ATTACHMENT 2

CONTRACT

This Parks & Recreation contract ("Contract") is entered into by and between the City of San Mateo ("City") and Suarez & Munoz Construction, Inc. ("Contractor"), for work on the Central Park Playground Improvements Project ("Project").

The parties agree as follows:

1. **Award of Contract.** In response to the Notice Inviting Sealed Proposals, Contractor has submitted a Bid Proposal to perform the Work to construct the Project. On October 7, 2024, City adopted Resolution No. 91 (2024) rejecting all bids and authorizing the City to negotiate a contract with the Contractor. Thereafter, the City and Contractor engaged in negotiations and are agreeable to executing this Contract based on the terms and conditions herein. On March 3, 2025, City authorized award of this Contract to Contractor for the amount set forth in Section 4, below.

2. **Contract Documents.** The Contract Documents are those included in the Contract Book Volume 1 (attached as Exhibit A and incorporated by reference) and Contract Book Volume 2 (as revised), entitled "Central Park Playground Improvements Project," and include the following amendments:

   a. Contractor's original "Bid Proposal and attachments thereto," inclusive of Contractor's subcontractor list, is hereby replaced with "Negotiated Bid Proposal and attachments thereto," which is attached as Exhibit B and incorporated by reference.

   b. "Project Plans and Specifications" is hereby replaced with "Project Plans and Specifications, Revised January 13, 2025," which is attached as Exhibit C and incorporated by reference.

   c. "Contract Book-Volume 2" is hereby replaced with "Contract Book-Volume 2, Revised January 13, 2025," which is attached as Exhibit D and incorporated by reference.

   The Contract Documents incorporated into this Contract also include and are comprised of all of the documents listed below, which include the above referenced amendments. The definitions provided in Article 1 of the General Conditions apply to all of the Contract Documents, including this Contract.

   2.1 Notice Inviting Bids;
   2.2 Instructions to Bidders;
   2.3 Addenda, if any;
   2.4 Negotiated Bid Proposal and attachments thereto;
   2.5 Contract;
   2.6 Payment and Performance Bonds;
   2.7 General Conditions;
   2.8 Special Conditions;
   2.9 Project Plans and Specifications, Revised January 13, 2025
   2.10 Change Orders, if any;
   2.11 Notice of Potential Award;
   2.12 Notice to Proceed; and
   2.13 The following: Geotechnical Reports and Supplemental Letters, Arborist Report.

3. **Contractor's Obligations.** Contractor will perform all of the Work required for the Project, as specified in the Contract Documents. Contractor must provide, furnish, and supply all things necessary and incidental for the timely performance and completion of the Work, including all necessary labor, materials, supplies, tools, equipment, transportation, onsite facilities, and utilities, unless otherwise specified in the Contract Documents. Contractor must use its best efforts to diligently prosecute and complete the Work in a professional and expeditious manner and to meet or exceed the performance standards required by the Contract Documents.

4. **Payment.** As full and complete compensation for Contractor's timely performance and completion of the Work in strict accordance with the terms and conditions of the Contract Documents, City will pay Contractor $8,485,784 ("Contract Price") for all of Contractor's direct and indirect costs to perform the Work, including all labor, materials, supplies, equipment, taxes, insurance, bonds and all overhead costs, in accordance with the payment provisions in the General Conditions.

5. **Time for Completion.** Contractor will fully complete the Work for the Project, meeting all requirements for Final Completion, within 548 calendar days from the start date set forth in the Notice to Proceed ("Contract Time"). By signing below, Contractor expressly waives any claim for delayed early completion.

6. **Liquidated Damages.** As further specified in Section 5.4 of the General Conditions, if Contractor fails to complete the Work within the Contract Time, City will assess liquidated damages in the amount of $9,500.00 per day for each day of unexcused delay in achieving Final Completion, and such liquidated damages may be deducted from City's payments due or to become due to Contractor under this Contract.

7. **Labor Code and City Minimum Wage Compliance.**

   7.1 General. This Contract is subject to all applicable requirements of Chapter 1 of Part 7 of Division 2 of the Labor Code, including requirements pertaining to wages, working hours and workers' compensation insurance, as further specified in Article 9 of the General Conditions.

   7.2 Prevailing Wages. This Project is subject to the prevailing wage requirements applicable to the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the Work, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes. Copies of these prevailing rates are available online at http://www.dir.ca.gov/DLSR.

   7.3 DIR Registration. City may not enter into the Contract with a bidder without proof that the bidder and its Subcontractors are registered with the California Department of Industrial Relations to perform public work pursuant to Labor Code § 1725.5, subject to limited legal exceptions.

   7.4 Minimum Wage. Bidder agrees to comply with the City's minimum wage ordinance as codified in San Mateo Municipal Code Chapter 5.92, which differs from the state minimum wage and includes a Consumer Price Index escalator. Contractor and its Subcontractors are required to pay the higher of the currently applicable state prevailing wage rates or City minimum wage.

8. **Workers' Compensation Certification.** Pursuant to Labor Code § 1861, by signing this Contract, Contractor certifies as follows: "I am aware of the provisions of Labor Code § 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work on this Contract."

9. **Conflicts of Interest.** Contractor, its employees, Subcontractors and agents, may not have, maintain or acquire a conflict of interest in relation to this Contract in violation of any City ordinance or requirement, or in violation of any California law, including Government Code § 1090 et seq., or the Political Reform Act, as set forth in Government Code § 81000 et seq. and its accompanying regulations. Any violation of this Section constitutes a material breach of the Contract.

10. **Independent Contractor.** Contractor is an independent contractor under this Contract and will have control of the Work and the means and methods by which it is performed. Contractor and its Subcontractors are not employees of City and are not entitled to participate in any health, retirement, or any other employee benefits from City.

11. **Notice.** Any notice, billing, or payment required by or pursuant to the Contract Documents must be made in writing, signed, dated and sent to the other party by personal delivery, U.S. Mail, a reliable overnight delivery service, or by email as a PDF file. Notice is deemed effective upon delivery, except that service by U.S. Mail is deemed effective on the second working day after deposit for delivery.

Notice for each party must be given as follows:

City:

City of San Mateo
Parks & Recreation Department
330 West 20th Ave.
San Mateo, CA 94403
Phone: (650)522-7542
Attn: King Leong, Sr. Project Manager
Email: kleong@cityofsanmateo.org

Contractor:

Suarez & Munoz Construction, Inc.
2490 American Ave., Hayward, CA 94545
Phone: (510)782-6055
Attn: John Suarez
Email: john@suarezmunoz.com

12. General Provisions.

12.1 Assignment and Successors. Contractor may not assign its rights or obligations under this Contract, in part or in whole, without City's written consent. This Contract is binding on Contractor's and City's lawful heirs, successors and permitted assigns.

12.2 Third Party Beneficiaries. There are no intended third party beneficiaries to this Contract.

12.3 Governing Law and Venue. This Contract will be governed by California law and venue will be in the San Mateo County Superior Court, and no other place. Contractor waives any right it may have pursuant to Code of Civil Procedure § 394, to file a motion to transfer any action arising from or relating to this Contract to a venue outside of San Mateo County, California.

12.4 Amendment. No amendment or modification of this Contract will be binding unless it is in a writing duly authorized and signed by the parties to this Contract.

12.5 Integration. This Contract and the Contract Documents incorporated herein, including authorized amendments or Change Orders thereto, constitute the final, complete, and exclusive terms of the agreement between City and Contractor.

12.6 Severability. If any provision of the Contract Documents is determined to be illegal, invalid, or unenforceable, in whole or in part, the remaining provisions of the Contract Documents will remain in full force and effect.

12.7 Iran Contracting Act. If the Contract Price exceeds $1,000,000, Contractor certifies, by signing below, that it is not identified on a list created under the Iran Contracting Act, Public Contract Code § 2200 et seq. (the "Act"), as a person engaging in investment activities in Iran, as defined in the Act, or is otherwise expressly exempt under the Act.

12.8 Authorization. Each individual signing below warrants that he or she is authorized to do so by the party that he or she represents, and that this Contract is legally binding on that party. If Contractor is a corporation, signatures from two officers of the corporation are required pursuant to California Corporation Code § 313.

[Signatures are on the following page.]

The parties agree to this Contract as witnessed by the signatures below:

CITY:

s/_____

_____
Joanne Magrini, Parks and Recreation Director

Date: _____

Approved as to form:

s/_____

_____
Linh Nguyen, Assistant City Attorney

Date: _____

Attest:

s/_____

_____
Name, Title

Date: _____

CONTRACTOR: Suarez & Munoz Construction, Inc.

s/_____ Seal:

_____
Name, Title

Date: _____

Second Signature (See Section 12.8):

s/_____

_____
Name, Title

Date: _____

_____
Contractor's California License Number(s) and Expiration Date(s)

END OF CONTRACT

EXHIBIT A

City of San Mateo

Contract Book – Volume 1

Central Park
Playground Improvements Project
City Project No. 610027

Project Manual

July 8, 2024

Department of Parks & Recreation

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Notice Inviting Sealed Proposals

1. Bid Submission. City of San Mateo ("City") will accept sealed bids, from prequalified bidders only, for its Central Park Playground Improvements Project ("Project"), by or before September 6, 2024, at 2:00 p.m., at its Clerk's office, located at City Hall, 330 West 20th Avenue, California, at which time the bids will be publicly opened and read aloud.

2. Project Information.

2.1 Location and Description. The Project is located at 50 East 5th Avenue, San Mateo, CA and is described as follows:

Demolition of existing play equipment, pathways, restroom building, and trees; Water pollution control and site protection measures; Tree removal and protection measures; Construct new custom play equipment and safety surfacing, new pre-engineered restroom, new picnic structure and concrete pad, new pedestrian pavements, raised boardwalk, water feature, fencing, site furnishings, irrigation, planting, site utilities (water, sewer), signage, lighting and other specified improvements; Construct new utility service connection in ROW of El Camino Real, State Route 82, under Encroachment Permit and jurisdiction of California Department of Transportation; Traffic and pedestrian control throughout construction.

2.2 Time for Final Completion. The Project must be fully completed within 548 calendar days from the start date set forth in the Notice to Proceed. City anticipates that the Work will begin on or about December 2, 2024, but the anticipated start date is provided solely for convenience and is neither certain nor binding.

2.3. Mandatroy Pre-Bid Meeting. A mandatory pre-bid meeting will be held on July 17, 2024 at 8:00 a.m., at the following location: Central Park, 50 East 5th Avenue, San Mateo, CA to acquaint all prequalified bidders with the Contract Documents and the Worksite. The bidders' conference is mandatory. A bidder who fails to attend a mandatory bidders' conference may be disqualified from bidding.

3. License and Registration Requirements.

3.1 License. This Project requires a valid California contractor's license for the following classification(s): Class A.

3.2 DIR Registration. City may not accept a Bid Proposal from or enter into the Contract with a bidder, without proof that the bidder is registered with the California Department of Industrial Relations ("DIR") to perform public work pursuant to Labor Code § 1725.5, subject to limited legal exceptions.

4. Contract Documents. The plans, specifications, bid forms and contract documents for the Project, and any addenda thereto ("Contract Documents") may be downloaded from City's website located at: Bid Postings • San Mateo • CivicEngage (cityofsanmateo.org). A printed copy of the Contract Documents may be obtained from the Barker Blue Web Link: Central Park Playground Improvements Project #610027 :: BarkerBlue Online Planroom (barkerblueplanroom.com)

5. Bid Security. The Bid Proposal must be accompanied by bid security of ten percent of the maximum bid amount, in the form of a cashier's or certified check made payable to City, or

a bid bond executed by a surety licensed to do business in the State of California on the Bid Bond form included with the Contract Documents. The bid security must guarantee that within ten days after City issues the Notice of Potential Award, the successful bidder will execute the Contract and submit the payment and performance bonds, insurance certificates and endorsements, and any other submittals required by the Contract Documents and as specified in the Notice of Potential Award.

6. Prevailing Wage Requirements.

6.1 General. Pursuant to California Labor Code § 1720 et seq., this Project is subject to the prevailing wage requirements applicable to the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the Work, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes.

6.2 Rates. The prevailing rates are on file with the City and are available online at http://www.dir.ca.gov/DLSR. Each Contractor and Subcontractor must pay no less than the specified rates to all workers employed to work on the Project. The schedule of per diem wages is based upon a working day of eight hours. The rate for holiday and overtime work must be at least time and one-half.

6.3 Compliance. The Contract will be subject to compliance monitoring and enforcement by the DIR, under Labor Code § 1771.4.

7. Performance and Payment Bonds. The successful bidder will be required to provide performance and payment bonds, each for 100% of the Contract Price, as further specified in the Contract Documents.

8. Substitution of Securities. Substitution of appropriate securities in lieu of retention amounts from progress payments is permitted under Public Contract Code § 22300.

9. Subcontractor List. Each Subcontractor must be registered with the DIR to perform work on public projects. Each bidder must submit a completed Subcontractor List form with its Bid Proposal, including the name, location of the place of business, California contractor license number, DIR registration number, and percentage of the Work to be performed (based on the base bid price) for each Subcontractor that will perform Work or service or fabricate or install Work for the prime contractor in excess of one-half of 1% of the bid price, using the Subcontractor List form included with the Contract Documents.

10. Instructions to Bidders. Prequalified bidders should carefully review the Instructions to Bidders for more detailed information before submitting a Bid Proposal. The definitions provided in Article 1 of the General Conditions apply to all of the Contract Documents, as defined therein, including this Notice Inviting Bids.

11. Prequalification. Only bids from prequalified bidders will be accepted.

12. Specific Brands. Pursuant to referenced provision(s) of Public Contract Code § 3400(c)(3), City has found that the following specific brands are required for the following particular material(s), product(s), thing(s), or service(s), and no substitutions will be considered or accepted:

Item:	Required brand:	Reference:
Pre-engineered restroom building	Romtec_____	
Custom playground equipment	Richter Spielgerate_____	
Elevated boardwalk	Wickcraft Boardwalks_____	

By: _____ Date: 6/28/2024
Martin McTaggart, City Clerk

Publication Date: July 8, 2024

END OF NOTICE INVITING SEALED PROPOSALS

Instructions to Bidders

Each Bid Proposal submitted to the City of San Mateo ("City") for its Central Park Playground Improvements Project ("Project") must be submitted in accordance with the following instructions and requirements:

1. Bid Submission.

1.1 General. Each Bid Proposal must be completed, using the form provided in the Contract Documents, signed, and submitted to City in a sealed envelope, with all required forms and attachments, by or before the date and time set forth in Section 1 of the Notice Inviting Bids, or as amended by subsequent addendum. Faxed or emailed Bid Proposals will not be accepted, unless otherwise specified. Late submissions will be returned unopened. City reserves the right to postpone the date or time for receiving or opening bids. Each bidder is solely responsible for all of its costs to prepare and submit its bid and by submitting a bid waives any right to recover those costs from City. The bid price(s) must include all costs to perform the Work as specified, including all labor, material, supplies, and equipment and all other direct or indirect costs such as applicable taxes, insurance and overhead.

1.2 Bid Envelope. The sealed envelope containing the Bid Proposal and all required forms and attachments must be clearly labeled and addressed as follows:

BID PROPOSAL:
Central Park Playground Improvements Project
City Project No. 610027

City Clerk
330 West 20th Avenue, San Mateo, CA 94403
Attn: Martin McTaggart

The envelope must also be clearly labeled, as follows, with the bidder's name, address, and its registration number with the California Department of Industrial Relations ("DIR") for bidding on public works contracts (Labor Code §§ 1725.5 and 1771.1):

[Contractor company name]
[street address]
[city, state, zip code]
DIR Registration No: _____

1.3 DIR Registration. Subject to limited legal exceptions for joint venture bids and federally-funded projects, City may not accept a Bid Proposal from a bidder without proof that the bidder is registered with the DIR to perform public work under Labor Code § 1725.5. If City is unable to confirm that the bidder is currently registered with the DIR, City may disqualify the bidder and return its bid unopened. (Labor Code §§ 1725.5 and 1771.1(a).)

2. Bid Proposal Form and Enclosures. Each Bid Proposal must be completed in ink using the Bid Proposal form included with the Contract Documents. The Bid Proposal form must be fully completed without interlineations, alterations, or erasures. Any necessary corrections must be clear and legible, and must be initialed by the bidder's authorized representative. A Bid Proposal submitted with exceptions or terms such as "negotiable," "will negotiate," or similar, will be considered nonresponsive. Each Bid Proposal must be accompanied by bid security, as set forth in Section 4 below, and by a completed

Subcontractor List and Non-Collusion Declaration using the forms included with the Contract Documents, and any other required enclosures, as applicable.

3. **Authorization and Execution.** Each Bid Proposal must be signed by the bidder's authorized representative. A Bid Proposal submitted by a partnership must be signed in the partnership name by a general partner with authority to bind the partnership. A Bid Proposal submitted by a corporation must be signed with the legal name of the corporation, followed by the signature and title of two officers of the corporation with full authority to bind the corporation to the terms of the Bid Proposal, under California Corporations Code § 313.

4. **Bid Security.** Each Bid Proposal must be accompanied by bid security of ten percent of the maximum bid amount, in the form of a cashier's check or certified check, made payable to the City, or bid bond using the form included in the Contract Documents and executed by a surety licensed to do business in the State of California. The bid security must guarantee that, within ten days after issuance of the Notice of Potential Award, the bidder will: execute and submit the enclosed Contract for the bid price; submit payment and performance bonds for 100% of the maximum Contract Price; and submit the insurance certificates and endorsements and any other submittals, if any, required by the Contract Documents or the Notice of Potential Award. A Bid Proposal may not be withdrawn for a period of 60 days after the bid opening without forfeiture of the bid security, except as authorized for material error under Public Contract Code § 5100 et seq.

5. **Requests for Information.** Questions or requests for clarifications regarding the Project, the bid procedures, or any of the Contract Documents must be submitted in writing to King Leong, Project Manager at kleong@cityofsanmateo.org. Oral responses are not authorized and are not binding on the City. Bidders should submit any such written inquiries no later thanAugust 9, 2024, 3:00 p.m., before the scheduled bid opening. Questions received any later might not be addressed before the bid deadline. An interpretation or clarification by City in response to a written inquiry will be issued in an addendum.

6. **Pre-Bid Investigation.**

   6.1 General. Each bidder is solely responsible at its sole expense for diligent and thorough review of the Contract Documents, examination of the Project site, and reasonable and prudent inquiry concerning known and potential site and area conditions prior to submitting a Bid Proposal. Each bidder is responsible for knowledge of conditions and requirements which reasonable review and investigation would have disclosed. However, except for any areas that are open to the public at large, bidders may not enter property owned or leased by the City or the Project site without prior written authorization from City.

   6.2 Document Review. Each bidder is responsible for review of the Contract Documents and any informational documents provided "For Reference Only," e.g., as-builts, technical reports, test data, and the like. A bidder is responsible for notifying City of any errors, omissions, inconsistencies, or conflicts it discovers in the Contract Documents, acting solely in its capacity as a contractor and subject to the limitations of Public Contract Code § 1104. Notification of any such errors, omissions, inconsistencies, or conflicts must be submitted in writing to the City no later than five Working Days before the scheduled bid opening. (See Section 5, above.) City expressly disclaims responsibility for assumptions a bidder might draw from the presence or absence of information provided by City.

   6.3 Project Site. Questions regarding the availability of soil test data, water table elevations, and the like should be submitted to the City in writing, as specified in Section 5, above. Any subsurface exploration at the Project site must be done at

the bidder's expense, but only with prior written authorization from City. All soil data and analyses available for inspection or provided in the Contract Documents apply only to the test hole locations. Any water table elevation indicated by a soil test report existed on the date the test hole was drilled. The bidder is responsible for determining and allowing for any differing soil or water table conditions during construction. Because groundwater levels may fluctuate, difference(s) in elevation between ground water shown in soil boring logs and ground water actually encountered during Project construction will not be considered changed Project site conditions. Actual locations and depths must be determined by bidder's field investigation. The bidder may request access to underlying or background information on the Project site in City's possession that is necessary for the bidder to form its own conclusions, including, if available, record drawings or other documents indicating the location of subsurface lines, utilities, or other structures.

6.4 Utility Company Standards. The Project must be completed in a manner that satisfies the standards and requirements of any affected utility companies or agencies (collectively, "utility owners"). The successful bidder may be required by the third party utility owners to provide detailed plans prepared by a California registered civil engineer showing the necessary temporary support of the utilities during coordinated construction work. Bidders are directed to contact the affected third party utility owners about their requirements before submitting a Bid Proposal.

7. Bidders Interested in More Than One Bid. No person, firm, or corporation may submit or be a party to more than one Bid Proposal unless alternate bids are specifically called for. However, a person, firm, or corporation that has submitted a subcontract proposal or quote to a bidder may submit subcontract proposals or quotes to other bidders.

8. Addenda. Any addenda issued prior to the bid opening are part of the Contract Documents. Subject to the limitations of Public Contract Code § 4104.5, City reserves the right to issue addenda prior to bid time. Each bidder is solely responsible for ensuring it has received and reviewed all addenda prior to submitting its bid. Bidders should check City's website periodically for any addenda or updates on the Project at: Bid Postings • San Mateo • CivicEngage (cityofsanmateo.org).

9. Brand Designations and "Or Equal" Substitutions. Any specification designating a material, product, thing, or service by specific brand or trade name, followed by the words "or equal," is intended only to indicate quality and type of item desired, and bidders may request use of any equal material, product, thing, or service. All data substantiating the proposed substitute as an equal item must be submitted with the written request for substitution. A request for substitution must be submitted within 35 days after Notice of Potential Award unless otherwise provided in the Contract Documents. This provision does not apply to materials, products, things, or services that may lawfully be designated by a specific brand or trade name under Public Contract Code § 3400(c).

10. Bid Protest. Any bid protest against another bidder must be submitted in writing and received by City Clerk Office at 330 West 20th Avenue, San Mateo, CA> or sent via email at clerk@cityofsanmateo.org before 5:00 p.m. no later than five Working Days following bid opening ("Bid Protest Deadline") and must comply with the following requirements:

10.1 General. Only a bidder who has actually submitted a Bid Proposal is eligible to submit a bid protest against another bidder. Subcontractors are not eligible to submit bid protests. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest. For purposes of this Section 10, a "Working Day" means a day that City is open for normal business, and excludes weekends and holidays observed by City. Pursuant to Public Contract Code §

4104, inadvertent omission of a Subcontractor's DIR registration number on the Subcontractor List form is not grounds for a bid protest, provided it is corrected within 24 hours of the bid opening or as otherwise provided under Labor Code § 1771.1(b).

10.2 Protest Contents. The bid protest must contain a complete statement of the basis for the protest and must include all supporting documentation. Material submitted after the Bid Protest Deadline will not be considered. The protest must refer to the *specific* portion or portions of the Contract Documents upon which the protest is based. The protest must include the name, address, email address, and telephone number of the protesting bidder and any person submitting the protest on behalf of or as an authorized representative of the protesting bidder.

10.3 Copy to Protested Bidder. Upon submission of its bid protest to City, the protesting bidder must also concurrently transmit the protest and all supporting documents to the protested bidder, and to any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest, by email or hand delivery to ensure delivery before the Bid Protest Deadline.

10.4 Response to Protest. The protested bidder may submit a written response to the protest, provided the response is received by City before 5:00 p.m., within two Working Days after the Bid Protest Deadline or after actual receipt of the bid protest, whichever is sooner (the "Response Deadline"). The response must attach all supporting documentation. Material submitted after the Response Deadline will not be considered. The response must include the name, address, email address, and telephone number of the person responding on behalf of or representing the protested bidder if different from the protested bidder.

10.5 Copy to Protesting Bidder. Upon submission of its response to the bid protest to the City, the protested bidder must also concurrently transmit by email or hand delivery, by or before the Response Deadline, a copy of its response and all supporting documents to the protesting bidder and to any other bidder who has a reasonable prospect of receiving an award depending upon the outcome of the protest.

10.6 Exclusive Remedy. The procedure and time limits set forth in this Section are mandatory and are the bidder's sole and exclusive remedy in the event of a bid protest. A bidder's failure to comply with these procedures will constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.

10.7 Right to Award. City reserves the right, acting in its sole discretion, to reject any bid protest that it determines lacks merit, to award the Contract to the bidder it has determined to be the responsible bidder submitting the lowest responsive bid, and to issue a Notice to Proceed with the Work notwithstanding any pending or continuing challenge to its determination.

11. Reservation of Rights. City reserves the unfettered right, acting in its sole discretion, to waive or to decline to waive any immaterial bid irregularities; to accept or reject any or all bids; to cancel or reschedule the bid; to postpone or abandon the Project entirely; or to perform all or part of the Work with its own forces. The Contract will be awarded, if at all, within 60 days after opening of bids or as otherwise specified in the Special Conditions, to the responsible bidder that submitted the lowest responsive bid. Any planned start date for the Project represents the City's expectations at the time the Notice Inviting Bids was first issued. City is not bound to issue a Notice to Proceed by or before such planned start date,

and it reserves the right to issue the Notice to Proceed when the City determines, in its sole discretion, the appropriate time for commencing the Work. The City expressly disclaims responsibility for any assumptions a bidder might draw from the presence or absence of information provided by the City in any form. Each bidder is solely responsible for its costs to prepare and submit a bid, including site investigation costs.

12. Bonds. Within ten calendar days following City's issuance of the Notice of Potential Award to the apparent low bidder, the bidder must submit payment and performance bonds to City as specified in the Contract Documents using the bond forms included in the Contract Documents. All required bonds must be calculated on the maximum total Contract Price as awarded, including additive alternates, if applicable.

13. License(s). The successful bidder and its Subcontractor(s) must possess the California contractor's license(s) in the classification(s) required by law to perform the Work. The successful bidder must also obtain a City business tax certificate within 14 calendar days following City's issuance of the Notice of Potential Award. Subcontractors must also obtain a City business tax certificate before performing any Work.

14. Ineligible Subcontractor. Any Subcontractor who is ineligible to perform work on a public works project under Labor Code §§ 1777.1 or 1777.7 is prohibited from performing work on the Project.

15. Safety Orders. If the Project includes construction of a pipeline, sewer, sewage disposal system, boring and jacking pits, or similar trenches or open excavations, which are five feet or deeper, each bid must include a bid item for adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life or limb, which comply with safety orders as required by Labor Code § 6707.

16. In-Use Off-Road Diesel-Fueled Fleets. If the Project involves the use of vehicles subject to the California Air Resources Board's In-Use Off-Road Diesel-Fueled Fleets Regulation (13 CCR § 2449 et seq.) ("Off-Road Regulation"), then within ten calendar days following City's issuance of the Notice of Potential Award to the successful bidder, the bidder must submit to City valid Certificates of Reported Compliance for its fleet and its listed Subcontractors, if applicable, in accordance with the Off-Road Regulation, unless exempt under the Off-Road Regulation.

17. Subcontractor Work Limits. The prime contractor must perform at least 10% of the Work on the Project, calculated as a percentage of the base bid price, with its own forces, except for any Work identified as "Specialty Work" in the Contract Documents. The total bid amount for any such Specialty Work, as shown on the Bid Schedule, may be deducted from the base bid price before computing the 10% self-performance requirement. The remaining Work may be performed by qualified Subcontractor(s).

18. Additive and Deductive Alternates. As required by Public Contract Code § 20103.8, if this bid solicitation includes additive or deductive items, the method checked below will be used to determine the lowest bid. If no method is checked, subparagraph (A) will be used to determine the lowest bid. City retains the right to add to or deduct from the Contract any of the additive or deductive alternates included in the Bid Proposal.

_____ (A) The lowest bid will be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items.

__X__ (B) The lowest bid will be the lowest total of the bid prices on the base contract and those additive or deductive items that were specifically identified in the bid solicitation or Bid Proposal as being used for the purpose of determining the lowest bid price.

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

_____ (D) The lowest bid will be determined in a manner that prevents any information that would identify any of the bidders or the proposed subcontractors or suppliers from being revealed to City before the ranking of all bidders from lowest to highest has been determined.

END OF INSTRUCTIONS TO BIDDERS

Bid Proposal

Central Park Playground Improvements Project

_____ ("Bidder") hereby submits this Bid Proposal to the City of San Mateo ("City") for the above-referenced project ("Project") in response to the Notice Inviting Bids and in accordance with the Contract Documents referenced in the Notice.

1. **Base Bid.** Bidder proposes to perform and fully complete the Work for the Project as specified in the Contract Documents, within the time required for full completion of the Work, including all labor, materials, supplies, and equipment and all other direct or indirect costs including, but not limited to, taxes, insurance and all overhead, for the following price ("Base Bid"): $_____.

2. **Bid Alternates.** Bidder submits the following prices for all the specified bid additive alternates, which are fully inclusive of all costs associated with the specified alternate, including, but not limited to, all labor, materials, supplies, and equipment incidental to or required for complete incorporation of the alternate::

   Alternate #1: Small picnic area and Entry obelisks
   Add: $_____

   Alternate #2: Swing area
   Add: $_____

   Alternate #3: Zip line area
   Add: $_____

   Alternate #4: Boardwalk
   Add: $_____

3. **Addenda.** Bidder agrees that it has confirmed receipt of or access to, and reviewed, all addenda issued for this bid. Bidder waives any claims it might have against the City based on its failure to receive, access, or review any addenda for any reason. Bidder specifically acknowledges receipt of the following addenda:

Addendum:	Date Received:	Addendum:	Date Received:
#01	_____	#05	_____
#02	_____	#06	_____
#03	_____	#07	_____
#04	_____	#08	_____

4. **Bidder's Certifications and Warranties.** By signing and submitting this Bid Proposal, Bidder certifies and warrants the following:

   4.1 Examination of Contract Documents. Bidder has thoroughly examined the Contract Documents and represents that, to the best of Bidder's knowledge, there are no errors, omissions, or discrepancies in the Contract Documents, subject to the limitations of Public Contract Code § 1104.

4.2 Examination of Worksite. Bidder has had the opportunity to examine the Worksite and local conditions at the Project location.

4.3 Bidder Responsibility. Bidder is a responsible bidder, with the necessary ability, capacity, experience, skill, qualifications, workforce, equipment, and resources to perform or cause the Work to be performed in accordance with the Contract Documents and within the Contract Time.

4.4 Responsibility for Bid. Bidder has carefully reviewed this Bid Proposal and is solely responsible for any errors or omissions contained in its completed bid. All statements and information provided in this Bid Proposal and enclosures are true and correct to the best of Bidder's knowledge.

4.5 Nondiscrimination. In preparing this bid, the Bidder has not engaged in discrimination against any prospective or present employee or Subcontractor on grounds of race, color, ancestry, national origin, ethnicity, religion, sex, sexual orientation, age, disability, or marital status.

4.6 Iran Contracting Act. If the Contract Price exceeds $1,000,000, Bidder is not identified on a list created under the Iran Contracting Act, Public Contract Code § 2200 et seq. (the "Act"), as a person engaging in investment activities in Iran, as defined in the Act, or is otherwise expressly exempt under the Act.

5. Award of Contract. By signing and submitting this Bid Proposal, Bidder agrees that if City issues the Notice of Potential Award to Bidder, then within ten days following issuance of the Notice of Potential Award to Bidder, Bidder will do all of the following:

5.1 Execute Contract. Enter into the Contract with City in accordance with the terms of this Bid Proposal, by signing and submitting to City the Contract prepared by City using the form included with the Contract Documents;

5.2 Submit Required Bonds. Submit to City a payment bond and a performance bond, each for 100% of the Contract Price, using the bond forms provided and in accordance with the requirements of the Contract Documents; and

5.3 Insurance Requirements. Submit to City the insurance certificate(s) and endorsement(s) as required by the Contract Documents; and

5.4 Certificates of Reported Compliance. Submit to City valid Certificates of Reported Compliance for its fleet and its listed Subcontractors, if applicable, if the Project involves the use of vehicles subject to the Off-Road Regulation. (See Section 16 of the Instructions to Bidders.)

6. Bid Security. As a guarantee that, if awarded the Contract, Bidder will perform its obligations under Section 5 above, Bidder is enclosing bid security in the amount of ten percent of its maximum bid amount in one of the following forms (check one):

____ A cashier's check or certified check payable to City and issued by _____ [Bank name] in the amount of $_____.

____ A bid bond, using the Bid Bond form included with the Contract Documents, payable to City and executed by a surety licensed to do business in the State of California.

This Bid Proposal is hereby submitted on _____, 20__.

s/ _____
_____
Name and Title

s/ _____
_____
[See Section 3 of Instructions to Bidders] Name and Title

_____
_____
Company Name License #, Expiration Date, and Classification

_____
_____
Address DIR Registration #

_____
_____
City, State, Zip Phone

_____
_____
Contact Name Contact Email

END OF BID PROPOSAL

Subcontractor List

For each Subcontractor that will perform a portion of the Work in an amount in excess of one-half of 1% of the Bidder's total Base Bid,[1] the bidder must list a description of the Work, the name of the Subcontractor, its California contractor license number, the location of its place of business, its DIR registration number, and the portion of the Work that the Subcontractor is performing based on a percentage of the Base Bid price.

DESCRIPTION OF WORK	SUBCONTRACTOR NAME	CALIFORNIA CONTRACTOR LICENSE NO.	LOCATION OF BUSINESS	DIR REG. NO.	PERCENT OF WORK

END OF SUBCONTRACTOR LIST

[1] For street or highway construction, this requirement applies to any subcontract of $10,000 or more.

Noncollusion Declaration

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ [title] of _____ [business name], the party making the foregoing bid.

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

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

This declaration is intended to comply with California Public Contract Code § 7106 and Title 23 U.S.C § 112.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

s/_____

_____
Name [print]

END OF NONCOLLUSION DECLARATION

Bid Bond

_____ ("Bidder") has submitted a bid, dated _____, 2024 ("Bid"), to the City of San Mateo ("City") for work on the Central Park Playground Improvements Project ("Project"). Under this duly executed bid bond ("Bid Bond"), Bidder as Principal and _____, its surety ("Surety"), are bound to City as obligee in the penal sum of ten percent of the maximum amount of the Bid (the "Bond Sum"). Bidder and Surety bind themselves and their respective heirs, executors, administrators, successors and assigns, jointly and severally, as follows:

1. General. If Bidder is awarded the Contract for the Project, Bidder will enter into the Contract with City in accordance with the terms of the Bid.

2. Submittals. Within ten days following issuance of the Notice of Potential Award to Bidder, Bidder must submit to City the following:

2.1 Contract. The executed Contract, using the form provided by City in the Project contract documents ("Contract Documents");

2.2 Payment Bond. A payment bond for 100% of the maximum Contract Price, executed by a surety licensed to do business in the State of California using the Payment Bond form included with the Contract Documents;

2.3 Performance Bond. A performance bond for 100% of the maximum Contract Price, executed by a surety licensed to do business in the State of California using the Performance Bond form included with the Contract Documents;

2.4 Insurance. The insurance certificate(s) and endorsement(s) required by the Contract Documents;

2.5 Certificates of Reported Compliance. Valid Certificates of Reported Compliance for its fleet and its listed Subcontractors, if applicable, in accordance with the In-Use Off-Road Diesel-Fueled Fleets Regulation (13 CCR § 2449 et seq.) ("Off-Road Regulation"), if the Project involves the use of vehicles subject to the Off-Road Regulation; and any other documents required by the Instructions to Bidders or Notice of Potential Award.

3. Enforcement. If Bidder fails to execute the Contract or to submit the bonds and insurance certificates , and valid Certificates of Reported Compliance as required by the Contract Documents, Surety guarantees that Bidder forfeits the Bond Sum to City. Any notice to Surety may be given in the manner specified in the Contract and delivered or transmitted to Surety as follows:

Attn: _____
Address: _____
City/State/Zip: _____
Phone: _____
Fax: _____
Email: _____

4. Duration and Waiver. If Bidder fulfills its obligations under Section 2, above, then this obligation will be null and void; otherwise, it will remain in full force and effect for 60 days following the bid opening or until this Bid Bond is returned to Bidder, whichever occurs first. Surety waives the provisions of Civil Code §§ 2819 and 2845.

[Signatures are on the following page.]

This Bid Bond is entered into and effective on _____, 20_____.

SURETY:

_____
Business Name

s/_____ _____
Date

_____
Name, Title

(Attach Acknowledgment with Notary Seal and Power of Attorney)

BIDDER:

_____
Business Name

s/_____ _____
Date

_____
Name, Title

END OF BID BOND

Contract

This public works contract ("Contract") is entered into by and between the City of San Mateo ("City") and _____ ("Contractor"), for work on the Central Park Playground Improvements Project ("Project").

The parties agree as follows:

1. **Award of Contract.** In response to the Notice Inviting Bids, Contractor has submitted a Bid Proposal to perform the Work to construct the Project. On _____, 20___, City authorized award of this Contract to Contractor for the amount set forth in Section 4, below. City has elected to include the following Project alternate(s) in the Contract: Additive Alternates Numbers. _____.

2. **Contract Documents.** The Contract Documents incorporated into this Contract include and are comprised of all of the documents listed below. The definitions provided in Article 1 of the General Conditions apply to all of the Contract Documents, including this Contract.

   2.1 Notice Inviting Bids;
   2.2 Instructions to Bidders;
   2.3 Addenda, if any;
   2.4 Bid Proposal and attachments thereto;
   2.5 Contract;
   2.6 Payment and Performance Bonds;
   2.7 General Conditions;
   2.8 Special Conditions;
   2.9 Project Plans and Specifications;
   2.10 Change Orders, if any;
   2.11 Notice of Potential Award;
   2.12 Notice to Proceed; and
   2.13 The following: Volume 2 Technical Specifications, Structural Calculations, Geotechnical Reports and Supplemental Letters, Arborist Report.

3. **Contractor's Obligations.** Contractor will perform all of the Work required for the Project, as specified in the Contract Documents. Contractor must provide, furnish, and supply all things necessary and incidental for the timely performance and completion of the Work, including all necessary labor, materials, supplies, tools, equipment, transportation, onsite facilities, and utilities, unless otherwise specified in the Contract Documents. Contractor must use its best efforts to diligently prosecute and complete the Work in a professional and expeditious manner and to meet or exceed the performance standards required by the Contract Documents.

4. **Payment.** As full and complete compensation for Contractor's timely performance and completion of the Work in strict accordance with the terms and conditions of the Contract Documents, City will pay Contractor $_____ ("Contract Price") for all of Contractor's direct and indirect costs to perform the Work, including all labor, materials, supplies, equipment, taxes, insurance, bonds and all overhead costs, in accordance with the payment provisions in the General Conditions.

5. **Time for Completion.** Contractor will fully complete the Work for the Project, meeting all requirements for Final Completion, within 548 calendar days from the start date set forth in the Notice to Proceed ("Contract Time"). By signing below, Contractor expressly waives any claim for delayed early completion.

6. **Liquidated Damages.** As further specified in Section 5.4 of the General Conditions, if Contractor fails to complete the Work within the Contract Time, City will assess liquidated damages in the amount of $9,500.00 per day for each day of unexcused delay in achieving Final Completion, and such liquidated damages may be deducted from City's payments due or to become due to Contractor under this Contract.

7. **Labor Code and City Minimum Wage Compliance.**

   7.1 **General.** This Contract is subject to all applicable requirements of Chapter 1 of Part 7 of Division 2 of the Labor Code, including requirements pertaining to wages, working hours and workers' compensation insurance, as further specified in Article 9 of the General Conditions.

   7.2 **Prevailing Wages.** This Project is subject to the prevailing wage requirements applicable to the locality in which the Work is to be performed for each craft, classification or type of worker needed to perform the Work, including employer payments for health and welfare, pension, vacation, apprenticeship and similar purposes. Copies of these prevailing rates are available online at http://www.dir.ca.gov/DLSR.

   7.3 **DIR Registration.** City may not enter into the Contract with a bidder without proof that the bidder and its Subcontractors are registered with the California Department of Industrial Relations to perform public work pursuant to Labor Code § 1725.5, subject to limited legal exceptions.

   7.4 **Minimum Wage.** Bidder agrees to comply with the City's minimum wage ordinance as codified in San Mateo Municipal Code Chapter 5.92, which differs from the state minimum wage and includes a Consumer Price Index escalator. Contractor and its Subcontractors are required to pay the higher of the currently applicable state prevailing wage rates or City minimum wage.

8. **Workers' Compensation Certification.** Pursuant to Labor Code § 1861, by signing this Contract, Contractor certifies as follows: "I am aware of the provisions of Labor Code § 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work on this Contract."

9. **Conflicts of Interest.** Contractor, its employees, Subcontractors and agents, may not have, maintain or acquire a conflict of interest in relation to this Contract in violation of any City ordinance or requirement, or in violation of any California law, including Government Code § 1090 et seq., or the Political Reform Act, as set forth in Government Code § 81000 et seq. and its accompanying regulations. Any violation of this Section constitutes a material breach of the Contract.

10. **Independent Contractor.** Contractor is an independent contractor under this Contract and will have control of the Work and the means and methods by which it is performed. Contractor and its Subcontractors are not employees of City and are not entitled to participate in any health, retirement, or any other employee benefits from City.

11. **Notice.** Any notice, billing, or payment required by or pursuant to the Contract Documents must be made in writing, signed, dated and sent to the other party by personal delivery, U.S. Mail, a reliable overnight delivery service, or by email as a PDF file. Notice is deemed effective upon delivery, except that service by U.S. Mail is deemed effective on the second working day after deposit for delivery. Notice for each party must be given as follows:

City:

Parks & Recreation Department
Park Yard
2001 Pacific Blvd.
San Mateo, CA 94403
Phone: (650)522-7542
Attn: King Leong, Project Manager
Email: kleong@cityofsanmateo.org

Contractor:

Name:_____
Address:_____
City/State/Zip:_____
Phone:_____
Attn:_____
Email:_____
Copy to:_____

12. General Provisions.

12.1 Assignment and Successors. Contractor may not assign its rights or obligations under this Contract, in part or in whole, without City's written consent. This Contract is binding on Contractor's and City's lawful heirs, successors and permitted assigns.

12.2 Third Party Beneficiaries. There are no intended third party beneficiaries to this Contract.

12.3 Governing Law and Venue. This Contract will be governed by California law and venue will be in the San Mateo County Superior Court, and no other place. Contractor waives any right it may have pursuant to Code of Civil Procedure § 394, to file a motion to transfer any action arising from or relating to this Contract to a venue outside of San Mateo County, California.

12.4 Amendment. No amendment or modification of this Contract will be binding unless it is in a writing duly authorized and signed by the parties to this Contract.

12.5 Integration. This Contract and the Contract Documents incorporated herein, including authorized amendments or Change Orders thereto, constitute the final, complete, and exclusive terms of the agreement between City and Contractor.

12.6 Severability. If any provision of the Contract Documents is determined to be illegal, invalid, or unenforceable, in whole or in part, the remaining provisions of the Contract Documents will remain in full force and effect.

12.7 Iran Contracting Act. If the Contract Price exceeds $1,000,000, Contractor certifies, by signing below, that it is not identified on a list created under the Iran Contracting Act, Public Contract Code § 2200 et seq. (the "Act"), as a person engaging in investment activities in Iran, as defined in the Act, or is otherwise expressly exempt under the Act.

12.8 Authorization. Each individual signing below warrants that he or she is authorized to do so by the party that he or she represents, and that this Contract is legally binding on that party. If Contractor is a corporation, signatures from two officers of the corporation are required pursuant to California Corporation Code § 313.

[Signatures are on the following page.]

The parties agree to this Contract as witnessed by the signatures below:

CITY:

s/_____

_____
Alex Khojikian, City Manager

Date: _____

Approved as to form:

s/_____

_____
Name, Title

Date: _____

Attest:

s/_____

_____
Name, Title

Date: _____

CONTRACTOR: _____
Business Name

s/_____

Seal:

_____
Name, Title

Date: _____

Second Signature (See Section 12.8):

s/_____

_____
Name, Title

Date: _____

_____
Contractor's California License Number(s) and Expiration Date(s)

END OF CONTRACT

Payment Bond

City of San Mateo ("City") and _____ ("Contractor") have entered into a contract for work on the Central Park Playground Improvements Project ("Project"). The Contract is incorporated by reference into this Payment Bond ("Bond").

1. **General.** Under this Bond, Contractor as principal and _____, its surety ("Surety"), are bound to City as obligee in an amount not less than $_____, under California Civil Code § 9550 et seq., to ensure payment to authorized claimants. This Bond is binding on the respective successors, assigns, owners, heirs, or executors of Surety and Contractor.

2. **Surety's Obligation.** If Contractor or any of its Subcontractors fails to pay a person authorized in California Civil Code § 9100 to assert a claim against a payment bond, any amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of Contractor and its Subcontractors under California Unemployment Insurance Code § 13020 with respect to the work and labor, then Surety will pay the obligation.

3. **Beneficiaries.** This Bond inures to the benefit of any of the persons named in California Civil Code § 9100, so as to give a right of action to those persons or their assigns in any suit brought upon this Bond. Contractor must promptly provide a copy of this Bond upon request by any person with legal rights under this Bond.

4. **Duration.** If Contractor promptly makes payment of all sums for all labor, materials, and equipment furnished for use in the performance of the Work required by the Contract, in conformance with the time requirements set forth in the Contract and as required by California law, Surety's obligations under this Bond will be null and void. Otherwise, Surety's obligations will remain in full force and effect.

5. **Waivers.** Surety waives any requirement to be notified of alterations to the Contract or extensions of time for performance of the Work under the Contract. Surety waives the provisions of Civil Code §§ 2819 and 2845. City waives the requirement of a new bond for any supplemental contract under Civil Code § 9550. Any notice to Surety may be given in the manner specified in the Contract and sent to Surety as follows:

   Attn: _____
   Address: _____
   City/State/Zip: _____
   Phone: _____
   Email: _____

6. **Law and Venue.** This Bond will be governed by California law, and venue for any dispute pursuant to this Bond will be in the San Mateo County Superior Court, and no other place. Surety will be responsible for City's attorneys' fees and costs in any action to enforce the provisions of this Bond.

[Signatures are on the following page.]

7. Effective Date; Execution. This Bond is entered into and is effective on _____, 20__.

SURETY:

_____
Business Name

s/_____ _____
Date

_____
Name, Title

(Attach Acknowledgment with Notary Seal and Power of Attorney)

CONTRACTOR:

_____
Business Name

s/_____ _____
Date

_____
Name, Title

APPROVED BY CITY:

s/ _____ _____
Date

_____
Name, Title

END OF PAYMENT BOND

Performance Bond

City of San Mateo("City") and _____ ("Contractor") have entered into a contract for work on the Central Park Playground Improvements Project ("Project"). The Contract is incorporated by reference into this Performance Bond ("Bond").

1. **General.** Under this Bond, Contractor as principal and _____, its surety ("Surety"), are bound to City as obligee for an amount not less than $_____ to ensure Contractor's faithful performance of its obligations under the Contract. This Bond is binding on the respective successors, assigns, owners, heirs, or executors of Surety and Contractor.

2. **Surety's Obligations.** Surety's obligations are co-extensive with Contractor's obligations under the Contract. If Contractor fully performs its obligations under the Contract, including its warranty obligations under the Contract, Surety's obligations under this Bond will become null and void. Otherwise, Surety's obligations will remain in full force and effect.

3. **Waiver.** Surety waives any requirement to be notified of and further consents to any alterations to the Contract made under the applicable provisions of the Contract Documents, including changes to the scope of Work or extensions of time for performance of Work under the Contract. Surety waives the provisions of Civil Code §§ 2819 and 2845.

4. **Application of Contract Balance.** Upon making a demand on this Bond for completion of the Work prior to acceptance of the Project, City will make the Contract Balance available to Surety for completion of the Work under the Contract. For purposes of this provision, the Contract Balance is defined as the total amount payable by City to Contractor as the Contract Price minus amounts already paid to Contractor, and minus any liquidated damages, credits, or backcharges to which City is entitled under the terms of the Contract.

5. **Contractor Default.** Upon written notification from City of Contractor's termination for default under Article 13 of the Contract General Conditions, time being of the essence, Surety must act within the time specified in Article 13 to remedy the default through one of the following courses of action:

5.1 Arrange for completion of the Work under the Contract by Contractor, with City's consent, but only if Contractor is in default solely due to its financial inability to complete the Work;

5.2 Arrange for completion of the Work under the Contract by a qualified contractor acceptable to City, and secured by performance and payment bonds issued by an admitted surety as required by the Contract Documents, at Surety's expense; or

5.3 Waive its right to complete the Work under the Contract and reimburse City the amount of City's costs to have the remaining Work completed.

6. **Surety Default.** If Surety defaults on its obligations under the Bond, City will be entitled to recover all costs it incurs due to Surety's default, including legal, design professional, or delay costs.

7. **Notice.** Any notice to Surety may be given in the manner specified in the Contract and sent to Surety as follows:

Attn: _____
Address: _____

City/State/Zip: _____
Phone: _____
Fax: _____
Email: _____

8. Law and Venue. This Bond will be governed by California law, and venue for any dispute pursuant to this Bond will be in the San Mateo County Superior Court, and no other place. Surety will be responsible for City's attorneys' fees and costs in any action to enforce the provisions of this Bond.

9. Effective Date; Execution. This Bond is entered into and effective on _____, 20___.

SURETY:

_____
Business Name

s/_____ _____
Date

_____
Name, Title

(Attach Acknowledgment with Notary Seal and Power of Attorney)

CONTRACTOR:

_____
Business Name

s/_____ _____
Date

_____
Name, Title

APPROVED BY CITY:

s/ _____ _____
Date

_____
Name, Title

END OF PERFORMANCE BOND

General Conditions

Article 1 - Definitions

Definitions. The following definitions apply to all of the Contract Documents unless otherwise indicated, e.g., additional definitions that apply solely to the Specifications or other technical documents. Defined terms and titles of documents are capitalized in the Contract Documents, with the exception of the following (in any tense or form): “day,” “furnish,” “including,” “install,” “work day” or “working day.”

Allowance means a specific amount that must be included in the Bid Proposal for a specified purpose.

Article, as used in these General Conditions, means a numbered Article of the General Conditions, unless otherwise indicated by the context.

Change Order means a written document duly approved and executed by City, which changes the scope of Work, the Contract Price, or the Contract Time.

City means the City of San Mateo which has entered into the Contract with Contractor for performance of the Work, acting through its City Council, officers, employees, City Engineer, and any other authorized representatives.

City Engineer means the City Engineer for City and his or her authorized delegee(s).

Claim means a separate demand by Contractor for a change in the Contract Time or Contract Price, that has previously been submitted to City in accordance with the requirements of the Contract Documents, and which has been rejected by City, in whole or in part; or a written demand by Contractor objecting to the amount of Final Payment.

Contract means the signed agreement between City and Contractor for performing the Work required for the Project, and all documents expressly incorporated therein.

Contract Documents means, collectively, all of the documents listed as such in Section 2 of the Contract, including the Notice Inviting Bids; the Instructions to Bidders; addenda, if any; the Bid Proposal, and attachments thereto; the Contract; the Notice of Potential Award and Notice to Proceed; the payment and performance bonds; the General Conditions; the Special Conditions; the Project Plans and Specifications; any Change Orders; and any other documents which are clearly and unambiguously made part of the Contract Documents. The Contract Documents do not include documents provided “For Reference Only,” or documents that are intended solely to provide information regarding existing conditions.

Contract Price means the total compensation to be paid to Contractor for performance of the Work, as set forth in the Contract and as may be amended by Change Order or adjusted for an Allowance. The Contract Price is not subject to adjustment due to inflation or due to the increased cost of labor, material, supplies or equipment following submission of the Bid Proposal.

Contract Time means the time specified for complete performance of the Work, as set forth in the Contract and as may be amended by Change Order.

Contractor means the individual, partnership, corporation, or joint-venture that has signed the Contract with City to perform the Work.

Day means a calendar day unless otherwise specified.

Design Professional means the licensed individual(s) or firm(s) retained by City to provide architectural, engineering, or otherl design professional services for the Project. If no Design Professional has been retained for this Project, any reference to Design Professional is deemed to refer to the Engineer.

DIR means the California Department of Industrial Relations.

Drawings has the same meaning as Plans.

Engineer means the Project Manager for the City of San Mateo and his or her authorized delegees.

Excusable Delay is defined in Section 5.3(B), Excusable Delay.

Extra Work means new or unforeseen work added to the Project, as determined by the Engineer in his or her sole discretion, including Work that was not part of or incidental to the scope of the Work when the Contractor's bid was submitted; Work that is substantially different from the Work as described in the Contract Documents at bid time; or Work that results from a substantially differing and unforeseeable condition.

Final Completion means Contractor has fully completed all of the Work required by the Contract Documents to the City's satisfaction, including all punch list items and any required commissioning or training, and has provided the City with all required submittals, including the instructions and manuals, product warranties, and as-built drawings.

Final Payment means payment to Contractor of the unpaid Contract Price, including release of undisputed retention, less amounts withheld or deducted pursuant to the Contract Documents.

Furnish means to purchase and deliver for the Project.

Government Code Claim means a claim submitted pursuant to California Government Code § 900 et seq.

Hazardous Materials means any substance or material identified now or in the future as hazardous under any Laws, or any other substance or material that may be considered hazardous or otherwise subject to Laws governing handling, disposal, or cleanup.

Including, whether or not capitalized, means "including, but not limited to," unless the context clearly requires otherwise.

Inspector means the individual(s) or firm(s) retained or employed by City to inspect the workmanship, materials, and manner of construction of the Project and its components to ensure compliance with the Contract Documents and all Laws.

Install means to fix in place for materials, and to fix in place and connect for equipment.

Laws means all applicable local, state, and federal laws, regulations, rules, codes, ordinances, permits, orders, and the like enacted or imposed by or under the auspices of any governmental entity with jurisdiction over any of the Work or any performance of the Work, including health and safety requirements.

Non-Excusable Delay is defined in Section 5.3(D), Non-Excusable Delay.

Plans means the City-provided plans, drawings, details, or graphical depictions of the Project requirements, but does not include Shop Drawings.

Project means the public works project referenced in the Contract, as modified by any Project alternates elected by City, if any.

Project Manager means the individual designated by City to oversee and manage the Project on City's behalf and may include his or her authorized delegee(s) when the Project Manager is unavailable.

Recoverable Costs is defined in Section 5.3(F), Recoverable Costs.

Request for Information or **RFI** means Contractor's written request for information about the Contract Documents, the Work or the Project, submitted to City in the manner and format specified by City.

Section, when capitalized in these General Conditions, means a numbered section or subsection of the General Conditions, unless the context clearly indicates otherwise.

Shop Drawings means drawings, plan details or other graphical depictions prepared by or on behalf of Contractor, and subject to City acceptance, which are intended to provide details for fabrication, installation, and the like, of items required by or shown in the Plans or Specifications.

Specialty Work means Work that must be performed by a specialized Subcontractor with the specified license or other special certification, and that the Contractor is not qualified to self-perform.

Specifications means the technical, text specifications describing the Project requirements, which are prepared for and incorporated into the Contract by or on behalf of City, and does not include the Contract, General Conditions or Special Conditions.

Subcontractor means an individual, partnership, corporation, or joint-venture retained by Contractor directly or indirectly through a subcontract to perform a specific portion of the Work. The term Subcontractor applies to subcontractors of all tiers, unless otherwise indicated by the context. A third party such as a utility performing related work on the Project is not a Subcontractor, even if Contractor must coordinate its Work with the third party.

Technical Specifications has the same meaning as Specifications.

Work means all of the construction and services necessary for or incidental to completing the Project in conformance with the requirements of the Contract Documents.

Work Day or **Working Day**, whether or not capitalized, means a weekday when the City is open for business, and does not include holidays observed by the City.

Worksite means the place or places where the Work is performed, which includes, but may extend beyond the Project site, including separate locations for staging, storage, or fabrication.

Article 2 - Roles and Responsibilities

2.1 City.

(A) ***City Council.*** The City Council has final authority in all matters affecting the Project, except to the extent it has delegated authority to the Engineer.

(B) ***Engineer.*** The Engineer, acting within the authority conferred by the City Council, is responsible for administration of the Project on behalf of City, including authority to provide directions to the Design Professional and to Contractor to ensure

proper and timely completion of the Project. The Engineer's decisions are final and conclusive within the scope of his or her authority, including interpretation of the Contract Documents.

(C) ***Project Manager.*** The Project Manager assigned to the Project will be the primary point of contact for the Contractor and will serve as City's representative for daily administration of the Project on behalf of City. Unless otherwise specified, all of Contractor's communications to City (in any form) will go to or through the Project Manager. City reserves the right to reassign the Project Manager role at any time or to delegate duties to additional City representatives, without prior notice to or consent of Contractor.

(D) ***Design Professional.*** The Design Professional is responsible for the overall design of the Project and, to the extent authorized by City, may act on City's behalf to ensure performance of the Work in compliance with the Plans and Specifications, including any design changes authorized by Change Order. The Design Professional's duties may include review of Contractor's submittals, visits to any Worksite, inspecting the Work, evaluating test and inspection results, and participation in Project-related meetings, including any pre-construction conference, weekly meetings, and coordination meetings. The Design Professional's interpretation of the Plans or Specifications is final and conclusive.

2.2 Contractor.

(A) ***General.*** Contractor must provide all labor, materials, supplies, equipment, services, and incidentals necessary to perform and timely complete the Work in strict accordance with the Contract Documents, and in an economical and efficient manner in the best interests of City, and with minimal inconvenience to the public.

(B) ***Responsibility for the Work and Risk of Loss.*** Contractor is responsible for supervising and directing all aspects of the Work to facilitate the efficient and timely completion of the Work. Contractor is solely responsible for and required to exercise full control over the Work, including the construction means, methods, techniques, sequences, procedures, safety precautions and programs, and coordination of all portions of the Work with that of all other contractors and Subcontractors, except to the extent that the Contract Documents provide other specific instructions. Contractor's responsibilities extend to any plan, method or sequence suggested, but not required by City or specified in the Contract Documents. From the date of commencement of the Work until either the date on which City formally accepts the Project or the effective date of termination of the Contract, whichever is later, Contractor bears all risks of injury or damage to the Work and the materials and equipment delivered to any Worksite, by any cause including fire, earthquake, wind, weather, vandalism or theft.

(C) ***Project Administration.*** Contractor must provide sufficient and competent administration, staff, and skilled workforce necessary to perform and timely complete the Work in accordance with the Contract Documents. Before starting the Work, Contractor must designate in writing and provide complete contact information, including telephone numbers and email address, for the officer or employee in Contractor's organization who is to serve as Contractor's primary representative for the Project, and who has authority to act on Contractor's behalf. A Subcontractor may not serve as Contractor's primary representative.

(D) ***On-Site Superintendent.*** Contractor must, at all times during performance of the Work, provide a qualified and competent full-time superintendent acceptable to City, and assistants as necessary, who must be physically present at the Project site while any aspect of the Work is being performed. The superintendent must have full authority to act

and communicate on behalf of Contractor, and Contractor will be bound by the superintendent's communications to City. City's approval of the superintendent is required before the Work commences. If City is not satisfied with the superintendent's performance, City may request a qualified replacement of the superintendent. Failure to comply may result in temporary suspension of the Work, at Contractor's sole expense and with no extension of Contract Time, until an approved superintendent is physically present to supervise the Work. Contractor must provide written notice to City, as soon as practicable, before replacing the superintendent.

(E) ***Standards.*** Contractor must, at all times, ensure that the Work is performed in an efficient, skillful manner following best practices and in full compliance with the Contract Documents and Laws and applicable manufacturer's recommendations. Contractor has a material and ongoing obligation to provide true and complete information, to the best of its knowledge, with respect to all records, documents, or communications pertaining to the Project, including oral or written reports, statements, certifications, Change Order requests, or Claims.

(F) ***Meetings.*** Contractor, its project manager, superintendent and any primary Subcontractors requested by City, must attend a pre-construction conference, if requested by City, as well as weekly Project progress meetings scheduled with City. If applicable, Contractor may also be required to participate in coordination meetings with other parties relating to other work being performed on or near the Project site or in relation to the Project, including work or activities performed by City, other contractors, or other utility owners.

(G) ***Construction Records.*** Contractor will maintain up-to-date, thorough, legible, and dated daily job reports, which document all significant activity on the Project for each day that Work is performed on the Project. The daily report for each day must include the number of workers at the Project site; primary Work activities; major deliveries; problems encountered, including injuries, if any; weather and site conditions; and delays, if any. Contractor will take date and time-stamped photographs to document general progress of the Project, including site conditions prior to construction activities, before and after photographs at offset trench laterals, existing improvements and utilities, damage and restoration. Contractor will maintain copies of all subcontracts, Project-related correspondence with Subcontractors, and records of meetings with Subcontractors. Upon request by the City, Contractor will permit review of and/or provide copies of any of these construction records.

(H) ***Responsible Party.*** Contractor is solely responsible to City for the acts or omissions of any Subcontractors, or any other party or parties performing portions of the Work or providing equipment, materials or services for or on behalf of Contractor or the Subcontractors. Upon City's written request, Contractor must promptly and permanently remove from the Project, at no cost to City, any employee or Subcontractor or employee of a Subcontractor who the Engineer has determined to be incompetent, intemperate or disorderly, or who has failed or refused to perform the Work as required under the Contract Documents.

(I) ***Correction of Defects.*** Contractor must promptly correct, at Contractor's sole expense, any Work that is determined by City to be deficient or defective in any way, including workmanship, materials, parts or equipment. Workmanship, materials, parts or equipment that do not conform to the requirements under the Plans, Specifications and every other Contract Document, as determined by City, will be considered defective and subject to rejection. Contractor must also promptly correct, at Contractor's sole expense, any Work performed beyond the lines and grades shown on the Plans or established by City, and any Extra Work performed without City's prior written approval. If Contractor fails to correct or to take reasonable steps toward correcting defective Work within five

days following notice from City, or within the time specified in City's notice to correct, City may elect to have the defective Work corrected by its own forces or by a third party, in which case the cost of correction will be deducted from the Contract Price. If City elects to correct defective Work due to Contractor's failure or refusal to do so, City or its agents will have the right to take possession of and use any equipment, supplies, or materials available at the Project site or any Worksite on City property, in order to effectuate the correction, at no extra cost to City. Contractor's warranty obligations under Section 11.2, Warranty, will not be waived nor limited by City's actions to correct defective Work under these circumstances. Alternatively, City may elect to retain defective Work, and deduct the difference in value, as determined by the Engineer, from payments otherwise due to Contractor. This paragraph applies to any defective Work performed by Contractor during the one-year warranty period under Section 11.2.

(J) ***Contractor's Records.*** Contractor must maintain all of its records relating to the Project in any form, including paper documents, photos, videos, electronic records, approved samples, and the construction records required pursuant to paragraph (G), above. Project records subject to this provision include complete Project cost records and records relating to preparation of Contractor's bid, including estimates, take-offs, and price quotes or bids.

(1) Contractor's cost records must include all supporting documentation, including original receipts, invoices, and payroll records, evidencing its direct costs to perform the Work, including, but not limited to, costs for labor, materials and equipment. Each cost record should include, at a minimum, a description of the expenditure with references to the applicable requirements of the Contract Documents, the amount actually paid, the date of payment, and whether the expenditure is part of the original Contract Price, related to an executed Change Order, or otherwise categorized by Contractor as Extra Work. Contractor's failure to comply with this provision as to any claimed cost operates as a waiver of any rights to recover the claimed cost.

(2) Contractor must continue to maintain its Project-related records in an organized manner for a period of five years after City's acceptance of the Project or following Contract termination, whichever occurs first. Subject to prior notice to Contractor, City is entitled to inspect or audit any of Contractor's records relating to the Project during Contractor's normal business hours. Contractor's records may also be subject to examination and audit by the California State Auditor, pursuant to Government Code § 8546.7. The record-keeping requirements set forth in this subsection 2.2(J) will survive expiration or termination of the Contract.

(K) ***Copies of Project Documents.*** Contractor and its Subcontractors must keep copies, at the Project site, of all Work-related documents, including the Contract, permit(s), Plans, Specifications, Addenda, Contract amendments, Change Orders, RFIs and RFI responses, Shop Drawings, as-built drawings, schedules, daily records, testing and inspection reports or results, and any related written interpretations. These documents must be available to City for reference at all times during construction of the Project.

2.3 Subcontractors.

(A) ***General.*** All Work which is not performed by Contractor with its own forces must be performed by Subcontractors. City reserves the right to approve or reject any and all Subcontractors proposed to perform the Work, for reasons including the subcontractor's poor reputation, lack of relevant experience, financial instability, and lack of technical

ability or adequate trained workforce. Each Subcontractor must obtain a City business tax certificate before performing any Work.

(B) ***Contractual Obligations.*** Contractor must require each Subcontractor to comply with the provisions of the Contract Documents as they apply to the Subcontractor's portion(s) of the Work, including the generally applicable terms of the Contract Documents, and to likewise bind their subcontractors. Contractor will provide that the rights that each Subcontractor may have against any manufacturer or supplier for breach of warranty or guarantee relating to items provided by the Subcontractor for the Project, will be assigned to City. Nothing in these Contract Documents creates a contractual relationship between a Subcontractor and City, but City is deemed to be a third-party beneficiary of the contract between Contractor and each Subcontractor.

(C) ***Termination.*** If the Contract is terminated, each Subcontractor's agreement must be assigned by Contractor to City, subject to the prior rights of any surety, but only if and to the extent that City accepts, in writing, the assignment by written notification, and assumes all rights and obligations of Contractor pursuant to each such subcontract agreement.

(D) ***Substitution of Subcontractor.*** If Contractor requests substitution of a listed Subcontractor under Public Contract Code § 4107, Contractor is solely responsible for all costs City incurs in responding to the request, including legal fees and costs to conduct a hearing, and any increased subcontract cost to perform the Work that was to be performed by the listed Subcontractor. If City determines that a Subcontractor is unacceptable to City based on the Subcontractor's failure to satisfactorily perform its Work, or for any of the grounds for substitution listed in Public Contract Code § 4107(a), City may request removal of the Subcontractor from the Project. Upon receipt of a written request from City to remove a Subcontractor pursuant to this paragraph, Contractor will immediately remove the Subcontractor from the Project and, at no further cost to City, will either (1) self-perform the remaining Work to the extent that Contractor is duly licensed and qualified to do so, or (2) substitute a Subcontractor that is acceptable to City, in compliance with Public Contract Code § 4107, as applicable.

2.4 Coordination of Work.

(A) ***Concurrent Work.*** City reserves the right to perform, have performed, or permit performance of other work on or adjacent to the Project site while the Work is being performed for the Project. Contractor is responsible for coordinating its Work with other work being performed on or adjacent to the Project site, including by any utility companies or agencies, and must avoid hindering, delaying, or interfering with the work of other contractors, individuals, or entities, and must ensure safe and reasonable site access and use as required or authorized by City. To the full extent permitted by law, Contractor must hold harmless and indemnify City against any and all claims arising from or related to Contractor's avoidable, negligent, or willful hindrance of, delay to, or interference with the work of any utility company or agency or another contractor or subcontractor.

(B) ***Coordination.*** If Contractor's Work will connect or interface with work performed by others, Contractor is responsible for independently measuring and visually inspecting such work to ensure a correct connection and interface. Contractor is responsible for any failure by Contractor or its Subcontractors to confirm measurements before proceeding with connecting Work. Before proceeding with any portion of the Work affected by the construction or operations of others, Contractor must give the Project Manager prompt written notification of any defects Contractor discovers which will prevent the proper execution of the Work. Failure to give notice of any known or reasonably discoverable defects will be deemed acknowledgement by Contractor that the work of others is not

defective and will not prevent the proper execution of the Work. Contractor must also promptly notify City if work performed by others, including work or activities performed by City's own forces, is operating to hinder, delay, or interfere with Contractor's timely performance of the Work. City reserves the right to backcharge Contractor for any additional costs incurred due to Contractor's failure to comply with the requirements in this Section 2.4.

2.5 Submittals. Unless otherwise specified, Contractor must submit to the Engineer for review and acceptance, all schedules, Shop Drawings, samples, product data, and similar submittals required by the Contract Documents, or upon request by the Engineer. Unless otherwise specified, all submittals, including Requests for Information, are subject to the general provisions of this Section, as well as specific submittal requirements that may be included elsewhere in the Contract Documents, including the Special Conditions or Specifications. The Engineer may require submission of a submittal schedule at or before a pre-construction conference, as may be specified in the Notice to Proceed.

(A) ***General.*** Contractor is responsible for ensuring that its submittals are accurate and conform to the Contract Documents.

(B) ***Time and Manner of Submission.*** Contractor must ensure that its submittals are prepared and delivered in a manner consistent with the current City-accepted schedule for the Work and within the applicable time specified in the Contract Documents, or if no time is specified, in such time and sequence so as not to delay the performance of the Work or completion of the Project.

(C) ***Required Contents.*** Each submittal must include the Project name and contract number, Contractor's name and address, the name and address of any Subcontractor or supplier involved with the submittal, the date, and references to applicable Specification section(s) and/or drawing and detail number(s).

(D) ***Required Corrections.*** If corrections are required, Contractor must promptly make and submit any required corrections as specified in full conformance with the requirements of this Section, or other requirements that apply to that submittal.

(E) ***Effect of Review and Acceptance.*** Review and acceptance of a submittal by City will not relieve Contractor from complying with the requirements of the Contract Documents. Contractor is responsible for any errors in any submittal, and review or acceptance of a submittal by City is not an assumption of risk or liability by City.

(F) ***Enforcement.*** Any Work performed or any material furnished, installed, fabricated or used without City's prior acceptance of a required submittal is performed or provided at Contractor's risk, and Contractor may be required to bear the costs incident thereto, including the cost of removing and replacing such Work, repairs to other affected portions of the Work or material, and the cost of additional time or services required of City, including costs for the Design Professional, Project Manager, or Inspector.

(G) ***Excessive RFIs.*** A RFI will be considered excessive or unnecessary if City determines that the explanation or response to the RFI is clearly and unambiguously discernable from the Contract Documents. City's costs to review and respond to excessive or unnecessary RFIs may be deducted from payments otherwise due to Contractor.

2.6 Shop Drawings. When Shop Drawings are required by the Specifications or requested by the Engineer, they must be prepared according to best practices at Contractor's expense. The Shop Drawings must be of a size and scale to clearly show all necessary details. Unless otherwise specified by City, Shop Drawings must be provided to the

Engineer for review and acceptance at least 30 days before the Work will be performed. If City requires changes, the corrected Shop Drawings must be resubmitted to the Engineer for review within the time specified by the Engineer. For all Project components requiring Shop Drawings, Contractor will not furnish materials or perform any Work until the Shop Drawings for those components are accepted by City. Contractor is responsible for any errors or omissions in the Shop Drawings, shop fits and field corrections; any deviations from the Contract Documents; and for the results obtained by the use of Shop Drawings. Acceptance of Shop Drawings by City does not relieve Contractor of Contractor's responsibility.

2.7 Access to Work. Contractor must afford prompt and safe access to any Worksite by City and its employees, agents, or consultants authorized by City; and upon request by City, Contractor must promptly arrange for City representatives to visit or inspect manufacturing sites or fabrication facilities for items to be incorporated into the Work.

2.8 Personnel. Contractor and its Subcontractors must employ only competent and skillful personnel to perform the Work. Contractor and its Subcontractor's supervisors, security or safety personnel, and employees who have unescorted access to the Project site must possess proficiency in English sufficient to read, understand, receive, and implement oral or written communications or instructions relating to their respective job functions, including safety and security requirements. Upon written notification from the Engineer, Contractor and its Subcontractors must immediately discharge any personnel who are incompetent, disorderly, disruptive, threatening, abusive, or profane, or otherwise refuse or fail to comply with the requirements of the Contract Documents or Laws, including Laws pertaining to health and safety. Any such discharged personnel may not be re-employed or permitted on the Project in any capacity without City's prior written consent.

Article 3 - Contract Documents

3.1 Interpretation of Contract Documents.

(A) ***Plans and Specifications.*** The Plans and Specifications included in the Contract Documents are complementary. If Work is shown on one but not on the other, Contractor must perform the Work as though fully described on both, consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. The Plans and Specifications are deemed to include and require everything necessary and reasonably incidental to completion of the Work, whether or not particularly mentioned or shown. Contractor must perform all Work and services and supply all things reasonably related to and inferable from the Contract Documents. In the event of a conflict between the Plans and Specifications, the Specifications will control, unless the drawing(s) at issue are dated later than the Specification(s) at issue. Detailed drawings take precedence over general drawings, and large-scale drawings take precedence over smaller scale drawings. Any arrangement or division of the Plans and Specifications into sections is for convenience and is not intended to limit the Work required by separate trades. A conclusion presented in the Plans or Specifications is only a recommendation. Actual locations and depths must be determined by Contractor's field investigation. Contractor may request access to underlying or background information in City's possession that is necessary for Contractor to form its own conclusions.

(B) ***Duty to Notify and Seek Direction.*** If Contractor becomes aware of a changed condition in the Project, or of any ambiguity, conflict, inconsistency, discrepancy, omission, or error in the Contract Documents, including the Plans or Specifications, Contractor must promptly submit a Request for Information to the Engineer and wait for a response from City before proceeding further with the related Work. The RFI must notify City of the issue and request clarification, interpretation or direction. The Engineer's

clarification, interpretation or direction will be final and binding on Contractor. If Contractor proceeds with the related Work before obtaining City's response, Contractor will be responsible for any resulting costs, including the cost of correcting any incorrect or defective Work that results. Timely submission of a clear and complete RFI is essential to avoiding delay. Delay resulting from Contractor's failure to submit a timely and complete RFI to the Engineer is Non-Excusable Delay. If Contractor believes that City's response to an RFI justifies a change to the Contract Price or Contract Time, Contractor must perform the Work as directed, but may submit a timely Change Order request in accordance with the Contract Documents. (See Article 5 and 6.)

(C) ***Figures and Dimensions.*** Figures control over scaled dimensions.

(D) ***Technical or Trade Terms.*** Any terms that have well-known technical or trade meanings will be interpreted in accordance with those meanings, unless otherwise specifically defined in the Contract Documents.

(E) ***Measurements.*** Contractor must verify all relevant measurements in the Contract Documents and at the Project site before ordering any material or performing any Work, and will be responsible for the correctness of those measurements or for costs that could have been avoided by independently verifying measurements.

(F) ***Compliance with Laws.*** The Contract Documents are intended to comply with Laws and will be interpreted to comply with Laws.

3.2 Order of Precedence. Information included in one Contract Document but not in another will not be considered a conflict or inconsistency. Unless otherwise specified in the Special Conditions, in case of any conflict or inconsistency among the Contract Documents, the following order of precedence will apply, beginning from highest to lowest, with the most recent version taking precedent over an earlier version:

(A) Change Orders;
(B) Addenda;
(C) Contract;
(D) Notice to Proceed;
(E) Attachment B – Federal Contract Requirements (only if used);
(F) Special Conditions;
(G) General Conditions;
(H) Payment and Performance Bonds;
(I) Specifications;
(J) Plans;
(K) Notice of Potential Award;
(L) Notice Inviting Bids;
(M) Attachment A – Federal Bidding Requirements (only if used);
(N) Instructions to Bidders;
(O) Contractor's Bid Proposal and attachments;
(P) the City's standard specifications, as applicable; and
(Q) Any generic documents prepared by and on behalf of a third party, that were not prepared specifically for this Project, such as the Caltrans Standard Specifications or Caltrans Special Provisions.

3.3 Caltrans Standard Specifications. Any reference to or incorporation of the Standard Specifications of the State of California, Department of Transportation ("Caltrans"), including "Standard Specifications," "Caltrans Specifications," "State Specifications," or "CSS," means the most current edition of Caltrans' Standard Specifications, unless otherwise specified ("Caltrans Standard Specifications"), including the most current amendments as of the date that Contractor's bid was submitted for this Project. The

following provisions apply to use of or reference to the Caltrans Standard Specifications or Special Provisions:

(A) ***Limitations.*** The "General Provisions" of the Caltrans Standard Specifications, i.e., sections 1 through 9, do not apply to these Contract Documents with the exception of any specific provisions, if any, which are expressly stated to apply to these Contract Documents.

(B) ***Conflicts or Inconsistencies.*** If there is a conflict or inconsistency between any provision in the Caltrans Standard Specifications or Special Provisions and a provision of these Contract Documents, as determined by City, the provision in the Contract Documents will govern.

(C) ***Meanings.*** Terms used in the Caltrans Standard Specifications or Special Provisions are to be interpreted as follows:

(1) Any reference to the "Engineer" is deemed to mean the City Engineer.

(2) Any reference to the "Special Provisions" is deemed to mean the Special Conditions, unless the Caltrans Special Provisions are expressly included in the Contract Documents listed in Section 2 of the Contract.

(3) Any reference to the "Department" or "State" is deemed to mean City.

3.4 For Reference Only. Contractor is responsible for the careful review of any document, study, or report provided by City or appended to the Contract Documents solely for informational purposes and identified as "For Reference Only." Nothing in any document, study, or report so appended and identified is intended to supplement, alter, or void any provision of the Contract Documents. Contractor is advised that City or its representatives may be guided by information or recommendations included in such reference documents, particularly when making determinations as to the acceptability of proposed materials, methods, or changes in the Work. Any record drawings or similar final or accepted drawings or maps that are not part of the Contract Documents are deemed to be For Reference Only. The provisions of the Contract Documents are not modified by any perceived or actual conflict with provisions in any document that is provided For Reference Only.

3.5 Current Versions. Unless otherwise specified by City, any reference to standard specifications, technical specifications, or any City or state codes or regulations means the latest specification, code or regulation in effect on the date that bids were due.

3.6 Conformed Copies. If City prepares a conformed set of the Contract Documents following award of the Contract, it will provide Contractor with two hard copy (paper) sets and one copy of the electronic file in PDF format. It is Contractor's responsibility to ensure that all Subcontractors, including fabricators, are provided with the conformed set of the Contract Documents at Contractor's sole expense.

3.7 Ownership. No portion of the Contract Documents may be used for any purpose other than construction of the Project, without prior written consent from City. Contractor is deemed to have conveyed the copyright in any designs, drawings, specifications, Shop Drawings, or other documents (in paper or electronic form) developed by Contractor for the Project, and City will retain all rights to such works, including the right to possession.

Article 4 - Bonds, Indemnity, and Insurance

4.1 Payment and Performance Bonds. Within ten days following issuance of the Notice of Potential Award, Contractor is required to provide a payment bond and a performance bond, each in the penal sum of not less than 100% of the Contract Price, and each executed by Contractor and its surety using the bond forms included with the Contract Documents.

(A) ***Surety*.** Each bond must be issued and executed by a surety admitted in California. If an issuing surety cancels the bond or becomes insolvent, within seven days following written notice from City, Contractor must substitute a surety acceptable to City. If Contractor fails to substitute an acceptable surety within the specified time, City may, at its sole discretion, withhold payment from Contractor until the surety is replaced to City's satisfaction, or terminate the Contract for default.

(B) ***Supplemental Bonds for Increase in Contract Price*.** If the Contract Price increases during construction by five percent or more over the original Contract Price, Contractor must provide supplemental or replacement bonds within ten days of written notice from City pursuant to this Section, covering 100% of the increased Contract Price and using the bond forms included with the Contract Documents.

4.2 Indemnity. To the fullest extent permitted by law, Contractor must indemnify, defend, and hold harmless City, its Council, officers, officials, employees, agents, volunteers, and consultants (individually, an "Indemnitee," and collectively the "Indemnitees") from and against any and all liability, loss, damage, claims, causes of action, demands, charges, fines, costs, and expenses (including, without limitation, attorney fees, expert witness fees, paralegal fees, and fees and costs of litigation or arbitration) (collectively, "Liability") of every nature arising out of or in connection with the acts or omissions of Contractor, its employees, Subcontractors, representatives, or agents, in bidding or performing the Work or in failing to comply with any obligation of Contractor under the Contract, except such Liability caused by the active negligence, sole negligence, or willful misconduct of an Indemnitee. This indemnity requirement applies to any Liability arising from alleged defects in the content or manner of submission of Contractor's bid for the Contract. Contractor's failure or refusal to timely accept a tender of defense pursuant to this Contract will be deemed a material breach of the Contract. City will timely notify Contractor upon receipt of any third-party claim relating to the Contract, as required by Public Contract Code § 9201. Contractor waives any right to express or implied indemnity against any Indemnitee. Contractor's indemnity obligations under this Contract will survive the expiration or any early termination of the Contract.

4.3 Insurance. No later than ten days following issuance of the Notice of Potential Award, Contractor must procure and provide proof of the insurance coverage required by this Section in the form of certificates and endorsements acceptable to City. The required insurance must cover the activities of Contractor and its Subcontractors relating to or arising from the performance of the Work, and must remain in full force and effect at all times during the period covered by the Contract, through the date of City's acceptance of the Project. All required insurance must be issued by a company licensed to do business in the State of California, and each such insurer must have an A.M. Best's financial strength rating of "A" or better and a financial size rating of "VIII" or better. If Contractor fails to provide any of the required coverage in full compliance with the requirements of the Contract Documents, City may, at its sole discretion, purchase such coverage at Contractor's expense and deduct the cost from payments due to Contractor, or terminate the Contract for default. The procurement of the required insurance will not be construed to limit Contractor's liability under this Contract or to fulfill Contractor's indemnification obligations under this Contract.

(A) ***Policies and Limits.*** The following insurance policies and limits are required for this Contract, unless otherwise specified in the Special Conditions:

(1) *Commercial General Liability ("CGL") Insurance:* The CGL insurance policy must be issued on an occurrence basis, written on a comprehensive general liability form, and must include coverage for liability arising from Contractor's or its Subcontractor's acts or omissions in the performance of the Work, including contractor's protected coverage, contractual liability, products and completed operations, and broad form property damage, with limits of at least $5,000,000 per occurrence and at least $10,000,000 general aggregate. The CGL insurance coverage may be arranged under a single policy for the full limits required or by a combination of underlying policies with the balance provided by excess or umbrella policies, provided each such policy complies with the requirements set forth in this Section, including required endorsements.

(2) *Automobile Liability Insurance:* The automobile liability insurance policy must provide coverage of at least $5,000,000 combined single-limit per accident for bodily injury, death, or property damage, including hired and non-owned auto liability.

(3) *Workers' Compensation Insurance and Employer's Liability:* The workers' compensation and employer's liability insurance policy must comply with the requirements of the California Labor Code, providing coverage of at least $1,000,000 or as otherwise required by the statute. If Contractor is self-insured, Contractor must provide its Certificate of Permission to Self-Insure, duly authorized by the DIR.

(4) *Pollution Liability Insurance:* The pollution liability insurance policy must be issued on an occurrence basis, providing coverage of at least $2,000,000 for all loss arising out of claims for bodily injury, death, property damage, or environmental damage caused by pollution conditions resulting from the Work.

(5) *Builder's Risk Insurance:* The builder's risk insurance policy must be issued on an occurrence basis, for all-risk or "all perils" coverage on a 100% completed value basis on the insurable portion of the Project for the benefit of City.

(B) ***Notice.*** Each certificate of insurance must state that the coverage afforded by the policy or policies will not be reduced, cancelled or allowed to expire without at least 30 days written notice to City, unless due to non-payment of premiums, in which case ten days written notice must be made to City.

(C) ***Waiver of Subrogation.*** Each required policy must include an endorsement providing that the carrier will waive any right of subrogation it may have against City.

(D) ***Required Endorsements.*** The CGL policy, automobile liability policy, pollution liability policy, and builder's risk policy must include the following specific endorsements:

(1) The City, including its Council, officials, officers, employees, agents, volunteers and consultants (collectively, "Additional Insured") must be named as an additional insured for all liability arising out of the operations by or on behalf of the named insured, and the policy must protect the Additional Insured against any and all liability for personal injury, death or property damage or destruction arising directly or indirectly in the performance of the Contract. The additional insured endorsement must be provided using ISO form CG 20 10 11 85 or equivalent form(s) approved by the City.

(2) The inclusion of more than one insured will not operate to impair the rights of one insured against another, and the coverages afforded will apply as though separate policies have been issued to each insured.

(3) The insurance provided by Contractor is primary and no insurance held or owned by any Additional Insured may be called upon to contribute to a loss.

(4) This policy does not exclude explosion, collapse, underground excavation hazard, or removal of lateral support.

(E) ***Contractor's Responsibilities.*** This Section 4.3 establishes the minimum requirements for Contractor's insurance coverage in relation to this Project, but is not intended to limit Contractor's ability to procure additional or greater coverage. Contractor is responsible for its own risk assessment and needs and is encouraged to consult its insurance provider to determine what coverage it may wish to carry beyond the minimum requirements of this Section. Contractor is solely responsible for the cost of its insurance coverage, including premium payments, deductibles, or self-insured retentions, and no Additional Insured will be responsible or liable for any of the cost of Contractor's insurance coverage.

(F) ***Deductibles and Self-Insured Retentions***. Any deductibles or self-insured retentions that apply to the required insurance (collectively, "deductibles") in excess of $100,000 are subject to approval by the City's Risk Manager, acting in his or her sole discretion, and must be declared by Contractor when it submits its certificates of insurance and endorsements pursuant to this Section 4.3. If the City's Risk Manager determines that the deductibles are unacceptably high, at City's option, Contractor must either reduce or eliminate the deductibles as they apply to City and all required Additional Insured; or must provide a financial guarantee, to City's satisfaction, guaranteeing payment of losses and related investigation, claim administration, and legal expenses.

(G) ***Subcontractors.*** Contractor must ensure that each Subcontractor is required to maintain the same insurance coverage required under this Section 4.3, with respect to its performance of Work on the Project, including those requirements related to the Additional Insureds and waiver of subrogation, but excluding pollution liability or builder's risk insurance unless otherwise specified in the Special Conditions. A Subcontractor may be eligible for reduced insurance coverage or limits, but only to the extent approved in writing in advance by the City's Risk Manager. Contractor must confirm that each Subcontractor has complied with these insurance requirements before the Subcontractor is permitted to begin Work on the Project. Upon request by the City, Contractor must provide certificates and endorsements submitted by each Subcontractor to prove compliance with this requirement. The insurance requirements for Subcontractors do not replace or limit the Contractor's insurance obligations.

Article 5 - Contract Time

5.1 Time is of the Essence. Time is of the essence in Contractor's performance and completion of the Work, and Contractor must diligently prosecute the Work and complete it within the Contract Time.

(A) ***General.*** Contractor must commence the Work on the date indicated in the Notice to Proceed and must fully complete the Work in strict compliance with all requirements of the Contract Documents and within the Contract Time. Contractor may not begin performing the Work before the date specified in the Notice to Proceed.

(B) ***Authorization.*** Contractor is not entitled to compensation or credit for any Work performed before the date specified in the Notice to Proceed, with the exception of any schedules, submittals, or other requirements, if any, that must be provided or performed before issuance of the Notice to Proceed.

(C) ***Rate of Progress.*** Contractor and its Subcontractors must, at all times, provide workers, materials, and equipment sufficient to maintain the rate of progress necessary to ensure full completion of the Work within the Contract Time. If City determines that Contractor is failing to prosecute the Work at a sufficient rate of progress, City may, in its sole discretion, direct Contractor to provide additional workers, materials, or equipment, or to work additional hours or days without additional cost to City, in order to achieve a rate of progress satisfactory to City. If Contractor fails to comply with City's directive in this regard, City may, at Contractor's expense, separately contract for additional workers, materials, or equipment or use City's own forces to achieve the necessary rate of progress. Alternatively, City may terminate the Contract based on Contractor's default.

5.2 Schedule Requirements. Contractor must prepare all schedules using standard, commercial scheduling software acceptable to the Engineer, and must provide the schedules in electronic and paper form as requested by the Engineer. In addition to the general scheduling requirements set forth below, Contractor must also comply with any scheduling requirements included in the Special Conditions or in the Technical Specifications.

(A) ***Baseline (As-Planned) Schedule.*** Within ten calendar days following City's issuance of the Notice to Proceed (or as otherwise specified in the Notice to Proceed), Contractor must submit to City for review and acceptance a baseline (as-planned) schedule using critical path methodology showing in detail how Contractor plans to perform and fully complete the Work within the Contract Time, including labor, equipment, materials and fabricated items. The baseline schedule must show the order of the major items of Work and the dates of start and completion of each item, including when the materials and equipment will be procured. The schedule must also include the work of all trades, reflecting anticipated labor or crew hours and equipment loading for the construction activities, and must be sufficiently comprehensive and detailed to enable progress to be monitored on a day-by-day basis. For each activity, the baseline schedule must be dated, provided in the format specified in the Contract Documents or as required by City, and must include, at a minimum, a description of the activity, the start and completion dates of the activity, and the duration of the activity.

(1) *Specialized Materials Ordering*. Within five calendar days following issuance of the Notice to Proceed, Contractor must order any specialized material or equipment for the Work that is not readily available from material suppliers. Contractor must also retain documentation of the purchase order date(s).

(B) ***City's Review of Schedules.*** City will review and may note exceptions to the baseline schedule, and to the progress schedules submitted as required below, to assure completion of the Work within the Contract Time. Contractor is solely responsible for resolving any exceptions noted in a schedule and, within seven days, must correct the schedule to address the exceptions. City's review or acceptance of Contractor's schedules will not operate to waive or limit Contractor's duty to complete the Project within the Contract Time, nor to waive or limit City's right to assess liquidated damages for Contractor's unexcused failure to do so.

(C) ***Progress Schedules.*** After City accepts the final baseline schedule with no exceptions, Contractor must submit an updated progress schedule and three-week look-ahead schedule, in the format specified by City, for review and acceptance with each application for a progress payment, or when otherwise specified by City, until completion

of the Work. The updated progress schedule must: show how the actual progress of the Work as constructed to date compares to the baseline schedule; reflect any proposed changes in the construction schedule or method of operations, including to achieve Project milestones within the Contract Time; and identify any actual or potential impacts to the critical path. Contractor must also submit periodic reports to City of any changes in the projected material or equipment delivery dates for the Project.

(1) *Float*. The progress schedule must show early and late completion dates for each task. The number of days between those dates will be designated as the "float." Any float belongs to the Project and may be allocated by the Engineer to best serve timely completion of the Project.

(2) *Failure to Submit Schedule*. Reliable, up-to-date schedules are essential to efficient and cost-effective administration of the Project and timely completion. If Contractor fails to submit a schedule within the time periods specified in this Section, or submits a schedule to which City has noted exceptions that are not corrected, City may withhold up to five percent from payment(s) otherwise due to Contractor until the exceptions are resolved, the schedule is corrected and resubmitted, and City has accepted the schedule. In addition, Contractor's failure to comply with the schedule requirements in this Section 5.2 will be deemed a material default and a waiver of any claims for Excusable Delay or loss of productivity arising during any period when Contractor is out of compliance, subject only to the limits of Public Contract Code § 7102.

(D) ***Recovery Schedule.*** If City determines that the Work is more than one week behind schedule, within seven days following written notice of such determination, Contractor must submit a recovery schedule, showing how Contractor intends to perform and complete the Work within the Contract Time, based on actual progress to date.

(E) ***Effect of Acceptance.*** Contractor and its Subcontractors must perform the Work in accordance with the most current City-accepted schedule unless otherwise directed by City. City's acceptance of a schedule does not operate to extend the time for completion of the Work or any component of the Work, and will not affect City's right to assess liquidated damages for Contractor's unexcused delay in completing the Work within the Contract Time.

(F) ***Posting.*** Contractor must at all times prominently post a copy of the most current City-accepted progress or recovery schedule in its on-site office.

(G) ***Reservation of Rights.*** City reserves the right to direct the sequence in which the Work must be performed or to make changes in the sequence of the Work in order to facilitate the performance of work by City or others, or to facilitate City's use of its property. The Contract Time or Contract Price may be adjusted to the extent such changes in sequence actually increase or decrease Contractor's time or cost to perform the Work.

(H) ***Authorized Working Days and Times.*** Contractor is limited to working Monday through Friday, excluding holidays, during City's normal business hours, except as provided in the Special Conditions or as authorized in writing by City. City reserves the right to charge Contractor for additional costs incurred by City due to Work performed on days or during hours not expressly authorized in the Contract Documents, including reimbursement of costs incurred for inspection, testing, and construction management services.

5.3 Delay and Extensions of Contract Time.

(A) ***Notice of Delay.*** If Contractor becomes aware of any actual or potential delay affecting the critical path, Contractor must promptly notify the Engineer in writing, regardless of the nature or cause of the delay, so that City has a reasonable opportunity to mitigate or avoid the delay.

(B) ***Excusable Delay.*** The Contract Time may be extended if Contractor encounters "Excusable Delay," which is an unavoidable delay in completing the Work within the Contract Time due to causes completely beyond Contractor's control, and which Contractor could not have avoided or mitigated through reasonable care, planning, foresight, or diligence, provided that Contractor is otherwise fully performing its obligations under the Contract Documents. Grounds for Excusable Delay may include fire, natural disasters including earthquake or unusually severe weather, acts of terror or vandalism, epidemic, unforeseeable adverse government actions, unforeseeable actions of third parties, encountering unforeseeable hazardous materials, unforeseeable site conditions, or suspension for convenience under Article 13. The Contract Time will not be extended based on circumstances which will not unavoidably delay completing the Work within the Contract Time based on critical path analysis.

(C) ***Weather Delays.*** A "Weather Delay Day" is a Working Day during which Contractor and its forces, including Subcontractors, are unable to perform more than 40% of the critical path Work scheduled for that day due to adverse weather conditions which impair the ability to safely or effectively perform the scheduled critical path Work that day. Adverse weather conditions may include rain, saturated soil, and Project site clean-up required due to adverse weather. Determination of what constitutes critical path Work scheduled for that day will be based on the most current, City-approved schedule. Contractor will be entitled to a non-compensable extension of the Contract Time for each Weather Delay Day in excess of the normal Weather Delay Days within a given month as determined by reliable records, including monthly rainfall averages, for the preceding ten years (or as otherwise specified in the Special Conditions or Specifications).

(1) Contractor must fully comply with the applicable procedures in Articles 5 and 6 of the General Conditions regarding requests to modify the Contract Time.

(2) Contractor will not be entitled to an extension of time for a Weather Delay Day to the extent Contractor is responsible for concurrent delay on that day.

(3) Contractor must take reasonable steps to mitigate the consequences of Weather Delay Days, including prudent workforce management and protecting the Work, Project Site, materials, and equipment.

(D) ***Non-Excusable Delay.*** Delay which Contractor could have avoided or mitigated through reasonable care, planning, foresight and diligence is "Non-Excusable Delay." Contractor is not entitled to an extension of Contract Time or any compensation for Non-Excusable Delay, or for Excusable Delay that is concurrent with Non-Excusable Delay. Non-Excusable Delay includes delay caused by:

(1) weather conditions which are normal for the location of the Project, as determined by reliable records, including monthly rainfall averages, for the preceding ten years;

(2) Contractor's failure to order equipment and materials sufficiently in advance of the time needed for completion of the Work within the Contract Time;

(3) Contractor's failure to provide adequate notification to utility companies or agencies for connections or services necessary for completion of the Work within the Contract Time;

(4) foreseeable conditions which Contractor could have ascertained from reasonably diligent inspection of the Project site or review of the Contract Documents or other information provided or available to Contractor;

(5) Contractor's failure, refusal, or financial inability to perform the Work within the Contract Time, including insufficient funds to pay its Subcontractors or suppliers;

(6) performance or non-performance by Contractor's Subcontractors or suppliers;

(7) the time required to respond to excessive RFIs (see Section 2.5(G));

(8) delayed submission of required submittals, or the time required for correction and resubmission of defective submittals;

(9) time required for repair of, re-testing, or re-inspection of defective Work;

(10) enforcement of Laws by City, or outside agencies with jurisdiction over the Work; or

(11) City's exercise or enforcement of any of its rights or Contractor's duties pursuant to the Contract Documents, including correction of defective Work, extra inspections or testing due to non-compliance with Contract requirements, safety compliance, environmental compliance, or rejection and return of defective or deficient submittals.

(E) ***Compensable Delay.*** Pursuant to Public Contract Code § 7102, in addition to entitlement to an extension of Contract Time, Contractor is entitled to compensation for costs incurred due to delay caused solely by City, when that delay is unreasonable under the circumstances involved and not within the contemplation of the parties ("Compensable Delay"). Contractor is not entitled to an extension of Contract Time or recovery of costs for Compensable Delay that is concurrent with Non-Excusable Delay. Delay due to causes that are beyond the control of either City or Contractor, including Weather Delay Days, discovery of Historic or Archeological Items pursuant to Section 7.18, or the actions or inactions of third parties or other agencies, is not Compensable Delay, and will only entitle Contractor to an extension of time commensurate with the time lost due to such delay.

(F) ***Recoverable Costs.*** Contractor is not entitled to compensation for Excusable Delay unless it is Compensable Delay, as defined above. Contractor is entitled to recover only the actual, direct, reasonable, and substantiated costs ("Recoverable Costs") for each working day that the Compensable Delay prevents Contractor from proceeding with more than 50% of the critical path Work scheduled for that day, based on the most recent progress schedule accepted by City. Recoverable Costs will not include home office overhead or lost profit.

(G) ***Request for Extension of Contract Time or Recoverable Costs.*** A request for an extension of Contract Time or any associated Recoverable Costs must be submitted in writing to City within ten calendar days of the date the delay is first encountered, even if the duration of the delay is not yet known at that time, or any entitlement to the Contract Time extension or to the Recoverable Costs will be deemed waived. In addition to

complying with the requirements of this Article 5, the request must be submitted in compliance with the Change Order request procedures in Article 6 below. Strict compliance with these requirements is necessary to ensure that any delay or consequences of delay may be mitigated as soon as possible, and to facilitate cost-efficient administration of the Project and timely performance of the Work. Any request for an extension of Contract Time or Recoverable Costs that does not strictly comply with all of the requirements of Article 5 and Article 6 will be deemed waived.

(1) *Required Contents.* The request must include a detailed description of the cause(s) of the delay and must also describe the measures that Contractor has taken to mitigate the delay and/or its effects, including efforts to mitigate the cost impact of the delay, such as by workforce management or by a change in sequencing. If the delay is still ongoing at the time the request is submitted, the request should also include Contractor's plan for continued mitigation of the delay or its effects.

(2) *Delay Days and Costs.* The request must specify the number of days of Excusable Delay claimed or provide a realistic estimate if the duration of the delay is not yet known. If Contractor believes it is entitled to Recoverable Costs for Compensable Delay, the request must specify the amount and basis for the Recoverable Costs that are claimed or provide a realistic estimate if the amount is not yet known. Any estimate of delay duration or cost must be updated in writing and submitted with all required supporting documentation as soon as the actual time and cost is known. The maximum extension of Contract Time will be the number of days, if any, by which an Excusable Delay or a Compensable Delay exceeds any concurrent Non-Excusable Delay. Contractor is entitled to an extension of Contract Time, or compensation for Recoverable Costs, only if, and only to the extent that, such delay will unavoidably delay Final Completion.

(3) *Supporting Documentation.* The request must also include any and all supporting documentation necessary to evidence the delay and its actual impacts, including scheduling and cost impacts with a time impact analysis using critical path methodology and demonstrating the unavoidable delay to Final Completion. The time impact analysis must be submitted in a form or format acceptable to City.

(4) *Burden of Proof.* Contractor has the burden of proving that: the delay was an Excusable Delay or Compensable Delay, as defined above; Contractor has fully complied with its scheduling obligations in Section 5.2, Schedule Requirements; Contractor has made reasonable efforts to mitigate the delay and its schedule and cost impacts; the delay will unavoidably result in delaying Final Completion; and any Recoverable Costs claimed by Contractor were actually incurred and were reasonable under the circumstances.

(5) *Legal Compliance.* Nothing in this Section 5.3 is intended to require the waiver, alteration, or limitation of the applicability of Public Contract Code § 7102.

(6) *No Waiver.* Any grant of an extension of Contract Time, or compensation for Recoverable Costs due to Compensable Delay, will not operate as a waiver of City's right to assess liquidated damages for Non-Excusable Delay.

(7) *Dispute Resolution.* In the event of a dispute over entitlement to an extension of Contract Time or compensation for Recoverable Costs, Contractor may not stop Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work. Contractor's sole recourse for an unresolved dispute

based on City's rejection of a Change Order request for an extension of Contract Time or compensation for Recoverable Costs is to comply with the dispute resolution provisions set forth in Article 12 below.

5.4 Liquidated Damages. It is expressly understood that if Final Completion is not achieved within the Contract Time, City will suffer damages from the delay that are difficult to determine and accurately specify. Pursuant to Public Contract Code § 7203, if Contractor fails to achieve Final Completion within the Contract Time due to Contractor's Non-Excusable Delay, City will charge Contractor in the amount specified in the Contract for each calendar day that Final Completion is delayed beyond the Contract Time, as liquidated damages and not as a penalty. Any waiver of accrued liquidated damages, in whole or in part, is subject to approval of the City Council or its authorized delegee.

(A) ***Liquidated Damages.*** Liquidated damages will not be assessed for any Excusable Delay or Compensable Delay, as set forth above.

(B) ***Milestones.*** Liquidated damages may also be separately assessed for failure to meet milestones specified elsewhere in the Contract Documents.

(C) ***Setoff.*** City is entitled to deduct the amount of liquidated damages assessed against any payments otherwise due to Contractor, including progress payments, Final Payment, or unreleased retention. If there are insufficient Contract funds remaining to cover the full amount of liquidated damages assessed, City is entitled to recover the balance from Contractor or its performance bond surety.

(D) ***Occupancy or Use.*** Occupancy or use of the Project in whole or in part prior to Final Completion does not constitute City's acceptance of the Project and will not operate as a waiver of City's right to assess liquidated damages for Contractor's Non-Excusable Delay in achieving Final Completion.

(E) ***Other Remedies.*** City's right to liquidated damages under this Section applies only to damages arising from Contractor's Non-Excusable Delay or failure to complete the Work within the Contract Time. City retains its right to pursue all other remedies under the Contract for other types of damage, including damage to property or persons, costs or diminution in value from defective materials or workmanship, costs to repair or complete the Work, or other liability caused by Contractor.

Article 6 - Contract Modification

6.1 Contract Modification. Subject to the limited exception set forth in subsection (D) below, any change in the Work or the Contract Documents, including the Contract Price or Contract Time, will not be a valid and binding change to the Contract unless it is formalized in a Change Order, including a "no-cost" Change Order or a unilateral Change Order. Changes in the Work pursuant to this Article 6 will not operate to release, limit, or abridge Contractor's warranty obligations pursuant to Article 11 or any obligations of Contractor's bond sureties.

(A) ***City-Directed Changes.*** City may direct changes in the scope or sequence of Work or the requirements of the Contract Documents, without invalidating the Contract. Such changes may include Extra Work as set forth in subsection (C) below, or deletion or modification of portions of the Work. Contractor must promptly comply with City-directed changes in the Work in accordance with the original Contract Documents, even if Contractor and City have not yet reached agreement as to adjustments to the Contract Price or Contract Time for the change in the Work or for the Extra Work. Contractor is not entitled to extra compensation for cost savings resulting from "value engineering"

pursuant to Public Contract Code § 7101, except to the extent authorized in advance by City in writing, and subject to any applicable procedural requirements for submitting a proposal for value engineering cost savings.

(B) ***Disputes.*** In the event of a dispute over entitlement to or the amount of a change in Contract Time or a change in Contract Price related to a City-directed change in the Work, Contractor must perform the Work as directed and may not delay its Work or cease Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work, including the Work in dispute. Likewise, in the event that City and Contractor dispute whether a portion or portions of the Work are already required by the Contract Documents or constitute Extra Work, or otherwise dispute the interpretation of any portion(s) of the Contract Documents, Contractor must perform the Work as directed and may not delay its Work or cease Work pending resolution of the dispute, but must continue to comply with its duty to diligently prosecute the performance and timely completion of the Work, including the Work in dispute, as directed by City. If Contractor refuses to perform the Work in dispute, City may, acting in its sole discretion, elect to delete the Work from the Contract and reduce the Contract Price accordingly, and self-perform the Work or direct that the Work be performed by others. Alternatively, City may elect to terminate the Contract for convenience or for cause. Contractor's sole recourse for an unresolved dispute related to changes in the Work or performance of any Extra Work is to comply with the dispute resolution provisions set forth in Article 12, below.

(C) ***Extra Work.*** City may direct Contractor to perform Extra Work related to the Project. Contractor must promptly perform any Extra Work as directed or authorized by City in accordance with the original Contract Documents, even if Contractor and City have not yet reached agreement on adjustments to the Contract Price or Contract Time for such Extra Work. If Contractor believes it is necessary to perform Extra Work due to changed conditions, Contractor must promptly notify the Engineer in writing, specifically identifying the Extra Work and the reason(s) the Contractor believes it is Extra Work. This notification requirement does not constitute a Change Order request pursuant to Section 6.2, below. Contractor must maintain detailed daily records that itemize the cost of each element of Extra Work, and sufficiently distinguish the direct cost of the Extra Work from the cost of other Work performed. For each day that Contractor performs Extra Work, or Work that Contractor contends is Extra Work, Contractor must submit no later than the following Working Day, a daily report of the Extra Work performed that day and the related costs, together with copies of certified payroll, invoices, and other documentation substantiating the costs ("Extra Work Report"). The Engineer will make any adjustments to Contractor's Extra Work Report(s) based on the Engineer's records of the Work. When an Extra Work Report(s) is agreed on and signed by both City and Contractor, the Extra Work Report(s) will become the basis for payment under a duly authorized and signed Change Order. Failure to submit the required documentation by close of business on the next Working Day is deemed a full and complete waiver for any change in the Contract Price or Contract Time for any Extra Work performed that day.

(D) ***Minor Changes and RFIs.*** Minor field changes, including RFI replies from City, that do not affect the Contract Price or Contract Time and that are approved by the Engineer acting within his or her scope of authority, do not require a Change Order. By executing an RFI reply from City, Contractor agrees that it will perform the Work as clarified therein, with no change to the Contract Price or Contract Time.

(E) ***Remedy for Non-Compliance.*** Contractor's failure to promptly comply with a City-directed change is deemed a material breach of the Contract, and in addition to all other remedies available to it, City may, at its sole discretion, hire another contractor or use its own forces to complete the disputed Work at Contractor's sole expense, and may deduct the cost from the Contract Price.

6.2 Contractor Change Order Requests. Contractor must submit a request or proposal for a change in the Work, compensation for Extra Work, or a change in the Contract Price or Contract Time as a written Change Order request or proposal.

(A) ***Time for Submission.*** Any request for a change in the Contract Price or the Contract Time must be submitted in writing to the Engineer within ten calendar days of the date that Contractor first encounters the circumstances, information or conditions giving rise to the Change Order request, even if the total amount of the requested change in the Contract Price or impact on the Contract Time is not yet known at that time. If City requests that Contractor propose the terms of a Change Order, unless otherwise specified in City's request, Contractor must provide the Engineer with a written proposal for the change in the Contract Price or Contract Time within five working days of receiving City's request, in a form satisfactory to the Engineer.

(B) ***Required Contents.*** Any Change Order request or proposal submitted by Contractor must include a complete breakdown of actual or estimated costs and credits, and must itemize labor, materials, equipment, taxes, insurance, subcontract amounts, and, if applicable, Extra Work Reports. Any estimated cost must be updated in writing as soon as the actual amount is known.

(C) ***Required Documentation.*** All claimed costs must be fully documented, and any related request for an extension of time or delay-related costs must be included at that time and in compliance with the requirements of Article 5 of the General Conditions. Upon request, Contractor must permit City to inspect its original and unaltered bidding records, subcontract agreements, subcontract change orders, purchase orders, invoices, or receipts associated with the claimed costs.

(D) ***Required Form.*** Contractor must use City's form(s) for submitting all Change Order requests or proposals, unless otherwise specified by City.

(E) ***Certification.*** All Change Order requests must be signed by Contractor and must include the following certification:

> "The undersigned Contractor certifies under penalty of perjury that its statements and representations in this Change Order request are true and correct. Contractor warrants that this Change Order request is comprehensive and complete as to the Work or changes referenced herein, and agrees that any known or foreseeable costs, expenses, or time extension requests not included herein, are deemed waived."

6.3 Adjustments to Contract Price. The amount of any increase or decrease in the Contract Price will be determined based on one of the following methods listed below, in the order listed with unit pricing taking precedence over the other methods. Markup applies only to City-authorized time and material Work, and does not apply to any other payments to Contractor. For Work items or components that are deleted in their entirety, Contractor will only be entitled to compensation for those direct, actual, and documented costs (including restocking fees), reasonably incurred before Contractor was notified of the City's intent to delete the Work, with no markup for overhead, profit, or other indirect costs.

(A) ***Unit Pricing.*** Amounts previously provided by Contractor in the form of unit prices, either in a bid schedule or in a post-award schedule of values pursuant to Section 8.1, Schedule of Values, will apply to determine the price for the affected Work, to the extent applicable unit prices have been provided for that type of Work. No additional markup for overhead, profit, or other indirect costs will be added to the calculation.

(B) ***Lump Sum.*** A mutually agreed upon, all-inclusive lump sum price for the affected Work with no additional markup for overhead, profit, or other indirect costs.

(C) ***Time and Materials.*** On a time and materials basis, if and only to the extent compensation on a time and materials basis is expressly authorized by City in advance of Contractor's performance of the Work and subject to any not-to-exceed limit. Time and materials compensation for increased costs or Extra Work (but not decreased costs or deleted Work), will include allowed markup for overhead, profit, and other indirect costs, calculated as the total of the following sums, the cumulative total of which may not exceed the maximum markup rate of 15%:

(1) All direct labor costs provided by the Contractor, excluding superintendence, project management, or administrative costs, plus 15% markup;

(2) All direct material costs provided by the Contractor, including sales tax, plus 15% markup;

(3) All direct plant and equipment rental costs provided by the Contractor, plus 15% markup;

(4) All direct additional subcontract costs plus 10% markup for Work performed by Subcontractors; and

(5) Increased bond or insurance premium costs computed at 1.5% of total of the previous four sums.

6.4 Unilateral Change Order. If the parties dispute the terms of a proposed Change Order, including disputes over the amount of compensation or extension of time that Contractor has requested, the value of deleted or changed Work, what constitutes Extra Work, or quantities used, City may elect to issue a unilateral Change Order, directing performance of the Work, and authorizing a change in the Contract Price or Contract Time for the adjustment to compensation or time that the City believes is merited. Contractor's sole recourse to dispute the terms of a unilateral Change Order is to submit a timely Claim pursuant to Article 12, below.

6.5 Non-Compliance Deemed Waiver. Contractor waives its entitlement to any increase in the Contract Price or Contract Time if Contractor fails to fully comply with the provisions of this Article. Contractor will not be paid for unauthorized Extra Work.

Article 7 - General Construction Provisions

7.1 Permits, Fees, Business Licenses, Certificates and Taxes.

(A) ***Permits, Fees, Licenses, and Certificates.*** Contractor must obtain and pay for all permits, fees, or licenses and certificates required to perform the Work, including a City business tax certificate. Contractor must cooperate with and provide notifications to all government agencies with jurisdiction over the Project, as may be required. Contractor must provide City with copies of all records of permits and permit applications, payment of required fees, and any licenses and certificates required for the Work.

(B) ***Taxes.*** Contractor must pay for all taxes on labor, material and equipment, except Federal Excise Tax to the extent that City is exempt from Federal Excise Tax.

7.2 Temporary Facilities. Contractor must provide, at Contractor's sole expense, any and all temporary facilities for the Project, including an onsite staging area for materials and equipment, a field office, sanitary facilities, utilities, storage, scaffolds, barricades, walkways, and any other temporary structure required to safely perform the Work along with any incidental utility services. The location of all temporary facilities must be approved by the City prior to installation. Temporary facilities must be safe and adequate for the intended use and installed and maintained in accordance with Laws and the Contract Documents. Contractor must fence and screen the Project site and, if applicable, any separate Worksites, including the staging area, and its operation must minimize inconvenience to neighboring properties. Additional provisions pertaining to temporary facilities may be included in the Specifications or Special Conditions.

(A) ***Utilities.*** Contractor must install and maintain the power, water, sewer and all other utilities required for the Project site, including the piping, wiring, internet and wifi connections, and any related equipment necessary to maintain the temporary facilities.

(B) ***Removal and Repair.*** Contractor must promptly remove all such temporary facilities when they are no longer needed or upon completion of the Work, whichever comes first. Contractor must promptly repair any damage to City's property or to other property caused by the installation, use, or removal of the temporary facilities, and must promptly restore the property to its original or intended condition.

7.3 Noninterference and Site Management. Contractor must avoid interfering with City's use of its property at or adjacent to the Project site, including use of roadways, entrances, parking areas, walkways, and structures. Contractor must also minimize disruption of access to private property in the Project vicinity. Contractor must coordinate with affected property owners, tenants, and businesses, and maintain some vehicle and pedestrian access to their residences or properties at all times. Temporary access ramps, fencing or other measures must be provided as needed. Before blocking access to a private driveway or parking lot, Contractor must provide effective notice to the affected parties at least 48 hours in advance of the pending closure and allow them to remove vehicles. Private driveways, residences and parking lots must have access to a roadway during non-Work hours.

(A) ***Offsite Acquisition.*** Unless otherwise provided by City, Contractor must acquire, use and dispose of, at its sole expense, any Worksites, licenses, easements, and temporary facilities necessary to access and perform the Work.

(B) ***Offsite Staging Area and Field Office*****.** If additional space beyond the Project site is needed, such as for the staging area or the field office, Contractor may need to make arrangements with the nearby property owner(s) to secure the space. Before using or occupying any property owned by a third party, Contractor must provide City with a copy of the necessary license agreement, easement, or other written authorization from the property owner, together with a written release from the property owner holding City harmless from any related liability, in a form acceptable to the City Attorney.

(C) ***Traffic Management.*** Contractor must provide traffic management and traffic controls as specified in the Contract Documents, as required by Laws, and as otherwise required to ensure public and worker safety, and to avoid interference with public or private operations or the normal flow of vehicular, bicycle, or pedestrian traffic.

7.4 Signs. No signs may be displayed on or about City's property, except signage which is required by Laws or by the Contract Documents, without City's prior written approval as to size, design, and location.

7.5 Project Site and Nearby Property Protections.

(A) ***General.*** Contractor is responsible at all times, on a 24-hour basis and at its sole cost, for protecting the Work, the Project site, and the materials and equipment to be incorporated into the Work, until the City has accepted the Project, excluding any exceptions to acceptance, if any. Except as specifically authorized by City, Contractor must confine its operations to the area of the Project site indicated in the Plans and Specifications. Contractor is liable for any damage caused by Contractor or its Subcontractors to the Work, City's property, the property of adjacent or nearby property owners and the work or personal property of other contractors working for City, including damage related to Contractor's failure to adequately secure the Work or any Worksite.

(1) Subject to City's approval, Contractor will provide and install safeguards to protect the Work; any Worksite, including the Project site; City's real or personal property and the real or personal property of adjacent or nearby property owners, including plant and tree protections.

(2) City wastewater systems may not be interrupted. If the Work disrupts existing sewer facilities, Contractor must immediately notify City and establish a plan, subject to City's approval, to convey the sewage in closed conduits back into the sanitary sewer system. Sewage must not be permitted to flow in trenches or be covered by backfill.

(3) Contractor must remove with due care, and store at City's request, any objects or material from the Project site that City will salvage or reuse at another location.

(4) If directed by Engineer, Contractor must promptly repair or replace any property damage, as specified by the Engineer. However, acting in its sole discretion, City may elect to have the property damage remedied otherwise, and may deduct the cost to repair or replace the damaged property from payment otherwise due to Contractor.

(5) Contractor will not permit any structure or infrastructure to be loaded in a manner that will damage or endanger the integrity of the structure or infrastructure.

(B) ***Securing Project Site.*** After completion of Work each day, Contractor must secure the Project site and, to the extent feasible, make the area reasonably accessible to the public unless City approves otherwise. All excess materials and equipment not protected by approved traffic control devices must be relocated to the staging area or demobilized. Trench spoils must be hauled off the Project site daily and open excavations must be protected with steel plates. Contractor and Subcontractor personnel may not occupy or use the Project site for any purpose during non-Work hours, except as may be provided in the Contract Documents or pursuant to prior written authorization from City.

(C) ***Unforeseen Conditions.*** If Contractor encounters facilities, utilities, or other unknown conditions not shown on or reasonably inferable from the Plans or apparent from inspection of the Project site, Contractor must immediately notify the City and promptly submit a Request for Information to obtain further directions from the Engineer. Contractor must avoid taking any action which could cause damage to the facilities or utilities pending further direction from the Engineer. The Engineer's written response will be final and binding on Contractor. If the Engineer's subsequent direction to Contractor affects Contractor's cost or time to perform the Work, Contractor may submit a Change Order request as set forth in Article 6 above.

(D) ***Support; Adjacent Properties.*** Contractor must provide, install, and maintain all shoring, bracing, and underpinning necessary to provide support to City's property and adjacent properties and improvements thereon. Contractor must provide notifications to adjacent property owners as may be required by Laws. See also, Section 7.15, Trenching of Five Feet or More.

(E) ***Notification of Property Damage.*** Contractor must immediately notify the City of damage to any real or personal property resulting from Work on the Project. Contractor must immediately provide a written report to City of any such property damage in excess of $500 (based on estimated cost to repair or replace) within 24 hours of the occurrence. The written report must include: (1) the location and nature of the damage, and the owner of the property, if known; (2) the name and address of each employee of Contractor or any Subcontractor involved in the damage; (3) a detailed description of the incident, including precise location, time, and names and contact information for known witnesses; and (4) a police or first responder report, if applicable. If Contractor is required to file an accident report with another government agency, Contractor will provide a copy of the report to City.

7.6 Materials and Equipment.

(A) ***General.*** Unless otherwise specified, all materials and equipment required for the Work must be new, free from defects, and of the best grade for the intended purpose, and furnished in sufficient quantities to ensure the proper and expeditious performance of the Work. Contractor must employ measures to preserve the specified quality and fitness of the materials and equipment. Unless otherwise specified, all materials and equipment required for the Work are deemed to include all components required for complete installation and intended operation and must be installed in accordance with the manufacturer's recommendations or instructions. Contractor is responsible for all shipping, handling, and storage costs associated with the materials and equipment required for the Work. Contractor is responsible for providing security and protecting the Work and all of the required materials, supplies, tools and equipment at Contractor's sole cost until City has formally accepted the Project as set forth in Section 11.1, Final Completion. Contractor will not assign, sell, mortgage, or hypothecate any materials or equipment for the Project, or remove any materials or equipment that have been installed or delivered.

(B) ***City-Provided.*** If the Work includes installation of materials or equipment to be provided by City, Contractor is solely responsible for the proper examination, handling, storage, and installation in accordance with the Contract Documents. Contractor must notify City of any defects discovered in City-provided materials or equipment, sufficiently in advance of scheduled use or installation to afford adequate time to procure replacement materials or equipment as needed. Contractor is solely responsible for any loss of or damage to such items which occurs while the items are in Contractor's custody and control, the cost of which may be offset from the Contract Price and deducted from any payment(s) due to Contractor.

(C) ***Intellectual Property Rights.*** Contractor must, at its sole expense, obtain any authorization or license required for use of patented or copyright-protected materials, equipment, devices or processes that are incorporated into the Work. Contractor's indemnity obligations in Article 4 apply to any claimed violation of intellectual property rights in violation of this provision.

7.7 Substitutions.

(A) ***"Or Equal."*** Any Specification designating a material, product, or thing (collectively, "item") or service by specific brand or trade name, followed by the words "or

equal," is intended only to indicate the quality and type of item or service desired, and Contractor may request use of any equal item or service. Unless otherwise stated in the Specifications, any reference to a specific brand or trade name for an item or service that is used solely for the purpose of describing the type of item or service desired, will be deemed to be followed by the words "or equal." A substitution will only be approved if it is a true "equal" item or service in every aspect of design, function, and quality, as determined by City, including dimensions, weight, maintenance requirements, durability, fit with other elements, and schedule impacts.

(B) ***Request for Substitution.*** A post-award request for substitution of an item or service must be submitted in writing to the Engineer for approval in advance, within the applicable time period provided in the Contract Documents. If no time period is specified, the substitution request may be submitted any time within 35 days after the date of award of the Contract, or sufficiently in advance of the time needed to avoid delay of the Work, whichever is earlier.

(C) ***Substantiation.*** Any available data substantiating the proposed substitute as an equal item or service must be submitted with the written request for substitution. Contractor's failure to timely provide all necessary substantiation, including any required test results as soon as they are available, is grounds for rejection of the proposed substitution, without further review.

(D) ***Burden of Proving Equality.*** Contractor has the burden of proving the equality of the proposed substitution at Contractor's sole cost. City has sole discretion to determine whether a proposed substitution is equal, and City's determination is final.

(E) ***Approval or Rejection.*** If the proposed substitution is approved, Contractor is solely responsible for any additional costs or time associated with the substituted item or service. If the proposed substitution is rejected, Contractor must, without delay, install the item or use the service as specified by City.

(F) ***Contractor's Obligations.*** City's approval of a proposed substitution will not relieve Contractor from any of its obligations under the Contract Documents. In the event Contractor makes an unauthorized substitution, Contractor will be solely responsible for all resulting cost impacts, including the cost of removal and replacement and the impact to other design elements.

7.8 Testing and Inspection.

(A) ***General.*** All materials, equipment, and workmanship used in the Work are subject to inspection and testing by City at all times and at all locations during construction and/or fabrication, including at any Worksite, shops, and yards. All manufacturers' application or installation instructions must be provided to the Inspector at least ten days prior to the first such application or installation. Contractor must, at all times, make the Work available for testing or inspection. Neither City's inspection or testing of Work, nor its failure to do so, operate to waive or limit Contractor's duty to complete the Work in accordance with the Contract Documents.

(B) ***Scheduling and Notification.*** Contractor must cooperate with City in coordinating the inspections and testing. Contractor must submit samples of materials, at Contractor's expense, and schedule all tests required by the Contract Documents in time to avoid any delay to the progress of the Work. Contractor must notify the Engineer no later than noon of the Working Day before any inspection or testing and must provide timely notice to the other necessary parties as specified in the Contract Documents. If Contractor schedules an inspection or test beyond regular Work hours, or on a Saturday, Sunday, or recognized City holiday, Contractor must notify the Engineer at least two

Working Days in advance for approval. If approved, Contractor must reimburse City for the cost of the overtime inspection or testing. Such costs, including the City's hourly costs for required personnel, may be deducted from payments otherwise due to Contractor.

(C) ***Responsibility for Costs.*** City will bear the initial cost of inspection and testing to be performed by independent testing consultants retained by City, subject to the following exceptions:

(1) Contractor will be responsible for the costs of any subsequent inspections or tests which are required to substantiate compliance with the Contract Documents, and any associated remediation costs.

(2) Contractor will be responsible for inspection costs, at City's hourly rates, for inspection time lost because the Work is not ready or Contractor fails to appear for a scheduled inspection.

(3) If any portion of the Work that is subject to inspection or testing is covered or concealed by Contractor prior to the inspection or testing, Contractor will bear the cost of making that portion of the Work available for the inspection or testing required by the Contract Documents, and any associated repair or remediation costs.

(4) Contractor is responsible for properly shoring all compaction test sites deeper than five feet below grade, as required under Section 7.15 below.

(5) Any Work or material that is defective or fails to comply with the requirements of the Contract Documents must be promptly repaired, removed, replaced, or corrected by Contractor, at Contractor's sole expense, even if that Work or material was previously inspected or included in a progress payment.

(D) ***Contractor's Obligations.*** Contractor is solely responsible for any delay occasioned by remediation of defective or noncompliant Work or material. Inspection or testing of the Work does not in any way relieve Contractor of its obligations to perform the Work as specified. Any Work done without the inspection(s) or testing required by the Contract Documents will also be subject to rejection by City.

(E) ***Distant Locations.*** If required off-site testing or inspection must be conducted at a location more than 100 miles from the Project site, Contractor is solely responsible for the additional travel costs required for testing and/or inspection at such locations.

(F) ***Final Inspection.*** The provisions of this Section 7.8 also apply to final inspection under Article 11, Completion and Warranty Provisions.

7.9 Project Site Conditions and Maintenance. Contractor must at all times, on a 24-hour basis and at its sole cost, maintain the Project site and staging and storage areas in clean, neat, and sanitary condition and in compliance with all Laws pertaining to safety, air quality, and dust control. Adequate toilets must be provided, and properly maintained and serviced for all workers on the Project site, located in a suitably secluded area, subject to City's prior approval. Contractor must also, on a daily basis and at its sole cost, remove and properly dispose of the debris and waste materials from the Project site.

(A) ***Air Emissions Control*****.** Contractor must not discharge smoke or other air contaminants into the atmosphere in violation of any Laws. Contractor must comply with all Laws, including the California Air Resources Board's In-Use Off-Road Diesel-Fueled Fleets Regulation (13 CCR § 2449 et seq.).

(B) ***Dust and Debris*.** Contractor must minimize and confine dust and debris resulting from the Work. Contractor must abate dust nuisance by cleaning, sweeping, and immediately sprinkling with water excavated areas of dirt or other materials prone to cause dust, and within one hour after the Engineer notifies Contractor that an airborne nuisance exists. The Engineer may direct that Contractor provide an approved water-spraying truck for this purpose. If water is used for dust control, Contractor will only use the minimum necessary. Contractor must take all necessary steps to keep waste water out of streets, gutters, or storm drains. See Section 7.19, Environmental Control. If City determines that the dust control is not adequate, City may have the work done by others and deduct the cost from the Contract Price. Contractor will immediately remove any excess excavated material from the Project site and any dirt deposited on public streets.

(C) ***Clean up.*** Before discontinuing Work in an area, Contractor must clean the area and remove all debris and waste along with the construction equipment, tools, machinery, and surplus materials.

(1) Except as otherwise specified, all excess Project materials, and the materials removed from existing improvements on the Project site with no salvage value or intended reuse by City, will be Contractor's property.

(2) Hauling trucks and other vehicles leaving the Project site must be cleaned of exterior mud or dirt before traveling on City streets. Materials and loose debris must be delivered and loaded to prevent dropping materials or debris. Contractor must immediately remove spillage from hauling on any publicly traveled way. Streets affected by Work on the Project must be kept clean by street sweeping.

(D) ***Disposal.*** Contractor must dispose of all Project debris and waste materials in a safe and legal manner. Contractor may not burn or bury waste materials on the Project site. Contractor will not allow any dirt, refuse, excavated material, surplus concrete or mortar, or any associated washings, to be disposed of onto streets, into manholes or into the storm drain system.

(E) ***Completion.*** At the completion of the Work, Contractor must remove from the Project site all of its equipment, tools, surplus materials, waste materials and debris, presenting a clean and neat appearance. Before demobilizing from the Project site, Contractor must ensure that all surfaces are cleaned, sealed, waxed, or finished as applicable, and that all marks, stains, paint splatters, and the like have been properly removed from the completed Work and the surrounding areas. Contractor must ensure that all parts of the construction are properly joined with the previously existing and adjacent improvements and conditions. Contractor must provide all cutting, fitting and patching needed to accomplish that requirement. Contractor must also repair or replace all existing improvements that are damaged or removed during the Work, both on and off the Project site, including curbs, sidewalks, driveways, fences, signs, landscaping, utilities, street surfaces and structures. Repairs and replacements must be at least equal to the previously existing improvements, and the condition, finish and dimensions must match the previously existing improvements. Contractor must restore to original condition all property or items that are not designated for alteration under the Contract Documents and leave each Worksite clean and ready for occupancy or use by City.

(F) ***Non-Compliance.*** If Contractor fails to comply with its maintenance and cleanup obligations or any City clean up order, City may, acting in its sole discretion, elect to suspend the Work until the condition(s) is corrected with no increase in the Contract Time or Contract Price, or undertake appropriate cleanup measures without further notice and deduct the cost from any amounts due or to become due to Contractor.

7.10 Instructions and Manuals. Contractor must provide to City three copies each of all instructions and manuals required by the Contract Documents, unless otherwise specified. These must be complete as to drawings, details, parts lists, performance data, and other information that may be required for City to easily maintain and service the materials and equipment installed for this Project.

(A) ***Submittal Requirements.*** All manufacturers' application or installation instructions must be provided to City at least ten days prior to the first such application. The instructions and manuals, along with any required guarantees, must be delivered to City for review.

(B) ***Training.*** Contractor or its Subcontractors must train City's personnel in the operation and maintenance of any complex equipment or systems as a condition precedent to Final Completion, if required in the Contract Documents.

7.11 As-built Drawings. Contractor and its Subcontractors must prepare and maintain at the Project site a detailed, complete and accurate as-built set of the Plans which will be used solely for the purpose of recording changes made in any portion of the original Plans in order to create accurate record drawings at the end of the Project.

(A) ***Duty to Update.*** The as-built drawings must be updated as changes occur, on a daily basis if necessary. City may withhold the estimated cost for City to have the as-built drawings prepared from payments otherwise due to Contractor, until the as-built drawings are brought up to date to the satisfaction of City. Actual locations to scale must be identified on the as-built drawings for all runs of mechanical and electrical work, including all site utilities installed underground, in walls, floors, or otherwise concealed. Deviations from the original Plans must be shown in detail. The exact location of all main runs, whether piping, conduit, ductwork or drain lines, must be shown by dimension and elevation. The location of all buried pipelines, appurtenances, or other improvements must be represented by coordinates and by the horizontal distance from visible above-ground improvements.

(B) ***Final Completion.*** Contractor must verify that all changes in the Work are depicted in the as-built drawings and must deliver the complete set of as-built drawings to the Engineer for review and acceptance as a condition precedent to Final Completion and Final Payment.

7.12 Existing Utilities.

(A) ***General.*** The Work may be performed in developed, urban areas with existing utilities, both above and below ground, including utilities identified in the Contract Documents or in other informational documents or records. Contractor must take due care to locate identified or reasonably identifiable utilities before proceeding with trenching, excavation, or any other activity that could damage or disrupt existing utilities. This may include excavation with small equipment, potholing, or hand excavation, and, if practical, using white paint or other suitable markings to delineate the area to be excavated. Except as otherwise provided herein, Contractor will be responsible for costs resulting from damage to identified or reasonably identifiable utilities due to Contractor's negligence or failure to comply with the Contract Documents, including the requirements in this Article 7.

(B) ***Unidentified Utilities.*** Pursuant to Government Code § 4215, if, during the performance of the Work, Contractor discovers utility facilities not identified by City in the Contract Documents, Contractor must immediately provide written notice to City and the utility. City assumes responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities located on the Project site if those utilities are not

identified in the Contract Documents. Contractor will be compensated in accordance with the provisions of the Contract Documents for the costs of locating, repairing damage not due to Contractor's failure to exercise reasonable care, and removing or relocating utility facilities not indicated in the Plans or Specifications with reasonable accuracy, and for equipment on the Project necessarily idled during such work. Contractor will not be assessed liquidated damages for delay in completion of the Work, to the extent the delay was caused by City's failure to provide for removal or relocation of the utility facilities.

7.13 Notice of Excavation. Contractor must comply with all applicable requirements in Government Code § 4216 et seq., which are incorporated by reference herein.

7.14 Trenching and Excavations of Four Feet or More. As required by Public Contract Code § 7104, if the Work includes digging trenches or other excavations that extend deeper than four feet below the surface, the provisions in this Section apply to the Work and the Project.

(A) ***Duty to Notify.*** Contractor must promptly, and before the following conditions are disturbed, provide written notice to City if Contractor finds any of the following conditions:

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

(2) Subsurface or latent physical conditions at the Project site differing from those indicated by information about the Project site made available to bidders prior to the deadline for submitting bids; or

(3) Unknown physical conditions at the Project site of any unusual nature, materially different from those ordinarily encountered and generally recognized as inherent in work of the character required by the Contract Documents.

(B) ***City Investigation.*** City will promptly investigate the conditions and if City finds that the conditions materially differ from those indicated, apparent, or reasonably inferred from information about the Project site made available to bidders, or involve hazardous waste, and cause a decrease or increase in Contractor's cost of, or the time required for, performance of any part of the Work, City will issue a Change Order.

(C) ***Disputes.*** In the event that a dispute arises between City and Contractor regarding any of the conditions specified in subsection (B) above, or the terms of a Change Order issued by City, Contractor will not be excused from completing the Work within the Contract Time, but must proceed with all Work to be performed under the Contract. Contractor will retain any and all rights provided either by the Contract or by Laws which pertain to the resolution of disputes between Contractor and City.

7.15 Trenching of Five Feet or More. As required by Labor Code § 6705, if the Contract Price exceeds $25,000 and the Work includes the excavation of any trench or trenches of five feet or more in depth, a detailed plan must be submitted to City for acceptance in advance of the excavation. The detailed plan must show the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation. If the plan varies from the shoring system standards, it must be prepared by a California registered civil or structural engineer. Use of a shoring,

sloping, or protective system less effective than that required by the Construction Safety Orders is prohibited.

7.16 New Utility Connections. Except as otherwise specified, City will pay connection charges and meter costs for new permanent utilities required by the Contract Documents, if any. Contractor must notify City sufficiently in advance of the time needed to request service from each utility provider so that connections and services are initiated in accordance with the Project schedule.

7.17 Lines and Grades. Contractor is required to use any benchmark provided by the Engineer. Unless otherwise specified in the Contract Documents, Contractor must provide all lines and grades required to execute the Work. Contractor must also provide, preserve, and replace if necessary, all construction stakes required for the Project. All stakes or marks must be set by a California licensed surveyor or a California registered civil engineer. Contractor must notify the Engineer of any discrepancies found between Contractor's staking and grading and information provided by the Contract Documents. Upon completion, all Work must conform to the lines, elevations, and grades shown in the Plans, including any changes directed by a Change Order.

7.18 Historic or Archeological Items.

(A) ***Contractor's Obligations.*** Contractor must ensure that all persons performing Work at the Project site are required to immediately notify the Project Manager, upon discovery of any potential historic or archeological items, including historic or prehistoric ruins, a burial ground, archaeological or vertebrate paleontological site, including fossilized footprints or other archeological, paleontological or historical feature on the Project site (collectively, "Historic or Archeological Items").

(B) ***Discovery; Cessation of Work.*** Upon discovery of any potential Historic or Archeological Items, Work must be stopped within an 85-foot radius of the find and may not resume until authorized in writing by City. If required by City, Contractor must assist in protecting or recovering the Historic or Archeological Items, with any such assistance to be compensated as Extra Work on a time and materials basis under Article 6, Contract Modification. At City's discretion, a suspension of Work required due to discovery of Historic or Archeological Items may be treated as Excusable Delay pursuant to Article 5, or as a suspension for convenience under Article 13.

7.19 Environmental Control. Contractor must not pollute any drainage course or its tributary inlets with fuels, oils, bitumens, acids, insecticides, herbicides or other harmful materials. Contractor must prevent the release of any hazardous material or hazardous waste into the soil or groundwater, and prevent the unlawful discharge of pollutants into City's storm drain system and watercourses as required below. Contractor and its Subcontractors must at all times in the performance of the Work comply with all Laws concerning pollution of waterways.

(A) ***Stormwater Permit.*** Contractor must comply with all applicable conditions of the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit for Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity ("Stormwater Permit").

(B) ***Contractor's Obligations.*** If required for the Work, a copy of the Stormwater Permit is on file in City's principal administrative offices, and Contractor must comply with it without adjustment of the Contract Price or the Contract Time. Contractor must timely and completely submit required reports and monitoring information required by the conditions of the Stormwater Permit. Contractor also must comply with all other Laws

governing discharge of stormwater, including applicable municipal stormwater management programs.

7.20 Noise Control. Contractor must comply with all applicable noise control Laws. Noise control requirements apply to all equipment used for the Work or related to the Work, including trucks, transit mixers or transient equipment that may or may not be owned by Contractor.

7.21 Mined Materials. Pursuant to the Surface Mining and Reclamation Act of 1975, Public Resources Code § 2710 et seq., any purchase of mined materials, such as construction aggregate, sand, gravel, crushed stone, road base, fill materials, and any other mineral materials must originate from a surface mining operation included on the AB 3098 List, which may be accessed online at: https://www.conservation.ca.gov/smgb/Pages/AB-3098-List.aspx.

Article 8 - Payment

8.1 Schedule of Values. Prior to submitting its first application for payment, Contractor must prepare and submit to the Project Manager a schedule of values apportioned to the various divisions and phases of the Work, including mobilization and demobilization. If a Bid Schedule was submitted with Contractor's bid, the amounts in the schedule of values must be consistent with the Bid Schedule. Each line item contained in the schedule of values must be assigned a value such that the total of all items equals the Contract Price. The items must be sufficiently detailed to enable accurate evaluation of the percentage of completion claimed in each application for payment, and the assigned value consistent with any itemized or unit pricing submitted with Contractor's bid.

(A) ***Measurements for Unit Price Work.*** Materials and items of Work to be paid for on the basis of unit pricing will be measured according to the methods specified in the Contract Documents.

(B) ***Deleted or Reduced Work.*** Contractor will not be compensated for Work that City has deleted or reduced in scope, except for any labor, material or equipment costs for such Work that Contractor reasonably incurred before Contractor learned that the Work could be deleted or reduced. Contractor will only be compensated for those actual, direct and documented costs incurred, and will not be entitled to any mark up for overhead or lost profits.

8.2 Progress Payments. Following the last day of each month, or as otherwise required by the Special Conditions or Specifications, Contractor will submit to the Project Manager a monthly application for payment for Work performed during the preceding month based on the estimated value of the Work performed during that preceding month.

(A) ***Application for Payment.*** Each application for payment must be itemized to include labor, materials, and equipment incorporated into the Work, and materials and equipment delivered to the Project site, as well as authorized and approved Change Orders. Each payment application must be supported by the unit prices submitted with Contractor's Bid Schedule and/or schedule of values and any other substantiating data required by the Contract Documents.

(B) ***Payment of Undisputed Amounts.*** City will pay the undisputed amount due within 30 days after Contractor has submitted a complete and accurate payment application, subject to Public Contract Code § 20104.50. City will deduct a percentage from each progress payment as retention, as set forth in Section 8.5, below, and may withhold additional amounts as set forth in Section 8.3, below.

8.3 Adjustment of Payment Application. City may adjust or reject the amount requested in a payment application, including application for Final Payment, in whole or in part, if the amount requested is disputed or unsubstantiated. Contractor will be notified in writing of the basis for the modification to the amount requested. City may also deduct or withhold from payment otherwise due based upon any of the circumstances and amounts listed below. Sums withheld from payment otherwise due will be released when the basis for that withholding has been remedied and no longer exists.

(A) For Contractor's unexcused failure to perform the Work as required by the Contract Documents, including correction or completion of punch list items, City may withhold or deduct an amount based on the City's estimated cost to correct or complete the Work.

(B) For loss or damage caused by Contractor or its Subcontractors arising out of or relating to performance of the Work or any failure to protect the Project site, City may deduct an amount based on the estimated cost to repair or replace.

(C) For Contractor's failure to pay its Subcontractors and suppliers when payment is due, City may withhold an amount equal to the total of past due payments and may opt to pay that amount separately via joint check pursuant to Section 8.6(B), Joint Checks.

(D) For Contractor's failure to timely correct rejected, nonconforming, or defective Work, City may withhold or deduct an amount based on the City's estimated cost to correct or complete the Work.

(E) For any unreleased stop notice, City may withhold 125% of the amount claimed.

(F) For Contractor's failure to submit any required schedule or schedule update in the manner and within the time specified in the Contract Documents, City may withhold an amount equal to five percent of the total amount requested until Contractor complies with its schedule submittal obligations.

(G) For Contractor's failure to maintain or submit as-built documents in the manner and within the time specified in the Contract Documents, City may withhold or deduct an amount based on the City's cost to prepare the as-builts.

(H) For Work performed without Shop Drawings that have been accepted by City, when accepted Shop Drawings are required before proceeding with the Work, City may deduct an amount based on the estimated cost to correct unsatisfactory Work or diminution in value.

(I) For fines, payments, or penalties assessed under the Labor Code, City may deduct from payments due to Contractor as required by Laws and as directed by the Division of Labor Standards Enforcement.

(J) For any other costs or charges that may be withheld or deducted from payments to Contractor, as provided in the Contract Documents, including liquidated damages, City may withhold or deduct such amounts from payment otherwise due to Contractor.

(K) For any other fines, payments, or penalties assessed against the City relating to Contractor's acts or omissions, including violations of Laws, City may withhold or deduct such amounts from payment otherwise due to Contractor.

8.4 Early Occupancy. Neither City's payment of progress payments nor its partial or full use or occupancy of the Project constitutes acceptance of any part of the Work.

8.5 Retention. City will retain five percent of the full amount due on each progress payment (i.e., the amount due before any withholding or deductions pursuant to Section 8.3, Adjustment of Payment Application), or the percentage stated in the Notice Inviting Bids, whichever is greater, as retention to ensure full and satisfactory performance of the Work. Contractor is not entitled to any reduction in the rate of withholding at any time, nor to release of any retention before 35 days following City's acceptance of the Project.

(A) ***Substitution of Securities.*** As provided by Public Contract Code § 22300, Contractor may request in writing that it be allowed, at its sole expense, to substitute securities for the retention withheld by City. Any escrow agreement entered into pursuant to this provision must fully comply with Public Contract Code § 22300 and will be subject to approval as to form by City's legal counsel. If City exercises its right to draw upon such securities in the event of default pursuant to section (7) of the statutory Escrow Agreement for Security Deposits in Lieu of Retention, pursuant to subdivision (g) of Public Contract Code § 22300 ("Escrow Agreement"), and if Contractor disputes that it is in default, its sole remedy is to comply with the dispute resolution procedures in Article 12 and the provisions therein. It is agreed that for purposes of this paragraph, an event of default includes City's rights pursuant to these Contract Documents to withhold or deduct sums from retention, including withholding or deduction for liquidated damages, incomplete or defective Work, stop payment notices, or backcharges. It is further agreed that if any individual authorized to give or receive written notice on behalf of a party pursuant to section (10) of the Escrow Agreement are unavailable to give or receive notice on behalf of that party due to separation from employment, retirement, death, or other circumstances, the successor or delegee of the named individual is deemed to be the individual authorized to give or receive notice pursuant to section (10) of the Escrow Agreement.

(B) ***Release of Undisputed Retention.*** All undisputed retention, less any amounts that may be assessed as liquidated damages, retained for stop notices, or otherwise withheld pursuant to Section 8.3, Adjustment of Payment Application, will be released as Final Payment to Contractor no sooner than 35 days following recordation of the notice of completion, and no later than 60 days following acceptance of the Project by City's governing body or authorized designee pursuant to Section 11.1(C), Acceptance, or, if the Project has not been accepted, no later than 60 days after the Project is otherwise considered complete pursuant to Public Contract Code § 7107(c).

8.6 Payment to Subcontractors and Suppliers. Each month, Contractor must promptly pay each Subcontractor and supplier the value of the portion of labor, materials, and equipment incorporated into the Work or delivered to the Project site by the Subcontractor or supplier during the preceding month. Such payments must be made in accordance with the requirements of Laws pertaining to such payments, and those of the Contract Documents and applicable subcontract or supplier contract.

(A) ***Withholding for Stop Notice.*** Pursuant to Civil Code § 9358, City will withhold 125% of the amount claimed by an unreleased stop notice, a portion of which may be retained by City for the costs incurred in handling the stop notice claim, including attorneys' fees and costs, as authorized by law.

(B) ***Joint Checks.*** City reserves the right, acting in its sole discretion, to issue joint checks made payable to Contractor and a Subcontractor or supplier, if City determines this is necessary to ensure fair and timely payment for a Subcontractor or supplier who has provided services or goods for the Project. As a condition to release of payment by a joint check, the joint check payees may be required to execute a joint check agreement in a form provided or approved by the City Attorney's Office. The joint check payees will be jointly and severally responsible for the allocation and disbursement of funds paid by joint check. Payment by joint check will not be construed to create a contractual relationship

between City and a Subcontractor or supplier of any tier beyond the scope of the joint check agreement.

8.7 Final Payment. Contractor's application for Final Payment must comply with the requirements for submitting an application for a progress payment as stated in Section 8.2, above. Corrections to previous progress payments, including adjustments to estimated quantities for unit priced items, may be included in the Final Payment. If Contractor fails to submit a timely application for Final Payment, City reserves the right to unilaterally process and issue Final Payment without an application from Contractor in order to close out the Project. For the purposes of determining the deadline for Claim submission pursuant to Article 12, the date of Final Payment is deemed to be the date that City acts to release undisputed retention as final payment to Contractor, or otherwise provides written notice to Contractor of Final Payment or that no undisputed funds remain available for Final Payment due to offsetting withholdings or deductions pursuant to Section 8.3, Adjustment of Payment Application. If the amount due from Contractor to City exceeds the amount of Final Payment, City retains the right to recover the balance from Contractor or its sureties.

8.8 Release of Claims. City may, at any time, require that payment of the undisputed portion of any progress payment or Final Payment be contingent upon Contractor furnishing City with a written waiver and release of all claims against City arising from or related to the portion of Work covered by those undisputed amounts subject to the limitations of Public Contract Code § 7100. Any disputed amounts may be specifically excluded from the release.

8.9 Warranty of Title. Contractor warrants that title to all work, materials, or equipment incorporated into the Work and included in a request for payment will pass over to City free of any claims, liens, or encumbrances upon payment to Contractor.

Article 9 - Labor Provisions

9.1 Discrimination Prohibited. Discrimination against any prospective or present employee engaged in the Work on grounds of race, color, ancestry, national origin, ethnicity, religion, sex, sexual orientation, age, disability, or marital status is strictly prohibited. Contractor and its Subcontractors are required to comply with all applicable Laws prohibiting discrimination, including the California Fair Employment and Housing Act (Govt. Code § 12900 et seq.), Government Code § 11135, and Labor Code §§ 1735, 1777.5, 1777.6, and 3077.5.

9.2 Labor Code Requirements.

(A) ***Eight Hour Day.*** Pursuant to Labor Code § 1810, eight hours of labor constitute a legal day's work under this Contract.

(B) ***Penalty.*** Pursuant to Labor Code § 1813, Contractor will forfeit to City as a penalty, the sum of $25.00 for each day during which a worker employed by Contractor or any Subcontractor is required or permitted to work more than eight hours in any one calendar day or more than 40 hours per calendar week, except if such workers are paid overtime under Labor Code § 1815.

(C) ***Apprentices.*** Contractor is responsible for compliance with the requirements governing employment and payment of apprentices, as set forth in Labor Code § 1777.5, which is fully incorporated by reference.

(D) ***Notices.*** Pursuant to Labor Code § 1771.4, Contractor is required to post all job site notices prescribed by Laws.

9.3 Prevailing Wages. Each worker performing Work under this Contract that is covered under Labor Code §§ 1720, 1720.3, or 1720.9, including cleanup at the Project site, must be paid at a rate not less than the prevailing wage as defined in §§ 1771 and 1774 of the Labor Code. The prevailing wage rates are on file with the City and available online at http://www.dir.ca.gov/dlsr. Contractor must post a copy of the applicable prevailing rates at the Project site.

(A) ***Penalties.*** Pursuant to Labor Code § 1775, Contractor and any Subcontractor will forfeit to City as a penalty up to $200.00 for each calendar day, or portion thereof, for each worker paid less than the applicable prevailing wage rate. Contractor must also pay each worker the difference between the applicable prevailing wage rate and the amount actually paid to that worker.

(B) ***Federal Requirements.*** If this Project is subject to federal prevailing wage requirements in addition to California prevailing wage requirements, Contractor and its Subcontractors are required to pay the higher of the currently applicable state or federal prevailing wage rates.

9.4 Payroll Records. Contractor must comply with the provisions of Labor Code §§ 1771.4, 1776, and 1812 and all implementing regulations, which are fully incorporated by this reference, including requirements for monthly electronic submission of payroll records to the DIR.

(A) ***Contractor and Subcontractor Obligations***. Contractor and each Subcontractor must keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed in connection with the Work. Each payroll record must contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:

(1) The information contained in the payroll record is true and correct; and

(2) Contractor or the Subcontractor has complied with the requirements of Labor Code §§ 1771, 1811, and 1815 for any Work performed by its employees on the Project.

(B) ***Certified Record.*** A certified copy of an employee's payroll record must be made available for inspection or furnished to the employee or his or her authorized representative on request, to City, to the Division of Labor Standards Enforcement, to the Division of Apprenticeship Standards of the DIR, and as further required by the Labor Code.

(C) ***Enforcement.*** Upon notice of noncompliance with Labor Code § 1776, Contractor or Subcontractor has ten days in which to comply with the requirements of this section. If Contractor or Subcontractor fails to do so within the ten-day period, Contractor or Subcontractor will forfeit a penalty of $100.00 per day, or portion thereof, for each worker for whom compliance is required, until strict compliance is achieved. Upon request by the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement, these penalties will be withheld from payments then due to Contractor.

9.5 Labor Compliance. Pursuant to Labor Code § 1771.4, the Contract for this Project is subject to compliance monitoring and enforcement by the DIR.

Article 10 - Safety Provisions

10.1 Safety Precautions and Programs. Contractor and its Subcontractors are fully responsible for safety precautions and programs, and for the safety of persons and property in the performance of the Work. Contractor and its Subcontractors must at all times comply with all applicable health and safety Laws and seek to avoid injury, loss, or damage to persons or property by taking reasonable steps to protect its employees and other persons at any Worksite, materials and equipment stored on or off site, and property at or adjacent to any Worksite.

(A) ***Reporting Requirements.*** Contractor must immediately notify the City of any death, serious injury or illness resulting from Work on the Project. Contractor must immediately provide a written report to City of each recordable accident or injury occurring at any Worksite within 24 hours of the occurrence. The written report must include: (1) the name and address of the injured or deceased person; (2) the name and address of each employee of Contractor or of any Subcontractor involved in the incident; (3) a detailed description of the incident, including precise location, time, and names and contact information for known witnesses; and (4) a police or first responder report, if applicable. If Contractor is required to file an accident report with a government agency, Contractor will provide a copy of the report to City.

(B) ***Legal Compliance.*** Contractor's safety program must comply with the applicable legal and regulatory requirements. Contractor must provide City with copies of all notices required by Laws.

(C) ***Contractor's Obligations.*** Any damage or loss caused by Contractor arising from the Work which is not insured under property insurance must be promptly remedied by Contractor.

(D) ***Remedies.*** If City determines, in its sole discretion, that any part of the Work or Project site is unsafe, City may, without assuming responsibility for Contractor's safety program, require Contractor or its Subcontractor to cease performance of the Work or to take corrective measures to City's satisfaction. If Contractor fails to promptly take the required corrective measures, City may perform them and deduct the cost from the Contract Price. Contractor agrees it is not entitled to submit a Claim for damages, for an increase in Contract Price, or for a change in Contract Time based on Contractor's compliance with City's request for corrective measures pursuant to this provision.

10.2 Hazardous Materials. Unless otherwise specified in the Contract Documents, this Contract does not include the removal, handling, or disturbance of any asbestos or other Hazardous Materials. If Contractor encounters materials on the Project site that Contractor reasonably believes to be asbestos or other Hazardous Materials, and the asbestos or other Hazardous Materials have not been rendered harmless, Contractor may continue Work in unaffected areas reasonably believed to be safe, but must immediately cease work on the area affected and report the condition to City. No asbestos, asbestos-containing products or other Hazardous Materials may be used in performance of the Work.

10.3 Material Safety. Contractor is solely responsible for complying with § 5194 of Title 8 of the California Code of Regulations, including by providing information to Contractor's employees about any hazardous chemicals to which they may be exposed in the course of the Work. A hazard communication program and other forms of warning and training about such exposure must be used. Contractor must also maintain Safety Data Sheets ("SDS") at the Project site, as required by Laws, for materials or substances used or

consumed in the performance of the Work. The SDS will be accessible and available to Contractor's employees, Subcontractors, and City.

(A) ***Contractor Obligations.*** Contractor is solely responsible for the proper delivery, handling, use, storage, removal, and disposal of all materials brought to the Project site and/or used in the performance of the Work. Contractor must notify the Engineer if a specified product or material cannot be used safely.

(B) ***Labeling.*** Contractor must ensure proper labeling on any material brought onto the Project site so that any persons working with or in the vicinity of the material may be informed as to the identity of the material, any potential hazards, and requirements for proper handling, protections, and disposal.

10.4 Hazardous Condition. Contractor is solely responsible for determining whether a hazardous condition exists or is created during the course of the Work, involving a risk of bodily harm to any person or risk of damage to any property. If a hazardous condition exists or is created, Contractor must take all precautions necessary to address the condition and ensure that the Work progresses safely under the circumstances. Hazardous conditions may result from, but are not limited to, use of specified materials or equipment, the Work location, the Project site condition, the method of construction, or the way any Work must be performed.

10.5 Emergencies. In an emergency affecting the safety or protection of persons, Work, or property at or adjacent to any Worksite, Contractor must take reasonable and prompt actions to prevent damage, injury, or loss, without prior authorization from the City if, under the circumstances, there is inadequate time to seek prior authorization from the City.

Article 11 - Completion and Warranty Provisions

11.1 Final Completion.

(A) ***Final Inspection and Punch List.*** When the Work required by this Contract is fully performed, Contractor must provide written notification to City requesting final inspection. The Engineer will schedule the date and time for final inspection, which must include Contractor's primary representative for this Project and its superintendent. Based on that inspection, City will prepare a punch list of any items that are incomplete, missing, defective, incorrectly installed, or otherwise not compliant with the Contract Documents. The punch list to Contractor will specify the time by which all of the punch list items must be completed or corrected. The punch list may include City's estimated cost to complete each punch list item if Contractor fails to do so within the specified time. The omission of any non-compliant item from a punch list will not relieve Contractor from fulfilling all requirements of the Contract Documents. Contractor's failure to complete any punch list item within the time specified in the punch list will not waive or abridge its warranty obligations for any such items that must be completed by the City or by a third party retained by the City due to Contractor's failure to timely complete any such outstanding item.

(B) ***Requirements for Final Completion.*** Final Completion will be achieved upon completion or correction of all punch list items, as verified by City's further inspection, and upon satisfaction of all other Contract requirements, including any commissioning required under the Contract Documents and submission of all final submittals, including instructions and manuals as required under Section 7.10, and complete, final as-built drawings as required under Section 7.11, all to City's satisfaction.

(C) ***Acceptance.*** The Project will be considered accepted upon City Council action during a public meeting to accept the Project, unless the Engineer is authorized to accept the Project, in which case the Project will be considered accepted upon the date of the Engineer's issuance of a written notice of acceptance. In order to avoid delay of Project close out, the City may elect, acting in its sole discretion, to accept the Project as complete subject to exceptions for punch list items that are not completed within the time specified in the punch list.

(D) ***Final Payment and Release of Retention.*** Final Payment and release of retention, less any sums withheld pursuant to the provisions of the Contract Documents, will not be made sooner than 35 days after recordation of the notice of completion. If Contractor fails to complete all of the punch list items within the specified time, City may withhold up to 150% of City's estimated cost to complete each of the remaining items from Final Payment and may use the withheld retention to pay for the costs to self-perform the outstanding items or to retain a third party to complete any such outstanding punch list item.

11.2 Warranty.

(A) ***General.*** Contractor warrants that all materials and equipment will be new unless otherwise specified, of good quality, in conformance with the Contract Documents, and free from defective workmanship and materials. Contractor further warrants that the Work will be free from material defects not intrinsic in the design or materials required in the Contract Documents. Contractor warrants that materials or items incorporated into the Work comply with the requirements and standards in the Contract Documents, including compliance with Laws, and that any Hazardous Materials encountered or used were handled as required by Laws. At City's request, Contractor must furnish satisfactory evidence of the quality and type of materials and equipment furnished. Contractor's warranty does not extend to damage caused by normal wear and tear, or improper use or maintenance.

(B) ***Warranty Period.*** Contractor's warranty must guarantee its Work for a period of one year from the date of Project acceptance (the "Warranty Period"), except when a longer guarantee is provided by a supplier or manufacturer or is required by the Specifications or Special Conditions. Contractor must obtain from its Subcontractors, suppliers and manufacturers any special or extended warranties required by the Contract Documents.

(C) ***Warranty Documents.*** As a condition precedent to Final Completion, Contractor must supply City with all warranty and guarantee documents relevant to equipment and materials incorporated into the Work and guaranteed by their suppliers or manufacturers.

(D) ***Subcontractors.*** The warranty obligations in the Contract Documents apply to Work performed by Contractor and its Subcontractors, and Contractor agrees to be co-guarantor of such Work.

(E) ***Contractor's Obligations.*** Upon written notice from City to Contractor of any defect in the Work discovered during the Warranty Period, Contractor or its responsible Subcontractor must promptly correct the defective Work at its own cost. Contractor's obligation to correct defects discovered during the Warranty Period will continue past the expiration of the Warranty Period as to any defects in Work for which Contractor was notified prior to expiration of the Warranty Period. Work performed during the Warranty Period ("Warranty Work") will be subject to the warranty provisions in this Section 11.2 for a one-year period that begins upon completion of such Warranty Work to City's satisfaction.

(F) ***City's Remedies.*** If Contractor or its responsible Subcontractor fails to correct defective Work within ten days following notice by City, or sooner if required by the circumstances, City may correct the defects to conform with the Contract Documents at Contractor's sole expense. Contractor must reimburse City for its costs in accordance with subsection (H), below.

(G) ***Emergency Repairs.*** In cases of emergency where any delay in correcting defective Work could cause harm, loss or damage, City may immediately correct the defects to conform with the Contract Documents at Contractor's sole expense. Contractor or its surety must reimburse City for its costs in accordance with subsection (H), below.

(H) ***Reimbursement.*** Contractor must reimburse City for its costs to repair under subsections (F) or (G), above, within 30 days following City's submission of a demand for payment pursuant to this provision. If City is required to initiate legal action to compel Contractor's compliance with this provision, and City is the prevailing party in such action, Contractor and its surety are solely responsible for all of City's attorney's fees and legal costs expended to enforce Contractor's warranty obligations herein, in addition to any and all costs City incurs to correct the defective Work.

11.3 Use Prior to Final Completion. City reserves the right to occupy or make use of the Project, or any portions of the Project, prior to Final Completion if City has determined that the Project or portion of it is in a condition suitable for the proposed occupation or use, and that it is in its best interest to occupy or make use of the Project, or any portions of it, prior to Final Completion.

(A) ***Non-Waiver.*** Occupation or use of the Project, in whole or in part, prior to Final Completion will not operate as acceptance of the Work or any portion of it, nor will it operate as a waiver of any of City's rights or Contractor's duties pursuant to these Contract Documents, and will not affect nor bear on the determination of the time of substantial completion with respect to any statute of repose pertaining to the time for filing an action for construction defect.

(B) ***City's Responsibility.*** City will be responsible for the cost of maintenance and repairs due to normal wear and tear with respect to those portions of the Project that are being occupied or used before Final Completion. The Contract Price or the Contract Time may be adjusted pursuant to the applicable provisions of these Contract Documents if, and only to the extent that, any occupation or use under this Section actually adds to Contractor's cost or time to complete the Work within the Contract Time.

11.4 Substantial Completion. For purposes of determining "substantial completion" with respect to any statute of repose pertaining to the time for filing an action for construction defect, "substantial completion" is deemed to mean the last date that Contractor or any Subcontractor performs Work on the Project prior to City acceptance of the Project, except for warranty work performed under this Article.

Article 12 - Dispute Resolution

12.1 Claims. This Article applies to and provides the exclusive procedures for any Claim arising from or related to the Contract or performance of the Work.

(A) ***Definition.*** "Claim" means a separate demand by Contractor, submitted in writing by registered or certified mail with return receipt requested, for a change in the Contract Time, including a time extension or relief from liquidated damages, or a change in the Contract Price, when the demand has previously been submitted to City in

accordance with the requirements of the Contract Documents, and which has been rejected or disputed by City, in whole or in part. A Claim may also include that portion of a unilateral Change Order that is disputed by the Contractor.

(B) ***Limitations.*** A Claim may only include the portion of a previously rejected demand that remains in dispute between Contractor and City. With the exception of any dispute regarding the amount of money actually paid to Contractor as Final Payment, Contractor is not entitled to submit a Claim demanding a change in the Contract Time or the Contract Price, which has not previously been submitted to City in full compliance with Article 5 and Article 6, and subsequently rejected in whole or in part by City.

(C) ***Scope of Article.*** This Article is intended to provide the exclusive procedures for submission and resolution of Claims of any amount and applies in addition to the provisions of Public Contract Code § 9204 and § 20104 et seq., which are incorporated by reference herein.

(D) ***No Work Delay.*** Notwithstanding the submission of a Claim or any other dispute between the parties related to the Project or the Contract Documents, Contractor must perform the Work and may not delay or cease Work pending resolution of a Claim or other dispute, but must continue to diligently prosecute the performance and timely completion of the Work, including the Work pertaining to the Claim or other dispute.

(E) ***Informal Resolution.*** Contractor will make a good faith effort to informally resolve a dispute before initiating a Claim, preferably by face-to-face meeting between authorized representatives of Contractor and City.

12.2 Claims Submission. The following requirements apply to any Claim subject to this Article:

(A) ***Substantiation.*** The Claim must be submitted to City in writing, clearly identified as a "Claim" submitted pursuant to this Article 12 and must include all of the documents necessary to substantiate the Claim including the Change Order request that was rejected in whole or in part, and a copy of City's written rejection that is in dispute. The Claim must clearly identify and describe the dispute, including relevant references to applicable portions of the Contract Documents, and a chronology of relevant events. Any Claim for additional payment must include a complete, itemized breakdown of all known or estimated labor, materials, taxes, insurance, and subcontract, or other costs. Substantiating documentation such as payroll records, receipts, invoices, or the like, must be submitted in support of each component of claimed cost. Any Claim for an extension of time or delay costs must be substantiated with a schedule analysis and narrative depicting and explaining claimed time impacts.

(B) ***Claim Format and Content.*** A Claim must be submitted in the following format:

(1) Provide a cover letter, specifically identifying the submission as a "Claim" submitted under this Article 12 and specifying the requested remedy (e.g., amount of proposed change to Contract Price and/or change to Contract Time).

(2) Provide a summary of each Claim, including underlying facts and the basis for entitlement, and identify each specific demand at issue, including the specific Change Order request (by number and submittal date), and the date of City's rejection of that demand, in whole or in part.

(3) Provide a detailed explanation of each issue in dispute. For multiple issues included within a single Claim or for multiple Claims submitted concurrently,

separately number and identify each individual issue or Claim, and include the following for each separate issue or Claim:

a. A succinct statement of the matter in dispute, including Contractor's position and the basis for that position;

b. Identify and attach all documents that substantiate the Claim, including relevant provisions of the Contract Documents, RFIs, calculations, and schedule analysis (see subsection (A), Substantiation, above);

c. A chronology of relevant events; and

d. Analysis and basis for claimed changes to Contract Price, Contract Time, or any other remedy requested.

(4) Provide a summary of issues and corresponding claimed damages. If, by the time of the Claim submission deadline (below), the precise amount of the requested change in the Contract Price or Contract Time is not yet known, Contractor must provide a good faith estimate, including the basis for that estimate, and must identify the date by which it is anticipated that the Claim will be updated to provide final amounts.

(5) Include the following certification, executed by Contractor's authorized representative:

"The undersigned Contractor certifies under penalty of perjury that its statements and representations in this Claim submittal are true and correct. Contractor warrants that this Claim submittal is comprehensive and complete as to the matters in dispute, and agrees that any costs, expenses, or delay not included herein are deemed waived."

(C) ***Submission Deadlines.***

(1) A Claim disputing rejection of a request for a change in the Contract Time or Contract Price must be submitted within 15 days following the date that City notified Contractor in writing that a request for a change in the Contract Time or Contract Price, duly submitted in compliance with Article 5 and Article 6, has been rejected in whole or in part. A Claim disputing the terms of a unilateral Change Order must be submitted within 15 days following the date of issuance of the unilateral Change Order. These Claim deadlines apply even if Contractor cannot yet quantify the total amount of any requested change in the Contract Time or Contract Price. If the Contractor cannot quantify those amounts, it must submit an estimate of the amounts claimed pending final determination of the requested remedy by Contractor.

(2) With the exception of any dispute regarding the amount of Final Payment, any Claim must be filed on or before the date of Final Payment or will be deemed waived.

(3) A Claim disputing the amount of Final Payment must be submitted within 15 days of the effective date of Final Payment, under Section 8.7, Final Payment.

(4) Strict compliance with these Claim submission deadlines is necessary to ensure that any dispute may be mitigated as soon as possible, and to facilitate

cost-efficient administration of the Project. ***Any Claim that is not submitted within the specified deadlines will be deemed waived by Contractor.***

12.3 City's Response. City will respond within 45 days of receipt of the Claim with a written statement identifying which portion(s) of the Claim are disputed, unless the 45-day period is extended by mutual agreement of City and Contractor or as otherwise allowed under Public Contract Code § 9204. However, if City determines that the Claim is not adequately substantiated pursuant to Section 12.2(A), Substantiation, City may first request in writing, within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim that City may have against the Claim.

(A) ***Additional Information.*** If additional information is thereafter required, it may be requested and provided upon mutual agreement of City and Contractor. If Contractor's Claim is based on estimated amounts, Contractor has a continuing duty to update its Claim as soon as possible with information on actual amounts in order to facilitate prompt and fair resolution of the Claim.

(B) ***Non-Waiver.*** Any failure by City to respond within the times specified above will not be construed as acceptance of the Claim, in whole or in part, or as a waiver of any provision of these Contract Documents.

12.4 Meet and Confer. If Contractor disputes City's written response, or City fails to respond within the specified time, within 15 days of receipt of City's response or within 15 days of City's failure to respond within the applicable 45-day time period under Section 12.3, respectively, Contractor may notify City of the dispute in writing sent by registered or certified mail, return receipt requested, and demand an informal conference to meet and confer for settlement of the issues in dispute. If Contractor fails to notify City of the dispute and demand an informal conference to meet and confer in writing within the specified time, Contractor's Claim will be deemed waived.

(A) ***Schedule Meet and Confer.*** Upon receipt of the demand to meet and confer, City will schedule the meet and confer conference to be held within 30 days, or later if needed to ensure the mutual availability of each of the individuals that each party requires to represent its interests at the meet and confer conference.

(B) ***Location for Meet and Confer.*** The meet and confer conference will be scheduled at a location at or near City's principal office.

(C) ***Written Statement After Meet and Confer.*** Within ten working days after the meet and confer has concluded, City will issue a written statement identifying which portion(s) of the Claim remain in dispute, if any.

(D) ***Submission to Mediation.*** If the Claim or any portion remains in dispute following the meet and confer conference, within ten working days after the City issues the written statement identifying any portion(s) of the Claim remaining in dispute, the Contractor may identify in writing disputed portion(s) of the Claim, which will be submitted for mediation, as set forth below.

12.5 Mediation and Government Code Claims.

(A) ***Mediation.*** Within ten working days after the City issues the written statement identifying any portion(s) of the Claim remaining in dispute following the meet and confer, City and Contractor will mutually agree to a mediator, as provided under Public Contract Code § 9204. Mediation will be scheduled to ensure the mutual availability of the selected mediator and all of the individuals that each party requires to represent its interests. If

there are multiple Claims in dispute, the parties may agree to schedule the mediation to address all outstanding Claims at the same time. The parties will share the costs of the mediator and mediation fees equally, but each party is otherwise solely and separately responsible for its own costs to prepare for and participate in the mediation, including costs for its legal counsel or any other consultants.

(B) ***Government Code Claims*.**

(1) Timely presentation of a Government Code Claim is a condition precedent to filing any legal action based on or arising from the Contract. Compliance with the Claim submission requirements in this Article 12 is a condition precedent to filing a Government Code Claim.

(2) The time for filing a Government Code Claim will be tolled from the time Contractor submits its written Claim pursuant to Section 12.2, above, until the time that Claim is denied in whole or in part at the conclusion of the meet and confer process, including any period of time used by the meet and confer process. However, if the Claim is submitted to mediation, the time for filing a Government Code Claim will be tolled until conclusion of the mediation, including any continuations, if the Claim is not fully resolved by mutual agreement of the parties during the mediation or any continuation of the mediation.

12.6 Tort Claims. This Article does not apply to tort claims and nothing in this Article is intended nor will be construed to change the time periods for filing tort-based Government Code Claims.

12.7 Arbitration. Upon agreement by the parties, any dispute arising out of or relating to the Contract may be settled by arbitration. The costs of arbitration are borne equally by the parties. It is expressly agreed, under Code of Civil Procedure § 1296, that in any arbitration to resolve a dispute relating to this Contract, the arbitrator's award must be supported by law and substantial evidence.

12.8 Burden of Proof and Limitations. Contractor bears the burden of proving entitlement to and the amount of any claimed damages. Contractor is not entitled to damages calculated on a total cost basis, but must prove actual damages. Contractor is not entitled to speculative, special, or consequential damages, including home office overhead or any form of overhead not directly incurred at the Project site or any other Worksite; lost profits; loss of productivity; lost opportunity to work on other projects; diminished bonding capacity; increased cost of financing for the Project; extended capital costs; non-availability of labor, material or equipment due to delays; or any other indirect loss arising from the Contract. The Eichleay Formula or similar formula will not be used for any recovery under the Contract. The City will not be directly liable to any Subcontractor or supplier.

12.9 Legal Proceedings. In any legal proceeding that involves enforcement of any requirements of the Contract Documents, the finder of fact will receive detailed instructions on the meaning and operation of the Contract Documents, including conditions, limitations of liability, remedies, claim procedures, and other provisions bearing on the defenses and theories of liability. Detailed findings of fact will be requested to verify enforcement of the Contract Documents. All of the City's remedies under the Contract Documents will be construed as cumulative, and not exclusive, and the City reserves all rights to all remedies available under law or equity as to any dispute arising from or relating to the Contract Documents or performance of the Work.

12.10 Other Disputes. The procedures in this Article 12 will apply to any and all disputes or legal actions, in addition to Claims, arising from or related to this Contract, including

disputes regarding suspension or early termination of the Contract, unless and only to the extent that compliance with a procedural requirement is expressly and specifically waived by City. Nothing in this Article is intended to delay suspension or termination under Article 13.

Article 13 - Suspension and Termination

13.1 Suspension for Cause. In addition to all other remedies available to City, if Contractor fails to perform or correct Work in accordance with the Contract Documents, including non-compliance with applicable environmental or health and safety Laws, City may immediately order the Work, or any portion of it, suspended until the circumstances giving rise to the suspension have been eliminated to City's satisfaction.

(A) ***Notice of Suspension.*** Upon receipt of City's written notice to suspend the Work, in whole or in part, except as otherwise specified in the notice of suspension, Contractor and its Subcontractors must promptly stop Work as specified in the notice of suspension; comply with directions for cleaning and securing the Worksite; and protect the completed and in-progress Work and materials. Contractor is solely responsible for any damages or loss resulting from its failure to adequately secure and protect the Project.

(B) ***Resumption of Work.*** Upon receipt of the City's written notice to resume the suspended Work, in whole or in part, except as otherwise specified in the notice to resume, Contractor and its Subcontractors must promptly re-mobilize and resume the Work as specified; and within ten days from the date of the notice to resume, Contractor must submit a recovery schedule, prepared in accordance with the Contract Documents, showing how Contractor will complete the Work within the Contract Time.

(C) ***Failure to Comply.*** Contractor will not be entitled to an increase in the Contract Time or Contract Price for a suspension occasioned by Contractor's failure to comply with the Contract Documents.

(D) ***No Duty to Suspend.*** City's right to suspend the Work will not give rise to a duty to suspend the Work, and City's failure to suspend the Work will not constitute a defense to Contractor's failure to comply with the requirements of the Contract Documents.

13.2 Suspension for Convenience. City reserves the right to suspend, delay, or interrupt the performance of the Work in whole or in part, for a period of time determined to be appropriate for City's convenience. Upon notice by City pursuant to this provision, Contractor must immediately suspend, delay, or interrupt the Work and secure the Project site as directed by City except for taking measures to protect completed or in-progress Work as directed in the suspension notice, and subject to the provisions of Section 13.1(A) and (B), above. If Contractor submits a timely request for a Change Order in compliance with Articles 5 and 6, the Contract Price and the Contract Time will be equitably adjusted by Change Order pursuant to the terms of Articles 5 and 6 to reflect the cost and delay impact occasioned by such suspension for convenience, except to the extent that any such impacts were caused by Contractor's failure to comply with the Contract Documents or the terms of the suspension notice or notice to resume. However, the Contract Time will only be extended if the suspension causes or will cause unavoidable delay in Final Completion. If Contractor disputes the terms of a Change Order issued for such equitable adjustment due to suspension for convenience, its sole recourse is to comply with the Claim procedures in Article 12.

13.3 Termination for Default. City may declare that Contractor is in default of the Contract for a material breach of or inability to fully, promptly, or satisfactorily perform its obligations under the Contract.

(A) ***Default.*** Events giving rise to a declaration of default include Contractor's refusal or failure to supply sufficient skilled workers, proper materials, or equipment to perform the Work within the Contract Time; Contractor's refusal or failure to make prompt payment to its employees, Subcontractors, or suppliers or to correct defective Work or damage; Contractor's failure to comply with Laws, or orders of any public agency with jurisdiction over the Project; evidence of Contractor's bankruptcy, insolvency, or lack of financial capacity to complete the Work as required within the Contract Time; suspension, revocation, or expiration and nonrenewal of Contractor's license or DIR registration; dissolution, liquidation, reorganization, or other major change in Contractor's organization, ownership, structure, or existence as a business entity; unauthorized assignment of Contractor's rights or duties under the Contract; or any material breach of the Contract requirements.

(B) ***Notice of Default and Opportunity to Cure.*** Upon City's declaration that Contractor is in default due to a material breach of the Contract Documents, if City determines that the default is curable, City will afford Contractor the opportunity to cure the default within ten days of City's notice of default, or within a period of time reasonably necessary for such cure, including a shorter period of time if applicable.

(C) ***Termination.*** If Contractor fails to cure the default or fails to expediently take steps reasonably calculated to cure the default within the time period specified in the notice of default, City may issue written notice to Contractor and its performance bond surety of City's termination of the Contract for default.

(D) ***Waiver.*** Time being of the essence in the performance of the Work, if Contractor's surety fails to arrange for completion of the Work in accordance with the Performance Bond within seven calendar days from the date of the notice of termination pursuant to paragraph (C), City may immediately make arrangements for the completion of the Work through use of its own forces, by hiring a replacement contractor, or by any other means that City determines advisable under the circumstances. Contractor and its surety will be jointly and severally liable for any additional cost incurred by City to complete the Work following termination, where "additional cost" means all cost in excess of the cost City would have incurred if Contactor had timely completed Work without the default and termination. In addition, City will have the right to immediate possession and use of any materials, supplies, and equipment procured for the Project and located at the Project site or any Worksite on City property for the purposes of completing the remaining Work.

(E) ***Compensation*****.** Within 30 days of receipt of updated as-builts, all warranties, manuals, instructions, or other required documents for Work installed to date, and delivery to City of all equipment and materials for the Project for which Contractor has already been compensated, Contractor will be compensated for the Work satisfactorily performed in compliance with the Contract Documents up to the effective date of the termination pursuant to the terms of Article 8, Payment, subject to City's rights to withhold or deduct sums from payment otherwise due pursuant to Section 8.3, and excluding any costs Contractor incurs as a result of the termination, including any cancellation or restocking charges or fees due to third parties. If Contractor disputes the amount of compensation determined by City, its sole recourse is to comply with the Claim Procedures in Article 12, by submitting a Claim no later than 30 days following notice from City of the total compensation to be paid by City.

(F) ***Wrongful Termination.*** If Contractor disputes the termination, its sole recourse is to comply with the Claim procedures in Article 12. If a court of competent jurisdiction or an arbitrator later determines that the termination for default was wrongful, the termination will be deemed to be a termination for convenience, and Contractor's damages will be strictly limited to the compensation provided for termination for convenience under Section 13.4, below. Contractor waives any claim for any other damages for wrongful termination including special or consequential damages, lost opportunity costs, or lost profits, and any award of damages is subject to Section 12.8, Burden of Proof and Limitations.

13.4 Termination for Convenience. City reserves the right, acting in its sole discretion, to terminate all or part of the Contract for convenience upon written notice to Contractor.

(A) ***Compensation to Contractor.*** In the event of City's termination for convenience, Contractor waives any claim for damages, including for loss of anticipated profits from the Project. The following will constitute full and fair compensation to Contractor, and Contractor will not be entitled to any additional claim or compensation:

(1) *Completed Work.* The value of its Work satisfactorily performed as of the date notice of termination is received, based on Contractor's schedule of values and unpaid costs for items delivered to the Project site that were fabricated for incorporation in the Work;

(2) *Demobilization.* Demobilization costs specified in the schedule of values, or if demobilization costs were not provided in a schedule of values pursuant to Section 8.1, then based on actual, reasonable, and fully documented demobilization costs; and

(3) *Termination Markup.* Five percent of the total value of the Work performed as of the date of notice of termination, including reasonable, actual, and documented costs to comply with the direction in the notice of termination for convenience, and demobilization costs, which is deemed to cover all overhead and profit to date.

(B) ***Disputes.*** If Contractor disputes the amount of compensation determined by City pursuant to paragraph (A), above, its sole recourse is to comply with the Claim procedures in Article 12, by submitting a Claim no later than 30 days following notice from City of total compensation to be paid by City.

13.5 Actions Upon Termination for Default or Convenience. The following provisions apply to any termination under this Article, whether for default or convenience, and whether in whole or in part.

(A) ***General.*** Upon termination, City may immediately enter upon and take possession of the Project and the Work and all tools, equipment, appliances, materials, and supplies procured or fabricated for the Project. Contractor will transfer title to and deliver all completed Work and all Work in progress to City.

(B) ***Submittals.*** Unless otherwise specified in the notice of termination, Contractor must immediately submit to City all designs, drawings, as-built drawings, Project records, contracts with vendors and Subcontractors, manufacturer warranties, manuals, and other such submittals or Work-related documents required under the terms of the Contract Documents, including incomplete documents or drafts.

(C) ***Close Out Requirements.*** Except as otherwise specified in the notice of termination, Contractor must comply with all of the following:

(1) Immediately stop the Work, except for any Work that must be completed pursuant to the notice of termination and comply with City's instructions for cessation of labor and securing the Project and any other Worksite(s).

(2) Comply with City's instructions to protect the completed Work and materials, using best efforts to minimize further costs.

(3) Contractor must not place further orders or enter into new subcontracts for materials, equipment, services or facilities, except as may be necessary to complete any portion of the Work that is not terminated.

(4) As directed in the notice, Contractor must assign to City or cancel existing subcontracts that relate to performance of the terminated Work, subject to any prior rights, if any, of the surety for Contractor's performance bond, and settle all outstanding liabilities and claims, subject to City's approval.

(5) As directed in the notice, Contractor must use its best efforts to sell any materials, supplies, or equipment intended solely for the terminated Work in a manner and at market rate prices acceptable to City.

(D) ***Payment Upon Termination.*** Upon completion of all termination obligations, as specified herein and in the notice of termination, Contractor will submit its request for Final Payment, including any amounts due following termination pursuant to this Article 13. Payment will be made in accordance with the provisions of Article 8, based on the portion of the Work satisfactorily completed, including the close out requirements, and consistent with the previously submitted schedule of values and unit pricing, including demobilization costs. Adjustments to Final Payment may include deductions for the cost of materials, supplies, or equipment retained by Contractor; payments received for sale of any such materials, supplies, or equipment, less re-stocking fees charged; and as otherwise specified in Section 8.3, Adjustment of Payment Application.

(E) ***Continuing Obligations.*** Regardless of any Contract termination, Contractor's obligations for portions of the Work already performed will continue and the provisions of the Contract Documents will remain in effect as to any claim, indemnity obligation, warranties, guarantees, submittals of as-built drawings, instructions, or manuals, record maintenance, or other such rights and obligations arising prior to the termination date.

Article 14 - Miscellaneous Provisions

14.1 Assignment of Unfair Business Practice Claims. Under Public Contract Code § 7103.5, Contractor and its Subcontractors agree to assign to City all rights, title, and interest in and to all causes of action it may have under section 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 (commencing with § 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Contract or any subcontract. This assignment will be effective at the time City tenders Final Payment to Contractor, without further acknowledgement by the parties.

14.2 Provisions Deemed Inserted. Every provision of law required to be inserted in the Contract Documents is deemed to be inserted, and the Contract Documents will be construed and enforced as though such provision has been included. If it is discovered that through mistake or otherwise that any required provision was not inserted, or not correctly inserted, the Contract Documents will be deemed amended accordingly.

14.3 Waiver. City's waiver of a breach, failure of any condition, or any right or remedy contained in or granted by the provisions of the Contract Documents will not be effective unless it is in writing and signed by City. City's waiver of any breach, failure, right, or remedy will not be deemed a waiver of any other breach, failure, right, or remedy, whether or not similar, nor will any waiver constitute a continuing waiver unless specified in writing by City.

14.4 Titles, Headings, and Groupings. The titles and headings used and the groupings of provisions in the Contract Documents are for convenience only and may not be used in the construction or interpretation of the Contract Documents or relied upon for any other purpose.

14.5 Statutory and Regulatory References. With respect to any amendments to any statutes or regulations referenced in these Contract Documents, the reference is deemed to be the version in effect on the date that bids were due.

14.6 Survival. The provisions that survive termination or expiration of this Contract include Contract Section 11, Notice, and subsections 12.1, 12.2, 12.3, 12.4, 12.5, and 12.6 of Section 12, General Provisions; and the following provisions in these General Conditions: Section 2.2(J), Contractor's Records, Section 2.3(C), Termination, Section 3.7, Ownership, Section 4.2, Indemnity, Article 12, Dispute Resolution, and Section 11.2, Warranty.

END OF GENERAL CONDITIONS

Special Conditions

1. Authorized Work Days and Hours.

1.1 Authorized Work Days. Except as expressly authorized in writing by City, Contractor is limited to performing Work on the Project on the following days of the week, excluding holidays observed by City: Monday – Friday.

1.2 Authorized Work Hours. Except as expressly authorized in writing by City, Contractor is limited to performing Work on the Project during the following hours: 7:00am - 7:00pm.

2. *Pre-Construction Conference.* City will designate a date and time for a pre-construction conference with Contractor following Contract execution. Project administration procedures and coordination between City and Contractor will be discussed, and Contractor must present City with the following information or documents at the meeting for City's review and acceptance before the Work commences:

2.1 Name, 24-hour contact information, and qualifications of the proposed on-site superintendent;

2.2 List of all key Project personnel and their complete contact information, including email addresses and telephone numbers during regular hours and after hours;

2.3 Staging plans that identify the sequence of the Work, including any phases and alternative sequences or phases, with the goal of minimizing the impacts on residents, businesses and other operations in the Project vicinity;

2.4 If required, traffic control plans associated with the staging plans that are signed and stamped by a licensed traffic engineer;

2.5 Draft baseline schedule for the Work as required under Section 5.2 of the General Conditions, to be finalized within ten days after City issues the Notice to Proceed;

2.6 Breakdown of lump sum bid items, to be used for determining the value of Work completed for future progress payments to Contractor;

2.7 Schedule with list of Project submittals that require City review, and list of the proposed material suppliers;

2.8 Plan for coordination with affected utility owner(s) and compliance with any related permit requirements;

2.9 Videotape and photographs recording the conditions throughout the pre-construction Project site, showing the existing improvements and current condition of the curbs, gutters, sidewalks, signs, landscaping, streetlights, structures near the Project such as building faces, canopies, shades and fences, and any other features within the Project area limits;

2.10 Any other documents specified in the Special Conditions or Notice of Potential Award.

END OF SPECIAL CONDITIONS

EXHIBIT B

Negotiated Bid Proposal

Central Park Playground Improvements Project

Suarez and Munoz Construction, Inc. ("Bidder") hereby submits this negotiated Bid Proposal to the City of San Mateo ("City") for the above-referenced project ("Project") in response to the Notice Inviting Bids, and to the City of San Mateo's City Council Resolution No. 91 (2024), passed on October 7th, 2024, and in accordance with the revised Contract Documents, dated January 13, 2025.

1. **Negotiated Bid Proposal.** Bidder proposes to perform and fully complete the Work for the Project as specified in the revised Contract Documents, within the time required for full completion of the Work, including all labor, materials, supplies, and equipment and all other direct or indirect costs including, but not limited to, taxes, insurance and all overhead, for the following price ("Lump Sum Bid"):

   $ 8,485,784- .

2. **Bid Alternates.** Bidder submits the following prices for all the specified bid additive alternates, which are fully inclusive of all costs associated with the specified alternate, including, but not limited to, all labor, materials, supplies, and equipment incidental to or required for complete incorporation of the alternate:

   Add: $ N/A

3. **Addenda.** Bidder agrees that it has confirmed receipt of or access to, and reviewed, all addenda issued for this bid. Bidder waives any claims it might have against the City based on its failure to receive, access, or review any addenda for any reason. Bidder specifically acknowledges receipt of the following addenda:

Addendum:	Date Received:	Addendum:	Date Received:
#01	7/9/2024	#05	Revised Bid Proposal Form 1/13/2025
#02	7/23/2024	#06	Revised Construction Documents 1/13/2025
#03	8/19/2024	#07	_____
#04	8/22/2024	#08	_____

4. **Bidder's Certifications and Warranties.** By signing and submitting this negotiated Bid Proposal, Bidder certifies and warrants the following:

   4.1 **Examination of Revised Contract Documents.** Bidder has thoroughly examined the revised Contract Documents and represents that, to the best of Bidder's knowledge, there are no errors, omissions, or discrepancies in the Contract Documents, subject to the limitations of Public Contract Code § 1104.

4.2 **Examination of Worksite.** Bidder has had the opportunity to examine the Worksite and local conditions at the Project location.

4.3 **Bidder Responsibility.** Bidder is a responsible bidder, with the necessary ability, capacity, experience, skill, qualifications, workforce, equipment, and resources to perform or cause the Work to be performed in accordance with the Contract Documents and within the Contract Time.

4.4 **Responsibility for Bid.** Bidder has carefully reviewed this Bid Proposal and is solely responsible for any errors or omissions contained in its completed bid. All statements and information provided in this Bid Proposal and enclosures are true and correct to the best of Bidder's knowledge.

4.5 **Nondiscrimination.** In preparing this bid, the Bidder has not engaged in discrimination against any prospective or present employee or Subcontractor on grounds of race, color, ancestry, national origin, ethnicity, religion, sex, sexual orientation, age, disability, or marital status.

4.6 **Iran Contracting Act.** If the Contract Price exceeds $1,000,000, Bidder is not identified on a list created under the Iran Contracting Act, Public Contract Code § 2200 et seq. (the "Act"), as a person engaging in investment activities in Iran, as defined in the Act, or is otherwise expressly exempt under the Act.

5. **Award of Contract.** By signing and submitting this Bid Proposal, Bidder agrees that if City issues the Notice of Potential Award to Bidder, then within ten days following issuance of the Notice of Potential Award to Bidder, Bidder will do all of the following:

5.1 **Execute Contract.** Enter into the Contract with City in accordance with the terms of this Bid Proposal, by signing and submitting to City the Contract prepared by City using the form included with the revised Contract Documents;

5.2 **Submit Required Bonds.** Submit to City a payment bond and a performance bond, each for 100% of the Contract Price, using the bond forms provided and in accordance with the requirements of the revised Contract Documents; and

5.3 **Insurance Requirements.** Submit to City the insurance certificate(s) and endorsement(s) as required by the revised Contract Documents; and

5.4 **Certificates of Reported Compliance.** Submit to City valid Certificates of Reported Compliance for its fleet and its listed Subcontractors, if applicable, if the Project involves the use of vehicles subject to the Off-Road Regulation. (See Section 16 of the Instructions to Bidders.)

6. **Bid Security.** As a guarantee that, if awarded the Contract, Bidder will perform its obligations under Section 5 above, Bidder is enclosing bid security in the amount of ten percent of its maximum bid amount in one of the following forms (check one):

____ A cashier's check or certified check payable to City and issued by _____ [Bank name] in the amount of $_____.

✓ A bid bond, using the Bid Bond form included with the revised Contract Documents, payable to City and executed by a surety licensed to do business in the State of California.

This Bid Proposal is hereby submitted on January 14th, 2025.

s/ _____
Martin P. Munoz, President
Name and Title

s/ _____
John P. Suarez, Secretary / Treasurer
[See Section 3 of Instructions to Bidders] Name and Title

Suarez & Munoz Construction, Inc.
873996 Exp. 3/31/2026 A, B, C8, C27
Company Name License #, Expiration Date, and Classification

2490 American Ave.
1000004125
Address DIR Registration #

Hayward, CA 94545
City, State, Zip Phone

John P. Suarez
john@suarezmunoz.com
Contact Name Contact Email

END OF BID PROPOSAL

Subcontractor List

For each Subcontractor that will perform a portion of the Work in an amount in excess of one-half of 1% of the Bidder's total Base Bid,[1] the bidder must list a description of the Work, the name of the Subcontractor, its California contractor license number, the location of its place of business, its DIR registration number, and the portion of the Work that the Subcontractor is performing based on a percentage of the Base Bid price.

DESCRIPTION OF WORK	SUBCONTRACTOR NAME	CALIFORNIA CONTRACTOR LICENSE NO.	LOCATION OF BUSINESS	DIR REG. NO.	PERCENT OF WORK
Electrical	Bear Electrical	982079	Alviso	1000002158	4.3
Fencing & Misc Metals	Ahlborn Fence & Steel	793504	Santa Rosa	1000001160	2.1
PIP	Robertson Ind.	667261	Tempe, AZ	1000002700	0.6

END OF SUBCONTRACTOR LIST

[1] For street or highway construction, this requirement applies to any subcontract of $10,000 or more.

EXHIBIT C

CITY OF SAN MATEO

CENTRAL PARK PLAYGROUND IMPROVEMENTS

50 E 5TH AVE, SAN MATEO, CA 94401

PROJECT PLANS AND SPECIFICATIONS
REVISED JANUARY 13, 2025

PROJECT DIRECTORY

OWNER
City of San Mateo
330 W. 20th Avenue — Phone: (650) 522-7404
San Mateo, CA 94403
Joanne Magrini, Director of Parks and Recreation

LANDSCAPE ARCHITECT / CIVIL / STRUCTURAL
RRM Design Group
325 Davis Street — Phone: (805) 543-1794
San Leandro, CA 94577
Marisa Peltier, PLA

ELECTRICAL ENGINEER
Otto Electrical
793 E. Foothill Blvd. A23 — Phone: (805)459-4329
San Luis Obispo, CA 93401
Garrett Otto, PE

GEOTECHNICAL ENGINEER
Ninyo & Moore
2020 Challenger Dr., Ste. 103 — Phone: (510)343-3000
Alameda, CA 94501
Ransom Hennefer, PE, GE

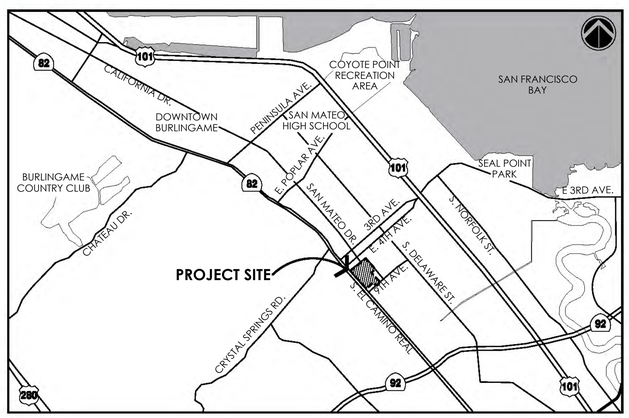


SHEET INDEX

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G005	PROJECT MITIGATION MEASURES	LC502	CONSTRUCTION DETAILS
G100	SITE REFERENCE PLAN	LC503	CONSTRUCTION DETAILS
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CD101	DEMOLITION PLAN	LI001	IRRIGATION SCHEDULE AND NOTES
CD102	TREE PROTECTION PLAN	LI101	IRRIGATION PLAN
CD501	CITY TREE PROTECTION DETAILS	LI501	IRRIGATION DETAILS
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VICINITY MAP

NOT TO SCALE



PROJECT DESCRIPTION

PROJECT AREA: APPROX. 1 ACRE

THIS PROJECT CONSISTS OF THE COMPLETE RENOVATION OF THE PLAYGROUND AREA AT CENTRAL PARK. THE PROJECT GENERALLY INCLUDES, BUT IS NOT LIMITED TO:

- DEMOLITION OF EXISTING SITE IMPROVEMENTS, INCLUDING RESTROOM BUILDING, CONCRETE AND ASPHALT WALKWAYS, PLAYGROUND EQUIPMENT, SITE FURNISHINGS, EXISTING UTILITIES, AND SELECT TREES.
- TREE PROTECTION MEASURES FOR EXISTING ON-SITE TREES.
- PLAYGROUND AREAS WITH CUSTOM PLAY EQUIPMENT, SITE-BUILT FEATURES, AND PROTECTIVE SURFACING.
- PRE-MANUFACTURED ELEVATED BOARDWALK SYSTEM.
- PAVEMENT, WALLS, DECORATIVE FENCE AND PIER, PICNIC AREAS, SITE FURNISHINGS, AND ENTRY MONUMENT.
- PRE-MANUFACTUREDT RESTROOM BUILDING AND ASSOCIATED UTILITIES.
- PRE-ENGINEERED PICNIC SHELTER.
- SITE UTILITIES, INCLUDING SEWER, WATER AND ELECTRICAL.
- NEW IRRIGATION SYSTEM UTILIZING EXISTING WELL WATER POINT OF CONNECTION.
- NEW TREE, SHRUB, AND TURF-GRASS PLANTING.
- UTILITY AND REPAVING WORK ON CA STATE ROUTE 82 UNDER JURISDICTION OF CALTRANS DISTRICT 4.

DEFERRED SUBMITTALS

1. PRE-MANUFACTURED SHADE STRUCTURE AND ASSOCIATED FOUNDATIONS (SEE SHEET Z101 FOR SCHEMATIC DRAWINGS).
2. PRE-MANUFACTURED ELEVATED BOARDWALK SYSTEM (SEE SHEETS Z103-Z108 FOR SCHEMATIC DRAWINGS, SEE S-201 FOR FOUNDATIONS).
3. TRAFFIC CONTROL PLAN AS PART OF THE OWNER-FILED ENCROACHMENT PERMIT APPLICATION WITH CALTRANS.

APPROVED BY

CITY OF SAN MATEO

SIGNATURE — DATE

NAME

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rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT — MARISA A. PELTIER No. 6424 — 6-30-26 — STATE OF CALIFORNIA

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

TITLE SHEET

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier

DRAWN BY	CHECKED BY
MP/YI	LM

DATE
JANUARY 13, 2025

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
G001

M:\1652\1652-02-RC22\Central Park Playground\Master\Drawings\Landscape-Architecture\PLANSHEETS\Dwg\Dwgs\Sheet Files\15-1652-02-RC17-Dwg - G001 - Rev 05, 2022 - 1:53pm, mpeltier

ABBREVIATIONS

AB	AGGREGATE BASE OR ANCHOR BOLT
ABV	ABOVE
AC	ASPHALTIC CONCRETE
ACP	ASPHALTIC CONCRETE PAVING
ADJ	ADJACENT
AGG	AGGREGATE
ALT	ALTERNATE
AP	ANGLE POINT
APPROX	APPROXIMATE
ARCH	ARCHITECT (URAL)
BEL	BELOW
BLDG	BUILDING
BLK	BLOCK
BOT	BOTTOM
BOW	BACK OF WALK
BR	BOTTOM OF RAMP
BRG	BEARING
CB	CATCH BASIN
CF	CUBIC FOOT
CI	CAST IRON
CIP	CAST IN PLACE
C/L	CENTERLINE
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS, CONTINUE
CP	CENTER POINT
CR	CURB RETURN
CTC	CENTER TO CENTER
CTR	CENTER
DAS	DIRECTION AS SHOWN
DET	DETAIL
DF	DRINKING FOUNTAIN
DI	DRAIN INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DS	DOWN SPOUT
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
ELECT	ELECTRICAL
ELEV	ELEVATION
ENCL	ENCLOSURE
EQ	EQUAL
EQPT	EQUIPMENT
ESMT	EASEMENT
EWF	ENGINEERED WOOD FIBER
EX	EXISTING
EXIST	EXISTING
(E)	EXISTING
FAB	FABRICATION
FBO	FURNISHED BY OTHERS
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FIN	FINISH (ED)
FL	FLOWLINE
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STEP
FND	FOUNDATION
FS	FINISHED SURFACE
FST	FINISHED SURFACE TURF
FTG	FOOTING
FUT	FUTURE
GA	GAGE, GAUGE
GB	GRADE BREAK
GKT	GASKET
GLV	GALVANIZED
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRATE
HB	HOSE BIB
HC	HANDICAPPED
HCAP	HANDICAPPED
HDB	HEADBOARD
HEX	HEXAGONAL
HOR	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
ID	INSIDE DIAMETER
INT	INTERSECTION
INV	INVERT
JT	JOINT
L	LENGTH
LB	LAG BOLT
LH	LEFT HAND
LOC	LOCATION
LP	LOW POINT
LS	LAG SCREW
LT	LEFT
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MED	MEDIUM
MFG	MANUFACTURING
MFR	MANUFACTURE(R)
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MAINLINE
(N)	NEW
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC, O/C	ON CENTER
OCEW	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
O.F.C.I. INSTALLED	OWNER FURNISHED, CONTRACTOR
OH	OVERHEAD
OPP	OPPOSITE
OPT	OPTIONAL
PA	PLANTER AREA
PC	POINT OF CURVE
PERF	PERFORATE (D)
PERP	PERPENDICULAR
PFE	PUBLIC FACILITIES EASEMENT
PL	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
PRC	POINT OF REVERSE CURVE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PT	POINT, POINT OF TANGENCY
PTDF	PRESSURE TREATED DOUGLAS FIR
PTL	PRESSURE TREATED LUMBER
PUE	PUBLIC UTILITIES EASEMENT
PVC	POLYVINYL CHLORIDE
R, RAD	RADIUS
RDWD	REDWOOD
REBAR	REINFORCING BAR
REF	REFERENCE
REM	REMOVE
REQ'D	REQUIRED
REV	REVISION(S), REVISED
RH	RIGHT HAND
ROW	RIGHT OF WAY
RT	RIGHT
S	SLOPE
SCH	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SL	SLOPE
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	SANITARY SEWER
S/S	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STRUC	STRUCTURE/ STRUCTURAL
SURF	SURFACE
SWCL	SIDEWALK CENTERLINE
SYS	SYSTEM
SYN	SYNTHETIC
TBC	TOP BACK OF CURB
TC	TOP OF CURB
TF	TOP OF FOOTING
TP	TANGENT POINT
TR	TOP OF RAMP
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VAR	VARIES
V.I.F.	VERIFY IN FIELD
VERT	VERTICAL
W	WATER
W/	WITH
W/O	WITHOUT
@	AT
℄	CENTERLINE
Ø	DIAMETER
SF	SQUARE FEET

NOTE: THESE ABBREVIATIONS ARE GENERAL FOR THE SET. OTHER ABBREVIATIONS SPECIFIC TO DISCIPLINE SETS AND/OR INDICATED ON SHEETS OR SPECIFICATION SHALL SUPERCEDE THIS LIST.

KEY TO SHEET NUMBERING

DRAWING SHEET NUMBERING AND ORGANIZATION IS ADAPTED FROM THE UNITED STATES NATIONAL CAD STANDARD.

DISCIPLINE DESIGNATORS - LEVEL 1 (Partial List)

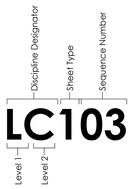
G	General
R	Resource (Existing Conditions)
H	Hazardous Materials
V	Survey/Mapping
B	Geotechnical
C	Civil
L	Landscape
S	Structural
A	Architectural
E	Electrical
Z	Contractor/Shop Drawings

DISCIPLINE DESIGNATORS - LEVEL 2 (Partial List)

D	Demolition
S	Site
G	Grading
E	Erosion Control
U	Utilities
C	Construction
I	Irrigation
P	Planting
L	Lighting
W	Stormwater
H	Horizontal Control

SHEET TYPES

0	General: Symbol legend, abbreviations, general notes.
1	Plans
2	Elevations
3	Sections
4	Large Scale Drawings: plans, elevations, sections (not details)
5	Details
6	Schedules, Diagrams and Reports
7	3D Drawings: isometric, perspective, photos



Example
Sheet number at left (LC103) is LANDSCAPE CONSTRUCTION PLAN, THIRD SHEET.

TYPICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
X / Y	DETAIL CALLOUT, WHERE 'X' = DETAIL NUMBER, AND 'Y' = PAGE NUMBER
X / Y	SECTION CALLOUT, WHERE 'X' = SECTION NUMBER AND 'Y' = PAGE NUMBER
X / Y	ELEVATION CALLOUT, WHERE 'X' = ELEVATION NUMBER AND 'Y' = PAGE NUMBER
	BREAKLINE
	LIMIT OF WORK LINE
	CENTERLINE
	SAWCUT LINE AT EXISTING IMPROVEMENTS
GB	GRADE BREAK
EXTENTS OF ROOT FLARE; 31	EXISTING TREE TRUNK AND CANOPY *NUMBER CORRESPONDS TO ARBORIST REPORT

NOTE: DISCIPLINE-SPECIFIC SYMBOLS ARE SHOWN ON THEIR RESPECTIVE SHEETS.

GENERAL CONSTRUCTION NOTES

1. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL TIE-IN CONDITIONS FOR GRADING, DRAINAGE, AND UNDERGROUND FACILITIES, INCLUDING LOCATION AND ELEVATION OF EXISTING FACILITIES AT CROSSINGS WITH PROPOSED UNDERGROUND FACILITIES. IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CITY AND SHALL NOT BEGIN CONSTRUCTION UNTIL THE CHANGED CONDITIONS HAVE BEEN EVALUATED AND RESOLVED.
2. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE PLANS AND SITE CONDITIONS PRIOR TO BEGINNING WORK. SHOULD CONFLICTING INFORMATION BE FOUND ON THE PLANS, THE CONTRACTOR SHALL NOTIFY AND RECEIVE DIRECTION FROM THE CITY BEFORE PROCEEDING WITH THE WORK IN QUESTION.
3. ONLY "APPROVED" STAMPED AND SIGNED DRAWINGS SHALL BE USED FOR THE CONSTRUCTION OF THIS PROJECT.
4. NO CHANGES OR MODIFICATIONS TO THE PLANS SHALL BE MADE WITHOUT THE PRIOR WRITTEN APPROVAL OF THE CITY.
5. CONSULT WITH THE CITY ARBORIST PRIOR TO PRUNING OR WORKING WITHIN THE TREE PROTECTION ZONE OF ANY TREE. ALL PRUNING OF TREES SHALL BE KEPT TO A MINIMUM AND MUST FOLLOW CITY OF SAN MATEO STANDARDS.
6. NO TREES, OTHER THAN THOSE INDICATED ON THE DRAWINGS, SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE CITY ARBORIST.
7. NO MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN THE DRIPLINE OF ANY TREE.
8. ALL NUMERIC AND WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER ALL SCALE DIMENSIONS.
9. DETAILS AND NOTES ON THE DRAWINGS TAKE PRECEDENCE OVER TYPICAL DETAILS AND GENERAL NOTES. WRITTEN SPECIFICATIONS TAKE PRECEDENCE OVER DRAWINGS.
10. ALL CONSTRUCTION SHALL CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS. IN THE ABSENCE OF A SPECIFIED STANDARD OR SPECIFICATION, WORK SHALL CONFORM TO THE CURRENT CITY OF SAN MATEO STANDARDS. IF NONE EXISTS, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK), SHALL APPLY.
11. CONTRACTOR SHALL USE PRECAUTION TO PREVENT DISRUPTION OF PROJECT SITE IN AREAS OUTSIDE CONSTRUCTION ZONE. DAMAGES SHALL BE REPLACED OR REPAIRED BY CONTRACTOR. CONTRACTOR SHALL SUBMIT VIDEO LOG OF CONSTRUCTION SITE THROUGHOUT DURATION OF PROJECT.
12. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 48 HOURS BEFORE COMMENCING WORK.
13. PROPOSED DEVIATIONS FROM THE PLANS MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL, INCLUDING FIELD REVISIONS REQUESTED BY THE CITY INSPECTOR.
14. THE CONTRACTOR SHALL EMPLOY ALL LABOR, EQUIPMENT, AND METHODS REQUIRED TO PREVENT HIS OPERATIONS FROM PRODUCING DUST IN AMOUNTS DAMAGING TO PROPERTY, CULTIVATED OR NATIVE VEGETATION, AND DOMESTIC AND NON-DOMESTIC ANIMALS OR CAUSING A NUISANCE TO PERSONS OCCUPYING BUILDINGS IN THE VICINITY OF THE JOB SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST RESULTING FROM HIS OPERATIONS.
15. CONSTRUCTION LINE AND GRADE STAKES SHALL BE SET BY A CONTRACTOR'S CIVIL ENGINEER OR SURVEYOR LICENSED IN THE STATE OF CALIFORNIA.
16. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OR PROPER RESETTING OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS. ANY SURVEY MONUMENTS DESTROYED BY THE CONTRACTOR SHALL BE REPLACED IN ACCORDANCE WITH THE STATE LAND SURVEYORS ACT AT THE CONTRACTOR'S EXPENSE.
17. ALL PROTECTIVE DEVICES TO BE INSTALLED BY THE CONTRACTOR, SHALL BE IN PLACE AT THE END OF EACH WORK DAY. A SAFE PEDESTRIAN ADA COMPLIANT PATH OF TRAVEL SHALL BE PROVIDED AT ALL TIMES TO AND FROM OTHER PARK FEATURES TO PARKING FACILITIES. COORDINATE PEDESTRIAN WALK CLOSURES WITH CITY PRIOR TO CONSTRUCTION.
18. CONTRACTOR SHALL REFER TO MATERIALS SPECIFICATIONS THROUGHOUT THE APPROVED PLAN SET AND SPECIFICATIONS. ANY SUBSTITUTIONS OF THE MATERIALS SPECIFIED IN THESE DOCUMENTS SHALL REQUIRE WRITTEN APPROVAL FROM THE CITY.
19. DURING THE COURSE OF WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING THE CITY OF SAN MATEO FOR TESTING AND INSPECTION 48 HOURS IN ADVANCE. WORK NOT PROPERLY TESTED AND INSPECTED WILL BE SUBJECT TO REJECTION.
20. WORK IN AND ALONG PUBLIC STREETS AND PARKING LOTS, ONCE BEGUN, SHALL PROCEED TO COMPLETION WITHOUT DELAY SO AS TO PROVIDE MINIMUM INCONVENIENCE TO THE PUBLIC.
21. SUBSURFACE UTILITY DATA IS DEPICTED TO LEVEL C OF CI/ASCE 38-02 AS DEFINED IN THE GUIDANCE OF THE EXISTING UTILITY DATA. CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF LOCATION OF ALL EXISTING ABOVE AND BELOW GRADE UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION. ALL UTILITIES SHALL BE PROTECTED AND REPAIRED BY THE CONTRACTOR IF DAMAGED. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF ALL UTILITY COMPANIES 48 HOURS PRIOR TO THE BEGINNING OF WORK. BRING ANY CONFLICTS WITH NEW IMPROVEMENTS IMMEDIATELY TO THE ATTENTION OF THE CITY.
22. CONTRACTOR SHALL PROVIDE A LEGIBLE AND COMPLETE SET OF AS-CONSTRUCTED PLANS IDENTIFYING ALL MODIFICATIONS MADE DURING CONSTRUCTION TO THE CITY FOR THE PREPARATION OF RECORD DRAWINGS.
23. ALL CONSTRUCTION SHALL CONFORM TO LATEST EDITION OF CALIFORNIA BUILDING CODE TITLE 24.
24. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO MONDAY THROUGH FRIDAY OF THE CALENDAR WEEK. NO WEEKEND WORK SHALL BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE CITY.
25. CONTRACTOR SHALL CONFORM TO THE WORKING HOURS FROM 8AM - 5PM. NO WORK SHALL BE DONE DURING CITY HOLIDAYS, SPECIAL EVENTS OR OTHER PEAK SEASON TIMES PER THE CITY OF SAN MATEO.
26. CONTRACTOR SHALL NOTIFY BUSINESSES OF WORK PRIOR TO COMMENCEMENT OF CONSTRUCTION. COORDINATE NOTIFICATION EFFORTS WITH CITY OF SAN MATEO.
27. THIS PROJECT SHALL COMPLY WITH THE 2022 EDITIONS OF THE CALIFORNIA BUILDING CODE (CBC), CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA PLUMBING CODE (CPC), CALIFORNIA ELECTRICAL CODE (CEC), CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBS), AND THE CALIFORNIA ENERGY CODE (CENC), ALL AMENDMENTS TO THE CA CODES ADOPTED BY THE CITY, AND ALL OTHER CODES, REGULATIONS, AND APPROVALS ESTABLISHED BY THE CITY OF SAN MATEO.
28. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION CONFERENCE WITH ALL PARTIES INVOLVED AT THE PROJECT SITE TO REVIEW THE SPECIAL INSPECTION REQUIREMENTS, PROCEDURES, AND INDIVIDUAL SPECIAL INSPECTORS THAT WILL BE ASSIGNED TO THE PROJECT, AS WELL AS REQUIREMENTS FOR STRUCTURAL OBSERVATION. CONTRACTOR SHALL CONTACT THE CITY OF SAN MATEO BUILDING DIVISION TO CONFIRM AN ACCEPTABLE MEETING DATE AND TIME.

PROJECT REPORTS

ALL WORK SHALL CONFIRM TO THE RECOMMENDATIONS AND MEASURES OUTLINED IN THE FOLLOWING PROJECT REPORTS:

- SAN MATEO CENTRAL PARK MASTER PLAN UPDATE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION BY FIRST CARBON SOLUTIONS DATED OCTOBER 20, 2017.
- GEOTECHNICAL EVALUATION BY NINYO & MOORE DATED JANUARY 29, 2020.
- GEOTECHNICAL EVALUATION SUPPLEMENTAL LETTER BY NINYO AND MOORE DATED JANUARY 25, 2023.
- ARBORIST REPORT BY HORT SCIENCE/BARTLETT CONSULTING DATED MAY 2024.

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LICENSED LANDSCAPE ARCHITECT
MARISA L. PELTIER No. 6427
6-30-26
STATE OF CALIFORNIA

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO
GENERAL NOTES

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier

DRAWN BY	CHECKED BY
MP/YI	LM

DATE
JANUARY 31, 2025

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
G002

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COMMUNITY DEVELOPMENT DEPARTMENT

330 West 20th Avenue
San Mateo, CA 94403
www.cityofsanmateo.org

CALGREEN: NON-RESIDENTIAL BUILDING PLAN SUBMITTAL CHECKLIST

New non-residential buildings shall be designed to include the green building mandatory measures specified in this checklist. This checklist shall also be applied to non-residential building additions of 1,000 square feet or larger and/or alterations with the permit valuation of $200,000 or more. The requirements shall apply only to the specific area of the addition or alteration. Initial tenant improvements are also subject to the mandatory measures. Subsequent tenant improvements are exempt.

** LOCAL GREEN BUILDING REACH CODE MEASURES ARE DENOTED WITH AN ASTERISK, HIGHLIGHTED IN GREEN AND REFERENCE THE SAN MATEO MUNICIPAL CODE (SMMC).*

PROJECT TYPE: ☐ Office ☐ Mixed-Use Residential/Office ☒ Other: recreation/park

ADDRESS: 50 E 5th Avenue, San Mateo, CA 94401

Feature or Measure (For full details of the code requirements see the 2022 CALGreen Code (CGC))	Yes or N/A Plan Reference
PLANNING AND DESIGN	
SITE DEVELOPMENT (5.106)	
Storm water pollution control. Newly constructed projects and additions which disturb less than one acre of land shall prevent the pollution of storm water runoff from the construction activities through local ordinance and/or best management practices (BMP's) per CGC 5.106.1.1 through 5.106.1.2. Projects that disturb one or more acres of land to comply with all lawfully enacted storm water discharge regulations for projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of a larger common plan of development or sale per CSC 5.106.2	Yes, CE001/CE101
Short-term bicycle parking (with exception). If the new project or an addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack per CGC 5.106.4.1.1. **Long-term bicycle parking.** For new buildings with 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied vehicular parking spaces, with a minimum of one bicycle parking facility per CGC 5.105.4.1.2 through CGC 5.106.4.1.5.	Yes, LC101/LC102
***Electric Vehicle Charging for New Construction.** Newly constructed non-residential buildings with Nonresidential Occupancy Group B Offices, the minimum EVCS shall be required per SMMC Section 23.70.050: 1. 20% of parking spaces shall be EVCS with Level 2 EV Ready 2. 30% of parking spaces shall be Level 2 EV Capable.	N/A
Newly constructed non-residential buildings with all other nonresidential occupancies, the minimum EVCS shall be required per SMMC Section 23.70.050: 1. 10% of parking spaces shall be EVCS with Level 2 EV Ready. 2. 10% of parking spaces shall be Level 2 EV Capable.	N/A
Light Pollution Reduction. Outdoor lighting systems shall be designed and installed to comply with requirements in the California Energy Code and in compliance with CGC 5.106.8 through 5.106.8.2	Yes,E1,E2,SSDS
Grading and Paving. Construction plans to indicate how site grading and drainage system will manage all water flows to keep water from entering buildings. Examples found at CGC 5.106.10. Alterations and additions not altering the drainage path are excluded.	Yes, CG101/CG102
***All-electric Requirements for New Construction.** All newly constructed buildings shall be all-electric buildings per SMMC 23.70.070.	N/A

Feature or Measure (For full details of the code requirements see the 2022 CALGreen Code (CGC))	Yes or N/A Plan Reference
WATER EFFICIENCY AND CONSERVATION	
INDOOR WATER USE (CGC 5.303)	
Meter. Separate submeters or metering devices shall be installed for the uses described in CGC Section 5.303.1.1 and 5.303.1.2. **Buildings in excess of 50,000 square feet.** Separate submeters shall be installed as follows: 1. For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day, including but not limited to, spaces used for laundry or cleaner, restaurant for food service, medical or dental office, laboratory or beauty salon or barber shop. 2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystem: a. Makeup water for cooling towers where through is greater than 500 gpm. b. Makeup water for evaporative coolers greater than 6 gpm. c. Steam and hot-water boilers with energy input more than 500,000 Btu/h.	N/A
Excess consumption. A separate submeter or metering device shall be provided for any tenant within a building that is projected to consume more than 1,000 gal/day.	
Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the prescriptive reduced flow rates specified in CGC 5.303.2.3.1 through 5.303.45.303.3.1 through 5.303.3.4.	Yes,P1,P2,SSDS
Commercial kitchen equipment. Food waste disposers shall either modulate the use of water to no more than 1 gal/min when disposer is not in use or automatically shut off after 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water per CGC 5.303.4.	N/A
Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall meet the applicable standards referenced in Table 1701.1 of the 2019 California Plumbing Code and in Chapter 6 of CGC.	Yes,P1,P2,SSDS
OUTDOOR WATER USE (CGC 5.304)	
Outdoor water use in landscape areas. Non-residential developments and rehabilitated landscape projects shall comply with the mandatory Water Efficiency Landscape Ordinance (WELO) given in SMMC Chapter 23.72.	Yes, LI001
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY	
WEATHER RESISTANCE AND MOISTURE MANAGEMENT (CGC 5.407)	
Weather projection. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1403.2 and California Energy Code Section 150, manufacturer's installation instructions or local ordinance, whichever is more stringent.	Yes,A4.1
Moisture control. Employ moisture control measures by the following methods: **Sprinkler.** Prevent irrigation spray on structures per CGC AS.407.4.1. **Entries and openings.** Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into building per CGC 5.407.2.2.	Yes, LI101 for sprinkler
CONSTRUCTION WASTE REDUCTION, DISPOSAL, AND RECYCLING (CGC 5.408)	
Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste per CGC 5.408.1	Yes, Installer
Universal waste. Additions and alterations that meet the scoping provisions in Section 301.3 shall provide verification that universal waste materials (fluorescent lamps and ballasts, mercury thermostats) are disposed of properly per CGC 5.408.2.	Yes, Installer
Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation resulting from land clearing shall be reused or recycled. CGC 5.408.3	Yes, Installer
BUILDING MAINTENANCE AND OPERATION (CGC 5.410)	
Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials (including organic waste) for recycling per CGC 5.410.1.	Yes, LC101/LC102
Commissioning. For new building 10,000 square feet and over, building commissioning for all building systems covered by T24, Part 6, process systems and renewable energy systems shall be incluided in the design and construction processes of the building project. Commissioning requirements shall include items listed in Section 5.410.2.	N/A

Feature or Measure (For full details of the code requirements see the 2022 CALGreen Code (CGC))	Yes or N/A Plan Reference
Commissioning report. A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative per CGC 5.410.2.6.	N/A
Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet per CGC 5.410.4.	Yes, SSDS
Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency per CGC 5.410.4.5.1.	Yes, SSDS
ENVIRONMENTAL QUALITY	
FIREPLACES (CGC 5.503)	
Fireplaces. New gas fireplaces are not allowed in residential buildings per SMMC 23.70.070. **Woodstoves.** Woodstoves and pellet stoves shall comply with US EPA New Source Performance Standards emission limits per CGC 5.503.1.1. Coordinate requirements with Bay Area Air Quality Management District.	N/A
POLLUTANT CONTROL (CGC 5.504)	
Temporary ventilation. The permanent HVAC system shall only be used during construction if necessary to condition the building within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy (CGC 5.504.1).	N/A
Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation or during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system per CGC 5.504.3.	Yes, Romtec SSDS
Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1. through 5.504.4.6.	Yes, A4.1
Adhesives, sealants and caulks. Adhesives, sealants and caulks used on the project shall meet the requirements of the standards listed in CGC 5.504.4.1.	
Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 5.504.4.3 unless more stringent local limits apply. **Verification.** Verification of compliance with this section shall be provided at the request of the enforcing agency.	Yes, A4.1
Carpet Systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in CGC Section 5.504.4.4. Carpet cushion and adhesive also must comply.	N/A
Composite wood products. Hardwood, plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4.5. **Documentation.** Verification of compliance with this section shall be provided at the request of the enforcing agency. CGC 5.504.4.5.3.	N/A
Resilient flooring systems. 80% of flooring must comply with the one of the following: the VOC-emission limits defined in the 2014 CHPS criteria and listed on its High Performance Products Database; products certified under U.L Greenguard Gold program; certified under the Resilient Floor Covering Institute Floor Score program; or meet California Department of Public Health 2010 Specifications. **Verification of compliance.** Documentation shall be provided for verifying that resilient flooring materials meet the pollutant emission limits.	Yes, A4.1
Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV value of 13. MERV 13 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. CGC 5.504.5.3	N/A
Environmental tobacco smoke. Prohibit smoking within 25 feet of building entries, outdoor intakes and operable windows. Post signage when local ordinances or policies are not in place per CGC 5.504.7.	N/A
INDOOR MOISTURE CONTROL (CGC 5.505)	
Indoor moisture control. Buildings shall meet or exceed the CBC Title 24, Part 2, Sections 1202 (ventilation) and Chapter 14 (exterior walls).	Yes,M1

INDOOR AIR QUALITY (CGC 5.506)	
Outdoor air delivery. For all ventilated spaces, meet the minimum requirements of Section 120.1 (requirements for ventilation) of the California Energy Code, or local code, whichever is more stringent.	Yes,M1
Carbon dioxide (CO2) monitoring. Buildings equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the California Energy code section 120(c)(4).	N/A
ENVIRONMENTAL COMFORT (CGC 5.507)	
Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E90 and ASTM E413 or OITC determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Sections 5.507.4.1 or 5.507.4.2.	N/A
OUTDOOR AIR QUALITY (CGC 5.508)	
Ozone depletion and greenhouse gas reductions. Installation of HVAC, refrigeration and fire suppression equipment shall comply with Section 5.508.1.1 and 5.508.1.2. **Supermarket refrigerant leak reduction.** New Commercial refrigeration systems shall comply with Section 5.508.2 when installed in retail food stores 8,000 square feet or more condition area, and the utilize either refrigerated display cases, or walk-in-coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global warming potential (high-GWP) refrigerant with a GWP of 150 or greater.	N/A

Responsible Designer's Declaration Statement

I hereby certify that this project has been designed to meet the requirements of the 2022 California Green Building Standards Code and local green building reach code amendments

Name: Marisa Peltier	Company: RRM Design Group
Signature: Marisa Peltier	Address: 325 Davis Street
Date: 11-27-23	City/St/Zip San Leandro, CA 94577

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

CALGREEN CHECKLIST
FOR NON-RESIDENTIAL PROJECTS

NO.	REVISION	DATE
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PROJECT MANAGER
Marisa Peltier

DRAWN BY: MP/YI
CHECKED BY: LM

DATE
JANUARY 31 2025

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

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FIRSTCARBONSOLUTIONS

Mitigation Monitoring and Reporting Program for the San Mateo Central Park Master Plan Update Initial Study/Mitigated Negative Declaration City of San Mateo, San Mateo County, California

Prepared for:
City of San Mateo
Department of Parks and Recreation
330 W 20th Avenue
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Date: January 12, 2018

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AN ADEC INNOVATION

Table 1: San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion: Date	Verification of Completion: Initial
1. Air Quality					
MM AIR-1: To reduce impacts from construction activities, the City shall implement the following basic construction emission controls: a. All active construction areas shall be watered at least two times per day. b. All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or nontoxic soil stabilizers shall be applied to exposed non-paved surfaces. c. All haul trucks transporting soil, sand, or other loose material off-site shall be covered and/or shall maintain at least two feet of freeboard. d. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. e. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. f. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. g. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage regarding idling restrictions hall be provided for construction workers at all access points.	Confirm that the control measures are printed on the project plans, and that the contractor understands the requirements.	Before issuance of grading, demolition, or tree removal permit	Building Department		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion: Date	Verification of Completion: Initial
h. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. i. The prime construction contract shall post a publicly visible with the telephone number and person to contact that HARD regarding during complaint. HRAD and the construction contact shall teak corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.					
2. Biology					
MM BIO-1: Nesting Bird and Raptors. To prevent impacts to Migratory Bird Treaty Act-protected birds and their nests, removal of vegetation and grading will be limited to only those necessary to the extent necessary to construct the project. • If any tree removal is necessary, then it will occur outside the nesting season between September 1 and February 14. If trees cannot be removed outside the nesting season, pre-construction surveys will be conducted 3 days prior to tree removal to verify the absence of active nests. • If an active nest is located during pre-construction surveys, USFWS and/or CDFW (as appropriate) shall be notified regarding the status of the nest. Construction activities shall be restricted as necessary to avoid disturbance of the nest until it is abandoned or the agencies deem disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 100 feet around an active	Confirm timing for tree removal outside of nesting seasons Or Confirm results of pre-construction nesting surveys If required, confirm establishment of buffer/exclusion zone as required by resource agencies	Prior to issuance of grading permit and tree removal permit Prior to issuance of grading permit	Department of Parks and Recreation Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion: Date	Verification of Completion: Initial
raptor nest and a 50-foot radius around an active migratory bird nest) or alteration of the construction schedule. • A qualified biologist will delineate the buffer using Environmentally Sensitive Area fencing, pin flags, and or yellow caution tape. The buffer zone will be maintained around the active nest site(s) until the young have fledged and are foraging independently.		Removal of exclusion zone shall not occur before young have fledged	Department of Parks and Recreation		
MM BIO-2: Bat Mitigation. To ensure that there will be no biological concerns associated with these species, a bat survey shall be conducted between March 1 to July 31 by a qualified wildlife biologist prior to the removal of any trees or buildings. If no bat roosts are detected, then no further action is required if the trees and buildings are removed prior to the next breeding season. If removal is delayed, then an additional pre-demolition survey shall be conducted 30 days prior to removal to ensure that a new colony has not established itself. If a colony of bats is found roosting on-site, then the following mitigation will be implemented to reduce the potential disturbance: • If maternity roosts are identified during the maternity roosting season (typically May to August), a qualified biologist shall determine appropriate buffer zones and roosts must remain undisturbed, until the qualified biologist has determined the young bats are no longer roosting. If roosting is found to occur on-site, replacement roost habitat (e.g., bat boxes) shall be provided on-site for roosting sites removed.	Confirmation of results of bat survey If required, confirm establishment of buffer/exclusion zone as required by resource agencies	Prior to issuance of demolition permit, tree removal permit, and grading permit Prior to issuance of demolition permit, tree removal permit, and grading permit	Department of Parks and Recreation Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion: Date	Verification of Completion: Initial
MM BIO-3: 13.52, Heritage Trees. 13.52.025 Tree Protection and Preservation. Any person who owns, controls, has custody or possession of any real property within the City shall use reasonable efforts to maintain and preserve all heritage trees located thereon in a state of good health, pursuant to the provisions of this Chapter. a. Any application for discretionary development approval for real property or for any other Development Project shall be accompanied by a signed statement by the property owner or authorized agent which discloses whether any heritage trees exist on the property and describes on the plans associated with the application the location of each such tree, its species, trunk size and drip line area. In addition, the location of any tree within thirty feet of the area proposed for construction that is within the public right-of-way shall be shown on the plans and identified by species. b. With regard to any tree required to be identified under section (a) above, (hereafter "protected tree"), any exterior construction work associated with any Development Project performed within a radius measured from the trunk center equal to ten times the diameter of the tree trunk measured at 4' above grade shall require the preparation and submittal of a Tree Protection Plan for review and approval by the City Arborist prior to the issuance of any permit for a Development Project. The Tree Protection Plan shall be prepared by a certified arborist. c. A Tree Protection Plan shall at a minimum include the following requirements: (1) Prior to the commencement of any Development Project, a chain link fence shall be installed at the drip line of any protected tree which will be affected by the construction and shall prohibit the storage of any	Confirmation of submittal of tree protection plan	Prior to issuance of tree removal permit, grading permit, or demolition permit	Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion: Date	Verification of Completion: Initial
construction materials, equipment or other materials inside the fence. The drip line shall not be altered in any way that would increase the encroachment of the construction. (2) Prohibit excavation, grading, soil deposit, drainage and leveling within the drip line unless approved by the City Arborist. (3) Prohibit disposal or depositing of oil, gasoline, chemicals, paints, solvents or other materials within the drip line or in drainage channels, swales or areas that may lead to the drip line. (4) Prohibit the attachment of wires, signs and ropes to any protected tree. (5) Utility service and irrigation lines shall be located outside of the drip line when feasible. (6) Include provision for the retention of the services of a certified arborist for periodic monitoring of the project site and the health of protected trees. The arborist shall be present whenever activities occur which will pose a potential threat to the health of the protected trees or whenever any work needs to be done within the drip line of such tree. (7) Include other provisions as deemed necessary by the City Arborist to preserve the protected tree and insure compliance with those provisions. (8) Require that the City Building Official be notified whenever any damage or injury occurs to a protected tree during construction so that proper treatment may be administered. (9) Contain the signature of the property owner and building permit applicant.					

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion: Date	Verification of Completion: Initial
(10) Tree Protection Plan Review. The Tree Protection Plan described in Section (c), above, shall be reviewed by the City Arborist. If the plan is sufficient to prevent harm to protected trees from reasonably foreseeable construction activities, it shall be approved and related building permits otherwise complete shall issue. (Ord. 2007-1 § 3; 2007; Ord. 2005-3, § 1, 2005; Ord. 2004-6, § 1, 2004). **13.52.040 Removal—Permit.** Any person or entity desiring to remove or prune one or more heritage trees shall apply to the Director for a permit. The application for a permit shall be made on forms provided for this purpose and shall state, among other things, the number and location of the trees to be removed or pruned by types and the reason for removal or pruning of each. The request for such a permit may only be made by the owner or owners of the property on which the trees are located or for pruning by an adjacent property owner of heritage tree limbs extending onto that adjacent property, after notice of the application to the property owner where the heritage tree is located. Heritage tree permits are valid for six months from date of issue. Extensions may be authorized by the Director. The applicant may submit an arborist's report with the permit application to show cause for removal or pruning. Pruning permit applications shall include pruning specifications prepared by a certified arborist. The Director shall review each application and shall consider and determine the following in rendering a decision: a. The condition of the tree or trees with respect to disease, danger of falling, proximity to existing or proposed structures and interference with utility services; b. The necessity to remove the tree or trees in order to construct any proposed improvements to allow reasonable					

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MARISA J. PELTIER No. 6132
6-30-26
STATE OF CALIFORNIA

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PROJECT MITIGATION MEASURES

NO.	REVISION	DATE
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PROJECT MANAGER
Marisa Peltier

DRAWN BY MP/YI | **CHECKED BY** LM

DATE
JANUARY 31 2025

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

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Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
economic enjoyment of the property. c. The topography of the land and the effect of the removal of the tree on erosion, soil retention and diversion or increased flow of surface waters. d. The number of trees existing in the neighborhood on improved property and the effect the removal would have on the established standard of the area and property value. e. The number of trees the particular parcel can adequately support according to good arboricultural practices. In reviewing applications, the Director shall give priority to those based on hazard or danger of disease. (S)he may refer any application to another department, committee, board or commission of the city for a report and recommendation or may require the applicant to supply a certified arborist's report. (Ord. 2007-1 § 3; 2007; Ord. 2005-3, § 1, 2005; Ord. 2004-6, § 1, 2004; Ord. 1998-8, § 3, 1998; Ord. 1997-24 § 6, 1997; Ord. 1984-7 § 4, 1984; Ord. 1968-35 § 3 (part), 1968: prior code § 65.53). **13.52.050 Reforestation.** Permits for heritage tree removal, removals without permits and causing damage to heritage trees shall require replanting conditions in accordance with the following guidelines: a. Trees removed under jurisdiction of a planning approval pursuant to Chapter 27.71 shall conform with the replacement conditions specified in the planning approval. b. Trees removed with a valid tree removal permit shall be replaced in accordance with the direction of the Director. Replacement direction shall include direction on the location and species of the replacement tree. Tree replacement shall be one 24" box size tree approved by the Director, for each tree removed.	Confirmation of replanting, if required	Prior to final sign-off of construction	Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
c. Trees removed without a valid tree removal permit shall be replaced by a 48" box size tree for each tree removed. Enhanced replant conditions may be imposed if it is determined by the Director that the value of the removed tree was significantly greater than that of a 48" box tree. In such cases, the determination of the level of replacement shall be within the discretion of the Director, but shall not exceed the actual tree loss as determined by the Replacement Value. In addition to the requirements of this subsection, penalties under Section 13.52.055 or other sanctions allowed by law may be imposed for removal of heritage trees without a permit. d. Where the Director determines that replanting is not feasible and/or appropriate, e.g., sufficient trees exist on-site, the Director (1) may require that a payment of equal value to the cost of the purchase and installation of the replacement tree(s) be made to the City tree planting fund or (2) may place other conditions on the permit which are of equal value to the cost of the purchase and installation of the replacement tree(s). e. Any person causing damage to a heritage tree shall be required to take such steps as may be required by the Director to assure the future vitality of the tree, including costs of treatment and/or construction of protective barriers, or if the Director determines that the damage is so great that the tree is no longer reasonably sustainable, replacement of the damaged tree per subsection (c), above (Ord. 2007-1 § 3; 2007; Ord. 2005-3, § 1, 2005; Ord. 2004-6, § 1, 2004; Ord. 1998-8, § 3, 1998; Ord. 1997-24 §§ 3 and 6, 1997; Ord. 1989-36 § 1, 1989; Ord. 1984-7 § 5, 1984; Ord. 1968-35 § 3 (part), 1968: prior code § 65.54).					

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
5. Cultural Resources					
MM CUL-1: Prior to project implementation, Central Park should be recorded to standards established for the National Park Service's Historic American Landscapes Survey (HALS), as detailed below. A. A HALS written report will be completed to document the physical history and description of the historical resource, the historic context for its construction and use, and its historic significance. The report will follow the standard outline format described in the Historic American Landscape Survey Guidelines for Historical Reports in effect at the time of recording. The report will be prepared by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History. B. Large-format, black and white photographs will be taken, showing the pathway segment to be demolished and the other park's other contributing features, including buildings, structures, small-scale features, circulation features, and vegetation. The photographs will be taken and processed for archival permanence in accordance with the HABS/HAER/HALS Photography Guidelines in effect at the time of recording. The photographs will be taken by a professional with HALS photography experience. The photographer will work with the architectural historian preparing the written report and City of San Mateo staff to determine the number and type of views required. C. Existing drawings, where available, will be reproduced on archival paper. If existing drawings are not available, a full set of measured drawings depicting existing conditions will be prepared. The drawings will be prepared in accordance with the Historic American Landscape Survey Guidelines for Drawings in effect at the time of recording. The drawings will	Confirmation of recordation of Central Park to HALS standards.	Prior to issuance of a grading, demolition or tree removal permit	Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
be prepared by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architecture or Historic Architecture. The HALS documentation, including the report, large-format photographs, and drawings, will be submitted to the San Mateo Parks and Recreation Department, San Mateo Public Library, and the San Mateo County Historical Association. The documentation will be prepared in accordance with the archival standards outlined in the Transmittal Guidelines for Preparing HABS/HAER/HAL Documentation in effect at the time of recording. A professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History will manage production of the HALS documentation.					
MM CUL-2: The Central Park Master Plan will include interpretive features located throughout the park. The circulation features of the park will be documented as part of this public interpretation program, as follows: A. Interpretive materials, such as an informational plaque depicting the original design of the pathways and discussing the importance of the circulation features, will be prepared as part of a public interpretation program and be displayed in a location with high public visibility near the pathway segment to be removed. B. The public interpretation program will be developed by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History.	Verification that interpretive signs have been established	Prior to project completion	Department of Parks and Recreation		
MM CUL-3: A project that has been determined to conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties can generally be considered to be a project	Verification of project conformance to the	Prior to Issuance of grading or	Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
that will not cause a significant impact. A professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History will assess each project component resulting from the proposed project for conformance with The Secretary of the Interior's Standards for Rehabilitation once it has been designed and proposed for implementation. If a project component is not found to be in conformance with the Standards, it will be redesigned to eliminate objectionable or damaging aspects of the project (e.g., redesigning new construction such that it not replicate contributing features to the park, such as the Kohl-era fencing; retaining rather than removing a character-defining feature; or reducing the size or massing of a proposed building, structure, or feature)..	Secretary of the Interior's standards, by a qualified architectural historian	demolition permit			
MM CUL-4: Due to the moderate potential for undiscovered archaeological resources within the project area, an archaeologist who meets the Secretary of Interior's Professional Qualification Standards for archaeology should be present during the initial phase of ground disturbance in previously undeveloped areas of the project site. This may be followed by regular periodic or "spot-check" archaeological monitoring as determined by the archaeologist, but full-time monitoring is not required at this time. In the event a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities within a 100-foot radius of the find shall cease and workers should avoid altering the materials until the archaeologist has evaluated the situation. The Applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction activities shall be recorded on appropriate	Submittal of letter report confirming result of monitoring of initial ground disturbance.	Monitoring by a qualified archaeologist of initial ground disturbance. Submittal of letter report from a qualified archaeologist following initial ground disturbance.	Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of CEQA criteria by a qualified archaeologist. If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant in accordance with Section 15064.5 of the CEQA Guidelines. The archaeologist shall also perform appropriate technical analyses, prepare a comprehensive report complete with methods, results, and recommendations, and provide for the permanent curation of the recovered resources. The report shall be submitted to the City of San Mateo, the Northwest Information Center, and the State Historic Preservation Office (SHPO), if required					
MM CUL-5: In the event that fossils or fossil-bearing deposits are discovered during construction activities, excavations within a 50-foot radius of the find shall be temporarily halted or diverted. The project contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery as needed (in accordance with Society of Vertebrate Paleontology [1995] standards), evaluate the potential resources, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction activities are allowed to resume at the location of the find. If the applicant determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of construction activities on the discovery. The plan shall be submitted to the city of San Mateo for review and approval prior to implementation, and the applicant shall	Stop operation if there are buried fossils and have a paleontologist examine the fossils	During ground-disturbing activities	Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
adhere to the recommendations in the plan.					
MM CUL-6: In the event of an accidental discovery or recognition of any human remains, Public Resource Code (PRC) Section 5097.98 must be followed. In this instance, once project-related earthmoving begins and if there is accidental discovery or recognition of any human remains, the following steps shall be taken: 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the Stanislaus County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98, or 2. Where the following conditions occur, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance: • The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being	Follow CEQA Guidelines § 15064.5; Health and Safety Code § 7050.5; Public Resources Code § 5097.94 and § 5097.98.	During the course of project development	Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
notified by the commission; • The descendent fails to make a recommendation; or • The landowner or his or her authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.					
12. Noise					
MM NOI-1: Implementation of the following multi-part mitigation measure is required to reduce potential construction period noise impacts: • The construction contractor shall ensure that all construction equipment have appropriate sound muffling devices, which are properly maintained and used at all times such equipment is in operation. • The construction contractor shall ensure that all internal combustion-engine-driven equipment is equipped with mufflers that are in good operating condition and appropriate for the equipment. • The construction contractor shall ensure that "quiet" models of air compressors and other stationary construction equipment are utilized where such technology exists. • The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction. • The construction contractor shall place all stationary	Confirm that mitigation measure is printed on project plans and that contractor understands requirements.	Prior to issuance of grading, demolition, or tree removal permit	Building Department Department of Parks and Recreation		

Table 1 (cont.): San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site. • The construction contractor shall prohibit unnecessary idling of internal combustion engines (i.e., in excess of 5 minutes). • The construction contractor shall designate a noise disturbance coordinator who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures warranted to correct the problem. The construction contractor shall conspicuously post a telephone number for the disturbance coordinator at the construction site. • The construction contractor shall limit all noise producing construction activity, including deliveries and equipment startup and idling, to the hours of 7:00 a.m. and 7:00 p.m. on weekdays, and the hours of 9:00 a.m. to 5:00 p.m. on Saturdays, and to the hours of 12:00 p.m. and 4:00 p.m. on Sundays.					

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NICHOLAS J. MOSCARELLI, ARCHITECT
No. C-31,118
6-30-26
STATE OF CALIFORNIA

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City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PROJECT MITIGATION MEASURES

NO.	REVISION	DATE
1		
2		
3		
4		
5		
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7		

PROJECT MANAGER
Marisa Peltier

DRAWN BY	CHECKED BY
MP/YI	LM

DATE
JANUARY 31, 2025

RRM PROJECT NUMBER
1652-02-RC22

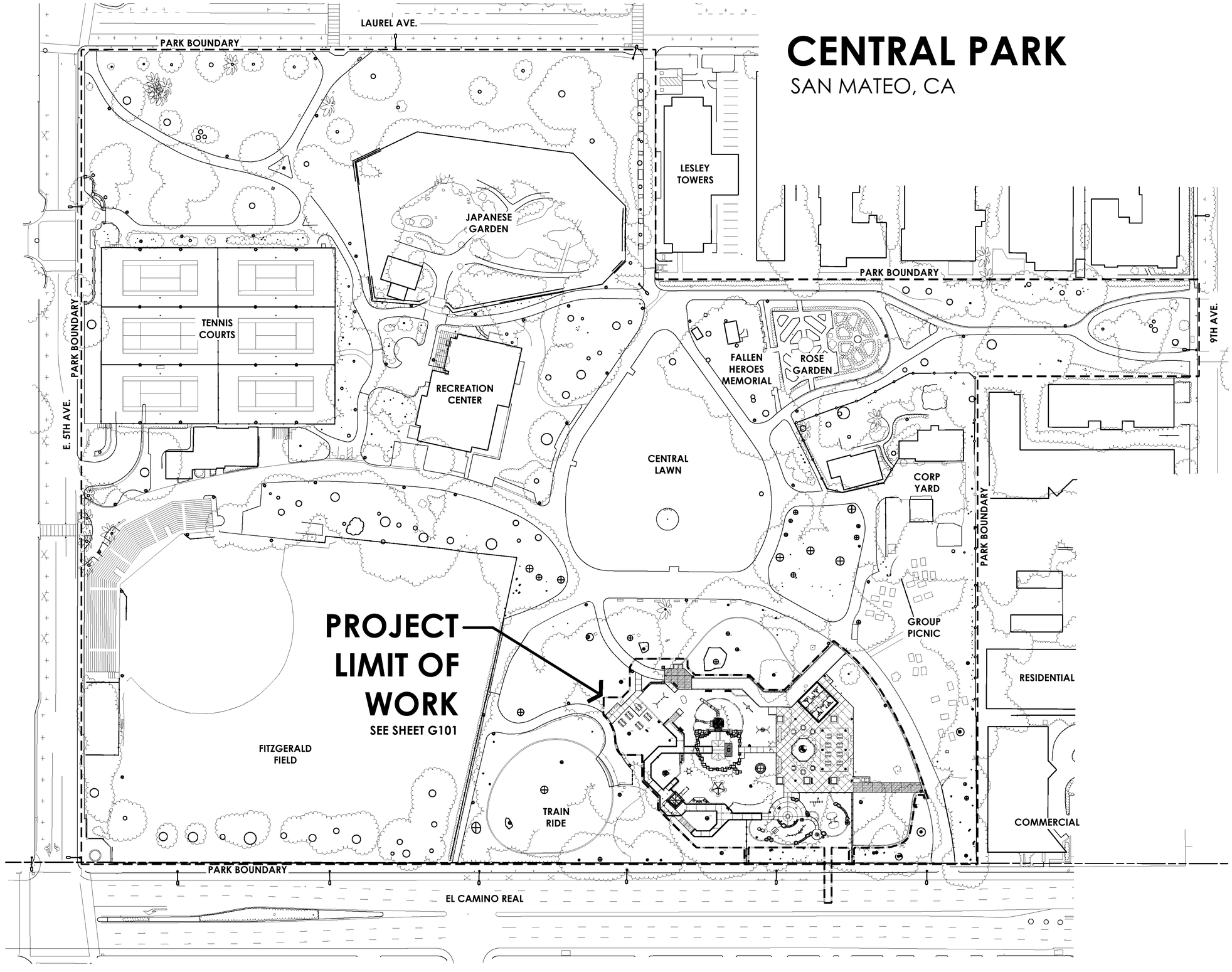
CITY OF SAN MATEO PROJECT NUMBER
610027

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CENTRAL PARK

SAN MATEO, CA



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LICENSED LANDSCAPE ARCHITECT — MARISA A. PELTIER — No. 6432 — 8.31.25 — RENEWAL DATE — STATE OF CALIFORNIA

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VE SET

SAN MATEO CENTRAL PARK

PLAYGROUND IMPROVEMENT PLANS

50 E 5TH AVE, SAN MATEO

SITE REFERENCE PLAN

NO.	REVISION	DATE
1		
2		
3		
4		
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7		

PROJECT MANAGER: Marisa Peltier

DRAWN BY: MP/YI | CHECKED BY: LM

DATE: JANUARY 31, 2025

RRM PROJECT NUMBER: 1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER: 610027

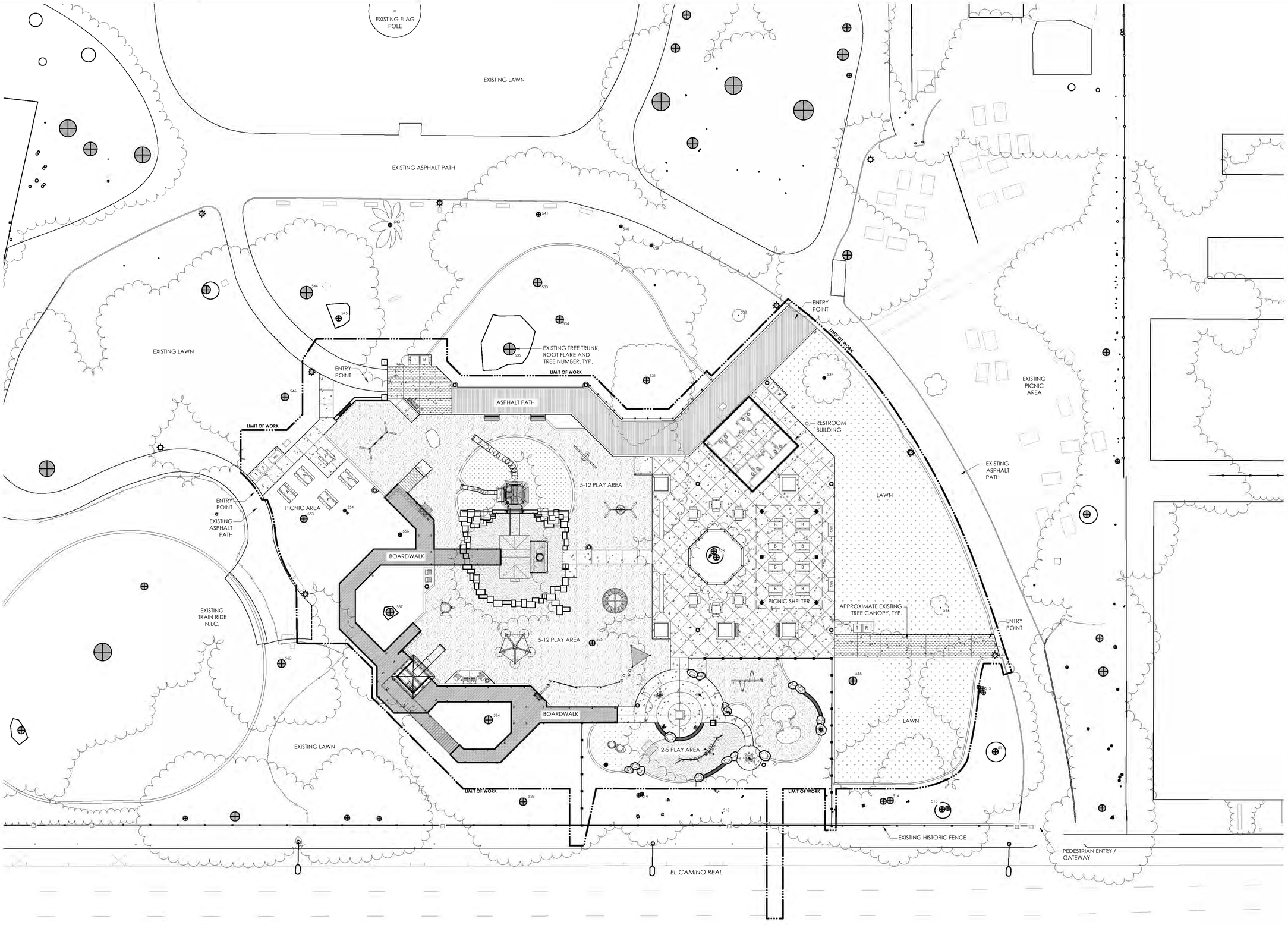
SHEET: G100

NORTH

0 40 80 120 feet

1" = 40'-0"

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NORTH

0 16 32 48 feet

1" = 16'-0"

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LICENSED LANDSCAPE ARCHITECT
MARISA A. PELTIER
No. 6423
8.31.25
Renewal Date
STATE OF CALIFORNIA

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VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PROJECT REFERENCE PLAN

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier

DRAWN BY MP/YI
CHECKED BY LM

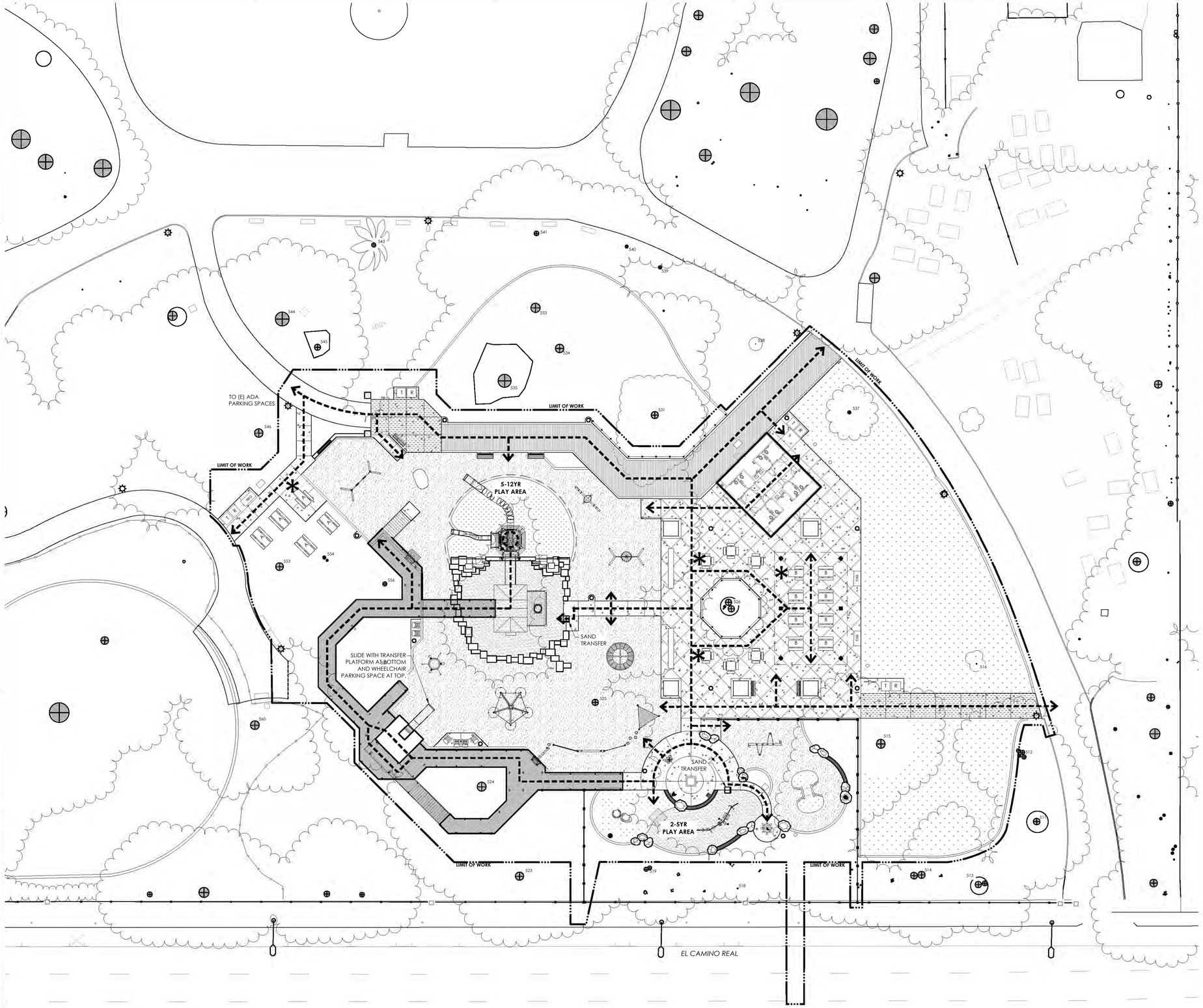
DATE
JANUARY 31 2025

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
G101

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LEGEND

ACCESSIBLE PATH OF TRAVEL

WHEELCHAIR PICNIC SPACE

ACCESSIBILITY NOTES

1. ALL IMPROVEMENTS SHALL MEET THE 2022 CALIFORNIA BUILDING CODE & 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN.
2. WITHIN THE SITE:
   - MAXIMUM SLOPE OF RAMPS: 8.33%
   - MAXIMUM RUNNING SLOPE OF WALKS: 5%
   - MAXIMUM CROSS SLOPE OF WALKS: 2%
   - MINIMUM CLEAR WIDTH OF ACCESSIBLE ROUTES: 48"
3. WITHIN THE PLAY AREA:
   - MAXIMUM SLOPE OF GROUND LEVEL ACCESSIBLE ROUTE: 6.25%
   - MINIMUM CLEAR WIDTH OF GROUND LEVEL ACCESSIBLE ROUTES: 60"
   - MINIMUM CLEAR WIDTH OF ELEVATED ACCESSIBLE ROUTES: 36"

PLAY COMPONENT ANALYSIS

1. REFER TO LC102 FOR LIST OF PLAY COMPONENTS AND TYPES.
2. REFER TO LC101 FOR PLAYGROUND SURFACING MATERIALS IN EACH AREA. ALL SURFACES ARE CONSIDERED ACCESSIBLE WITH THE EXCEPTION OF SAND.
3. THE LIST BELOW DOES NOT INCLUDE WATER, MUSIC OR SENSORY COMPONENTS. ALL OF THESE COMPONENTS ARE ALONG AN ACCESSIBLE ROUTE.
4. COMPLIANCE WITH 11B-240.2.1.2:

2-5 YEAR OLD PLAY AREA: (SEE CHART ON LC102)	
TOTAL NUMBER OF PLAY COMPONENTS	6
# OF ELEVATED PLAY COMPONENTS	0
# OF GROUND LEVEL PLAY COMPONENTS	6
# OF DIFFERENT PLAY TYPES	3
# OF COMPONENTS ON ACCESSIBLE ROUTE	5
# OF COMPONENTS NOT ON ACCESSIBLE ROUTE	1
IS AT LEAST ONE OF EACH PLAY TYPE ON AN ACCESSIBLE ROUTE?	YES
	IN COMPLIANCE

5-12 YEAR OLD PLAY AREA: (SEE CHART ON LC104)	
TOTAL NUMBER OF PLAY COMPONENTS	14
# OF ELEVATED PLAY COMPONENTS	1
# OF GROUND LEVEL PLAY COMPONENTS	13
# OF DIFFERENT PLAY TYPES	5
# OF COMPONENTS ON ACCESSIBLE ROUTE	13
# OF COMPONENTS NOT ON ACCESSIBLE ROUTE	1
IS AT LEAST ONE OF EACH PLAY TYPE ON AN ACCESSIBLE ROUTE?	YES
	IN COMPLIANCE

NORTH

0 16 32 48 feet

1" = 16'-0"

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LICENSED LANDSCAPE ARCHITECT MARISA L. PELTIER No. 6455 8.31.25 Renewal Date STATE OF CALIFORNIA

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VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

ACCESSIBILITY PLAN

NO.	REVISION	DATE
1		
2		
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PROJECT MANAGER
Marisa Peltier

DRAWN BY MP/YI
CHECKED BY LM

DATE
JANUARY 31 2025
~~JANUARY 31 2025~~

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
G102

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BID ALTERNATE #1

BASE BID: EXCLUDE SMALL GROUP PICNIC AREA (CONCRETE SIDEWALK, CURB, 7 TABLES AND 1 BARBECUE). EXCLUDE ENTRY OBELISKS AND ASSOCIATED FOUNDATIONS. INSTALL NEW TURF LAWN AND MODIFY SPRINKLER HEADS TO CONFORM TO NEW PATH.

ALTERNATE: INSTALL PICNIC AREA AND ENTRY OBELISKS AS SHOWN.

BID ALTERNATE #5

BASE BID: INSTALL COMPOSITE DECKING FOR ELEVATED BOARDWALK SYSTEM PER SPECIFICATIONS.

ALTERNATE: INSTALL REDWOOD DECKING FOR ELEVATED BOARDWALK SYSTEM PER MANUFACTURER.

BID ALTERNATE #4

BASE BID: EXCLUDE 582 SF OF ELEVATED BOARDWALK. RELOCATE STAIRCASE AND LANDING SOUTH AS SHOWN. EXCLUDE 2 ACCESS STAIRCASES AND LANDING AREAS. EXCLUDE CONCRETE WALK AND TRASH RECEPTACLES NEAR TRAIN AREA.

INSTALL PLANTER AREA AND ASSOCIATED DRIP IRRIGATION IN PLACE OF BOARDWALK.

ALTERNATE: INSTALL ELEVATED BOARDWALK AND STAIRCASES AS SHOWN.

BID ALTERNATE #3

BASE BID: EXCLUDE ZIP LINE, RUBBER SURFACING, ENGINEERED WOOD FIBER SURFACING, CONCRETE SEAT WALLS, 2 TREES AND ASSOCIATED IRRIGATION, HANDRAIL, 6 CHAIRS, STONE BLOCK EDGE AND PLAY CURB.

INSTALL TURF AREA, ASSOCIATED IRRIGATION AND CONCRETE CURB EDGE IN PLACE OF ZIP LINE.

ALTERNATE: INSTALL ZIP LINE AREA AS SHOWN.

BID ALTERNATE #2

BASE BID: EXCLUDE 1570 SF OF ENGINEERED WOOD FIBER SURFACING, SEE-SAW AND BASKET SWING. RELOCATE HIGH SWING TO BASKET SWING LOCATION. EXCLUDE 28 LF OF PLAY CURB AND MOVE FENCE AND CURB WEST TO REFLECT NEW SWING AREA FOOTPRINT.

INSTALL MULCH AREA IN PLACE OF SWING AREA REDUCTION.

ALTERNATE: INSTALL SWING AREA AS SHOWN.

LIMIT OF WORK

EL CAMINO REAL

NORTH

0 16 32 48 feet

1" = 16'-0"

SUPERSEDED

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MARISSA L. PELTIER No. 6504 REGISTERED LANDSCAPE ARCHITECT 8.31.24 STATE OF CALIFORNIA

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BID DOCUMENT

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

ADDITIVE BID ALTERNATES

NO.	REVISION	DATE
1	Addendum 3	08-19-24

PROJECT MANAGER
Marisa Peltier

DRAWN BY: MP/YI
CHECKED BY: LM

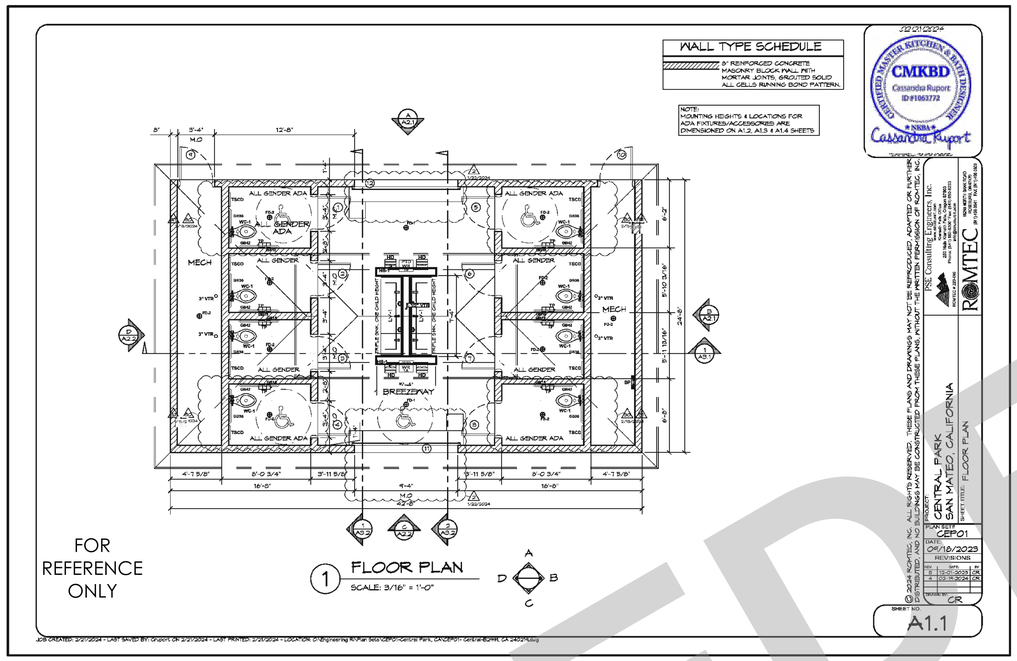
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JULY 8, 2024
REVISED JANUARY 13, 2025

RRM PROJECT NUMBER
1652-02-RC22

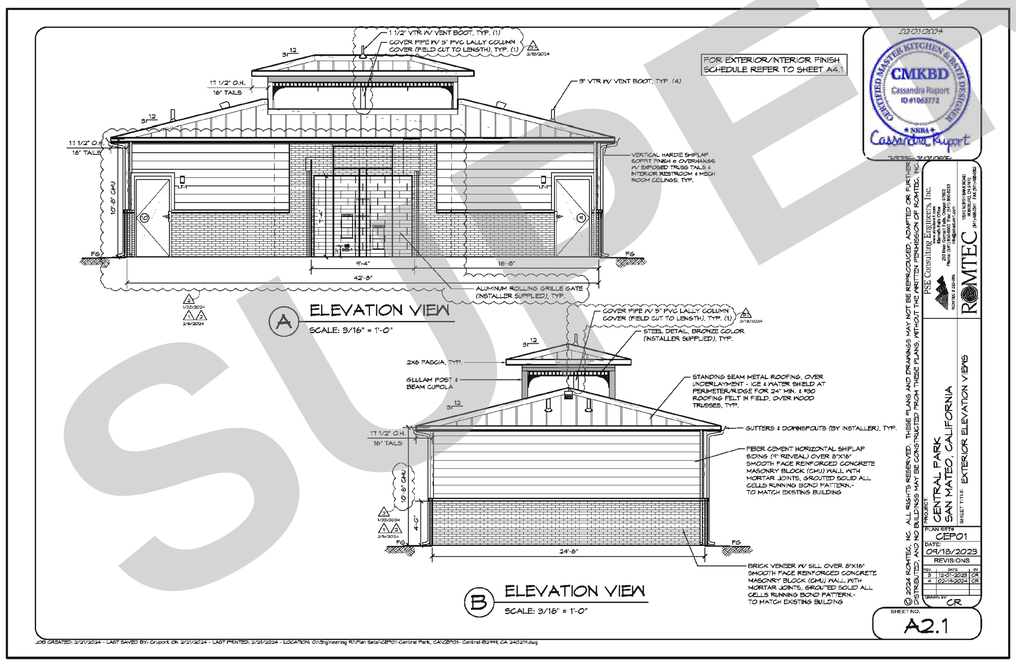
CITY OF SAN MATEO PROJECT NUMBER
610027

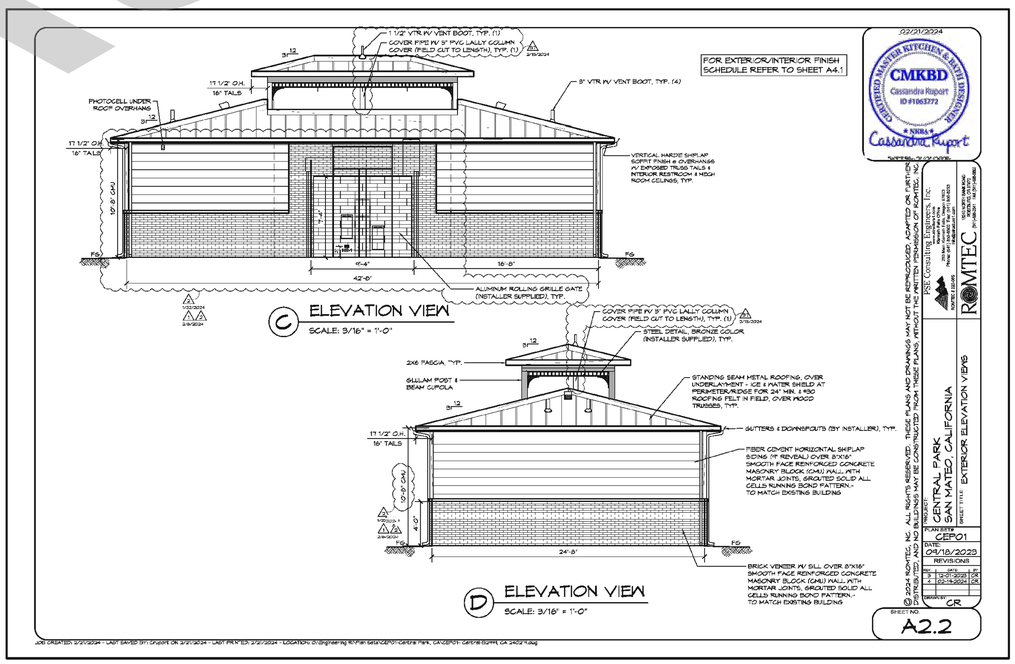
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2 RESTROOM FLOOR PLAN
NTS





FOR REFERENCE ONLY

1 RESTROOM ELEVATIONS
NTS

NOTES

1. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR THE RESTROOM BUILDING PACKAGE INSTALLATION. CONTRACTOR WORK WILL INCLUDE FOUNDATION/PAD SUPPLY AND CONSTRUCTION AND BUILDING PACKAGE ASSEMBLY/CONSTRUCTION. ANY ITEMS REQUIRED TO COMPLETE THIS WORK THAT ARE NOT EXPLICITLY CALLED OUT AS SUPPLIED BY THE BUILDING SUPPLIER AND/OR OWNER SHOULD BE CONSIDERED PART OF THE CONTRACTOR'S SCOPE OF SUPPLY AND WORK.
2. CONTRACTOR'S BID SHALL INCLUDE A COMPLETE INSTALLATION OF A FULLY OPERATIONAL RESTROOM BUILDING, INCLUDING BUT NOT LIMITED TO:
   a. OWNER-FURNISHED BUILDING KIT.
   b. ON SITE FOUNDATION PREPARATION AND CONSTRUCTION
   c. WET AND DRY UTILITY CONNECTIONS
   d. MISCELLANEOUS MATERIALS, COMPONENTS, AND APPURTENANCES NECESSARY FOR A COMPLETE INSTALLATION.
2. THIS PLAN SHEET IS PROVIDED FOR REFERENCE ONLY. A FINAL SHOP DRAWING PACKAGE, PREPARED BY ROMTEC, IS A PART OF THE BID DOCUMENTS IN ITS ENTIRETY.
3. IT THE CONTRACTOR'S RESPONSIBILITY TO REVIEW AND BECOME FAMILIAR WITH THE CONSTRUCTION PLANS AND MANUFACTURER-PREPARED SHOP DRAWINGS PRIOR TO SUBMITTING A BID. BID WILL INCLUDE ALL SCOPE ITEMS FOR A COMPLETE INSTALLATION.
4. OTHER INFORMATION RELATED TO THE RESTROOM CONSTRUCTION INCLUDES BUT IS NOT LIMITED TO:
   a. GEOTECHNICAL REPORT: RECOMMENDATIONS FOR FOUNDATION PREPARATION.
   b. ELECTRICAL SHEETS CONTAINED HEREIN.
   c. IRRIGATION PLANS CONTAINED HEREIN: COORDINATION OF IRRIGATION CONTROLLER LOCATED WITHIN RESTROOM BUILDING.
5. BEFORE COMMENCING CONSTRUCTION ACTIVITIES FOR THIS PART OF THE PROJECT, PROVIDE SHOP DRAWINGS FOR OWNER APPROVAL ILLUSTRATING COORDINATION OF ALL UTILITY CONNECTIONS INTO BUILDING.

SUPERSEDED

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325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT — MARISA PETTIER — No. 6065 — 8.31.24 — RENEWAL DATE — STATE OF CALIFORNIA

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BID/PERMIT DOCUMENT

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

RESTROOM BUILDING

NO.	REVISION	DATE
1	Addendum 3	08-19-24

PROJECT MANAGER
Marisa Pettier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JANUARY 13, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
A001

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LAWN
ASPHALT PATH
LIMIT OF PROPOSED WORK
BENCH
CURB
LAWN
IRRIGATION VALVE
EXISTING TREE AND ASSOCIATED NUMBER, TYP.
ROOT FLARE AT EXISTING TREE, TYP.
LIGHT POLE
ART BENCH AROUND OLIVE TREE
DRINKING FOUNTAIN
LIMIT OF PROPOSED WORK
ASPHALT PATH
LIGHT POLE
PICNIC TABLES
SAND
LAWN
ASPHALT PATH
CURB
BENCH, TYP.
CONCRETE
SAND
PLAY EQUIPMENT
ASPHALT PATH W/ CURB
ASPHALT PATH
LAWN
TRAIN TRACKS
PLAY EQUIPMENT IN ENGINEERED WOOD FIBER
BENCH
APPROXIMATE TREE CANOPY
LIGHT POLE
TRASH CAN
BENCH
LAWN
CONCRETE
DRINKING FOUNTAIN
IRRIGATION VALVE
RESTROOM BUILDING
PICNIC TABLES
SAND
PLAY EQUIPMENT
PLAY EQUIPMENT
LAWN
CURB
LIMIT OF PROPOSED WORK
DOMESTIC BACKFLOW PREVENTER
DOMESTIC WATER METER
HISTORIC WALL AND FENCE
CURB
CURB
HISTORIC WALL AND FENCE
EL CAMINO REAL
RESIDENTIAL
PICNIC AREA
BENCH, TYP.
ASPHALT PATH
COMMERCIAL
ROW

TOPOGRAPHIC SURVEY PROVIDED BY RRM DESIGN GROUP.

NORTH

0 16 32 48 feet

1" = 16'-0"

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LICENSED LANDSCAPE ARCHITECT
MARISA J. PELTIER No. 5446
6-30-26
STATE OF CALIFORNIA

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330 W 20th Ave., San Mateo, CA 94403

CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

EXISTING CONDITIONS

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JANUARY 31, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
V101

N:\1652\1652-02-RC22\Central Park Playground Master Grove Rnd\Design\Landscape\Active Files\1652-02-RC17-Exhg_V101_Jan 14, 2025, 3:33pm, dlright

DEMOLITION NOTES

1. **DEMOLITION PHASE TREE PROTECTION AND REMOVAL PER ARBORIST REPORT:**

   1.1. **THIS PLAN SHALL BE REVIEWED IN CONJUNCTION WITH THE ARBORIST REPORT ON THE FOLLOWING PAGES AND THE TREE PROTECTION PLAN (CD102) FOR CONSTRUCTION PHASE TREE PROTECTION MEASURES.**

   1.2. **THE DEMOLITION CONTRACTOR SHALL MEET WITH THE PROJECT ARBORIST BEFORE BEGINNING WORK TO DISCUSS TREE WORK PROCEDURES AND TREE PROTECTION.**

   1.3. **THE CALCULATED TREE PROTECTION ZONE IS SPECIFIED BY THE ARBORIST REPORT BASED ON SPECIES TOLERANCES, TREE CONDITION, TRUNK DIAMETER AND THE NATURE AND PROXIMITY OF PROPOSED IMPROVEMENTS. DUE TO THE SIZE AND LOCATION OF EXISTING TREES, MUCH OF THE PROPOSED CONSTRUCTION OCCURS WITHIN THE CALCULATED TREE PROTECTION ZONES. BECAUSE OF THIS, A SPECIFIED TREE PROTECTION ZONE HAS BEEN DESIGNATED WHICH IN MOST CASES IS SMALLER THAN THE CALCULATED TREE PROTECTION ZONE. SEE FOLLOWING NOTE. NO EXCESS SOIL, CHEMICALS, DEBRIS, EQUIPMENT OR OTHER MATERIALS SHALL BE STORED WITHIN THE CALCULATED TPZ. LIMIT USE OF HEAVY MACHINERY WITHIN THIS AREA.**

   1.4. **THE SPECIFIED TREE PROTECTION ZONE REPRESENTS A FENCED AREA IN WHICH NO DEMOLITION, CONSTRUCTION, GRADING, TRENCHING, UTILITIES, STORAGE OR STOCKPILING OF MATERIALS SHALL OCCUR. THE SPECIFIED TPZ ON THIS SHEET IS BASED ON BOTH EXISTING CONDITIONS AND PROPOSED IMPROVEMENTS FOR THE DEMOLITION PHASE OF WORK. ONCE PAVING AND CURBS HAVE BEEN DEMOLISHED, THE SPECIFIED TPZ FENCING SHALL BE EXTENDED TO THE LAYOUT SHOWN ON THE TREE PROTECTION PLAN. THIS FENCE SHALL REMAIN UNTIL CONSTRUCTION IS COMPLETED.**

   1.5. **SEQUENCING: FOR TREES WHERE FURNISHINGS, SAND, ENGINEERED WOOD FIBER OR GRASS MUST BE REMOVED FROM WITHIN THE SPECIFIED TPZ FENCING, FIRST INSTALL TRUNK PROTECTION PER DETAILS ON CD501. NEXT, REMOVE MATERIAL BY HAND, AIR SPADE OR WATER EXCAVATION. PRESERVE ROOTS ENCOUNTERED. FINALLY, ERECT TREE PROTECTION FENCING TO FULLY ENCLOSE THE SPECIFIED TPZ AFTER MATERIALS HAVE BEEN REMOVED. TRUNK PROTECTION MAY BE REMOVED AFTER TREE PROTECTION FENCING HAS BEEN INSTALLED.**

   1.6. **INSTALL CITY APPROVED TREE PROTECTION MEASURES ON SHEET CD501 FOR ALL TREES TO REMAIN AFTER ITEMS IN THE ABOVE NOTE HAVE BEEN ADDRESSED.**

   1.7. **APPLY AND MAINTAIN 4-6 INCHES OF WOOD CHIP MULCH WITHIN THE SPECIFIED TPZ.**

   1.8. **WHERE POSSIBLE, CAP AND ABANDON ALL EXISTING UNDERGROUND UTILITIES WITHIN THE SPECIFIED TPZ IN PLACE. REMOVAL OF UTILITY BOXES BY HAND IS ACCEPTABLE BUT NO TRENCHING SHOULD BE PERFORMED WITHIN THE SPECIFIED TPZ TO REMOVE UTILITIES, IRRIGATION LINES, ETC.**

   1.9. **OPERATE ANY MACHINERY FROM EXISTING HARDSCAPE WHERE POSSIBLE. PULL MATERIAL AWAY FROM THE TRUNKS RATHER THAN PERPENDICULAR ACROSS THE ROOT AREAS.**

   1.10. **TREES TO BE PRESERVED MAY REQUIRE PRUNING TO REMOVE DEAD BRANCHES AND REDUCE THE LIKELIHOOD OF FAILURE (SEE TREE DISPOSITION FORM IN ARBORIST REPORT). ALL PRUNING SHALL BE DONE BY A STATE OF CA LICENSED TREE CONTRACTOR (C61/D49). ALL PRUNING SHALL BE DONE BY AN ISA CERTIFIED ARBORIST OR CERTIFIED TREE WORKER AND ADHERE TO THE MOST RECENT ADDITIONS OF THE AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS (Z133.1) AND PRUNING (A300). THE CONSULTING ARBORIST WILL PROVIDE PRUNING SPECIFICATIONS PRIOR TO SITE DEMOLITION. BRANCHES EXTENDING INTO THE WORK AREA THAT CAN REMAIN FOLLOWING DEMOLITION MAY BE TIED BACK AND PROTECTED FROM DAMAGE.**

   1.11. **ALL TREE WORK SHALL COMPLY WITH THE MITIGATION MEASURES FOR TREE REMOVALS, THE MIGRATORY BIRD TREATY ACT AS WELL AS CA FISH AND WILDLIFE CODE 3503-3513 TO NOT DISTURB NESTING BIRDS. TREE PRUNING AND REMOVAL SHOULD BE SCHEDULED OUTSIDE OF THE BREEDING SEASON TO AVOID SCHEDULING DELAYS.**

   1.12. **TREES TO BE REMOVED THAT HAVE BRANCHES EXTENDING INTO THE CANOPY OF TREES TO REMAIN MUST BE REMOVED BY A QUALIFIED ARBORIST AND NOT BY CONSTRUCTION CONTRACTORS. THE QUALIFIED ARBORIST SHALL REMOVE THE TREE IN A MANNER THAT CAUSES NO DAMAGE TO THE TREES AND UNDERSTORY TO REMAIN. TREE STUMPS SHALL BE GROUND 12 INCHES BELOW GROUND SURFACE.**

   1.13. **TREES TO BE REMOVED SHALL BE FELLED SO AS TO FALL AWAY FROM OTHER TREES AND AVOID PULLING OR BREAKING OF ROOTS OF TREES TO REMAIN. IF ROOTS ARE ENTWINED, THE CONSULTANT MAY REQUIRE FIRST SEVERING THE MAJOR WOODY ROOT MASS BEFORE EXTRACTING THE TREES, OR GRINDING THE STUMP BELOW GROUND.**

   1.14. **TREES TO BE REMOVED MAY BE RE-USED ON SITE AS EDGE FOR PLAYGROUND SURFACING. WHERE POSSIBLE, CUT TRUNKS AND LARGE BRANCHES IN 6FT OR GREATER SEGMENTS FOR RE-USE.**

2. THIS DEMOLITION PLAN WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. UNDERGROUND UTILITIES SHOWN ARE DRAWN DIAGRAMMATICALLY FROM OWNER-PROVIDED AS-BUILT DRAWINGS. THE ARCHITECT AND THE ENGINEER DO NOT REPRESENT THAT ALL ITEMS WHICH MAY REQUIRE DEMOLITION AND REMOVAL HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE AS-BUILTS, AND THE SITE, TO DETERMINE AND EXECUTE ALL DEMOLITIONS AND REMOVALS NECESSARY FOR THE CONSTRUCTION OF THE NEW WORK TO THE SPECIFIED LINES, GRADES, AND CONFIGURATIONS.

3. DEMOLITION WORK AND ABANDONMENT SHALL CONFORM TO THE UNIFORM BUILDING CODE, TITLE 24, AND CITY OF SAN MATEO REQUIREMENTS. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER OF RECORD AND SAN MATEO CITY ENGINEER.

4. ALL DEMOLITION WORK SHALL CONFORM TO THE SPECIFICATIONS FOR THIS PROJECT, AND THE RECOMMENDATIONS IN THE REPORTS PREPARED FOR THIS PROJECT LISTED ON SHEET G002.

5. CONTRACTOR TO COMPLY WITH SAN MATEO MUNICIPAL ORDINANCE #2006-7 REGARDING CONSTRUCTION AND DEMOLITION DEBRIS.

6. NO DEMOLITION SHALL BE STARTED WITHOUT APPROVED PLANS. THE CITY SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO STARTING DEMOLITION.

7. THE PLANS DO NOT AUTHORIZE SITE DISTURBANCE BEYOND THE LIMITS OF WORK LINES AS REPRESENTED ON THE PLANS UNLESS OTHERWISE NOTED.

8. ALL ITEMS DAMAGED DURING DEMOLITION AND CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO ORIGINAL CONDITION OR TO THE SATISFACTION OF THE DISTRICT.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER STORAGE AND TRANSPORTATION OF ANY ITEMS TO BE RELOCATED.

10. ALL ITEMS TO BE SALVAGED ARE THE PROPERTY OF THE CITY. THE CONTRACTOR SHALL SALVAGE AND DELIVER TO THE CITY CORP YARD ANY ITEMS AT THE REQUEST OF THE CITY.

11. ALL DEBRIS FROM THE DEMOLITION PROCESS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE UNLESS OTHERWISE NOTED.

12. ALL STREETS, ALLEYS, VEHICULAR WAYS, SIDEWALKS, AND HAUL ROUTES SHALL BE KEPT CLEAN AND CLEAR OF DEBRIS, DIRT AND DUST IN A MANNER ACCEPTABLE TO THE CITY. AT A MINIMUM, THESE AREAS SHALL BE CLEANED AT THE END OF EACH WORK DAY. FAILURE TO DO SO WILL RESULT IN A "STOP WORK" NOTICE. SAID NOTICE WILL NOT BE RELEASED UNTIL THE AREA HAS BEEN CLEANED TO THE SATISFACTION OF THE CITY. THE FLUSHING OF DIRT OR DEBRIS INTO STORM DRAIN OR SANITARY SEWER FACILITIES SHALL NOT BE PERMITTED.

13. ALL ABANDONED UTILITIES SHALL BE MARKED IN THE FIELD AND LOCATED ON THE DRAWINGS OF RECORD BY THE CONTRACTOR.

14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION. EXISTING UTILITIES AND IMPROVEMENTS SHOWN ON THESE PLANS ARE FROM RECORD SOURCES AND SPOT CHECKS. UTILITIES ARE SHOWN FOR DESIGN PURPOSES ONLY.

15. THE CONTRACTOR SHALL ONLY REMOVE THOSE UNDERGROUND FACILITIES SPECIFICALLY NOTED FOR REMOVAL. DAMAGE TO EXISTING FACILITIES TO REMAIN SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF ALL UTILITY COMPANIES 48 HOURS PRIOR TO THE BEGINNING OF WORK. BRING ANY CONFLICTS WITH NEW IMPROVEMENTS IMMEDIATELY TO THE ATTENTION OF THE CITY.

17. NOTIFY UNDERGROUND SERVICE ALERT (USA) TOLL FREE AT 811 A MINIMUM OF 48 WORKING HOURS PRIOR TO THE START OF CONSTRUCTION.

18. CONTRACTOR SHALL NOT INTERRUPT ANY SERVICES OR DISRUPT THE OPERATION OF ADJACENT BUSINESSES, RESIDENTIAL AREAS OR ONSITE FACILITIES OUTSIDE THE LIMITS OF DEMOLITION.

19. CONTRACTOR SHALL OBTAIN FROM THE CITY A DEMOLITION PERMIT FROM THE CITY AND, IF APPLICABLE, A CALTRANS ENCROACHMENT PERMIT FOR WORK WITHIN CITY RIGHT OF WAY PRIOR TO THE START OF WORK.

20. FILL AND COMPACT HOLES RESULTING FROM TREES AND TREE STUMP REMOVAL TO REQUIRED DENSITY FOR PROPOSED IMPROVEMENTS. FILLING SHALL NOT BE DONE UNTIL HOLES HAVE BEEN APPROVED BY THE CITY'S REPRESENTATIVE.

21. ANY DAMAGE TO THE HAUL ROUTE PAVING SHALL BE NOTIFIED BY THE CONTRACTOR AND REPAIRED TO THE SATISFACTION OF THE CITY.

22. ALL CONSTRUCTION DEBRIS SHALL BE PROPERLY DISPOSED OF, RECYCLED, AND/OR SALVAGED, IN ACCORDANCE WITH THE CITY'S MUNICIPAL CODE REGARDING CONSTRUCTION, AND DEMOLITION DEBRIS.

23. CONTRACTOR TO PROVIDE PORTA-POTTIES (MIN. TWO, ONE ADA ACCESSIBLE) AT THE PARK'S 9TH STREET ENTRANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR REGULAR MAINTENANCE, CLEANING, RESTOCKING SUPPLIES, AND SECURITY OF THE PORTA-POTTIES TO THE SATISFACTION OF THE CITY.

24. CONSTRUCTION FENCING TO BE SET UP ON THE OUTBOARD SIDE OF THE HAUL ROUTE.

25. CAREFULLY REMOVE AND SALVAGE ALL DEDICATION PLAQUES ON EXISTING BENCH WITHIN THE LIMIT OF WORK AND PACKAGE FOR DELIVERY TO OWNER'S REPRESENTATIVE.

26. SEE NOTE 1 ON ES102 FOR INFORMATION ON ELECTRICAL CONDUIT DEMOLITION AT POLE LIGHTS. ELECTRICAL LINES SHOWN ON THIS PLAN ARE APPROXIMATE AND MAY NOT REPRESENT ACTUAL CONDUIT LAYOUT, THEREFORE, ANY ABANDONMENT OR DEMOLITION OF ELECTRICAL LINES HAS NOT BEEN SHOWN ON THE FOLLOWING SHEET.

MITIGATION MEASURES FOR TREE AND BUILDING REMOVALS

TREE REMOVALS:

1. REFER TO **SAN MATEO CENTRAL PARK UPDATE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION** PREPARED BY FIRST CARBON SOLUTIONS DATED OCTOBER 20, 2017.

2. MM BIO-1 NESTING BIRD AND RAPTORS: TO PREVENT IMPACTS TO MIGRATORY BIRD TREATY ACT-PROTECTED BIRDS AND THEIR NESTS, REMOVAL OF VEGETATION AND GRADING WILL BE LIMITED TO ONLY THOSE NECESSARY TO THE EXTENT NECESSARY TO CONSTRUCT THE PROJECT.

- IF ANY TREE REMOVAL IS NECESSARY, THEN IT WILL OCCUR OUTSIDE THE NESTING SEASON BETWEEN SEPTEMBER 1 AND FEBRUARY 14. IF TREES CANNOT BE REMOVED OUTSIDE THE NESTING SEASON, PRE-CONSTRUCTION SURVEYS WILL BE CONDUCTED 3 DAYS PRIOR TO TREE REMOVAL TO VERIFY THE ABSENCE OF ACTIVE NESTS.
- IF AN ACTIVE NEST IS LOCATED DURING PRE-CONSTRUCTION SURVEYS, USFWS AND/OR CDFW (AS APPROPRIATE) SHALL BE NOTIFIED REGARDING THE STATUS OF THE NEST. CONSTRUCTION ACTIVITIES SHALL BE RESTRICTED AS NECESSARY TO AVOID DISTURBANCE OF THE NEST UNTIL IT IS ABANDONED OR THE AGENCIES DEEM DISTURBANCE POTENTIAL TO BE MINIMAL. RESTRICTIONS MAY INCLUDE ESTABLISHMENT OF EXCLUSION ZONES (NO INGRESS OF PERSONNEL OR EQUIPMENT AT A MINIMUM RADIUS OF 100 FEET AROUND AN ACTIVE RAPTOR NEST AND A 50-FOOT RADIUS AROUND AN ACTIVE MIGRATORY BIRD NEST) OR ALTERATION OF THE CONSTRUCTION SCHEDULE.
- A QUALIFIED BIOLOGIST WILL DELINEATE THE BUFFER USING ENVIRONMENTALLY SENSITIVE AREA FENCING, PIN FLAGS, AND/OR YELLOW CAUTION TAPE. THE BUFFER ZONE WILL BE MAINTAINED AROUND THE ACTIVE NEST SITE(S) UNTIL THE YOUNG HAVE FLEDGED AND ARE FORAGING INDEPENDENTLY.

3. MM BIO2 BAT MITIGATION: TO ENSURE THAT THERE WILL BE NO BIOLOGICAL CONCERNS ASSOCIATED WITH THESE SPECIES, A BAT SURVEY SHALL BE CONDUCTED BETWEEN MARCH 1 TO JULY 31 BY A QUALIFIED WILDLIFE BIOLOGIST PRIOR TO THE REMOVAL OF ANY TREES OR BUILDINGS. IF NO BAT ROOSTS ARE DETECTED, THEN NO FURTHER ACTION IS REQUIRED IF THE TREES AND BUILDINGS ARE REMOVED PRIOR TO THE NEXT BREEDING SEASON. IF REMOVAL IS DELAYED, THEN AN ADDITIONAL PRE-DEMOLITION SURVEY SHALL BE CONDUCTED 30 DAYS PRIOR TO REMOVAL TO ENSURE THAT A NEW COLONY HAS NOT ESTABLISHED ITSELF. IF A COLONY OF BATS IS FOUND ROOSTING ON-SITE, THEN THE FOLLOWING MITIGATION WILL BE IMPLEMENTED TO REDUCE THE POTENTIAL DISTURBANCE:

- IF MATERNITY ROOSTS ARE IDENTIFIED DURING THE MATERNITY ROOSTING SEASON (TYPICALLY MAY TO AUGUST), A QUALIFIED BIOLOGIST SHALL DETERMINE APPROPRIATE BUFFER ZONES AND ROOSTS MUST REMAIN UNDISTURBED, UNTIL THE QUALIFIED BIOLOGIST HAS DETERMINED THE YOUNG BATS ARE NO LONGER ROOSTING. IF ROOSTING IS FOUND TO OCCUR ON-SITE, REPLACEMENT ROOST HABITAT (E.G., BAT BOXES) SHALL BE PROVIDED ON-SITE FOR ROOSTING SITES REMOVED.

BUILDING REMOVALS:

1. REFER TO **SAN MATEO CENTRAL PARK UPDATE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION** PREPARED BY FIRST CARBON SOLUTIONS DATED OCTOBER 20, 2017.

- MM BIO-2 BAT MITIGATION: TO ENSURE THAT THERE WILL BE NO BIOLOGICAL CONCERNS ASSOCIATED WITH THESE SPECIES, A BAT SURVEY SHALL BE CONDUCTED BETWEEN MARCH 1 TO JULY 31 BY A QUALIFIED WILDLIFE BIOLOGIST PRIOR TO THE REMOVAL OF ANY TREES OR BUILDINGS. IF NO BAT ROOSTS ARE DETECTED, THEN NO FURTHER ACTION IS REQUIRED IF THE TREES AND BUILDINGS ARE REMOVED PRIOR TO THE NEXT BREEDING SEASON. IF REMOVAL IS DELAYED, THEN AN ADDITIONAL PRE-DEMOLITION SURVEY SHALL BE CONDUCTED 30 DAYS PRIOR TO REMOVAL TO ENSURE THAT A NEW COLONY HAS NOT ESTABLISHED ITSELF. IF A COLONY OF BATS IS FOUND ROOSTING ON-SITE, THEN THE FOLLOWING MITIGATION WILL BE IMPLEMENTED TO REDUCE THE POTENTIAL DISTURBANCE:

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DEMOLITION SCHEDULE

CODE	DESCRIPTION
DEMOLITION	
D-01	REMOVE AND SALVAGE EXISTING LIGHT POLE AND FIXTURE AND STORE ON SITE. SEE NOTE 1 ON SHEET ES102.
D-02	REMOVE AND STORE EXISTING BENCH ON SITE. REMOVE AND SALVAGE DEDICATION PLAQUE. SEE NOTE 25.
D-03	REMOVE AND DISPOSE OF EXISTING PLAY EQUIPMENT AND FOOTINGS.
D-04	REMOVE AND DISPOSE OF EXISTING RESTROOM BUILDING, FOUNDATION, UTILITIES, AND APPURTENANCES. SALVAGE EXISTING CONTROLLER. REFER TO IRRIGATION PLAN FOR NEW WIRE CONNECTIONS AND TEMPORARY CONTROLLER RELOCATION.
D-05	REMOVE AND SALVAGE EXISTING TRASH RECEPTACLES AND STORE ON SITE. REMOVE AND DISPOSE OF EXISTING FOOTINGS.
D-06	REMOVE AND DISPOSE OF EXISTING DRINKING FOUNTAIN AND ASSOCIATED CONCRETE SLAB.
D-07	REMOVE AND SALVAGE EXISTING PICNIC TABLES AND STORE ON SITE.
D-09	REMOVE AND DISPOSE OF EXISTING WALL AND FOOTING.
D-10	REMOVE AND DISPOSE OF EXISTING IRRIGATION LATERAL/MAINLINE.
D-14	ABANDON EXISTING IRRIGATION LATERAL.
D-15	ABANDON EXISTING ELECTRICAL CONDUIT.
D-16	CAP AND ABANDON EXISTING POTABLE WATER LINE IN PLACE.
D-17	CAP AND ABANDON EXISTING SEWER LINE IN PLACE.
D-19	ABANDON SEGMENT OF EXISTING IRRIGATION MAINLINE. PROTECT IRRIGATION WIRES IN PLACE. SEE IRRIGATION PLAN FOR NEW MAINLINE SEGMENT.
D-20	REMOVE AND DISPOSE SEGMENT OF EXISTING POTABLE WATER LINE.
D-21	REMOVE AND DISPOSE OF EXISTING BACKFLOW PREVENTOR.
EXISTING TO REMAIN	
EX-02	PROTECT IN PLACE EXISTING LIGHT POLE AND PULL BOX.
EX-03	PROTECT IN PLACE EXISTING FENCE, WALL AND PILASTERS.
EX-04	PROTECT IN PLACE EXISTING ASPHALT PATH.
EX-05	PROTECT IN PLACE EXISTING BENCH.
EX-06	PROTECT IN PLACE EXISTING PLAQUE.
EX-07	PROTECT EXISTING IRRIGATION CONTROL VALVES.
EX-10	PROTECT IN PLACE EXISTING IRRIGATION MAINLINE AND IRRIGATION WIRES.
EX-11	APPROXIMATE EXISTING ELECTRICAL CONDUIT. SEE NOTE 1 ON SHEET ES102.
EX-12	PROTECT IN PLACE EXISTING WATER LINE.
EX-13	PROTECT IN PLACE EXISTING STORM DRAIN LINE.
EX-14	PROTECT IN PLACE EXISTING IRRIGATION LATERAL.
EX-16	PROTECT IN PLACE EXISTING SIDEWALK AND GUTTER.
EX-17	PROTECT IN PLACE EXISTING CONCRETE / ASPHALT ROAD.
EX-18	PROTECT IN PLACE EXISTING WATER METER.

SYMBOL LEGEND

- SAWCUT LINE. SAWCUT TO NEAREST EXISTING SCORE JOINT AT CONCRETE PAVING.
- REMOVE & PROPERLY DISPOSE OF EXISTING ASPHALTIC CONCRETE PAVEMENT AND BASE MATERIAL.
- REMOVE & PROPERLY DISPOSE OF EXISTING CONCRETE PAVEMENT AND BASE MATERIAL.
- REMOVE EXISTING SAND AND FILTER FABRIC.
- REMOVE EXISTING ENGINEERED WOOD FIBER AND FILTER FABRIC. STOCKPILE ON SITE FOR USE AS MULCH.
- REMOVE & PROPERLY DISPOSE OF EXISTING CURB AND BASE MATERIAL.
- EXISTING MULCH AND TURF TO BE CLEARED, GRUBBED, AND REMOVED. REMOVE AND PROPERLY DISPOSE OF ALL IRRIGATION PIPING, FITTINGS, HEADS, AND ASSOCIATED ITEMS AS SHOWN ON PLAN. ALL IRRIGATION TO AREAS BEYOND PROJECT LIMITS SHALL REMAIN FULLY FUNCTIONAL.
- ABANDON PIPE IN PLACE
- REMOVE PIPE
- CAUTION TAPE ON WOOD STAKES, SPACED 6'
- CHAIN LINK FENCE AT SPECIFIED TREE PROTECTION ZONE, DEMOLITION PHASE. ~~SEE NOTE 1/CD001 FOR SEQUENCE.~~
- CALCULATED TREE PROTECTION ZONE PER ARBORIST ~~REPORT~~
- 532 — EXISTING TREE TO BE REMOVED
- 532 — EXISTING TREE TO REMAIN. SEE CD102.
- EXISTING TREE DRIPLINE

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LICENSED LANDSCAPE ARCHITECT — MARIE L. PEITTIER — EXP. 8.31.26 — STATE OF CALIFORNIA

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CITY OF SAN MATEO — PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

DEMOLITION NOTES AND SCHEDULE

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Marisa Peitier
DRAWN BY MP/YI
CHECKED BY LM
DATE
~~JANUARY 31, 2025~~
APRIL 30, 2025
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SHEET
CD001

K:\1652\1652-02-RC22-Central Park Playground Master Plan\Final Design\1 Landscape Architecture\PLOTSHEETS\Plot Sheets\Plot Sheet 1652-02-RC22-CD001 Feb 04, 2025 4:01pm, jkgerard

LIMIT OF WORK EXTENDS WEST TO ALLOW FOR ELECTRICAL WORK TO EXISTING SWITCHBOARD. CONDUIT MAY BE BORED (PREFERRED) OR TRENCHED. SEE IS101 FOR LIMIT OF WORK IN THIS AREA.

LIMIT OF WORK

EX. CAPPED WATER LINE

LIMIT OF WORK

END PIPE ABANDONMENT

LIMIT OF WORK

BEGIN

IRRIGATION BEYOND LIMIT OF WORK SHALL REMAIN FULLY FUNCTIONAL.

END

CAUTION! DO NOT DAMAGE EXISTING HISTORIC FENCE, WALL AND PILASTERS!

LIMIT OF WORK

LIMIT OF WORK

CAUTION! DO NOT DAMAGE EXISTING HISTORIC FENCE, WALL AND PILASTERS!

CONTRACTOR TO PROVIDE TEMPORARY PEDESTRIAN WALKWAY DURING UTILITY EXCAVATION AND INSTALLATION WORK

BEGIN REMOVAL AT NORTHEAST CONNECTION OF EXISTING WATER METER

EL CAMINO REAL

CONTRACTOR SHALL REPLACE ANY PAVEMENT (MATCH EXISTING PAVEMENT SECTION) DAMAGED DURING CONSTRUCTION. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL WALK THE ENTIRE HAUL ROUTE WITH THE CITY (OR CITY'S DESIGNATED REPRESENTATIVE) AND PROVIDE PHOTOGRAPHIC DOCUMENTATION OF THE HAUL ROUTE'S EXISTING CONDITIONS.

NORTH

0 10 20 30 feet

1" = 10'-0"

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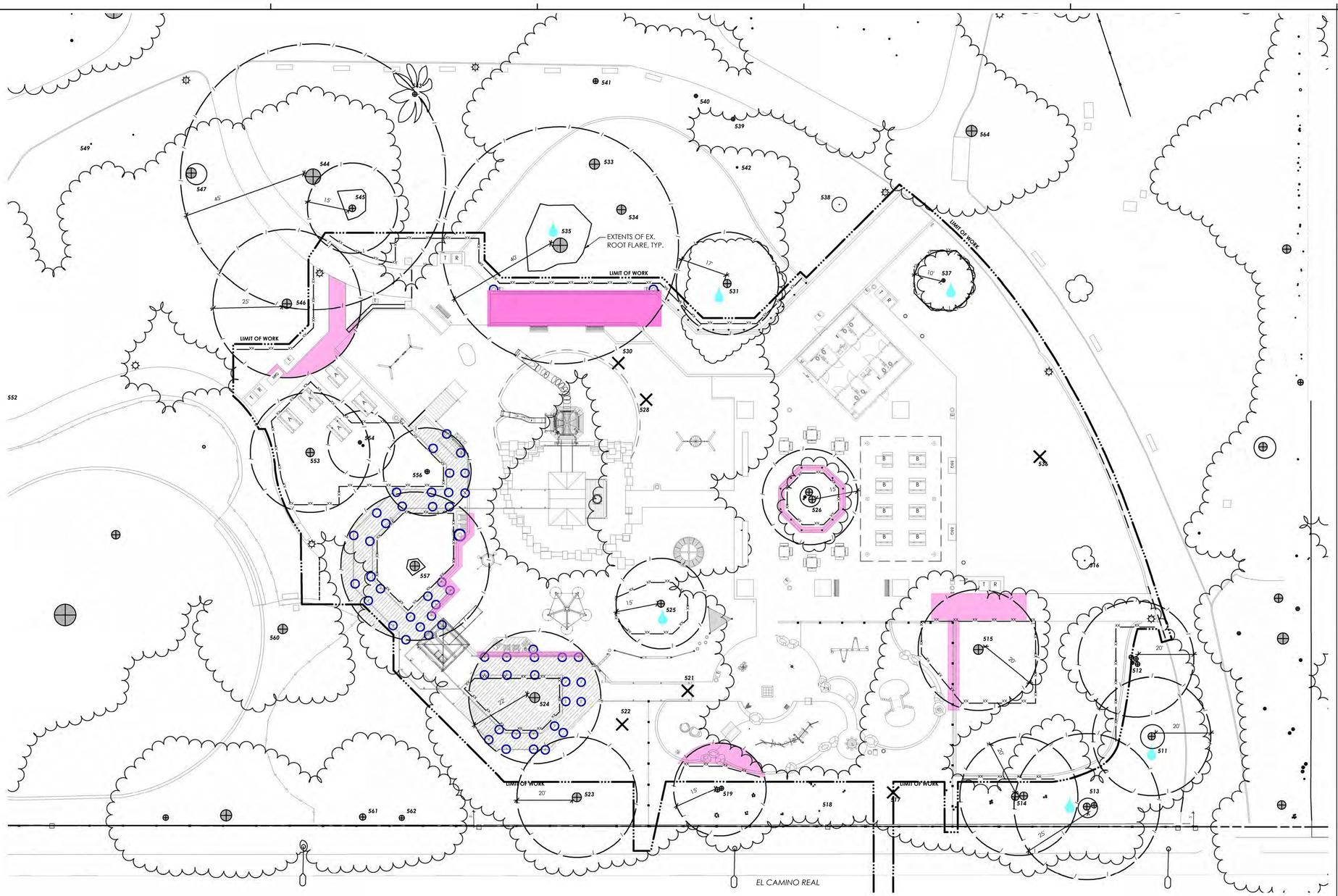
VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

DEMOLITION PLAN

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SYMBOL LEGEND

- LIMIT OF PROJECT WORK/CONSTRUCTION FENCE PERIMETER
- CHAIN LINK FENCE AT SPECIFIED TREE PROTECTION ZONE, CONSTRUCTION PHASE.
- CALCULATED TREE PROTECTION ZONE PER ARBORIST REPORT
- 532 — EXISTING TREE TO BE REMOVED PER DEMOLITION PLAN
- 532 — EXISTING TREE TO BE PROTECTED
- 532 — EXISTING TREE TO BE RELOCATED
- EXISTING TREE DRIPLINE
- AREAS OF HAND EXCAVATION TO IMPLEMENT PROPOSED IMPROVEMENTS
- AREAS WITHIN THE CALCULATED TREE PROTECTION ZONE TO BE PROVIDED WITH SOIL AND ROOT BUFFERS FOR THE DURATION OF CONSTRUCTION. REMOVE AND REPLACE FOR FOOTING INSTALLATION.
- CONDUCT EXPLORATORY TRENCHING AT THE BEGINNING OF WORK COMMENCEMENT AT HIGHLIGHTED AREAS SPECIFIED FOR DEEP PIER FOOTINGS WITHIN THE CALCULATED TPZ. PRIOR TO THE ORDERING OF FINAL SHOP DRAWINGS FOR BOARDWALK, REFER TO ARBORIST REPORT FOR MORE INFORMATION.
- TREES TO RECEIVE SUPPLEMENTAL IRRIGATION DURING CONSTRUCTION. SEE NOTE 12.

PROTECTED TREES PROPOSED FOR PRESERVATION

- REFER TO TREE DISPOSITION TABLE IN ARBORIST REPORT FOR A FULL DESCRIPTION OF EACH PROTECTED TREE TO BE PRESERVED. THE FOLLOWING LIST REPRESENTS TREES WITHIN/NEAR THE LIMIT OF PROJECT WORK TO BE PRESERVED.

TREE NO.	SPECIES
511	OLIVE
512	COAST LIVE OAK
513	OLIVE
514	COAST LIVE OAK
515	COAST LIVE OAK
519	COAST LIVE OAK
523	COAST LIVE OAK
524	COAST LIVE OAK
525	COAST LIVE OAK
526	OLIVE
531	BUNYA-BUNYA
533	ATLAS CEDAR
534	COAST LIVE OAK
535	MORETON BAY FIG
537	SOUTHERN LIVE OAK
539	COAST LIVE OAK
540	COAST LIVE OAK
541	COAST LIVE OAK
543	CALIFORNIA FAN PALM
544	COAST REDWOOD
545	INCENSE CEDAR
546	COAST LIVE OAK
547	COAST REDWOOD
553	COAST LIVE OAK
554	COAST LIVE OAK
556	COAST LIVE OAK
557	COAST LIVE OAK
560	COAST LIVE OAK

TREE PROTECTION NOTES

CONSTRUCTION PHASE TREE PROTECTION PER ARBORIST REPORT:

1. **THIS PLAN SHALL BE REVIEWED IN CONJUNCTION WITH THE ARBORIST REPORT ON THE FOLLOWING PAGES AND THE DEMOLITION PLAN (CD102) FOR DEMOLITION PHASE TREE PROTECTION MEASURES.**
2. **THE CALCULATED TREE PROTECTION ZONE IS SPECIFIED BY THE ARBORIST REPORT BASED ON SPECIES TOLERANCES, TREE CONDITION, TRUNK DIAMETER AND THE NATURE AND PROXIMITY OF PROPOSED IMPROVEMENTS. DUE TO THE SIZE AND LOCATION OF EXISTING TREES, MUCH OF THE PROPOSED CONSTRUCTION OCCURS WITHIN THE CALCULATED TREE PROTECTION ZONES. BECAUSE OF THIS, A SPECIFIED TREE PROTECTION ZONE HAS BEEN DESIGNATED WHICH IN MOST CASES IS SMALLER THAN THE CALCULATED TREE PROTECTION ZONE. SEE FOLLOWING NOTE. NO EXCESS SOIL, CHEMICALS, DEBRIS, EQUIPMENT OR OTHER MATERIALS SHALL BE STORED WITHIN THE CALCULATED TPZ. LIMIT USE OF HEAVY MACHINERY WITHIN THIS AREA.**
3. **THE SPECIFIED TREE PROTECTION ZONE REPRESENTS A FENCED AREA IN WHICH NO DEMOLITION, CONSTRUCTION, GRADING, TRENCHING, UTILITIES, STORAGE OR STOCKPILING OF MATERIALS SHALL OCCUR. THE SPECIFIED TPZ ON THIS SHEET IS BASED ON PROPOSED IMPROVEMENTS FOR THE CONSTRUCTION PHASE OF WORK. THE SPECIFIED TPZ FENCING SHALL REMAIN UNTIL CONSTRUCTION IS COMPLETED. FENCES MAY NOT BE RELOCATED OR REMOVED WITHOUT PERMISSION OF THE CONSULTING ARBORIST.**
4. **PRIOR TO BEGINNING WORK, THE CONTRACTORS WORKING IN THE VICINITY OF TREES TO BE PRESERVED ARE REQUIRED TO MEET WITH THE CONSULTING ARBORIST AT THE SITE TO REVIEW ALL WORK PROCEDURES, ACCESS ROUTES, STORAGE AREAS AND TREE PROTECTION MEASURES.**
5. **ALL CONTRACTORS SHALL CONDUCT OPERATIONS IN A MANNER THAT WILL PREVENT DAMAGE TO TREES TO BE PRESERVED.**
6. **ANY GRADING, CONSTRUCTION, DEMOLITION OR OTHER WORK THAT IS EXPECTED TO ENCOUNTER TREE ROOTS SHOULD BE MONITORED BY THE CONSULTING ARBORIST.**
7. **CONSTRUCTION TRAILERS, TRAFFIC AND STORAGE AREAS MUST REMAIN OUTSIDE FENCED AREAS AT ALL TIMES.**
8. **PRIOR TO GRADING, PAD PREPARATION, EXCAVATION FOR FOUNDATIONS/FOOTINGS/WALLS, TRENCHING, TREES MAY REQUIRE ROOT PRUNING OUTSIDE THE SPECIFIED TPZ BY CUTTING ALL ROOTS CLEANLY TO THE DEPTH OF THE EXCAVATION. ROOTS SHALL BE CUT BY MANUALLY DIGGING A TRENCH AND CUTTING EXPOSED ROOTS WITH A SAW, VIBRATING KNIFE, ROCK SAW, NARROW TRENCHER WITH SHARP BLADES, OR OTHER APPROVED ROOT PRUNING EQUIPMENT. THE CONSULTING ARBORIST WILL MONITOR ALL ROOT PRUNING ACTIVITIES.**
9. **CONDUCT EXPLORATORY TRENCHING AT AREAS IDENTIFIED ON THE PLAN FOR ALL PIERED FOOTINGS FOR THE BOARDWALK, LIGHT POLES AND SHADE TRELLIS WITHIN CALCULATED TPZ AREAS. IF ROOTS GREATER THAN 2 INCHES IN DIAMETER ARE ENCOUNTERED, ADJUST THE FOOTING LOCATION TO AVOID ROOTS. CONTACT THE CONSULTING ARBORIST IF ROOTS ARE ENCOUNTERED AND THE FOOTING CANNOT BE MOVED TO AVOID THEM.**
10. **IF INJURY SHOULD OCCUR TO ANY TREE DURING CONSTRUCTION, IT SHOULD BE EVALUATED AS SOON AS POSSIBLE BY THE CONSULTING ARBORIST SO THAT APPROPRIATE TREATMENTS CAN BE APPLIED.**
11. **ANY ADDITIONAL TREE PRUNING NEEDED FOR CLEARANCE DURING CONSTRUCTION MUST BE PERFORMED BY A CERTIFIED ARBORIST AND NOT BY CONSTRUCTION PERSONNEL.**
12. **ALL TREES EXCEPT FOR COAST LIVE OAKS SHALL BE IRRIGATED ON A SCHEDULE TO BE DETERMINED BY THE PROJECT ARBORIST (EVERY 3 TO 6 WEEKS APRIL THROUGH OCTOBER IS TYPICAL). AIM TO WET THE SOIL WITHIN THE SPECIFIED TPZ TO A DEPTH OF 24 INCHES. DO NOT WATER COAST LIVE OAKS IN THE SUMMER MONTHS.**
13. **INSTALL CITY APPROVED TREE PROTECTION MEASURES ON SHEET CD501 FOR ALL TREES TO REMAIN.**
14. **APPLY AND MAINTAIN 4-6 INCHES OF WOOD CHIP MULCH WITHIN THE SPECIFIED TPZ.**
15. **OPERATE ANY MACHINERY FROM EXISTING HARDSCAPE WHERE POSSIBLE. PULL MATERIAL AWAY FROM THE TRUNKS RATHER THAN PERPENDICULAR ACROSS THE ROOT AREAS.**
16. **TREES TO BE PRESERVED MAY REQUIRE PRUNING TO REMOVE DEAD BRANCHES AND REDUCE THE LIKELIHOOD OF FAILURE (SEE TREE DISPOSITION FORM IN ARBORIST REPORT). ALL PRUNING SHALL BE DONE BY A STATE OF CA LICENSED TREE CONTRACTOR (C61/D49). ALL PRUNING SHALL BE DONE BY AN ISA CERTIFIED ARBORIST OR CERTIFIED TREE WORKER AND ADHERE TO THE MOST RECENT ADDITIONS OF THE AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS (Z133.1) AND PRUNING (A300). THE CONSULTING ARBORIST WILL PROVIDE PRUNING SPECIFICATIONS PRIOR TO SITE DEMOLITION. BRANCHES EXTENDING INTO THE WORK AREA THAT CAN REMAIN FOLLOWING DEMOLITION MAY BE TIED BACK AND PROTECTED FROM DAMAGE.**
17. **ALL TREE WORK SHALL COMPLY WITH THE MITIGATION MEASURES FOR TREE REMOVALS, THE MIGRATORY BIRD TREATY ACT AS WELL AS CA FISH AND WILDLIFE CODE 3503-3513 TO NOT DISTURB NESTING BIRDS. TREE PRUNING AND REMOVAL SHOULD BE SCHEDULED OUTSIDE OF THE BREEDING SEASON TO AVOID SCHEDULING DELAYS.**

NORTH

0 16 32 48 feet

1" = 16'-0"

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT MARISA L. PELTIER No. 6391 6.30.26 STATE OF CALIFORNIA

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

TREE PROTECTION PLAN

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Marisa Peltier

DRAWN BY: MP/YI
CHECKED BY: LM

DATE
~~JANUARY 31, 2025~~
FEBRUARY 6, 2026

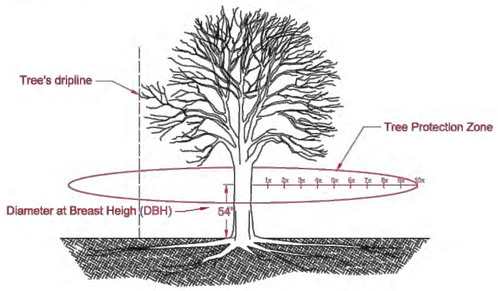
RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
CD102

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1 TREE PROTECTION ZONE SECTION VIEW



PROTECTED TREES

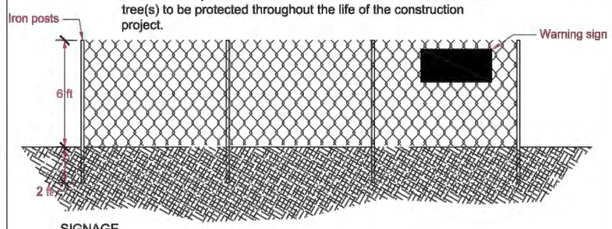
In the City of San Mateo per Chapter 13.40 of the Municipal Code, the following trees are considered protected:

1. Heritage Trees
   - Oak trees with a trunk diameter of 10 inches or more
   - Any other tree species with a trunk diameter of 15 inches or more.
2. Street Trees
   - All trees growing within the public right of way.
3. Existing Trees/Major Vegetation
   - Trees with a trunk diameter of 6 inches or more designated as protected as part of a Planning Application subject to Chapter 27.71.

Tree Protection Zone (TPZ) is the area surrounding a tree with a radius equal to 10 times the diameter of the trunk measured at 54" above grade or as otherwise specified by a Project Arborist and approved by the City Arborist.
Construction activities as defined by the Code are not allowed within the TPZ. It is unlawful for any person to cause damage to a Protected Tree compromising its health or structural integrity according to accepted industry standards, or to cause damage that is severely detrimental to its overall aesthetics. Any violations may result in penalties described in SMMC 13.40.160."

2 TREE PROTECTION FENCING AND SIGN DETAILS SECTION VIEW

Fencing shall consist of chain link fence (6-feet high), mounted on galvanized iron posts with 2 inches in diameter. Each post must be driven into the ground at least two 2 feet deep, no more than 10 feet apart. The fence shall enclose the entire TPZ of the tree(s) to be protected throughout the life of the construction project.



SIGNAGE

Warning signs shall be installed to be displayed on fencing and trunk wraps. Tree signs should be in English, Spanish or any other language if required.

---WARNING---

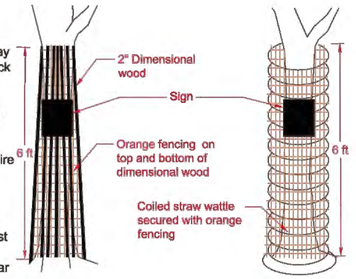
TREE PROTECTION ZONE

Do not move or remove without Arborist approval.
Violations will be subject to penalties according to SMMC 13.40.

3 TRUNK AND ROOT PROTECTION DETAILS TRUNK WRAP

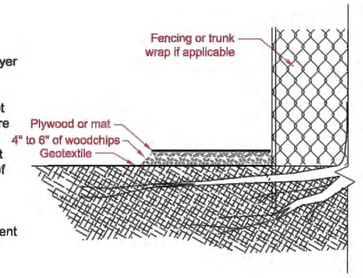
Wrap the trunk with orange plastic fencing for buffering (2" thick). Overlay orange plastic fencing with 2-inch thick wooden slats bound securely by two layers of additional orange fencing (slats shall not be allowed to dig in to the bark). During installation, use caution to avoid damaging any branches. Major limbs may also require wrapping.

Straw wattle can be used as an alternative material. For this purpose coil the straw wattle around the lowest 6' of the trunk and secure it with a double layer of orange fence or similar material.



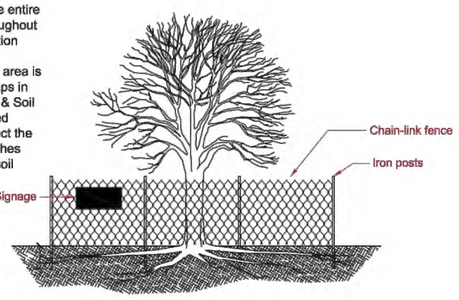
ROOT BUFFER

Root buffers consist of secured geotextile material covered with a layer 4" to 6" of clean wood chips and 3/4-inch plywood sheets securely installed over the wood chips. Do not use geotextile fabric if root buffers are to be left permanently.
The Project Arborist shall be present during the installation and removal of root buffers.
Any root buffer variation must be approved by the City Arborist in accordance with the Best Management Practices (BMPs).

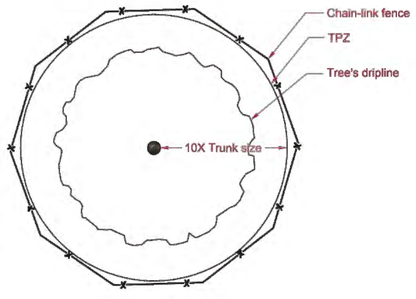


4 TYPE I COMPLETE FENCING SECTION VIEW

The fence encloses the entire TPZ of the tree(s) throughout the life of the construction project.
When fencing the TPZ area is not feasible, Trunk wraps in combination with Root & Soil buffers shall be installed within the TPZ to protect the trunk, roots, and branches from injury and avoid soil compaction.



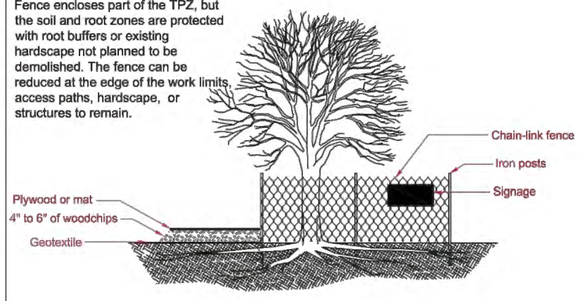
PLAN VIEW



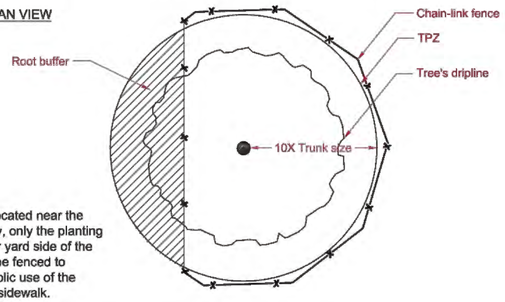
Fencing a group of trees at the TPZ radius of the largest tree is acceptable rather than fencing each tree in the group individually.
Adjustments and/or reparations for protective fencing shall be performed in a timely maner to avoid damages to Protected trees.

5 TYPE II REDUCED FENCING SECTION VIEW

Fence encloses part of the TPZ, but the soil and root zones are protected with root buffers or existing hardscape not planned to be demolished. The fence can be reduced at the edge of the work limits, access paths, hardscape, or structures to remain.



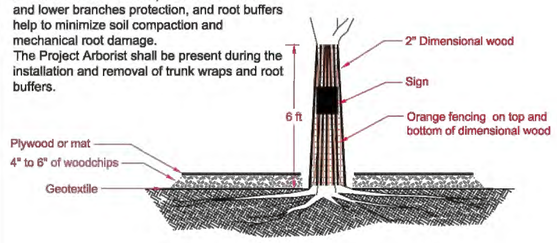
PLAN VIEW



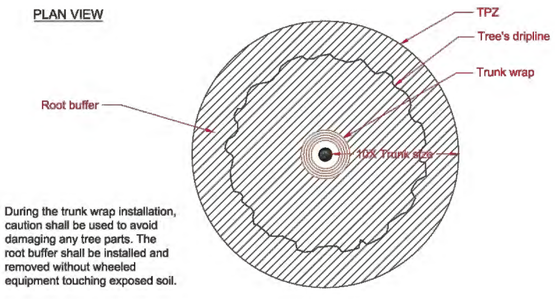
For trees located near the right of way, only the planting strip and/or yard side of the TPZ shall be fenced to provide public use of the street and sidewalk.

6 TYPE III TRUNK WRAP & ROOT BUFFER SECTION VIEW

To be used when construction activities cannot be kept outside of TPZ and/or installing fencing is not feasible. Trunk wraps account for trunk and lower branches protection, and root buffers help to minimize soil compaction and mechanical root damage.
The Project Arborist shall be present during the installation and removal of trunk wraps and root buffers.



PLAN VIEW



During the trunk wrap installation, caution shall be used to avoid damaging any tree parts. The root buffer shall be installed and removed without wheeled equipment touching exposed soil.

APPROVED TREE PROTECTION DETAILS
Community Development Department
S.M.M.C. 13.40

330 West 20th Avenue
San Mateo, CA 94403

NOTES:

- Tree protection measures are required whenever construction activities encroach the TPZ of Protected trees. These shall not be installed, altered or removed unless recommended by the Project Arborist and approved by the City Arborist.
- Construction Activity as defined by the Code includes the necessary related activities like storing/staging of materials, site access, parking, placement of temporary structures, debris disposal, additional excavation, and landscaping.
- See the Tree Protection Plan sheet or Site Plan for specific information and location of protection measures.

SHEET
TP-01
Not to Scale Rev 9/23

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325 Davis St., San Leandro, CA 94577

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City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

BID DOCUMENT

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

CITY TREE PROTECTION DETAILS

NO.	REVISION	DATE
1		
2		
3		
4		
5		
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7		

PROJECT MANAGER: Marisa Peltier
DRAWN BY: MP/YI | CHECKED BY: LM
DATE: JULY 8, 2024 | JULY 13, 2025
RRM PROJECT NUMBER: 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: CD501

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Arborist Report

City of San Mateo
Central Park

PREPARED FOR:
RRM DESIGN GROUP
20250 Southwest Acacia Street Suite 260
Newport Beach, CA 92660

PREPARED BY:
HortScience | Bartlett Consulting
2550 Ninth Street Suite 112
Berkeley, CA 94710-2552

Revised May 2024

Arborist Report
Central Park
San Mateo CA

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Suitability for Preservation	6
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Estimate of Value	10
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Attachments

Tree Assessment Form

Tree Assessment Map

Tree Disposition, Maintenance Recommendation, and Estimate of Value Form

Arborist Report
Central Park
San Mateo CA

Introduction and Overview

RRM Design Group is planning the renovation of Central Park located in San Mateo CA. Current site use consists of recreational facilities and associated landscape. RRM Design Group requested that HortScience | Bartlett Consulting, Divisions of The F.A. Bartlett Tree Expert Co., assess the health and structural condition of trees, review proposed project plans, and provide recommendations for tree preservation.

This report provides the following information:

1. A survey of trees within and adjacent to the proposed project area.
2. An assessment of tree health, structure, and suitability for preservation.
3. An assessment of the impacts of constructing the project on the tree, and recommendations for preservation and removal.
4. Tree preservation guidelines.

Assessment Methods

Trees were initially assessed in October 2019 and were reassessed on August 26, 2022. At request of the City, the tree assessment was updated on April 9, 2024. This report summarizes observations made in April of 2024. Trees measuring 5 inches or greater in trunk diameter or certain planted trees within the project area were included in the assessment. Ten (10) trees had been removed from the site since the initial assessment. The assessment procedure consisted of the following steps:

1. Identifying the tree as to species;
2. Tagging each tree with an identifying number and recording its location on a map;
3. Measuring the trunk diameter at a point 54 inches above grade;
4. Evaluating the health and structural condition using a scale of 1 – 5:
   - ***5*** - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
   - ***4*** - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   - ***3*** - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   - ***2*** - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   - ***1*** - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the health, age and structural condition of the tree, and its potential to remain an asset to the site for years to come.
   - ***High***: Trees with good health and structural stability that have the potential for longevity at the site.
   - ***Moderate***: Trees with somewhat declining health and/or structural defects than can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'good' category.
   - ***Low***: Trees in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual may have characteristics that are undesirable for landscapes, and generally are unsuited for use areas.

Description of Trees

Forty-four (44) trees were assessed, representing 16 species (Table 1). Species present were typical of those found in landscapes in the San Mateo area but included bunya-bunya and Moreton Bay fig which are unusual. Coast live oak, valley oak, and coast redwood are native to the region, while incense cedar and California fan palm are native to California. None of the trees were indigenous to the site. Descriptions of each tree are found in the ***Tree Assessment Form*** and approximate locations are shown on the ***Tree Assessment Map*** (see Exhibits).

Tree tag numbers were discontinuous because some previously assessed have been removed (see ***Tree Assessment Form***). The population as a whole had declined in condition since the initial assessment. Fourteen (14) trees were in good condition, 24 were in fair condition, and six were in poor condition. Tree size was exceptional for parks in the area with an average trunk diameter of over 27 inches. More than 70% of trees were greater than 18 inches in diameter.

Table 1. Condition ratings and frequency of occurrence of trees Central Park. San Mateo CA.

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
Tree of heaven	*Ailanthus altissima*	1	-	-	**1**
Bunya-bunya	*Araucaria bidwillii*	-	-	1	**1**
Incense cedar	*Calocedrus decurrens*	-	1	-	**1**
Atlas cedar	*Cedrus atlantica*	-	1	-	**1**
Deodar cedar	*Cedrus deodara*	-	-	-	-
Silver dollar gum	*Eucalyptus polyanthemos*	-	-	-	-
Moreton Bay fig	*Ficus macrophylla*	-	-	1	**1**
California black walnut	*Juglans hindsii*	-	-	-	-
Olive	*Olea europaea*	-	2	2	**4**
Victorian box	*Pittosporum undulatum*	-	1	-	**1**
English laurel	*Prunus laurocerasus*	1	-	-	**1**
Coast live oak	*Quercus agrifolia*	2	15	7	**24**
Valley oak	*Quercus lobata*	-	-	-	-
Southern live oak	*Quercus virginiana*	2	-	1	**3**
Italian buckthorn	*Rhamnus alaternus*	-	1	-	**1**
Coast redwood	*Sequoia sempervirens*	-	3	-	3
Windmill palm	*Trachycarpus fortunei*	-	-	1	**1**
California fan palm	*Washingtonia filifera*	-	-	1	**1**
Total		**6**	**24**	**14**	**44**

Coast live oak was the most frequently occurring species with 24 trees. Coast live oaks were planted throughout the site and comprised most of the tree canopy. Trees were semi-mature to overmature in development with trunk diameters ranging from 10 to 43 in. Thirteen (13) trees had at least one stem larger than 24 in. Trees were in good (seven trees) and fair (15) condition. Coast live oaks in good condition had full, dense, spreading crowns with good branch unions. Individuals in fair condition had small crowns with twig and branch dieback and tended to have multiple stems with included bark, sinuous trunks, and/or moderate to severe lean. Drought stress and over-crowding appeared to be a factor for trees in fair condition. Oak #560 had a wound from a stem failure from the base to 6'. A fruiting body of the decay fungus *Ganoderma* was present in the wound (Photo 1). The crown was dense and healthy; response growth surrounding the wound was vigorous and sound (Photo 2).

Photo 1 (left): Coast live oak #560 had a large trunk scar (orange bracket) with fungal activity (green arrow).

Photo 2 (above): Tree #560 had a dense and spreading crown.

No other species was represented by more than four trees. Included in this group were:

- Atlas cedar #533 was over-mature in development with a trunk diameter of 44 inches and over-extended branches with slightly thinning foliage (Photo 3).



Photo 3: Coast live oak #541, Atlas cedar #533, and Moreton Bay fig #535 were planted at the northeast of the project site.

- Bunya-bunya #531 was one of the tallest trees on site and had a trunk diameter of 34 inches. Tree #531 had good form and structure but a buried root crown. A large crop of cones was present. (Photo 4 and 5).



Photo 4: Bunya-bunya #531 had a dense, vigorous crown and heavy, drooping branches.

Photo 5 (inset): Each cone on tree #531 was over 1 foot in diameter and could weigh over 20 pounds.

- California fan palm #643 had slight leaf chlorosis and a sinuous trunk with a diameter of 20 inches. Tree #643 was labelled with a placard as a Mexican Palmetto.
- Coast redwoods #544, 547, and 549 were located at the northern corner of the project site (Photo 6, next page). Trees #544 and 547 were mature to overmature with trunk diameters of 66 and 44 inches while trees #549 and #550 were young with 11- and 14-inch trunks. Each was in fair condition.
- English laurel #518 had multiple stems arising from the base, measuring 5 inches or smaller. The tree was all but dead.
- Incense cedar #545 had a trunk diameter of 29 inches and was in fair condition characterized by an asymmetrical and thinning crown.
- Italian buckthorn #563 was young in development with codominant trunks arising from the base and diameters of 6 and 5 inches.
- Moreton Bay fig #535 was in good condition with a trunk diameter of 62 inches and extensive buttress roots typical of this species (Photo 3, previous page).
- Olives #511, 513, 526, and 538 were located at the southern half of the project site. Trees #511 and 513 were mature and overmature while trees #526 and #538 were semi-mature and young respectively. Trees #513 and #526 were in fair condition and multi-stemmed with individual trunk diameters ranging from 5 to 19 inches. Trees #511 and #538 were in good an excellent condition and had trunk diameters of 2 and 31 inches respectively.

- Southern live oaks #516, 536, and 537 were planted on the southern half of the site and were young in development. Trees #516 and 536 were in poor condition characterized by thin chlorotic foliage while #537 was good (Photo 6).

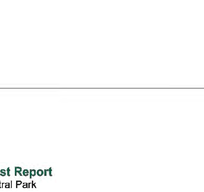


Photo 7: Both southern live oaks #536 and 537 had low, spreading crowns. Tree #537 had significantly healthier and more vigorous foliage.

- Tree of heaven #528 was in poor condition with a trunk diameter of 29 inches.
- Victorian box #521 had codominant stems with diameters of 9 and 6 inches.
- Windmill palm #542 was in good condition and had a trunk diameter of 7 inches which was too dense to accept a tag.

At the request of San Mateo City Arborist, at least one combination of tree part and likelihood of failure was assessed in April of 2024 as described by terminology and methods described in Tree Risk Assessment Best Management Practices (2nd Ed., International Society of Arboriculture, 2017). The inspection involved a 360° visual assessment from the ground. . The timeframe considered in this assessment was three years. Note that a full risk assessment was not performed.

Fifteen (15) were rated as having an improbable likelihood of failure. Twenty-one (21) were rated as possible. Eight were rated probable. Tree #517 was rated imminent; a codominant union at approximately 7 feet was splitting. Andres Solis Molina, City of San Mateo, was notified of the condition of tree #517 on the same day as the assessment. Descriptions of ratings for individual trees and associated maintenance recommendations are described in the **Tree Assessment Form** (*see Attachments*).

San Mateo Tree Protection Requirements

Municipal Code 13.40 defines oaks with a trunk diameter of 10 inches and larger and any other species with a trunk diameter of 15 inches or greater as ***Heritage*** trees. Based on these definitions, 37 qualify for ***Heritage*** status. Protected status designations for individual trees are provided in the ***Tree Assessment Form*** (see *Exhibits*). Permits and replacement tree plantings are required for the removal of all heritage trees. Tree replacements should be selected from species on the City's Official Replant List.

Suitability for Preservation

Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape. Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.
- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. For example, coast live oak #517 was splitting. It is not a good candidate for preservation in a use area.
- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. Coast live oak, coast redwood and olive are tolerant of impacts from construction while Atlas cedar, Victorian box, and valley oak are more moderate in response.
- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.
- **Species invasiveness**
  Species which spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database (www.cal-ipc.org) lists species identified as being invasive. San Mateo is part of the Central West Floristic Province. Tree of heaven has been identified as moderately invasive in this area while olive has limited invasiveness.

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BID/PERMIT DOCUMENT

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

ARBORIST REPORT

NO.	REVISION	DATE
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PROJECT MANAGER
Marisa Peltier

DRAWN BY MP/YI
CHECKED BY LM

DATE
JULY 8, 2024
JUNE 13, 2025

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

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CD601

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Each tree was rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment (Table 2, next page).

Table 2. Tree suitability for preservation
Central Park, San Mateo, CA.

High	Trees with good health and structural stability that have the potential for longevity at the site. Eleven (11) trees had high suitability for preservation: seven coast live oaks, Moreton Bay fig #535, olives #511 and 538, and southern live oak #537.
Moderate	Trees in fair health and/or possessing structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring, and may have shorter lifespans than those in the "high" category. Twenty-two (22) trees had moderate suitability for preservation: Atlas cedar #533, bunya-bunya #531, California fan palm #543, 11 coast live oaks, coast redwoods #544, 547, and 549, incense cedar #545, Italian buckthorn #563, olives #513 and 526, and windmill palm #542.
Low	Trees in poor health or possessing significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Eleven (11) trees had low suitability for preservation: six coast live oaks, English laurel #518, southern live oaks #516 and 536, tree of heaven #526, and Victorian box #521.

We consider trees with high suitability for preservation to be the best candidates for preservation. We do not generally recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Evaluation of Impacts and Recommendations for Action

Appropriate tree retention develops a practical match between the location and intensity of construction activities and the quality and health of trees. The **Tree Assessment** was the reference point for tree condition and quality. Potential impacts from the proposed project were assessed using San Mateo Central Park Playground Improvement Plans, 100% Construction Document Submittal (*RRM Design Group, revised May 10, 2024*).

Based my review of the proposed plan and updated tree condition, 35 trees are identified for preservation and eight are identified for removal.

Of the eight trees identified for removal, seven are expected to incur impacts from the proposed developments that will exceed their tolerance. Coast live oak #517 is recommended for removal due to a crack in a major branch union. Olive #538 is identified for relocation.

Of the trees proposed for preservation 33 are *heritage*. Of the eight trees to be removed, four are *Heritage* (#517, 522, 526, and 530). Individual descriptions are included in the **Tree Disposition and Estimate of Value Form** (*see Attachments*).

Among the 35 trees identified for preservation are the following:

- Sixteen (11) trees can be expected to experience low impacts of construction: California fan palm #543, five coast live oaks (#514, 540, 546, 553, and 560), coast redwood #547, olives #511 and 513, and windmill palm #542. Some pruning is advised to improve long-term stability and reduce risk of branch failure.
- Seven coast live oaks (#523, 524, 553, 554, 556, 557, and 558) have construction occurring within the dripline. Plans specify piered supports for a raised boardwalk. I recommend exploratory excavation of the root area of each tree where piers are proposed at the beginning of construction. Final boardwalk drawings will be based on this exploratory excavation. If footings can be adjusted by 1 – 2 feet depending on the location of roots larger than 2 inches, then I expect the construction impacts to be moderate the trees may be preserved. The landscape architect has confirmed that the boardwalk manufacturer can relocate footings as needed with the help of a structural engineer.
- Coast live oak #519 is approximately 10 feet from the construction of a new curb. I expect impacts to be moderate.
- Coast live oak #525 had a buried root crown with possible decay. Synthetic turf is approximately 9 feet to the east and west, and 10 feet to the south and north. Excavation to at least 6 inches with 95% subgrade compaction is expected. The tree is currently in a small planter, and I expect impacts to be moderate.
- Olive #526 will be approximately 9 feet from brick paving set approximately 6 – 8 inches within the existing sand substrate. The paving should sloped to drain runoff away from the trunk. I do not expect roots to be encountered within the sand substrate. Impacts are expected to be mild and within tolerable levels.

- Bunya-bunya #531, coast live oaks #534, 539, and 541, and Moreton Bay fig #535 have construction of cement and/or asphalt pathways within six times their trunk diameter. Piered footings will be excavated around bunya-bunya #531 to erect a structure to protect from failing cones. Exploratory excavation will be conducted to determine presence and size of roots in the alignments of footings. The entire structure may be rotated to avoid roots. Excavation of footings will be localized and limited. I expect impacts to be moderate.

  Pathways are expected to be installed above grade on these trees which should allow for a reduction of impacts. Even above grade installation of the planned paths with current materials will require compaction. I expect impacts to be moderate, and within the tolerance of the trees.
- Olive #538 is within the restroom footprint but is slated for relocation per the plans. The tree has a high suitability for preservation, is small, and the new location has adequate soil volume and sunlight. Relocation of this tree is expected to be successful if an adequate root ball of approximately 4 feet in diameter and 18 to 24 inches depth is maintained.
- Coast live oak #515 has construction impacts from a concrete sidewalk and playground structures varying 9 – 20 feet from the trunk. Permeable engineered wood fiber is proposed throughout the entire TPZ, installed on non-compacted native soil. I expect impacts to be moderate.
- Seven trees (#518, 549, 550, 552, 561, 562, 563, and 564) appear to be outside of the proposed construction area.
- Project staff has elected to preserve southern live oak #516 due to its memorial status. The tree was in very poor condition with extensive dieback. What living foliage existed was mostly epicormic growth. I do not expect preservation to be successful in the long-term.

The retention of all trees is predicated on strict adherence to the ***Tree Preservation Guidelines***. Some amount of crown and root pruning may be required, and should be discussed with the Consulting Arborist as the need arises. Coast redwood and coast live oak are tolerant of root pruning and can be retained even with activity in the root zone.

Among the eight trees to be removed are:

- Coast live oak #522 and 530, southern live oak #536, tree of heaven #528, windmill palm #542, and Victorian box #521 are within the construction footprint.
- Coast live oak #517 was rated as having an imminent likelihood of stem failure due to a recently cracked codominant union. I recommend the tree be removed. If the City prefers preservation, I recommend investigation into the possibility of bracing with a through-bolt, cabling, and heavily reducing the end weight.
- English laurel #518 was all but dead, and is unlikely to be an asset to the site in the future.

Estimate of Value

The City of San Mateo requires that the value of all trees identified for removal be established. To accomplish this, I used the standard methods found in *Guide for Plant Appraisal*, 10th edition (published in 2018 by the International Society of Arboriculture, Champaign IL). In addition, I referred to *Species Classification and Group Assignment* (2004), a publication of the Western Chapter of the International Society of Arboriculture. These two documents outline the methods employed in tree appraisal.

The reproduction cost of landscape trees is based upon four factors: size, condition, functional limitations and external limitations. Size is measured as trunk diameter, normally 54" above grade. Condition reflects the health and structural integrity of the individual, as noted in the ***Tree Assessment*** (*see* ***Exhibits***). Functional limitations consider the interaction of the tree with its planting site currently and for the foreseeable future. I did not identify any external limitations at this site.

The estimated value of the eight trees identified for removal was $21,050. The estimated value of the 34 trees identified for preservation was $766,900. The estimated value of tree #538 identified for relocation was $300. The total estimated value of all trees was $788,250. Individual values are described per tree in the ***Tree Disposition, Maintenance Recommendation, and Estimate of Value*** form (*see Exhibits*).

Tree Preservation Guidelines

The following recommendations will help reduce impacts to trees from development as well as maintain and improve their health and vitality through the clearing, grading and construction phases. The key elements of a tree preservation plan for the Central Park site would include:

- Establishing **Tree Protection Zones (TPZ)** for each tree to be preserved. **Calculated Tree Protection Zones** are identified by the Consulting Arborist based on species tolerances, tree condition, trunk diameters and the nature and proximity of the proposed disturbance (see attachments). **Specified Tree Protection Zones** are based on existing conditions, proposed improvements, and the **Calculated Tree Protection Zones.** They will be depicted in the Tree Protection Plan created by the project architect.
- Notifying the Consulting Arborist when roots are encountered during work in the **Calculated Tree Protection Zones.** Consult the Arborist to evaluate potential root pruning or other mitigation measures to reduce impacts to trees. Any work within the **Specified Tree Protection Zones** must be monitored by the Consulting Arborist.
- Providing supplemental irrigation prior to and during the demolition and construction phases. Many of the trees onsite are mature and will need regular irrigation which starts now and continues through construction to have the best chance at survival. Do not provide supplemental irrigation during summer months to coast live oaks.

Design recommendations

1. For trees identified for preservation, designate a **Specified Tree Protection Zone (TPZ)** in which no construction, grading and underground services including utilities, sub-drains, water or sewer will be located. For design purposes, the **Specified TPZ** should enclose as much of the **Calculated TPZ** as possible while not inhibiting the proposed construction. Note that all **Calculated TPZ** distances described in the **Tree Disposition, Maintenance Recommendation, and Estimate of Value Form** (*see Attachments*) are to be measured from the trunk of the tree. In most cases, the **Specified TPZ** will be smaller than the **Calculated TPZ.**
2. No grading, excavation, construction or storage of materials shall occur within that zone.
3. No underground services including utilities, sub-drains, water or sewer shall be placed in the **Specified TPZ.**
4. Irrigation systems must be designed so that no trenching will occur within the **Specified TPZ.**
5. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement.
6. Consider installing a temporary irrigation system (using soaker hoses or pvc laid on the ground and covered with mulch) as soon as possible to supply the trees with water and help them recover and prepare them for impacts associated with the demolition and construction process. Note that coast live oaks should not be irrigated during the summer months.

Demolition treatments and recommendations

1. The demolition contractor shall meet with the Project Arborist before beginning work to discuss work procedures and tree protection.
2. Where possible, cap and abandon all existing underground utilities within the **Specified TPZ** in place. Removal of utility boxes by hand is acceptable but no trenching should be performed within the **Specified TPZ** to remove utilities, irrigation lines, etc.
3. Current extent of hardscape shall serve as the edge of the **Specified TPZ** for trees during demolition. Once asphalt has been demolished, the **Specified TPZ** shall be extended to the alignments depicted on the Tree Protection Plan prepared by the project Landscape Architect.
4. For trees where sand must be removed from the root area, remove material by hand, air spade, or water excavation. Preserve roots encountered. Erect tree protection fencing to enclose the **Specified TPZ** after material has been removed.
5. For trees where furnishings, sand, engineered wood fiber, or grass must be removed within the **Specified TPZ** fencing, first install trunk protection per details on CD501. Next remove material by hand, air spade, or water excavation. Preserve roots encountered. Erect tree protection fencing to fully enclose the **Specified TPZ** after materials have been removed. Remove trunk protection after the fences have been erected.

6. Operate any machinery from existing hardscape where possible. Pull material away from the trunks rather than perpendicular across the root areas.

Pre-construction treatments and recommendations

1. Fence all remaining trees to be retained to completely enclose the **Specified TPZ**, adjusting as necessary from the demolition phase. The **Specified TPZ** shall extend to the extent of the **Calculated TPZ**, or 1-foot from the edge of proposed improvements. Fences shall be 6-foot chain link fence on posts driven into the ground. Fences may be placed on stands only when the driven post will damage existing roots, pavements, other existing improvements, or underground utilities or obstructions. Fences are to remain until all grading and construction is completed.
2. Trees to be preserved may require pruning to remove dead branches and reduce the likelihood of failure (*see Tree Disposition Form* attachment for individual recommendations). All pruning shall be done by a State of California Licensed Tree Contractor (C61/D49). All pruning shall be done by an ISA Certified Arborist or Certified Tree Worker and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300). The Consulting Arborist will provide pruning specifications prior to site demolition. Branches extending into the work area that can remain following demolition may be tied back and protected from damage.
3. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. Tree pruning and removal should be scheduled outside of the breeding season to avoid scheduling delays. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests. See San Mateo Central Park Master Plan Update Mitigation Monitoring and Reporting Program (*FirstCarbon Solutions, prepared January 2018*) for more information.
4. Trees to be removed that have branches extending into the canopy of trees to remain must be removed by a qualified arborist and not by construction contractors. The qualified arborist shall remove the tree in a manner that causes no damage to the trees and understory to remain. Tree stumps shall be ground 12 inches below ground surface.
5. Trees to be removed shall be felled so as to fall away from other trees and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the consultant may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.
6. Apply and maintain 4-6 inches of wood chip mulch within the **Specified TPZ.**

Recommendations for tree protection during construction

1. Prior to beginning work, the contractors working in the vicinity of trees to be preserved are required to meet with the Consulting Arborist at the site to review all work procedures, access routes, storage areas and tree protection measures.
2. All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.
3. Any grading, construction, demolition or other work that is expected to encounter tree roots within the **Specified TPZ** should be monitored by the Consulting Arborist.
4. Where machinery may be operated within the **Calculated TPZ**, provide root protection in the form of root buffers for the duration of construction to mitigate soil compaction. Reference alignments on the Tree Protection Plan (sheet CD103). Where footings must be installed, root buffer may be removed and replaced in localized areas. Root buffer should consist of 8 – 12 inches of coarse organic mulch topped with ¾-inch plywood or steel plates.
5. Tree protection fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the Consulting Arborist.
6. Construction trailers, traffic and storage areas must remain outside fenced areas at all times.
7. Prior to grading, pad preparation, excavation for foundations/footings/walls, trenching, trees may require root pruning outside the **Specified TPZ** by cutting all roots cleanly to the depth of the excavation. Roots shall be cut by manually digging a trench and cutting exposed roots with a saw, with a vibrating knife, rock saw, narrow trencher with sharp blades, or other approvec root pruning equipment. The Consulting Arborist will identify where root pruning is required and monitor all root pruning activities.
8. Conduct exploratory trenching at areas identified for all piered footings for the boardwalk and around bunya-bunya #531. If roots greater than 2 inches in diameter are encountered, adjust the footing location to avoid roots. Contact the Consulting Arborist if roots are encountered and the footing cannot be moved to avoid them.
9. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
10. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the **Calculated TPZ.**
11. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.
12. All trees except for coast live oaks shall be irrigated on a schedule to be determined by the Project Arborist (every 3 to 6 weeks April through October is typical). Aim to wet the soil within the to a depth of 24 inches within the **Specified Tree Protection Zones.** Do not water coast live oaks in the summer months.

Maintenance of impacted trees

Our procedures included assessing trees for observable defects in structure. This is not to say that trees without significant defects will not fail. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces, for example, can exceed the strength of defect-free wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, reducing their ability to hold roots, and blow over defect-free trees. Although we cannot predict all failures, identifying those trees with observable defects is a critical component of enhancing public safety.

Furthermore, trees change over time. Our inspections represent the condition of the tree at the time of inspection. As trees age, the likelihood of failure of branches or entire trees increases. Annual tree inspections are recommended to identify changes to tree health and structure. In addition, trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Initiating these inspections is the responsibility of the client and/or tree owner.

Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority.

If you have any questions about my observations or recommendations, please contact me.

HortScience | Bartlett Consulting

If you have any questions regarding my observations or recommendations, please contact me.

HortScience | Bartlett Consulting

Ryan Suttle, Consulting Arborist & Urban Forester
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SAN MATEO CENTRAL PARK
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PROJECT MANAGER
Marisa Peltier

DRAWN BY MP/YI
CHECKED BY LM

DATE
JULY 8, 2024
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RRM PROJECT NUMBER
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610027

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Attachments

Tree Assessment Form

Tree Assessment Map

Tree Disposition, Maintenance Recommendation, and Estimate of Value Form

Tree Assessment

RFP Central Park San Mateo
San Mateo, CA
Revised May 2024

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
511	Olive	31	Yes	4	High	Multiple trunks arise from 6'; spreading, slightly thin crown; cavity at base.
512	Coast live oak	20,20,15,9	Yes	4	High	Multiple trunks arise from 2.5'; slightly thin, spreading, slightly asymmetrical crown influenced by adjacent olive; root flare buried on north.
513	Olive	19,12	Yes	3	Moderate	Codominant trunks arise from 3' and 6'; spreading, slightly thin crown; crowded by adjacent oak.
514	Coast live oak	34,16	Yes	4	High	Codominant trunks arise from 4' and 6'; dense, spreading crown; root flare buried in sand on north.
515	Coast live oak	41	Yes	3	Moderate	Trunk leans north; multiple small cavities with decay at base on tension side; cavities on upper limbs from pruning cuts and branch failures; thin upper crown.
516	Southern live oak	3	No	1	Low	Half dead; twig and branch dieback; wounds on trunk; root flare buried in sand.
517	Coast live oak	24,17	Yes	3	Low	Codominant trunks arise from 1.5'; dense, spreading crown; codominant union cracking at 7 feet.
518	English laurel	5,4,3,2,2,2,1,1	No	1	Low	Small tree/shrub; multiple stems at base; all but dead.
519	Coast live oak	20,18	Yes	3	Moderate	Codominant trunks arise from 3.5'; fair form; thin upper crown; unbalanced crown by adjacent trees.
520	Victorian box	-	-	-	-	Removed
521	Victorian box	9,6	No	3	Low	Codominant trunks arise from 5'; slight lean north; twig dieback throughout crown.
522	Coast live oak	10	Yes	3	Low	Codominant trunks arise from 8'; twisted form; suppressed.
523	Coast live oak	39	Yes	4	High	Good form and structure; slightly thin, spreading crown; slightly crowded form on north; CHL.

Tree Assessment

RFP Central Park San Mateo
San Mateo, CA
Revised May 2024

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
524	Coast live oak	43	Yes	3	Moderate	Measurement taken below attachments; Multiple trunks arise from 4'; trunk wound at base on east possibly caused by girdling root; root flare slightly buried; dead branch; small cavity with decay on east stem; dense, spreading crown.
525	Coast live oak	30	Yes	4	High	Codominant trunks arise from 5'; measurement taken below attachments; root flare buried on east with missing bark; slightly thin crown.
526	Olive	18,15,11,5	Yes	3	Moderate	Multiple trunks arise from 4' with narrow attachments; good form; slightly thin crown.
527	Deodar cedar	-	-	-	-	Removed
528	Tree of heaven	29	Yes	2	Low	Multiple trunks arise from 10'; very thin upper crown.
529	Coast live oak	-	-	-	-	Removed
530	Coast live oak	11,7	Yes	2	Low	Codominant trunks arise from 3'; poor form and structure; suppressed; tear-out with decay W at 7'; 4" dead branch W at
531	Bunya-bunya	34	Yes	4	Moderate	Good form and structure; minor dieback from shading/crowding; base of tree buried; hazardous cones.
532	Tree of heaven	-	-	-	-	Removed
533	Atlas cedar	44	Yes	3	Moderate	Crowded by adjacent trees; fair form; slightly thin crown; overextended lions-tailed branches.
534	Coast live oak	40	Yes	3	Low	Measurement taken below attachment; base outside of dripline; leans south; crowded; epicormic sprouts along limbs.
535	Moreton Bay fig	62	Yes	4	High	Multiple trunks arise from 9'; several upright stems with long wounds; dense, spreading crown.
536	Southern live oak	8	No	2	Low	Basal wounds on east and south; Multiple trunks arise from 5'; slight lean south; thin chlorotic foliage.
537	Southern live oak	15	Yes	4	High	Sand covering root flare; Multiple trunks arise from 5'; some lateral limbs starting to take over; dense crown.
538	Olive	2	No	5	High	Good young tree.

Tree Assessment

RFP Central Park San Mateo
San Mateo, CA
Revised May 2024

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
539	Coast live oak	16	Yes	3	Low	Poor form and structure; cavities with decay in trunk; thin crown; twig dieback.
540	Coast live oak	15	Yes	3	Moderate	Fair form and structure; cavities at 8' and 13'.
541	Coast live oak	22	Yes	3	Moderate	Codominant trunks arise from 8'; buried root flare; cavity with decay on lower trunk good occlusion; heavy lateral limb north.
542	Windmill palm	7	No	4	Moderate	No tag; 20' brown trunk height; small crown; slight leaf chlorosis.
543	California fan palm	20	Yes	4	Moderate	23' brown trunk height; sinuous trunk; slight leaf chlorosis; (id'd as Mexican Palmetto).
544	Coast redwood	66	Yes	3	Moderate	Thin top and thinning crown; twig and branch dieback; top appears to be missing; overextended branches.
545	Incense cedar	29	Yes	3	Moderate	Asymmetrical crown due to crowding by adjacent redwood; thinning crown; twig dieback.
546	Coast live oak	40	Yes	3	Moderate	Multiple trunks arise from 8'; wound on southwest limb over picnic bench; thinning crown; twig dieback; history of large branch failure; decaying cavity in center of crown at 12'.
547	Coast redwood	44	Yes	3	Moderate	Small basal cavities; fair form; dense crown; minor twig dieback; trunk wound on south at 25'.
548	Silver dollar gum	-	-	-	-	Removed
549	Coast redwood	14	Yes	3	Moderate	Good form and structure; slightly sinuous trunk at 12'; one-sided
550	Coast redwood	-	-	-	-	Removed
551	Valley oak	-	-	-	-	Removed
552	Coast live oak	62,24	Yes	4	High	Codominant trunks arise from 4'; Multiple trunks arise from 7'; slightly thin spreading crown; crown heavier to south; cavity with decay below and above attachments; stubbed branch with decay on west; large tearout S; 5" dead branch over path.
553	Coast live oak	37	Yes	3	Moderate	Multiple trunks arise from 7' with narrow attachments good occlusion; asymmetrical crown with all stems leaning west; large tear out S; 5" dead branch over path.

Tree Assessment

RFP Central Park San Mateo
San Mateo, CA
Revised May 2024

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
554	Coast live oak	13,10	Yes	3	Moderate	Poor form and structure; asymmetrical dense vigorous crown south.
555	California black walnut	-	-	-	-	Removed
556	Coast live oak	20	Yes	3	Moderate	Trunk cavity with decay on south; branch and twig dieback; asymmetrical crown; fair form and structure; 4" dead branch to S.
557	Coast live oak	41	Yes	4	High	Root flare buried on south; codominant trunks arise from 6'; asymmetrical crown southeast; dense spreading crown.
558	Coast live oak	-	-	-	-	Removed
559	Coast live oak	-	-	-	-	Removed
560	Coast live oak	41	Yes	2	Low	Large stem failure with decay on south from base to 6' with Ganoderma; wood near fruiting body is solid; good response growth around area of decay; base 3' from tracks; spreading slightly thin; crown; cavities at 30' with decay.
561	Coast live oak	27	Yes	5	High	Codominant trunks arise from 5'; measured below trunks; good form and structure; dense, spreading crown.
562	Coast live oak	22	Yes	3	Moderate	Base at wall; measurement below stems; codominant trunks arise from 5'; asymmetrical crown south crowded with #561.
563	Italian buckthorn	6,5	No	3	Moderate	Codominant trunks arise from base; suppressed by #560; dense crown.
564	Coast live oak	52	Yes	3	Moderate	Outside project area; 2' or less from paving to W and S; codominant at 9'; decaying stub to E at 11' with good reaction wood; beehive in associated cavity; small 3" cavity N with bees; boring damage; good vigor, heavy laterals; dense, vigorous

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City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

BID/PERMIT DOCUMENT

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

ARBORIST REPORT

NO.	REVISION	DATE
1		
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3		
4		
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6		
7		

PROJECT MANAGER
Marisa Peltier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JULY 8, 2024 - JANUARY 13, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
CD603

X:\1652\1652-02-RC22-CentralPark-Playground-Main-Grove-Rnd-Design\Landscape-Architecture\Plans\P-1652-02-RC22-Cvr.dwg, CD603, Jan 08, 2024 4:03pm, ysanchi

Tree Disposition, Maintenance Recommendation, and Estimate of Value

RFP Central Park San Mateo
San Mateo, CA
Revised May 2024

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments	Expected Impacts	Calculated TPZ radius (ft.)	Tree part	Likelihood of failure	Maintenance recommendation	Estimated Value
511	Olive	31	Yes	Preserve	Landscaping & minor construction w/in dripline	Low	20	Branch	Possible	Retain and monitor	$ 19,400.00
512	Coast live oak	20,20,15,9	Yes	Preserve	Construction & landscaping w/in dripline; clearance prune over swings	Moderate	20	Branch	Possible	Retain and monitor	$ 18,150.00
513	Olive	18,12	Yes	Preserve	Construction at current infrastructure limits	Low	25	Branch	Improbable	Retain and monitor	$ 6,500.00
514	Coast live oak	34,16	Yes	Preserve	Minor demo & construction w/in dripline	Low	20	Stem	Possible	Retain and monitor	$ 28,400.00
515	Coast live oak	41	Yes	Preserve	Concrete path 3x208H from trunk; exploratory trenching to site playground features	Moderate	20	Whole tree; branch	Possible (both)	Retain and monitor	$ 27,150.00
516	Southern live oak	3	No	Preserve	Site of future construction; mostly dead; preservation not expected to succeed in long run.	Severe	6	Dead branch	Possible	Plan for replacement	$ 200.00
517	Coast live oak	24,17	Yes	Remove	Minor demo & construction w/in dripline; curb ~5' away.	Moderate	20	Stem	Imminent	Remove; if preservation preferred by City, through-bolt, cable, and heavy reduction pruning, reassess annually and after storm events.	$ 12,500.00
518	English laurel	5,4,3,2,2,2,2,1,1	No	Remove	Outside limit of work		NA	Dead stems	Probable	Remove	$ 250.00
519	Coast live oak	20,18	Yes	Preserve	Moderate root severance expected 9' from trunk; exploratory excavation advised	Moderate	15	Dead branch	Possible	Prune to remove dead branches.	$ 10,500.00
520	Victorian box	-	-	Removed	-						$ -
521	Victorian box	9,6	No	Remove	Within pathway; in decline	Severe	NA	Stem	Improbable	Remove	$ 2,050.00
522	Coast live oak	10	Yes	Remove	W/in landing construction	Severe	NA	Branch	Improbable	Remove	$ 1,400.00
523	Coast live oak	39	Yes	Preserve	Construction & landscaping w/in dripline; design flexible footings; clearance prune	Moderate	20	Dead branch	Probable	Prune to remove dead branches.	$ 30,550.00
524	Coast live oak	43	Yes	Preserve	Construction & landscaping w/in dripline; design flexible footings; clearance prune	Moderate	22	Stem	Possible	Retain and monitor	$ 23,250.00
525	Coast live oak	30	Yes	Preserve	Construction & landscaping w/in dripline; exploratory excavation advised; raised curb; 13'	Moderate	15	Stem	Improbable	Retain and monitor	$ 18,150.00
526	Olive	18,15,11,5	Yes	Preserve	Sand-set brick at 9' from trunk; set ~6 - 7" within existing sand substrate.	Moderate	15	Stem	Possible	Retain and monitor	$ 9,000.00
527	Deodar cedar	-	-	Removed	-						$ -
528	Tree of heaven	29	Yes	Remove	W/in play structure footprint; low suitability for preservation; in decline.	Severe	NA	Branch	Possible	Remove	$ 1,600.00

Tree Disposition, Maintenance Recommendation, and Estimate of Value

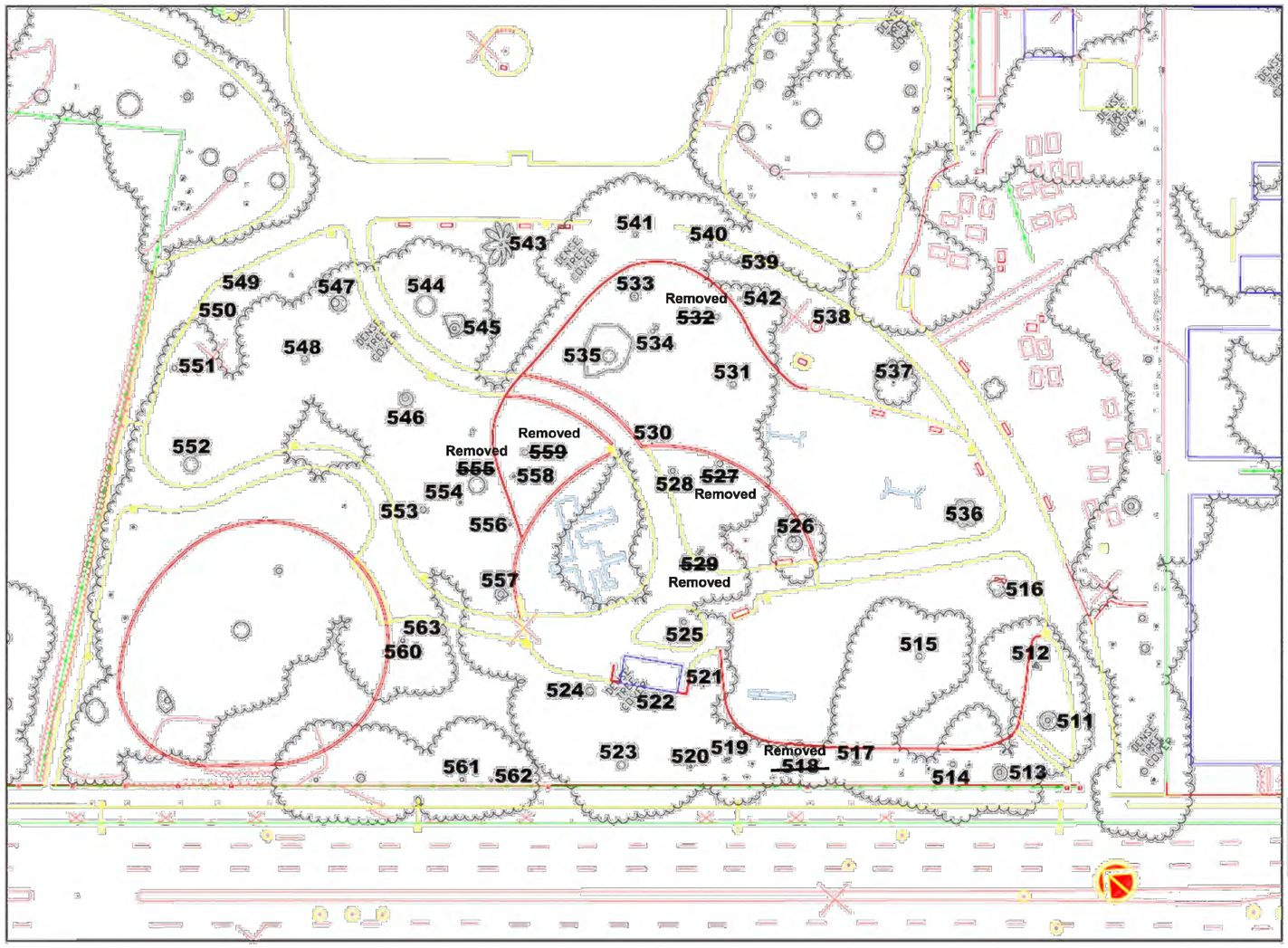
RFP Central Park San Mateo
San Mateo, CA
Revised May 2024

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments	Expected Impacts	Calculated TPZ radius (ft.)	Tree part	Likelihood of failure	Maintenance recommendation	Estimated Value
529	Coast live oak	-	-	Removed	-	-	-	-	-	-	$ -
530	Coast live oak	11,7	Yes	Remove	3' from play structure	Severe	NA	Dead branch	Probable	Remove	$ 1,650.00
531	Bunya-bunya	34	Yes	Preserve	Asphalt path ~17' from trunk surrounding tree; movable footings for shade structure.	Moderate	17	Branch	Improbable	Retain and monitor	$ 5,950.00
532	Tree of heaven	-	-	Removed	-	-	-	-	-	-	$ -
533	Atlas cedar	44	Yes	Preserve	Construction 14' from trunk; structural prune	Moderate	20	Branch	Possible	Retain and monitor	$ 27,800.00
534	Coast live oak	40	Yes	Preserve	Curb construction encroaches to 3x208H; optional picnic bench and curb encroaches to 3x08H.	Moderate	20	Whole tree	Probable	Prune to reduce weight in direction of lean.	$ 23,000.00
535	Moreton Bay fig	82	Yes	Preserve	Path & curb construction 16' from trunk, encroaches 4' closer than current walkway.	Moderate	40	Branch	Possible	Retain and monitor	$ 48,200.00
536	Southern live oak	8	No	Remove	Site of future construction; in decline	Severe	NA	Whole tree	Possible	Remove	$ 1,200.00
537	Southern live oak	15	Yes	Preserve	Construction & landscaping w/in dripline; structural prune	Moderate	10	Branch	Improbable	Retain and monitor	$ 7,800.00
538	Olive	2	No	Relocate	Tree is w/in building footprint; plans call for relocation	Moderate	NA	Branch	Improbable	Relocate	$ 300.00
539	Coast live oak	18	Yes	Preserve	Concrete path construction encroaches to 9' from trunk	Moderate	10	Branch	Improbable	Retain and monitor	$ 3,850.00
540	Coast live oak	15	Yes	Preserve	Landscaping w/in dripline	Low	10	Stem	Possible	Retain and monitor	$ 3,400.00
541	Coast live oak	22	Yes	Preserve	Concrete path construction encroaches to 8' from trunk	Moderate	10	Branch	Improbable	Retain and monitor	$ 7,100.00
542	Windmill palm	7	No	Preserve	Within improvements	Low	7	Frond	Possible	Retain and monitor	$ 400.00
543	California fan palm	20	Yes	Preserve	Landscaping w/in dripline	Low	7	Frond	Possible	Retain and monitor	$ 650.00
544	Coast redwood	66	Yes	Preserve	Concrete path demolition & construction 8' from trunk along west & south sides; irrigation lines 7'; structural prune.	Moderate	45	Branch	Possible	Retain and monitor	$ 43,700.00
545	Incense cedar	29	Yes	Preserve	Demolition & construction 12' from trunk along north & south sides; structural prune.	Moderate	15	Dead branch	Probable	Prune to remove dead branches.	$ 10,700.00
546	Coast live oak	40	Yes	Preserve	Demo & construction w/in dripline; structural prune; picnic footings to be placed based on location of roots; pavement installed on top of finished grade	Low	25	Branch	Possible	Prune to reduce end weight.	$ 25,850.00
547	Coast redwood	44	Yes	Preserve	Minor construction & landscaping w/in dripline	Low	25	Branch	Improbable	Retain and monitor	$ 19,600.00
548	Silver dollar gum	-	-	Removed	-	-	-	-	-	-	$ -
549	Coast redwood	14	Yes	Preserve	Outside of construction area	Negligible	10	Branch	Improbable	Retain and monitor	$ 2,150.00

Tree Disposition, Maintenance Recommendation, and Estimate of Value

RFP Central Park San Mateo
San Mateo, CA
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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments	Expected Impacts	Calculated TPZ radius (ft.)	Tree part	Likelihood of failure	Maintenance recommendation	Estimated Value
550	Coast redwood	-	-	Removed	-	-	-	-	-	-	$ -
551	Valley oak	-	-	Removed	-	-	-	-	-	-	$ -
552	Coast live oak	62,24	Yes	Preserve	Outside of construction area	Negligible	40	Stem	Probable	Prune to reduce end weight; investigate cabling; prune to remove dead branch over path.	$ 99,550.00
553	Coast live oak	37	Yes	Preserve	Construction & landscaping w/in dripline; design flexible footings	Low	20	Branch	Possible	Retain and monitor	$ 19,700.00
554	Coast live oak	13,10	Yes	Preserve	Construction & landscaping w/in dripline; design flexible footings; clearance prune	Moderate	12	Branch	Improbable	Retain and monitor	$ 4,000.00
555	California black walnut	-	-	Removed	-	-	-	-	-	-	$ -
556	Coast live oak	20	Yes	Preserve	Construction & landscaping w/in dripline; design flexible footings; clearance prune	Moderate	15	Dead branch	Probable	Prune to remove dead branches.	$ 6,600.00
557	Coast live oak	41	Yes	Preserve	Construction & landscaping w/in dripline; design flexible footings; clearance prune	Moderate	25	E stem	Possible	Retain and monitor	$ 33,750.00
558	Coast live oak	-	-	Removed	-	-	-	-	-	-	$ -
559	Coast live oak	-	-	Removed	-	-	-	-	-	-	$ -
560	Coast live oak	41	Yes	Preserve	Fence alteration	Low	30	Whole tree; branch	Possible (whole tree); probable (branch)	Prune to reduce end weight; plan for retrenchment pruning or removal.	$ 16,350.00
561	Coast live oak	27	Yes	Preserve	Outside of construction area.	Negligible	13	Stem	Improbable	Retain and monitor	$ 15,900.00
562	Coast live oak	22	Yes	Preserve	Outside of construction area.	Negligible	11	Branch	Improbable	Retain and monitor	$ 7,100.00
563	Italian buckthorn	6,5	No	Preserve	Outside of construction area.	Negligible	3	Stem	Improbable	Retain and monitor	$ 850.00
564	Coast live oak	52	Yes	Preserve	Outside of construction area.	Negligible	35	Stem	Possible	Retain and monitor; aerial inspection of cavities, be cautios of beehive.	$ 139,200.00
										Total	$ 788,250.00



Tree Assessment Map

Central Park
San Mateo, CA

Prepared for:
RRM Design Group
San Leandro, CA

Revised May 2023

No Scale

Notes:

Base map provided by:
RRM Design Group
San Leandro, CA

Numbered tree locations with no survey point were approximately located in the field.

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SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

ARBORIST REPORT

NO.	REVISION	DATE
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PROJECT MANAGER: Marisa Peltier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE: JULY 8, 2024 / May 13, 2025
RRM PROJECT NUMBER: 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: CD604

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GENERAL EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL BE OR DESIGNATE A QUALIFIED QSP,THE QSP (QUALIFIED SWPPP PRACTITIONER) SHALL HAVE THE APPROPRIATE TRAINING AND OVERSEE ALL IMPLEMENTATION OF THE SWPPP AND IT'S REQUIREMENTS. THE QSP SHALL BE RESPONSIBLE FOR ALL INSPECTIONS AND OBSERVATIONS OF THE BMP'S AND IMPLEMENTATION OF ANY CHANGES NEEDED TO BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE GENERAL PERMIT. THE QSP SHALL HOLD A PRE-CONSTRUCTION MEETING WITH ALL CONTRACTORS AND SUBCONTRACTORS THAT WILL BE WORKING AT THE SITE AND INFORM THEM ON THE REQUIREMENTS OF THE GENERAL PERMIT AND THE SWPPP.
2. THE QSD (QUALIFIED SWPPP DEVELOPER) SHALL APPROVE AND CERTIFY ALL AMENDMENTS TO THE SWPPP AND THE ANNUAL CERTIFICATIONS.
3. IF FAILURE OF ANY OF THE BMP'S SHOULD RESULT IN NTU'S THAT EXCEED THE LIMITS OF THE GENERAL PERMIT REQUIREMENTS, THE QSP SHALL IMPLEMENT THE CHANGES NECESSARY TO KEEP THE VIOLATION FROM HAPPENING AGAIN, AND REPORT THE VIOLATION VIA THE SMARTS SYSTEM PER THE REQUIREMENTS OF THE GENERAL PERMIT. (SEE SWPPP)
4. IF WATER MONITORING BECOMES NECESSARY PER THE REQUIREMENTS OF THE GENERAL PERMIT, THEN THE PERSON OR PERSONS DOING THE MONITORING SHALL HAVE THE APPROPRIATE TRAINING AND QUALIFICATION TO PERFORM SUCH MONITORING.
5. REFER TO SWPPP FOR WATER MONITORING LOCATIONS CHOSEN FOR THIS SITE BY THE QSD. THE QSP SHALL REVIEW THIS LOCATION AND REPORT BACK TO THE QSD IF THIS LOCATION IS DEEMED UNSAFE OR UNSUITABLE FOR ANY REASONS.
6. THE QSP SHALL ASSURE ALL SAFETY PRECAUTIONS NECESSARY HAVE BEEN IMPLEMENTED TO DO THE WATER MONITORING.
7. A STANDBY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON (OCTOBER 15 THROUGH APRIL 15). NECESSARY MATERIALS SHALL BE AVAILABLE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
8. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THIS PLAN AND/OR AS DIRECTED BY THE ENGINEER OR QSD TO CONTROL DRAINAGE WHICH HAS BEEN AFFECTED BY GRADING AND/OR TRENCHING
9. THE CONTRACTOR WILL BE ON CALL IN THE EVENT IT IS NECESSARY TO IMPLEMENT EROSION CONTROL MEASURES OR IN THE EVENT OF AN EMERGENCY.
10. ALL STORMWATER CONTROL MEASURES THAT ARE IDENTIFIED IN THE REAP SHALL BE IN PLACE MIN. OF 24 HRS. PRIOR TO FORECAST RAINS.
11. AFTER A RAINSTORM, ALL BMP'S SHALL BE INSPECTED AND ANY BUILDUP OF SEDIMENTS SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.
12. THE ENGINEER OF RECORD, QSD OR AN AUTHORIZED REPRESENTATIVE MAY REQUIRE THE CONTRACTOR AT ANY TIME TO INSTALL AND/OR CONSTRUCT ADDITIONAL DRAINAGE STRUCTURES AS NECESSARY TO PREVENT OR CONTROL EROSION.
13. THE EROSION CONTROL DEVICES ON THIS PLAN ARE A GENERAL CONCEPT OF WHAT MAY BE REQUIRED. EROSION CONTROL DEVICES MAY BE RELOCATED, DELETED OR ADDITIONAL ITEMS MAY BE REQUIRED DEPENDING ON THE ACTUAL SOIL CONDITIONS ENCOUNTERED. EROSION CONTROL DEVICES MAY BE PLACED AT THE DISCRETION OF THE QSP AS APPROVED BY THE QSD.
14. THE CONTRACTOR IS RESPONSIBLE TO KEEP IN FORCE ALL EROSION CONTROL DEVICES AND TO MODIFY THOSE DEVICES AS SITE PROGRESS DICTATES.
15. THE CONTRACTOR SHALL MONITOR THE EROSION CONTROL DEVICES DURING STORMS AND MODIFY THEM IN ORDER TO PREVENT PROGRESS OF ANY ONGOING EROSION.
16. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING ANY EROSION OR DEBRIS SPILLING ONTO A PUBLIC STREET DAILY.
17. THE CONTRACTOR SHALL CONTACT THE QSD IN THE EVENT THAT THE EROSION CONTROL PLAN AS DESIGNED REQUIRES ANY SUBSTANTIAL REVISIONS.
18. DURING GRADING OPERATIONS IF AN AREA OF DISTURBANCE IS TO REMAIN IDLE FOR A PERIOD OF 2 OR MORE WEEKS, THE DISTURBED AREAS SHALL BE COVERED WITH MULCH, STRAW OR SOME OTHER TYPE OF BMP TO PREVENT EROSION DURING RAIN EVENTS.
19. THE CONTRACTOR SHALL PROVIDE STREET SWEEPING ONGOING DURING CONSTRUCTION TO PREVENT ANY SEDIMENTS FROM BEING TRACKED OFF-SITE OR TO AREAS THAT MAY CONTRIBUTE TO SEDIMENTS BEING DEPOSITED INTO THE STORM DRAIN SYSTEM.
20. POST CONSTRUCTION BMP'S INCLUDING PLANTINGS, SHRUBS, GROUND COVER AND TREES AS SHOWN ON THE PLANTING PLANS SHALL BE IN PLACE AS SOON AS PRACTICAL.
21. CONTRACTOR TO INSTALL SILT FENCING AT ALL PERIMETER LOCATIONS THAT HAVE THE POTENTIAL TO DISCHARGE STORMWATER OFF-SITE.
22. CONTRACTOR TO PROTECT ALL YARD AND LANDSCAPE AREA DRAINS FROM SEDIMENTS UNTIL LANDSCAPING IS COMPLETED AND VEGETATION ESTABLISHED.
23. GRAVEL BAGS ORIENTED TO SLOW THE FLOW OF STORM WATER RUNOFF SHALL BE PLACED IN THE CONCRETE GUTTERS IN THE ON-SITE ROADWAY TO HELP FILTER OUT ANY SEDIMENTS. THESE GRAVEL BAGS SHALL BE PLACED 50' O/C MAX. SEDIMENTS THAT ACCUMULATE AT THE GRAVEL BAGS SHALL BE REMOVED AFTER EACH RAIN EVENT.
24. THE CONTRACTOR SHALL KEEP TWO ACCEPTABLE RAIN GAUGES ON-SITE TO MONITOR RAIN EVENTS DURING CONSTRUCTION.
25. THE CONTRACTOR SHALL IMPLEMENT EFFECTIVE WIND EROSION CONTROLS.
26. IN THE EVENT OF A RELEASE OF A REPORTABLE QUANTITY OF A POLLUTANT, THE CONTRACTOR SHALL ADVISE THE OWNER TO NOTIFY THE NATIONAL RESPONSE CENTER AND THE COUNTY. IF NECESSARY, THIS POLLUTION PREVENTION PLAN SHOULD BE REVISED TO REFLECT THE CHANGE IN CONDITIONS OF THE CONSTRUCTION ACTIVITY. A REPORTABLE QUANTITY IS ESTABLISHED BY THE 40 CODE OF FEDERAL REGULATIONS (CRI) 1117.3 OR 40 CFR 302.4.
27. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AND MAINTAINED TO THE SATISFACTION OF THE BUILDING OFFICIAL AND PUBLIC WORKS DIRECTOR DURING ALL DEMOLITIONS, CONSTRUCTION AND GROUND DISTURBING ACTIVITIES.
28. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WHEN PERMANENT IMPROVEMENTS, PLANTINGS, AND FACILITIES ARE IN PLACE. TEMPORARY MEASURES SHALL BE REMOVED PRIOR TO FINAL INSPECTION APPROVALS.
29. STOCKPILE MANAGEMENT SHALL BE IN CONFORMANCE WITH GENERAL PERMIT AND THE CASQA BMP GUIDE.
30. IF DURING CONSTRUCTION DEWATERING OPERATIONS BECOME NECESSARY, ALL DEWATERING SHALL BE DONE IN COMPLIANCE WITH THE REQUIREMENTS OUTLINED THE NPDES GENERAL PERMIT AND PER THE CASQA BMP HANDBOOK FOR BMP SC-11. DISCHARGES SHALL BE TREATED FOR EXCESSIVE SEDIMENTS PRIOR TO LEAVING THE SITE AND/OR ENTERING THE CITY'S STORM DRAIN SYSTEM.

GOOD HOUSEKEEPING PRACTICES

1. THE CONTRACTOR SHALL IMPLEMENT GOOD HOUSEKEEPING PRACTICES AS OUTLINED IN THE GENERAL PERMIT AND PER THE SWPPP.
2. THE CONTRACTOR SHALL CONDUCT AN INVENTORY OF THE PRODUCTS USED AND/OR EXPECTED TO BE USED AND THE END PRODUCTS THAT ARE PRODUCED AND/OR EXPECTED TO BE PRODUCED.
3. COVER AND BERM LOOSE STOCKPILED CONSTRUCTION MATERIALS THAT ARE NOT ACTIVELY BEING USED.
4. STORE CHEMICALS IN WATERTIGHT CONTAINERS (WITH APPROPRIATE SECONDARY CONTAINMENT TO PREVENT ANY SPILLAGE OR LEAKAGE) OR IN A STORAGE SHED (COMPLETELY ENCLOSED).
5. ALL EQUIPMENT AND VEHICLE FUELING AND MAINTENANCE PROCEDURES SHALL BE DONE IN THE AREA SHOWN ON THE SITE PLANS OR OTHER LOCATION WHERE THE APPROPRIATE BMP'S HAVE BEEN INSTALLED TO PREVENT ANY CONTAMINATION OF THE SOILS.
6. THE CONTRACTOR SHALL USE SOME TYPE OF GROUND COVER OR OTHER DEVISES TO ENSURE NO PETROLEUM PRODUCTS COME IN CONTACT WITH SOILS DURING FUELING AND MAINTENANCE.
7. THE CONTRACTOR SHALL PROVIDE APPROPRIATE CONTAINMENT AROUND ANY SANITARY TOILETS THAT PREVENT CONTAMINATION TO THE SOILS.
8. ANY BUILDING MATERIALS THAT ARE STORED ON-SITE THAT HAVE THE POTENTIAL TO CONTRIBUTE NON-VISIBLE POLLUTANTS TO THE STORM WATER RUNOFF SHALL BE STORED IN WATERTIGHT CONTAINERS OR UNDER THE COVER OF SHELTERS THAT PROVIDE PROTECTION FROM RAINS.
9. CONSTRUCTION MATERIAL WASTES SHALL BE CLEANED UP DAILY AND STORED IN COVERED CONTAINERS PRIOR TO DISPOSAL.
10. THE CONTRACTOR HAS THE OPTION TO USE METAL SHAKER BOARDS IN LIEU OF RIP RAP AT THE CONSTRUCTION ENTRANCE AS LONG AS IT PROVIDES ADEQUATE TIRE CLEANING ABILITIES.

AIR QUALITY CONTROL NOTES

THE FOLLOWING PRACTICES ARE TO BE USED AT ALL TIMES DURING CONSTRUCTION:

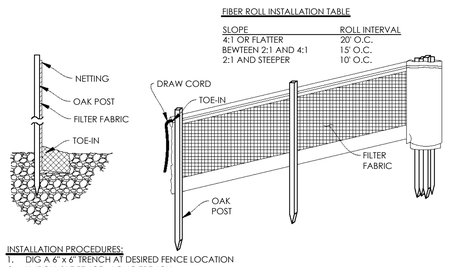
1. REDUCE THE AMOUNT OF DISTURBED AREA WHERE POSSIBLE.
2. USE WATER TRUCKS OR SPRINKLER SYSTEMS IN SUFFICIENT QUANTITY TO PREVENT AIRBORNE DUST FROM LEAVING THE SITE. INCREASED WATERING FREQUENCY WILL BE REQUIRED WHENEVER WIND SPEEDS EXCEED 15MPH. RECLAIMED (NON-POTABLE WATER) WATER SHOULD BE USED WHENEVER POSSIBLE.
3. PERMANENT DUST CONTROL MEASURES IDENTIFIED IN THE APPROVED PROJECT LANDSCAPE PLANS SHALL BE IMPLEMENTED AS SOON AS POSSIBLE FOLLOWING COMPLETION OF ANY SOIL DISTURBING ACTIVITIES.
4. EXPOSED GROUND AREAS THAT ARE PLANNED TO BE REWORKED AT DATES GREATER THAN ONE MONTH AFTER INITIAL GRADING SHALL BE SECURED WITH FIBER ROLLS, STRAW WADDLES AND/OR TURF REINFORCEMENT MAT.
5. ALL DISTURBED SOIL AREAS NOT SUBJECT TO RE-VEGETATION MUST BE STABILIZED USING APPROVED CHEMICAL SOIL BINDERS, JUTE NETTING, OR OTHER METHODS APPROVED IN ADVANCE BY THE DISTRICT.
6. ALL ROADWAYS, DRIVEWAYS, SIDEWALKS, ETC. TO BE PAVED SHOULD BE COMPLETED AS SOON AS POSSIBLE. IN ADDITION, BUILDING PADS SHOULD BE LAID AS SOON AS POSSIBLE AFTER GRADING UNLESS SEEDING OR SOIL BINDERS ARE USED.
7. VEHICLE SPEED FOR ALL CONSTRUCTION VEHICLES SHALL NOT EXCEED 15MPH ON ANY UNPAVED SURFACE AT THE CONSTRUCTION SITE.
8. ALL TRUCKS HAULING DIRT, SAND, SOIL, OR OTHER LOOSE MATERIAL ARE TO BE COVERED OR SHOULD MAINTAIN AT LEAST TWO FEET OF FREEBOARD (MINIMUM VERTICAL DISTANCE BETWEEN TOP OF LOAD AND TOP OF TRAILER) IN ACCORDANCE WITH THE CALIFORNIA VEHICLE CODE SECTION 23114.
9. INSTALL WHEEL WASHERS WHERE VEHICLES ENTER AND EXIT UNPAVED ROAD AND STREETS, OR WASH OFF TRUCKS AND EQUIPMENT LEAVING THE SITE.
10. SWEEP STREETS AT THE END OF EACH DAY IF VISIBLE SOIL MATERIAL IS CARRIED ONTO ADJACENT PAVED ROADS. WATER SWEEPERS WITH RECLAIMED WATER SHOULD BE USED WHERE FEASIBLE.
11. A DESIGNATED DUST CONTROL MONITOR SHALL BE CHOSEN. THEY SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF ALL DUST CONTROL MEASURES. THE MONITOR SHALL BE AVAILABLE DURING WEEKENDS AND HOLIDAYS. THE NAME AND 24/7 CONTACT INFORMATION OF THE MONITOR SHALL BE PROVIDED TO THE CITY AND BAY AREA AIR QUALITY MANAGEMENT DISTRICT.

PHASING NOTES

1. THE CONTRACTOR SHALL PHASE CONSTRUCTION ROUGH GRADING TO LIMIT THE SIZE OF DISTURBANCE TO AN AREA THAT CAN BE MAINTAINED WITH PROPER BMP'S DURING ANY RAIN EVENTS.
2. AFTER AN AREA HAS BEEN PAVED THE CONTRACTOR SHALL PROVIDE GRAVEL BAGS IN THE FLOW LINES TO FILTER SEDIMENTS FROM STORM WATER RUNOFF OR AN APPROVED EQUAL.
3. AREA DRAINS SHALL HAVE STORM DRAIN INLET PROTECTION INSTALLED DURING THE TIME BETWEEN INSTALLATION AND PLANTING OF GROUND VEGETATION PER THE PLANS OR AN APPROVED EQUAL.
4. LANDSCAPED AREAS SHALL BE COMPLETED AND SPRINKLERS INSTALLED AS SOON AS POSSIBLE AFTER GRADING OPERATIONS.
5. ANY AREAS OF DISTURBANCE THAT WILL REMAIN IDLE FOR TWO OR MORE WEEKS SHALL BE STABILIZED WITH MULCH, STRAW, HYDROSEED OR OTHER APPROPRIATE BMP COVER.
6. DURING ASPHALT PATCHING OPERATIONS, THE CONTRACTOR SHALL PROVIDE EITHER PERMANENT OR TEMPORARY PAVING IN THE AREAS OF PATCHING BY THE END OF THE WORK DAY. NO TRENCHES SHALL BE LEFT OPEN DURING TIMES OF PREDICTED RAINFALL.
7. THE AREAS SHOWN ON THE PLANS FOR MATERIAL DELIVERY & STORAGE AND CONCRETE WASTE MANAGEMENT ARE FOR REFERENCE ONLY. THE ACTUAL LOCATIONS ARE TO BE DETERMINED BY THE QSP.
8. THE BMP'S SHOWN ON THE EROSION CONTROL PLANS ARE INTENDED AS A GUIDELINE FOR THE CONTRACTOR'S QSP. IMPLEMENTATION OF THESE OR OTHER BMP'S WILL BE THE RESPONSIBILITY OF THE QSP.
9. ALL ROADWAYS SHALL BE KEPT CLEAN ON A DAILY BASIS BY MEANS OF VACUUMING OR STREET SWEEPINGS.
10. ROADWAYS THAT HAVE NOT BEEN STABILIZED WITH AGGREGATE BASE SHALL BE STABILIZED USING SOIL BINDERS, MULCH AND/OR OTHER APPROPRIATE BMP'S PRIOR TO FORECAST RAIN EVENTS.
11. PRIOR TO FORECAST RAIN EVENTS, THE QSP SHALL EVALUATE THE SITE AND ESTABLISH ADEQUATE BMP'S TO PROTECT ALL DISTURBED AREAS FROM EROSION.
12. STORM DRAIN INLET PROTECTION SHALL BE TYPE 2 DURING STORM DRAIN INSTALLATIONS, AND TYPE 3 AFTER PAVING OPERATIONS HAVE BEEN COMPLETED. (SEE BMP GUIDANCE HANDOUT IN THE SWPPP FOR MORE INFORMATION).
13. THE STRAW WATTLES SHOWN ON THESE PLANS ARE INTENDED TO REPRESENT DIFFERENT PHASES OF CONSTRUCTION. CONTRACTOR SHALL INCORPORATE THEIR USE AS NEEDED DURING CONSTRUCTION.

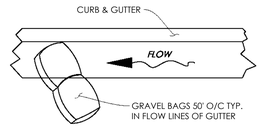
EROSION CONTROL NOTES

1. ALL 4:1 & STEEPER SLOPES TO BE HYDROSEEDED AFTER COMPLETION OF GRADING OPERATIONS, UNLESS OTHERWISE LANDSCAPED BY THESE PLANS.
2. DRAINAGE SWALES TO HAVE EROSION CONTROL BLANKET (NORTH AMERICAN C-125 OR CITY APPROVED EQUAL).
3. THE BMP'S PROPOSED ON THESE PLANS ARE INTENDED AS A GUIDELINE FOR THE CONTRACTOR. OTHER AND/OR MOVES EXTENSIVE MEASURES MAY BECOME NECESSARY DURING CONSTRUCTION, AND WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT.

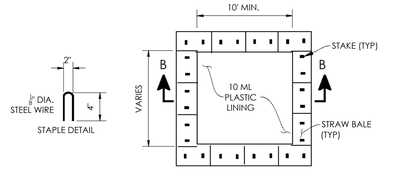


INSTALLATION PROCEDURES:
1. DIG A 6" x 6" TRENCH AT DESIRED FENCE LOCATION
2. UNROLL SILT FENCE ALONG TRENCH
3. DRIVE STAKES INTO THE DOWNHILL SIDE OF TRENCH WITH NETTING AND STAKES FACING THE DOWNHILL SIDE.
4. LAY THE BOTTOM 6" OF FABRIC INTO THE TRENCH AND FILL WITH TOP SOIL FOR PROPER TOE-IN.
5. DRAW TENSION CORD AT TOP OF FENCE AND TIE TO END STAKES.

PRE-ASSEMBLED SILT FENCE
-NTS-

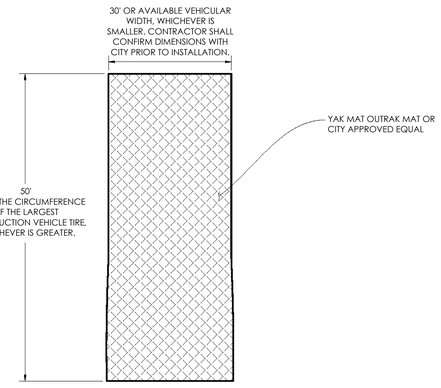


SE-6 GRAVEL BAGS IN FLOW LINE DETAIL
-NTS-

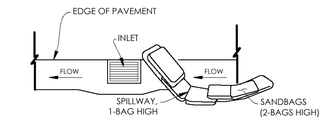


NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY

CONCRETE WASTE MANAGEMENT WM-8
-NTS-



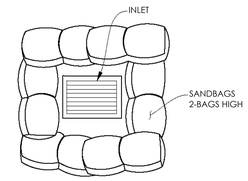
PLAN
STABLIZED CONSTRUCTION ENTRANCE/EXIT
-NTS-



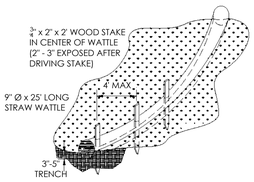
TYPICAL PROTECTION FOR INLET ON GRADE
-NTS-

NOTES:
1. INTENDED FOR SHORT TERM USE
2. USE TO INHIBIT NON-STORM WATER FLOWS
3. ALLOW FOR PROPER MAINTENANCE AND CLEANUP
4. BAGS MUST BE REMOVED AFTER ADJACENT OPERATION IS COMPLETE
5. NOT APPLICABLE IN AREAS WITH HIGH SILTS & WITHOUT FILTER FABRIC

SE-10 STORM DRAIN INLET PROTECTION TYPE-3
-NTS-

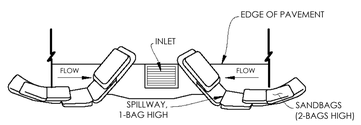


SE-10 STORM DRAIN INLET PROTECTION TYPE-3
-NTS-



NOTES:
PLACE NET-WRAPPED STRAW WATTLE IN TRENCH. WATTLE TO BE TIGHTLY BUTTED END TO END BUT NOT OVERLAPPING. MINIMUM 6 STAKES PER 25' OF WATTLE.

STRAW WATTLE DETAIL
-NTS-



TYPICAL PROTECTION FOR INLET ON SUMP
-NTS-

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VE SET

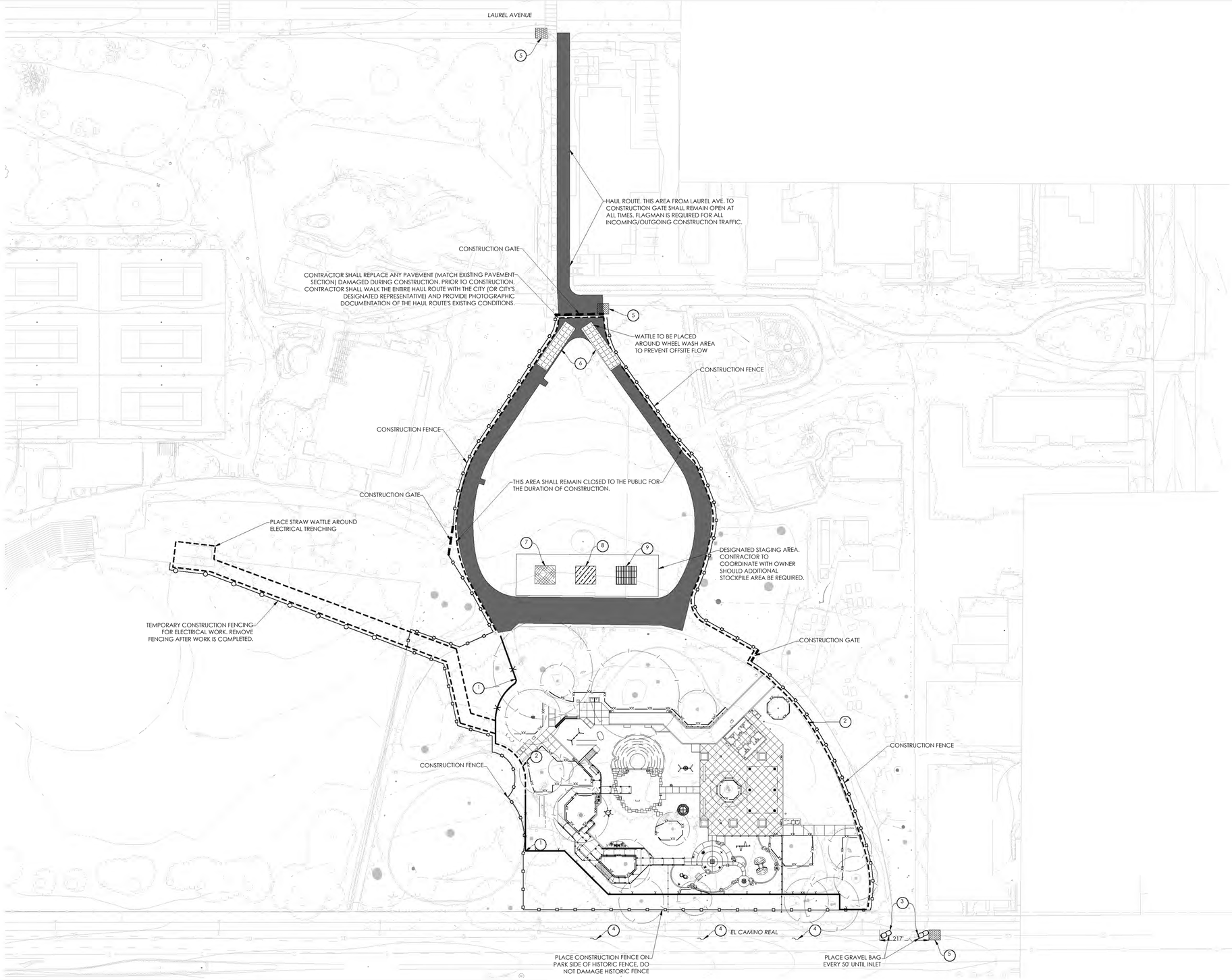
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

EROSION CONTROL NOTES

NO.	REVISION	DATE
1		

PROJECT MANAGER: Marisa Peltier
DRAWN BY: RP
CHECKED BY: DC
DATE: JANUARY 31 2025
RRM PROJECT NUMBER: 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: CE001

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SWPPP CONTROL

WDID: 2 41C402121

#	BMP SYMBOL	NAME	LEGEND
1	SE-1	SILT FENCE	
2	SE-5	STRAW WATTLE	
3	SE-6	GRAVEL BAGS	
4	SE-7	STREET SWEEPING AND VACUUMING	
5	SE-10	STORM DRAIN INLET PROTECTION	
6	TC-1/TC-3	STABILIZED CONSTRUCTION ENTRANCE WITH WHEEL WASH AREA	
7	WM-1/WM-2	MATERIAL DELIVERY & STORAGE/ MATERIAL USE	
8	WM-3	STOCKPILE MANAGEMENT	
9	WM-8	CONCRETE WASTE MANAGEMENT	
		TREE PROTECTION FENCING	xx xx
		TRUCK HAUL ROUTE	

NORTH

0 40 80 120 feet

1" = 40'-0"

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325 Davis St., San Leandro, CA 94577

REGISTERED PROFESSIONAL ENGINEER JOHNNY W.K. CHOU 82708 EXP 9/30/26 CIVIL STATE OF CALIFORNIA

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VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

EROSION CONTROL AND CONSTRUCTION STAGING PLAN

NO.	REVISION	DATE

PROJECT MANAGER: Marisa Peltier
DRAWN BY: RP
CHECKED BY: DC
DATE: JANUARY 31, 2025
RRM PROJECT NUMBER: 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: CE100

N:\1600\1652.02 RC22 Central Park Playground Imm. Grove + Rhyd Design Engineering\Cad\Docs\Sheet Files\CE\1652.02 RC22 ECSC.dwg, CE100, Feb 04, 2025 - 11:01pm, AJHeidt

APPROXIMATE EARTH QUANTITIES

CUT: 525 CY
FILL: 60 CY
NET: 465 CY <EXPORT>

THE APPROXIMATE RAW EARTHWORK QUANTITIES SHOWN HEREON REPRESENT THE ESTIMATED VOLUMETRIC DIFFERENCE CALULATED BETWEEN THE PROPOSED SUBGRADE AND EXISTING GRADE SURFACE, AND ARE SUBJECT TO CHANGE. THESE ESTIMATES DO NOT INCLUDE CONSIDERATIONS FOR LOSSES OR BULKING DUE TO: SOIL AMENDMENTS, STABILIZATION, CONSTRUCTION TECHNIQUE, FOOTING & TRENCHING SPOILS, ETC. THESE CONSIDERATIONS, IN ADDITION TO ACTUAL FIELD CONDITIONS AND THE FINAL RECOMMENDATION OF THE GEOTECHNICAL ENGINEER, MAY SIGNIFICANTLY AFFECT THE FINAL IMPORT/EXPORT QUANTITIES. APPROXIMATE QUANTITIES SHOWN ON THESE PLANS ARE FOR PERMITTING PURPOSES ONLY.

LEGEND

SPECIFIED TPZ FENCE — XX — XX — XX — XX —

CALCULATED TPZ — / ——— / ——— / ———

SEE CD102 FOR DETAILS

GRADING NOTES

1. THE GEOTECH REPORT, IN ITS ENTIRETY, SHALL BE CONSIDERED A PART OF THESE PLANS.
2. ALL GRADING SHALL BE IN CONFORMANCE WITH THE STANDARDS AND REQUIREMENTS PERTAINING THERETO, THIS PLAN, AND THE RECOMMENDATIONS AND REQUIREMENTS OF THE SUPERVISING SOILS ENGINEER.
3. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR PROTECTION OF PUBLIC AND PRIVATE PROPERTY ADJACENT TO THE JOB SITE AND THAT HE/SHE SHALL AT HIS/HER EXPENSE, REPAIR OR REPLACE TO ORIGINAL CONDITION ALL EXISTING IMPROVEMENTS WITHIN OR ADJACENT TO THE JOB SITE WHICH ARE DESIGNATED FOR REMOVAL AND WHICH ARE DAMAGED OR REMOVED AS A RESULT OF HIS/HER OPERATIONS.
4. NO CUT OR FILL SLOPES WILL BE CONSTRUCTED STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1), UNLESS OTHERWISE APPROVED BY THE SOILS ENGINEER.
5. SOILS TESTS SHALL BE DONE IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT AND RECOMMENDATIONS. ALL TESTS MUST BE MADE WITHIN 15 DAYS PRIOR TO PLACING THE MATERIAL. THE TEST RESULTS SHALL CLEARLY INDICATE THE LOCATION AND SOURCE OF THE MATERIAL.
6. ALL SOIL COMPACTION ACTIVITY SHALL BE IN ACCORDANCE WITH GEOTECHNICAL INVESTIGATION REPORT RECOMMENDATIONS.
7. CONTRACTOR SHALL USE CAUTION WHEN GRADING OR TRENCHING UNDER EXISTING TREE DRIPLINES. HAND DIG ANY GRADING OR TRENCHES THAT OCCUR WITHIN 6' OF THE TREE TRUNKS.
8. SEE CU SHEETS FOR SEWER AND WATER UTILITIES
9. SEE LC SHEETS FOR SITE MATERIALS
10. ALL WORK WITHIN CALTRANS ROW SHALL CONFORM TO LATEST EDITION OF CALTRANS STANDARD PLANS
11. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR WORK WITHIN CALTRANS ROW TO THE CITY OF SAN MATEO FOR APPROVAL PRIOR TO CONSTRUCTION
12. BUILDING PAD ELEVATIONS BASED ON 8" CONCRETE SLAB OVER 2" SAND. CONTRACTOR TO CONFIRM BUILDING PAD ELEVATIONS AND PAD DESIGN WITH RESTROOM MANUFACTURER AND GEOTECHNICAL ENGINEER PRIOR TO PAD PREPARATION.

IMPROVEMENT NOTES

1. REPLACE EXISTING CURB, GUTTER, AND SIDEWALK PER DETAIL1 ON CG 501, AS NEEDED TO INSTALL PROPOSED UTILITIES IN CALTRANS RIGHT OF WAY. MATCH EXISTING TC, FL, AND GUTTER LIP ELEVATIONS.
2. CONNECT PROPOSED PAVEMENT TO EXISTING WALKWAY PER DETAILS 3 (CONCRETE TO CONCRETE) AND 15 (ASPHALT TO CONCRETE) ON LC502. PROPOSED FINISH SURFACE SHALL BE FLUSH WITH EXISTING SURFACE.
3. CONFORM PAVING EDGE OR TOP OF CURB TO EXISTING GROUND PER DETAIL 14 ON LC501.
4. TREE PROTECTION ZONE, REFER TO SHEET CD102 FOR TREE PROTECTION PLAN

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REGISTERED PROFESSIONAL ENGINEER — MARK R. CROSSER — 82706 — EXP 9/30/26 — CIVIL — STATE OF CALIFORNIA

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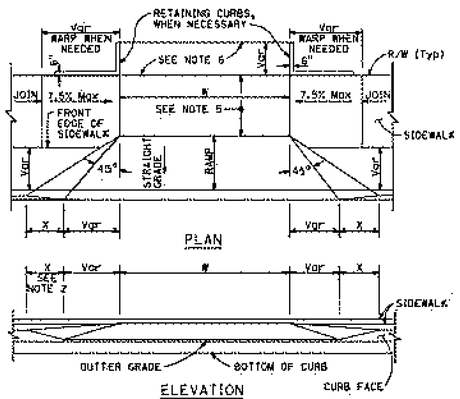
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

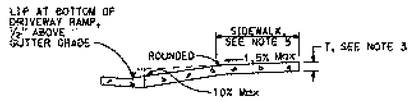
GRADING AND DRAINAGE PLAN

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier
DRAWN BY: RP
CHECKED BY: DC
DATE
JANUARY 31, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
CG101

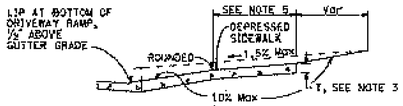
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CASE A

Typical driveway, sidewalk not depressed



CASE B

Driveway with depressed sidewalk

SECTIONS

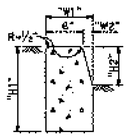
TABLE A

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	1¾"	1¼"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7½"	1½"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	1¼"	1¼"
A3-8	8"	7"	1¾"	1¾"
B1-4	1'-0"	4"	7½"	2½"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7½"	2½"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8½"	3½"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-9"

CURB QUANTITIES

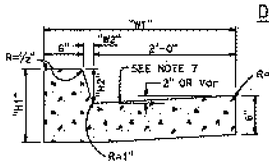
TYPE	CUBIC YARDS PER LINEAR FOOT
A3-6	0.02585
A3-8	0.03084
A2-6	0.05903
A2-8	0.06319
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

DRIVEWAYS



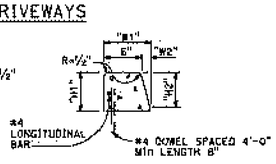
TYPE A1 CURBS

See Table A



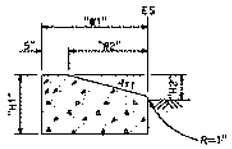
TYPE A2 CURBS

See Table A



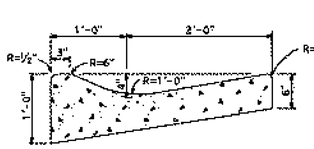
TYPE A3 CURBS

Superimposed on existing pavement
See Table A

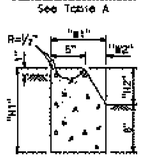


TYPE D CURBS

See Table A

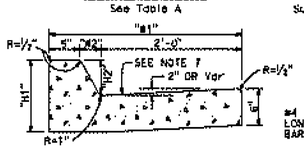


TYPE E CURB



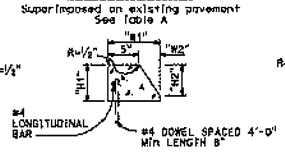
TYPE B1 CURBS

See Table A



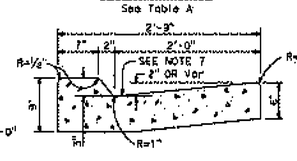
TYPE B2 CURBS

See Table A

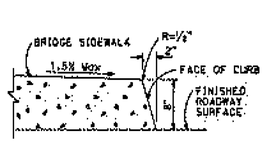


TYPE B3 CURBS

Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB

On Bridges

CURBS

NOTES:

1. Case A driveway section typically applies.
2. X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
3. Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
4. Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
5. Minimum width of clear passageway for sidewalk shall be 4'-2".
6. Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
7. Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

NO SCALE

A87A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

H. Daniel Cohen
REGISTERED CIVIL ENGINEER

May 1, 2023
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — HENRY DANIEL COHEN — No. 047967 — CIVIL — 3-31-24 — STATE OF CALIFORNIA

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2023 STANDARD PLAN A87A

166

K:\1652\02\RC22\Central Park\Playground\Master Grade Plan\Design\Engineering\Construction\Sheet Files\CG501_GRADING AND DRAINAGE DETAILS.dwg, CG501, Feb 03, 2025 - 1:45pm, AGomez

1 CURB, GUTTER, AND SIDEWALK REPLACEMENT
NTS

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

REGISTERED PROFESSIONAL ENGINEER — 82708 — EXP 9/30/25 — CIVIL — STATE OF CALIFORNIA

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

GRADING AND DRAINAGE DETAILS

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier
DRAWN BY: RP
CHECKED BY: DC
DATE
JANUARY 31 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
CG501

DMA	DMA AREA (SF)	PERVIOUS AREA (SF)	IMPERVIOUS AREA (SF)	BMP SIZE PROVIDED (SF)	SELF RETAINING TREATMENT AREA (SF)	MINIMUM VOLUME DEPTH (FT)	PROVIDED VOLUME DEPTH (FT)
1	17,112	11,198	5,914	SELF RETAINING	11,198	NATURAL VEGETATION/LANDSCAPE	NATURAL VEGETATION/LANDSCAPE
2	14,992	6,743	8,249	SELF RETAINING	6,743	NATURAL VEGETATION/LANDSCAPE	NATURAL VEGETATION/LANDSCAPE
3	7,466	6,478	988	SELF RETAINING	6,478	NATURAL VEGETATION/LANDSCAPE	NATURAL VEGETATION/LANDSCAPE
4	8,700	6,839	1,861	SELF RETAINING	6,839	NATURAL VEGETATION/LANDSCAPE	NATURAL VEGETATION/LANDSCAPE
5	7,013	7,013	0	SELF TREATING	7,013	NATURAL VEGETATION/LANDSCAPE	NATURAL VEGETATION/LANDSCAPE

LEGEND

- DMA LIMITS
- FLOW — DIRECTION OF FLOW
- PERVIOUS AREA
- IMPERVIOUS AREA

LIMIT OF WORK

DMA 1
16,644 SF

DMA 2
14,992 SF

DMA 3
7,466 SF

DMA 4
8,700 SF

DMA 5
7,013 SF

ELEVATED BOARDWALK AND PLAY AREAS SUSPENDED ABOVE PERVIOUS SURFACES

NORTH

0 10 20 30 feet

1" = 10'-0"

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

REGISTERED PROFESSIONAL ENGINEER — DANNY H.S. CHOW — 82708 — EXP 9/30/26 — CIVIL — STATE OF CALIFORNIA

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VE SET

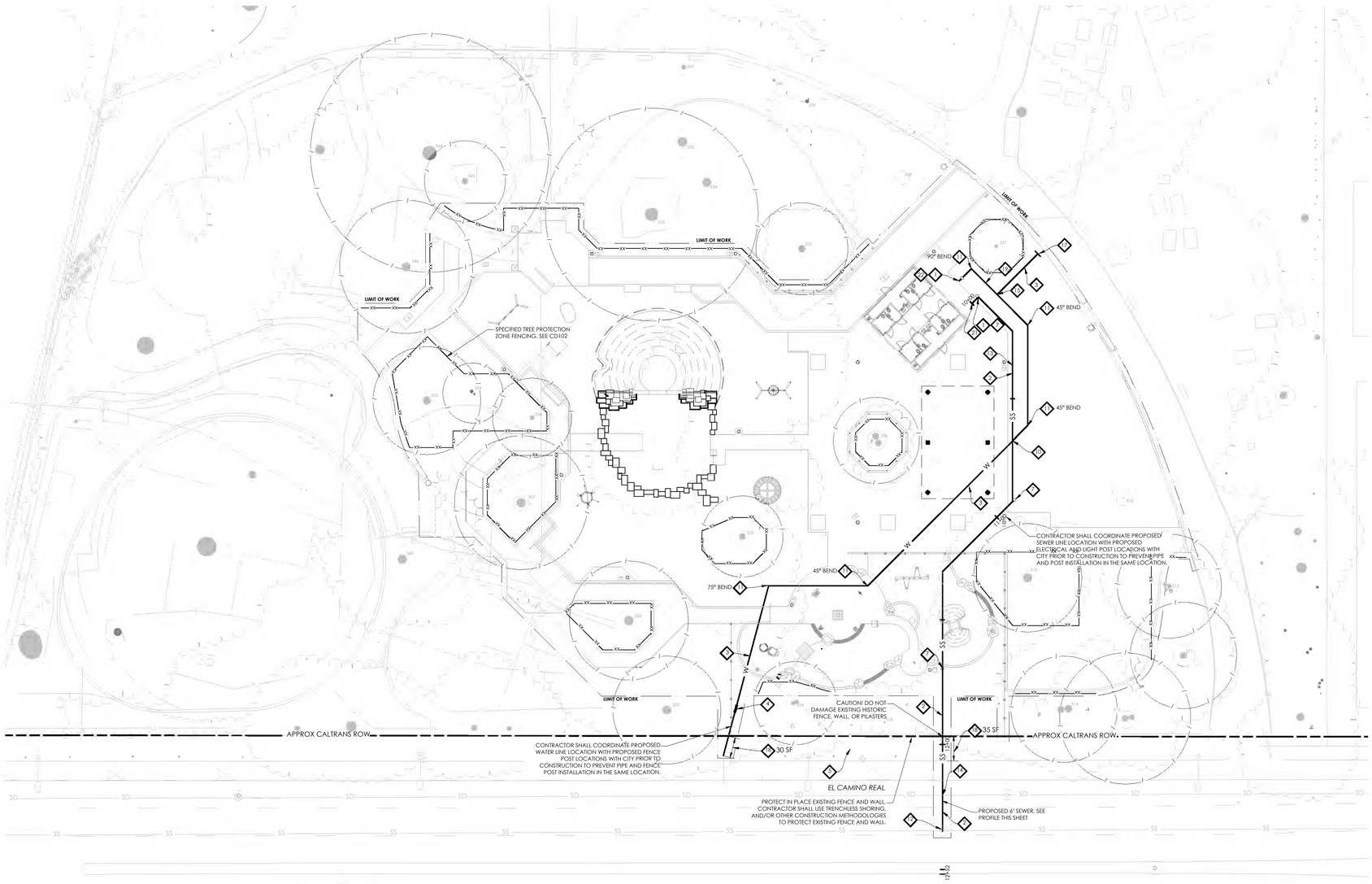
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

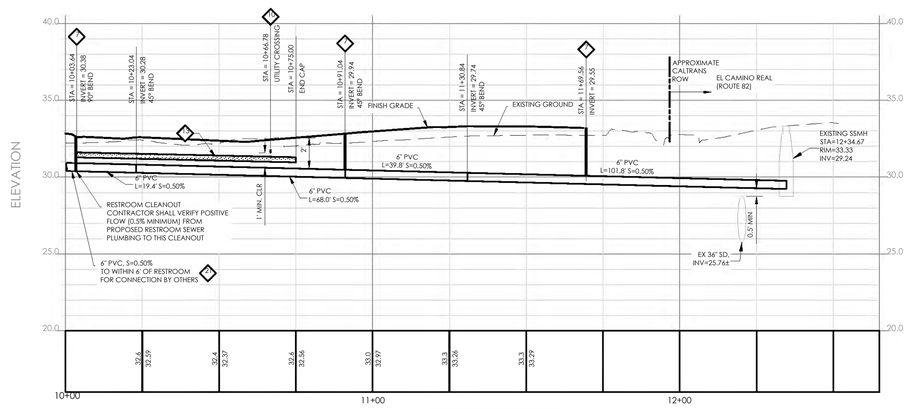
STORMWATER MANAGEMENT PLAN

NO.	REVISION	DATE

PROJECT MANAGER: Marisa Peltier
DRAWN BY: DNH
CHECKED BY: DC
DATE: JANUARY 31, 2025
RRM PROJECT NUMBER: 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: CW101

K:\1600\1652-02\RC22\Central Park Playground Improvement Plans\Design\Engineering\Civil\Cw101_Site Plan\1652-02-RC22_CW101_Site Plan.dwg, CW101, Feb 05, 2025 2:44pm, jmarcial





SANITARY SEWER PROFILE

SCALE:
HORIZONTAL 1" = 20'
VERTICAL 1" = 4'

IMPROVEMENT NOTES

1. STUB PROPOSED UTILITY FOR PROPOSED RESTROOM.
2. INSTALL PROPOSED 6" PVC SDR 35 SEWER LINE PER DETAIL 1 ON CU501 AND DETAIL 9 ON CU502. INSTALL CALTRANS TRENCH FOR PORTION OF SEWER IN CALTRANS ROW PER DETAIL 11 ON CU502.
3. INSTALL 2" PROPOSED PVC SCHEDULE 80 WATER LINE PER DETAIL 2 AND 4 ON CU501.
4. REPLACE EXISTING BACKFLOW PREVENTER PER PER DETAIL 7 ON CU501. CONTRACTOR SHALL CALL CAL WATER'S MARK LAURICELLA [(650) 558-7818] TO INSPECT AND PHOTOGRAPH THE INSTALLATION BEFORE BACK-FILLING. PROTECT IN PLACE EXISTING WATER METER.
5. ABANDON EXISTING SEWER LINE. PLUG ABANDONED SEWER LINE AT UPSTREAM AND DOWNSTREAM ENDS.
6. NOT USED.
7. INSTALL SEWER CLEANOUT (CHRISTY B09 OR CITY APPROVED EQUAL) PER DETAIL 9 ON SHEET CU502 WITH LOCKABLE LID.
8. NOT USED.
9. NOT USED.
10. UTILITY CROSSING - MINIMUM 12" CLEARANCE. REFER TO DETAIL 4 ON CU501 FOR WATER CROSSINGS. WATER SHALL ALWAYS BE ABOVE SEWER AND STORM DRAIN.
11. INSTALL ELBOW AND THRUST BLOCK PER DETAIL 3 ON CU501. SEE PLAN FOR ANGLE.
12. CONNECT PROPOSED SEWER LATERAL TO EXISTING SSMH 283-14X. REMOVE PORTION OF EXISTING ABANDONED SEWER PIPE AS NEEDED TO INSTALL PROPOSED SEWER LATERAL. PATCH AND REPAIR SEWER MANHOLE PER CITY STANDARDS AS NEEDED CREATE A WATER TIGHT SEAL FOR PROPOSED SEWER LATERAL.
13. INSTALL REINFORCED CONCRETE CAP ABOVE SEWER LINE PER DETAIL 5 ON CU501. INSTALL WHEREVER SEWER LINE COVER IS LESS THAN 2'. INSTALL UTILITY WARNING TAPE BELOW CONCRETE CAP.
14. INSTALL PIPE SUPPORT ACROSS TRENCH. SEE DETAIL 8 ON CU502. FIELD MODIFY WITH APPROVAL FROM CITY FOR 6" CLEARANCE BETWEEN SEWER AND STORM DRAIN.
15. INSTALL 1.5" X 2" X 2" TEE AND THRUST BLOCK PER DETAILS 3 AND 4 ON SHEET CU501.
16. NOT USED.
17. STUB WATER LINE FOR FUTURE CITY CONNECTION 5' FROM EDGE OF EXISTING PATH. SEE DETAIL 10 ON CU502.
18. MATCH EXISTING SIDEWALK STRUCTURAL SECTION AND BRING THE CLSM/SLURRY CEMENT TO THE BOTTOM OF THE SIDEWALK. SEE CALTRANS TRENCH DETAIL 11 ON CU502.
19. INSTALL 1.5" PROPOSED PVC SCHEDULE 80 WATER LINE PER DETAIL 2 AND 4 ON CU501.
20. NOT USED.
21. INSTALL PROPOSED 6" PVC SDR 35 SEWER LINE PER DETAIL 1 ON CU501 AND DETAIL 9 ON CU502. STUB FOR CONNECTION TO RESTROOM SEWER PLUMBING WITHIN 6' OF BUILDING. CONTRACTOR SHALL VERIFY POSITIVE FLOW (0.5% MINIMUM) FROM RESTROOM SEWER PLUMBING TO THIS SEWER LINE. CONTRACTOR SHALL CONFIRM HORIZONTAL AND VERTICAL CONNECTIONS WITH CITY PRIOR TO CONSTRUCTION.
22. INSTALL SHUTOFF VALVE PER DETAIL 13 ON SHEET CU502

NOTES

1. CONTRACTOR SHALL PROVIDE ALL FITTINGS AND APPURTENANCES REQUIRED TO INSTALL AND CONSTRUCT ANY/ALL UTILITIES SHOWN ON THESE IMPROVEMENT PLANS.
2. THE GEOTECH REPORT, IN ITS ENTIRETY, SHALL BE CONSIDERED A PART OF THESE PLANS
3. SEE CG SHEETS FOR GRADING AND STORM DRAINS
4. ALL WORK WITHIN CALTRANS ROW SHALL CONFORM TO LATEST EDITION OF CALTRANS STANDARD PLANS
5. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR WORK WITHIN CALTRANS ROW TO THE CITY OF SAN MATEO FOR APPROVAL PRIOR TO CONSTRUCTION
6. CONTRACTOR MUST INSTALL AND PRESSURIZE DOMESTIC WATER SERVICE FOR THE RESTROOM PRIOR TO THE INSTALLATION OF THE RESTROOM BY THE RESTROOM MANUFACTURER. THIS ALLOWS RESTROOM MANUFACTURER TO CHECK THE RESTROOM PLUMBING SYSTEM FOR LEAKS. IF THE PLUMBING SYSTEM IS NOT CHECKED FOR LEAKS BY RESTROOM MANUFACTURER PRIOR TO RESTROOM MANUFACTURER LEAVING THE SITE, CONTRACTOR WILL BE RESPONSIBLE FOR CHECKING FOR AND REPAIRING ANY LEAKS AS PART OF THEIR SCOPE OF WORK AND NOT AS A CHANGE ORDER.
7. CONTRACTOR SHALL DISINFECT RESTROOM PLUMBING SYSTEM PER PLUMBING CODE PRIOR TO FINAL BUILDING INSPECTION/ ACCEPTANCE.

FENCE LEGEND

SPECIFIED TPZ ___xx___xx___xx___xx___

CALCULATED TPZ __/ _____/ _____

SEE LC SHEETS FOR FENCE DETAILS

NORTH

0 20 40 60 feet

1" = 20'-0"

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325 Davis St., San Leandro, CA 94577

REGISTERED PROFESSIONAL ENGINEER — MARK D. CAMPBELL — 82706 — EXP 9/30/26 — CIVIL — STATE OF CALIFORNIA

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330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

UTILITY PLAN

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peiffer

DRAWN BY RP
CHECKED BY DC

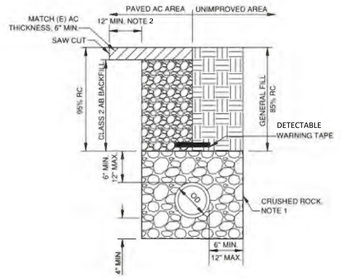
DATE
JANUARY 31, 2025
~~JANUARY 31, 2025~~

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

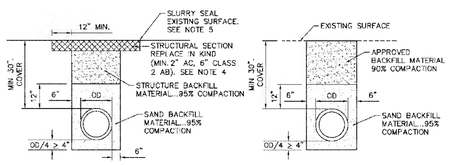
SHEET
CU101

K:\1652\1652-02-RC22\Central Park Playground\Main Drive Prof Design\Engineering\Civil\Docs\Sheet Files\CU-1652-02-RC17.dwg, CU101, Feb 06, 2025 9:58am, jmanna



NOTES:
1. COMPACT ¾" CRUSHED ROCK TO 90% RC.
2. THE 12" BENCH SECTION FOR PAVEMENT SHALL BE CUT AND REMOVED IMMEDIATELY PRIOR TO FINISHING PAVING OPERATIONS.

1 STANDARD TRENCH DETAIL FOR SEWER AND STORM DRAIN INSTALLATION
NTS



NOTES:
1. SAND... MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:

SIEVE SIZE	% PASSING SIEVE
No. 4	100
No. 200	0–5

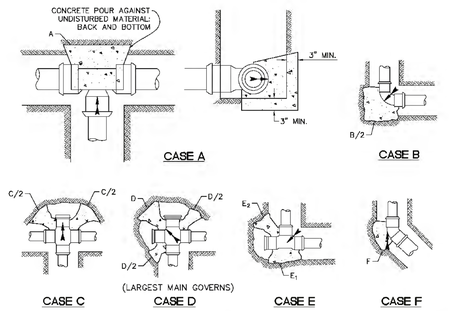
2. STRUCTURE BACKFILL MATERIAL.... MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

SIEVE SIZE	% PASSING SIEVE
3"	100
No. 4	35–100
No. 200	20–100

3. BACKFILL MATERIAL.... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.
4. ON TRENCHES THAT PARALLEL THE ROAD AND ARE WITHIN EXISTING BICYCLE LANES, THE WIDTH OF THE STRUCTURAL SECTION SHALL BE GREATER THAN OR EQUAL TO THE WIDTH OF THE EXISTING BICYCLE LANE, WHICHEVER IS WIDER. PAVING JOINTS WITHIN BICYCLE LANES ARE NOT ALLOWED.
5. FULL WIDTH SLURRY SHALL BE APPLIED TO THE FINISH SURFACE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT WHEN THERE IS A MAIN OR LATERAL LINE INSTALLATION THAT IS GREATER THAN 100 FEET IN TOTAL LENGTH. SLURRY SEAL SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS. SPREAD RATE TO BE 17 LBS/SY (±1).

STANDARD TRENCH BACKFILL AND BEDDING DETAIL FOR WATER LINE INSTALLATIONS

2 WATER LINE INSTALLATION
NTS

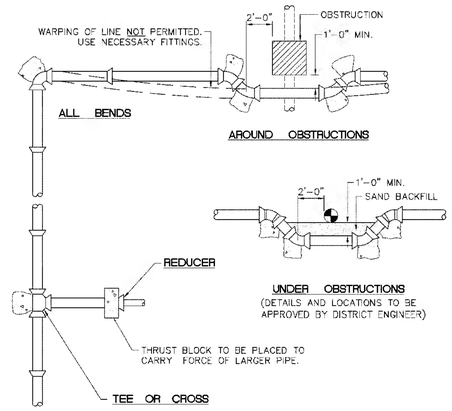


NOTES:
1. CASE "A" IS TYPICAL FOR ALL.
2. ALL BLOCKS TO BE KEPT CLEAR OF LUGS.
3. UNSUPPORTED SURFACES TO BE FORMED.
4. ARROWS ON CASE "A", "C" & "E" INDICATE MAINS WHICH DETERMINE BEARING AREA.
5. BASED ON 150 P.S.I. PRESSURE, 1,000 P.S.F. SOIL BEARING.
6. CONCRETE SHALL BE CLASS B PER STANDARD SPECIFICATIONS.

REQUIRED BEARING AREAS – SQ. FT.							
	A	B	C	D	E_1	E_2	F
4"	2	3	3	3	2	3	2
6"	5	6	7	7	5	7	4
8"	8	12	11	11	8	11	6
10"	12	18	17	17	12	17	8
12"	17	24	24	24	17	24	12

STANDARD WATER MAIN THRUST BLOCK

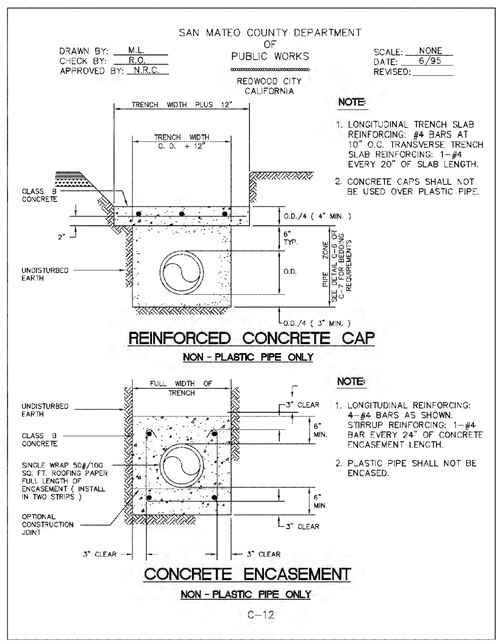
3 STANDARD WATER MAIN THRUST BLOCK
NTS



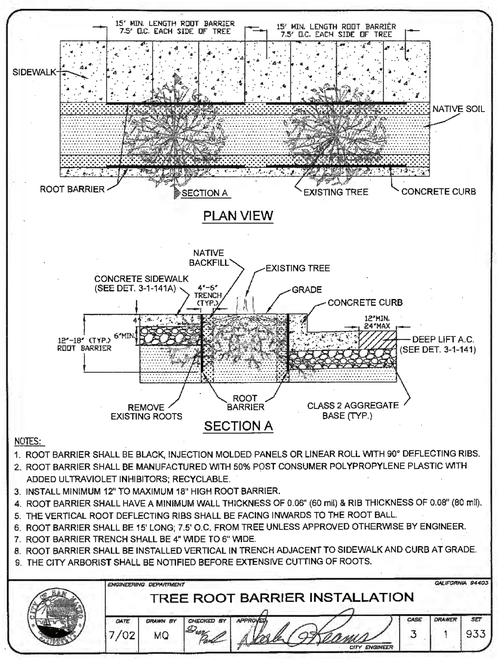
NOTE: IF FLANGED FITTINGS ARE SPECIFIED, USE STAINLESS STEEL BOLTS AND NUTS.

STANDARD PIPE INSTALLATION DETAILS

4 STANDARD PIPE INSTALLATION DETAILS
NTS



5 CONCRETE ENCASEMENT
NTS

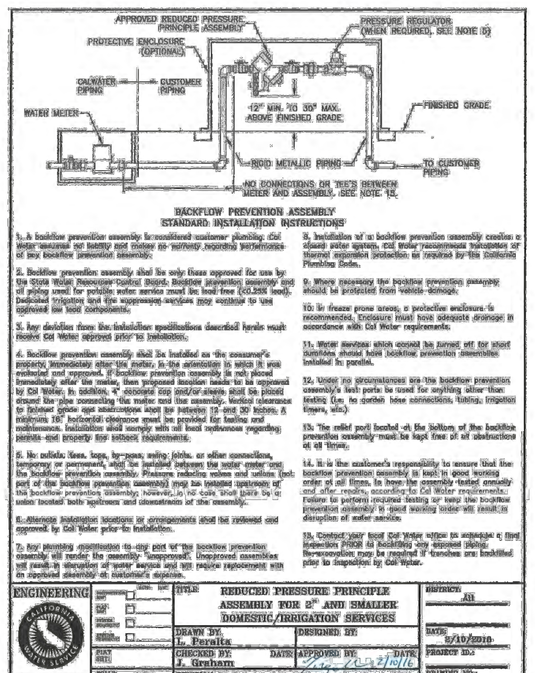


NOTES:
1. ROOT BARRIER SHALL BE BLACK, INJECTION MOLDED PANELS OR LINEAR ROLL WITH 90° DEFLECTING RIBS.
2. ROOT BARRIER SHALL BE MANUFACTURED WITH 50% POST CONSUMER POLYPROPYLENE PLASTIC WITH ADDED ULTRAVIOLET INHIBITORS; RECYCLABLE.
3. INSTALL MINIMUM 12" TO MAXIMUM 18" HIGH ROOT BARRIER.
4. ROOT BARRIER SHALL HAVE A MINIMUM WALL THICKNESS OF 0.06" (60 mil) & RIB THICKNESS OF 0.08" (80 mil).
5. THE VERTICAL ROOT DEFLECTING RIBS SHALL BE FACING INWARDS TO THE ROOT BALL.
6. ROOT BARRIER SHALL BE 18" LONG, 7.5' O.C. FROM TREE UNLESS APPROVED OTHERWISE BY ENGINEER.
7. ROOT BARRIER TRENCH SHALL BE 4" WIDE TO 6" WIDE.
8. ROOT BARRIER SHALL BE INSTALLED VERTICAL IN TRENCH ADJACENT TO SIDEWALK AND CURB AT GRADE.
9. THE CITY ARBORIST SHALL BE NOTIFIED BEFORE EXTENSIVE CUTTING OF ROOTS.

ENGINEERING DEPARTMENT — CALIFORNIA 94403
TREE ROOT BARRIER INSTALLATION

DATE	DRAWN BY	CHECKED BY	APPROVED	CASE	DRAWER	SET
7/02	MQ		CITY ENGINEER	3	1	933

6 TREE ROOT BARRIER INSTALLATION
NTS



BACKFLOW PREVENTION ASSEMBLY STANDARD INSTALLATION INSTRUCTIONS

1. A backflow prevention assembly is considered customer plumbing. Cal Water assumes no liability and makes no warranty regarding performance of any backflow prevention assembly.
2. Backflow prevention assembly shall be only those approved for use by the state Water Resources Control Board. Backflow prevention assembly and all piping used for potable water service must be lead free (≤0.25% lead). Dedicated irrigation and fire suppression services may continue to use approved no lead components.
3. Any deviation from the installation specifications described herein must receive Cal Water approval prior to installation.
4. Backflow prevention assembly shall be installed on the consumer's property immediately after the meter, in the orientation in which it was evaluated and approved. If backflow prevention assembly is not placed immediately after the meter, then proposed location header to be approved by Cal Water. In addition, 4" concrete cap and/or sleeve shall be placed around the pipe connecting the meter and the assembly. Vertical clearance to lowest point and maximum level be between 12 and 30 inches. A minimum 18" horizontal clearance must be provided for testing and maintenance. Installation shall comply with all local ordinances regarding permits and property line setback requirements.
5. No solder, lead, type, by-pass, swing joints, or other connections, temporary or permanent, shall be installed between the water meter and the backflow prevention assembly. Pressure reducing valves and unions (not part of the backflow prevention assembly) may be installed upstream of the backflow prevention assembly; however, in no case shall pairs be in union located both upstream and downstream of the assembly.
6. Alternate installation locations or arrangements shall be reviewed and approved by Cal Water prior to installation.
7. Any plumbing modification to any part of the backflow prevention assembly will render the assembly "unapproved". Unapproved assemblies will result in cessation of water service and will require replacement with an approved assembly at customer's expense.
8. Installation of an backflow prevention assembly creates a closed water system. Cal Water recommends installation of thermal expansion protection as required by the California Plumbing Code.
9. Where necessary the backflow prevention assembly should be protected from vehicle damage.
10. In freeze prone areas, a protective enclosure is recommended. Enclosure must have adequate drainage in accordance with Cal Water requirements.
11. Water services which cannot be turned off for short durations should have backflow prevention assemblies installed in parallel.
12. Under no circumstances are the backflow prevention assembly's test ports be used for anything other than testing (i.e. no garden hose connections, tubing, irrigation timers, etc.).
13. The relief port located at the bottom of the backflow prevention assembly must be kept free of all obstructions at all times.
14. It is the customer's responsibility to ensure that the backflow prevention assembly is kept in good working order at all times. In case the assembly tested annually and after repairs, according to Cal Water requirements. Failure to perform required testing or keep the backflow prevention assembly in good working order will result in disruption of water service.
15. Contact your local Cal Water office to schedule a field inspection PRIOR to backfilling any exposed piping. Re-excavation may be required if trenches are backfilled prior to inspection by Cal Water.

ENGINEERING DEPARTMENT		TITLE: REDUCED PRESSURE PRINCIPLE ASSEMBLY FOR 2" AND SMALLER DOMESTIC/IRRIGATION SERVICES		DISTRICT: All
		DRAWN BY: L. Peralta	DESIGNED BY:	DATE: 8/10/2010
		CHECKED BY: J. Graham	DATE: APPROVED BY: DATE: 2/15/16	PROJECT ID:
		WATER N.T.S.	REVISION #4 Revised to meet drafting standards, minor corrections. Modified note 11 Split or modified note 4. 12 PMC 2/15/2016	DRAWING NO.: CWDSGE R6

7 BACKFLOW PREVENTER INSTALLATION
NTS

LEAD FREE REDUCED PRESSURE PRINCIPLE ASSEMBLIES (RP), APPROVED FOR USE BY THE STATE WATER RESOURCES CONTROL BOARD FOR USE ON POTABLE WATER SERVICE CONNECTIONS

Approval of backflow prevention assemblies used in potable water systems throughout California requires laboratory analysis and field verification by a third party testing facility (currently the University of Southern California's Foundation for Cross Connection Control & Hydraulic Research (USC FCCC&HR). ANSI lab certification as lead free is also required. It is the responsibility of the customer to verify with the contractor, distributor or manufacturer that the backflow prevention assembly installed is the correct type, is approved by the USC FCCC&HR, and is ANSI certified as lead free. The USC FCCC&HR continually updates their approved list which can be downloaded at http://fccchr.usc.edu/list.html

READ AND UNDERSTAND ALL OF THE IMPORTANT INFORMATION PROVIDED WITH THIS LIST

Manufacturer	Model	Orientation	Sizes
Ames	Colt 400	H	2"¼", 3", 4", 6", 8", 10"
	Colt 400BF	H	4", 6"
	Colt 400N	VU,VD, VUVD	2"¼", 3", 4", 6", 8"
	Colt 450Z	VUVD, VUVU	2"¼", 3", 4", 6", 8"
	LF4000SM2	H	1", 1 ¼", 1 ½", 2"
	LF4000SM3	H	¾"
	Maxim 400	H	2"¼", 3", 4", 6", 8", 10"
	Maxim 400N	VUVD, VUVU	8" VUVD Only) 2"¼", 3", 4"
	Maxim 400Z	VUVD, VUVU	2"¼", 3", 6"
	4000SS	H	2"¼", 3", 4", 6", 8"
Apollo Conbraco	RPLF4A	H	¾", 1", 1 ¼", 1 ½", 2", 3, 4, 6, 8, 10, 12
	RPLF4AN	VUVD, VUVU	¾", 1", 1 ½", 12" VUVD Only) 2 ½", 3", 4", 6", 8"
	RPLF4AR	H	2 ½", 3", 4", 6", 8", 10"
	RPLF4G	H	1 ½", 2 ½", 3"
ARI	RP500	H	¾", 1", 1 ¼", 1 ½", 2"
	RP501	H	¾", 1", 1 ¼", 1 ½", 2"
Backflow Direct	Demiger 40-40G	H	2 ½", 3", 4", 6", 8"
	Demiger 40X 40GX	H	(4" 40GX Only) 6"
	Magnum 40-40G	H	2 ½", 3", 4", 6"
	Magnum 40X	H	6"
Febco	760	H	2 ½", 3", 4", 6", 8", 10"
	760N	VUVD	2 ½", 3", 4"
	760Z	VUVU	2 ½", 3", 4"
	LF825Y	H	¾", 1", 1 ½", 2"
	LF825YA	H, HVD, VUH, VUVD	¾", 1", 1 ¼", 2"
	LF860	H	¾", 1", 1 ½", 1 ¼", 2", 2 ½", 3", 4", 6", 8", 10"
	LF850U	H	¾", 1 ¼", 1 ½", 2"
	LF860V	VUVD, VUVU	2 ½", 3", 4", 6", 8", 10"
	LF860W & WZ	VUVD, VUVU	4", 6", 8", 10"
Watts	957	H	2 ½", 3", 4", 6", 8", 10"
	957 DF	H	4", 6"
	957H	VUVD, VUVU	6" VUVD Only) 2 ½", 3", 4", 8"
	957NQT	VUVD, VUVU	2 ½", 3", 4"
	857QT	H	2 ½", 3", 4"
	957Z	VUVD, VUVU	2 ½", 3", 4", 8"
	957ZQT	VUVD, VUVU	2 ½", 3", 4"
	957FI	VUVD, VUVU	4", 6"
	LF009	H	2 ½", 3"
	LF009MQT	H	¾", 1", 1 ¼", 1 ½", 2"
	LF009MQTCQT	H	1", 2"
	LF009M3FCQT	H	¾"
	LF009M3QT	H	¾"
	LF909	H	2 ½", 3", 4", 6"
	LF909M1	H	¾", 1"
Watts	LF909M1QT	H	1 ¼", 1 ½", 2"
	LF909M3	H, VI	¾", 1"
	LF919AQT	VUVD	¾", 1", 1 ¼", 1 ½", 2"
	LF919QT	H, VD	¾", 1", 1 ¼", 1 ½", 2"
	LF919AQT	VUVD	¾", 1", 1 ¼", 1 ½", 2"
	LF919QT	H, VD	1", 1 ¼", 1 ½", 2"
	Maxim 400	H	2 ½", 3", 4", 6", 8", 10"
	Maxim 400N	VUVD, VUVU	(8" VUVD Only) 2 ½", 3", 4"
	Maxim 400Z	VUVD, VUVU	2 ½", 3", 4", 6", 8", 10"
	4000SS	H	2 ½", 3", 4", 6", 8", 10"
	RPLF4A	H	¾", 1", 1 ¼", 1 ½", 2", 3, 4, 6, 8, 10, 12
	RPLF4AN	VUVD, VUVU	(¾", 1", 1 ½", 12" VUVD Only) 2 ½", 3", 4", 6", 8"
	RPLF4AR	H	2 ½", 3", 4", 6", 8", 10"
	RPLF4G	H	1 ½", 2 ½", 3"
	RP500	H	¾", 1", 1 ¼", 1 ½", 2"
	RP501	H	¾", 1", 1 ¼", 1 ½", 2"
	Demiger 40-40G	H	2 ½", 3", 4", 6", 8"
	Demiger 40X 40GX	H	(4" 40GX Only) 6"
	Magnum 40-40G	H	2 ½", 3", 4", 6"
	Magnum 40X	H	6"
	760	H	2 ½", 3", 4", 6", 8", 10"
	760N	VUVD	2 ½", 3", 4"
	760Z	VUVU	2 ½", 3", 4"
	LF825Y	H	¾", 1", 1 ½", 2"
	LF825YA	H, HVD, VUH, VUVD	¾", 1", 1 ¼", 2"
	LF860	H	¾", 1", 1 ½", 1 ¼", 2", 2 ½", 3", 4", 6", 8", 10"
	LF850U	H	¾", 1 ¼", 1 ½", 2"
	LF860V	VUVD, VUVU	2 ½", 3", 4", 6", 8", 10"
	LF860W & WZ	VUVD, VUVU	4", 6", 8", 10"
	957	H	2 ½", 3", 4", 6", 8", 10"
	957 DF	H	4", 6"
	957H	VUVD, VUVU	6" VUVD Only) 2 ½", 3", 4", 8"
	957NQT	VUVD, VUVU	2 ½", 3", 4"
	857QT	H	2 ½", 3", 4"
	957Z	VUVD, VUVU	2 ½", 3", 4", 8"
	957ZQT	VUVD, VUVU	2 ½", 3", 4"
	957FI	VUVD, VUVU	4", 6"
	LF009	H	2 ½", 3"
	LF009MQT	H	¾", 1", 1 ¼", 1 ½", 2"
	LF009MQTCQT	H	1", 2"
	LF009M3FCQT	H	¾"
	LF009M3QT	H	¾"
	LF909	H	2 ½", 3", 4", 6"
	LF909M1	H	¾", 1"
	LF909M1QT	H	1 ¼", 1 ½", 2"
	LF909M3	H	¾", 1"
	LF919AQT	VUVD	¾", 1", 1 ¼", 1 ½", 2"
	LF919QT	H, VD	¾", 1", 1 ¼", 1 ½", 2"
	LF919AQT	VUVD	¾", 1", 1 ¼", 1 ½", 2"
	LF919QT	H, VD	1", 1 ¼", 1 ½", 2"
	Maxim 400	H	2 ½", 3", 4", 6", 8", 10"
	Maxim 400N	VUVD, VUVU	(8" VUVD Only) 2 ½", 3", 4"
	Maxim 400Z	VUVD, VUVU	2 ½", 3", 4", 6", 8", 10"
	4000SS	H	2 ½", 3", 4", 6", 8", 10"
	375AMS	H	2 ½", 3", 4", 6", 8", 10"
	375AR	H	2 ½", 3", 4", 6", 8", 10"
	375AR1	H	2 ½", 3", 4", 6", 8", 10"
	375ARMS	H	2 ½", 3", 4", 6", 8", 10"
	375ARXL	H	2 ½", 3", 4", 6", 8", 10"
	375AST	H	2 ½", 3", 4", 6", 8", 10"
	375MS	H	2 ½", 3", 4", 6", 8", 10"
	375ASTRIMS	H	2 ½", 3", 4", 6", 8", 10"
	375XL	H	2 ½", 3", 4", 6", 8", 10"
	375XLB	H	¾", 1", 1 ½", 1 ¼", 2"
	375XLMS	H	2 ½", 3", 4", 6", 8", 10"
	475, 475 MS	VUVD	(10" 475 Only) 2 ½", 3", 4", 6", 8"
	478MS	H	10"
	475V	VUVU	2 ½", 3", 4", 6", 8", 10"
	475VMS	VUVU	2 ½", 3", 4", 6", 8"
	475VMS	H	10"
	475V, 475VMS	VUVU	(10" 475V Only) 2 ½", 3", 4", 6", 8"
	475XMS	H	10"
	475XL, 475XLMS	VUVD	(10" Only 475XL) 2 ½", 3", 4", 6", 8",
	475XLMS	H	10"
	475XLV	VUVU	2 ½", 3", 4", 6", 8", 10"
	475XLVMS	VUVU	2 ½", 3", 4", 6", 8"
	475XLVMS	H	10"
	975XL2	H	¾", 1", 1 ½", 1 ¼", 2"
	975XL2RMS	H	¾", 1", 1 ½", 1 ¼", 2"
	975XL2MS	H	¾", 1", 1 ½", 1 ¼", 2"
	975XL2SE	VUVD, VUVU	¾", 1", 1 ¼", 1 ½", 2"
	975XL2SEU	VUVD, VUVU	¾", 1", 1 ½", 1 ¼", 2"
	975XL2TCU	H	¾", 1", 1 ½", 1 ¼", 2"
	975XL2U	H	¾", 1", 1 ½", 2"
	975XL2V	VUVD, VUVU	¾", 1"
	975XL3	H	¾", 1", 1 ½", 1 ¼", 2"
	975XLBFSS	H	2"
	975XL3SE	VUVD, VUVU	¾", 1"
	975XL3U	H	¾", 1", 1 ½", 1 ¼", 2"
	975XLD	H	¾" RPDA Fire Bypass
Wilkins	475XL	H	¾", 1", 1 ½", 1 ¼", 2"
	475XLU	H	¾", 1", 1 ½", 1 ¼", 2"
	475XLV	VUVU	¾", 1", 1 ½", 1 ¼", 2"
	475XLVU	VUVU	¾", 1", 1 ½", 1 ¼", 2"
	975XL	H	¾", 1", 1 ½", 1 ¼", 2"
	975XL2	H	¾", 1", 1 ½", 1 ¼", 2"
	975XL2U	H	¾", 1", 1 ½", 1 ¼", 2"
	975XL2V	VUVD, VUVU	¾", 1"
	975XL3	H	¾", 1", 1 ½", 1 ¼", 2"
	975XLBFSS	H	2"
	975XL3SE	VUVD, VUVU	¾", 1"
	975XL3U	H	¾", 1", 1 ½", 1 ¼", 2"
	975XLD	H	¾" RPDA Fire Bypass

Orientation: H=Horizontal, VD=Vertical Down, VUVU=Vertical Up Vertical Up, VU=Vertical Up. VUVD=Vertical Up Vertical Down
VDVU=Vertical Down Vertical Up, VDVD=Vertical Down Vertical Down, HVD=Horizontal Vertical Down. VUH=Vertical Up Horizontal

Assemblies must be installed only in an orientation for which they are approved.

Refer to local building department for permit requirements. Installing a backflow prevention assembly creates a closed piping system. It is the customers responsibility to have a qualified plumbing professional install thermal expansion protection to prevent personal injury or property damage. The specific size of backflow prevention assembly should be selected based on flow requirements. Pressure losses vary between sizes and manufacturers. Pressure losses at rated flow must be accounted for during system design. All installations must be in accordance with the California Plumbing Code and the requirements of California's Water Service (Cal Water). The list provided by Cal Water is not an endorsement of any specific backflow prevention assembly. Cal Water has no financial interest in any of the companies listed.

Rev. 6/5/2023

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City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

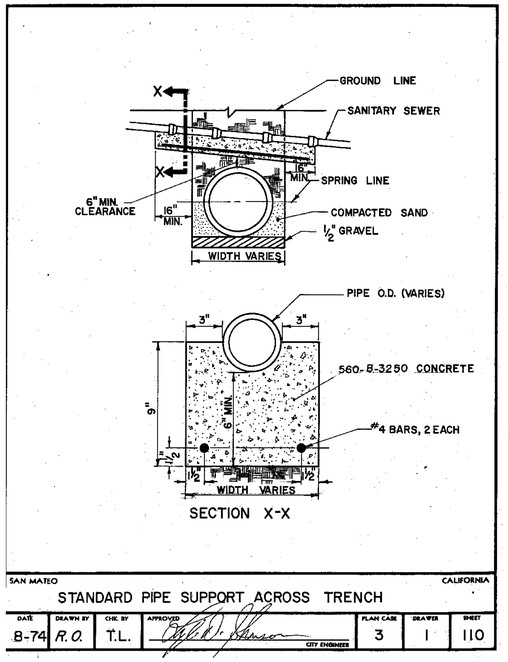
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

UTILITY DETAILS

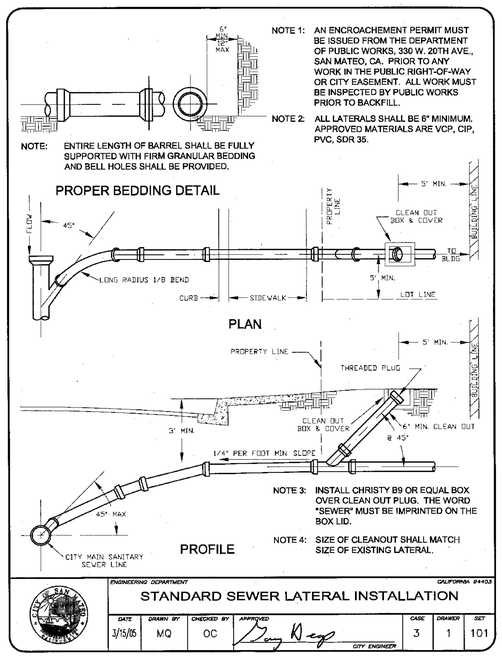
NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier
DRAWN BY: RP
CHECKED BY: DC
DATE: JANUARY 31 2025
RRM PROJECT NUMBER: 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: CU501

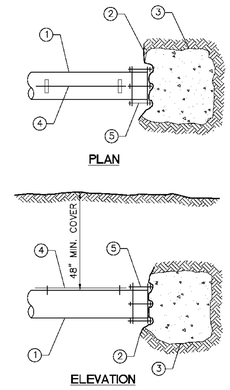
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8 STANDARD PIPE SUPPORT ACROSS TRENCH
NTS



9 STANDARD SEWER LATERAL INSTALLATION
NTS



REMARKS:

1. WATER PIPE
2. 2 LAYERS OF 6 MIL PLASTIC FILM, PLACED BETWEEN THE END CAP AND THRUST BLOCKING
3. STANDARD WATER MAIN THRUST BLOCKING (SEE W-11)
4. BLUE # 10 LOCATION WIRE
5. END CAP, ROCKWELL # 482 OR EQUAL

NOTES:

1. POUR THRUST BLOCKS AGAINST UNDISTURBED EARTH.
2. LOCATION WIRE TO BE CONNECTED TO MAIN LINE WIRE.
3. ALL BOLTS AND NUTS USED SHALL BE STAINLESS STEEL.

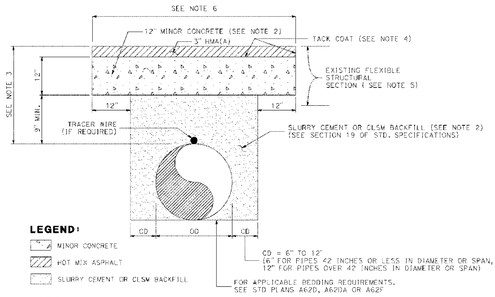
DEAD ENDING WATER MAINS

10 DEAD ENDING WATER MAIN
NTS

REVISED 02/25/2021

CASE 1a: FOR TRAFFIC INDEX (TI) LESS THAN OR EQUAL TO 12

HIGH GROUNDWATER TABLE CONDITIONS DO NOT EXIST WITHIN THE TRENCH



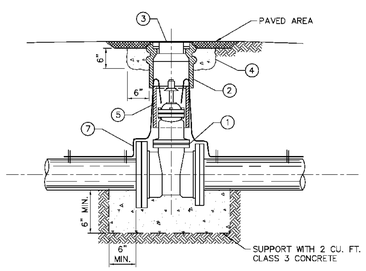
NOTES:

1. USE OF THIS DETAIL IS APPLICABLE ONLY IF HIGH GROUNDWATER TABLE CONDITIONS DO NOT EXIST WITHIN THE TRENCH AND/OR PERMEABLE MATERIAL/ PERMEABLE BASE IS NOT PRESENT IN THE STRUCTURAL SECTION. AS BUILT CONDITIONS MAY BE REQUIRED TO VERIFY.
2. CONCRETE CAP MAY BE RAPID STRENGTH CONCRETE (RSC). IF RSC IS USED, SLURRY CEMENT OR CLSM MAY BE REPLACED WITH RSC DEPENDING UPON PROJECT TIME CONSTRAINTS.
3. FOR NEW INSTALLATIONS, MINIMUM DEPTH OF COVER REQUIREMENTS ARE TO FOLLOW GUIDELINES IN THE ENCROACHMENT PERMITS MANUAL OR HIGHWAY DESIGN MANUAL WHEN COVER OVER A REPLACEMENT PIPE/ENCASEMENT PIPE IS LESS THAN 24". A SPECIAL DESIGN IS NECESSARY (FOR IN-HOUSE PROJECTS, REFER TO HD. DRAINAGE DETAIL LIBRARY).
4. TACK COAT (ASPHALTIC EMULSION) SHALL BE APPLIED TO ALL EXPOSED SURFACES PRIOR TO PLACING HMA(A).
5. IF EXISTING FLEXIBLE PAVEMENT CONTAINS RIGID LAYERS, THE EXISTING PAVEMENT SHALL BE SAWCUT TO THE BOTTOM OF THE EXISTING RIGID LAYER.
6. FOR LONGITUDINAL TRENCHES, 0.10' COLD PLANED SURFACE AND OVERLAY SHALL BE TO THE NEAREST LANE LINE FOR ENTIRE LENGTH OF THE TRENCH/DISTURBED AREAS,AND/OR AS DIRECTED BY STATE'S REPRESENTATIVE.
7. ALL MATERIALS, WORKMANSHIP, TESTING, AND INSPECTIONS SHALL COMPLY WITH CALTRANS STANDARD SPECIFICATIONS, PROJECT-SPECIFIC SPECIAL PROVISIONS AND OTHER STATE REGULATIONS.
8. ALL VALVE CASINGS AND COVERS SHALL BE RAISED TO FINISHED GRADE AFTER PERMANENT PAVEMENT HAS BEEN PLACED.
9. FOR SIDEWALKS, CONCRETE CAP/HMA ARE NOT REQUIRED. MATCH THE EXISTING SIDEWALK STRUCTURAL SECTION AND BRING THE CLSM/SLURRY CEMENT TO THE BOTTOM OF THE SIDEWALK.
10. SPECIAL CONSIDERATION REQUIRED FOR INSTALLATION OF PLASTIC PIPE TO COUNTERACT THE EFFECT OF BOUYANCY ON THE PIPE IN FLOWABLE BACKFILL. CONTRACTOR TO PREVENT UPWARD DEFLECTION OF PIPE WHEN PLACING FLOWABLE MATERIALS.

ABBREVIATIONS:

CD = CLEAR DISTANCE
HMA(A) = HOT MIX ASPHALT TYPE A
OD = OUTSIDE DIAMETER OF UTILITY OR CULVERT
CLSM = CONTROLLED LOW-STRENGTH MATERIAL

11 CALTRANS TRENCH
NTS



1. RESILIENT SEAT GATE VALVE: MUELLER A2370 WITH "O"-RING SEALS AND NON-RISING STEM (CCW TO OPEN), OR EQUAL.
2. VALVE BOX: CHRISTY G5, SET 2" ABOVE GRADE IN NON-TRAFFIC AREAS.
3. C.I. COVER, INSCRIBED "WATER"
4. CONCRETE SETTING COLLAR IN PAVED AREAS (CLASS 3)
5. 6" PVC, C900, CL 200 (UNLESS SPECIFIED OTHERWISE BY THE DISTRICT ENGINEER) (LENGTH AS NECESSARY).
6. ALL BOLTS AND NUTS USED SHALL BE STAINLESS STEEL.
7. BLUE #10 LOCATION WIRE (WIRE TO EXTEND 1 FOOT ABOVE TOP OF VALVE BOX).

STANDARD GATE VALVE ASSEMBLY

13 STANDARD GATE VALVE ASSEMBLY
NTS

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

UTILITY DETAILS

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Marisa Peltier
DRAWN BY RP
CHECKED BY DC
DATE JANUARY 31, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
CU502

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POINT TABLE			
POINT #	RAW DESCRIPTION	NORTHING	EASTING
1	LIGHT	9863.0877	9898.9494
2	LIGHT	9819.6632	9936.6962
3	LIGHT	9859.2185	9841.0413
4	LIGHT	9814.3440	9824.2557
5	LIGHT	9767.3518	9810.5883
6	LIGHT	9710.5117	9845.5517
7	LIGHT	9651.6480	9862.2304
8	LIGHT	9668.0198	9926.2078
9	LIGHT	9712.2097	9887.7956
10	LIGHT	9771.9930	9883.8534
11	LIGHT	9758.8909	9987.4474
12	LIGHT	9754.1902	9936.0906
13	LIGHT	9709.9741	9974.5341
14	FS/MATCH	9911.1976	9863.8490
15	FS	9897.9011	9848.5526
16	FS	9899.3993	9827.1334
17	FS	9904.3871	9827.4823
18	FS/MATCH	9905.6537	9809.3744
19	FS/MATCH	9894.7927	9807.0027
20	FS	9892.9953	9832.7001
21	FS	9878.3875	9831.6783
22	FS	9877.5502	9843.6491
23	FS	9892.1580	9844.6709
24	FS	9890.7292	9865.0979
25	FS	9879.3212	9875.0143
26	FS	9866.5868	9874.1236
27	FS	9866.2379	9879.1114
28	FS	9844.8242	9897.7253
29	FS	9843.1841	9895.8385
30	FS	9838.2784	9900.1028
31	FS	9839.9185	9901.9896
32	FS	9829.5182	9911.0301
33	FS	9827.8781	9909.1433
34	FS	9822.9724	9913.4076
35	FS	9824.6125	9915.2944
36	FS	9816.8738	9912.9810
37	FS	9816.1394	9922.6597
38	FS	9806.5138	9921.9864
39	FS	9790.0630	9920.8358
40	FS	9783.1935	9926.7876
41	FS	9777.9448	9920.7410
42	FS	9771.9061	9925.9901
43	FS	9750.2602	9901.0884
44	FS	9746.3240	9896.5600
45	FS	9724.6782	9871.6566
46	FS	9718.6420	9876.9052
47	FS	9713.3934	9870.8716
48	BC	9709.7675	9866.6974
49	EC	9711.0510	9844.2545
50	FS	9716.7771	9839.2771

POINT TABLE			
POINT #	RAW DESCRIPTION	NORTHING	EASTING
51	FS	9716.2850	9838.7111
52	FS	9738.1804	9819.6785
53	FS	9752.6502	9820.6906
54	FS	9764.1380	9811.6985
55	FS	9772.0073	9812.2490
56	FS	9780.1078	9805.2076
57	FS	9780.6582	9797.3383
58	FS	9781.7562	9795.3901
59	FS	9803.6688	9796.9228
60	FS	9802.9935	9806.5769
61	FS	9808.5433	9806.9651
62	FS	9807.9740	9815.1043
63	FS	9813.2931	9821.1266
64	FS	9812.8983	9826.7697
65	FS	9817.9066	9832.5312
66	FS	9820.9255	9829.9070
67	FS	9829.8749	9846.2998
68	FS	9851.3772	9847.8038
69	FS	9851.7938	9841.8475
70	FS	9857.8794	9842.2732
71	FS	9857.9708	9840.9665
72	FS	9860.4645	9841.1409
73	FS	9860.3733	9842.4450
74	FS/MATCH	9904.7264	9865.5502
75	FS	9893.9783	9853.1854
76	FS	9893.0636	9866.2619
77	FS	9883.9815	9874.1566
78	FS	9882.3703	9876.1137
79	FS	9890.8281	9885.8436
80	FS	9883.9233	9891.8457
81	FS	9887.2035	9895.6193
82	FS	9879.6563	9902.1797
83	FS	9876.3760	9898.4061
84	FS	9874.8079	9899.7692
85	FS	9864.8512	9899.0728
86	BC	9863.9078	9899.8928
87	EC	9862.1362	9899.7600
88	FS	9861.5503	9899.0860
89	FS	9820.0124	9935.1927
90	BC	9820.5984	9935.8669
91	EC	9818.7280	9937.5256
92	FS	9818.1258	9936.8329
93	FS	9797.6888	9935.4034
94	FS	9780.5781	9950.2562
95	FS/MATCH	9775.6112	10021.2662
96	FS/MATCH	9759.5365	10021.7743
97	FS	9761.1301	9998.9918
98	FS	9765.0799	9942.5221
99	FS	9777.1490	9932.0345
100	FS	9755.4879	9998.5971

POINT TABLE			
POINT #	RAW DESCRIPTION	NORTHING	EASTING
101	FS	9756.2806	9987.2643
102	FS	9716.7840	9984.5017
103	FS	9669.5695	9930.1717
104	FS	9656.5897	9941.4308
105	FS	9652.6609	9936.9110
106	FS/MATCH	9612.9224	9971.4537
107	FS/MATCH	9604.3277	9965.6749
108	FS	9659.0618	9918.0970
109	FS/BC	9676.6077	9902.8460
110	FS	9701.3225	9881.3643
111	PLANTER	9766.5600	9921.3623
112	PLANTER	9770.4953	9925.8914
113	PLANTER	9765.9679	9929.8269
114	PLANTER	9762.0324	9925.2995
115	PLANTER	9724.3018	9958.0969
116	PLANTER	9728.2373	9962.6244
117	PLANTER	9723.7098	9966.5598
118	PLANTER	9719.7744	9962.0324
119	PLANTER	9686.2633	9914.3301
120	PLANTER	9681.7350	9918.2664
121	PLANTER	9677.7987	9913.7380
122	PLANTER	9682.3271	9909.8018
123	PLANTER	9728.5148	9877.5965
124	PLANTER	9723.9866	9881.5311
125	PLANTER	9720.0512	9877.0036
126	PLANTER	9724.5826	9873.0710
127	PLANTER	9738.8421	9912.3378
128	PLANTER	9738.0528	9923.6222
129	PLANTER	9732.0160	9928.8698
130	PLANTER	9720.7315	9928.0804
131	PLANTER	9715.4840	9922.0436
132	PLANTER	9716.2733	9910.7591
133	PLANTER	9722.3101	9905.5116
134	PLANTER	9733.5946	9906.3009
135	PLANTER	9703.4563	9891.4351
136	PLANTER	9707.3926	9895.9634
137	PLANTER	9702.8643	9899.8997
138	PLANTER	9698.9280	9895.3714
139	PLANTER	9695.9749	9854.6777
140	PLANTER	9693.7470	9856.6143
141	PLANTER	9691.8103	9854.3864
142	PLANTER	9694.0383	9852.4497
143	FS	9712.6768	9834.5601
144	BC	9719.4850	9828.6420
145	PCC	9693.3181	9824.7869
146	EC	9664.2754	9851.7317
147	BC	9693.8349	9826.3779
148	PRC	9694.1670	9830.6015
149	EC	9691.7374	9842.5281
150	FS	9712.1848	9833.9941

POINT TABLE			
POINT #	RAW DESCRIPTION	NORTHING	EASTING
151	BC	9699.7300	9844.8204
152	EC	9683.4644	9858.9593
153	BC	9675.9696	9865.4742
154	EC	9664.6834	9864.6848
155	BC	9663.3042	9863.0980
156	EC	9660.6560	9865.4055
157	BC	9662.0419	9866.9809
158	FS/BC	9666.5157	9870.1399
159	EC	9677.3883	9868.8066
160	BC	9678.7989	9867.6522
161	FS/EC	9680.4776	9869.3643
162	EC	9695.3315	9874.4796
163	PRC	9660.6554	9897.8813
164	EC	9651.6093	9865.6258
165	BLDG	9764.4080	9951.4141
166	BLDG	9762.4810	9979.6784
167	BLDG	9753.4848	9950.6466
168	BLDG	9751.5078	9978.9109
169	BLDG	9744.8392	9950.0419
170	BLDG	9742.8623	9978.3062
171	BLDG	9733.8660	9949.2744
172	BLDG	9731.8891	9977.5387
173	COLUMN	9882.4936	9874.3502
174	COLUMN	9892.8263	9886.2371
175	CENTER	9656.1573	9881.7465
176	CENTER	9658.5560	9860.3222
177	CENTER	9693.8934	9854.5314
178	CENTER	9811.5784	9879.9050
179	POST	9841.7055	9848.7646
180	POST	9833.3296	9846.8422
181	POST	9827.4927	9842.3194
182	POST	9831.6751	9838.6839
183	POST	9822.7412	9836.8532
184	POST	9819.3460	9832.9474
185	POST	9811.6180	9839.6650
186	POST	9815.6909	9844.3506
187	POST	9808.1339	9850.9195
188	POST	9804.0610	9846.2339
189	POST	9801.6986	9856.5134
190	POST	9797.6257	9851.8278
191	POST	9823.7592	9784.9206
192	POST	9823.3260	9791.1138
193	POST	9811.1858	9784.0411
194	POST	9808.5012	9790.4736
195	POST	9808.6584	9800.1699
196	POST	9808.1587	9807.3141
197	POST	9804.4603	9799.8762
198	POST	9803.9606	9807.0204
199	POST	9803.4970	9778.9923
200	POST	9804.0019	9783.1418

POINT TABLE			
POINT #	RAW DESCRIPTION	NORTHING	EASTING
201	POST	9803.5134	9790.1247
202	POST	9803.1224	9795.7152
203	POST	9798.2844	9774.1167
204	POST	9799.1908	9789.8224
205	POST	9798.7997	9795.4129
206	POST	9788.0087	9774.3603
207	POST	9783.9894	9778.1472
208	POST	9786.9137	9790.0165
209	POST	9786.5959	9794.5593
210	POST	9779.1648	9783.0308
211	POST	9778.7162	9789.4431
212	POST	9782.4719	9794.2708
213	POST	9776.3671	9777.0894
214	POST	9776.0037	9782.2850
215	POST	9774.7151	9792.2939
216	POST	9778.7881	9796.9795
217	POST	9768.6805	9797.5395
218	POST	9772.7535	9802.2251
219	POST	9761.1427	9804.0918
220	POST	9765.2157	9808.7773
221	POST	9758.2447	9775.8218
222	POST	9757.8813	9781.0174
223	POST	9751.3362	9777.3918
224	POST	9752.0825	9783.6441
225	POST	9743.9486	9783.8135
226	POST	9747.3655	9787.7444
227	POST	9740.5579	9786.2847
228	POST	9743.7075	9795.0457
229	POST	9746.4053	9804.2478
230	POST	9750.9976	9809.5308
231	POST	9757.6873	9815.3214
232	POST	9742.2261	9807.8805
233	POST	9746.8184	9813.1636
234	POST	9753.2506	9819.1780
235	POST	9736.5088	9812.8503
236	POST	9741.1011	9818.1333
237	POST	9744.0901	9820.4469
238	POST	9728.2936	9820.5159
239	POST	9732.3665	9825.2014
240	POST	9720.7464	9827.0763
241	POST	9724.8193	9831.7619
242	POST	9713.1992	9833.6368
243	POST	9717.2721	9838.3223
244	POST	9798.0540	9778.6063
245	POST	9799.1276	9783.8962
246	POST	9787.4614	9777.8654
247	POST	9787.0980	9783.0610
248	EQUIPMENT	9875.7253	9851.2458
249	EQUIPMENT	9874.6560	9866.5320
250	EQUIPMENT	9868.8658	9850.7660

POINT TABLE			
POINT #	RAW DESCRIPTION	NORTHING	EASTING
251	EQUIPMENT	9867.7966	9866.0522
252	EQUIPMENT	9842.0265	9885.8544
253	EQUIPMENT	9842.2297	9888.4705
254	EQUIPMENT	9831.3203	9866.2464
255	EQUIPMENT	9832.2589	9867.7485
256	EQUIPMENT	9839.6508	9849.3775
257	EQUIPMENT	9834.0706	9848.9872
258	EQUIPMENT	9839.1660	9851.4897
259	EQUIPMENT	9834.2567	9851.1463
260	EQUIPMENT	9803.7132	9839.0510
261	EQUIPMENT	9802.1028	9822.5762
262	EQUIPMENT	9803.1007	9827.3939
263	EQUIPMENT	9805.7761	9819.3031
264	EQUIPMENT	9797.4315	9821.0315
265	EQUIPMENT	9771.4564	9823.4672
266	EQUIPMENT	9774.5845	9831.2512
267	EQUIPMENT	9768.5286	9836.4889
268	EQUIPMENT	9761.1992	9832.3218
269	EQUIPMENT	9763.0699	9824.1006
270	EQUIPMENT	9744.9507	9829.4969
271	EQUIPMENT	9746.3876	9828.3646
272	EQUIPMENT	9736.0026	9833.8966
273	EQUIPMENT	9734.9556	9834.9369
274	EQUIPMENT	9729.0005	9840.0852
275	EQUIPMENT	9727.9735	9840.9823
276	EQUIPMENT	9723.2554	9848.0863
277	EQUIPMENT	9722.8337	9849.5047
278	EQUIPMENT	9723.4967	9851.4966
279	EQUIPMENT	9722.0724	9853.1502
280	EQUIPMENT	9723.0627	9854.8390
281	EQUIPMENT	9723.0990	9856.5688
282	EQUIPMENT	9729.8649	9863.3935
283	EQUIPMENT	9720.5716	9865.8409
284	EQUIPMENT	9747.9756	9873.6359
285	EQUIPMENT	9761.3168	9863.7505
286	EQUIPMENT	9781.9076	9882.2593
287	EQUIPMENT	9775.2913	9898.4388
288	EQUIPMENT	9779.5913	9903.3855
289	EQUIPMENT	9765.0132	9907.3731
290	EQUIPMENT	9769.3132	9912.3198
291	EQUIPMENT	9772.3039	9905.3786
292	EQUIPMENT	9799.3820	9910.4370
293	EQUIPMENT	9799.0764	9914.8055
294	EQUIPMENT	9746.1296	9826.8567
295	EQUIPMENT	9695.9586	9844.7223
296	EQUIPMENT	9693.0173	9867.0332
297	EQUIPMENT	9703.4749	9842.9204
298	EQUIPMENT	9680.4075	9840.3071
299	EQUIPMENT	9675.5307	9844.6946
300	EQUIPMENT	9673.5010	9850.9327

POINT TABLE			
POINT #	RAW DESCRIPTION	NORTHING	EASTING
301	EQUIPMENT	9674.8622	9857.3499
302	EQUIPMENT	9836.2022	9812.4111
303	EQUIPMENT	9817.5129	9874.8913
304	EQUIPMENT	9818.6749	9876.2281
305	EQUIPMENT	9778.6214	9863.4948
306	EQUIPMENT	9787.4998	9873.7086
307	EQUIPMENT	9685.4613	9880.4269
308	EQUIPMENT	9677.1130	9889.9429
309	EQUIPMENT	9670.9373	9873.3669
310	EQUIPMENT	9655.4085	9887.6702
311	EQUIPMENT	9650.7604	9884.4702
312	EQUIPMENT	9660.9893	9879.5639
313	EQUIPMENT	9656.3412	9876.3639
314	EQUIPMENT	9685.5782	9855.6243
315	EQUIPMENT	9685.5362	9854.2418
316	EQUIPMENT	9852.3144	9872.4156
317	EQUIPMENT	9707.8046	9825.1895
318	EQUIPMENT	9703.9645	9826.2439
319	EQUIPMENT	9706.1385	9855.3879
320	SCULPTURE	9703.9090	9816.9166
321	EQUIPMENT	9697.1049	9832.5720
322	EQUIPMENT	9696.7304	9837.7585
323	EQUIPMENT	9691.9185	9832.1975
324	EQUIPMENT	9691.5439	9837.3840
325	SIGN	9845.8569	9860.4306
326	SIGN	9681.5880	9868.6019
327	EQUIPMENT	9824.5446	9871.4323
328	EQUIPMENT	9821.8268	9872.3069
329	EQUIPMENT	9828.7014	9888.2825
330	EQUIPMENT	9820.6012	9888.4056
331	BC	9823.3493	9856.9731
332	PCC	9829.5620	9861.4442
333	PCC	9830.6104	9864.1807
334	PRC	9829.7146	9867.4983
335	PRC	9830.6108	9868.9435
336	PCC	9834.2111	9869.6489
337	PCC	9835.9112	9871.4436
338	EC	9786.9563	9887.4049
339	FENCE	9694.4629	9789.9046
340	FENCE	9723.8830	9823.8254
341	FENCE	9611.7584	9861.6357
342	FENCE	9659.6850	9916.8942
343	FENCE	9707.0273	9875.7404
344	EQUIPMENT	9747.1341	9820.7304
345	EQUIPMENT	9744.9166	9820.5753
346	SIGN	9718.7942	9875.5963
347	EQUIPMENT	9808.5866	9872.4668
348	EQUIPMENT	9804.6258	9875.9097
349	EQUIPMENT	9806.5533	9878.5271
350	EQUIPMENT	9806.4091	9880.5885

POINT TABLE			
POINT #	RAW DESCRIPTION	NORTHING	EASTING
351	EQUIPMENT	9810.1963	9884.9453
352	EQUIPMENT	9812.2577	9885.0895
353	EQUIPMENT	9816.6146	9881.3023
354	EQUIPMENT	9816.7587	9879.2409
355	EQUIPMENT	9812.9715	9874.8841
356	EQUIPMENT	9810.9102	9874.7399
357	SIGN	9888.2369	9889.4178
358	SIGN	9758.7258	10020.5238
359	SIGN	9704.4618	9871.8363
360	EQUIPMENT	9793.3083	9809.0912
361	EQUIPMENT	9790.0371	9808.8511
362	EQUIPMENT	9798.2880	9786.0545
363	EQUIPMENT	9797.5677	9795.8681
364	EQUIPMENT	9787.7541	9795.1478
365	EQUIPMENT	9788.4744	9785.3342
366	FS	9770.2295	9883.7300
367	BC	9771.0496	9884.6734
368	EC	9772.9364	9883.0333
369	FS	9772.1163	9882.0899
370	FS	9779.7643	9875.4418
371	FS	9775.8281	9870.9135
372	SIGN	9716.8534	9840.0760
373	WATER	9691.6370	9781.9396
374	WATER	9722.5519	9845.1429
375	WATER	9692.5547	9871.2173
376	WATER	9686.2354	9961.5453
377	WATER	9712.6203	9991.9065
378	WATER	9729.8872	9993.1143
379	WATER	9744.4335	9994.1318
380	WATER	9744.8023	9988.8599
381	WATER	9744.9131	9987.2760
382	WATER	9728.2771	10016.1313
383	SEWER	9648.2392	9865.8352
384	SEWER	9673.6922	9895.0693
385	SEWER	9670.9148	9934.7688
386	SEWER	9670.8467	9935.7419
387	SEWER	9715.5186	9986.0946
388	SEWER	9734.5058	9987.4227
389	SEWER	9735.4766	9987.4487
390	SEWER	9735.1281	9983.8527

CURVE DATA			
SEGMENT	LENGTH	RADIUS	DELTA
C1	1.98	1.25	90°34'07"
C2	3.93	1.25	180°00'00"
C3	3.93	1.25	180°00'00"
C4	3.95	1.25	181°08'14"
C5	23.87	20.00	68°23'13"
C6	18.54	20.00	53°07'28"
C7	39.99	13.25	172°55'01"
C8	43.35	29.75	83°29'32"
C9	12.57	8.00	90°00'00"
C10	28.48	11.33	144°00'45"
C11	30.99	5.50	322°53'33"
C12	16.95	11.50	84°26'01"
C13	22.67	7.00	185°35'14"
C14	4.26	12.50	19°30'48"
C15	12.59	14.00	51°31'55"
C16	52.57	16.75	179°49'21"
C17	17.56	16.25	61°54'24"
C18	81.85	25.75	182°07'04"
C19	2.55	3.00	48°39'51"
C20	3.69	9.50	22°15'58"
C21	2.03	1.00	116°28'55"
C22	3.46	8.75	22°38'57"
C23	3.02	3.50	49°29'46"
C24	7.68	25.75	17°05'41"

LINE DATA		
SEGMENT	LENGTH	DIRECTION
L1	20.27	S49° 00' 04"W
L2	21.47	N85° 59' 56"W
L3	5.00	N4° 00' 04"E
L4	18.15	N85° 59' 56"W
L5	25.76	S85° 59' 56"E
L6	14.64	S4° 00' 04"W
L7	12.00	S85° 59' 56"E
L8	12.03	N40° 59' 56"W
L9	13.11	N85° 59' 56"W
L10	16.38	N49° 00' 04"E
L11	12.89	S49° 00' 04"W
L12	9.15	S40° 59' 56"E
L13	5.00	N49° 00' 04"E
L14	10.00	S40° 59' 56"E
L15	5.00	S49° 00' 04"W
L16	2.08	S40° 59' 56"E
L17	9.98	S4° 00' 04"W
L18	1.25	S40° 59' 56"E
L20	0.89	S49° 00' 03"W
L21	55.04	S40° 59' 57"E
L22	0.89	N49° 00' 05"E
L24	0.92	S49° 00' 03"W
L25	20.49	S4° 00' 04"W
L26	22.66	S40° 57' 34"E
L27	71.18	S85° 59' 56"E

LINE DATA		
SEGMENT	LENGTH	DIRECTION
L28	22.84	N85° 59' 56"W
L29	56.61	N85° 59' 56"W
L30	16.00	N40° 59' 23"W
L31	8.00	N40° 57' 34"W
L32	9.09	N40° 54' 22"W
L33	16.49	N4° 00' 04"E
L34	9.65	N4° 00' 04"E
L35	11.23	N40° 59' 56"W
L36	6.50	N40° 59' 56"W
L37	13.78	N40° 59' 56"W
L38	6.50	N40° 59' 56"W
L39	14.23	N40° 59' 56"W
L40	14.14	N40° 59' 56"W
L41	5.00	N85° 59' 56"W
L42	12.77	N4° 00' 04"E
L43	15.12	N40° 59' 56"W
L44	20.48	N85° 59' 56"W
L45	5.66	S4° 00' 04"W
L46	11.36	N85° 59' 56"W
L47	39.59	S4° 00' 04"W
L48	72.00	S48° 59' 39"W
L49	17.16	S40° 59' 56"E
L50	5.99	S49° 00' 04"W
L51	52.65	S40° 59' 56"E
L52	72.53	N40° 59' 56"W

LINE DATA		
SEGMENT	LENGTH	DIRECTION
L53	23.24	N40° 59' 51"W
L54	32.74	N40° 59' 48"W
L55	16.00	N40° 59' 56"W
L56	8.00	N48° 59' 16"E
L57	8.00	N41° 00' 27"W
L58	8.00	N49° 00' 11"E
L59	24.99	N49° 00' 11"E
L60	6.00	N49° 00' 05"E
L61	25.00	N49° 00' 04"E
L62	8.00	N49° 00' 04"E
L63	8.00	N40° 57' 34"W
L64	8.01	N49° 02' 26"E
L65	39.09	N40° 59' 56"W
L66	6.00	N49° 00' 04"E
L67	10.13	S40° 59' 56"E
L68	1.25	N49° 00' 04"E
L70	1.25	S49° 00' 04"W
L71	26.46	S40° 59' 56"E
L72	14.64	S4° 00' 04"W
L73	17.22	S4° 00' 36"W
L74	1.31	N85° 59' 56"W
L76	1.31	S85° 59' 56"E
L77	6.10	S4° 00' 04"W
L78	5.97	S85° 59' 56"E
L79	21.55	S4° 00' 04"W

LINE DATA		
SEGMENT	LENGTH	DIRECTION
L80	18.24	S49° 00' 04"W
L81	4.00	N40° 59' 56"W
L82	11.63	S49° 00' 04"W
L83	8.03	S49° 00' 04"W
L84	8.11	N86° 18' 58"W
L85	5.56	S4° 00' 04"W
L86	9.68	N85° 59' 56"W
L87	21.97	S4° 00' 04"W
L88	38.57	S40° 59' 56"E
L89	14.51	S4° 00' 04"W
L90	7.63	S49° 00' 04"W
L91	5.66	N85° 59' 56"W
L92	7.89	N4° 00' 04"E
L93	10.73	N40° 59' 56"W
L94	7.89	N85° 59' 56"W
L95	29.01	S40° 59' 56"E
L96	0.75	N49° 00' 04"E
L97	5.53	S49° 00' 04"W
L99	7.59	N40° 59' 56"W
L100	9.13	S49° 00' 04"W
L102	5.50	S49° 00' 04"W
L103	9.02	N40° 59' 56"W
L105	2.10	N49° 00' 04"E
L107	9.93	N40° 59' 56"W
L109	16.50	N40° 59' 56"W

LINE DATA		
SEGMENT	LENGTH	DIRECTION
L110	2.10	N49° 00' 04"E
L112	1.82	N39° 17' 39"W
L113	6.00	N49° 00' 46"E
L114	6.00	S40° 59' 14"E
L115	6.00	S49° 00' 04"W
L116	6.00	N40° 57' 11"W
L117	6.00	S40° 59' 56"E
L118	6.00	S49° 00' 04"W
L119	6.00	N40° 59' 56"W
L120	6.00	N49° 00' 04"E
L121	6.00	S40° 59' 56"E
L122	6.00	S49° 00' 04"W
L123	5.99	N40° 59' 56"W
L124	6.00	N48° 55' 26"E
L125	8.00	N49° 00' 04"E
L126	11.31	S85° 59' 56"E
L127	8.00	S40° 59' 56"E
L128	11.31	S4° 00' 04"W
L129	8.00	S49° 00' 04"W
L130	11.31	N85° 59' 56"W
L131	8.00	N40° 59' 56"W
L132	11.31	N4° 00' 04"E
L133	6.00	S40° 59' 56"E
L134	6.00	N49° 00' 04"E
L135	6.00	N40° 59' 56"W

LINE DATA		
SEGMENT	LENGTH	DIRECTION
L136	6.00	S49° 00' 04"W
L137	6.00	S40° 59' 56"E
L138	6.00	S49° 00' 04"W
L139	6.00	N40° 59' 56"W
L140	6.00	N49° 00' 46"E
L141	13.73	N40° 59' 56"W
L142	6.11	N4° 00' 04"E
L143	2.50	S49° 00' 04"W
L144	6.50	N40° 59' 56"W
L145	2.50	N49° 00' 04"E
L146	2.50	S49° 00' 04"W
L147	6.50	N40° 59' 56"W
L148	2.50	N49° 00' 04"E
L149	44.90	N49° 03' 52"E
L150	73.15	N49° 03' 52"E
L151	62.73	N40° 59' 59"W

ABBREVIATIONS

BC	BEGIN CURVE
BLDG	BUILDING
EC	END CURVE
FS	FINISHED SURFACE
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE

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LIMIT OF WORK

LIMIT OF WORK

LIMIT OF WORK

LIMIT OF WORK

LIMIT OF WORK

NORTH

0 10 20 30 feet

1" = 10'-0"

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VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

HORIZONTAL CONTROL PLAN

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier

DRAWN BY: RP
CHECKED BY: DC

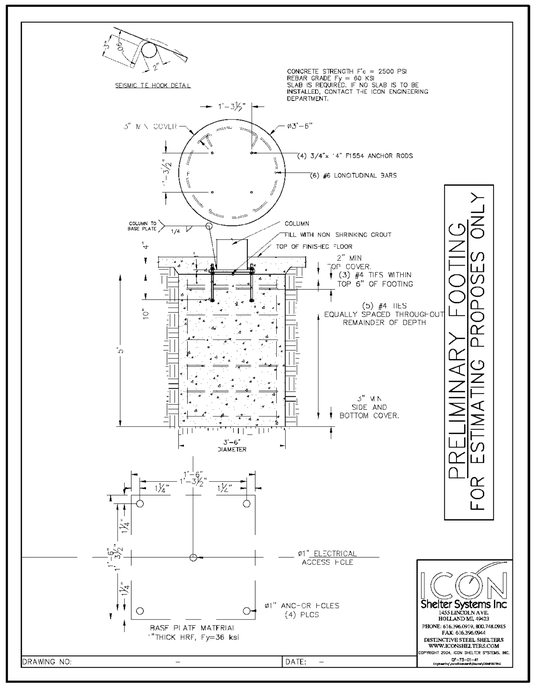
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JANUARY 31, 2025

RRM PROJECT NUMBER
1652-02-RC22

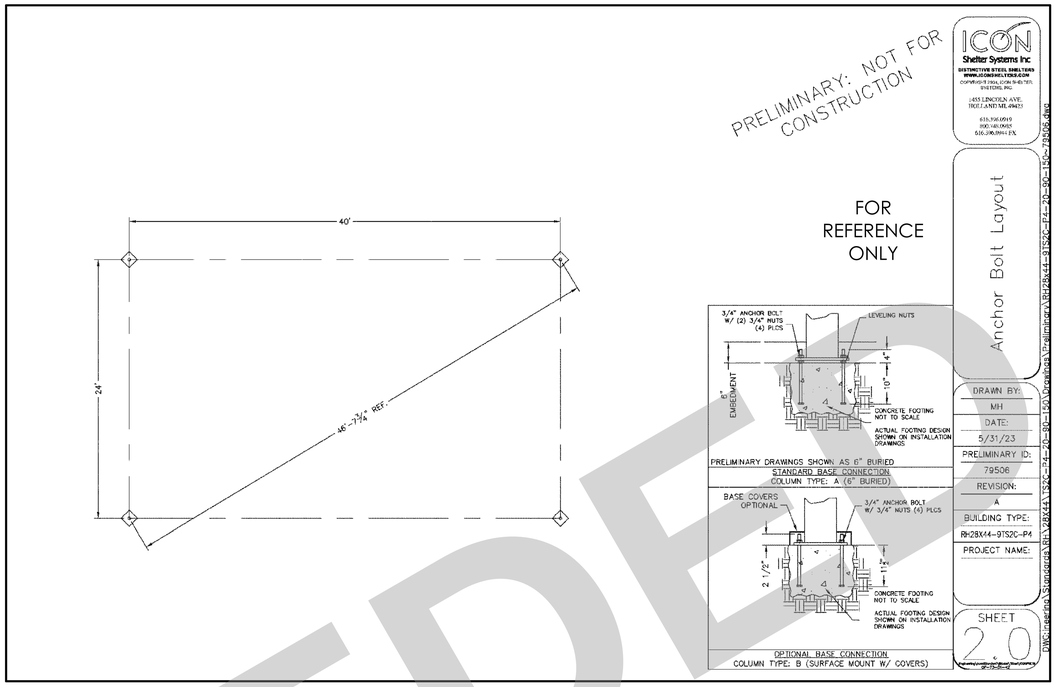
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610027

SHEET
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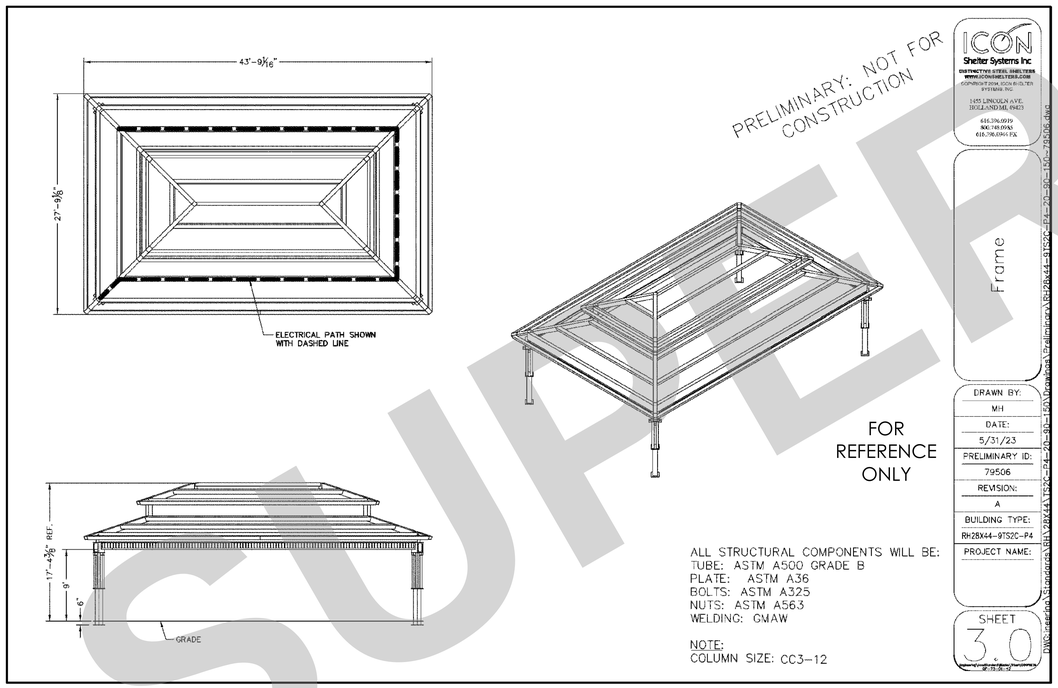
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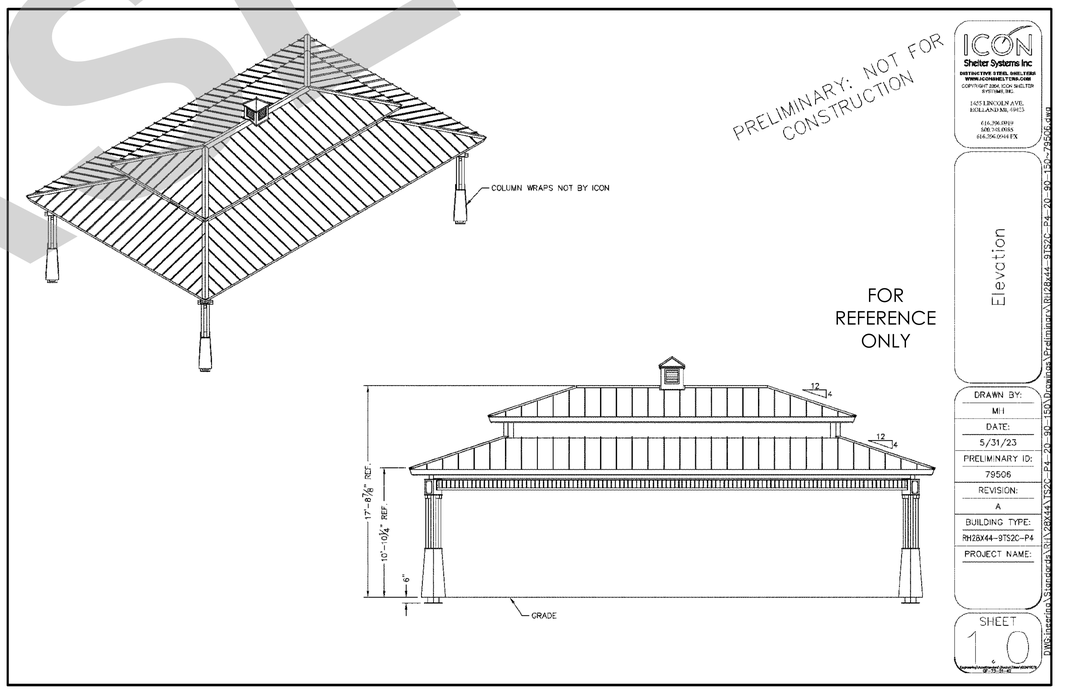
4 SHADE STRUCTURE FOOTING
NTS



2 SHADE STRUCTURE FOOTING LAYOUT
NTS



3 SHADE STRUCTURE FRAME
NTS



1 SHADE STRUCTURE ELEVATION
NTS

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LICENSED LANDSCAPE ARCHITECT
MARISSA A. PELTIER
No. 6423
6.30.25
Date
STATE OF CALIFORNIA

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CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PRE-MANUFACTURED SHADE STRUCTURE

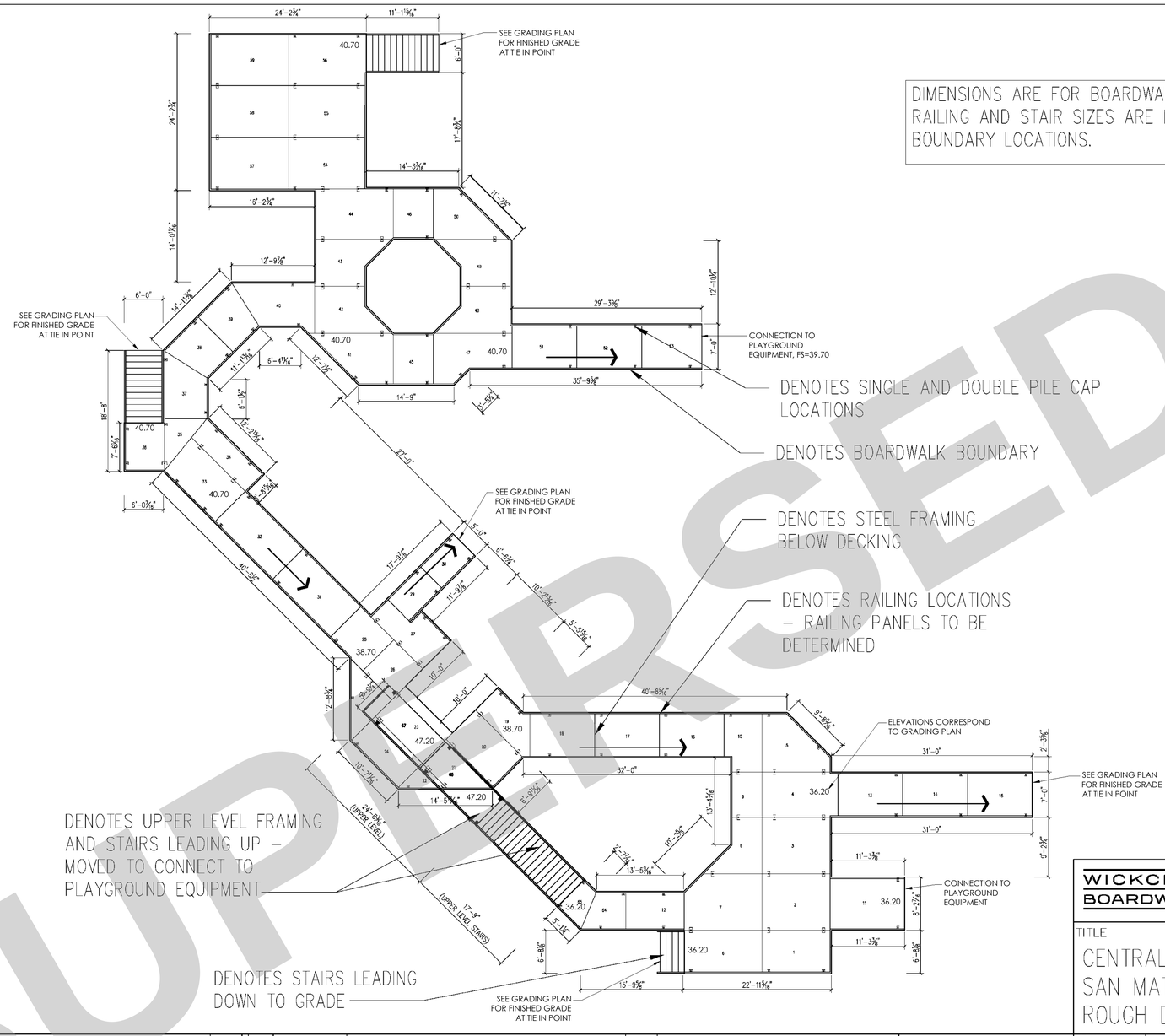
NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JANUARY 31 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
Z101

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DIMENSIONS ARE FOR BOARDWALK BOUNDARY. ALL FRAME, DECK RAILING AND STAIR SIZES ARE NOT TO EXCEED BOARDWALK BOUNDARY LOCATIONS.

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TITLE
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SAN MATEO, CALIFORNIA
ROUGH DRAFT LAYOUT

DRAWN BY	DATE:	DWG. NO.	1
JLL	2/17/23		
APPROVED BY	DATE:	PROJECT NO.	CA-22-1303

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CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PRE-MANUFACTURED BOARDWALK SYSTEM

NO.	REVISION	DATE
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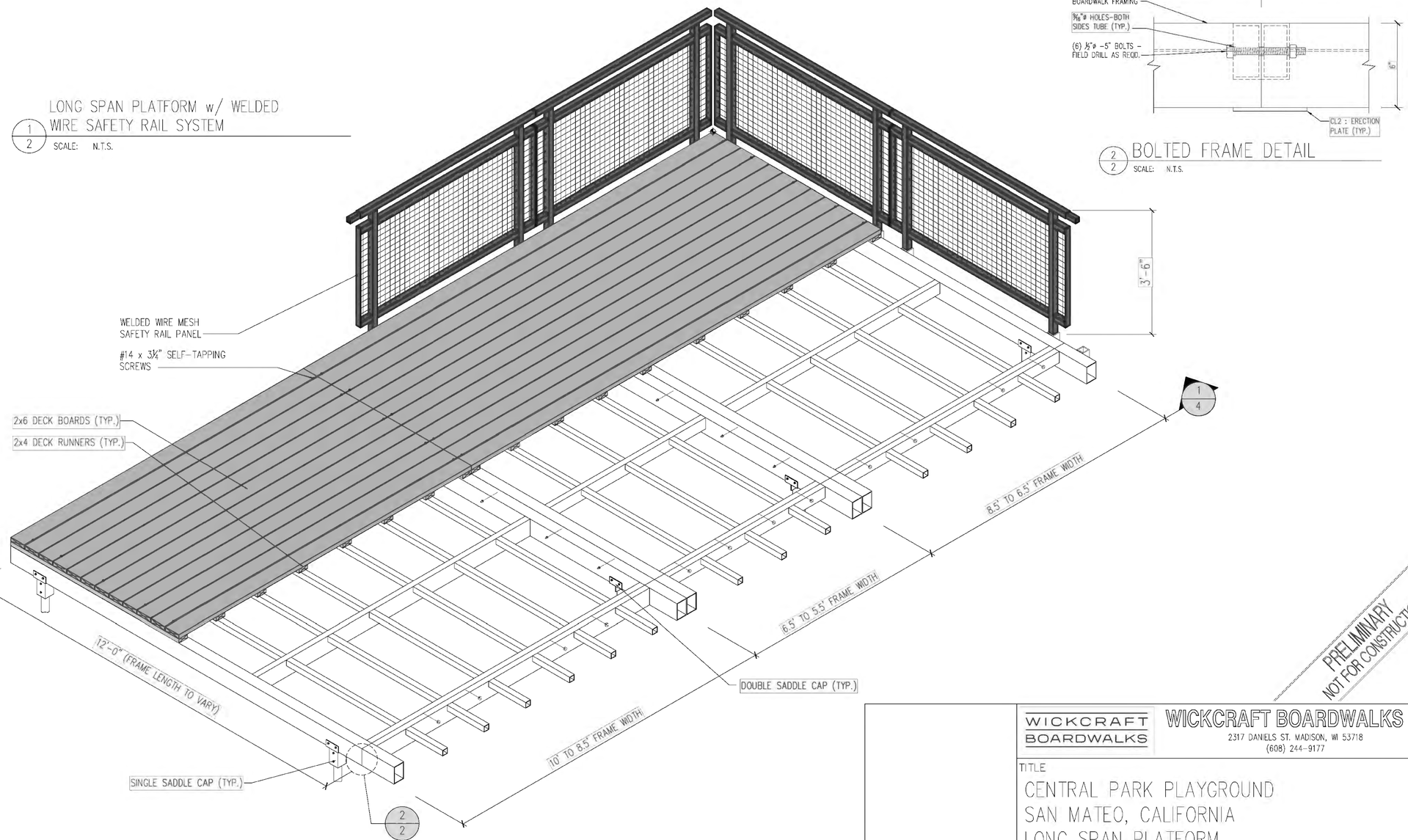
PROJECT MANAGER
Marisa Peltier
DRAWN BY: MP/YI | CHECKED BY: LM
DATE
JANUARY 31, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
Z102

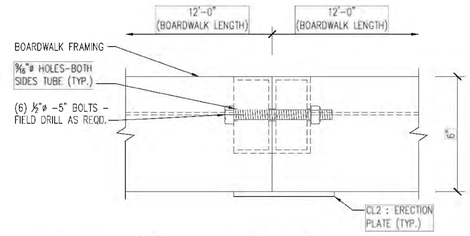
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1/2 LONG SPAN PLATFORM w/ WELDED WIRE SAFETY RAIL SYSTEM
SCALE: N.T.S.





2/2 BOLTED FRAME DETAIL
SCALE: N.T.S.

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#	DATE	DESCRIPTION	BY:	#	DATE	DESCRIPTION	BY:
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2	–	–	–	2	–	–	–

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TITLE
CENTRAL PARK PLAYGROUND
SAN MATEO, CALIFORNIA
LONG SPAN PLATFORM

DRAWN BY	DATE:	DWG. NO.	2
JLL	2/17/23		
APPROVED BY	DATE:	PROJECT NO.	CA-22-1303

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CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PRE-MANUFACTURED BOARDWALK SYSTEM

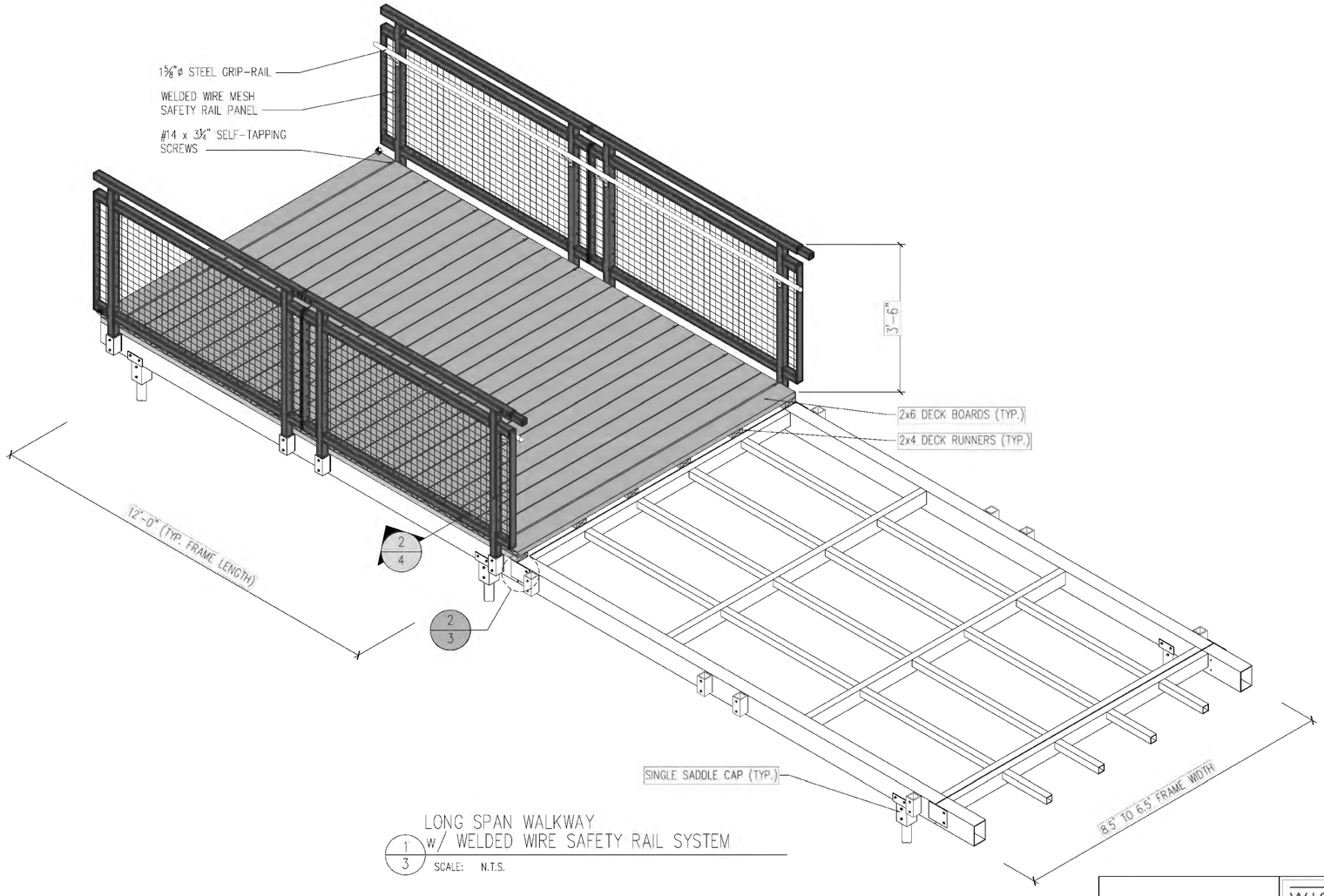
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PROJECT MANAGER
Marisa Peltier
DRAWN BY: MP/YH | CHECKED BY: LM
DATE
JANUARY 31, 2025
RRM PROJECT NUMBER
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CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
Z103

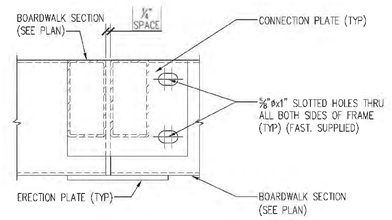
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1/3 LONG SPAN WALKWAY w/ WELDED WIRE SAFETY RAIL SYSTEM
SCALE: N.T.S.



2/3 FRAME-FRAME CONNECTION
SCALE: N.T.S.

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TITLE
CENTRAL PARK PLAYGROUND
SAN MATEO, CALIFORNIA
LONG SPAN WALKWAY

DRAWN BY	DATE:	DWG. NO.
JLL	2/17/23	3
APPROVED BY	DATE:	PROJECT NO. CA-22-1303

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CONSTRUCTION SET

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PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PRE-MANUFACTURED BOARDWALK SYSTEM

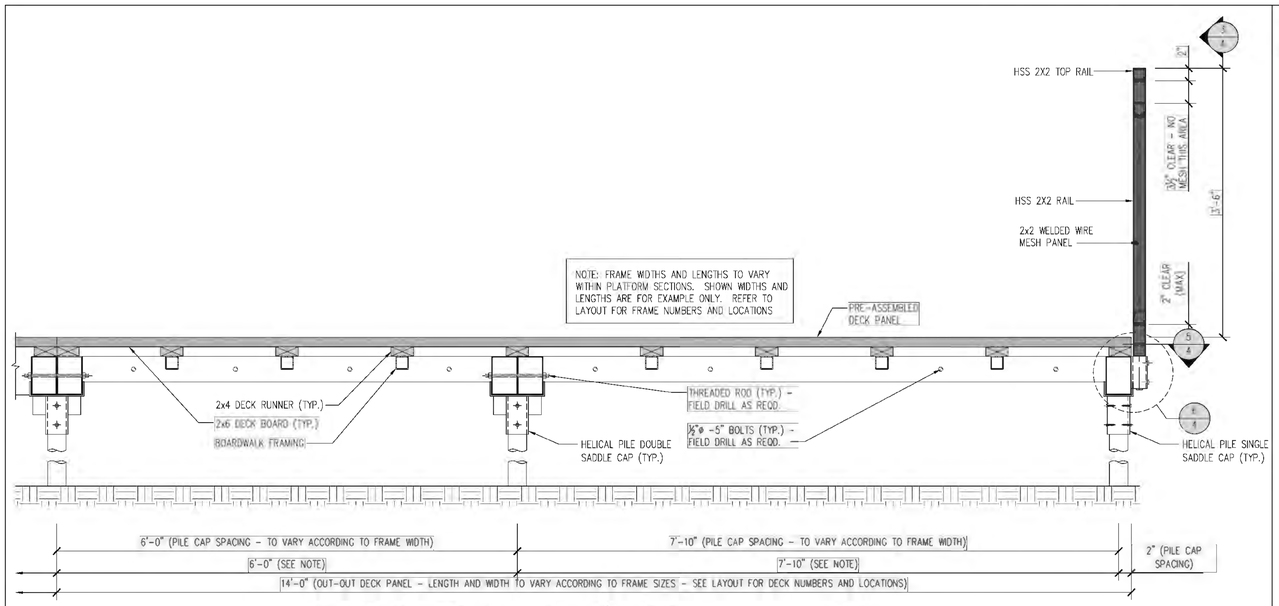
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CHECKED BY: LM
DATE: JANUARY 31 2025
RRM PROJECT NUMBER
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CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
Z104

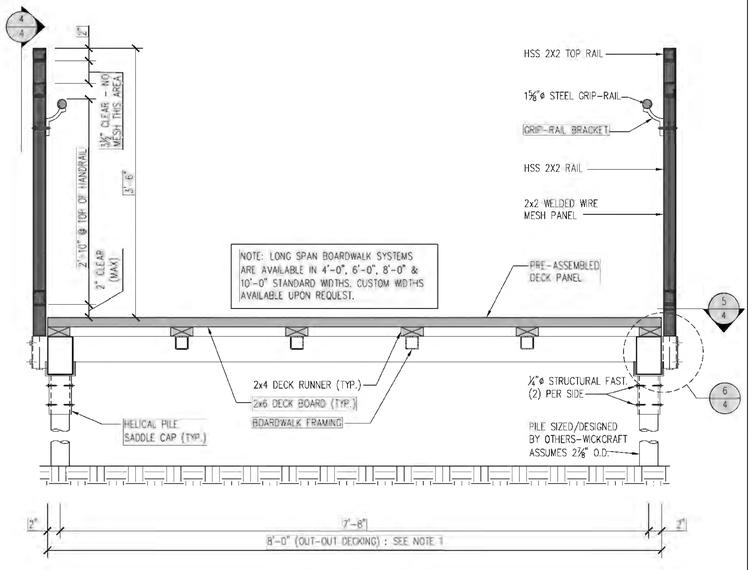
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NOTES

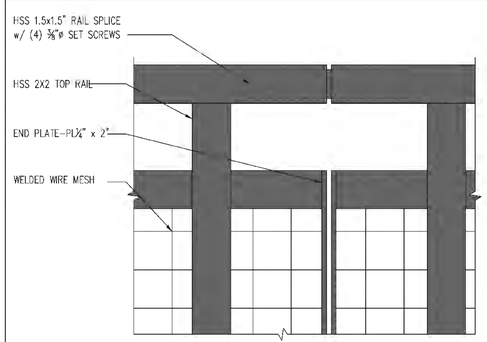
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4. REFER TO CD103 FOR EXPLORATORY TRENCHING REQUIREMENTS FOR BOARDWALK FOOTINGS WITHIN THE TREE PROTECTION ZONES. CONDUCT EXPLORATION PRIOR TO COMMENCING FINAL SHOP DRAWINGS FOR THE BOARDWALK.



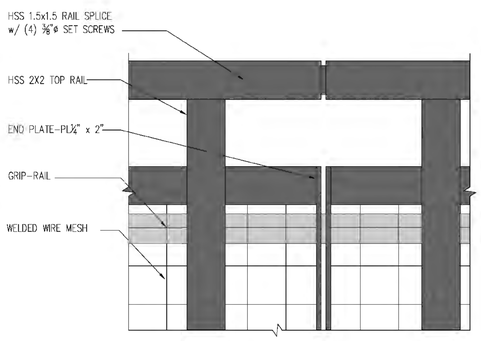
1/4 PLATFORM SECTION w/ WELDED-WIRE SAFETY RAIL
SCALE: N.T.S.



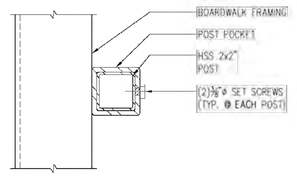
2/4 WALKWAY SECTION w/ WELDED-WIRE SAFETY RAIL
SCALE: N.T.S.



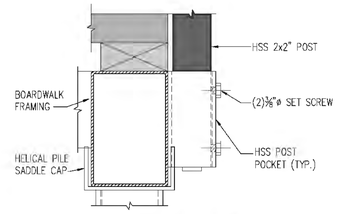
3/4 RAIL PANEL DETAIL
SCALE: NTS



4/4 RAIL PANEL w/GRIP-RAIL DETAIL
SCALE: NTS



5/4 HSS 2x2 RAIL POST (TOP)
SCALE: N.T.S.



6/4 HSS 2x2 RAIL POST (SIDE)
SCALE: N.T.S.

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(608) 244-9177

TITLE
CENTRAL PARK PLAYGROUND
SAN MATEO, CALIFORNIA
LONG SPAN SYSTEM DETAILS

DRAWN BY	DATE:	DWC. NO.	4
JLL	2/17/23		
APPROVED BY	DATE:	PROJECT NO.	CA-22-1303

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT — MARISA A. PELTIER — No. 6423 — 8.31.25 — RENEWAL DATE — STATE OF CALIFORNIA

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CITY OF SAN MATEO PARKS & RECREATION

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330 W 20th Ave., San Mateo, CA 94403

CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PRE-MANUFACTURED BOARDWALK SYSTEM

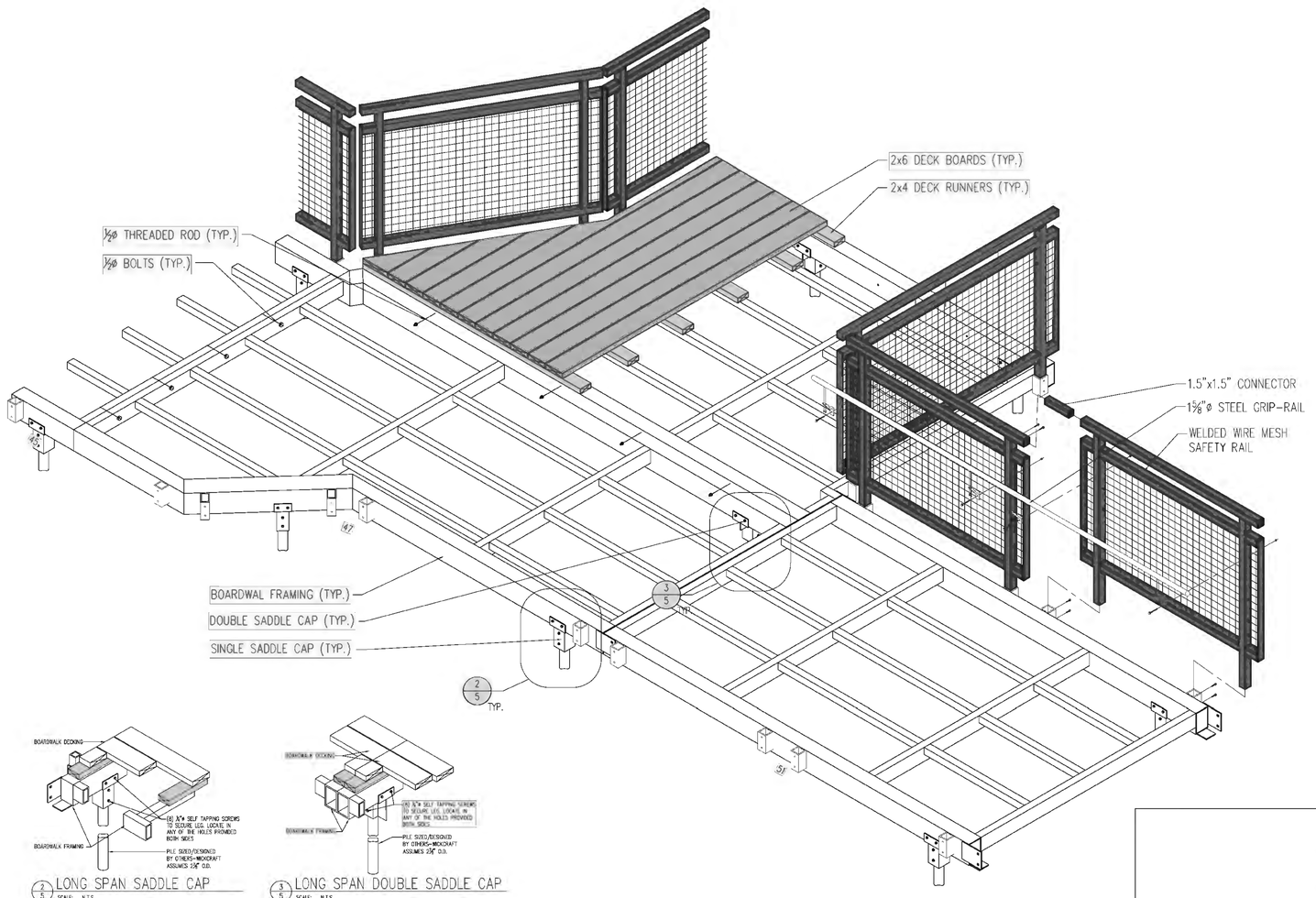
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PROJECT MANAGER
Marisa Peltier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JANUARY 31 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
Z105

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2/5 LONG SPAN SADDLE CAP
SCALE: N.T.S.

3/5 LONG SPAN DOUBLE SADDLE CAP
SCALE: N.T.S.

1/5 TYPICAL LONG SPAN BOARDWALK INSTALLATION w/WELDED-WIRE SAFETY RAIL
SCALE: N.T.S.

INSTALLATION INSTRUCTIONS:

NOTES: BOARDWALK LAYOUT SHOWN IS INTENDED TO PROVIDE AN OVERALL CONCEPT OF THE INSTALLATION REQUIRED FOR A LONG-SPAN BOARDWALK ASSEMBLY. ACTUAL PROJECT LAYOUT & PART MARK NUMBERS / GEOMETRY WILL VARY BY PROJECT. REFER TO PROJECT SPECIFIC LAYOUT DRAWINGS PROVIDED FOR LOCATION & PART MARK NUMBERS OF BOARDWALK SECTIONS TO INSTALL.

1) PILES ARE TO BE LOCATED AND INSTALLED BY OTHERS. PILES TO BE INSTALLED PRIOR TO BOARDWALK INSTALLATION.
2) SEE PLAN FOR STARTER SECTION PART MARK NUMBER (#). LOCATE AND PLACE STARTER SECTION AT DESIRED LOCATION/ELEVATION.
3) PLACE SADDLE-CAP ONTO THE PILE, ENSURING THE CORRECT ORIENTATION/ELEVATION. IF THE PILE EXTENDS FULLY TO THE UNDERSIDE OF THE SADDLE CAP SECURE THE CAP TO THE PILE WITH (2) ¼"ø SELF-TAPPING SCREWS INTO LOWER HOLES. IF THE PILE DOES NOT EXTEND FULLY TO THE UNDERSIDE OF THE SADDLE CAP THEN THE USE OF (2) ½"ø A325 BOLTS ARE REQUIRED TO SECURE THE CAP TO THE PILE. BOLTS ARE NOT BY WICKCRAFT AND ARE TO BE PURCHASED LOCALLY AS REQD.
4) PLACE THE STARTER FRAME ONTO ITS FOUR SADDLE-CAPS. SECURE IT BY INSERTING ¼"ø SELF TAPPING SCREWS INTO UPPER HOLES.
5) ONCE STARTER FRAME IS IN PLACE LOCATE AND INSTALL THE NEXT FRAME (#) PER THE PLAN.
6) IF THE NEXT FRAME IS PART OF A PLATFORM: THE NEXT FRAME IS TO BE ATTACHED TO THE STARTER FRAME VIA THE BOLT HOLES/ ERECTION PLATES PROVIDED ON EACH SECTION. SET THE NEXT FRAME ONTO THE ERECTION PLATES LOCATED ON THE STARTER FRAME AND ITS SADDLE-CAPS; OR ONTO THE DOUBLE-SADDLE CAPS TO THE SIDE OF THE STARTER FRAME AND IT'S SADDLE CAPS. ALIGN THE BOLT HOLES WITH THE STARTER'S BOLT HOLES AND INSERT A ½"ø BOLT THROUGH EACH HOLE ON THAT SIDE. IF NECESSARY, FIELD DRILL ⅝"ø HOLES THROUGH THE FRAME AFTER BOTH FRAMES ARE ALIGNED. LOCK THE FRAME DOWN BY INSERTING ¼"ø SELF TAPPING SCREWS INTO UPPER HOLES OF ITS SADDLE-CAPS.
7) IF THE NEXT FRAME IS PART OF A WALKWAY; THE NEXT FRAME IS TO BE ATTACHED TO THE STARTER SECTION VIA THE CONNECTION/ ERECTION PLATES PROVIDED ON EACH SECTION. SET THE NEXT FRAME ONTO THE ERECTION PLATES LOCATED ON THE STARTER FRAME AND ITS TWO SADDLE-CAPS. ALIGN THE CONNECTOR PLATE'S HOLES WITH THE INTERMEDIATE'S HOLES AND INSERT ½"ø BOLT THROUGH EACH HOLE ON BOTH SIDES. LOCK THE INTERMEDIATE FRAME DOWN BY INSERTING ¼"ø SELF TAPPING SCREWS INTO UPPER HOLES OF ITS TWO SADDLE-CAPS.
8) REPEAT PROCESS ABOVE FOR ALL INTERMEDIATE FRAMES.
9) ONCE FRAMES ARE INSTALLED, PLACE DECK PANEL ONTO FIRST FRAME AND SECURE PANEL IN PLACE. REFER TO DECK PANEL INSTALLATION DRAWING FOR ADDITIONAL INFORMATION.
10) ONCE FRAMING AND DECKING PANEL INSTALLATION IS COMPLETE, INSTALL WELDED-WIRE SAFETY RAIL SYSTEM AS REQUIRED FOR THE PROJECT. REFER TO WELDED-WIRE SAFETY RAIL INSTALLATION DRAWING FOR ADDITIONAL INFORMATION.

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(608) 244-9177

TITLE
CENTRAL PARK PLAYGROUND
SAN MATEO, CALIFORNIA
LONG SPAN INSTALLATION

DRAWN BY	DATE:	DWG. NO.	5
JLL	2/17/23		
APPROVED BY	DATE:	PROJECT NO.	CA-22-1303

rrm design group
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325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT — MARISA L. PELTIER — No. 6432 — 8.31.25 — RENEWAL DATE — STATE OF CALIFORNIA

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CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PRE-MANUFACTURED BOARDWALK SYSTEM

NO.	REVISION	DATE
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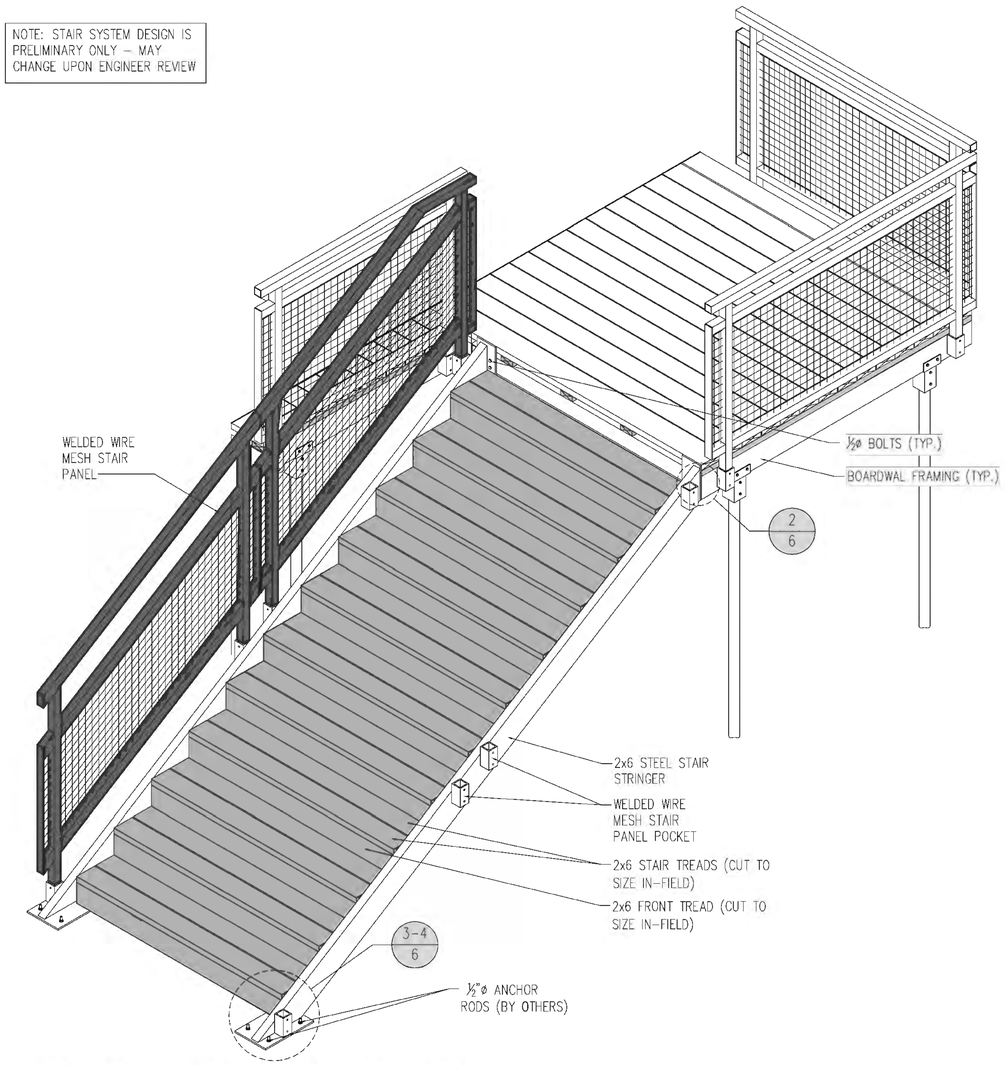
PROJECT MANAGER
Marisa Peltier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JANUARY 31, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
Z106

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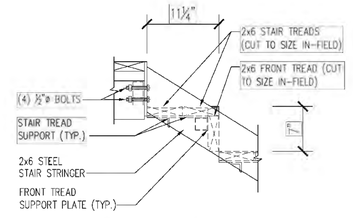
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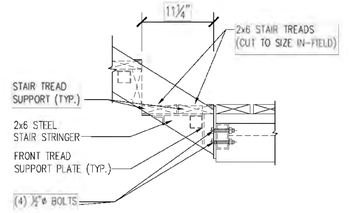
NOTE: STAIR SYSTEM DESIGN IS PRELIMINARY ONLY – MAY CHANGE UPON ENGINEER REVIEW



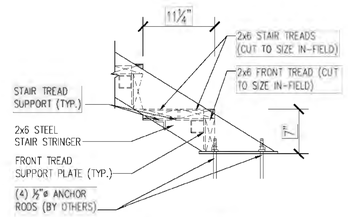
1/6 TYPICAL LONG SPAN STAIR SYSTEM w/WELDED-WIRE SAFETY RAIL
SCALE: N.T.S.



2/6 STAIR TOP DETAIL
SCALE: 1"=1'-0"



3/6 STAIR-TO-FRAME
SCALE: 1"=1'-0"



4/6 STAIR-TO-GRADE
SCALE: 1"=1'-0"

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TITLE
CENTRAL PARK PLAYGROUND
SAN MATEO, CALIFORNIA
LONG SPAN STAIR SYSTEM

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JLL	2/17/23		
APPROVED BY	DATE:	PROJECT NO.	CA-22-1303

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50 E 5TH AVE, SAN MATEO

PRE-MANUFACTURED BOARDWALK SYSTEM

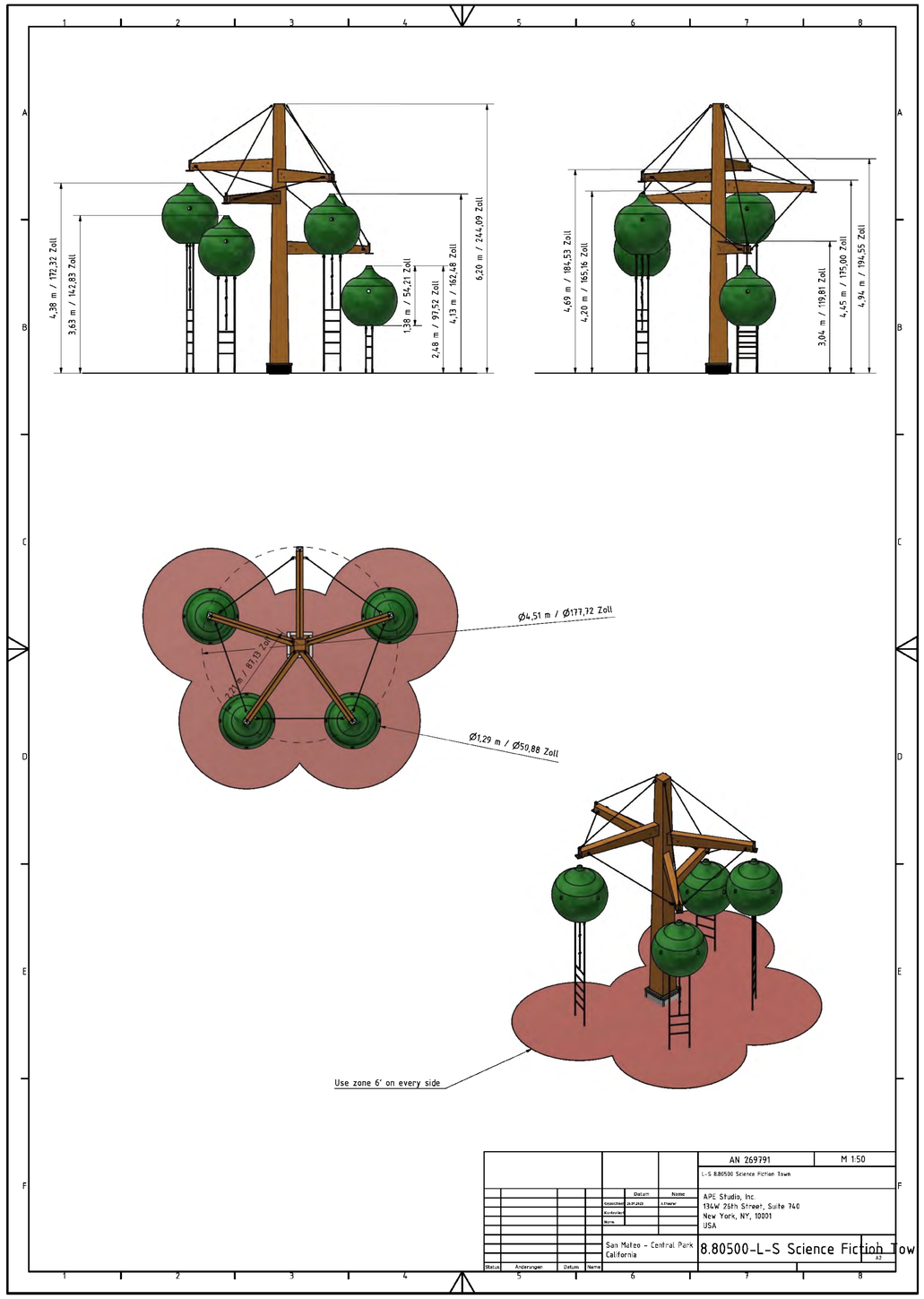
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PROJECT MANAGER
Marisa Peltier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JANUARY 31, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
Z107

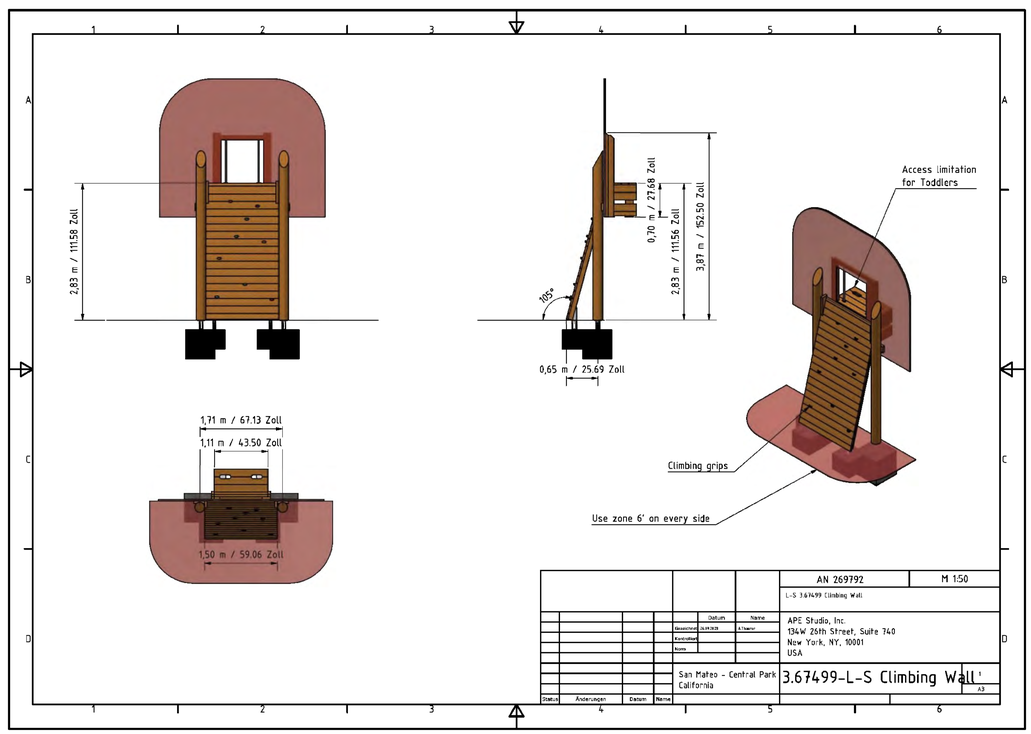
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					AN 269791	M 1:50
					L-S 8.80500 Science Fiction Town	
			Datum	Name	APE Studio, Inc. 134W 26th Street, Suite 740 New York, NY, 10001 USA	
			Gezeichnet	24.09.2025	AHaerer	
			Kontrolliert			
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Status	Änderungen	Datum	Name		San Mateo - Central Park California	8.80500-L-S Science Fiction Tow
						A2



					AN 269792	M 1:50
					L-S 3.67499 Climbing Wall	
			Datum	Name	APE Studio, Inc. 134W 26th Street, Suite 740 New York, NY, 10001 USA	
			Gezeichnet	24.09.25	AHaerer	
			Kontrolliert			
			Norm			
Status	Änderungen	Datum	Name		San Mateo - Central Park California	3.67499-L-S Climbing Wall
						A3

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CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PLAY EQUIPMENT CUT SHEETS

NO.	REVISION	DATE
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PROJECT MANAGER
Marisa Peltier

DRAWN BY MP/YI
CHECKED BY LM

DATE
JANUARY 31 2025
~~AUGUST 2025~~

RRM PROJECT NUMBER
1652-02-RC22

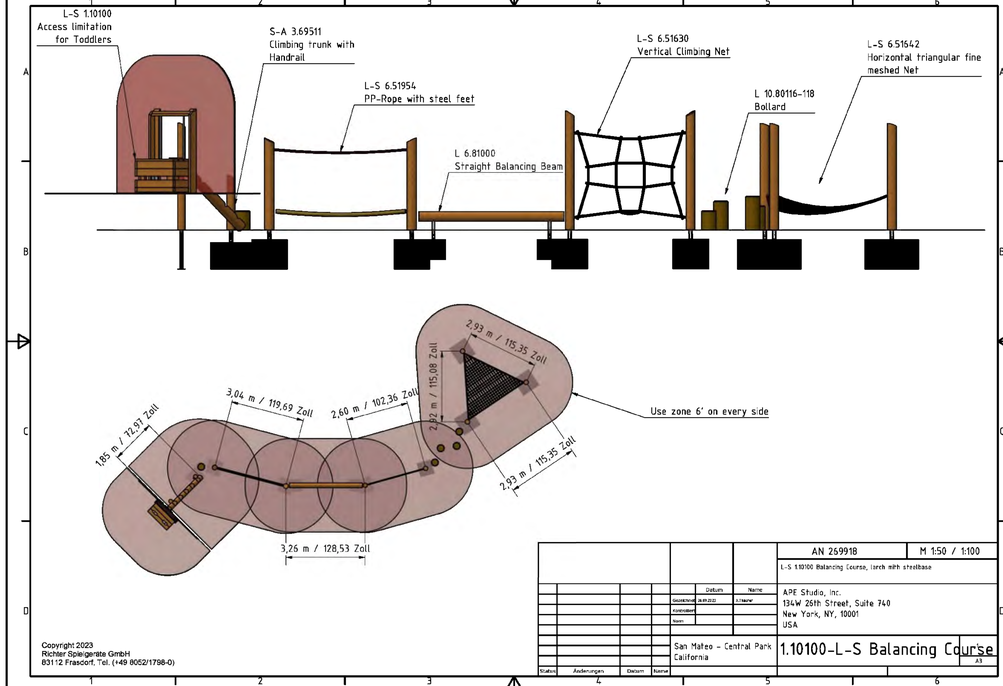
CITY OF SAN MATEO PROJECT NUMBER
610027

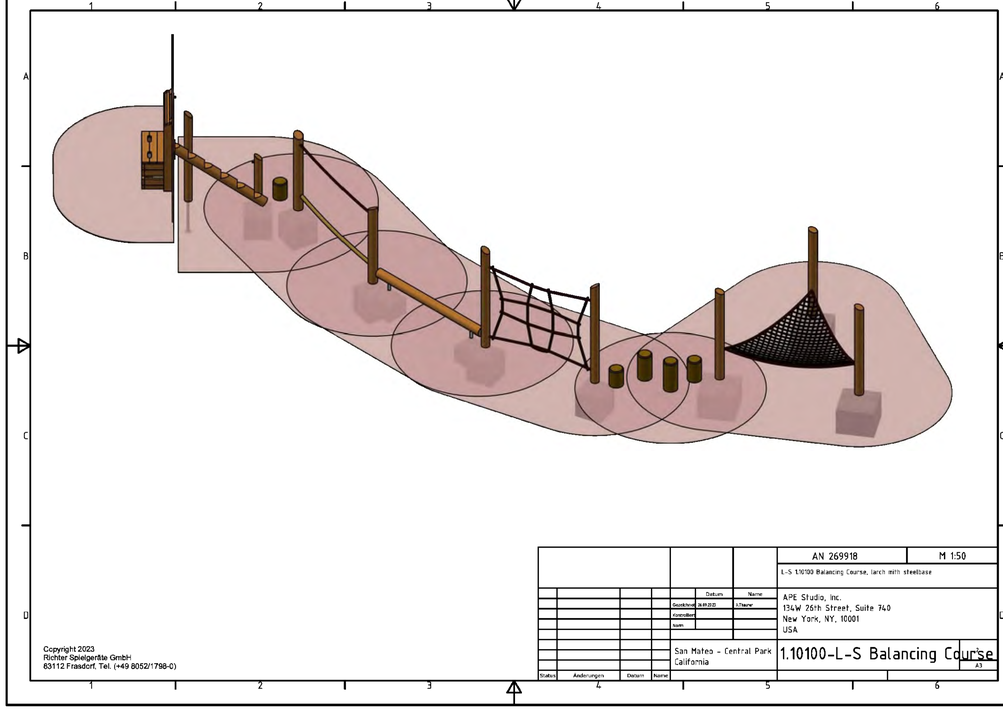
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LICENSED LANDSCAPE ARCHITECT
MARISA A. PELTIER
No. 6511
8.31.25
Renewal Date
STATE OF CALIFORNIA

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CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PLAY EQUIPMENT CUT SHEETS

NO.	REVISION	DATE
1		
2		
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7		

PROJECT MANAGER
Marisa Peltier

DRAWN BY MP/YI
CHECKED BY LM

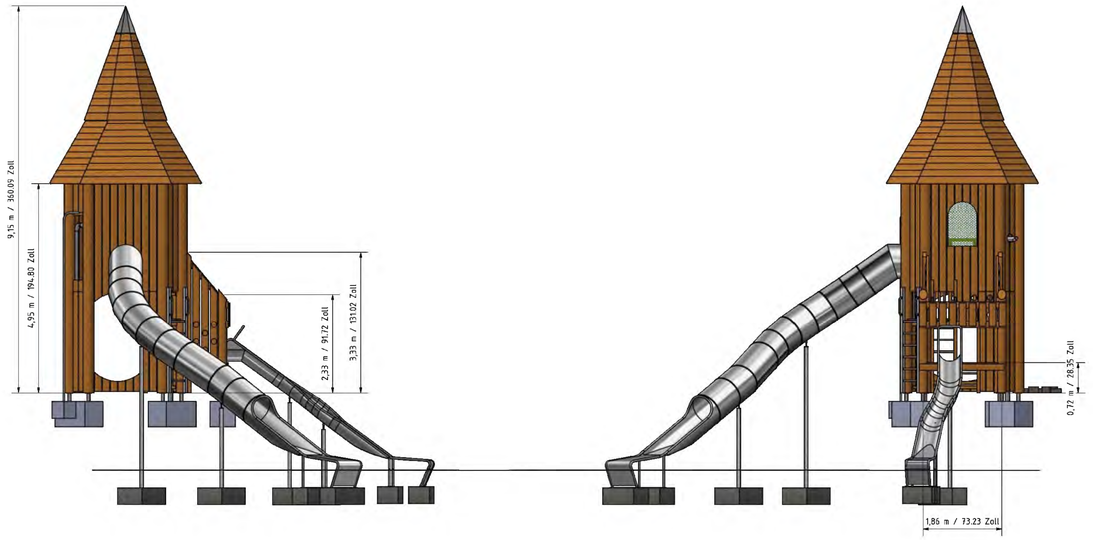
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JANUARY 31 2025
~~JANUARY 31 2025~~

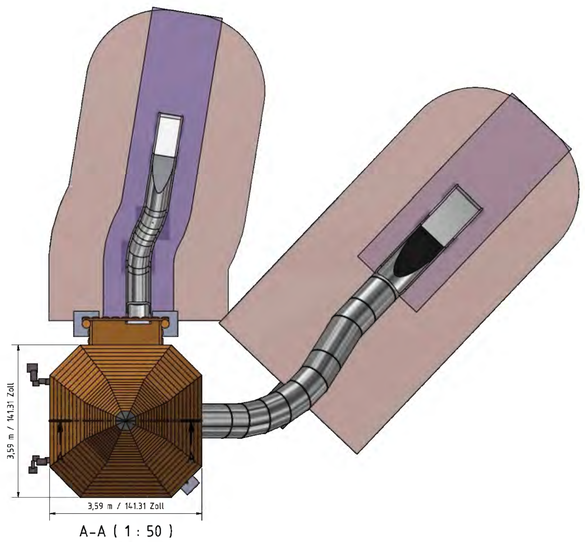
RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

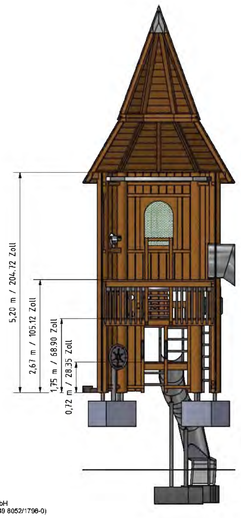
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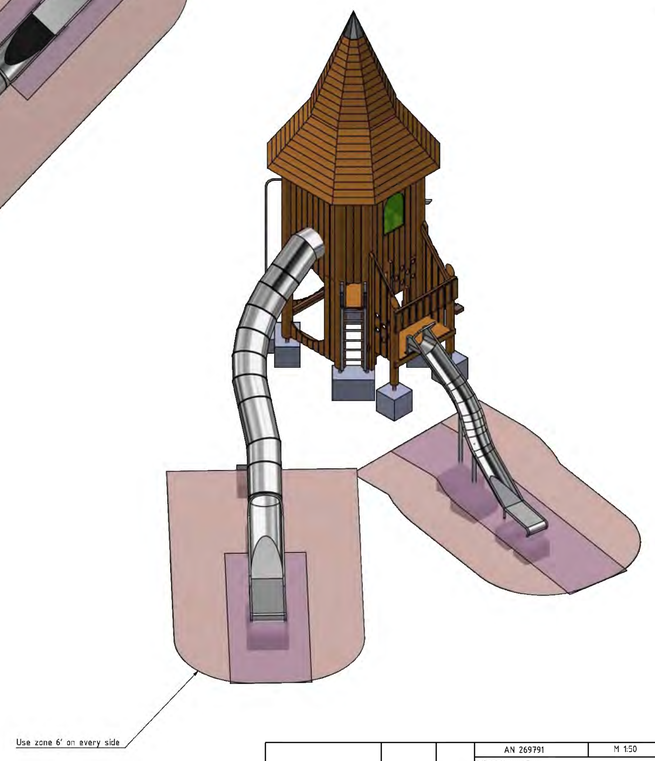
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A-A (1 : 50)





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			Datum	Name	AN 269791 M 1:50
			Gezeichnet	20.01.23	L-S 1.10100 Mound Tower
			Geändert	Arthur	APE Studio, Inc 134 W 26th Street, Suite 740 New York, NY, 10001 USA
			Norm		
					San Mateo - Central Park California
Status	Änderungen	Datum	Name		1.10100-L-S Mound Tower 1 A1

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2. REFER TO THE PROJECT GEOTECHNICAL REPORT AND ASSOCIATED RECOMMENDATIONS FOR PROPER FOOTING PREPARATION.
3. SEE STRUCTURAL CALCULATIONS AND SHEET S-201 FOR PLAY STRUCTURE FOUNDATIONS.
4. REFER TO CD103 FOR EXPLORATORY TRENCHING REQUIREMENTS FOR BOARDWALK FOOTINGS WITHIN THE TREE PROTECTION ZONES. CONDUCT EXPLORATION PRIOR TO COMMENCING FINAL SHOP DRAWINGS FOR THE BOARDWALK.

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT
MARISA A. PELTIER LIC. #5124
Marisa Peltier
5.31.24
Date
STATE OF CALIFORNIA

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CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PLAY EQUIPMENT
CUT SHEETS

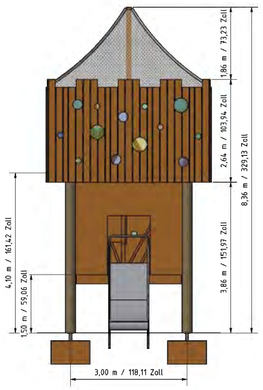
NO.	REVISION	DATE

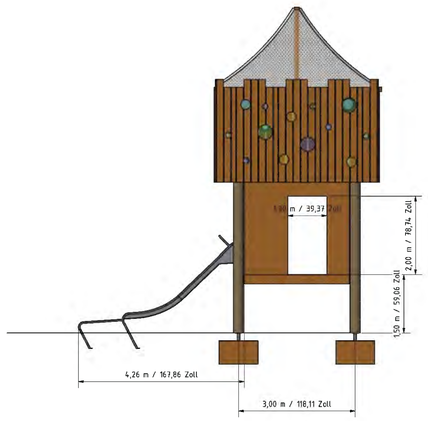
PROJECT MANAGER
Marisa Peltier
DRAWN BY MP/YI
CHECKED BY LM
DATE
JANUARY 31, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
Z110

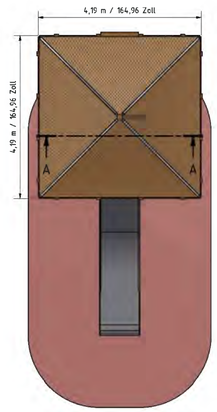
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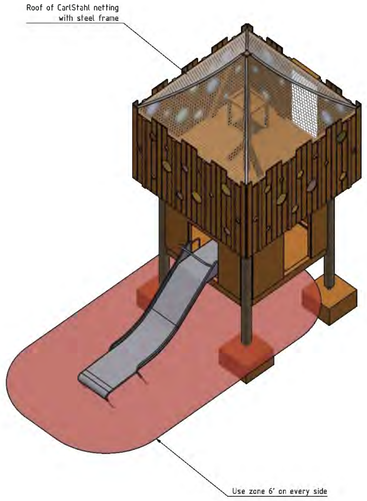
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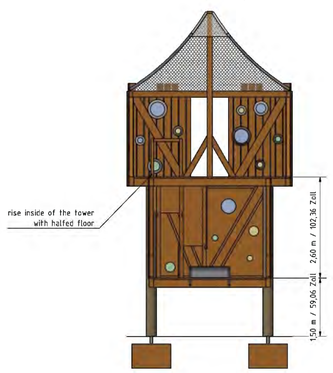








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| | | |

SYMBOL LEGEND

SYMBOL	DESCRIPTION
A A	PICNIC TABLE - 8FT PICNIC TABLE - 8FT - ADA
B B	PICNIC TABLE - 6FT PICNIC TABLE - 6FT - ADA
	PICNIC TABLE - SQUARE PICNIC TABLE - SQUARE - ADA
	PICNIC TABLE - TOT TABLE
	CHAIR - ADIRONDACK
	BENCH - BACKED

T R	WASTE/RECYCLING RECEPTACLES
BBQ	BBQ GRILL
	POLE LIGHT POLE LIGHT - EXISTING
	BIKE RACK
	PLANTER FENCE
	PERIMETER FENCE
EXTENTS OF ROOT FLARE 531	EXISTING TREE TRUNK AND CANOPY *NUMBER CORRESPONDS TO ARBORIST REPORT, SEE CD103

	CONTRACTION/CONTROL JOINT
	EXPANSION JOINT
	LIMIT OF WORK
xx xx	CHAIN LINK FENCE AT SPECIFIED TPZ. SEE CD102 AND 103.

MATERIALS LEGEND

SYMBOL	TYPE	DESCRIPTION	DETAIL
	CONCRETE PAVING VEHICULAR	COLOR: KAILUA FINISH: MEDIUM BROOM	2 LC501
	CONCRETE PAVING PEDESTRIAN	COLOR: KAILUA FINISH: MEDIUM BROOM	1 LC501
	ASPHALT PAVING	SEE SPECS	4 LC501
	ENGINEERED WOOD FIBER	COLOR: KAILUA FINISH: MEDIUM BROOM	5 LC501
	POURED-IN-PLACE RUBBER SURFACING	SEE SPECS	6 LC501
	PLAYGROUND SAND	SEE SPECS	7 LC501

4 LC504 PARK INFORMATION SIGN
EXISTING ASPHALT PATH
CONCRETE WALL AT MONUMENT 4 LC503
ENTRY OBELISK 1 LC503
ENTRY MONUMENT 3 LC503
SEE ES101 FOR LIMIT OF ELECTRICAL WORK EXTENTS TO THE NORTH
7 LC503 PLAYGROUND ACCESS RAMP
535
LIMIT OF WORK
3 LC502 5-12 YEAR OLD AGE SIGN
14 LC501 FILL SLOPE AT PAVING EDGE
531
3 LC504 PLANTER FENCE
537
VALVE BOX PER CU10
SEWER CLEAN-OUT, SEE CU101
RESTROOM BUILDING. REFER TO MANUFACTURER SHOP DRAWINGS.
PRE-FABRICATED SHADE STRUCTURE, SEE Z101
TURF AREA, SEE LP101
8 LC501 MOW CURB 9"
PATCH BACK ADJACENT ASPHALT IN KIND AS NEEDED FOR CURB INSTALLATION
11 LC501 PLAY CURB AT EWF
13 LC501 CONCRETE PAVING AT EWF
SEE LC102 FOR PLAY EQUIPMENT
2 LC505 MOUND SECTION
CONCEPTUAL CONTOURS, SEE GRADING PLAN
LIMITS OF RUBBER SLOPE BENEATH EWF
TOP OF EWF AT RUBBER SLOPE
6 LC505 CONCRETE RETAINING WALL
15 LC501 CONCRETE PAVING AT EXISTING ASPHALT
EX. TREE, TYP. 553
554
BOARDWALK SIGN 8 LC503
556
9 LC503 SENSORY EQUIPMENT LAYOUT
1 LC505 MOUND ELEVATION
3 LC505 STONE BLOCK TERRACE (TYP. BOTH SIDES)
13 LC501 CONCRETE PAVING AT EWF,TYP.
526
BOARDWALK ABOVE, SEE Z102
12 LC501 CONCRETE PAVING AT PLAY SAND
7 LC502 SAND AREA TRANSFER
5 LC505 STONE BLOCK EDGE
EXPANSION JOINT COVER AT BOARDWALK 6 LC502
PLAY CURB AT EWF 11 LC501
557
STONE BLOCK EDGE 5 LC505
ENGINEERED WOOD FIBER AT TREE (WITHIN TPZ FENCING) 13 LC502
525
SAWCUT LINE, EDGE OF EXISTING ASPHALT PAVING, TYP.
560
EX. TRAIN AREA
3 LC502 5-12 YEAR OLD AGE SIGN
PLAYGROUND ACCESS RAMP 7 LC503
2 LC504 PERIMETER FENCE
13 LC501 CONCRETE PAVING AT EWF
4 LC502 2-5 YEAR OLD AGE SIGN
SEWER CLEAN-OUT, SEE CU101
4 LC504 PARK INFORMATION SIGN
516
MOW CURB 9" 8 LC501
CONCRETE PAVING AT EXISTING ASPHALT 15 LC501
EX. POLE LIGHT, TYP.
11 LC501 PLAY CURB AT EWF
515
2 LC502 CONCRETE SEAT WALL W/ BOULDERS
512
MOW CURB 4" 8 LC501
BOARDWALK SIGN 8 LC503
12 LC502 MUSICAL EQUIPMENT INSTALLATION
SEE LC102 FOR MUSIC EQUIPMENT
6 LC503 TREASURE HUNT SIGN
1 LC504 FOX DEN MOUND
14 LC502 FOX SCULPTURE
8 LC502 SQUIRREL SCULPTURE
8 LC501 MOW CURB
11 LC501 PLAY CURB AT EWF
5 LC502 TOT TABLE MOUNTING
TURF AREA, SEE LP101
EXPANSION JOINT COVER AT BOARDWALK 6 LC502
524
EX. LAWN AREA
BEGINNING OF BOARDWALK
BOARDWALK ABOVE, SEE Z102
PLAY CURB AT PIP RUBBER 10 LC501
PERIMETER FENCE 2 LC504
HAWK SCULPTURE 9 LC502
LANDSCAPE BOULDER (TYP.) 1 LC502
SEE LC102 FOR PLAY EQUIPMENT
9 LC501 RUBBER AT LOOSE FILL
511
SEWER CLEAN-OUT, SEE CU101
PLAY CURB 11 LC501
7 LC502 SAND AREA TRANSFER
2 LC502 CONCRETE SEAT WALL W/ BOULDERS
2 LC504 PERIMETER FENCE
514
513
519
EX. TREE, TYP.
518
523
CAUTION! EX. HISTORIC WALL AND FENCE. DO NOT DAMAGE.
CAUTION! EX. HISTORIC WALL AND FENCE. DO NOT DAMAGE.
END PROPOSED FENCE 12" FROM EXISTING WALL/FENCE, TYP. TAKE CAUTION TO NOT DAMAGE ANY PART OF FENCE OR WALL WHEN INSTALLING FENCE. DO NOT DAMAGE WALL FOOTING WHEN EXCAVATING FOR FENCE FOOTING.
EX. SIDEWALK
SEE DEMOLITION AND UTILITY SHEETS FOR WORK WITHIN THIS AREA
LIMIT OF WORK
LIMIT OF WORK

NORTH
0 10 20 30 feet
1" = 10'-0"

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325 Davis St., San Leandro, CA 94577

MARISA L. PELTIER LANDSCAPE ARCHITECT — No. 6391 — R.31.25 — STATE OF CALIFORNIA

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VE SET

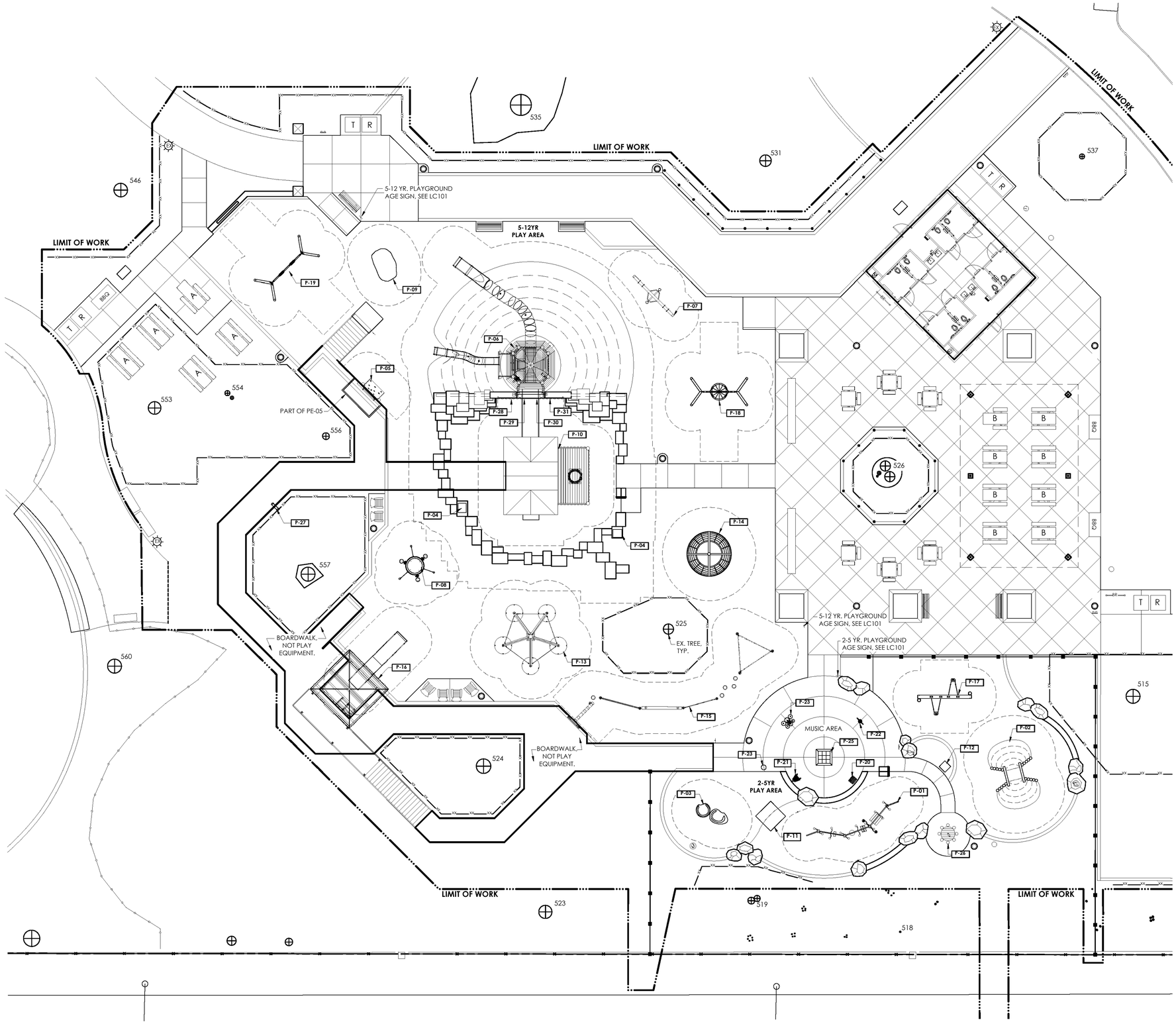
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

CONSTRUCTION PLAN

NO.	REVISION	DATE

PROJECT MANAGER Marisa Peltier
DRAWN BY MP/YI
CHECKED BY LM
DATE JANUARY 13, 2025
RRM PROJECT NUMBER 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER 610027
SHEET LC101

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PLAYGROUND EQUIPMENT SCHEDULE

CODE	DESCRIPTION	TYPE	AGE
P-01	CATERPILLAR BUILDER	SAND	2-5YR
P-02	FOX DEN MOUND	CLIMBER	2-5YR
P-03	OWL EGGS	CLIMBER	2-5YR
P-04	SINGING STONE	SENSORY	2-12YR
P-05	CLIMBING WALL	CLIMBER	5-12YR
P-06	MOUND TOWER W/ 2 SLIDES	SLIDE (2)	5-12YR
P-07	DOUBLE SEE-SAW	ROCKING	5-12YR
P-08	SWINGING TABLE	CLIMBER	5-12YR
P-09	STONE CAIRN	CLIMBER	5-12 YR
P-10	ELF HOUSE W/ VERTICAL NET	CLIMBER	5-12YR
P-11	SAND TABLE	SAND	2-12YR
P-12	JINGLE JANGLE	SENSORY	2-12YR
P-13	SCIENCE FICTION TOWN	CLIMBER	5-12YR
P-14	SPINNERROUND BASKET	SPINNER	5-12YR
P-15	OBSTACLE COURSE	CLIMBER	5-12YR
P-16	LOOKOUT TOWER W/ SLIDE	SLIDE	5-12YR
P-17	TOT SWING	SWING (2)	2-12YR
P-18	BASKET SWING	SWING	5-12YR
P-19	HIGH SWING	SWING (2)	5-12YR
P-20	PENTATONIC TEMBOS	MUSIC	ALL
P-21	HARMONY	MUSIC	ALL
P-22	BELL LYRE	MUSIC	ALL
P-23	BABEL DRUM	MUSIC	ALL
P-24	LIBERTY BELLS	MUSIC	ALL
P-25	DANCE CHIMES	MUSIC	ALL
P-26	TOT TABLE	TABLE	2-5YR
P-27	TELESCOPE	SENSORY	ALL
P-28	ROTATING DISC 1	SENSORY	ALL
P-29	ROTATING DISC 2	SENSORY	ALL
P-30	ROTATING DISC 3	SENSORY	ALL
P-31	ROTATING DISC 4	SENSORY	ALL

LEGEND

PLAY EQUIPMENT USE ZONE

PLAYGROUND NOTES

1. SEE G102 FOR ANALYSIS OF PLAY EQUIPMENT TYPES AND ACCESSIBILITY.
2. THIS PLAYGROUND SHALL COMPLY WITH THE FOLLOWING DOCUMENTS:
   - UNITED STATES CONSUMER PRODUCT SAFETY COMMISSION'S (CPSC) "PUBLIC PLAYGROUND SAFETY HANDBOOK"
   - ASTM INTERNATIONAL (ASTM) F1487-21 STANDARD CONSUMER SAFETY PERFORMANCE SPECIFICATION FOR PLAYGROUND EQUIPMENT FOR PUBLIC USE
   - THE 2010 DEPARTMENT OF JUSTICE ADA ACCESSIBILITY GUIDELINES.
3. CONTRACTOR TO VERIFY ALL USE ZONE DIMENSIONS AND ALLOWABLE OVERLAP PER MANUFACTURER AND ASTM F1487.
4. PLAY EQUIPMENT USE ZONES SHALL ONLY OCCUR OVER IMPACT ATTENUATING SURFACING. USE ZONE SHALL NOT EXTEND OUT ONTO CONCRETE OR OTHER SITE BUILT ELEMENTS. USE ZONES SHALL NOT OVERLAP EACH OTHER MORE THAN SHOWN ON THE PLAN. CONTRACTOR TO VERIFY USE ZONE EXTENTS BEFORE INSTALLATION OF PLAY EQUIPMENT.
5. THE CRITICAL FALL HEIGHT OF THE SURFACING SHALL BE GREATER THAN OR EQUAL TO THE FALL HEIGHT OF THE PLAYGROUND EQUIPMENT.
6. MUSIC AND SENSORY EQUIPMENT ARE NOT CONSIDERED PLAYGROUND EQUIPMENT AND THEREFORE DO NOT HAVE USE ZONE REQUIREMENTS.
7. LOCATE PLAY EQUIPMENT PER HORIZONTAL CONTROL PLAN.
8. SEE SPECIFICATIONS FOR PLAY EQUIPMENT MANUFACTURERS.
9. ALL PLAYGROUND EQUIPMENT SHALL INCLUDE MANUFACTURER'S LABEL TO DISPLAY RECOMMENDED AGE RANGE.

NORTH

0 10 20 30 feet

1" = 10'-0"

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LICENSED LANDSCAPE ARCHITECT MARISA A. PELTIER R.L.A. 6555 8.31.25 RENEWAL DATE STATE OF CALIFORNIA

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VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PLAYGROUND EQUIPMENT PLAN

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Marisa Peltier

DRAWN BY: MP/YI | CHECKED BY: LM

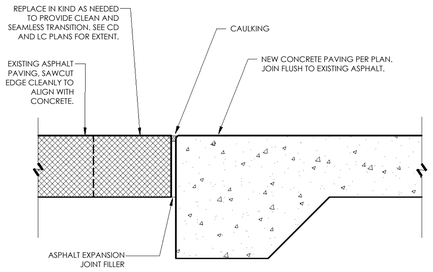
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~~AUGUST 31, 2025~~

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

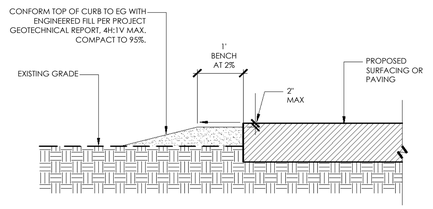
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LC102

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15 CONCRETE PAVING AT EXISTING ASPHALT

3" = 1'-0" RRM-1600-1652.01-145

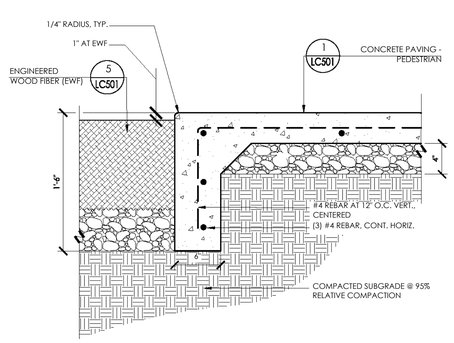


NOTE:

1. PER THE PROJECT ARBORIST REPORT, WHERE FEASIBLE, PROPOSED SURFACING AND PAVING SECTIONS ARE TO BE PLACED ATOP EXISTING GRADE SO AS NOT TO DISTURB EXISTING TREE ROOTS. THIS RESULTS IN PAVED AREAS THAT MAY HAVE AN EDGE CONDITION GREATER THAN 4" ABOVE EXISTING GRADE. IN THESE INSTANCES, PROVIDE ENGINEERED FILL SLOPES TO AVOID NON-COMPLIANT DROP-OFF CONDITION. NO DROP-OFF CONDITION GREATER THAN 2" IS PERMITTED AT PROPOSED IMPROVEMENTS.

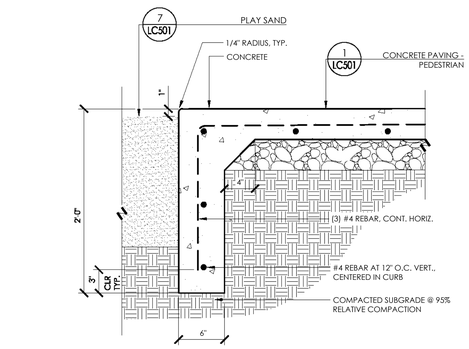
14 FILL SLOPE AT PAVING EDGE

3/4" = 1'-0" RRM-1600-1652.01-197



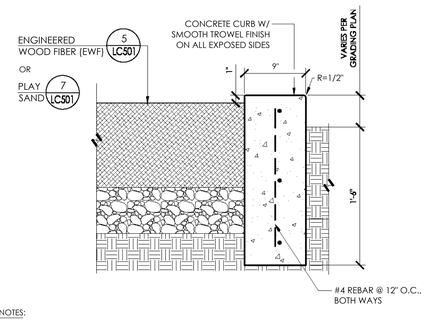
13 CONCRETE PAVING AT EWF

1 1/2" = 1'-0" RRM-1600-1652.01-20



12 CONCRETE PAVING AT PLAY SAND

1 1/2" = 1'-0" RRM-1600-1652.01-05

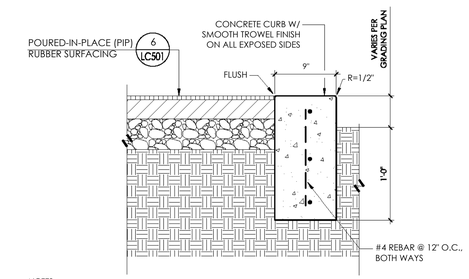


NOTES:

1. PROVIDE CONTRACTION JOINT ON CURB EVERY 10' MAX.
2. PROVIDE EXPANSION JOINT ON CURB EVERY 20' MAX.

11 PLAY CURB AT EWF

1 1/2" = 1'-0" RRM-1600-1652.01-107

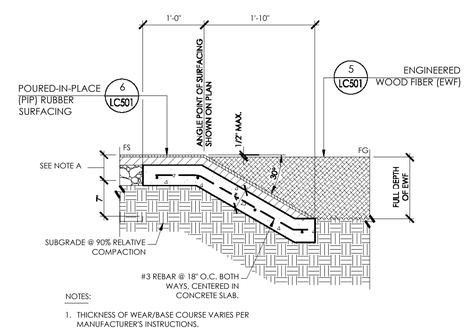


NOTES:

1. PROVIDE CONTRACTION JOINT ON CURB EVERY 10' MAX.
2. PROVIDE EXPANSION JOINT ON CURB EVERY 20' MAX.

10 PLAY CURB AT PIP RUBBER

1 1/2" = 1'-0" RRM-1600-1652.01-176

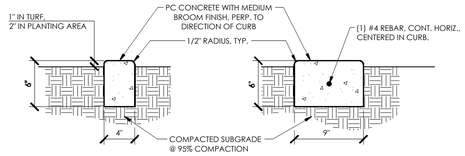


NOTES:

1. THICKNESS OF WEAR/BASE COURSE VARIES PER MANUFACTURER'S INSTRUCTIONS.
2. LIMIT OF RUBBER SURFACING SHOWN ON PLANS IS RUBBER ANGLE-POINT.

9 RUBBER AT LOOSE FILL

1" = 1'-0" RRM-1600-1652.01-201



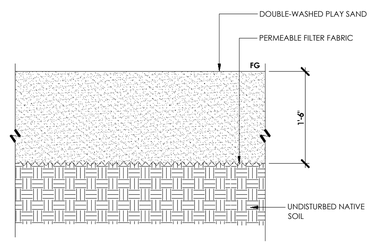
4" CONDITION 9" CONDITION

NOTES:

1. PROVIDE CONTRACTION JOINT EVERY 10' MAX.
2. PROVIDE EXPANSION JOINT EVERY 20' MAX.
3. SPACE JOINTS EVENLY BETWEEN BEGINNING AND END POINTS.

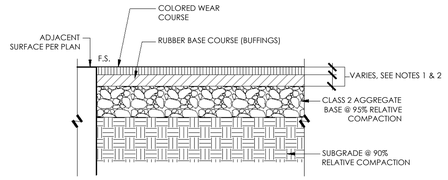
8 MOW CURB

1 1/2" = 1'-0" RRM-1600-1652.01-29



7 PLAY SAND

1" = 1'-0" RRM-1600-1652.01-106

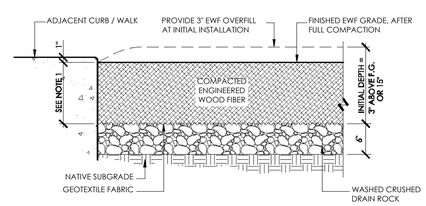


NOTES:

1. CONTRACTOR SHALL CONTACT MANUFACTURER TO DETERMINE FALL HEIGHT FOR SPECIFIED PLAY EQUIPMENT IN EACH AREA OF RUBBER SURFACING.
2. CRITICAL FALL HEIGHT OF SURFACING SHALL MEET OR EXCEED FALL HEIGHT OF EQUIPMENT. INSTALL SURFACING TO REQUIRED THICKNESS TO MEET THIS CRITICAL FALL HEIGHT.
3. CONTRACTOR SHALL SUPPLY ALL TEST DATA TO THE CITY OR THE CITY'S AUTHORIZED REPRESENTATIVE FOR REVIEW PRIOR TO INSTALLATION.
4. SEE CONSTRUCTION PLANS FOR COLOR.
5. SEE SPECIFICATIONS FOR RUBBER SURFACING PRODUCT, GRANULE SIZE AND BINDER TYPE.

6 POURED-IN-PLACE (PIP) RUBBER SURFACING

3/4" = 1'-0" RRM-1600-1652.01-09

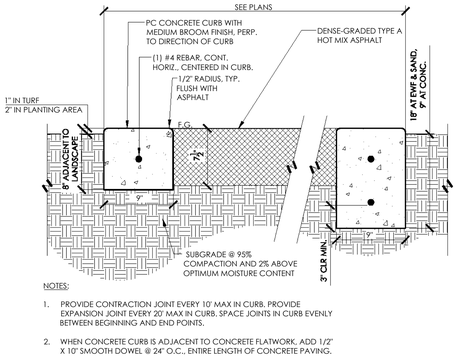


NOTES:

1. EWF MINIMUM COMPACTED DEPTH: 12" MIN. (15" MIN. UNCOMPACTED).
2. CONTRACTOR WILL INITIALLY PLACE 15" OF EWF (3" ABOVE PROPOSED EWF F.G. AS SHOWN ABOVE AND ON THE GRADING PLAN) AND COMPACT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.
3. CHANGES IN LEVEL BETWEEN ¼" HIGH MINIMUM AND ½" HIGH MAXIMUM SHALL BE BEVELED WITH A SLOPE NOT STEEPER THAN 1:2.

5 ENGINEERED WOOD FIBER (EWF)

1" = 1'-0" RRM-1600-1652.01-08



NOTES:

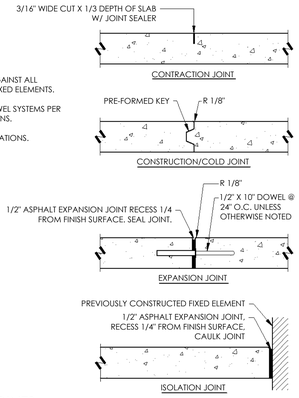
1. PROVIDE CONTRACTION JOINT EVERY 10' MAX IN CURB. PROVIDE EXPANSION JOINT EVERY 20' MAX IN CURB. SPACE JOINTS IN CURB EVENLY BETWEEN BEGINNING AND END POINTS.
2. WHEN CONCRETE CURB IS ADJACENT TO CONCRETE FLATWORK, ADD 1/2" X 10" SMOOTH DOWEL @ 24" O.C., ENTIRE LENGTH OF CONCRETE PAVING.

4 ASPHALT PAVING

1 1/2" = 1'-0" RRM-1600-1652.01-38

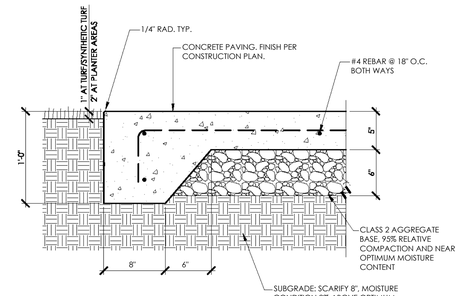
NOTES:

1. REFER TO PLANS FOR JOINT LOCATIONS/LAYOUT.
2. PROVIDE ISOLATION JOINT AGAINST ALL PREVIOUSLY CONSTRUCTED FIXED ELEMENTS.
3. INSTALL MANUFACTURED DOWEL SYSTEMS PER MANUFACTURER'S INSTRUCTIONS.
4. SEAL ALL JOINTS PER SPECIFICATIONS.



3 CONCRETE JOINTS

1 1/2" = 1'-0" RRM-0501-0510.01-19

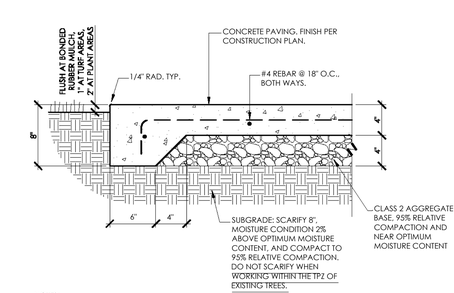


NOTES:

1. PROVIDE JOINTS AT LOCATIONS SHOWN ON PLANS. JOINTS SHALL OCCUR @ 10' O.C. MAX SPACING.

2 CONCRETE PAVING - VEHICULAR

1 1/2" = 1'-0" RRM-1600-1652.01-51



NOTES:

1. PROVIDE CONTROL JOINTS AT LOCATIONS SHOWN ON PLANS, MAX 10' SPACING.
2. INTEGRAL COLOR PER PLANS.

1 CONCRETE PAVING - PEDESTRIAN

1 1/2" = 1'-0" RRM-1600-1652.01-39

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT MARISA A. PEITTER P.O. 4924 8.31.25 RENEWAL DATE STATE OF CALIFORNIA

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City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

CONSTRUCTION DETAILS

NO.	REVISION	DATE
1		
2		
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7		

PROJECT MANAGER
Marisa Peitter

DRAWN BY MP/YJ
CHECKED BY LM

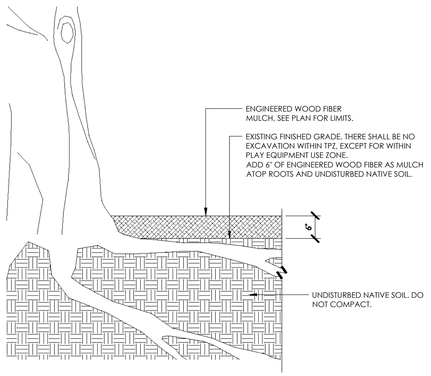
DATE
JANUARY 31, 2025

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

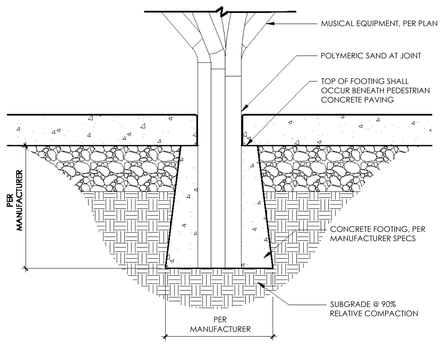
SHEET
LC501

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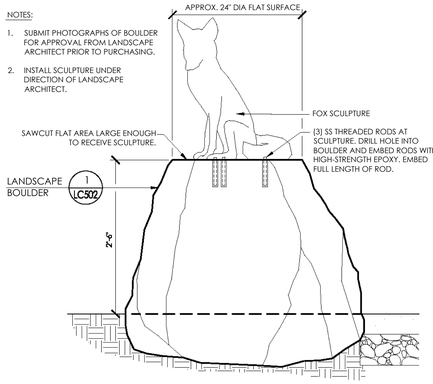
13 ENGINEERED WOOD FIBER AT TREE

3/4" = 1'-0" RRM-1600-1652.01-76



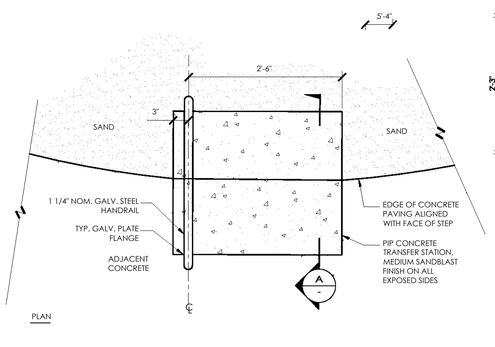
12 MUSICAL EQUIPMENT INSTALLATION

1 1/2" = 1'-0" RRM-1600-1652.01-143



11 FOX SCULPTURE

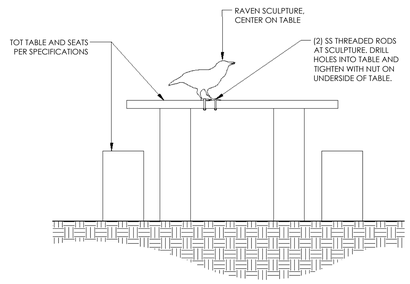
1" = 1'-0" RRM-1600-1652.01-129



7 SAND AREA TRANSFER

1" = 1'-0" RRM-1600-1652.01-21

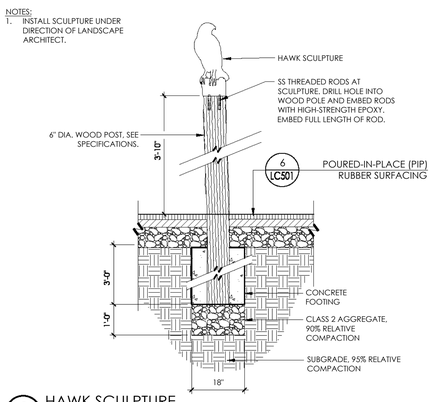
NOTES:
1. INSTALL SCULPTURE UNDER DIRECTION OF LANDSCAPE ARCHITECT.



10 RAVEN SCULPTURE

1" = 1'-0" RRM-1600-1652.01-131

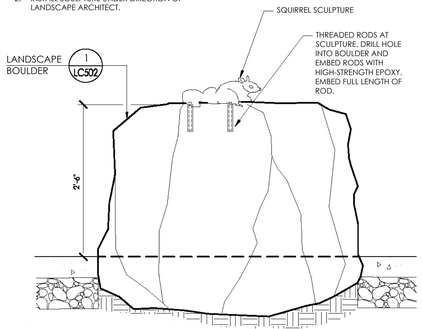
NOTES:
1. INSTALL SCULPTURE UNDER DIRECTION OF LANDSCAPE ARCHITECT.



9 HAWK SCULPTURE

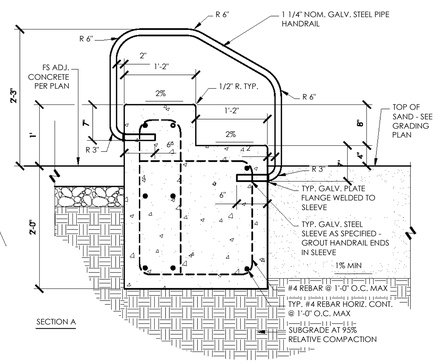
1/2" = 1'-0" RRM-1600-1652.01-132

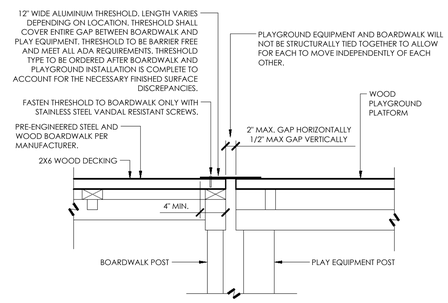
NOTES:
1. SUBMIT PHOTOGRAPHS OF BOULDER FOR APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO PURCHASING.
2. INSTALL SCULPTURE UNDER DIRECTION OF LANDSCAPE ARCHITECT.



8 SQUIRREL SCULPTURE

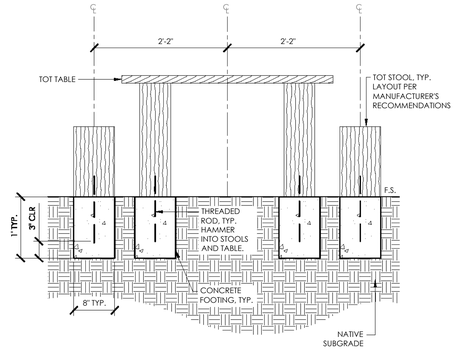
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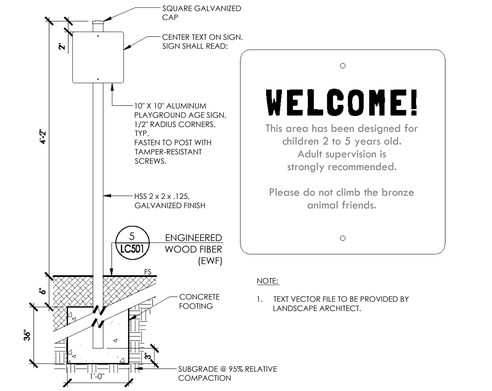
6 EXPANSION JOINT COVER AT BOARDWALK

1" = 1'-0" RRM-1600-1652.01-155



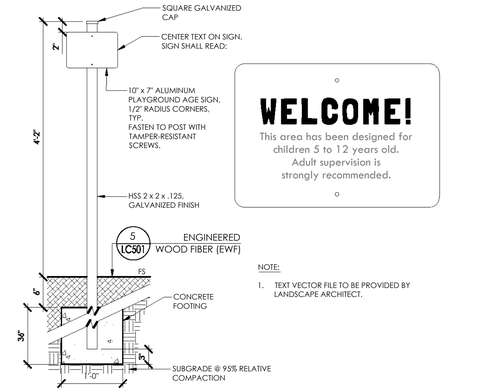
5 TOT TABLE MOUNTING

1" = 1'-0" RRM-1600-1652.01-133



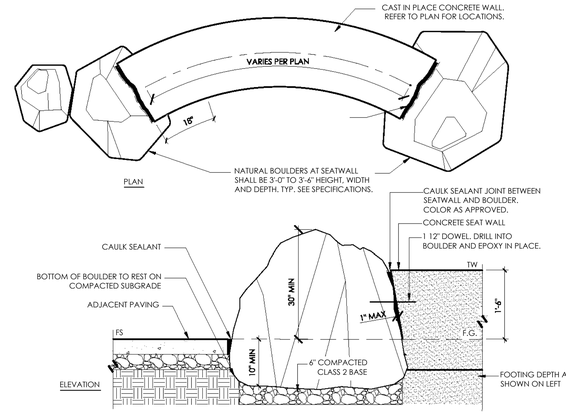
4 2-5 YEAR OLD AGE SIGN

1" = 1'-0" RRM-1600-CE-186



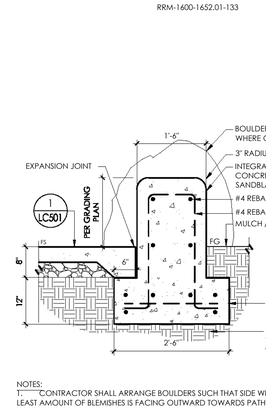
3 5-12 YEAR OLD AGE SIGN

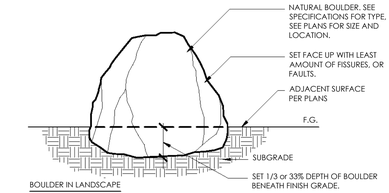
1" = 1'-0" RRM-1600-1652.01-188



2 CONCRETE SEAT WALL W/ BOULDERS

3/4" = 1'-0"



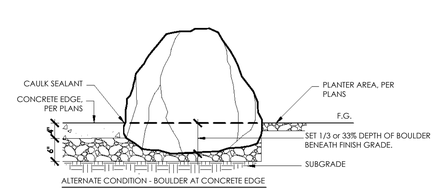


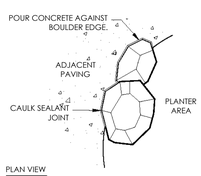
BOULDER SIZING:

PROVIDE QUANTITIES OF BOULDERS PER QUANTITIES SHOWN ON PLANS. BOULDER SIZES ARE LABELED ON PLANS PER THE SYMBOLS SHOWN BELOW.

SYMBOL	SIZE RANGE (H, L & W)
A	24" X 36" X 36"
B	36" X 48" X 48"
C	48" X 60" X 60"

NOTES:
1. SUBMIT PHOTOGRAPHS OF BOULDERS FOR APPROVAL FROM OWNER PRIOR TO PURCHASING.
2. OWNER SHALL APPROVE FINAL PLACEMENT IN THE FIELD.





1 LANDSCAPE BOULDER

3/4" = 1'-0" RRM-1600-1652.01-119

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325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT MARISA A. PEITTER P.O. BOX 2427 MARISA PEITTER 8.31.25 RENEWAL DATE STATE OF CALIFORNIA

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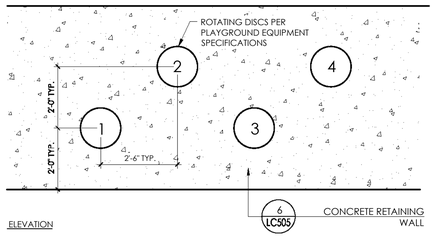
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

CONSTRUCTION DETAILS

NO.	REVISION	DATE
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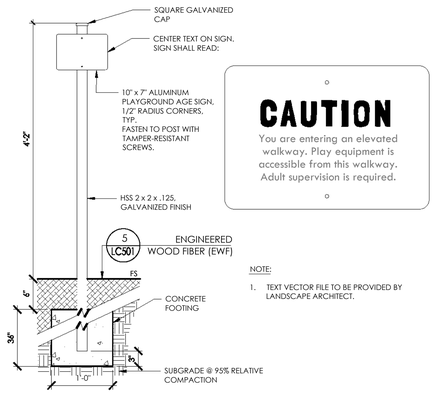
PROJECT MANAGER
Marisa Peitter
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JANUARY 13, 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
LC502

X:\1600\1652\02\Central Park Playground\Admin Comm\Final Design\Landscape Architecture\PLAYGROUND\Construction Sheet Files\LC5-1652-02-RC22.dwg, LC502, Feb 06, 2025 - 10:07am, mpeitter



9 SENSORY EQUIPMENT LAYOUT

1/2" = 1'-0" RRM-1600-1652.01-102



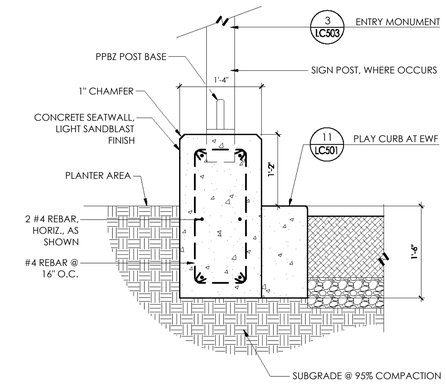
8 BOARDWALK SIGN

1" = 1'-0" RRM-1600-1652.01-198



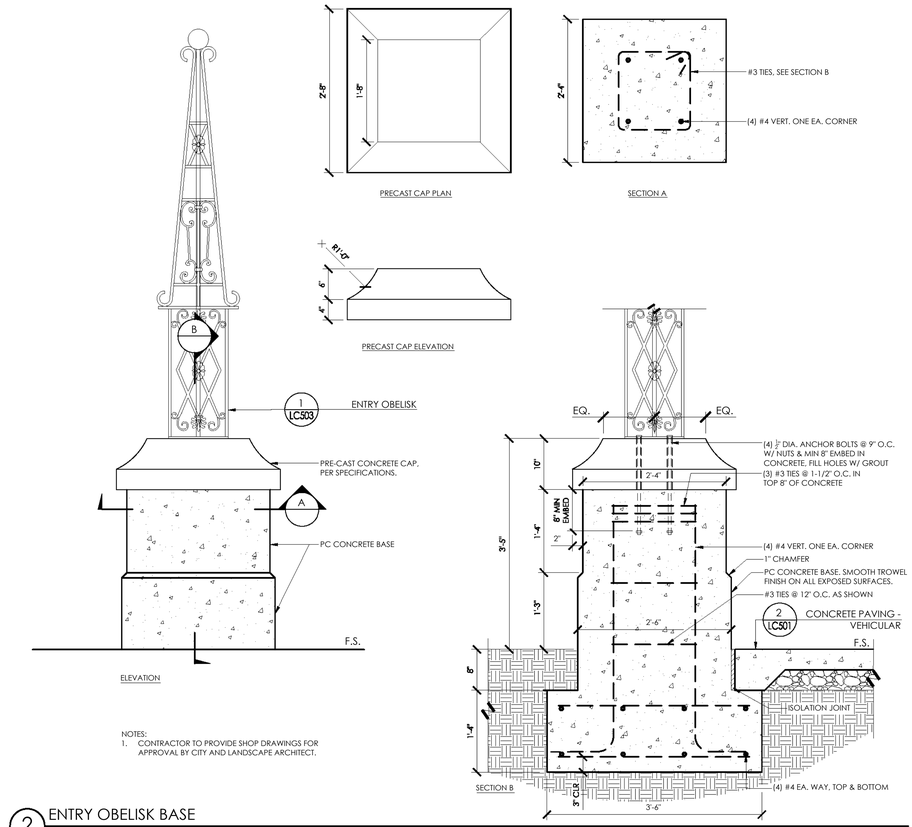
5 METAL SIGN LETTER LAYOUT

1 1/2" = 1'-0" RRM-1600-1652.01-124



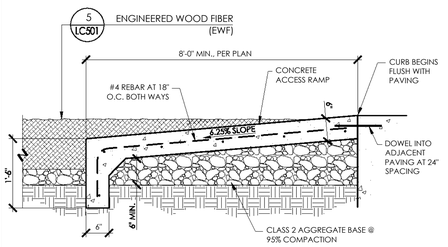
4 CONCRETE WALL AT MONUMENT

1" = 1'-0" RRM-1600-1652.01-123



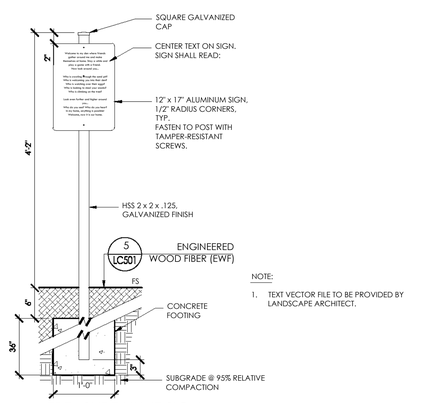
2 ENTRY OBELISK BASE

1" = 1'-0" RRM-1600-1652.01-142



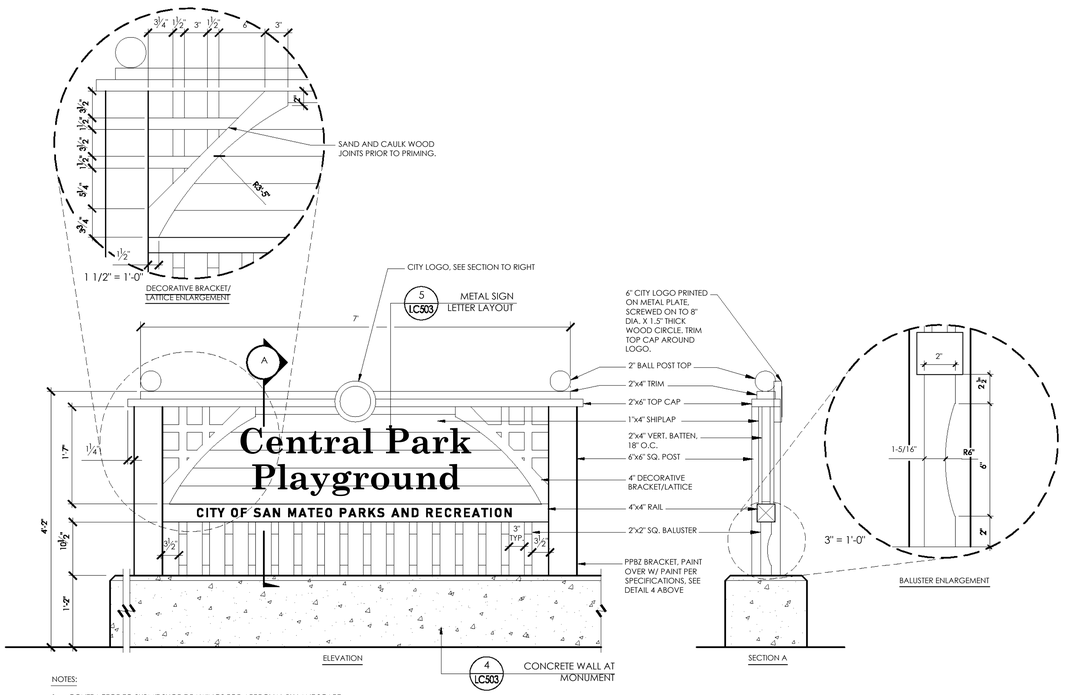
7 PLAYGROUND ACCESS RAMP

3/4" = 1'-0" RRM-1600-1652.01-200



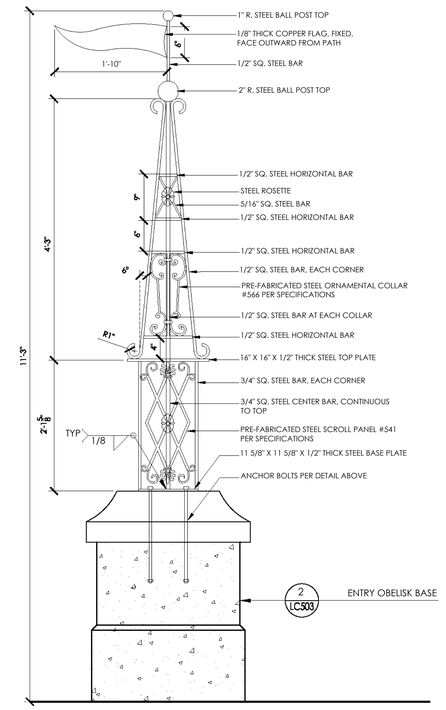
6 TREASURE HUNT SIGN

1" = 1'-0" RRM-1600-1652.01-199



3 ENTRY MONUMENT

1" = 1'-0" RRM-1600-1652.01-14



1 ENTRY OBELISK

1" = 1'-0" RRM-1600-1652.01-125

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LICENSED LANDSCAPE ARCHITECT MARISA L. PEITTIER No. 6425 6.30.25 Renewal Date STATE OF CALIFORNIA

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VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

CONSTRUCTION DETAILS

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Marisa Peitier

DRAWN BY MP/YI
CHECKED BY LM

DATE
JANUARY 31, 2025

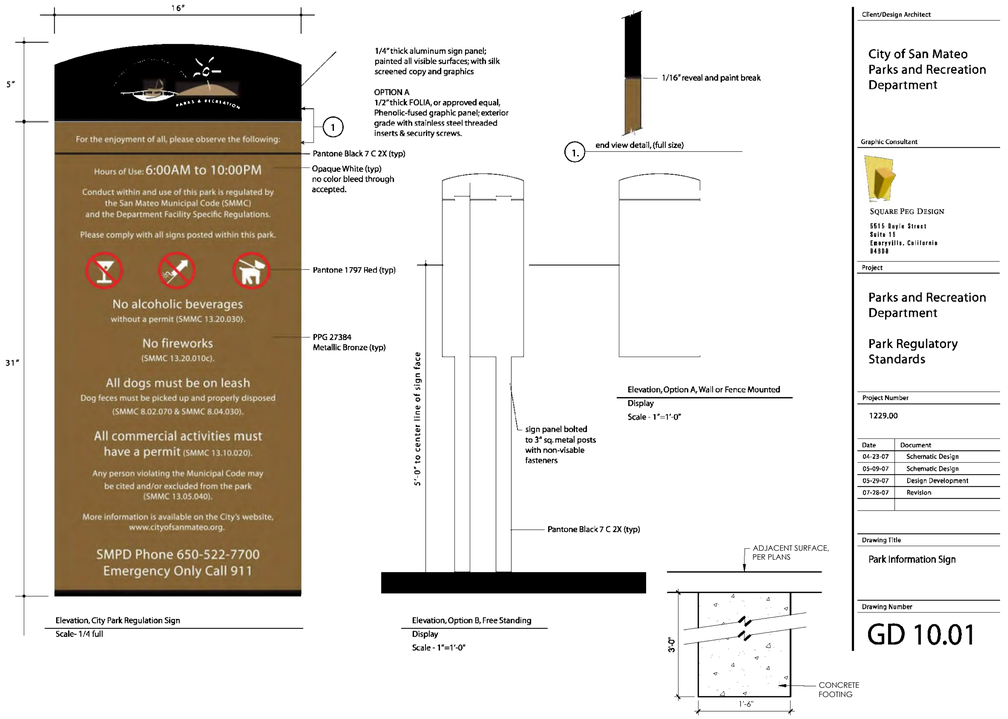
RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
LC503

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NOTES:
1. GRAPHIC FILE PROVIDED BY OWNER. GRAPHICS TO INCLUDE UPDATED LOGO AND 'NO SMOKING' TEXT.



Client/Design Architect

City of San Mateo
Parks and Recreation Department

Graphic Consultant

SQUARE PEG DESIGN
5515 Doyle Street
Suite 15
Emeryville, California
94608

Project

Parks and Recreation Department

Park Regulatory Standards

Project Number

1229.00

Date	Document
04-23-07	Schematic Design
05-09-07	Schematic Design
05-29-07	Design Development
07-28-07	Revision

Drawing Title

Park Information Sign

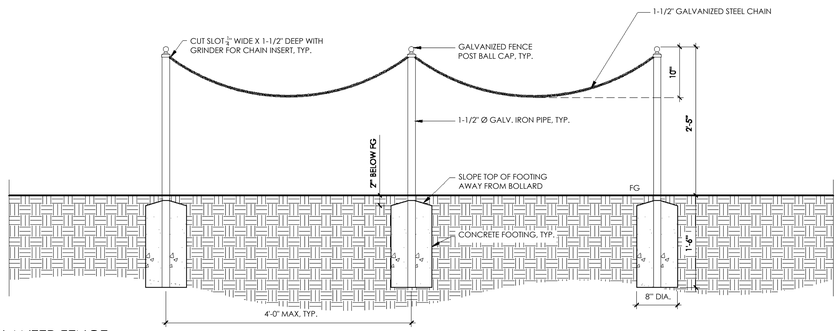
Drawing Number

GD 10.01

4 PARK INFORMATION SIGN
1" = 1'-0"

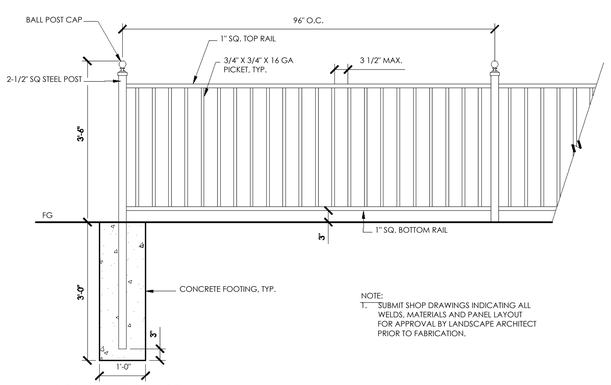
RRM-1600-1652.01-144

NOTES:
1. POST AND CAP TO BE PAINTED BLACK.



3 PLANTER FENCE
1" = 1'-0"

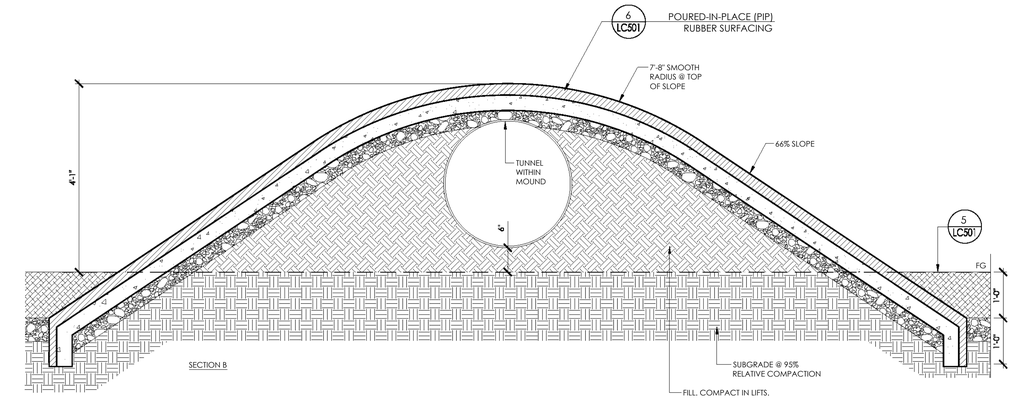
RRM-1600-1652.01-110

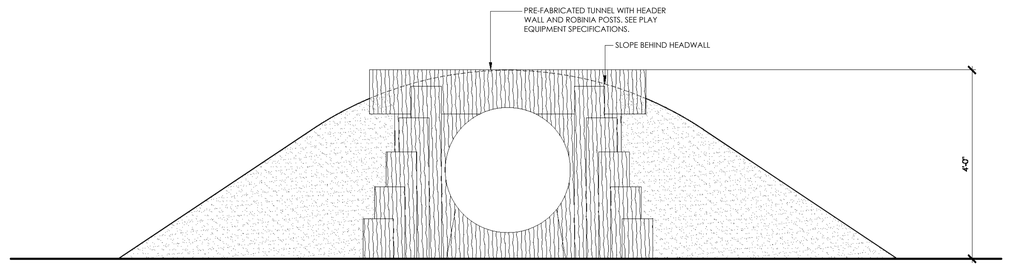


NOTE:
1. SUBMIT SHOP DRAWINGS INDICATING ALL WELDS, MATERIALS AND PANEL LAYOUT FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO FABRICATION.

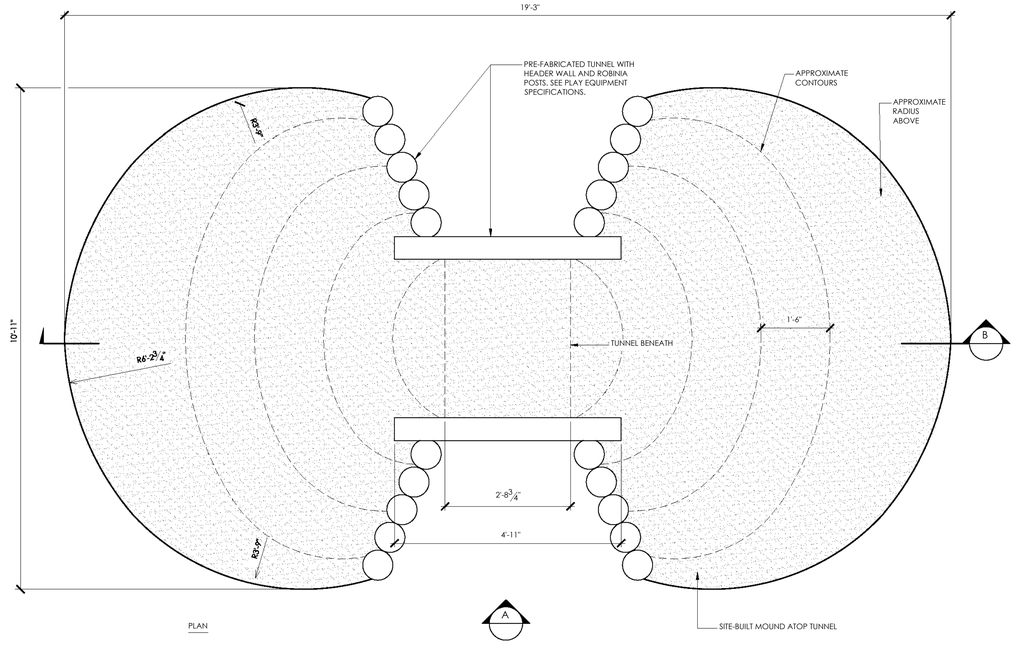
2 PERIMETER FENCE
3/4" = 1'-0"

RRM-1600-1652.01-105





ELEVATION A



PLAN

1 FOX DEN MOUND
3/4" = 1'-0"

RRM-1600-1652.01-136

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LICENSED LANDSCAPE ARCHITECT
MARISA A. PEITIER R.L.A. #6432
8.31.25
RENEWAL DATE
STATE OF CALIFORNIA

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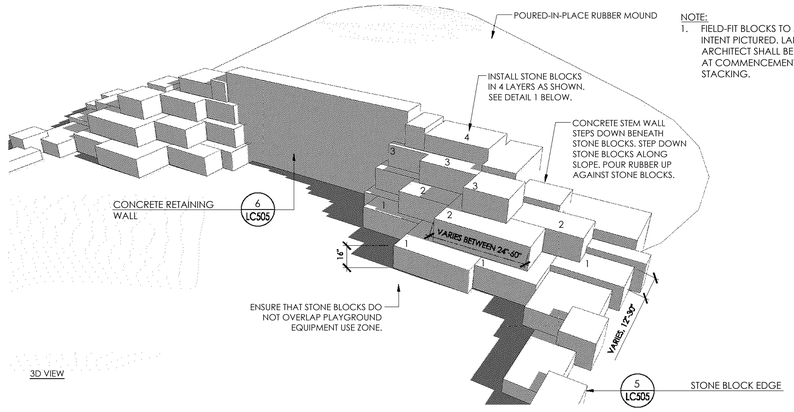
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

CONSTRUCTION DETAILS

NO.	REVISION	DATE
1		
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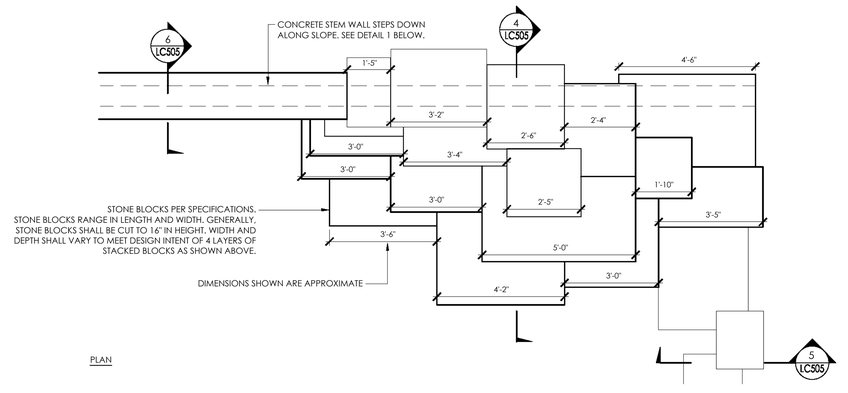
PROJECT MANAGER
Marisa Peitier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE
JANUARY 31, 2025
~~AUGUST 20, 2024~~
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
LC504

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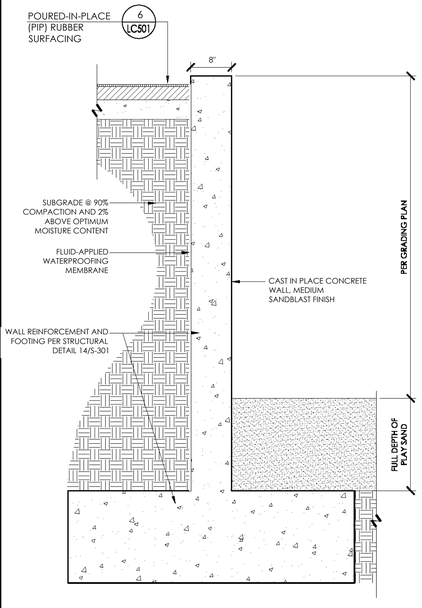


3D VIEW

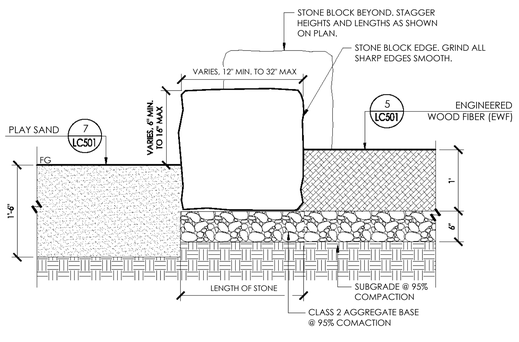
NOTE:
1. FIELD-FIT BLOCKS TO MEET INTENT PICTURED. LANDSCAPE ARCHITECT SHALL BE PRESENT AT COMMENCEMENT OF STACKING.



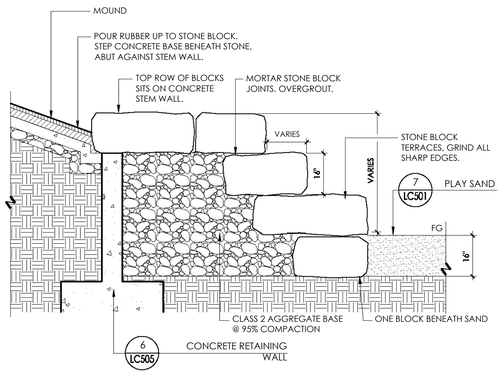
PLAN



6 CONCRETE RETAINING WALL
1" = 1'-0" RRM-1600-1652.01-48

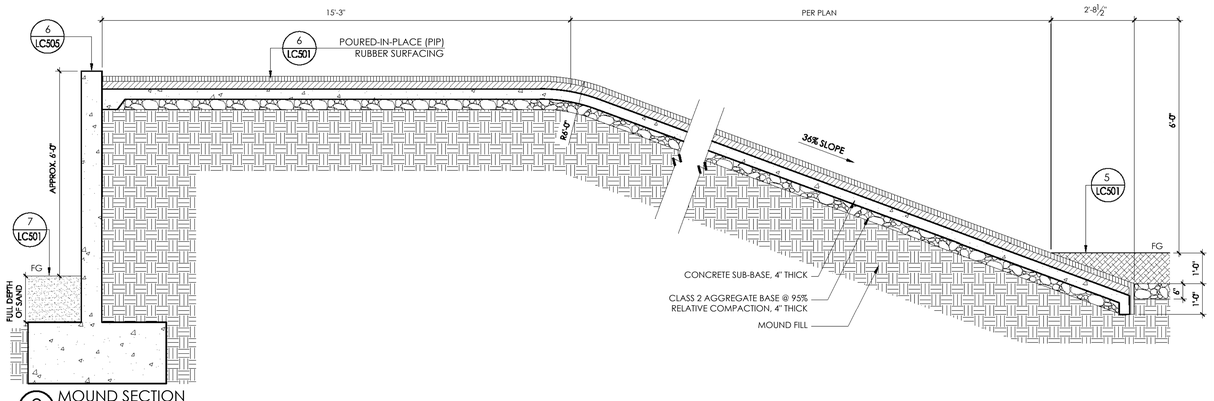


5 STONE BLOCK EDGE
1" = 1'-0" RRM-1600-1652.01-158

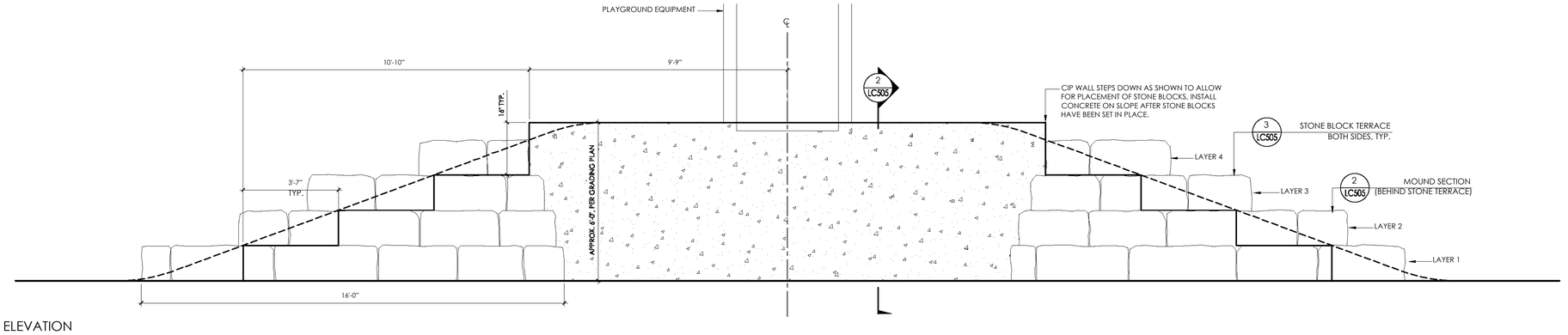


4 STONE BLOCK TERRACE SECTION
1/2" = 1'-0" RRM-1600-1652.01-179

3 STONE BLOCK TERRACE
1/2" = 1'-0" RRM-1600-1652.01-160



2 MOUND SECTION
1/2" = 1'-0" RRM-1600-1652.01-173



1 MOUND ELEVATION
1/2" = 1'-0" RRM-1600-1652.01-162

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LICENSED LANDSCAPE ARCHITECT MARISA A. PELTIER R.L.A. 6432 8.31.25 RENEWAL DATE STATE OF CALIFORNIA

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50 E 5TH AVE, SAN MATEO

CONSTRUCTION DETAILS

NO.	REVISION	DATE

PROJECT MANAGER
Marisa Peltier
DRAWN BY MP/YI
CHECKED BY LM
DATE
JANUARY 31 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
LC505

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SYMBOLS

DETAIL REFERENCE BUBBLE WITH LEADER

DETAIL REFERENCE BUBBLE

FULL HEIGHT SECTION INDICATOR

ELEVATION OF WALL OR FRAME

NORTH ARROW

BOT OF EL = (-X'-Y") — TOP/BOTTOM OF ELEVATIONS

SLOPE

WELDED WIRE FABRIC (WWF LAYER)

STEPPED SURFACE: FLOOR DEPRESSION

SLOPED SURFACE

S — S — STEPPED FOOTING

SB — SB — BOTTOM STEPPED FOOTING

XX-Y — INDICATES SHEAR WALL TYPE AND LENGTH, PER SHEAR WALL SCHEDULE

INDICATES SPAN AND DIRECTION OF PREFABRICATED ROOF TRUSS (BY OTHERS)

XX — INDICATES SPAN AND DIRECTION OF ROOF RAFTER OR FLOOR JOIST WITH WEB STIFFENER

XX — INDICATES SPAN AND DIRECTION OF ROOF RAFTER OR FLOOR JOIST

INDICATES EXTENTS OF FRAMING OR OTHER STRUCTURAL ELEMENT

INDICATES HEADER @ OPENING PER HEADER SCHEDULE

EARTH LAYER

INDICATES SAND OR GROUT

INDICATES GRAVEL

STEEL IN CROSS SECTION

INDICATES BEARING WALL

SHADED AREA INDICATES CALIFORNIA FRAMING

SHADED AREA INDICATES FOOTPRINT OF FLOOR ABOVE

STEEL HSS TUBE COLUMN

STEEL HSS OR PIPE COLUMN

WIDE FLANGE STEEL COLUMN

WOOD POST

INDICATES TOP PLATE SPLICE NAILING PER SCHEDULE

INDICATES SHEAR WALL STRAP / HOLDOWN TYPE PER SCHEDULE

F1 — INDICATES PAD FOOTING TYPE PER SCHEDULE

C1 — INDICATES FOOTING TYPE PER SCHEDULE

ANGLE BRACE

(2L) — DOUBLE ANGLE BRACE

DRAG STRUT CONNECTION

FULL HEIGHT STIFFENER CONNECTION

MOMENT CONNECTION

MEMBER SPLICE

(+3") — TOP OF STEEL ± ELEVATION

[X] — NUMBER OF EVENLY SPACED SHEAR STUDS

[X-Y-Z] — SPECIAL STUD SPACING SEE TYPICAL STEEL DETAILS

<3/4> — BEAM CAMBER AT MID-SPAN

WALL TYPES

INDICATES PLYWOOD SIDE FOR SHEARWALL

INDICATES BEARING WOOD WALL BELOW

INDICATES BEARING WOOD WALL ABOVE

INDICATES NON-BEARING WOOD WALL BELOW

INDICATES NON-BEARING WOOD WALL ABOVE

INDICATES EXISTING BEARING WOOD WALL

INDICATES EXISTING NON-BEARING WOOD WALL

INDICATES BEARING CMU WALL BELOW

INDICATES BEARING CMU WALL ABOVE

INDICATES NON-BEARING CMU WALL BELOW

INDICATES NON-BEARING CMU WALL ABOVE

INDICATES EXISTING BEARING CMU WALL

INDICATES EXISTING NON-BEARING CMU WALL

INDICATES BEARING CONCRETE WALL BELOW

INDICATES BEARING CONCRETE WALL ABOVE

INDICATES NON-BEARING CONCRETE WALL BELOW

INDICATES NON-BEARING CONCRETE WALL ABOVE

INDICATES EXISTING BEARING CONCRETE WALL

INDICATES EXISTING NON-BEARING CONCRETE WALL

SHEET INDEX

SEE LANDSCAPE ARCHITECTURE DRAWINGS FOR SHEET INDEX

ABBREVIATIONS

A & B	ABOVE AND BELOW
AB	ANCHOR BOLT
ABV	ABOVE
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	ENGINEERED WOOD ASSOCIATION (FORMERLY THE AMERICAN PLYWOOD ASSOCIATION)
APPVD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL; ARCHITECT
AWPA	AMERICAN WOOD PRESERVERS ASSOCIATION
AWS	AMERICAN WELDING SOCIETY
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
BEL	BELOW
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT OR B	BOTTOM
BRC	BRACE
BRG	BEARING
BTWN	BETWEEN
CANT	CANTILEVER
CAM OR C	CAMBER
CC	CENTER TO CENTER
CG	CENTER OF GRAVITY
CIP	CAST-IN-PLACE
CJ	CONSTRUCTION JOINT; CONTROL JOINT
CL	CENTER LINE
CLR	CLEARANCE; CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPRESSION
CONC	CONCRETE
CONN	CONNECTION; CONNECT
CONSTR	CONSTRUCTION
CONT	CONTINUE; CONTINUOUS
CONTR	CONTRACTOR
CJP	COMPLETE JOINT PENETRATION WELD
CTR	CENTER
CTSK	COUNTERSINK; COUNTERSUNK

CU FT	CUBIC FOOT
d	PENNY (NAIL OR BAR DIA)
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DF	DOUGLAS FIR/LARCH
DIA OR Ø	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DN	DOWN
DO	DO OVER
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDMENT
EN	EDGE NAIL
ENGR	ENGINEER
EQ	EQUAL OR EQUIVALENT
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST or (E)	EXISTING
EXT	EXTERIOR
FDN	FOUNDATION
FIN	FINISH
FJ	FLOOR JOIST
FLG	FLANGE
FLR	FLOOR
FN	FIELD NAIL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONARY
FOS	FACE OF STUD
FOW	FACE OF WALL
FRMG	FRAMING
FT	FOOT; FEET
FTA	FLOOR TIE ABOVE
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GLB	GLUED LAMINATED BEAM
GR	GRADE
GRND	GROUND

H or HORIZ	HORIZONTAL
HDR	HEADER
HGR	HANGER
HP	HIGH POINT
HSH	HORIZONTALLY SLOTTED HOLES
HT	HEIGHT
ID	INSIDE DIAMETER
IF	INSIDE FACE
I-JST	I-JOIST
IN	INCH
INCL	INCLUDE
INFO	INFORMATION
INSP	INSPECTION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIPS
KS	KING STUD
KP	KING POST
KSI	KIPS PER SQUARE INCH
LB(S) OR #	POUND(S)
LF	LINEAL FOOT
LIN	LINEAL; LINEAR
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LSH	LONG SLOTTED HOLES
LSL	LAMINATED STRAND LUMBER
LT WT	LIGHTWEIGHT
LVL	LEVEL OR LAMINATED VENEER LUMBER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM; MINUTE
MISC	MISCELLANEOUS
(N)	NEW
N	NORTH
NO or #	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL

OSB	ORIENTED STRAND BOARD
PA	POST ABOVE
PARA OR //	PARALLEL
PC	PRECAST; PIECE
PERP	PERPENDICULAR
PI	PLYWOOD INDEX
PL OR PL.	PLATE
PL	PROPERTY LINE
PLF	PONDS PER LINEAL FOOT
PLCS	PLACES
PLY	PLYWOOD
PROP	PROPERTY
PT	PRESSURE TREATED
PW	PLATE WASHER
PJP	PARTIAL JOINT PENETRATION WELD
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PVMT	PAVEMENT
#	POUND; NUMBER
REF	REFERENCE
REINF	REINFORCE; REINFORCING
REQD	REQUIRED
RF	ROOF
RR	ROOF RAFTER
Ø	ROUND; DIAMETER
SCHED	SCHEDULE
SECT	SECTION
SEP	SEPARATION
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SOG	SLAB ON GRADE
SN	SHEAR NAIL
SPCG	SPACING
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
SSL	SHORT SLOTTED HOLES
STD	STANDARD
STGR	STAGGER
STIFF	STIFFENERS
STIRR	STIRRUP
STL	STEEL
STRUCT	STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL

TB	TIE BEAM
T & B	TOP AND BOTTOM
T & G	TONGUE & GROOVE
TO	TOP OF
TOC	TOP OF CURB; TOP OF CONCRETE
TOF	TOP OF FOOTING
TEMP	TEMPERATURE; TEMPORARY
THRU	THROUGH
THK	THICKNESS/THICK
THR	THREADED
TOP or T	TOP
TOS	TOP OF STEEL/TOP OF SLAB
TOW	TOP OF WALL
TS	TRIMMER STUD
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UT	ULTRA-SONIC TEST
VERT	VERTICAL
VSH	VERTICAL SLOTTED HOLES
W/	WITH
W/O	WITHOUT
WO	WHERE OCCURS
WD	WOOD
WP	WORK POINT; WATERPROOF
WWF	WELDED WIRE FABRIC

STRUCTURAL STEEL SHAPES

W	W SHAPE
C	AMERICAN STD CHANNEL SHAPE
MC	MISC CHANNEL SHAPE
L	ANGLE SHAPE
WT, ST, MT	STRUCT TEE SHAPE
PIPE	STANDARD PIPE SHAPE
PIPE-X	EXTRA STRONG PIPE SHAPE
PIPE-XX	DBL EXTRA STRONG PIPE SHAPE
HSS	HOLLOW STRUCTURAL SECTION

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rrmdesign.com | (805) 543-1794
3765 S. Higuera, San Luis Obispo, CA 93401

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SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

STRUCTURAL SHEET INDEX, ABBREVIATIONS & SYMBOLS

NO.	REVISION	DATE
1	PLAN CHECK REVISION 1	01/10/24
2	PLAN CHECK REVISION 2	05/10/24

PROJECT MANAGER: M. DOREMUS
DRAWN BY: J. LONG — CHECKED BY: C. CECIL
DATE: JANUARY 13, 2023 / JUNE 24, 2024
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TESTING CRITERIA FOR POST-INSTALLED ANCHORS IN CONCRETE / MASONRY

1. CONDUCT TESTING OF POST- INSTALLED ANCHORS PER SECTION 1901.3.4 OF THE CODE.
2. WHERE THE MANUFACTURER'S INSTALLATION INSTRUCTIONS OR APPLICABLE ICC-ES EVALUATION SERVICES REPORT CALL FOR THE APPLICATION OF AN INSTALLATION TORQUE, THE SPECIFIED TORQUE SHALL BE APPLIED WITH A CALIBRATED TORQUE WRENCH. THE SPECIFIED INSTALLATION TORQUE SHALL NOT BE EXCEEDED.
3. THE SPECIAL INSPECTOR SHALL BE ON THE JOBSITE DURING ANCHOR INSTALLATION AS REQUIRED PER CHAPTER 17 OF THE CODE, UNLESS OTHERWISE NOTED IN ICC-ES ESR, TO VERIFY ANCHOR, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, HOLE DIMENSIONS, ANCHOR SPACING, EDGE DISTANCES, SLAB THICKNESS, ANCHOR EMBEDMENT, AND INSTALLATION TORQUE.
4. TEST LOAD: REQUIRED TEST LOADS SHALL BE DETERMINED BY ONE OF THE FOLLOWING METHODS:
   A. TWICE THE MAXIMUM ALLOWABLE TENSION LOAD OR ONE AND A QUARTER (1 1/4) TIMES THE MAXIMUM DESIGN STRENGTH PROVIDED BY THE ICC REPORT OR DETERMINED PER ACI 318. THE TENSION TEST LOAD NEED NOT TO EXCEED 80 PERCENT OF THE NOMINAL YIELD STRENGTH OF THE ANCHOR (0.8 As Fy). SEE STRUCTURAL DETAILS FOR DESIGN-BASED TENSION TEST LOADS FOR ADHESIVE ANCHORS.
   B. THE MANUFACTURER'S RECOMMENDED INSTALLATION TORQUE AS APPROVED BY THE ICC REPORT.
5. TENSION OR TORQUE TESTING OF POST-INSTALLED ANCHORS SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE IOR AND ENFORCEMENT AGENCY.
6. THE SPECIAL INSPECTOR SHALL SELECT ANCHORS FOR TESTING AT RANDOM.
7. TEST FREQUENCY:

APPLICATION	QUANTITY
STRUCTURAL	100% OF BOLTS
NON-STRUCTURAL [SUCH AS EQUIPMENT ANCHORAGE]	50%: ALTERNATE BOLTS IN A GROUP [TEST AT LEAST HALF OF THE ANCHORS IN GROUP]
SILL PLATE BOLTING	10% OF BOLTS

EXCEPTIONS:

   A. UNDERCUT ANCHORS THAT ALLOW VISUAL CONFIRMATION OF FULL SET SHALL NOT REQUIRE TESTING.
   B. WHERE THE FACTORED DESIGN TENSION ON ANCHORS IS LESS THAN 100 LBS AND THOSE ANCHORS ARE CLEARLY NOTED ON THE APPROVED CONSTRUCTION DOCUMENTS.
   C. WHERE ADHESIVE ANCHOR SYSTEMS ARE USED TO INSTALL REINFORCING DOWEL BARS IN HARDENED CONCRETE, ONLY 25 PERCENT OF THE DOWELS SHALL BE TESTED IF ALL OF THE FOLLOWING CONDITIONS ARE MET:
      - THE DOWELS ARE USED EXCLUSIVELY TO TRANSMIT SHEAR FORCES ACROSS JOINTS BETWEEN EXISTING AND NEW CONCRETE.
      - THE NUMBER OF DOWELS IN ANY ONE MEMBER EQUALS OR EXCEEDS 12.
      - THE DOWELS ARE UNIFORMLY DISTRIBUTED ACROSS SEISMIC FORCE RESISTING MEMBERS (SUCH AS SHEAR WALLS, COLLECTORS, AND DIAPHRAGMS).
   D. TESTING OF SHEAR DOWELS ACROSS COLD JOINTS IN SLAB ON GRADE, WHERE THE SLAB IS NOT PART OF THE LATERAL FORCE-RESISTING SYSTEM SHALL NOT BE REQUIRED.
   E. TESTING IS NOT REQUIRED FOR POWER ACTUATED FASTENERS USED TO ATTACH TRACKS OF INTERIOR NON-SHEAR WALL PARTITIONS FOR SHEAR ONLY, WHERE THERE ARE AT LEAST THREE FASTENERS PER SEGMENT OF TRACK.
8. TEST METHODS: TEST LOADS MAY BE APPLIED BY ANY METHOD THAT WILL EFFECTIVELY TRANSMIT A MEASURABLE TENSION LOAD TO THE ANCHOR. ACCEPTABLE METHODS INCLUDE:
   A. **USE OF HYDRAULIC JACK, WHEREBY EITHER UNCONFINED OR CONFINED TESTING SHALL BE ACCEPTABLE;**
   B. USE OF CALIBRATED SPRING LOADED DEVICES; OR
   C. USE OF A CALIBRATED TORQUE WRENCH FOR TORQUE-CONTROLLED EXPANSION ANCHORS.
9. TEST ACCEPTANCE CRITERIA: ACCEPTANCE CRITERIA FOR POST-INSTALLED ANCHORS SHALL BE BASED ON THE ICC REPORT OR MANUFACTURER'S WRITTEN INSTRUCTION AS ACCEPTABLE TO OSHPD. FIELD TESTS SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:
   A. HYDRAULIC RAM METHOD: ANCHORS TESTED WITH A HYDRAULIC JACK OR SPRING LOADED DEVICES SHALL MAINTAIN THE TEST LOAD FOR A MINIMUM OF 15 SECONDS AND SHALL EXHIBIT NO DISCERNABLE MOVEMENT DURING THE TENSION TEST. E.G. AS EVIDENCED BY LOOSENING OF THE WASHER UNDER THE NUT. SCREW ANCHORS MAY BE LOOSENED A MAXIMUM ONE FULL TURN TO FACILITATE THE POSITIONING OF A TENSION TEST COLLAR.
   B. TORQUE WRENCH METHOD: ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH MUST ATTAIN THE SPECIFIED TORQUE WITHIN HALF (1/2) TURN OF THE NUT.

   EXCEPTIONS:

      - WEDGE OR SLEEVE TYPE: ONE-QUARTER (1/4) TURN OF THE NUT FOR A 3/8 INCH ANCHOR ONLY.
      - THREADED TYPE: ONE-QUARTER (1/4) TURN OF THE SCREW AFTER INITIAL SEATING OF THE SCREW HEAD.
10. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE, INSTALLED BY THE SAME TRADE, AND NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME INITIAL TEST FREQUENCY.
11. REQUIRED TORQUE TEST LOADS SHALL BE EQUAL TO THE MANUFACTURER'S RECOMMENDED INSTALLATION TORQUE PROVIDED IN THE ICC-ESR FOR THE SPECIFIC ANCHOR. TEST TORQUE VALUES ARE SUMMARIZED IN THE TABLE BELOW:

LOCATION IN STRUCTURE	SIMPSON INSTALLATION TORQUE [FT-LBS] CONCRETE SUBSTRATE	
INCHES	SIMPSON STRONG-BOLT2 (ICC ES ESR 3037)	SIMPSON TITEN HD (ICC ES ESR-2713)
3/8	4	24
1/2	30	50
5/8	60	65
3/4	90	100
7/8	150	150

POST-INSTALLED ANCHORS IN CONCRETE / MASONRY

1. POST-INSTALLED ANCHOR CAPACITIES IN CONCRETE SHALL BE DETERMINED PER SECTION 1901.3 OF THE CODE AND ACI 318-19 CHAPTER 17 USING STRENGTH DESIGN.
2. POST INSTALLED ANCHORS IN CONCRETE AND MASONRY SHALL BE PREQUALIFIED FOR SEISMIC APPLICATIONS IN ACCORDANCE WITH THE FOLLOWING INSTALLATION OF POST-INSTALLED ANCHORS SHALL BE IN ACCORDANCE WITH THE LISTED APPLICABLE ICC EVALUATION REPORT.

SUBSTRATE MATERIAL	ANCHOR TYPE	ANCHOR PRODUCT	ICC EVALUATION REPORT	ACCEPTANCE CRITERIA
CONCRETE	EXPANSION ANCHORS	SIMPSON STRONGBOLT 2	ICC ESR-3037	AC193
CMU	EXPANSION ANCHORS	SIMPSON STRONGBOLT 2	IAPMO ES ER 240	ACI01 OR AC106
CONCRETE	SCREW ANCHOR	SIMPSON TITEN HD	ICC ESR-2713	AC193
CMU	SCREW ANCHOR	SIMPSON TITEN HD	ICC ESR-1056	AC106
CONCRETE	ADHESIVE ANCHORS	SIMPSON SET-XP 3CG	ICC ESR-4057	AC193
CMU	ADHESIVE ANCHOR	SIMPSON SET-XP	IAPMO ES ER 265	AC58
CONCRETE	POWER ACTUATED FASTENER**	SIMPSON PDPAW	ICC ESR-2138	AC70

**LIMITATIONS OF USE OF POWER ACTUATED FASTENERS:
PER SECTION 13.4.5 OF ASCE 7-16 POWER ACTUATED FASTENERS IN CONCRETE OR STEEL SHALL NOT BE USED FOR SUSTAINED TENSION LOADS OR FOR BRACE APPLICATIONS IN SEISMIC UNLESS APPROVED FOR SEISMIC LOADING. POWER ACTUATED FASTENERS IN MASONRY SHALL NOT BE PERMITTED UNLESS APPROVED FOR SEISMIC LOADING.

EXCEPTION: POWER ACTUATED FASTENERS IN CONCRETE USED FOR SUPPORT OF ACOUSTICAL TILE OR LAY-IN PANEL SUSPENDED CEILING APPLICATIONS AND DISTRIBUTED SYSTEMS WHERE THE SERVICE LOAD ON ANY INDIVIDUAL FASTENER DOES NOT EXCEED 90 LB.

3. EXPANSION ANCHOR EMBEDMENTS IN THE DRAWINGS ARE MINIMUM "EFFECTIVE EMBEDMENTS" (hef) AS SHOWN IN THE ICC REPORT CORRESPONDING TO THE ANCHOR.
4. LOCATE ALL EXISTING REINFORCEMENT BY NON-DESTRUCTIVE MEANS (X-RAY, PACOMETER, GPR, ETC.) PRIOR TO DRILLING OR INSTALLING POST-INSTALLED ANCHORS. COORDINATE POST-INSTALLED ANCHOR LOCATIONS WITH LOCATIONS OF EXISTING REINFORCEMENT. DO NOT CUT OR DAMAGE EXISTING REINFORCEMENT.
5. ALL POST-INSTALLED ANCHORS USED IN DRY INTERIOR CONDITIONS SHALL BE CARBON STEEL, U.N.O
6. ALL POST-INSTALLED ANCHORS USED AT EXTERIOR CONDITIONS, EXPOSED TO THE ELEMENTS, OR USED IN A DAMP ENVIRONMENT (I.E. KITCHENS) SHALL BE STAINLESS STEEL, U.N.O.
7. WHERE POST-INSTALLED MECHANICAL ANCHORS ARE USED FOR NON-VIBRATION ISOLATED MECHANICAL EQUIPMENT RATED OVER 10 HP, THEY SHALL BE QUALIFIED IN ACCORDANCE WITH ACI 355.2.
8. IF THE CONCRETE CRACKS DURING THE INSTALLATION OF AN ANCHOR, THE ANCHOR SHALL BE REMOVED OR ABANDONED. FOR ABANDONED ANCHORS AND ABANDONED ANCHOR HOLES:
   A. FILL ALL EMPTY ABANDONED ANCHOR HOLES WITH A DRY-PACK MORTAR.
   B. FOR ABANDONED EXPANSION ANCHORS WHICH CANNOT BE REMOVED WITHOUT DAMAGING THE SUBSTRATE, CUT/BURN OFF THE END OF THE BOLT FLUSH WITH THE FACE OF CONCRETE/MASONRY AND THEN DRIVE ABANDONED ANCHOR TO BOTTOM OF HOLE. FILL REMAINDER OF HOLE WITH A DRY-PACK MORTAR.
   C. FOR ABANDONED ADHESIVE OR UNDERCUT ANCHORS WHICH CANNOT BE REMOVED WITHOUT DAMAGING THE SUBSTRATE, BURN OFF THE END OF THE BOLT/ROD 1" BELOW THE SURFACE OF CONCRETE/MASONRY AND FILL REMAINDER OF HOLE WITH A DRY-PACK MORTAR.
   D. ABANDONED ANCHOR HOLES (WHETHER FILLED WITH DRY-PACK OR CONTAINING ABANDONED ANCHORS) MAY NOT BE LOCATED ANY CLOSER THAN 3x DIAMETER CENTER-TO-CENTER TO ANY ANCHOR IN SERVICE. ANCHORS NOT MEETING THIS MINIMUM SPACING MAY HAVE REDUCED CAPACITY AND SHALL BE REVIEWED WITH THE SEOR.

REINFORCING STEEL

1. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE CODE AND WITH THE PROVISIONS OF ACI 318-19. ASTM A706, GRADE 60 U.N.O. ASTM A615 GR 60 STEEL MAY BE SUBSTITUTED FOR ASTM A706 GR60 STEEL PER ACI 318-19 SECTION 20.2.2.5 PROVIDED THE FOLLOWING CONDITIONS ARE MET:
   A. THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI.
   B. THE RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO THE ACTUAL YIELD STRENGTH IS NOT LESS THAN 1.25.
   C. WHERE REINFORCEMENT COMPLYING WITH ASTM A615 IS TO BE WELDED, CHEMICAL TESTS SHALL BE PERFORMED TO DETERMINE WELDABILITY IN ACCORDANCE WITH SECTION 26.6.4 OF ACI 318-19.
2. BARS SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
3. WELDED WIRE REINFORCEMENT (WWR), PLAIN OR DEFORMED, SHALL CONFORM TO ASTM A185. WELDED DEFORMED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A1064. ALL WWR FOR STAIR PANS AND ALL WWR FOR CONCRETE FILL ON METAL DECK TO BE PLAIN WWR. PROVIDE LAPS PER ACI 318-19 SECTION 25.5.3 OR 25.5.4 MINIMUM. WWR SHALL BE SUPPORTED ON APPROVED CHAIRS.
4. REINFORCING BAR LAP SPLICES SHALL BE MADE AS INDICATED ON THE DRAWINGS. LAP ALL HORIZONTAL BARS AT CORNERS AND INTERSECTIONS. STAGGER ALL SPLICES UNLESS NOTED OTHERWISE ON PLANS.
   A. MINIMUM LAP SPLICE LENGTH FOR REINFORCING STEEL BARS IN CONCRETE SHALL BE PER ACI 318-19 SECTION 25.5.2 AND THE REINFORCING SCHEDULE ON THE DRAWINGS.
   B. MINIMUM LAP SPLICE LENGTH FOR REINFORCING STEEL BARS IN MASONRY SHALL BE PER TMS 0402-16 SECTION 6.1.6.1.1 AND THE REINFORCING SCHEDULE ON THE DRAWINGS.
5. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE. ALL REINFORCING CONFORMING TO DIFFERING ASTM SPECIFICATIONS AND/OR OF DIFFERING GRADES SHALL BE CLEARLY MARKED TO DIFFERENTIATE THEM FROM OTHER REINFORCING STEEL IF CONCURRENTLY PRESENT ON SITE.
6. WHERE WELDING OF REINFORCING IS APPROVED BY THE STRUCTURAL ENGINEER, IT SHALL BE DONE BY AWS CERTIFIED WELDERS USING E80XX OR APPROVED ELECTRODES. WELDING PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF STRUCTURAL WELDING CODE- REINFORCING STEEL", AWS-D1.4-15. REINFORCING BARS TO BE WELDED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706.
7. REINFORCING STEEL SHALL BE ACCURATELY PLACED AND ADEQUATELY SUPPORTED BEFORE THE CONCRETE IS PLACED AND SHALL BE SECURED AGAINST DISPLACEMENT DURING CONSTRUCTION WITHIN PERMITTED TOLERANCES. ADEQUATE SUPPORTS ARE ALSO NECESSARY TO KEEP THE REINFORCING STEEL AT THE PROPER DISTANCE FROM THE FORMS. USE WIRE BAR SUPPORTS, PRECAST CONCRETE SUPPORTS, SPACERS, BOLSTERS, REINFORCEMENT OR OTHER MEANS OF SUPPORT PER THE "CRSI MANUAL OF STANDARD PRACTICE", LATEST EDITION.
8. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE "CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.
9. WHEN REQ'D, INSPECTION OF CONCRETE SHALL INCLUDE INSPECTION DURING INSTALLATION OF REINFORCING STEEL. INSPECTION SHALL BE SCHEDULED SO THAT PLACEMENT OF REINFORCING STEEL, CONDUIT, SLEEVES, AND EMBEDDED ITEMS MAY BE CORRECTED PRIOR TO PLACEMENT OF OVERLYING GRIDS OR REINFORCING STEEL.
10. CONCRETE PROTECTION FOR REINFORCEMENT

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT IN CAST-IN-PLACE CONCRETE (NON-PRESTRESSED):		MINIMUM COVER, IN.
A.	CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3
B.	CONCRETE EXPOSED TO EARTH OR WEATHER: NO.6 THROUGH NO. 18 BAR NO.5 BAR, W31 OR D31 WIRE & SMALLER	2 1½"

11. MECHANICAL BAR SPLICE CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318-19 SECTION 25.5.7 USE OF MECHANICAL CONNECTIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. SPLICES MUST BE TESTED AS INDICATED IN THE CONCRETE REINFORCEMENT SPECIFICATION. ACCEPTABLE PRODUCTS INCLUDE:

    LENTON STANDARD COUPLERS (IAPMO-ES 0129)
    LENTON FORM SAVERS, TYPE SA (IAPMO-ES 0129)
    LENTON WELDABLE HALF COUPLERS (IAPMO-ES 0129)
    LENTON LOCK COUPLERS PER (IAPMO-ES 0129)

    NOTE THAT REBAR ATTACHED TO PLATE USING LENTON WELDABLE HALF COUPLERS SHALL BE ASTM A706 PER IAPMO-ES 0129.

    ALL MECHANICAL BAR SPLICE CONNECTIONS IN SPECIAL STRUCTURAL WALLS, SPECIAL MOMENT FRAMES AND CONCRETE DIAPHRAGMS SHALL BE TYPE 2 CONFORMING TO THE REQUIREMENTS OF ACI 318-19 SECTION 18.2.7 & 18.12.7.4

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED BY AN APPROVED AND LICENSED FABRICATOR IN ACCORDANCE WITH AISC 360-16 AND CHAPTER 22 OF THE CODE.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE ASTM DESIGNATION AS INDICATED BELOW (UNO):

STRUCTURAL STEEL MATERIALS	
SHAPE	ASTM/GRADE
STD PIPE	A53, GR B
PLATES (INCLUDING BASE PLATES)	A572
ANGLES, CHANNELS	A36
HSS	A500 GRB
COMMON/MACHINE BOLTS	A307 GR A

3. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STEEL FOR REVIEW AND APPROVAL BY THE AOR AND SEOR PRIOR TO FABRICATION.
4. BOLT HOLES USED IN STEEL SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, EXCEPT AS NOTED.
5. ALL STRUCTURAL STEEL SURFACES THAT ARE ENCASED IN CONCRETE, MASONRY, SPRAY ON FIREPROOFING, OR ARE ENCASED BY BUILDING FINISH, SHALL BE LEFT UNPAINTED, EXCEPT AS REQUIRED FOR DESIGNATION OF PROTECTED ZONES.
6. PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED TO REINFORCED CONCRETE/MASONRY USING POST-INSTALLED ANCHORS, CONTRACTOR SHALL LOCATE ALL REINFORCEMENT AND CONSTRUCTABILITY OF ANCHOR LOCATIONS. SHOULD CONFLICTS WITH REINFORCEMENT OCCUR, CONTRACTOR SHALL COORDINATE AND SUBMIT ALTERNATE ANCHOR LOCATIONS AND REVISED STEEL FABRICATIONS TO SEOR FOR REVIEW AND APPROVAL. DO NOT CUT OR DAMAGE EXISTING REINFORCEMENT.
7. REFER TO LANDSCAPE ARCHITECTURAL DRAWINGS FOR STEEL FINISH. ALL STRUCTURAL STEEL AND MISCELLANEOUS METAL EXPOSED TO THE WEATHER SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. PROTECT FIELD WELDS EXPOSED TO THE WEATHER VIA PRIME AND PAINT OR BRUSH / COLD GALVANIZING. REFER TO ARCH DRAWINGS FOR STEEL FINISH.
8. ALL ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL CONFORM TO REQUIREMENTS OF AISC 303-22.
9. ALL WELDING IS TO BE DONE BY CERTIFIED WELDERS USING E70XX ELECTRODES (UNO). ALL WELDS SHALL BE IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS AND THE CODE FOR WELDING IN BUILDING CONSTRUCTION (AWS D1.1-15) OF THE AMERICAN WELDING SOCIETY. SEE SPECIAL INSPECTIONS SECTION FOR WELDING INSPECTION REQUIREMENTS. ALL WELDING FOR ELEMENTS OF THE LATERAL FORCE RESISTING SYSTEM SHALL PER AWS D1.8-16.
10. THE CONTRACTOR SHALL SUBMIT ALL WELDING PROCEDURE SPECIFICATIONS FOR REVIEW AND APPROVAL BY SEOR. THE SUBMITTED WELDING PROCEDURES SHALL INCLUDE ONLY THOSE PROCEDURES RELEVANT TO THIS PROJECT. ALL WELDED JOINTS SHALL BE PREQUALIFIED PER AWS OR BE QUALIFIED BY TEST PER AWS. A PROCEDURE QUALIFICATION RECORD (PQR) SHALL BE INCLUDED WITH THE WPS IF THE WELDING PROCEDURE OR JOINT IS QUALIFIED BY TESTING. THE ELECTRODE MANUFACTURER AND PRODUCT/TRADE NAME SHALL BE IDENTIFIED IN THE WPS IN ADDITION TO THE AWS ELECTRODE CLASSIFICATION NAME. A COPY OF THE ELECTRODE MANUFACTURER'S TECHNICAL DATA SHEETS WITH THE RECOMMENDED WELDING PARAMETERS SHALL BE SUBMITTED WITH THE WPS.
11. 100 PERCENT ULTRASONIC TESTING IS REQUIRED FOR ALL COMPLETE JOINT PENETRATION GROOVE WELDS.
12. IF INTERMIXING OF WELD FILLER MATERIAL IS REQUIRED AT SPECIFIC WELDED JOINTS, AND IF ONE OF THE FILLER METALS IS FCAW-S, SUBMIT A WELDING PROCEDURE SPECIFICATION (WPS) AND QUALIFY BY TESTING.
13. DISCONTINUITIES IN WELDS CREATED BY ERRORS OR BY FABRICATION OR ERECTION OPERATIONS, SUCH AS **TACK WELDS, ERECTION AIDS, AIR ARC GOUGING AND FLAME CUTTING SHALL BE REPAIRED AS REQUIRED BY SEOR.**

STEEL HEADED STUDS

1. ALL HEADED STUDS WELDED TO BEAMS OR CONCRETE CONNECTIONS SHALL BE NELSON STUDS (ICC-ESR 2856), OR APPROVED EQUAL. STUD MATERIAL SHALL BE IN ACCORDANCE WITH AWS D1.1-15, "STRUCTURAL WELDING CODE-STEEL"
2. NELSON SHEAR CONNECTOR STUDS SHALL BE AUTOMATICALLY END WELDED IN THE SHOP OR IN THE FIELD WITH EQUIPMENT AND PROCEDURES RECOMMENDED BY NELSON STUD WELDING, INC. AND COMPLY WITH AISC 360-16 SECTION M2, ITEM 4 AND AWS D1.1-15. WELDING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE.
3. ALL SURFACES TO RECEIVE NELSON STUDS SHALL BE CLEAN, UNPAINTED AND FREE OF HEAVY RUST AND MILL SCALE, DIRT, SAND OIL, WATER OR OTHER DELETERIOUS MATERIALS.

EXISTING CONDITIONS

1. ALL INFORMATION SHOWN ON THE PLANS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE FROM PLANS SUPPLIED BY THE OWNER, BUT WITHOUT GUARANTEE OF ACCURACY.
2. WHERE ACTUAL CONDITIONS ARE NOT IN ACCORDANCE WITH THE INFORMATION PRESENTED, THE LANDSCAPE ARCHITECT AND/OR STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY. NO MODIFICATIONS OF THE PLANS FOR NEW CONSTRUCTION SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.

EXISTING UNDERGROUND UTILITIES

1. THE ARCHITECT AND ENGINEERS ARE NOT RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS. DRAWINGS, IF ANY, IS APPROXIMATE. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THE SITE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHOULD ANY SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES WHICH MAY RESULT FROM HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES.
3. AN UNDERGROUND SERVICE ALERT INQUIRY IDENTIFICATION NUMBER MUST BE OBTAINED AT LEAST TWO WORKING DAYS BEFORE STARTING WORK WITH THIS PERMIT.
   A. FOR PROJECTS IN SOUTHERN CALIFORNIA TELEPHONE NO. 1-800-422-4133.
   B. FOR PROJECTS IN NORTHERN CALIFORNIA TELEPHONE NO. 1-800-227-2600.

CONCRETE

1. ALL CONCRETE CONSTRUCTION SHALL CONFORM WITH CHAPTER 19 OF THE CODE AND WITH THE PROVISIONS OF ACI 318-19.
2. CONCRETE MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

MATERIAL	ASTM STANDARD
PORTLAND CEMENT (TYPE II)[A]	C150
CONCRETE AGGREGATES (HARDROCK)	C33
CONCRETE AGGREGATES (LIGHTWEIGHT)[C]	C330
WATER[B]	C1602
COAL FLY ASH OR POZZOLAN (CLASS F)	C618
NATURAL OR MANUFACTURED SAND	C33
SLAG	C989

   A. FOR SOILS WITH HIGH CONCENTRATIONS OF SULFATES (EXPOSURES S2 OR S3 PER ACI 318-19 TABLE 19.3.2.1) PORTLAND CEMENT SHALL BE TYPE V. VERIFY WITH PROJECT GEOTECHNICAL REPORT.
   B. WATER SHOULD ONLY BE ADDED AT THE BATCH PLANT. IN NO CASE SHALL THE DESIGN WATER/ CEMENT RATIO BE EXCEEDED.
   C. PUMICE AGGREGATE SHALL NOT BE USED.
3. CONCRETE MIXES SHALL BE PROPORTIONED BASED ON SECTION 26.4.3 OF ACI 318-19, WHICH REFERENCES ACI 301-20 ARTICLE 4.2.3. MIX DESIGNS SHALL INCLUDE DOCUMENTATION OF MIX AVERAGE COMPRESSIVE STRENGTH THROUGH FIELD TEST DATA OR TRIAL MIXTURES IN ACCORDANCE WITH ACI 301-20 ARTICLE 4.2.3.4. SCHEDULE OF STRUCTURAL CONCRETE STRENGTHS AND LOCATIONS (UNO):

LOCATION IN STRUCTURE	MINIMUM STRENGTH (PSI)	DENSITY (PCF)	MAX SLUMP (IN±1)	MAX WATER/CEMENT RATIO	SLAG/ FLY ASH[A] (MAX)
CONCRETE FOUNDATIONS	3,000	150	4	0.5	0.15
SITE WALLS	3,000	150	4	0.5	0.15

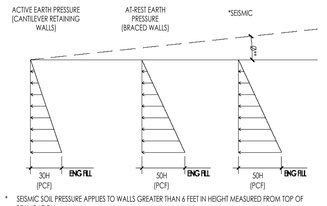
   A. AS MEASURED BY CEMENTITIOUS WEIGHT
4. READY MIXED CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C94 OR C685.
5. DEPOSITING AND CONVEYING OF CONCRETE SHALL CONFORM TO SECTION 26.5 OF ACI 318-19 AND PROJECT SPECIFICATIONS.
6. ALL CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED SHALL BE CLEANED AND ROUGHENED TO 1/4" AMPLITUDE.
7. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
8. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT, CORING IN CONCRETE IS NOT PERMITTED WITHOUT SEOR APPROVAL. NOTIFY THE SEOR IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS. SEE THE DRAWINGS FOR ADDITIONAL RESTRICTIONS ON THE PLACEMENT OF OPENINGS IN SLABS AND WALLS.
9. PIPES EMBEDDED IN CONCRETE:
   A. CONCRETE
      a. PIPES LARGER THAN 1-1/2" DIAMETER SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY SEOR.
      b. NO CONDUITS SHALL BE PLACED IN CONCRETE FILL OVER METAL DECK.
      c. PIPES SHALL NOT DISPLACE OR INTERRUPT REINFORCING BARS.
      d. DO NOT STACK CONDUITS. SPACE EMBEDDED PIPES AND CONDUITS AT A MINIMUM OF 3 DIAMETERS CLEAR FROM OTHER EMBEDDED PIPES/CONDUITS AND REBAR.

FOUNDATION

1. GEOTECHNICAL INFORMATION AND FOUNDATION DESIGN IS BASED ON THE FOLLOWING GEOTECHNICAL REPORTS AND SUPPLEMENTS/ADDENDUMS. COPIES OF THE REPORTS AND SUPPLEMENTAL LETTERS SHALL BE AVAILABLE AT THE JOBSITE AT ALL TIMES.

REPORT/ADDENDUM TITLE	PREPARED BY	DATE	PROJECT #
GEOTECHNICAL INVESTIGATION FOR CENTRAL PARK MASTER PLAN IMPROVEMENTS - PHASE 1 50 EAST 5TH AVENUE SAN MATEO, CA	NINYO & MOORE	1/25/23	403634001

2. LATERAL EARTH PRESSURES:



   * SEISMIC SOIL PRESSURE APPLIES TO WALLS GREATER THAN 6 FEET IN HEIGHT MEASURED FROM TOP OF FOUNDATION
   ** FOR SLOPING BACKFILL ADD 1 PCF FOR EVERY 2 DEG. (ACTIVE CASE) AND 1.5 PCF FOR EVERY 2 DEG (AT REST)
3. SPREAD OR CONTINUOUS FOOTINGS:

ELEMENT	ALLOWABLE BEARING CAPACITY (PSF)[A]	ALLOWABLE LATERAL RESISTANCE[B]	
		PASSIVE RESISTANCE (PSF/FT BELOW GRADE)[C]	FRICTION RESISTANCE (COEFFICIENT OF FRICTION)
RET WALL	3,000	300 150 (2:1 SLOPING DOWN)	0.30

   NOTES:
   A. THE ALLOWABLE CAPACITY MAY BE INCREASED BY ONE-THIRD WHEN CONSIDERING LOADS OF SHORT DURATION SUCH AS WIND OR SEISMIC FORCES.
   B. THE ALLOWABLE LATERAL RESISTANCE CAN BE TAKEN AS THE SUM OF THE FRICTIONAL RESISTANCE AND PASSIVE RESISTANCE WITH THE LESSER REDUCED BY 33 PERCENT.
   C. THE UPPER 6 INCHES OF SOIL NOT PROTECTED BY PAVEMENT SHALL BE NEGLECTED WHEN CALCULATING PASSIVE RESISTANCE.
   D. COMPACTED FILL SHOULD BE PREPARED PER SECTION 9.3.5 GEOTECHNICAL EVALUATION REPORT
4. WHERE NOT SHOWN ON THE DRAWINGS, CONTRACTOR TO PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED AND SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS, AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
5. CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER AND/OR SEEPAGE.
6. EXCAVATION FOR FOOTINGS SHALL BE APPROVED BY THE INSPECTOR OR GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE AND REINFORCING.
7. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE OR GROUT HAS ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING.
8. EXCAVATIONS SHALL BE C

REQUIRED VERIFICATION AND INSPECTIONS

CONCRETE CONSTRUCTION
CODE TABLE 1705.3

SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC	REFERENCED STANDARD	CBC REFERENCE
1. INSPECT REINFORCMENT, VERIFY PLACEMENT.	—	X	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3	—
2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" AND c. INSPECT ALL OTHER WELDS	— — X	X X —	AWS D1.4 ACI 318: 26.6.4	—
3. INSPECT ANCHORS CAST IN CONCRETE	—	X	ACI 318: 26.7	—
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS [2] (a) ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS (b) MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a	X —	— X	ACI 318: 26.7.1 ACI 318: 26.7.1	— —
5. VERIFY USE OF REQUIRED MIX DESIGN	—	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	—	ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	—
7. INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	—	ACI 318: 26.5	—
12. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	—	X	**ACI 318: 26.11.1.2 (b)**	—
SPECIAL INSPECTIONS LISTED FOR CONCRETE ALSO APPLY TO GROUTING OPERATIONS.				

SOILS
CODE TABLE 1705.6

SPECIAL INSPECTION OR TEST	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	—	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	—	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	—	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	—
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	—	X

CAST - IN - PLACE DEEP FOUNDATION ELEMENTS
CODE TABLE 1705.8

TYPE	CONTINUOUS	PERIODIC
1. INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	X	—
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE) AND ADEQUATE END-BEARING STRATA CAPACITY, RECORD CONCRETE OR GROUT VOLUMES.	X	—
3. FOR CONCRETE ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3	—	—

STRUCTURAL OBSERVATIONS

1. IN ACCORDANCE WITH SECTION 1704.6 OF THE CODE STRUCTURAL OBSERVATIONS SHALL BE PERFORMED FOR THE FOLLOWING ELEMENTS OF CONSTRUCTION:
   A. FOUNDATION REINFORCING AND ANCHORAGE, EXCLUDING THE SLAB ON GRADE REINFORCEMENT.
2. THE OBJECTIVE OF THE STRUCTURAL OBSERVATION IS TO BECOME FAMILIAR WITH THE PROGRESS AND QUALITY OF THE CONTRACTOR'S WORK AND DETERMINE IF THE WORK IS BEING COMPLETED IN GENERAL CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS
   A. STRUCTURAL OBSERVATIONS ARE NOT INSPECTIONS AND SHALL NOT BE USED AS A REPLACEMENT FOR THE SPECIAL INSPECTIONS REQUIRED BY THE CODE OR REFERENCED STANDARD OR FOR SPECIAL INSPECTIONS REQUIRED IN THIS DOCUMENT.
   B. THE PERSON COMPLETING THE STRUCTURAL OBSERVATIONS DOES NOT HAVE RESPONSIBILITY FOR ANY ACTS OR OMISSIONS BY THE CONTRACTOR OR OF ANY OTHER ENTITY PROVIDING MATERIALS OR SERVICES ON THE PROJECT.
3. ADEQUATE NOTIFICATION SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER PERFORMING OBSERVATIONS, A MINIMUM OF (2) WORKING DAYS, PRIOR TO OBSERVATION OF THE WORK.

STATEMENT OF SPECIAL INSPECTIONS

1. THIS STATEMENT OF SPECIAL INSPECTIONS HAS BEEN PREPARED PURSUANT TO SECTION 1704.3 OF THE CODE , THIS SECTION DETAILS BOTH REQUIRED SPECIAL INSPECTIONS AND TESTS INCLUDING TESTING PER SECTION 1705 OF THE CODE. THE FOLLOWING SHALL BE OBSERVED DURING THEIR IMPLEMENTATION:
   A. GENERAL:
      a. STRUCTURAL VERIFICATIONS, INSPECTIONS AND TESTS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF THE CODE AND/OR THE APPLICABLE REFERENCE STANDARD.
   B. OWNER REQUIREMENTS:
      a. THE OWNER OR OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN SECTION 1705 OF THE CODE AND IN THIS STATEMENT OF INSPECTIONS.
   C. SPECIAL INSPECTOR QUALIFICATIONS:
      a. THE SPECIAL INSPECTIONS SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING HIS OR HER COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING. THE EXPERIENCE OR TRAINING SHALL BE CONSIDERED RELEVANT WHEN THE DOCUMENTED EXPERIENCE OR TRAINING IS RELATED IN COMPLEXITY TO THE SAME TYPE OF SPECIAL INSPECTION ACTIVITIES FOR PROJECTS OF SIMILAR COMPLEXITY AND MATERIAL QUANTITIES.
   D. CONTRACTOR REQUIREMENTS:
      a. SPECIAL INSPECTION IS IN ADDITION TO THE CONTRACTOR'S QUALITY CONTROL INSPECTIONS AND TESTING. THE CONTRACTOR'S QUALITY CONTROL INSPECTIONS AND TESTING SHALL OCCUR PRIOR TO SPECIAL INSPECTION AND REPORTS SHALL BE AVAILABLE TO THE SPECIAL INSPECTOR.
      b. THE CONTRACTOR SHALL ENSURE THAT THE WORK FOR WHICH SPECIAL INSPECTION IS REQUIRED REMAINS ACCESSIBLE AND EXPOSED FOR SPECIAL INSPECTION PURPOSES UNTIL COMPLETION OF THE REQUIRED SPECIAL INSPECTION.
      c. ANY CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE MAIN WIND OR SEISMIC FORCE RESISTING SYSTEM SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.
   E. SPECIAL INSPECTOR REPORT REQUIREMENTS:
      a. THE SPECIAL INSPECTOR SHALL KEEP RECORD OF INSPECTIONS
      b. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD.
      c. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS.
      d. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
      e. IF NOT CORRECTED DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD PRIOR TO THE COMPLETION OF THAT PHASE OF WORK.
      f. A FINAL REPORT DOCUMENTING SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED SHALL BE SUBMITTED TO THE BUILDING OFFICIAL.

SUBMITTALS

1. THE FOLLOWING SUBMITTALS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER:
   A. STEEL INCLUDING MISC. METALS
      a. SHOP DRAWINGS FOR FABRICATION AND ERECTION
      b. WELD PROCEDURES (INCLUDING PREQUALIFICATION RECORDS), TO BE SUBMITTED TO PROJECT CWI
      c. SHOP DRAWINGS FOR FABRICATION AND PLACEMENT
   B. REINFORCING STEEL
   C. CONCRETE MIX DESIGNS FOR ALL CONCRETE STRENGTHS 3,000 PSI AND ABOVE
2. BEFORE SUBMITTING EACH SUBMITTAL, (INCLUDES SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS), THE CONTRACTOR SHALL HAVE:
   A. REVIEWED AND COORDINATED EACH SUBMITTAL WITH OTHER SUBMITTALS AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS. THIS INCLUDES THE CONTRACTOR REVIEWING AND VERIFYING THAT THE SUBMITTAL IS COORDINATED AMONG ALL CONSTRUCTION TRADES:
   B. DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS , SPECIFIED PERFORMANCE AND DESIGN CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION
   C. DETERMINED AND VERIFIED ALL INFORMATION RELATIVE TO THE CONTRACTOR'S RESPONSIBILITIES FOR MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS.
   D. REVIEWED AND VERIFIED THAT THE ARCHITECT'S OR ENGINEER'S COMMENTS FROM PREVIOUS SUBMITTAL ROUNDS HAVE BEEN ADDRESSED.
3. EACH SUBMITTAL SHALL BEAR A STAMP OR SPECIFIC WRITTEN CERTIFICATION THAT THE CONTRACTOR HAS SATISFIED THEIR OBLIGATIONS UNDER THE CONTRACT DOCUMENTS WITH RESPECT TO THE CONTRACTOR'S REVIEW AND APPROVAL OF THAT SUBMITTAL.
4. THE CONTRACTOR'S OBLIGATION TO PERFORM AND COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS SHALL BE ABSOLUTE:
   a. REVIEW AND APPROVAL OF SHOP DRAWINGS BY THE ARCHITECT AND/OR ENGINEER DOES NOT CONSTITUTE APPROVAL OF A CHANGE REQUEST, SUBSTITUTION OR MODIFICATION TO THE CONTRACT DRAWINGS.
   b. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED OF CHANGE REQUESTS, SUBSTITUTIONS OR MODIFICATIONS TO THE CONTRACT DRAWINGS IN WRITING BEFORE AND SEPARATE FROM THE SUBMITTAL PRIOR TO SUBMISSION.
5. FABRICATION FOR ITEMS IN THESE DOCUMENTS SHALL NOT COMMENCE UNTIL THE SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE ENGINEER.

SHOP FABRICATION

1. SHOP FABRICATION REQUIRES SPECIAL INSPECTION IN ACCORDANCE WITH CODE SECTION 1704.2.5. EXCEPTION: SHOP SPECIAL INSPECTIONS ARE NOT REQUIRED WHEN WORK IS DONE ON THE PREMISES OF FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK IN ACCORDANCE WITH CODE SECTION 1704.2.5.1. THE FOLLOWING ACCREDITATIONS MEET THE REQUIREMENTS OF THIS EXCEPTION:
   A. STEEL BUILDINGS (OR STEEL ELEMENTS IN OTHER BUILDINGS)
      a. FOR GENERAL STEEL BUILDINGS OR ELEMENTS THE FABRICATOR SHALL BE AN AISC CERTIFIED FABRICATOR IN ACCORDANCE WITH THE AISC CERTIFICATION PROGRAM FOR STRUCTURAL STEEL FABRICATORS (AISC 201-06).
      b. OTHER ACCREDITATION DEEMED ACCEPTABLE BY THE AUTHORITY HAVING JURISDICTION.
      c. IF FABRICATION IS PERFORMED BY AN APPROVED FABRICATOR A CERTIFICATE OF COMPLIANCE MUST BE PROVIDED TO THE BUILDING INSPECTOR THAT THE MATERIALS SUPPLIED AND WORK PERFORMED BY THE FABRICATOR ARE IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS.
      d. IF FABRICATION IS NOT PERFORMED BY AN APPROVED FABRICATOR WELDING INSPECTION REPORTS MUST BE SUBMITTED TO THE BUILDING OFFICIAL BY AN APPROVED TESTING AGENCY.
      d.a. NONDESTRUCTIVE TESTING (NDT) MAY BE PERFORMED BY THE FABRICATOR, HOWEVER THE QA AGENCY SHALL REVIEW THE FABRICATOR'S NDT REPORTS.

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

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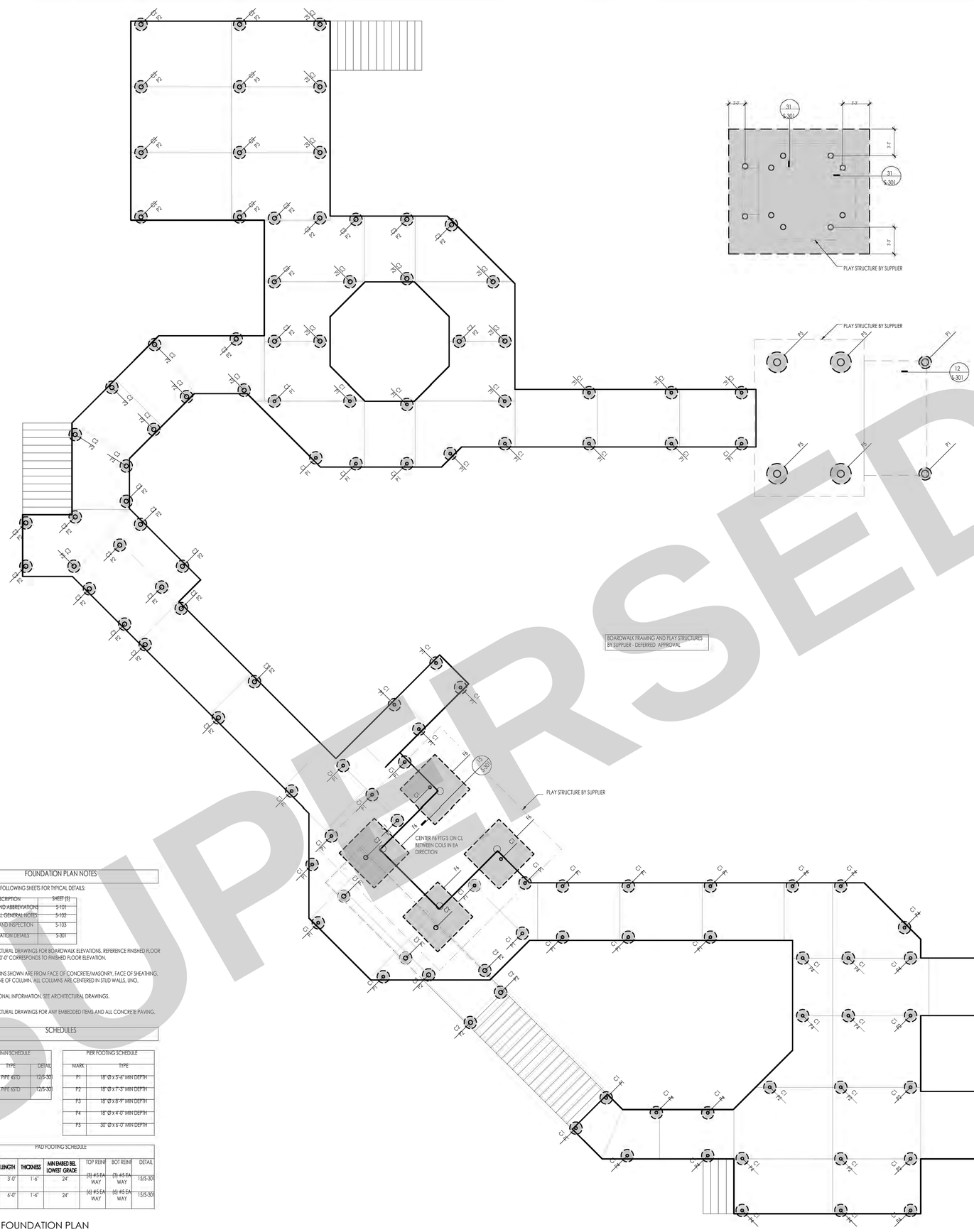
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

SPECIAL INSPECTION & TESTS

NO.	REVISION	DATE
1	PLAN CHECK REVISION 1	01/19/24
2	PLAN CHECK REVISION 2	05/10/24

PROJECT MANAGER
M. DOREMUS
DRAWN BY
J. LONG
CHECKED BY
C. CECIL
DATE
~~JUNE 3, 2024~~
JANUARY 13, 2025
~~JUNE 24, 2024~~
PROJECT NUMBER
1652-02-RC22
SHEET
S-103

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FOUNDATION PLAN NOTES

1. REFER TO THE FOLLOWING SHEETS FOR TYPICAL DETAILS:

DESCRIPTION	SHEET (S)
SYMBOLS AND ABBREVIATIONS	S-101
STRUCTURAL GENERAL NOTES	S-102
TESTING AND INSPECTION	S-103
FOUNDATION DETAILS	S-301

2. SEE ARCHITECTURAL DRAWINGS FOR BOARDWALK ELEVATIONS. REFERENCE FINISHED FLOOR ELEVATION = 0'-0" CORRESPONDS TO FINISHED FLOOR ELEVATION.
3. ALL DIMENSIONS SHOWN ARE FROM FACE OF CONCRETE/MASONRY, FACE OF SHEATHING, OR CENTERLINE OF COLUMN. ALL COLUMNS ARE CENTERED IN STUD WALLS, UNO.
4. FOR DIMENSIONAL INFORMATION, SEE ARCHITECTURAL DRAWINGS.
5. SEE ARCHITECTURAL DRAWINGS FOR ANY EMBEDDED ITEMS AND ALL CONCRETE PAVING.

SCHEDULES

COLUMN SCHEDULE

MARK	TYPE	DETAIL
C1	PIPE 4STD	12/S-301
C2	PIPE 6STD	12/S-301

PIER FOOTING SCHEDULE

MARK	TYPE
P1	18" Ø x 5'-6" MIN DEPTH
P2	18" Ø x 7'-3" MIN DEPTH
P3	18" Ø x 8'-9" MIN DEPTH
P4	18" Ø x 4'-0" MIN DEPTH
P5	30" Ø x 6'-0" MIN DEPTH

PAD FOOTING SCHEDULE

TYPE	WIDTH	LENGTH	THICKNESS	MIN EMBED BEL. LOWEST GRADE	TOP REINF	BOT REINF	DETAIL
F3	3'-0"	3'-0"	1'-6"	24"	(3) #5 EA WAY	(3) #5 EA WAY	15/S-301
F6	6'-0"	6'-0"	1'-6"	24"	(6) #5 EA WAY	(6) #5 EA WAY	15/S-301

1 BOARDWALK FOUNDATION PLAN
SCALE: 3/16" = 1'-0"

SUPERSEDED

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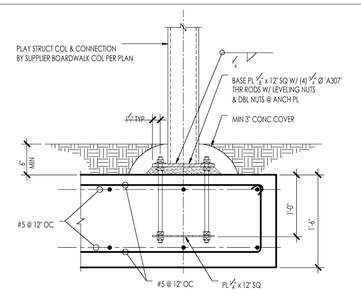
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

BOARDWALK & PLAY STRUCTURE FOUNDATION PLAN

NO.	REVISION	DATE
1	PLAN CHECK REVISION 1	01/19/24
2	PLAN CHECK REVISION 2	05/10/24

PROJECT MANAGER
M. DOREMUS
DRAWN BY
J. LONG
CHECKED BY
C. CECIL
~~DATE~~
~~JANUARY 13, 2023~~
JUNE 6, 2024
~~PROJECT NUMBER~~
1652-02-RC22
~~SHEET~~
S-201

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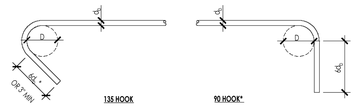


MAT FOOTING

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1" = 1'-0"

31



BAR SIZE	D
#3	1½"
#4	2"
#5	2½"

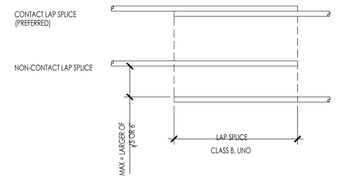
* PROVIDE 10d_b EXTENSIONS IN LIEU OF 6d_b AT ALL FRAME COLUMNS, GIRDERS, SHEAR WALLS AND SHEAR WALL BOUNDARY MEMBERS

REINF TIES AND STIRRUPS

1652-02-RC22 - S301

NTS

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REINFORCING TENSION DEVELOPMENT LENGTH AND LAP SPLICE SCHEDULE

BAR SIZE	DEVELOPMENT LENGTH, l_d (CLASS A LAP SPLICE)			LAP SPLICE, l_s (CLASS B LAP SPLICE)		
	f'c (psi)			f'c (psi)		
	2,500	3,000	4,000	2,500	3,000	4,000
#3	1'-6"	1'-5"	1'-3"	2'-0"	1'-10"	1'-7"
#4	2'-0"	1'-10"	1'-7"	2'-8"	2'-5"	2'-1"
#5	2'-6"	2'-4"	2'-0"	3'-3"	3'-0"	2'-7"
#6	3'-0"	2'-9"	2'-5"	3'-11"	3'-7"	3'-2"
#7	4'-5"	4'-0"	3'-6"	5'-9"	5'-2"	4'-6"
#8	5'-0"	4'-7"	4'-0"	6'-6"	5'-11"	5'-2"
#9	5'-8"	5'-2"	4'-6"	7'-4"	6'-9"	5'-10"
#10	6'-5"	5'-10"	5'-1"	8'-3"	7'-7"	6'-7"
#11	7'-1"	6'-6"	5'-7"	9'-2"	8'-5"	7'-3"

NOTES:

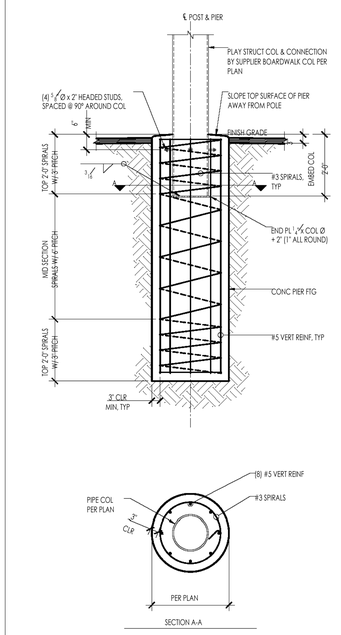
1. VALUES ABOVE ARE FOR REINFORCEMENT WITH THE FOLLOWING PARAMETERS:
   - A. GRADE 60 REINFORCEMENT
   - B. NORMAL WEIGHT CONCRETE
     - a. FOR LIGHTWEIGHT CONCRETE MULTIPLY THE VALUES ABOVE BY 1.3
   - C. NON-EPOXY COATED REINFORCEMENT
   - D. HORIZONTAL BARS WITH 12" OF CONCRETE BELOW (BOTTOM BARS), AND VERTICAL BARS
     - a. FOR TOP BARS WITH 12" OR MORE OF CONCRETE BELOW THE BAR MULTIPLY THE VALUES ABOVE BY 1.3
   - E. CLEAR SPACING NOT LESS THAN d_b, CLEAR COVER NOT LESS THAN d_b AND STIRRUPS THROUGH l_d NOT LESS THAN MIN
     - OR
     - CLEAR SPACING NO LESS THAN 2d_b AND CLEAR COVER NOT LESS THAN db
     - a. FOR OTHER SPACING AND COVER CONDITIONS MULTIPLY THE VALUES ABOVE BY 1.5
   - F. REINFORCEMENT NOT IN SHEAR WALLS
     - a. FOR REINFORCEMENT IN SHEAR WALLS MULTIPLY THE VALUES ABOVE BY 1.25
2. THE MULTIPLIERS LISTED IN NOTE 1 ABOVE ARE CUMULATIVE INCREASES IN DEVELOPMENT/LAP SPLICE LENGTH.
3. ALL LAP SPLICES REFERENCED IN THE PLANS SHALL BE CLASS B UNLESS NOTED OTHERWISE.
4. WHEN REINFORCING BARS OF TWO SIZES ARE LAP-SPLICED IN TENSION, USE THE LARGER OF THE TENSION CLASS B. LAP SPLICE LENGTH (l_s) OF THE SMALLER BAR, AND THE CLASS A, TENSION DEVELOPMENT LENGTH (l_d) OF THE LARGER BAR.

REINF DEVELOPMENT LENGTH AND SPLICES

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NTS

22

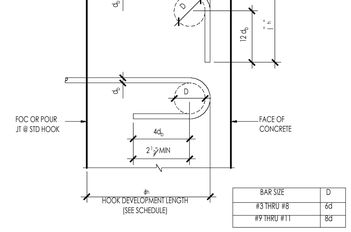


COLUMN PIER FOOTING

1652-02-RC22 - S301 - 12

NTS

12



BAR SIZE	D
#3 THRU #8	6d
#9 THRU #11	8d

STANDARD HOOK DEVELOPMENT LENGTH " l_{dh} "					
BAR SIZE	D	" l_{dh} "	NORMAL WEIGHT		
			2,500	3,000	4,000
#3	2 1/4"	6"	0'-9"	0'-9"	0'-8"
#4	3"	8"	1'-0"	0'-11"	0'-10"
#5	3 3/4"	10"	1'-3"	1'-2"	1'-0"
#6	4 1/2"	12"	1'-6"	1'-5"	1'-3"
#7	5 1/4"	1'-2"	1'-9"	1'-8"	1'-5"
#8	6"	1'-4"	2'-0"	1'-10"	1'-7"
#9	9 1/2"	1'-7 1/2"	2'-3"	2'-1"	1'-10"
#10	10 3/4"	1'-10"	2'-7"	2'-4"	2'-1"
#11	12"	2'-0 1/2"	2'-10"	2'-7"	2'-3"

NOTES:

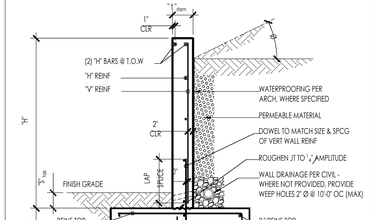
1. ALL HOOKED BARS SHALL EXTEND AS FAR AS POSSIBLE WITH A MINIMUM 2" END COVER AND WITH EMBEDMENT NOT LESS THAN SHOWN ON THE SCHEDULE UNLESS NOTED OTHERWISE ON PLANS.
2. MINIMUM SIDE COVER = 2½"
3. FOR LIGHTWEIGHT CONCRETE MULTIPLY LENGTHS IN SCHEDULE BY 1.3.

REINF HOOK DEVELOPMENT LENGTH AND BENDS

1652-02-RC22 - S301 - 24

NTS

24



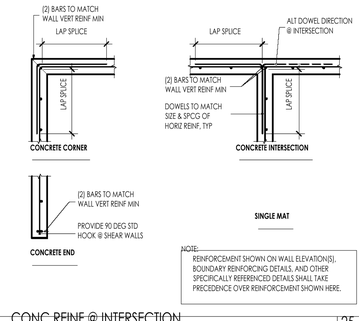
H_w	l_{dh} MIN	Ø	d_b	t_{wall} (IN)	B	W	KEY REQ'D	REINF						
								TOP		BOTTOM		WALL		
								T	L	T	L	HORIZ	VERT	
7'-6"	6"	5	#5	8	2'-6"	5'-6"	YES	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	
5'-6"	6"	5	#5	8	2'-0"	4'-6"	NO	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	
3'-6"	6"	5	#5	8	1'-0"	2'-3"	NO	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	#5 @ 16"	

CONCRETE RETAINING WALL

1652-02-RC22 - S301 - 14

NTS

14

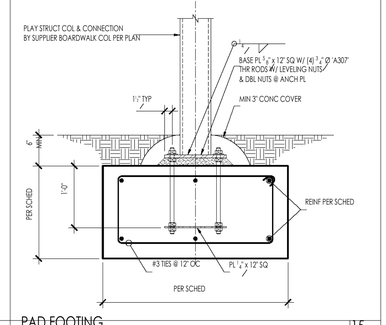


CONC REINF @ INTERSECTION

1652-02-RC22 - S301 - 25

NTS

25



PAD FOOTING

1652-02-RC22 - S301 - 15

1" = 1'-0"

15

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rrmdesign.com | (805) 543-1794
3765 S. Higuera, San Luis Obispo, CA 93401

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

100% CONSTRUCTION DOCUMENT SUBMITTAL

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

DETAILS

NO.	REVISION	DATE
1	PLAN CHECK REVISION 1	01/19/24
2	PLAN CHECK REVISION 2	05/10/24

PROJECT MANAGER
M. DOREMUS
DRAWN BY
J. LONG
CHECKED BY
C. CECIL
DATE
JANUARY 13, 2023
JUNE 6, 2024
PROJECT NUMBER
1652-02-RC22
SHEET
S-301

XV (x601) \1652-02-RC22 - Central Park Playground Metro-Core-Rnd Design\Structural\ CorDocs\ Sheet Files\ 1652-02-RC22 - S301.dwg, S301, Jun 04, 2024 11:21am, Alcaraz

WATER USE CALCULATIONS

SEE WATER EFFICIENT LANDSCAPE WORKSHEET INCLUDED IN WATER CONSERVATION IN LANDSCAPE APPLICATION ON SHEET LI601.

COMPLIANCE WITH MWELO

I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN.

JANUARY 13, 2025

LANDSCAPE ARCHITECT — DATE

IRRIGATION NOTES

1. CONTRACTOR SHALL SLEEVE ALL LATERALS AND MAINLINES RUNNING UNDER PAVING.
2. IRRIGATION PLAN IS DIAGRAMMATIC. FINAL LOCATION OF PIPING WILL BE DETERMINED AT THE TIME OF INSTALLATION. MAINLINE AND LATERALS SHALL BE PLACED IN THE SAME TRENCH WHEN POSSIBLE. ALL Q.C. VALVES ARE TO BE LOCATED 12" FROM SIDEWALKS, CURBS, ASPHALT & CONCRETE SURFACES. AVOID TRENCHING AT TREE ROOTS.
3. ALL EQUIPMENT REQUIRED BUT NOT SPECIFIED ON THE DRAWING, TO COMPLETE THE WORK, SHALL BE PROVIDED BY THE IRRIGATION CONTRACTOR.
4. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND/OR SPECIFICATIONS.
5. CONTRACTOR SHALL FAMILIARIZE THEMSELF WITH THE PLANS AND SITE CONDITIONS PRIOR TO BEGINNING WORK. SHOULD CONFLICTING INFORMATION BE FOUND ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE WORK IN QUESTION.
6. DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY AT NO EXPENSE TO THE CITY REPRESENTATIVE.
7. SPLICING OF 24 VOLT WIRES WILL NOT BE PERMITTED EXCEPT IN PULL BOXES. LEAVE A 24" COIL OF EXCESS WIRE AT EACH SPLICE. LABEL ALL WIRES W/ WATERPROOF MARKERS AT ALL SPLICES AND VALVE MANIFOLDS.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL MATERIAL APPEARING ON PLAN.
9. ALL EXISTING UTILITIES, WATER LINES AND FIRE HYDRANTS SHALL REMAIN CONNECTED AND IN FULL CONTINUOUS OPERATION DURING AND FOLLOWING ALL CONTRACT WORK.
10. CONTRACTOR SHALL MAKE ALL NECESSARY ADJUSTMENTS TO THE IRRIGATION SYSTEM FOLLOWING A PRECIPITATION TEST PER THE CITY. ADJUSTMENTS SHALL INCLUDE BUT WILL NOT BE LIMITED TO: HEAD RELOCATION, CHANGING NOZZLES, AND ADJUSTING ARC PATTERNS TO ATTAIN 65% EFFICIENT UNIFORMITY AS REQUIRED BY THE CITY.
11. CONTRACTOR SHALL SLEEVE ALL PIPE CROSSINGS UNDER HARDSCAPE. ALL SLEEVES UNDER PAVING SHALL RECEIVE IDENTIFYING MARK ON TOP OF HARDSCAPE AT EDGE OF PLANTER TO INDICATE LOCATION OF SLEEVE. EXTEND ALL SLEEVES 18" BEYOND EDGE OF HARDSCAPE, TYP.
12. ALL NEW IRRIGATION BOXES, AND ADDITIONAL BOXES SHALL BE LOCATED IN PLANTING AREAS 12" MIN. AWAY FROM ADJACENT PAVING. CONTRACTOR SHALL CONFIRM FINAL LOCATION WITH CITY REPRESENTATIVE PRIOR TO INSTALLATION.
13. CONTRACTOR SHALL NOT INSTALL ANY PLANTING UNTIL THE FOLLOWING ARE COMPLETED: 1. THE IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL. 2. HYDROSTATIC PRESSURE TESTS SHALL BE PERFORMED ON MAIN AND LATERAL LINES. 3. ALL ZONES SHALL PASS A COVERAGE TEST. 4. CONTROLLERS SHALL BE FULLY OPERATIONAL.
14. CONTRACTOR SHALL REQUEST AS-BUILT DRAWINGS PRIOR TO BID AND CONFIRM SCOPE OF IRRIGATION CONSTRUCTION. IF ANY ERRORS AND/OR ISSUES ARE FOUND, CONTRACTOR SHALL REPORT THIS TO CITY REPRESENTATIVE IMMEDIATELY.
15. CONTRACTOR SHALL REPLACE ANY BROKEN OR FAILING IRRIGATION EQUIPMENT IN KIND. IF EQUIPMENT IS FOUND TO BE INADEQUATE OR CAUSES OVERSPRAY, CONTRACTOR SHALL REPLACE OR ADJUST EQUIPMENT AS NEEDED TO PROVIDE ADEQUATE COVERAGE.
16. NON-PERMEABLE SURFACES ADJACENT TO TURF ARE GRADED TO DRAIN ENTIRELY TO LANDSCAPING.
17. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING UNINTERRUPTED IRRIGATION WATER SUPPLY TO ALL EXISTING IRRIGATION CONTROL VALVES THAT WERE CONTROLLED BY THE EXISTING CONTROLLER IN THE OLD RESTROOM.
18. CONTRACTOR SHALL PROVIDE AND INSTALL NEW CONTROL WIRING FROM NEW CALSENSE CONTROLLER (IN NEW RESTROOM) TO ALL EXISTING IRRIGATION CONTROL VALVES THAT WERE CONTROLLED BY THE EXISTING CONTROLLER IN THE OLD RESTROOM. ALL WIRING CONNECTIONS SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS.
19. CONTRACTOR TO COORDINATE ALL IRRIGATION WORK (TEMPORARY AND PERMANENT) WITH CITY OF SAN MATEO'S PARK MAINTENANCE DEPARTMENT IN ADVANCE OF ACTUAL START OF IRRIGATION WORK.
20. AVOID TRENCHING WITHIN SPECIFIED TREE PROTECTION ZONES. SEE CD103.
21. CALSENSE CONTROLLER TO BE CERTIFIED BY CALSENSE MANUFACTURER. CONTRACTOR TO MODIFY IRRIGATION INSTALLATION AS REQUIRED IN ORDER TO PROVIDE CERTIFICATION.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	ARC	PSI	GPM	RADIUS	DETAIL
A	HUNTER MP3000 PROS-06-PRS40-CV-F-R A	360	40	3.64	30'	8/LI501
B	HUNTER MP3000 PROS-06-PRS40-CV-F-R B	90-210	40		30'	8/LI501
Y	HUNTER MP3000 PROS-06-PRS40-CV-F-R Y	210-270	40		30'	8/LI501
	RAIN BIRD RWS-B-C 1401	360	30	0.25	3'	7/LI501

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	PIPE TRANSITION POINT PIPE TRANSITION POINT FROM PVC LATERAL TO BUBBLER AREA	10/LI501
	AREA TO RECEIVE DRIP EMITTERS RAIN BIRD 1800-1400 FLOOD FIXED FLOW RATE 0.25 GPM, FULL CIRCLE BUBBLER. THREADED ON TO FLEX PIPE RISER PER DETAIL. (1) PER SHRUB, (2) PER TREE. Emitter Notes: 1401 emitters (1 assigned to each 1 gal plant) 1401 EMITTERS (1 ASSIGNED TO EACH SHRUB AND GROUNDCOVER) 1401 emitters (1 assigned to each 5 gal plant) 1401 emitters (1 assigned to each 15 gal plant)	6/LI501

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	IRRITROL 100P-G 1"-3" ELECTRIC REMOTE CONTROL VALVE. GLOBE CONFIGURATION. PRESSURE RANGE OF 20-220 PSI. INCLUDE OPTIONAL MODULAR PRESSURE REGULATION	4/LI501
	(E) 1" RAINBIRD QUICK COUPLER	
	(E) HARDIE 100 SERIES RCV	
	RAIN BIRD 44-LRC 1IN. BRASS QUICK-COUPLING VALVE, WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING THERMOPLASTIC RUBBER COVER, AND 2-PIECE BODY.	9/LI501
	RWV 5044S BALL VALVE BRASS, F.I.P.T. THREADED FULL PORT	5/LI501
C	CALSENSE CS3000 CONTROLLER WALL MOUNTED. OWNER PROVIDED AND CONTRACTOR TO INSTALL.	11/LI501
POC	POINT OF CONNECTION 3" PONY SHED WELL, ASSUMED 65-70PSI	
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40	1/LI501
TC	RELOCATED EXISTING CONTROLLER REMOVE TEMPORARY CONTROLLER AFTER INSTALLING NEW CONTROLLER.	
	IRRIGATION MAINLINE: PVC SCHEDULE 40 SCH 40 PVC UP TO 1.5" CLASS 315 PVC FOR LARGER THAN 1.5"	1/LI501
	IRRIGATION MAINLINE: PVC CLASS 315 SDR 13.5	
	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE. PIPE SLEEVE SIZE SHALL ALLOW FOR IRRIGATION PIPING AND THEIR RELATED	
	(E) IRRIGATION MAINLINE TO REMAIN	
	COUPLINGS TO EASILY SLIDE THROUGH SLEEVING MATERIAL. EXTEND SLEEVES 18 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.	

Valve Callout

#" — Valve Number
#" — Valve Flow
#" — Valve Size

CRITICAL ANALYSIS

Generated:	2025-01-14 13:50
P.O.C. NUMBER: 01	
Water Source Information:	Pony shed well, assumed 65-70psi
FLOW AVAILABLE	
Point of Connection Size:	3"
Flow Available	170.11 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	70 PSI
Pressure Available:	70 PSI
DESIGN ANALYSIS	
Maximum Multi-valve Flow:	55 GPM
Flow Available at POC:	170.11 GPM
Residual Flow Available:	115.11 GPM
Critical Station:	4
Design Pressure:	40 PSI
Friction Loss:	6.12 PSI
Fittings Loss:	0.61 PSI
Elevation Loss:	0 PSI
Loss through Valve:	2.91 PSI
Pressure Req. at Critical Station:	49.6 PSI
Loss for Fittings:	0.48 PSI
Loss for Main Line:	4.83 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	0 PSI
Critical Station Pressure at POC:	55.0 PSI
Pressure Available:	70 PSI
Residual Pressure Available:	15.0 PSI

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	DESIGN PSI	PSI	PSI @ POC	PRECIP
1	IRRITROL 100P-G	1-1/2"	BUBBLER	3.5	30	33.9	35.1	0.95 in/h
2	IRRITROL 100P-G	1-1/2"	AREA FOR DRIP EMITTERS	12	30	37.5	38.8	5.64 in/h
3	IRRITROL 100P-G	1"	AREA FOR DRIP EMITTERS	4	30	37.0	38.3	7.66 in/h
4	IRRITROL 100P-G	1-1/2"	TURF ROTARY	44.71	40	49.6	55.0	0.42 in/h

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT — MARISA PEITIER — No. 6132 — 8.31.26 — STATE OF CALIFORNIA

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CITY OF SAN MATEO — PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

IRRIGATION SCHEDULE AND NOTES

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Marisa Peitier

DRAWN BY MP/YI — **CHECKED BY** LM

DATE
JANUARY 31, 2025

RRM PROJECT NUMBER
1652-02-RC22

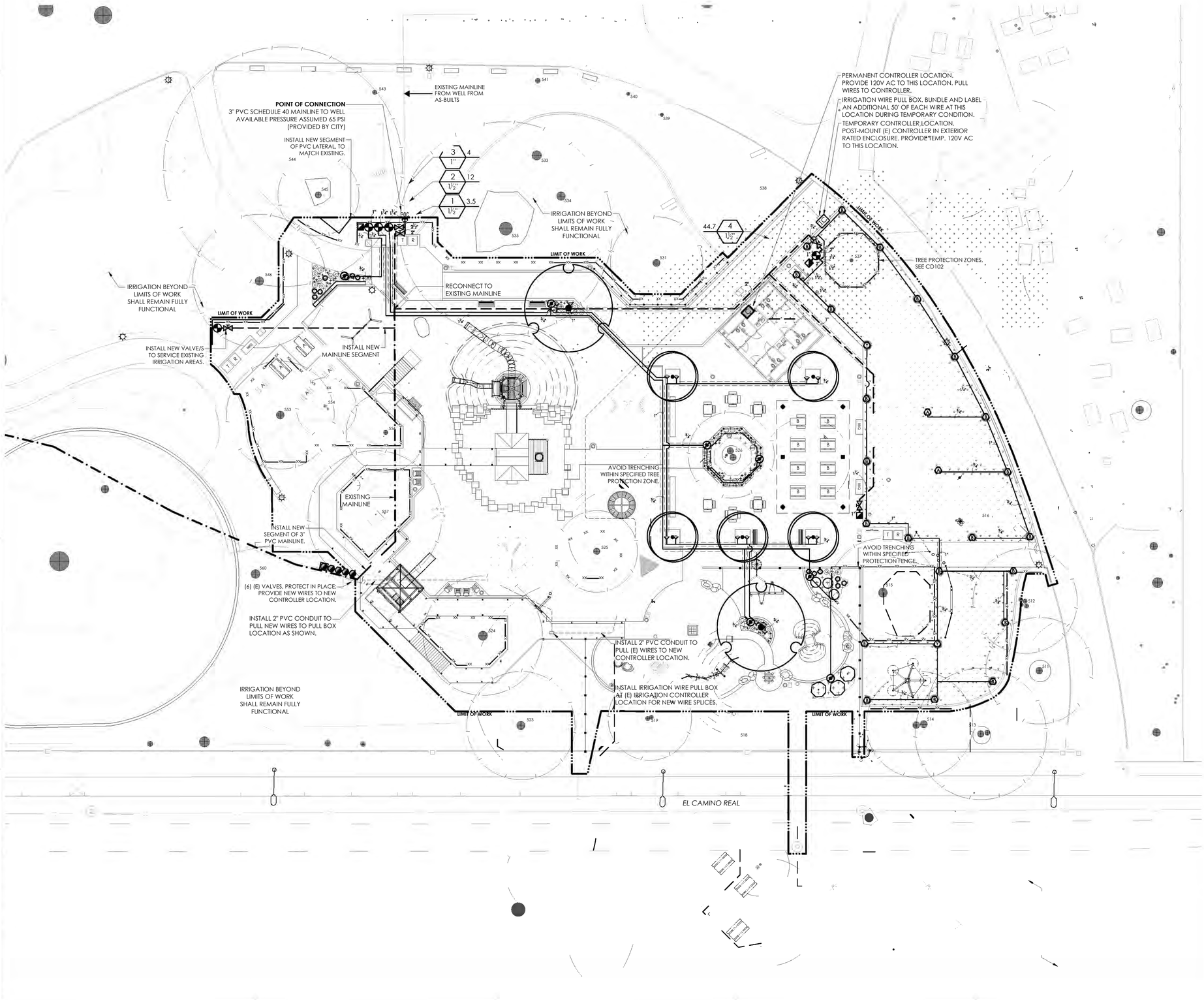
CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
LI001

N:\1652\1652-02-RC22\Central Park Playground Master Genera\Final Design\Landscape Architecture\PLOTS\PDF\DWG\CityDocs\Sheet Files\LI-1652-02-RC21-Irrig 1801, Jan 14, 2025 2:51pm, dlhigh

NOTE:

1. SEE LI001 FOR IRRIGATION SCHEDULE, NOTES, AND WATER CALCULATIONS.
2. CONTRACTOR SHALL INCLUDE AN ADDITIONAL 500 LF OF WIRING FOR CONNECTING ADDITIONAL EXISTING VALVES NOT SHOWN ON PLANS.



NORTH

0 16 32 48 feet

1" = 16'-0"

rrm

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325 Davis St., San Leandro, CA 94577

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RRM DESIGN
RRM IS

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

IRRIGATION PLAN

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Marisa Peltier

DRAWN BY MP/YI
CHECKED BY LM

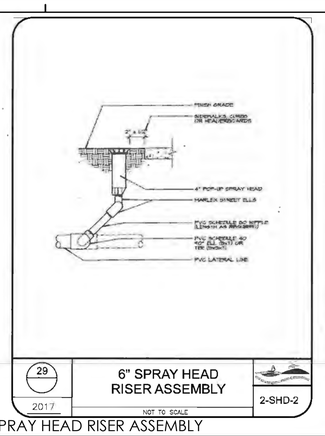
DATE
JANUARY 31, 2025

RRM PROJECT NUMBER
1652-02-RC22

CITY OF SAN MATEO PROJECT NUMBER
610027

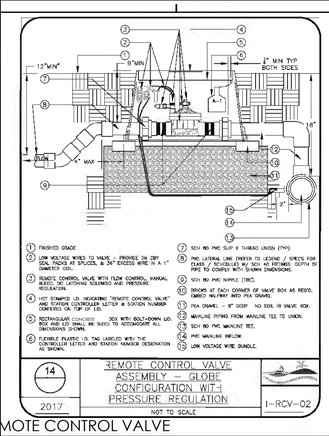
SHEET
LI101

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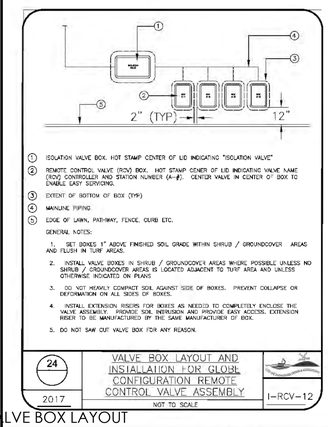
29 | 2017 | 6" SPRAY HEAD RISER ASSEMBLY | NOT TO SCALE | 2-SHD-2

8 6" SPRAY HEAD RISER ASSEMBLY
NTS RRM-1600-1652.01-163



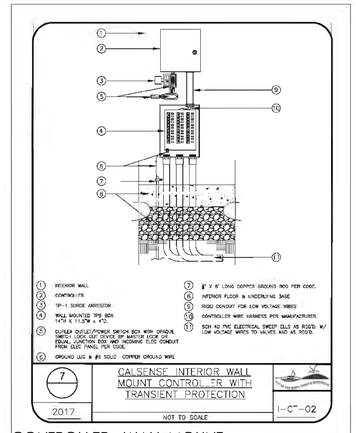
14 | 2017 | REMOTE CONTROL VALVE ASSEMBLY – GLOBE CONFIGURATION, WIT-1 PRESSURE REGULATION | NOT TO SCALE | I-RCV-02

4 REMOTE CONTROL VALVE
NTS RRM-1600-1652.01-167



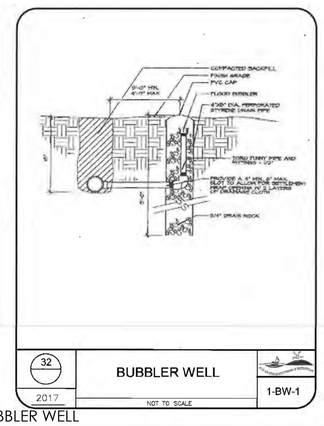
24 | 2017 | VALVE BOX LAYOUT AND INSTALLATION FOR GLOBE CONFIGURATION REMOTE CONTROL VALVE ASSEMBLY | NOT TO SCALE | I-RCV-12

3 VALVE BOX LAYOUT
NTS RRM-1600-1652.01-165



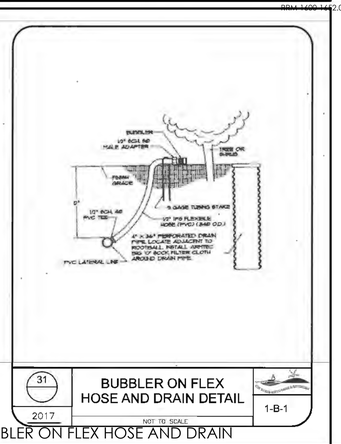
7 | 2017 | CALSENSE INTERIOR WALL MOUNT CONTROLLER WITH TRANSIENT PROTECTION | NOT TO SCALE | I-C"-02

11 CONTROLLER - WALL MOUNT
NTS RRM-1600-1652.01-195



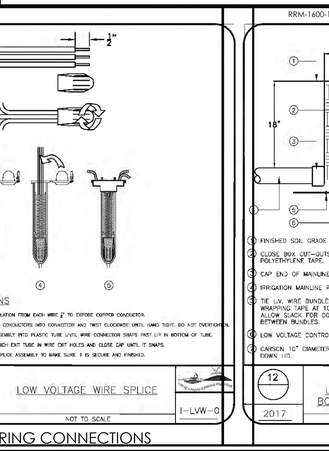
32 | 2017 | BUBBLER WELL | NOT TO SCALE | 1-BW-1

7 BUBBLER WELL
NTS RRM-1600-1652.01-170



31 | 2017 | BUBBLER ON FLEX HOSE AND DRAIN DETAIL | NOT TO SCALE | 1-B-1

6 BUBBLER ON FLEX HOSE AND DRAIN
NTS RRM-1600-1652.01-169

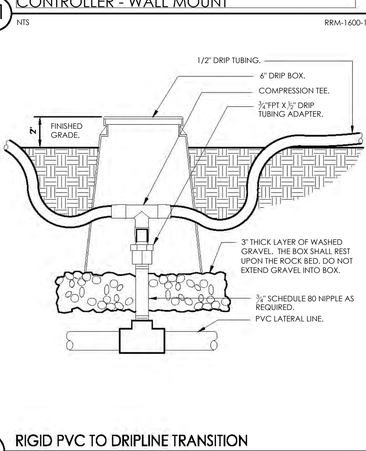


INSTRUCTIONS
1. STRIP WIRE INSULATION FROM EACH WIRE 2" TO EXPOSE COPPER CONDUCTOR.
2. INSERT EXPOSED CONDUCTORS INTO CONNECTOR AND TWIST CLOCKWISE UNTIL HAND TIGHT, DO NOT OVERTIGHTEN.
3. INSERT WIRE ASSEMBLY INTO PLASTIC TUBE UNTIL WIRE CONNECTION SNAPS PAST U/I IN BOTTOM OF TUBE.
4. PLACE WIRES WHICH EXIT TUBE IN WIRE CUT HOLES AND CLOSE CAP UNTIL IT SNAPS.
5. INSPECT FINAL SPLICE ASSEMBLY TO MAKE SURE IT IS SECURE AND FINISHED.

11 | 2017 | LOW VOLTAGE WIRE SPLICE | NOT TO SCALE | I-LVW-0

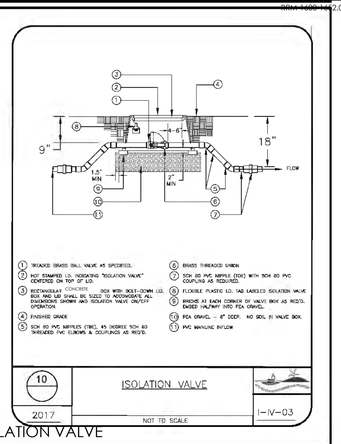
12 | 2017 | LOW VOLTAGE WIRE SPLICE BOX AND MAINLINE STUB OUT | NOT TO SCALE | I-LVW-02

2 WIRING CONNECTIONS
NTS RRM-1600-1652.01-166



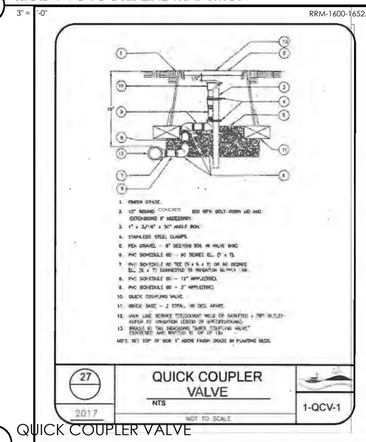
27 | 2017 | QUICK COUPLER VALVE | NTS NOT TO SCALE | 1-QCV-1

9 QUICK COUPLER VALVE
NTS RRM-1600-1652.01-168



10 | 2017 | ISOLATION VALVE | NOT TO SCALE | I-IV-03

5 ISOLATION VALVE
NTS RRM-1600-1652.01-172



25 | 2017 | TRENCH DETAIL | NTS NOT TO SCALE | 1-T-02

26 | 2017 | TRENCH DETAIL | NTS NOT TO SCALE | 2-T-2

1 TRENCHING
NTS RRM-1600-1652.01-164

10 RIGID PVC TO DRIPLINE TRANSITION
3" = -0" RRM-1600-1652.0-184

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT — MARIKO PELTIER — 6.30.25 — STATE OF CALIFORNIA

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CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

CONSTRUCTION SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

IRRIGATION DETAILS

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER: Mariko Peltier
DRAWN BY: MP/YI | CHECKED BY: LM
DATE: JANUARY 31 2025
RRM PROJECT NUMBER: 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: LI501

M:\1600\1652\02\RC22\Central Park Playground\Main Group Final Design\Landscape Architecture\PLANSHEETS\CONSTRUCTION\Plot\LI-1652-02-RC22-IRR.dwg, LI501, Jan 14, 2025 - 2:28pm, dmghy

Building Division
330 West 20th Avenue
San Mateo, CA 94403
(650) 522 - 7172
www.cityofsanmateo.org

Water Conservation in Landscaping
Project Information and Submission Checklist
REVISED 08/22/19

Project Information

Site Address / APN: 50 E 5th Avenue, San Mateo

Project Type / Description *(residential, commercial, industrial)*: commercial

Total Landscape Area (sq. ft.): 8,941 Water Supply Type: well water

Property Owner Information

Name: Joanne Magrini

Phone: (650) 522-7404

Address: 330 W. 20th Avenue, San Mateo, CA 94403

Email: jmagrini@cityofsanmateo.org

Applicant Information (if different from property owner)

Name:

Phone:

Address:

Email:

Submittal Checklist

		Shown on Plans / Page #
1. Water Efficient Landscape Worksheet	☐	
a. Hydrozone Information Table	☐	
b. Water Budget Calculations	☐	
i. Maximum Applied Water Allowance (MAWA)	☐	
ii. Estimated Total Water Use (ETWU)	☐	
2. Soil Management Plan	☐	
3. Landscape Design Plan	☐	
4. Irrigation Design Plan	☐	

Signature

I agree to comply with the requirements of the WELO and submit a complete Landscape Document Package.

Marisa Peltier
Landscape Plans Preparer Signature Required

1-13-25
Date

Water Efficient Landscape Worksheet

City of San Mateo Reference Evapotranspiration (ETo): 42.8

Hydrozone # / Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
1 : Low shrubs	0.1	Bubbler	0.81	0.12	648	80.00	2,123
2 : Medium shrubs	0.4	Bubbler	0.81	0.49	191	98.07	2,603
3 : Trees	0.3	Bubbler	0.81	0.37	142	53.09	1,409
				Totals	A 981	B 227.16	6,028
Special Landscape Areas							
Play area	[redacted]			1	7960		
				1	0		
				1	0		
				Totals	C 7960	D 7960	211,227
						ETWU Total	217,204
				Maximum Allowed Water Allowance (MAWA)*			222,041

Hydrozone #/ Planting Description
E.g.
1.) front lawn
2.) low water use plantings
3.) medium water use planting

[b]*Irrigation Method*
overhead spray or drip

[c]*Irrigation Efficiency*
0.75 for spray head
0.81 for drip

[d]*ETWU* (Annual Gallons Required)
= Eto x 0.62 x ETAF x Area
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year.

***MAWA (Annual Gallons Allowed) =** *(Eto) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]*

where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and .45 for non-residential areas.

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	227.16	(B)
Total Area	981	(A)
Average ETAF	0.23	**B ÷ A**

Average Evapotranspiration Adjustment Factor (ETAF) for Regular Landcape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

All Landscape Areas

Total ETAF x Area	8187.16	(B+D)
Total Area	8,941	(A+C)
Sitewide ETAF	0.91	**(B+D) ÷ (A+C)**

Soil Management Report Checklist

Site Address / APN: 50 E. 5th Ave., San Mateo, CA 94401

Date Prepared: Not prepared yet

Soil Management Report Submittal Checklist		Shown on Plans / Page #
1. Soil Sample Lab Report		
a. Soil Sampling Conducted at Appropriate Depth for Intended Plants	☐	
b. Soil Analysis	☐	
i. Soil Texture	☐	
ii. Infiltration Rate	☐	
iii. pH	☐	
iv. Total Soluble Salts	☐	
v. Percent Organic Matter	☐	
vi. Recommendations	☐	
2. Soil Management Plan	☐	
3. Landscape Design Plan	☐	
4. Irrigation Design Plan	☐	

Signature

I verify that the Soil Management Report was provided to the person(s) preparing the Landscape Design Plan.

Marisa Peltier
Landscape Plans Preparer Signature Required

1-13-25
Date

Landscape Design Plan Checklist

Site Address / APN: 50 E. 5th Ave., San Mateo, CA 94401

Date Prepared: 9-29-23

Landscape Design Plan Submittal Checklist		Shown on Plans / Page #
1. Hydrozone		
a. Delineate and Label each Hydrozone by #, Letter, or Other Method	☑	LP101
b. Identify each Hydrozone as Low, Moderate, High, or Mixed Water Use	☑	
2. Identify on Plans:		
a. Recreation Areas	☑	
b. Areas Permanently and Solely Dedicated to Edible Plants N/A	☐	
c. Areas Irrigated with Recycled Water N/A, WELL WATER	☐	
d. Types of Mulch and Application Depth	☑	
e. Soil Amendments, Type & Quantity	☐	
f. Location of Hardscape (Pervious & Non-Pervious)	☑	
g. Applicable Rain Harvest or Catchment Technologies N/A	☐	
i. 24-Hour Capacities	☐	
h. Graywater Systems (if applicable) N/A	☐	
i. Discharge Piping	☐	
ii. System Components	☐	
iii. Area(s) of Distribution	☐	
3. Stormwater Requirements Checklist (C3)	☑	

Signature

The following statement shall be printed on the front page of the Landscape Design Plan along with the signature of person(s)

I have complied with the criteria of the Water Efficient Landscape Ordinance and applied them for efficient use of water in the Landscape Design Plan.

Marisa Peltier
Landscape Plans Preparer Signature Required

1-13-25
Date

Irrigation Design Plan Checklist

Site Address / APN: 50 E. 5th Ave., San Mateo, CA 94401

Date Prepared: 9-29-23

Irrigation Design Plan Submittal Checklist		Shown on Plans / Page #
1. Location of Separate Water Meters for Landscaped Areas	UTILIZING EXISTING SYSTEM ☐	LI101
2. Location, Type and Size of all System Components		
a. Controllers	☑	
b. Main and Lateral Lines	☑	
c. Valves	☑	
d. Sprinkler Heads	☑	
e. Moisture Sensing Devices	☐	
f. Rain Switches	☐	
g. Quick Couplers	☑	
h. Pressure Regulators	☐	
i. Backflow Prevention Devices	☐	
3. For each Station:		
a. Flow Rate (gallons per minute)	☑	
b. Application Rate (inches per hour)	☑	
c. Design Operating Pressure (pressure per square inch)	☑	

Signature

The following statement shall be printed on the front page of the Irrigation Design Plan along with the signature of person(s) authorized to design the landscaping plan:

I have complied with the criteria of the Water Efficient Landscape Ordinance and applied them for efficient use of water in the irrigation design plan.

Marisa Peltier
Landscape Plans Preparer Signature Required

1-13-25
Date

Certificate of Completion

Part 1: This portion is filled out by the project applicant, landscape architect and / or landscape contractor upon completion of the landscape project, and submitted to the City.

Project information

Project Name

Site Address

APN(s)

Applicant Name

Phone Number

Email Address

Street Address

Property Owner Name (if different from applicant)

Phone Number

Email Address

Street Address

Property Owner Signature

"I / we certify that I / we have received copies of all of the documents within the Landscape Documentation Package and the Certificate of Completion, and that it is our responsibility to ensure that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

Property Owner Signature

Date

Part 2: This portion is stamped and signed by the signer of the Landscape Design Plan, Irrigation Design Plan, or by the licensed landscape contractor and submitted to the City following project installation. This means the signer is one or more of the following: a licensed landscape architect, a licensed landscape contractor, a certified irrigation designer, any person authorized to design landscapes and/or an irrigation system.

"I / we certify that based on periodic site observations, the work has been completed in accordance with the Water Efficient Landscape Ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package. Significant changes made during construction comply with the ordinance."

Signature

Date

Printed Name

License Number

Please provide completed stamp here

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT — MARISA L. PELTIER (LIC. # 6421) — 6-27-26 — STATE OF CALIFORNIA

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City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

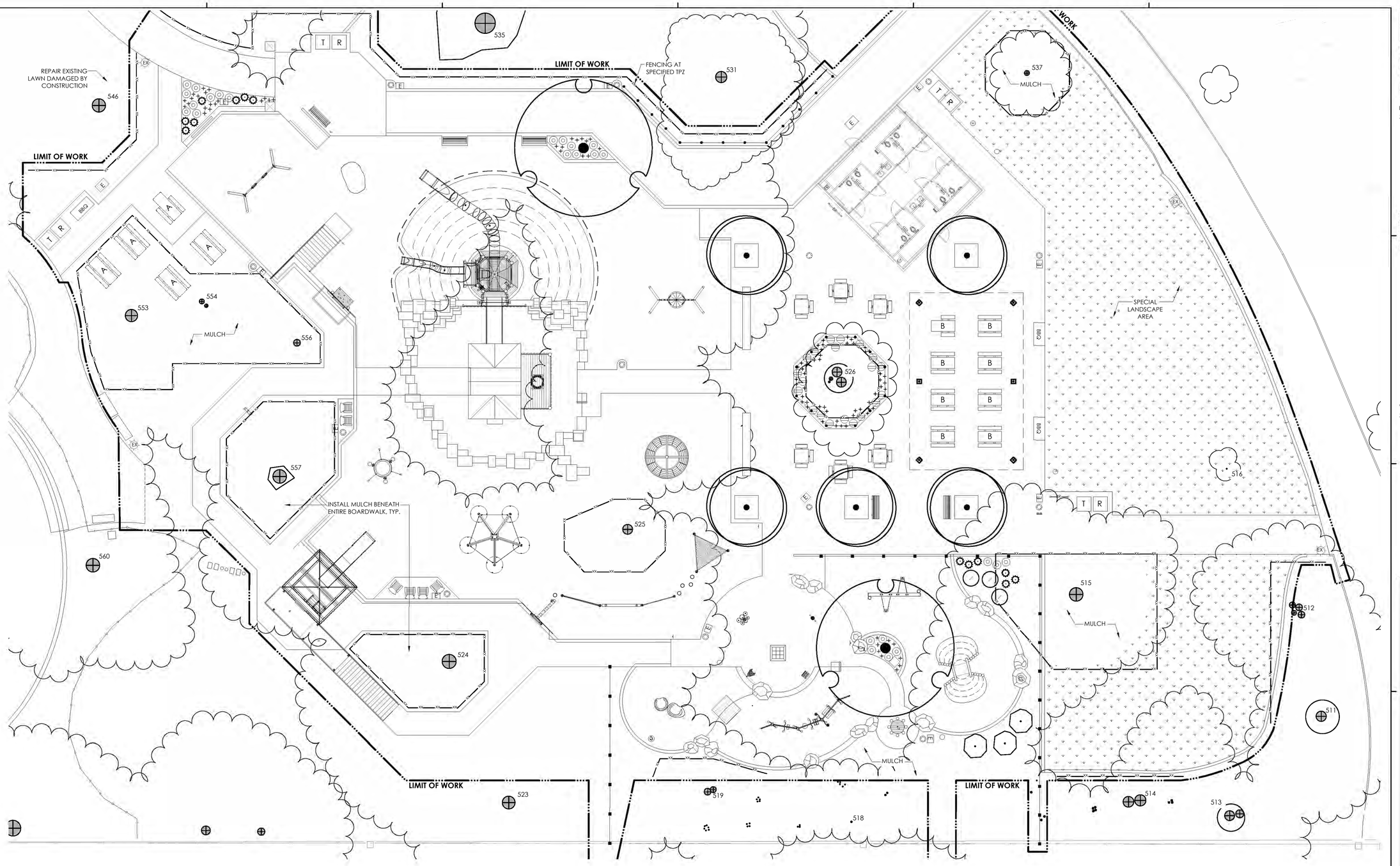
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

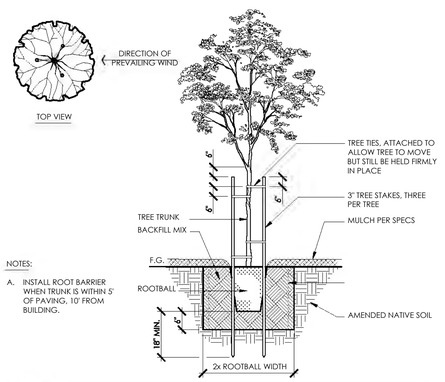
WELO LANDSCAPE DOCUMENTATION PACKAGE

NO.	REVISION	DATE
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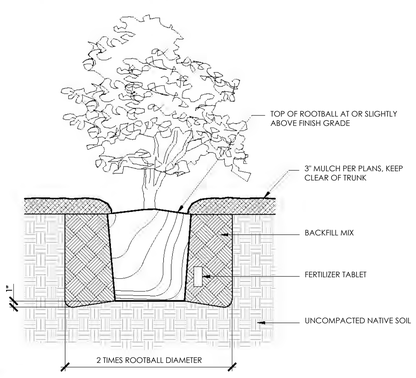
PROJECT MANAGER
Marisa Peltier
DRAWN BY MP/YI
CHECKED BY LM
DATE
JANUARY 31 2025
RRM PROJECT NUMBER
1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
LI601

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2 TREE PLANTING WITH WOOD STAKES
1/2" = 1'-0" RRM-1600-1652.01-114



1 SHRUB PLANTING
1 1/2" = 1'-0" RRM-1600-1652.01-75

PLANT SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	QTY
TREES					
	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD MAIDENHAIR TREE	48"BOX	MODERATE	5
	QUERCUS TOMENTELLA	ISLAND OAK	48"BOX	LOW	2
SHRUBS					
	ACACIA COGNATA 'COUSIN ITT'	COUSIN ITT LITTLE RIVER WATTLE	5 GAL	LOW	3
	CAMELLIA JAPONICA 'KUMASAKA'	CAMELLIA	5 GAL	MODERATE	3
	CAREX DIVULSA	EUROPEAN GREY SEDGE	5 GAL	LOW	25
	HAKONECHLOA MACRA	JAPANESE FOREST GRASS	5 GAL	MODERATE	13
	IRIS X GERMANICA	MIXED BEARDED IRIS BULBS	BULB	LOW	88
	SEDUM X 'AUTUMN JOY'	AUTUMN JOY SEDUM	1 GAL	LOW	20

SYMBOL	BOTANICAL NAME	COMMON NAME	CONT	WUCOLS	SPACING	QTY
GROUND COVERS						
	FESTUCA X 'ENDURO'	ENDURO DWARF TALL FESCUE	SOD	MODERATE		5,691 SF

PLANTING NOTES

1. PLANT LIST IS FOR CONVENIENCE OF CONTRACTOR ONLY. IN CASE OF DISCREPANCIES BETWEEN THE PLANS AND THE LIST, PLANS SHALL PREVAIL.
2. PLANT LOCATIONS SHOWN ON THE PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL LOCATE ALL PLANT MATERIAL UNDER THE DIRECTION OF THE CITY PRIOR TO PLANTING HOLE EXCAVATION.
3. THE CITY RESERVES THE RIGHT TO MAKE SUBSTITUTIONS, ADDITIONS, AND DELETIONS TO THE PLANTING LAYOUT AS WORK PROGRESSES.
4. CONTRACTOR SHALL INSTALL A 3" THICK LAYER OF MULCH PER SPECIFICATIONS IN ALL PLANTER AREAS AND AREAS BENEATH EXISTING TREES WITHIN THE PROJECT LIMIT OF WORK.
5. EXECUTE GREAT CARE WHEN PLANTING WITHIN THE DRIPLINE OF EXISTING TREES. DO NOT SEVER ROOTS FOR PLANTING HOLE EXCAVATION.
6. SOIL MANAGEMENT:
   EXISTING SITE SOIL AND IMPORT SOIL SHALL BE SUBMITTED TO A RECOGNIZED SOIL LABORATORY FOR SOIL AND PLANT TESTING PRIOR TO CONSTRUCTION. ANALYSIS OF SOIL SAMPLES PROVIDED BY THE LABORATORY SHALL INCLUDE SOIL TEXTURE, INFILTRATION RATE, PH BALANCE, TOTAL SOLUBLE SALTS, PERCENT OF ORGANIC MATTER, AND AMENDMENT RECOMMENDATIONS. RECOMMENDATIONS SHALL INCLUDE AMENDING THE SOIL WITH COMPOST TO BRING THE SOIL ORGANIC MATTER TO A MINIMUM OF 6% BY DRY WEIGHT AND INCORPORATE NATURAL, NON-SYNTHETIC FERTILIZERS TO RECOMMENDED LEVELS FOR THE PLANT PALETTE INCLUDED IN THE PLANS. SUBMITTAL OF SOIL REPORT AND SOIL AMENDMENTS SHALL BE APPROVED BY THE PROJECT LANDSCAPE ARCHITECT PRIOR TO PLACEMENT OF SOIL AND AMENDMENT ORDERS BY THE CONTRACTOR.

NORTH
0 10 20 30 feet
1" = 10'-0"

rrm design group
rrmdesign.com | (510) 751-4910
325 Davis St., San Leandro, CA 94577

LICENSED LANDSCAPE ARCHITECT
MARISA A. PELTIER
No. 6439
6.30.25
RENEWAL DATE
STATE OF CALIFORNIA

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City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

VE SET

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PLANTING PLAN AND SCHEDULE

NO.	REVISION	DATE

PROJECT MANAGER: Marisa Peltier
DRAWN BY: MP/YI
CHECKED BY: LM
DATE: JANUARY 31, 2025 (JANUARY 31, 2025)
RRM PROJECT NUMBER: 1652-02-RC22
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: LP101

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LEGEND

NOTE: INTERPRET IN CONTEXT

LIGHT FIXTURES

- CEILING SURFACEMOUNT
- WALL SURFACEMOUNT
- PENDANT MOUNT
- RECESSED DOWNLIGHT
- RECESSED WALLWASH
- RECESSED FLUOR.
- SURFACE FLUOR.
- FLUOR. STRIP UON
- TRACK LIGHT
- DIRECTIONAL FLOOD
- EMERGENCY FIXTURE
- POLE LIGHT
- POLE LIGHT- DECORATIVE
- TANDEM-WIRED LAMPS
- BOLLARD
- GRADE WELL LIGHT
- EXIT LIGHT- WALL
- EXIT LIGHT- CEILING (ARROW INDICATES DIRECTION)
- A — LETTER ADJACENT INDICATES FIXTURE TYPE

POWER/COMM.

- SINGLE RECEPT.
- DUPLEX RECEPT.
- MOUNTED ABOVE COUNTER
- GFI/GND FAULT CIRCUIT-INTERRUPT DUPLEX- HALF SWITCHED
- DOUBLE DUPLEX
- SPECIAL CONFIGURATION
- DUPLEX- FLOOR OUTLET
- JUNCTION BOX
- TELEPHONE OUTLET
- DATA OUTLET
- PHONE/DATA COMBO OUTLET
- MOUNTED ABOVE COUNTER
- SAFETY DISCONNECT
- TELEVISION OUTLET

CONDUIT/WIRE

- NEW
- UNDERGROUND
- NEW POWER HOMERUN (3 HOTS & NEUT SHOWN)
- ISOLATED GROUND
- EXISTING TO REMAIN
- (E) POWER HOMERUN
- CONDUIT STUB (W/MARKER)
- VERTICAL CONDUIT RUN
- CONDUIT SEAL
- FLEXIBLE CONNECTION
- LOW VOLTAGE
- SURFACEMOUNT RACEWAY

SWITCHES

- $ SPST
- $2 DPST
- $3 3-WAY
- $4 4-WAY
- $D DIMMER
- $T TIMER SWITCH
- $T W/THERMAL OVERLOAD
- $P W/PILOT LIGHT
- $K KEY OPERATED
- $2$3 DUAL LEVEL SWITCHING
- .a SWITCHLEG DESIGNATION
- OS OCCUPANCY SENSOR

MISCELLANEOUS

- MOTOR
- THERMOSTAT
- CIRCUIT BREAKER
- FUSIBLE SWITCH
- Ø PHASE
- GROUND

ABBREVIATIONS

A	AMPERE
AF	AMP FUSE RATING
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AIC	AMPERES INTERRUPT CAPACITY
AS	AMP SWITCH RATING
BFG	BELOW FINISH GRADE
CB	CIRCUIT BREAKER
CEC	CAL ELECTRICAL CODE
CKT	CIRCUIT
C	CONDUIT
C.O.	CONDUIT ONLY
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EF-#	EXHAUST FAN
(EXN)	(E) IN (N) LOCATION
(EXR)	(E) TO BE (R)
(F)	FUTURE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
G	GROUNDING CONDUCTOR
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT CKT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
GWS	GANGED WITH SWITCH
IG	ISOLATED GROUND
LTG	LIGHTING
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTTB	MAIN TELEPHONE TERMINAL BOARD
(N)	NEW
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
P	POLE
PV	PHOTOVOLTAIC
(R)	RELOCATE(D)
(TBR)	TO BE REMOVED
TYP	TYPICAL
UC	UNDERCABINET
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERES
W	WATT, WIRE
WP	WEATHERPROOF (NEMA 3R)

GENERAL NOTES

1. CODE COMPLIANCE: ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES, STANDARDS, AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS (IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION) OF THE FOLLOWING PUBLICATIONS:
   A. CALIFORNIA CODE OF REGULATIONS TITLE 24; INCLUDES 2019 CALIFORNIA ELECTRICAL CODE, 2019 CALIFORNIA FIRE CODE, 2019 CALIFORNIA BUILDING CODE, ETC. WITH LOCAL AMENDMENTS AS APPLICABLE.
   B. AMERICANS WITH DISABILITIES ACT (ADA).
2. SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT ALL CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORKPERSONS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, FLAGS, TAPE, ETC. AS REQUIRED FOR SAFETY. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES, WHICH MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.
3. FIRE RATED ASSEMBLIES SHALL MAINTAIN RATINGS AS SPECIFIED IN THE CALIFORNIA BUILDING CODE CHAPTER 7. CONTRACTOR SHALL PROVIDE AND INSTALL PHYSICAL ENCLOSURE AROUND FIXTURES, PANELS, ETC. AS REQUIRED. ALL ASSEMBLIES TO BE PENETRATED SHALL BE INSTALLED WITH APPLICABLE THROUGH-PENETRATION FIRESTOP SYSTEM AS DETERMINED BY UL CLASSIFICATION. BEFORE CONSTRUCTION, VERIFY AND COMPLY WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.
4. MOUNTING HEIGHTS SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

   +15" AFF: RECEPTACLES, TELEPHONE, TV & DATA OUTLETS. (MEASURED BOTTOM OF OUTLET BOX)
   +46" AFF: OUTLET ABOVE COUNTER (MEASURED TOP OF OUTLET BOX)
   +48" AFF: LIGHT SWITCHES. (MEASURED TOP OF OUTLET BOX)
   +48" AFF: FIRE ALARM MANUAL PULL STATIONS, T-STATS. (MEASURED TOP OF OUTLET BOX)
   THE LOWER OF +80" AFF TO BOTTOM OF LENS, OR 6" BELOW CEILING: FIRE ALARM VISUALS.

   ELECTRICAL SWITCHES: CONTROLS AND SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHT AND RECEPTACLE OUTLETS, APPLIANCES OR COOLING, HEATING AND VENTILATING EQUIPMENT, SHALL BE LOCATED NO MORE THAN 48 INCHES MEASURED FROM THE TOP OF THE OUTLET BOX NOR LESS THAN 15 INCHES MEASURED FROM THE BOTTOM OF THE OUTLET BOX TO THE LEVEL OF THE FINISH FLOOR OR WORKING PLATFORM. [CBC 11B-308.1.1]

   ELECTRICAL RECEPTACLE OUTLETS: ELECTRICAL RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30 AMPERES OR LESS AND COMMUNICATION SYSTEM RECEPTACLES SHALL BE LOCATED NO MORE THAN 48 INCHES MEASURED FROM THE TOP OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING NOR LESS THAN 15 INCHES MEASURED FROM THE BOTTOM OF THE RECEPTACLE OUTLET BOX OR RECEPTACLE HOUSING TO THE LEVEL OF THE FINISH FLOOR OR WORKING PLATFORM [CBC 11B-308.1.2]

   BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, ETC. WITH ARCHITECT OR OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WAINSCOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL SHEETS SHALL GOVERN.
5. LABEL PANELS, CABINETS, BACKBOARDS, MAIN DEVICES, SAFETY SWITCHES, CONTACTORS AND OTHER SPECIFICALLY DESIGNATED EQUIPMENT SHOWN ON PLANS. USE ENGRAVED LAMINATED PLASTIC NAMEPLATES ATTACHED BY SCREWS OR RIVETS. FOR FEEDERS, NEATLY AND INDELIBLY LABEL CONDUIT DESTINATIONS ON BOTH VISIBLE ENDS OF CONDUIT RUNS WHERE CONDUITS TERMINATE AT DESIGNATED ENCLOSURES, STRUCTURES OR EQUIPMENT (INCLUDING PULL AND SPLICE BOXES).

SINGLE LINE DIAGRAM NOTES

- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT AND COORDINATE WITH THE SERVING UTILITY TO ENSURE ALL SERVING UTILITY REQUIREMENTS ARE MET.
- SERVICE ENTRANCE EQUIPMENT SHALL BE IN ACCORDANCE WITH THE SERVING ELECTRIC UTILITY COMPANY'S REQUIREMENTS.
- FOR SERIES RATED EQUIPMENT; IN ADDITION TO ALL FACTORY APPLIED, CODE REQUIRED MARKING AND SPECIFIED LABELING OF THE ELECTRICAL PANELBOARD AND THEIR COMPONENTS, ADDITIONAL MARKING AND LABELING IDENTIFYING THE SERIES RATED SYSTEM SHALL BE PROVIDED AS FOLLOWS:
  A. THE SERIES COMBINATION INTERRUPTING RATING, AS INDICATED ABOVE, SHALL BE MARKED ON THE EQUIPMENT BY THE MANUFACTURER AS REQUIRED BY NEC 240-83(C).
  B. WHEN USED, THE CONTRACTOR SHALL USE A "SERIES RATED SYSTEM" LABEL INDICATING SERIES RATING WARNINGS, COMPLYING WITH NEC 110-22 AND SHALL BE FURNISHED BY MANUFACTURER. THE LABEL SHALL BE PERMANENTLY AFFIXED TO THE INTERIOR OF PANELBOARD'S TRIM WHERE IT CAN BE READILY SEEN BY SERVICE PERSONNEL. THE COMPLETED LABEL SHALL READ:

  CAUTION!
  SERIES COMBINATION SYSTEM RATED SYSTEM [XX,XXX]A.
  IDENTIFIED REPLACEMENT COMPONENT REQUIRED.
  ANY ADDITIONS OR REPLACEMENTS SHALL BE WITH IDENTICAL COMPONENTS.
  FAILURE TO DO SO COULD RESULT IN ELECTRICAL EXPLOSION AND FIRE.

  SERIES RATINGS SHALL NOT BE USED WHERE MOTORS ARE CONNECTED ON THE LOAD SIDE OF THE HIGHER-RATED OVERCURRENT DEVICE AND ON THE LINE SIDE OF THE LOWER-RATED OVERCURRENT DEVICE, WHEN THE SUM OF THE MOTOR FULL-LOAD CURRENTS EXCEEDS 1 PERCENT OF THE INTERRUPTING RATING OF THE LOWER-RATED CIRCUIT BREAKER PER NEC 240-86(B).
- ALL CONDUCTORS SHALL BE COPPER WITH TYPE THHN/THWN INSULATION UNLESS OTHERWISE NOTED.
- ALL SWITCHES, CIRCUIT BREAKERS AND OTHER EQUIPMENT, AS SPECIFIED, SHALL HAVE TERMINATION PROVISIONS LISTED AND IDENTIFIED FOR USE WITH 75 DEG. CONDUCTORS, AND ALL FEEDER CONDUCTORS, AND CONDUITS, ARE SIZE BASED ON USE OF 75 DEG. C COPPER WIRES TYPE THWN/THHN.
- ALL EQUIPMENT SHALL HAVE AN APPROVED TESTING LABORATORY LABEL ATTACHED [UL, CSA, ETC.] (CEC 110-2).
- PER CALIFORNIA TITLE 24 SECTION 130.5, WIRING PROVISIONS HAVE BEEN MADE FOR DESEGREGATION OF THE ELECTRICAL CIRCUITS. THE OPTIONAL METERING HAS NOT BEEN PROVIDED FOR THIS PROJECT.
- REFER TO PANEL SCHEDULES FOR INDIVIDUAL BRANCH CIRCUIT VOLTAGE DROP AND SINGLE LINE DIAGRAM FOR FEEDER VOLTAGE DROP CALCULATIONS.
- BRANCH CIRCUIT/FEEDER DISTANCE IS SHOWN FOR REFERENCE ONLY AS THE BASIS OF VOLTAGE DROP CALCULATIONS. CONDUCTOR DISTANCE AS INDICATED SHALL NOT BE USED FOR BIDDING/CONSTRUCTION PURPOSES. SHOULD THE FEEDER DISTANCE EXCEED THE LENGTH NOTED PER INSTALLATION CONDITIONS, NOTIFY THE ENGINEER OF RECORD. TYPICAL.

GENERAL SITE PLAN NOTES

A. TRENCHING AND BACKFILLING FOR ALL CONDUIT SYSTEMS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL CONDUITS SHALL HAVE MINIMUM COVER REQUIREMENTS AS SPECIFIED IN CEC 300-5. MORE STRINGENT DEPTH REQUIREMENTS MAY BE IMPOSED BY UTILITY COMPANY AND / OR THIS SPECIFICATION. JOINT TRENCHING MAY BE UTILIZED WHERE PRACTICABLE AND WERE PERMITTED BY THIS SPECIFICATION.

B. LOCATIONS OF EXISTING UNDERGROUND (UG) UTILITY SYSTEMS SHALL BE DETERMINED BY CALLING UNDERGROUND SERVICE ALERT (USA) TOLL FREE AT 811. WHEN PLANNING UNDERGROUND WORK, AND BEFORE YOU DIG, CONTACT UNDERGROUND SERVICE ALERT (USA) AT LEAST 48 HOURS PRIOR TO EXCAVATION (WEEKENDS EXCLUDED) FOR THE LOCATION OF UNDERGROUND GAS AND ELECTRIC LINES OR EQUIPMENT.

C. MAINTAIN REQUIRED CLEARANCES FROM ALL SANITARY SEWER, WATER AND STORM DRAIN PIPING. REFER TO CIVIL PLANS FOR EXACT LOCATIONS AND DEPTHS OF PIPING.

D. ALL SITE UTILITY WORK SHALL BE INSTALLED PER THE UTILITY COMPANY ISSUED CONSTRUCTION DRAWINGS AND SPECIFICATIONS SPECIFIC TO THIS PROJECT. ANY UTILITY WORK PERFORMED WITHOUT PRIOR UTILITY COMPANY APPROVAL SHALL BE DONE AT THE CONTRACTOR'S RISK.

LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	MANUFACTURER	CATALOG NO.	VOLTAGE	MAX. VA.	LAMPING	MOUNTING	DESCRIPTION
A	⚙	FIXTURE: KING LUMINAIRE POLE: STRESSCRETE	FIXTURE: K118R-83AR-V-40(SSL)-1036-120:277-K23-GRS-PR7-3K-WS POLE: KM20FF-12' (REF TO SHEET E502)	120-277V	40	LED 3000K TYPE 5	POLE REFER TO DETAIL ON E501	CENTRAL PARK STANDARD DECORATIVE LIGHT POLE AND LED LAMP. REFER TO DETAILS ON SHEET E502.
B	◯	BK-LIGHTING	FIXTURE: CK-LED-TR-x99-WFL-***-12-11-C-010-120 ***PREMIUM FINISH TO MATCH SHADE STRUCTURE.	120	13	LED 3000K	SURFACE	SURFACE MOUNTED OUTDOOR FIXTURE. COORDINATE MOUNTING PROVISIONS LOCATIONS AND CONDUIT/CIRCUIT ROUTING WITH SHADE STRUCTURE MANUFACTURER.
C	⬡	B-K LIGHTING	FIXTURE: S-HP2-LED-TR-x58-SP-BZP-11-ELV- MT-AH	120	12	4000K LED	EMBED IN CONCRETE FLUSH AT GRADE.	ADJUSTABLE AT GRADE WELL LIGHT WITH INTEGRAL DRIVER. PLACE FIXTURES 12" AWAY FROM SIGN FACE. ADJUST LIGHTS TO AIM AND WASH FACE OF SIGN.

PANEL RR-1

BUS RATING: 200A, 120/208V, 1PH, 3W
MAIN: 200A MAIN CIRCUIT BREAKER
SPACES: 30 FULL SIZE BOLT-ON CB SPACES
AIC RATING: 25 KAIC PANEL

SURFACE MOUNT, NEMA 1
LOCATION: RESTROOM CHASE
WITH EQUIPMENT GND BUS
PROVIDED BY: OTHERS

CKT %WD	DIST (FT)	NOTES	LOAD TYPE	CKT	DESCRIPTION	TRIP	POLES	COND SIZE	CONNECTED VA PHASE A	CONNECTED VA PHASE B	COND SIZE	POLES	TRIP	DESCRIPTION	CKT	LOAD TYPE	NOTES	DIST (FT)	CKT %WD
		2		1	RR LOADS	20	1		40			1	20	RR LOADS	2		2		
		2		3	RR LOADS	20	1		40	40		1	20	RR LOADS	4		2		
		2		5	RR LOADS	20	1		40			1	20	RR LOADS	6		2		
		2		7	RR LOADS	20	1			40		1	20	RR LOADS	8		2		
		2		9	RR LOADS	20	1		71			1	20	RR LOADS	10		2		
		2		11	RR LOADS	20	1			360		1	20	RR LOADS	12		2		
		2		13	RR LOADS	20	1		108			1	20	RR LOADS	14		2		
		2		15	RR LOADS	20	1			1400		1	20	RR LOADS	16		2		
		2		17	RR LOADS	20	1		1400		3	2	100	PANEL RR-2	18		2	50	0.02%
				19	SPACE					3000	3	-	100	*	20		2	50	0.02%
				21	SPACE									SPACE	22				
1.35%	280	1		23	PLAYGROUND POLE LIGHTS - SOUTHEAST	20	1	10		280	10	1	20	SHADE STRUCTURE LIGHTS	24		1	200	0.36%
2.65%	400	1		25	PLAYGROUND POLE LIGHTS - NORTH WEST	20	1	10	585	105	12	1	20	LIGHTING CONTROL PANEL	26			5	0.03%
3.27%	280	1		21	PLAYGROUND POLE RECPT - SOUTHEAST	20	1	8	200	1080				SPACE	28				
1.56%	400	1		25	PLAYGROUND POLE RECPT - NORTH WEST	20	1	8	360					SPACE	30				

CON:	5863	8145
25%	0	0
SUB:	0	0
TOT:	5863	8145
AMPS	49	68

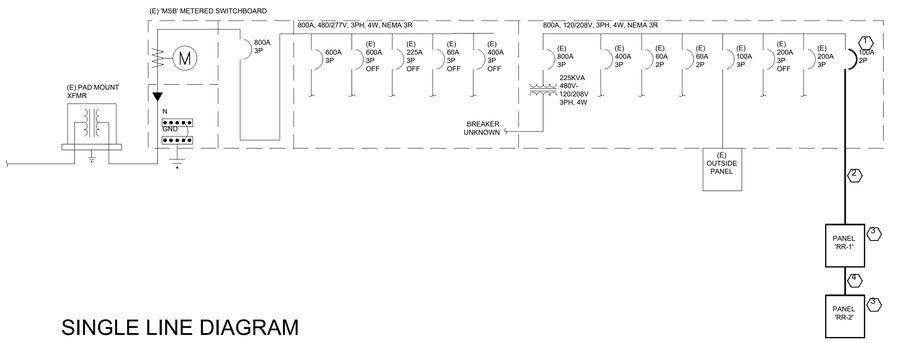
PANEL NOTES:
1. ROUTE CIRCUIT THROUGH LIGHTING CONTROL PANEL
2. CIRCUITS FOR RESTROOM

LOAD (VA)	LOAD TYPE LEGEND	
0	R	RECEPTACLE
0	L	LIGHTING (125% OF CONNECTED LOAD CEC 215.2)
0	M	MECHANICAL
0	K	KITCHEN APPLIANCE
0	N	NON-CONTINUOUS MISC
0	C	CONTINUOUS MISC. (125% OF CONNECTED LOAD CEC 215.2)

REFERENCE NOTES

1. PROVIDE NEW 100A/2P BREAKER IN 120/280V SECTION. SQUARE D POWERPACT HDA261001.
2. 2"C - 3#3/0 THWN & 1#1 GND.
3. RESTROOM PANELBOARD PROVIDED BY RESTROOM MANUFACTURER.
4. 1-1/2"C - 3#3 THWN & 1#6 GND.

LOAD CALCULATIONS	
EXISTING PEAK DEMAND (METER # 1010025382) ON 1/1/2022	265.92 kW 332.4 kVA (0.8PF) 399.8A @480V, 3PH
25% OF PEAK DEMAND	83.1 KVA
NEW LOAD (EST)	9.4 kVA
TOTAL SERVICE LOAD	424.9 kVA 511A @480V, 3PH



SINGLE LINE DIAGRAM

OTTO ELECTRICAL

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805.459.4329

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REGISTERED PROFESSIONAL ENGINEER
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EXP. 8-30-26
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STATE OF CALIFORNIA

CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

100% CONSTRUCTION DOCUMENT SUBMITTAL

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

GENERAL NOTES AND LEGEND

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER: Garrett Otto
DRAWN BY: GO
CHECKED BY: GO
DATE: January 29, 2025
PROJECT NUMBER: 22-005.02
CITY OF SAN MATEO PROJECT NUMBER: 610027
SHEET: E001

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UNDERGROUND CONDUIT INSTALLATION

THE CITY PREFERS NEW UNDERGROUND CONDUITS TO BE INSTALLED UTILIZING DIRECTIONAL BORING TO GREATEST EXTENT PRACTICAL.

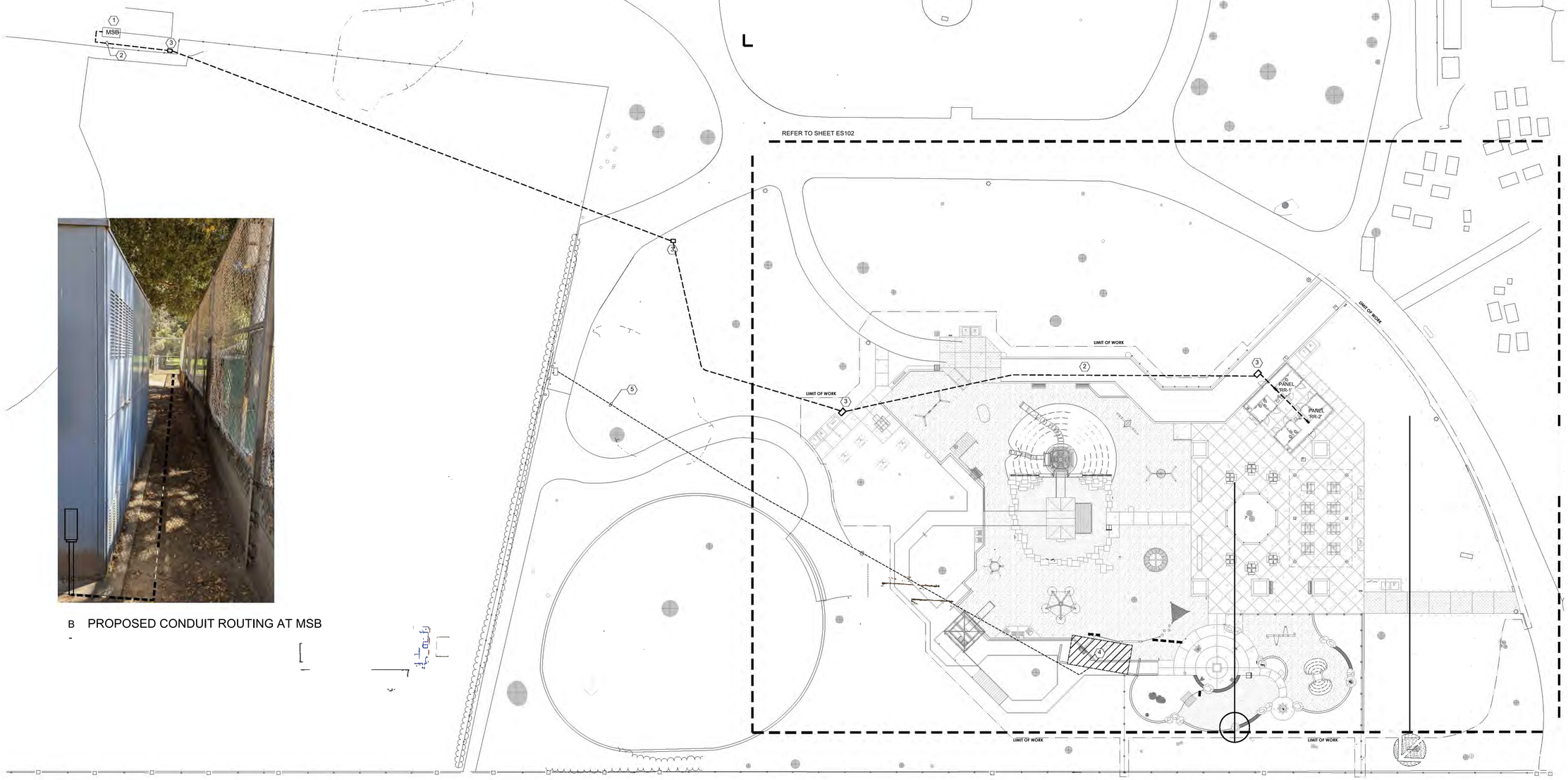
x CONSTRUCTION NOTES

1. PROVIDE NEW SQUARE D POWERPACT 100A/2P BREAKER OF SIMILAR STYLE AND RATING IN EXISTING 120/208V SECTION OF EXISTING SWITCHBOARD. LABEL BREAKER "PLAYGROUND RESTROOM". SEE DETAIL A.
2. 2"C - 3#3/0 THWN & 1#1 GND FEEDER FROM MSB TO PANEL 'RR-1' AT NEW RESTROOM. PENETRATE THROUGH SIDE OF MSB WITH WEATHER TIGHT FITTINGS. SEE DETAIL B.
3. 2'X3' CONCRETE PULL BOX.
4. EXISTING RESTROOM TO BE REMOVED.
5. DISCONNECT AND REMOVE CIRCUIT FROM EXISTING RESTROOM BACK TO CIRCUIT BREAKER AT SCORE BOARD. CUT CONDUIT BACK BELOW GRADE.



A - PROPOSED BREAKER FOR MSB

B - PROPOSED CONDUIT ROUTING AT MSB



SITE ELECTRICAL PLAN - OVERALL

SCALE: 1"=20'

NORTH

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DP

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SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

ELECTRICAL SITE PLAN - OVERALL

NO.	REVISION	DATE

PROJECT MANAGER
Garrett Otto

DRAWN BY: GO | CHECKED BY: GO

DATE
JANUARY 2025

PROJECT NUMBER
22-005.02

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
ES101

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UNDERGROUND CONDUIT ROUTING

CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY. ROUTE CONDUITS ALONG DIRT/BARK/PLANTING AREAS AND AVOID TREE PROTECTION ZONE, PLAY EQUIPMENT, AND PAVED AREAS TO THE GREATEST EXTENT POSSIBLE. PROVIDE REDLINES OF APPROXIMATE INSTALLED ROUTING.

CONSTRUCTION NOTES

1. DISCONNECT AND REMOVE EXISTING LIGHT FIXTURE. CIRCUIT FED FROM PANELBOARD IN SHED NORTH OF PLAYGROUND (NOT SHOWN). CONTRACTOR SHALL DETERMINE EXISTING CIRCUITING TO/FROM LIGHTS TO REMAIN AND PROVIDE ANY ADDITIONAL CONDUIT AND CIRCUITING TO ENSURE CONTINUOUS CIRCUIT FROM ORIGINAL SOURCE TO EXISTING FIXTURE TO REMAIN. SALVAGE POLE AND FIXTURE TO CITY. CONTRACTOR TO PROVIDE AN ALLOWANCE WITH ASSUMED TIME AND MATERIAL LINE ITEM FOR THIS EFFORT.
2. LIGHTING CONTROL PANEL. WATTSTOPPER LMCP8-10V-115V/277V-BHDR-115V WITH LENCBS ENCLOSURE. MOUNTED IN RESTROOM CHASE. PROGRAM SUCH THAT LIGHTS TURN ON TO 100% DUSK, DIM TO 30% AT 10PM, AND OFF AT DAWN. CONFIRM PROGRAMMING WITH CITY.
3. 2'X3' CONCRETE PULL BOX.
4. FEEDER FROM MSB. SEE ES-101.
5. 1"C - 2#10 THWN & 1#10 GND FOR LIGHTING CIRCUIT AND (1) 1PR#16 FOR 0-10V DIMMING CIRCUIT.
6. N09 CONCRETE PULL BOX. TYPICAL UNLESS NOTED OTHERWISE.
7. 2"C - 6#10 THWN & 3#10 GND FOR LIGHTING CIRCUIT, (3) 1PR#16 FOR 0-10V DIMMING CIRCUIT, AND 4#8 THWN & 1#10 GND FOR RECEPTACLES.
8. STUB CONDUIT INTO SHADE STRUCTURE SUPPORT COLUMN FOOTING. LIGHTING CIRCUIT CONTINUED IN SHADE STRUCTURE.
9. OUTDOOR PHOTOCELL WATTSTOPPER LMPO-200 WITH LMIN-104 INTERFACE MODULE. MOUNT PHOTOCELL ON EXTERIOR OF NORTH SIDE OF BUILDING. CONNECT TO LIGHTING CONTROL PANEL VIA INTERFACE MODULE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTION FOR WIRING DETAILS.
10. 1-1/4"C - 4#10 THWN & 2#10 GND FOR LIGHTING CIRCUIT, (2) 1PR#16 FOR 0-10V DIMMING CIRCUIT, AND 2#8 THWN & 1#10 GND FOR RECEPTACLES.
11. 1"C -2#10 THWN & 1#10 GND FOR LIGHTING CIRCUIT, (1) 1PR#16 FOR 0-10V DIMMING CIRCUIT, AND 2#8 THWN & 1#10 GND FOR RECEPTACLES.
12. 1"C -2#10 THWN & 1#10 GND FOR LIGHTING CIRCUIT.
13. EXISTING LIGHT POLES TO REMAIN. CONTRACTOR SHALL DETERMINE EXISTING CIRCUITING TO/FROM LIGHTS TO REMAIN AND PROVIDE ANY ADDITIONAL CONDUIT AND CIRCUITING TO ENSURE CONTINUOUS CIRCUIT FROM ORIGINAL SOURCE TO EXISTING FIXTURE TO REMAIN. TYPICAL.
14. 1"C - 4#10 THWN & 2#10 GND FOR LIGHTING CIRCUIT AND (2) 1PR#16 FOR 0-10V DIMMING CIRCUIT.
15. BUILDING GROUND ROD IN GROUND WELL.

LIMIT OF WORK

PANEL RR-1*

PANEL RR-2

SITE ELECTRICAL PLAN - ENLARGED

SCALE: 1"=10'

NORTH

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CITY OF SAN MATEO PARKS & RECREATION

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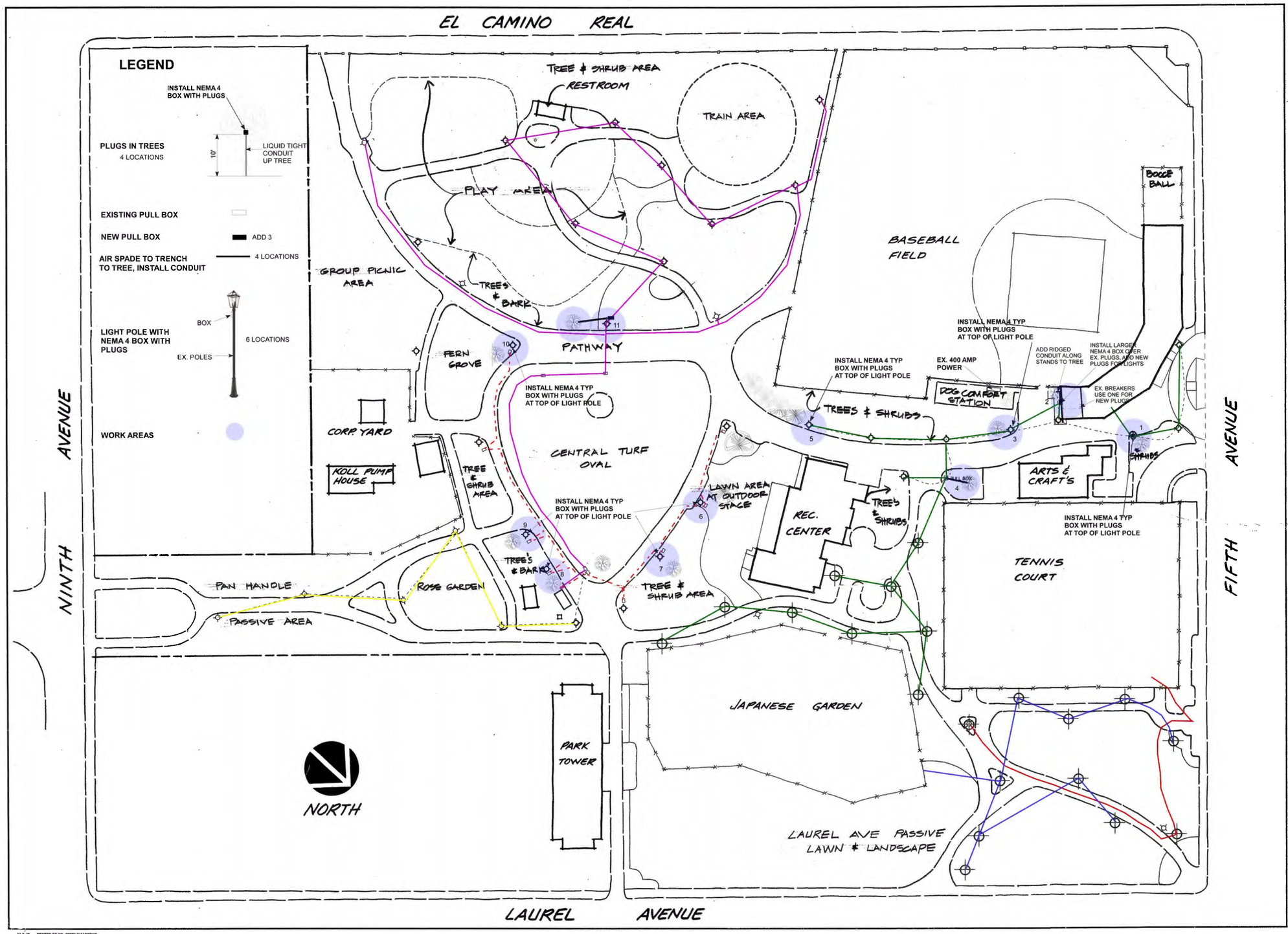
SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

ELECTRICAL SITE PLAN - ENLARGED

NO.	REVISION	DATE

PROJECT MANAGER
Garrett Otto
DRAWN BY: GO
CHECKED BY: GO
DATE
January 24, 2025
PROJECT NUMBER
22-005.02
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
ES102

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FOR REFERENCE ONLY

REVISIONS	BY
9/22/2021	

PATHWAY LIGHTING AND TREE LIGHTING PLAN

CENTRAL PARK

Date

Scale 1"= 40'

Drawn R.W.M.

Job

Sheet

Of Sheets

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REGISTERED PROFESSIONAL ENGINEER — GARRETT D. OTTO — 20830 — EXP. 8-30-26 — ELECTRICAL — STATE OF CALIFORNIA

CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

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SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

EXISTING PATHWAY LIGHTING PLANS

NO.	REVISION	DATE

PROJECT MANAGER
Garrett Otto

DRAWN BY
GO

CHECKED BY
GO

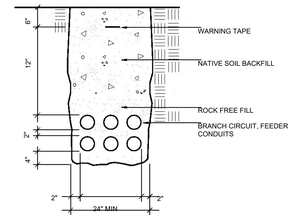
DATE
January 27, 2025

PROJECT NUMBER
22-005.02

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
ES103

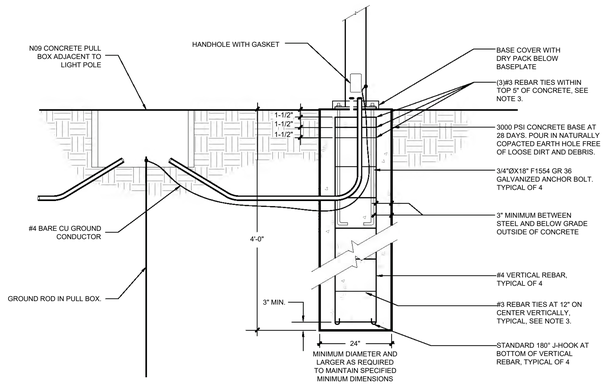
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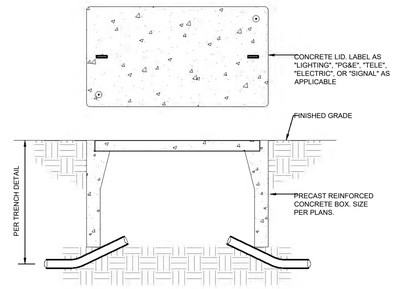


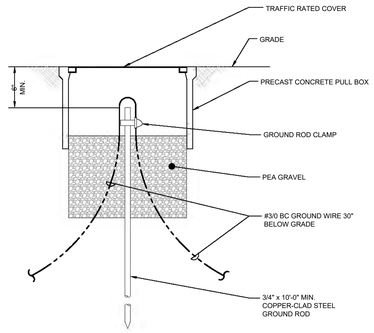
1 TYPICAL BRANCH CIRCUIT TRENCH DETAIL
NTS

NOTES:

1. GALV. ANCHOR BOLTS & TEMPLATE PROVIDE BY POLE MANUFACTURER.
2. CONDUIT SHALL BE 3/4" MINIMUM SIZE AND MINIMUM 18" BELOW FINISH GRADE.
3. TIES SHALL HAVE AT EACH END A 135 DEGREE HOOK BEND WITH A SIX-BAR DIAMETER, BUT NOT LESS THAN 3 INCH, EXTENSION THAT ENGAGES THE LONGITUDINAL REINFORCEMENT AND PROJECTS INTO THE INTERIOR OF THE STIRRUP OR HOOP.







4 TYPICAL GROUND WELL

3 TYPICAL AT GRADE POLE MOUNTING DETAIL
NTS

2 TYPICAL AT GRADE PULL BOX DETAIL
NTS

WATTSTOPPER®

RELAY PANEL INTERIORS

LMCP SERIES



Dimming panels dim 0-10V lighting loads as well as switch lighting and plug loads

Switching panels switch lighting and plug loads

Runs scheduled and photocell events autonomously

HDR relays include a switch for manual override even when panel is powered off

Compatible with Digital Lighting Management switches, sensors and input devices

Native BACnet communications for network control solutions

Easy setup via LMCT-100-2 handheld configuration tool

99 control groups accessible via handheld configuration tool

DESCRIPTION

The LMCP panel series is designed to provide 0-10V dimming and switching for the control of building lighting and plug loads. The panels can be networked together to enable automation through out an entire facility.

Digital lighting management devices such as switches, occupancy sensors, daylight sensors, and other devices connect to the panel to switch loads On or Off via the relay or to dim loads using the 0-10V capability on the dimming panel.

OPERATION

Relays in each LMCP panel can be assigned to up to 99 automation groups in any combination. Each group can respond to unique scheduled events and light/dark photocell operations set up via an LMCT-100-2 handheld configuration tool. A group can also respond to schedules sent from a Network Controller or a BACnet-enabled building automation system (BAS). Individual loads, or groups of loads, can also be controlled by DLM digital switches, dimmers, occupancy sensors, LMLS series daylight sensors, and LMIN-104 input modules. Controls are assigned to relays using Push n' Learn™ directly from the user input device, or via an LMCT-100-2.

NETWORKING

Multiple panels may be networked together for global control operation without the use of a Network Controller or BAS. The LMCP panel also provides a native-BACnet integration solution via BACnet MS/TP. Relay, group, and control device status, including occupancy sensor status, are available as BACnet objects. When a Wattstopper Network Controller is used, it will automatically recognize LMCP panels and map them to the browser-based user interface so that they can be configured with minimal additional setup.

APPLICATIONS

LMCP panels provide effective, code-compliant control of building exterior lighting as well as larger interior areas that are not suited for DLM distributed controls. Recommended applications include office building lobbies, corridors, loading docks, etc., as well as school gymnasiums, commons areas, hallways, any space with a hard cap ceiling, or an open ceiling where view of load controllers is not desired. LMCP panels are also ideal for retrofit scenarios where mounting control equipment near existing branch circuit breakers is beneficial and digital switch and sensor devices and load parameter configurability are required to meet complex operational sequences.

FEATURES

- Standard single pole heavy duty relays UL and cUL listed for both lighting and plug loads
- Available in Dimming or Switching configurations
- Available in interiors sized for 8, 24, or 48 relays maximum
- Runs event-based schedule routines independently (does not require BAS or Network Controller)
- Supports astronomical, time-based, and photocell-based event types
- Two free-topology DLM Category 5e local networks for DLM sensors, switches, and LMIN-104 interface module
- LMCT-100-2 handheld config tool recommended for setup
- Panel can provide accessory power for low voltage network devices such as NB-ROUTER
- BAA/TAA-compliant
- DIN-rail feature used to mount an NB-ROUTER for BACnet IP (LMCP24/48 only)

PROJECT		LOCATION/ TYPE	

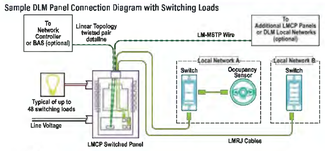
DIGITAL LIGHT MANAGEMENT | Lighting Control Panels

SPECIFICATIONS

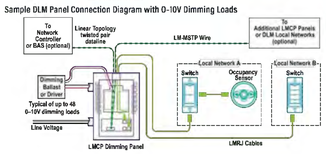
- Input voltage options, 120/277V, 120/347V, 240V Single Phase, 50/60 Hz
- For 0-10V models:
  - Sinks up to 100 mA per 0-10V input (50 fixtures at 2mA each)
  - 0-10V signal will open on loss of power to panel, or via contact on LMRD-x-10V cards
- Class 2 connection to two independent DLM local networks: 24VDC output, up to 250mA across 2 RJ45 ports per local network
- Free-topology DLM local network segments may include digital switches and sensors; Category 5e cable, up to 1,000 ft. total per local network
- Terminals for connection to DLM segment network (BACnet MS/TP)
- Segment network parameters:
  - Wattstopper LM-MSTP wire
  - Linear topology; 4000 ft. maximum per segment
- Accessory power available:
  - LMCP8, N/A
  - LMCP24, 650 mA @ 15VDC, 400 mA @ 24VDC
  - LMCP48, 650 mA @ 15VDC, 400 mA @ 24VDC
- HDR relays:
  - Coil voltage, 24 VDC, pulse ON and pulse OFF
  - Mechanically latched contacts
  - ½" K.O. mounting, LV plug connection, individually replaceable
  - UL listed for receptacle circuit control
  - Contact ratings:
    - 30 amps ballast @ 277V
    - 20 amps ballast @ 347V
    - 16 amps e-ballast @ 120V
    - 10 amps e-ballast @ 277V
    - 20 amps tungsten @ 120V
    - 30 amps resistive @ 347V
    - 20 amps receptacle load @ 120V
    - 1.5 HP @ 120V
  - SCCR (short circuit current rating) 14,000 amps with HDR Heavy Duty Relay
- Operating conditions: for indoor use only; 32–140°F (0–60°C); 5-95% RH, non-condensing
- UL and cUL Listed (E207852), Complementary Listed to Emergency Lighting Equipment UL924
- OSHPD (OSP) Approved (Certification No: OSP-0257)
- Five year warranty

CONNECTING

Sample DLM Panel Connection Diagram with Switching Loads



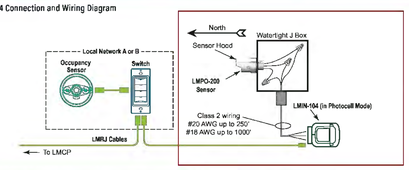
Sample DLM Panel Connection Diagram with 0-10V Dimming Loads



WATTSTOPPER®

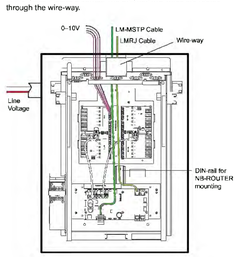
CONNECTING

LMIN-104 Connection and Wiring Diagram



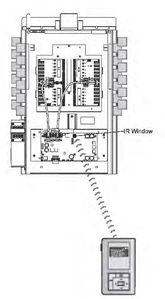
0–10V AND NETWORK WIRING

The Class 2 wire-way at the top of the LMCP panel is designed to provide separation between Class 1 wiring and BACnet/IRB network wiring. All 0–10V wires must originate as Class 2, or be reclassified. The 0–10V are routed through grommets in the top of the Class 1/Class 2 barrier. The BACnet/IRB wires are routed through the wire-way.



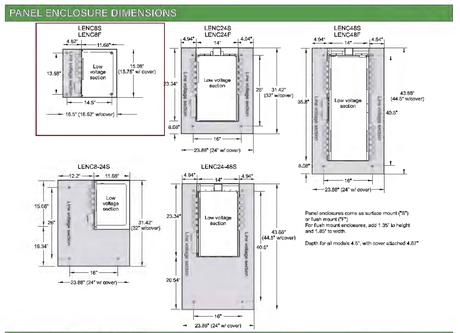
SET UP AND DIAGNOSTICS

LMCP Set Up using LMCT-100-2 Handheld Configuration Tool



DIGITAL LIGHT MANAGEMENT | Lighting Control Panels

PANEL ENCLOSURE DIMENSIONS



ORDERING INFORMATION

Interior Capacity	Voltage Options	Relay Count	Emergency Relays	Coil Voltage
Dimming Panels (Installed Options)				
☒ LMCP8-10V	☒ 115/277			☒ 115
☐ LMCP24-10V	☐ 115/347	8 HDR relays / 0-10V outputs installed (max of interior capacity)	0 EM relay count (Not available in 8-relay size panels; max. of 24 in 24-relay or 48-relay size interior)	☐ 240*
☐ LMCP48-10V	☐ 240			☐ 277
				☐ 347
Switching Panels				
☐ LMCP8	☐ 115/277			☐ 115
☐ LMCP24	☐ 115/347	HDR relays installed (max of interior capacity)	EM relay count (Not available in 8-relay size panels; max. of 24 in 24-relay or 48-relay size interior)	☐ 240*
☐ LMCP48	☐ 240			☐ 277
				☐ 347
☐ LMCT-100-2	Wireless Configuration Tool			

* 240VAC single phase only

Ordering Notes
All LMCPx and LMCPx-10V panels are BAA/TAA Compliant
LMCP panels are compatible with LENC enclosures (order separately)
See EM-1N cut sheet for emergency relay functionality
See Application Note for field mounting NB-ROUTER and accessory cables (order separately)

BACnet® is a registered trademark of ASHRAE.

Pub No. 2748544 Rev. 05/2021

5 LIGHTING CONTROL PANEL
NTS

OTTO ELECTRICAL

OTTO ELECTRICAL, INC.
979 OSOS STREET. SUITE F10
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REGISTERED PROFESSIONAL ENGINEER GARRETT J. OTTO EXP. 9-30-26 ELECTRICAL STATE OF CALIFORNIA

CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

100% CONSTRUCTION DOCUMENT SUBMITTAL

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

ELECTRICAL DETAILS

NO.	REVISION	DATE

PROJECT MANAGER
Garrett Otto
DRAWN BY GO CHECKED BY GO
DATE
January 29, 2025
PROJECT NUMBER
22-005.02
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
E501

G:\Shared drives\Projects\2022\22-005\CAD\CAD FILES\PERCHS\22-005_CM.dwg, E501, Jan 27, 2025 - 11:06pm, GarrettOtto

HP2 LED (INTEGRAL DRIVER)

IP66 RATED

DATE: | PROJECT: | TYPE:

CATALOG NUMBER LOGIC:



*Only available with x58-x63

**Only available with x43-x45

***Select up to 2. Accessory Holder required.

****120V

*****Aluminum only.

CATALOG NUMBER LOGIC

Example: HP2 - LED - TR - x61 - SP - SAP - 10/11 - INC - MT - AH/TC

MATERIAL

(Blank) - Aluminum B - Brass S - Stainless Steel

SERIES

HP2 - In-grade with Flush Mounted Faceplate

OptiLock®

LED - Cold Phosphor Technology

HOUSING

TR - Integral Housing

LED TYPE

x58 - 12W LED/2700K x61 - 20W LED/2700K x43 - 34W LED/2700K

x59 - 12W LED/3000K x62 - 20W LED/3000K x44 - 34W LED/3000K

x60 - 12W LED/4000K x63 - 20W LED/4000K x45 - 34W LED/4000K

OPTICS

SP - Spot (15°)* FL - Flood (35°)*

NFL - Narrow Flood (25°)** WFL - Wide Flood (60°)

FINISH (See page 2 for full-color swatches)

Standard Finishes: BZP, BZW, BLP, BLW, WHP, WHW, SAP, VER)

Premium Finish (ABP, AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRI, CRM, HUG, MDS, NBP, OCP, RMG, SDS, SMG, TXF, WCP, WRI)

Also available in RAL Finishes

Brass Finishes (MAC, POL, MIT)

Stainless Steel Finishes (MAC, POL)

ACCESSORY***

10 - Spread Lens

11 - Honeycomb Baffle

12 - Soft Focus Lens

13 - Rectilinear Lens

CONTROL TYPE

ELV - Dimming Driver (For use with Electronic Low Voltage Dimmer)******

INC - Dimming Driver (For use with Incandescent Dimmer)******

010 - 0-10V Dimming Driver (Dimming 1 - 100%)

INPUT VOLTAGE

MT - 120/208/240/277 Multi Tap

OPTIONS

AH - Accessory Holder

TC - Traction Control Lens

GM-R - Round Grout Mask

GM-S - Square Grout Mask

GS - Glare Shield*****

HD - Half Dome*****

RG - Rock Guard*****

B-K LIGHTING | MADE IN THE USA | 559.438.5800 | INFO@BKLIGHTING.COM | BKLIGHTING.COM

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09/09/2021 SKU-879
Sub-2405-03

CATSKILL LED (INTEGRAL)

IP66 RATED

DATE: | PROJECT: | TYPE:

CATALOG NUMBER LOGIC:



*Accommodates up to 2 lens/shielding media.

**120V only.

TITLE 24, JA8 COMPLIANT

CATALOG NUMBER LOGIC

Example: CK - LED - TR - x98 - SP - BZW - 9 - 11 - A - INC - 120

MATERIAL

Aluminum

SERIES

CK - Catskill

SOURCE

LED - Chip on Board (COB) Technology

HOUSING

TR - Integral Driver

LED TYPE

x98 - 13W/2700K/80CRI	x101 - 13W/2700K/90CRI
x99 - 13W/3000K/80CRI	x102 - 13W/3000K/90CRI
x103 - 13W/3500K/80CRI	x104 - 13W/3500K/90CRI
x100 - 13W/4000K/80CRI	x121 - 13W/4000K/90CRI
x122 - 21W/2700K/80CRI	x126 - 21W/2700K/90CRI
x123 - 21W/3000K/80CRI	x127 - 21W/3000K/90CRI
x124 - 21W/3500K/80CRI	x128 - 21W/3500K/90CRI
x125 - 21W/4000K/80CRI	x129 - 21W/4000K/90CRI

OPTICS

SP - Spot (17°) FL - Flood (45°) WFL - Wide Flood (55°)

FINISH (See page 2 for full-color swatches)

Standard Finishes (BZP, BZW, BLP, BLW, WHP, WHW, SAP, VER)

Premium Finish (ABP, AMG, AQW, BCM, BGE, BPP, CAP, CMG, CRI, CRM, HUG, MDS, NBP, OCP, RMG, SDS, SMG, TXF, WCP, WRI) *

Also available in RAL Finishes

LENS TYPE*

9 - Clear (Standard)

12 - Soft Focus 13 - Rectilinear

SHIELDING*

11 - Honeycomb Baffle

CAP STYLE

A - 45°

B - 90°

C - Flush

D - 45° Less Weephole (Downward Aiming Only)

E - 90° Less Weephole (Downward Aiming Only)

CONTROL

ELV - Dimming Driver (For use with Electronic Low Voltage Dimmer)**

INC - Dimming Driver (For use with Incandescent Dimmer)**

010 - 0-10V Dimming Driver (Dimming 53-100%)

INPUT VOLTAGE

120 - 120 VAC

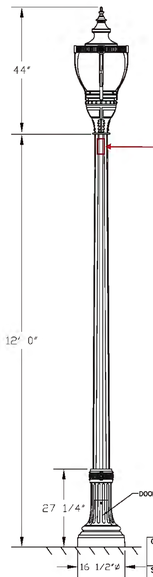
277 - 277 VAC

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04/13/2022 SKU-1371
SUB-2202-03

REV.	ALTERATION	DATE	BY



LUMINAIRE SPECIFICATIONS

CATALOGUE NO.: K118R-B3AR-V-40(SSL)-1036-120:277-K23-GRS-PR7-3K-WS

QUANTITY:

OPTICAL SYSTEM: BAFFLED ARRAY ACRYLIC RIPPLED

IES CLASS.: TYPE V

WATTAGE: 40W (1036 SERIES) SOLID STATE LIGHTING

LINE VOLTAGE: 120:277V

CCT: 3000K

POLE ADAPTOR: K23

PAINT: MARINE GRADE TEXTURED RAL 6012 POWDER COAT

OPTIONS: #1 VENTED FINIAL, GENERAL ELECTRIC RING & STRUTS, LARGE STYLE, TWISTLOCK RECEPTACLE (PHOTO-EYE BY OTHERS), & WATTAGE SELECTOR

POLE SPECIFICATIONS

CATALOGUE NO.: KM20FF-12'

QUANTITY:

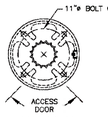
MATERIAL: FLUTED FORMED ALUM. SHAFT & CAST ALUM. BASE

HEIGHT: 12' 0"

PAINT: MARINE GRADE TEXTURED RAL 6012 POWDER COAT

MOUNTING: ACCEPT 3 1/2"L x 3 1/2" O.D TENON

ANCHOR BOLTS: (4) 1" x 36"L (BY OTHERS)



TOP VIEW

CUSTOMER APPROVAL & DATE:

CUSTOMER ORDER No:	
STRESSCRETE ORDER No:	
KMFG. ORDER No:	
KING U.S. ORDER No:	

King Luminaire • StressCrete • Est. 1953

STRESSCRETE GROUP

Manufacturing Locations:

Burlington, Ontario 1-800-268-7809

Northport, Alabama 1-800-435-6563

Atchison, Kansas 1-800-837-1024

Jefferson, Ohio 1-800-268-7809

PROJECT/CUSTOMER: SAN MATEO - CENTRAL PARK PLAYGROUND

DRAWN BY:	AT:	CHECKED BY:	DATE:	REVISION:
MJ	SC3		4-28-23	

DRAWING TYPE: CONCEPT DRAWING

DRAWING NUMBER: Q-2304057-2

Notes:
Although rare, oscillating loads severe enough to cause damage can occasionally occur in structures of all types. Because they are influenced by many factors not provided to Stresscrete, these loads are unpredictable. The users maintenance program should include observation for excessive vibration & examination for any structural damage. The StressCrete warranty specifically excludes fatigue failure or similar phenomena resulting from induced vibration, oscillation or resonance associated with the eccentric rotation of attached equipment.

3	TYPE C FIXTURE NTS	2	TYPE B FIXTURE NTS
1	TYPICAL DECORATIVE POLE NTS		

OTTO ELECTRICAL

OTTO ELECTRICAL, INC.
979 OSOS STREET, SUITE F10
SAN LUIS OBISPO, CA
GOTTO@OTTOELECTRICAL.COM
805.459.4329

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REGISTERED PROFESSIONAL ENGINEER — GARRETT D. OTTO — 26630 — EXP. 8-30-26 — ELECTRICAL — STATE OF CALIFORNIA

CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

100% CONSTRUCTION DOCUMENT SUBMITTAL

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

LIGHTING DETAIL

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Garrett Otto

DRAWN BY: GO | CHECKED BY: GO

DATE
January 24, 2025

PROJECT NUMBER
22-005.02

CITY OF SAN MATEO PROJECT NUMBER
610027

SHEET
E502

G:\Shared drives\Projects\2022\22-005\2-DESIGN\CAD\PLAYGROUND\22-005.02_CH.dwg, ESD2, Jan 27, 2025 11:56pm, GarrettOtto

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Central Park	**Report Page:**	**(Page 3 of 7)**
Project Address:	50 E. 5th Ave	**Date Prepared:**	5/22/2023

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with §140.7 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2I, only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included).

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 2]	How is Wattage determined	Total number luminaires[2]	Luminaire Status[3]	Excluded per §140.7(a)	Design Watts	Cutoff Req. > 6,200 initial lumen output §130.2(b)[4]	Field Inspector	
										Pass	Fail
A	SITE POLE	☐ Linear	40	Mfr. Spec	13	New	☐	520	NA: < 6200 lumens	☐	☐
B	SHADE LIGHTS	☐ Linear	13	Mfr. Spec	8	New	☐	104	NA: < 6200 lumens	☐	☐
							Total Design Watts:	624			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b)

[1] *FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)*
[2] *For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.*
[3] *Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacements luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.*
[4] *Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by §130.2(b)*

G. CUTOFF REQUIREMENTS (BUG)

This section does not apply to this project.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2023-05-22 14:23:45

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Central Park	**Report Page:**	**(Page 2 of 7)**
Project Address:	50 E. 5th Ave	**Date Prepared:**	5/22/2023

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2I											Compliance Results			
01		02		03		04		05		06		07		08	09
General Hardscape Allowance §140.7(d)1 (See Table I)	+	Per Application §140.7(d)2 (See Table J)	+	Sales Frontage §140.7(d)2 (See Table K)	+	Ornamental §140.7(d)2 (See Table L)	+	Per Specific Area §140.7(d)2 (See Table M)	OR	Existing Power Allowance §141.0(b)2I (See Table N)	=	Total Allowed (Watts)	≥	Total Actual (Watts)	07 must be >= 08
2,350	+	---	+	---	+	---	+	---	OR	---	=	2,350	≥	624	COMPLIES
Cutoff Compliance (See Table G for Details)															N/A
Controls Compliance (See Table H for Details)															COMPLIES with Exceptional Conditions

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2023-05-22 14:23:45

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Central Park	**Report Page:**	**(Page 1 of 7)**
Project Address:	50 E. 5th Ave	**Date Prepared:**	5/22/2023

A. GENERAL INFORMATION

01	Project Location (city)	San Mateo	04 Total Illuminated Hardscape Area (ft²)	70000
02	Climate Zone	3		
03	Outdoor Lighting Zone per Title 24 Part 1 §10.114 or as designated by Authority Having Jurisdiction (AHJ):			
☐ LZ-0: Very Low - Undeveloped Parkland		☐ LZ-2: Moderate - Rural Areas	☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval	
☐ LZ-1: Low - Developed Parkland		☒ LZ-3: Moderately High - Urban Areas		

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2I for alterations.

My Project Consists of:

01		02			
☒	New Lighting System	Must Comply with Allowances from §140.7			
☐	Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	◯ Yes	◯ No	
03		04		05	
% of Existing Luminaires Being Altered[1]		Sum Total of Luminaires Being Added or Altered		Calculation Method	
☐ < 10%	☐ >= 10% and < 50%	☐ >= 50%			

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] *FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.*

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2023-05-22 14:23:45

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Central Park	**Report Page:**	**(Page 4 of 7)**
Project Address:	50 E. 5th Ave	**Date Prepared:**	5/22/2023

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Yes	No	Form/Title	Field Inspector Pass	Fail
◉	◯	NRCI-LTO-01-E - Must be submitted for all buildings	☐	☐
◉	◯	NRCI-LTO-02-E- Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Yes	No	Form/Title	Field Inspector Pass	Fail
◉	◯	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	☐	☐

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2023-05-22 14:23:45

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Central Park	**Report Page:**	**(Page 5 of 7)**
Project Address:	50 E. 5th Ave	**Date Prepared:**	5/22/2023

I. LIGHTING POWER ALLOWANCE (per §140.7)

This table includes areas using allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lose it" Allowances are per Table 140.7-B . Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

	01				
	☒ General Hardscape Allowance Table I (below)	"Use it or lose it" Allowance (select all that apply) (select all that apply)			
		☐ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☐ Per Specific Area Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 0, 1 & 4)
This section does not apply to this project.
Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 2 & 3)

02	03	04	05	06	07	08	09	10
		Area Wattage Allowance (AWA)			Area Wattage Allowance (AWA)			
Area Description	Surface Type	Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	Total General AWA + LWA (Watts)
Playground Lighting	Asphalt	70000	0.03	1750	1000	0.4	250	2000
						Initial Wattage Allowance for Entire Site (Watts):		350
						Total General Hardscape Allowance (Watts):		2350

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This section does not apply to this project.

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2023-05-22 14:23:45

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Central Park	**Report Page:**	**(Page 6 of 7)**
Project Address:	50 E. 5th Ave	**Date Prepared:**	5/22/2023

H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Mandatory Controls

01	02	03	04	05	
Area Description	Shut-Off §130.2(c)1	Auto-Schedule §130.2(c)2	Motion Sensor §130.2(c)3	Field Inspector Pass	Fail
All	Photocontrol	Yes	Exempt*	☐	☐

* NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Not permitted by health & safety to be turned off: EXCEPTION 1 to §130.2(c)

All	Pole mounted less than 75W

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2023-05-22 14:23:45

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Central Park	**Report Page:**	**(Page 7 of 7)**
Project Address:	50 E. 5th Ave	**Date Prepared:**	5/22/2023

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Garrett Otto	
Company:	Signature Date:
Otto Electrical	2023-05-22
Address:	CEA/HERS Certification Identification (if applicable):
979 Osos. Street. Suite F10	E20833
City/State/Zip:	Phone:
San Luis Obispo CA 93401	805.459.4329

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on the Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Garrett Otto	
Company:	Date Signed:
Otto Electrical, Inc.	2023-05-22
Address:	License:
979 Osos. St. Suite F10	E20833
City/State/Zip:	Phone:
San Luis Obispo CA 93401	805.459.4329

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20200601 | Report Generated: 2023-05-22 14:23:45

OTTO ELECTRICAL
OTTO ELECTRICAL, INC.
979 OSOS STREET. SUITE F10
SAN LUIS OBISPO, CA
GOTTO@OTTOELECTRICAL.COM
805.459.4329

THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND ARE THE PROPERTY OF OTTO ELECTRICAL, INC. ALL DESIGNS AND OTHER INFORMATION ON THESE DRAWINGS ARE FOR THE USE OF THE SPECIFIED PROJECT AND SHALL NOT BE USED OTHERWISE OR REPRODUCED WITHOUT THE EXPRESSED WRITTEN PERMISSION OF OTTO ELECTRICAL.

REGISTERED PROFESSIONAL ENGINEER
C-ELECTRICAL
GARRETT D. OTTO
No. 20033
EXP. 8-30-26
ELECTRICAL
STATE OF CALIFORNIA

CITY OF SAN MATEO PARKS & RECREATION

City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

100% CONSTRUCTION DOCUMENT SUBMITTAL

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

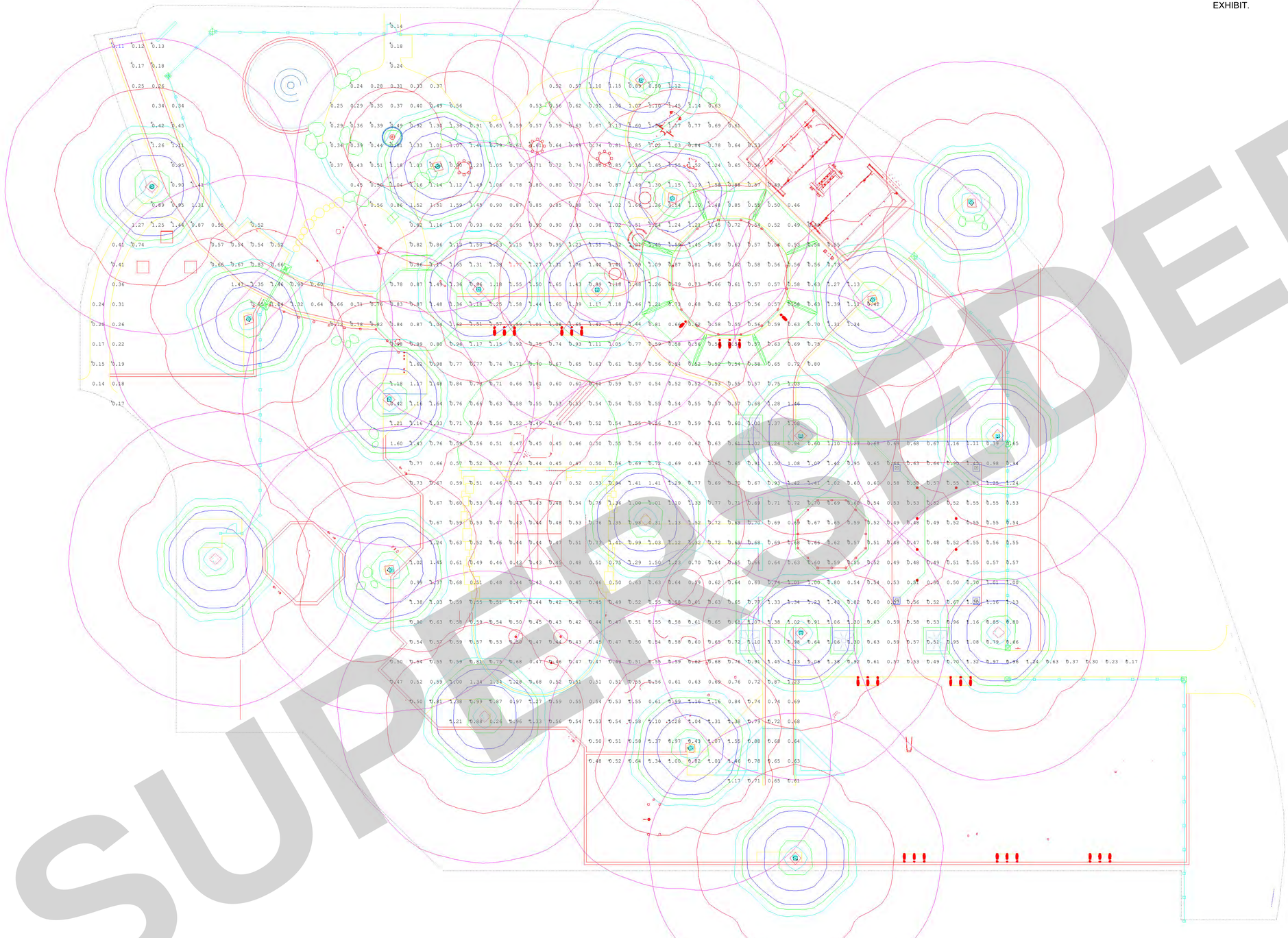
TITLE 24 FORMS

NO.	REVISION	DATE
1		
2		
3		
4		
5		
6		
7		

PROJECT MANAGER
Garrett Otto
DRAWN BY GO | **CHECKED BY** GO
DATE
January 24, 2025
PROJECT NUMBER
22-005.02
CITY OF SAN MATEO PROJECT NUMBER
610027
SHEET
E503

G:\Shared drives\Projects\2022\22-005\22-005.02\CAD\A-XYOPOWO\22-005.02_CA.dwg, E503, Jan 27, 2025 - 1:06pm, GarrettOtto

PHOTOMETRIC EXHIBIT NOTE:
PHOTOMETRIC ARE MODELED BASED ON IES FILE SUPPLIED BY SPECIFIED LUMINAIRE MANUFACTURER. FOOTCANDLE VALUES ARE APPROXIMATE ONLY AND ARE NOT A GUARANTEE OF PERFORMANCE. SITE TOPOGRAPHY, BUILDINGS, FIXTURES, TREES, PLANTING, AND OTHER ELEMENTS MAY CAUSE SHADOWING NOT REPRESENTED ON EXHIBIT. EXISTING LIGHTING, AMBIENT LIGHTING, AND OTHER SOURCES OR LIGHT ARE NOT REPRESENTED ON THIS EXHIBIT.



SUPERSEDED

PHOTOMETRIC EXHIBIT

NORTH

Calculation Summary							
Label	**CalcType**	**Units**	**Avg**	**Max**	**Min**	**Avg/Min**	**Max/Min**
WALKWAY & PLAYGROUND AREA	Illuminance	Fc	0.79	1.77	0.11	7.18	16.09

OTTO ELECTRICAL

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City of San Mateo Parks & Recreation
330 W 20th Ave., San Mateo, CA 94403

95% CONSTRUCTION DOCUMENT SUBMITTAL

SAN MATEO CENTRAL PARK
PLAYGROUND IMPROVEMENT PLANS
50 E 5TH AVE, SAN MATEO

PHOTOMETRIC EXHIBIT

NO.	REVISION	DATE

PROJECT MANAGER
Garrett Otto
DRAWN BY: GO
CHECKED BY: GO
DATE
May 30, 2023
Updated: May 13, 2025
PROJECT NUMBER
22-005.02
PROJECT NUMBER
-
SHEET
PHOTO

G:\Shared drives\Projects\2023\22-005\2-DESIGN\CAD\PLAYGROUND\22-005.02_SITE.dwg, PHOTO, May 30, 2023 - 2:08pm, GarrettOtto

EXHIBIT D

City of San Mateo

Contract Book – Volume 2

Revised January 13, 2025

Central Park
Playground Improvements

City Project No. 610027

Project Manual

Department of Parks & Recreation

City of San Mateo

CENTRAL PARK PLAYGROUND
Specification Manual



Bid Specifications

Revised January 13, 2025

rrm design group

Project Number: 1652-02-RC22

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Section 02 4100
Demolition

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Restroom building demolition.

B. Selective demolition of built site elements, including but not limited to concrete and asphalt paving, play equipment and footings, miscellaneous site furnishings, and trees.

C. Abandonment and removal of existing utilities.

1.02 RELATED REQUIREMENTS

A. Section 01 - General Conditions

B. Section 31 1000 - Site Clearing: Vegetation and existing debris removal; earth stripping and stockpiling.

C. Section 31 2200 - Grading: Rough and fine grading.

D. Section 31 2323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

1.03 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Site Plan: Indicate:
   1. Areas for temporary construction and field offices.
   2. Areas for temporary and permanent placement of removed materials.

C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 2 PRODUCTS

2.01 MATERIALS

A. Fill Material: See Section 31 2323.

PART 3 EXECUTION

3.01 DEMOLITION

A. Remove the entire restroom building indicated on the drawings.

B. Remove other items indicated, for salvage, relocation, recycling, and disposal..

C. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 31 2200.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Comply with applicable requirements of NFPA 241.
   3. Use of explosives is not permitted.
   4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   5. Provide, erect, and maintain temporary barriers and security devices.
   6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   8. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
   9. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
   10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from City.

C. Do not begin removal until built elements to be salvaged or relocated have been removed.

D. Do not begin removal until vegetation to be relocated has been removed and vegetation to remain has been protected from damage.

E. Protect existing structures and other elements to remain in place and not removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

F. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

G. Hazardous Materials:
   1. If hazardous materials are discovered during removal operations, stop work and notify Architect and City; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.
   2. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.

H. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.03 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to City.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to City.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove materials not to be reused on site; comply with requirements of Section 01 7419 - Waste Management.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION 02 4100

Section 03 1000
Concrete Forming and Accessories

PART 1 GENERAL

1.01 Section Includes

A. Formwork for cast-in-place concrete, with shoring, bracing and anchorage.

B. Installation of items to be embedded in concrete, such as anchor bolts, inserts, embeds, and sleeves.

C. Openings for other work.

D. Form accessories.

E. Form stripping.

1.02 Related Requirements

A. Section 03 2000 - Concrete Reinforcing.

B. Section 03 3000 - Cast-in-Place Concrete.

C. Section 32 11 23 - Aggregate Base Courses

D. Section 32 13 13 - Concrete Paving

E. City of San Mateo Standard Drawings (Current Version)

1.03 Reference Standards

A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).

B. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).

C. ACI SPEC-117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

D. ACI SPEC-301 - Specifications for Concrete Construction; 2020.

1.04 Delivery, Storage, and Handling

A. Deliver prefabricated forms and installation instructions in manufacturer's packaging.

B. Protect plastic foam products from damage and exposure to sunlight.

PART 2 PRODUCTS

2.01 Formwork - General

A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.

B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.

C. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

D. Comply with relevant portions of ACI CODE-318, ACI PRC-347, and ACI SPEC-301.

2.02 Wood Form Materials

A. Form Materials: At the discretion of the Contractor.

2.03 Formwork Accessories

A. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
   1. VOC Content: In compliance with applicable local, State, and federal regulations.
   2. Products:
      a. SpecChem, LLC; Bio Strip WB (water-based): www.specchemllc.com/#sle.
      b. W. R. Meadows, Inc; Duogard II (water-based): www.wrmeadows.com/#sle.

B. Dowel Sleeves: Plastic sleeve and nailable plastic base for smooth, round, steel load-transfer dowels.

C. Filler Strips for Chamfered Corners: Rigid plastic type; size as shown on the Drawings; maximum possible lengths.

D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

PART 3 EXECUTION

3.01 Examination

A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.02 Earth Forms

A. Earth forms are not permitted.

3.03 Erection - Formwork

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI SPEC-301.

B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.

D. Form Joints: Align joints and make watertight. Keep form joints to a minimum.

E. Coordinate this section with other sections of work that require attachment of components to formwork.

3.04 Application - Form Release Agent

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.05 Inserts, Embedded Parts, and Openings

A. Provide formed openings where required for items to be embedded in passing through concrete work.

B. Locate and set in place items that will be cast directly into concrete.

C. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.

D. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.

3.06 Formwork Tolerances

A. Construct formwork to maintain tolerances required by ACI SPEC-117, unless otherwise indicated.

3.07 Field Quality Control

A. Do not reuse wood formwork more than 3 times for concrete surfaces to be exposed to view. Do not patch formwork.

B. The Contractor shall verify accuracy of items, furnished under other sections of these specifications and installed under this section.

3.08 Form Removal

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

END OF SECTION 03 1000

Section 03 2000
Concrete Reinforcing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforcing steel for concrete paving and cast-in-place concrete.

B. Reinforcing Steel for Concrete Foundations

C. Supports and accessories for steel reinforcement.

1.02 RELATED REQUIREMENTS

A. Section 01 - General Conditions

B. Section 03 1000 - Concrete Forming and Accessories.

C. Section 03 3000 - Cast-in-Place Concrete.

D. City of San Mateo Standard Drawings (Current Version)

E. Section 32 13 13 - Concrete Paving

1.03 REFERENCE STANDARDS

A. ACI 301 - Specifications for Concrete Construction; 2020.

B. ACI 318 - Building Code Requirements for Structural Concrete; 2019 (Reapproved 2022).

C. ACI SP-66 - ACI Detailing Manual; 2004.

D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.

E. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement; 2022.

F. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021.

G. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars; 2018, with Amendment (2020).

H. CRSI (DA4) - Manual of Standard Practice; 2018, with Errata (2019).

I. CRSI (P1) - Placing Reinforcing Bars, 10th Edition; 2019.

1.04 SUBMITTALS

A. See Section 01 - General Conditions, for submittal procedures.

B. Shop Drawings for custom play structure foundations, elevated walkway foundations and concrete retaining wall.
   1. Comply with requirements of ACI SP-66. Include the following:
      a. complete bar layout
      b. representative sections
      c. details for congested conditions
      d. proposed layout where vertical and horizontal bars intersect
      e. bar schedules
      f. typical bending diagrams and offsets
      g. shapes of bent bars
      h. spacing of bars
      i. splice lengths and locations

C. Prepare shop drawings under seal of a Professional Structural Engineer experienced in design of work of this type and licensed in California.

D. Manufacturer's Certificate: Certify that reinforcing steel and accessories supplied for this project meet or exceed specified requirements.

E. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

F. Where welding is proposed:
   1. Detail welding to conform to AWS D1.4
   2. Submit copies of welding operator's certificate
   3. Where reinforcement complying with ASTM A615 is to be welded, chemical tests shall be performed to determine the weldability in accordance with Section ACI 318-1426.6.4.1.

G. Reports: Submit certified copies of mill test report of reinforcement materials analysis.

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301.

PART 2 PRODUCTS

2.01 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
   1. Deformed billet-steel bars.

B. Reinforcement Accessories:
   1. Tie Wire: ASTM A82, Annealed copper bearing steel, minimum 16 gage, 0.0508 inch.

2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement. Standard manufactured products shall conform to the Concrete Reinforcing Institute, "Manual of Stand Practice," latest edition.

2.02 Re-bar Splicing:

A. Coupler Systems: Mechanical devices for splicing reinforcing bars conforming to the requirements of ACI 318-14 Section 25.5.7.1; capable of developing 1.25fy of the steel reinforcing yield strength in tension and compression.

All mechanical splices in Special Structural Walls, Special Moment Frames and Concrete Diaphragms shall be Type 2 conforming to the requirements of ACI 318-11 Section 18.2.7.1-18.2.7.2 & 25.5.7.1; capable of developing 1.25fy of the steel reinforcing yield strength in tension and compression and develop the specified tensile strength of the spliced bars.

1. Products:
   a. Dayton Superior Corporation; Bar Lock Coupler System: www.daytonsuperior.com (ICC-ESR 2481.
   b. Lenton Lock Couplers (IAPMO-ES 129.

PART 3 EXECUTION

3.01 PLACEMENT

A. Before placing bars, and again before concrete is placed, clean bars of loose rust and/or mill scale, dirt, oil, or any other coating that may be deleterious or could reduce bond with the concrete.

B. Place, support and secure reinforcement against displacement. Do not deviate from required position.

C. Accommodate placement of formed openings.

D. Maintain concrete cover around reinforcing as follows:
   1. Refer to Drawings for cover requirements
   2. Walls (exposed to weather or backfill): 3 inch.
   3. Footings and Concrete Formed Against Earth: 3 inch.
   4. Slabs on Fill: 1 1/2 inch minimum, centered in slab.

3.02 FIELD QUALITY CONTROL

A. An independent testing agency may inspect installed reinforcement for conformance to contract documents before concrete placement at contractor's sole expense.

END OF SECTION 03 2000

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Section 03 3000
Cast-in-Place Concrete

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Joint devices associated with concrete work.

B. Concrete Walls

C. Miscellaneous concrete elements, including equipment pads and light pole bases.

D. Concrete curing

E. Structure footings

1.02 RELATED REQUIREMENTS

A. Section 03 1000 - Concrete Forming and Accessories: Forms and accessories for formwork.

B. Section 03 2000 - Concrete Reinforcing.

C. Section 32 1313 - Concrete Paving: Sidewalks, curbs and gutters.

1.03 PRICE AND PAYMENT PROCEDURES

A. Cast-in-place concrete work will be paid for by the unit price method.

B. Concrete - Vertical in Forms: Includes formwork as specified in Section 03 1000, reinforcement as specified in Section 03 2000, concrete, placement accessories, consolidating, and curing.

C. Concrete - Miscellaneous Locations: Includes formwork as specified in Section 03 1000, reinforcement as specified in Section 03 2000, concrete, placement accessories, consolidating, and curing.

D. Construction Joint Devices: Includes component, accessories, and installation. Measurement by the linear foot.

1.04 REFERENCE STANDARDS

A. ACI 117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

B. ACI 211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.

C. ACI 301 - Specifications for Concrete Construction; 2020.

D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

E. ACI 305R - Guide to Hot Weather Concreting; 2020.

F. ACI 306R - Guide to Cold Weather Concreting; 2016.

G. ACI 308R - Guide to External Curing of Concrete; 2016.

H. ACI 318 - Building Code Requirements for Structural Concrete; 2019 (Reapproved 2022).

I. ACI 347R - Guide to Formwork for Concrete; 2014 (Reapproved 2021).

J. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.

K. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

L. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.

M. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

N. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).

O. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2022.

P. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures; 2016.

Q. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.

R. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.

S. ASTM E1993/E1993M - Standard Specification for Bituminous Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs; 1998 (Reapproved 2020).

1.05 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Comply with the pertinent provisions of Section 01 - General Conditions. Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

C. Mix Design: Submit proposed concrete mix design(s). For each concrete mixture:
   1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
   2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
      a. Mixes shall be based on existing approved compressive strength test data for concrete mixes in accordance with AACI 318 Section 5.3.1.1 and requirements below:
         1) Normal Weight Concrete Mix Design: Design all mixes for workability and durability of concrete. Control the mixes in accordance with the CBC, ACI 318 Section 5.2, ACI 211.1, and Chapter 4, ACI 318, Building Code Requirements for Reinforced Concrete. Make adjustments in cement content required for concrete strengths at Contractor's expense and do not exceed 0.50 (or as indicated on concrete general notes of approved plans) absolute water-cement or cement plus fly ash or slag ratio by weight. Do not use calcium chloride or any admix containing such material. Admixtures containing a material releasing nitrates in solution are limited to 0.06 percent by weight for the chloride ion.
            Design the mixes with 1" maximum size, except maximum 1-1/2" size for foundations as submitted by the contractor and approved by the Architect and Structural Engineer of Record.
         2) ACI 318 Section 5.3.1.1 with test records. Where a testing laboratory acceptable to the enforcement agency has records of compressive strength tests, a standard deviation shall be established. Test records from which a standard deviation is calculated shall:
            (a) Represent materials, quality control procedures and conditions similar to those expected, and changes in materials and proportions within the test records shall not have been more restricted than those for proposed work.
            (b) Represent concrete produced to meet a specified strength or strengths f’ c within 1,000 psi of that specified for proposed work.
            (c) Must consist of at least 30 consecutive tests or two groups of consecutive tests totaling at least 30 tests as defined in ACI 318 Section 5.3.1.1, except as provided in ACI 318 Section 5.3.1.2.

D. Verification Samples: Submit sample chips of specified colors indicating pigment numbers and required dosage rates, for subsequent comparison to installed concrete.

E. Test Reports: Submit report for each test or series of tests specified.

F. Sustainable Design Submittal: If any fly ash, ground granulated blast furnace slag, silica fume, rice hull ash, or other waste material is used in mix designs to replace Portland cement, submit the total volume of concrete cast in place, mix design(s) used showing the quantity of portland cement replaced, reports showing successful cylinder testing, and temperature on day of pour if cold weather mix is used.

G. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.06 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.
   1. Maintain one copy of each document on site.

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

D. Compliance with Regulations: All materials shall comply with the current rules and regulations of the local air quality management district, with the rules regarding volatile organic compounds, and with FDA rules and regulations for dangerous substances in construction products.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Ready-mix concrete shall be mixed and delivered in accordance with ASTM C94/C94M . Each batch of concrete delivered to the Project site shall be accompanied by a time slip bearing departure time and signature of batch plant supervisor. Concrete shall be placed within 90 minutes after start of mixing. Concrete which has developed initial set shall not be used. Concrete which has partially hardened shall not be used. Deliver all materials in timely manner to ensure uninterrupted progress of the work.

B. Deliver, store and handle all cement and aggregate materials so as to prevent their deterioration or intrusion by foreign matter. Deteriorated or contaminated materials shall not be furnished.

1.08 JOB CONDITIONS

A. Cold Weather Requirements:
   1. Follow recommendations of ACI 306R A when concreting during cold weather.
   2. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather. Surfaces, in which concrete is to come in contact with, shall be free from frost or ice. No frozen materials or materials containing ice shall be furnished.
   3. When placing concrete during freezing or near-freezing weather the mix shall have a temperature of at least 50 degrees F., but not more than 90 degrees F. when cement is added. Concrete shall be maintained at a temperature of at least 50 degrees F. for at least 72 hours after placing or until it has thoroughly hydrated. When necessary, concrete materials shall be heated before mixing. Special precautions shall be provided for protection of transit-mixed concrete.

B. Hot Weather Requirements:
   1. Follow recommendations of ACI 305R when concreting during hot weather.
   2. During hot weather, proper attention shall be provided for ingredients, production methods, handling, placing, protection and curing, to prevent excessive concrete temperatures or water evaporation which could impair required strength or durability.

PART 2 PRODUCTS

2.01 FORMWORK

A. Comply with requirements of Section 03 1000.

B. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.

C. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
   2. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
   3. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Comply with requirements of Section 03 2000.

2.03 CONCRETE MATERIALS

A. Cement:ASTM C595/C595M or ASTM C150/C150M, Type II - Moderate Portland type
   1. Acquire cement for entire project from same source.

B. Fine and Course Aggregates: ASTM C33/C33M
   1. Acquire aggregates for entire project from same source.

C. Fly Ash: ASTM C618, Class C or F.

D. Integral Color Additives: Pure, concentrated mineral pigments specifically intended for mixing into concrete and complying with ASTM C979/C979M.
   1. Concentration: 100% dosage rates on weight of Portland cement, fly ash, silica fume, and other cementitious materials but not aggregate or sand.
   2. Packaging: If pigments are to be added to mix at site, furnish pigments in premeasured disintegrating bags to minimize job site waste.
   3. Color(s): Concentration shall be 100% dose to match manufacturer's color chips.
      a. Sand Area Transfer Station: Sequoia Sand
      b. Concrete Planter Wall: Flagstone Brown
      c. Concrete Seatwall w/ Boulders: Flagstone Brown
      d. Concrete Seatwall w/ Mounted Bench: Flagstone Brown
   4. Manufacturer: Davis Colors or approved equal.

E. Water: ASTM C1602/C1602M; clean, potable and not detrimental to concrete.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Water Reducing Admixture: ASTM C494/C494M Type A.

2.05 ACCESSORY MATERIALS

A. Waterproofing Materials
   1. Shall be installed on backs of walls at elevations below finished grade to provent moisture from penetrating through wall and causing discoloration of wall materials.
   2. MasterSeal HLM 5000, maufactured by BASF, or approved equal.
   3. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
      a. Grout: Comply with ASTM C1107/C1107M.
      b. Height Change, Plastic State; when tested in accordance with ASTM C827/C827M:
         1) Maximum: Plus 4 percent.
         2) Minimum: Plus 1 percent.

B. Non-Shrink Epoxy Grout: Moisture-insensitive, two-part; consisting of epoxy resin, non-metallic aggregate, and activator.
   1. Composition: High solids content material exhibiting positive expansion when tested in accordance with ASTM C827/C827M.
      a. Maximum Height Change: Plus 4 percent.
      b. Minimum Height Change: Plus 1 percent.

2.06 BONDING AND JOINTING PRODUCTS

A. Expansion Joint Dowel Options
   1. 1/2" Dia x 10" smooth round dowel @ 24" OC Centered in joint and lightly greased on (1) side.
   2. Plastic sleeve for smooth, round, steel load-transfer dowels. Sika Speed Dowel.
   3. Plate Dowel System: Steel plate dowel and plastic dowel sleeve; with integral fasteners for attachment to formwork. PNA Diamond Dowel.

B. Epoxy Bonding System:
   1. Complying with ASTM C881/C881M and of Type required for specific application.
   2. Products:
      a. Simpson Set 3G

C. Expansion Joint Fillers: Preformed strips, non-extruding and resilient bituminous type, of thickness indicated, conforming to ASTM D 1751 and ASTM D1752.

2.07 FINISHING AND CURING MATERIALS

A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

2.08 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
   1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.

B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
   1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

D. Normal Weight Concrete:
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 pounds per square inch for structural concrete, 2,500 pounds per square inch for non-structural concrete.
   2. Water-Cement Ratio: Maximum 40 percent by weight.
   3. Maximum Aggregate Size: 5/8 inch.

E. MIXING
   1. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 GENERAL

A. Time of Placing: Do not place concrete until reinforcement, conduits, outlet boxes, anchors, hangers, sleeves, bolts, and other embedded materials are securely fastened in place. Contact the inspector at least 24 hours before placing concrete; do not place concrete until inspected by the inspector.

3.03 PREPARATION

A. Verify that forms are clean and free of rust before applying release agent.

B. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

C. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.

1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.

D. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

3.04 PLACING CONCRETE

A. Conveying and Placing:
   1. Place concrete in accordance with ACI 304R. Prior to placement, coordinate with City inspector to verify forms are set up per designed layout.

3.05 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.

3.06 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.

D. Surfaces Not in Contact with Forms:
   1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
   2. Final Curing: Begin after initial curing but before surface is dry.

3.07 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 - General Conditions.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

E. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.

F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.08 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to the City and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the City. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of the City for each individual area.

3.09 CLEAN UP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.10 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION 03 3000

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Section 03 4500
Precast Architectural Concrete

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Architectural precast concrete caps.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Piers.

1.03 REFERENCE STANDARDS

A. PCI MNL-117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products; 2013.

B. PCI MNL-120 - PCI Design Handbook; 2017, with Errata (2021).

C. PCI MNL-122 - Architectural Precast Concrete: Fully Revised Manual Including New Sections, Extensive Updates, and Detailed Specifications to Meet Today's Construction Needs.; 2007.

D. PCI MNL-123 - Connections Manual: Design and Typical Details of Connections for Precast and Prestressed Concrete; 1988.

E. PCI MNL-135 - Tolerance Manual for Precast and Prestressed Concrete Construction; 2000.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Manufacturer's information on accessory products, including pigments, admixtures, inserts, plates, etc.

C. Shop Drawings: Indicate layout, unit locations, configuration, unit identification marks, reinforcement, connection details, support items, dimensions, openings, and relationship to adjacent materials.

D. Samples: Submit one sample illustrating surface finish, color and texture.

E. Fabricator's Qualification Statement: Provide documentation showing precast concrete fabricator is accredited under IAS AC157.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications:
   1. Firm having at least 5 years of documented experience in production of precast concrete of the type required.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Handling: Lift and support precast units only from support points.

B. Protect units to prevent staining, chipping, or spalling of concrete.

PART 2 PRODUCTS

2.01 PRECAST CAPS

A. Perimeter Fence Pier Cap
   1. Manufacturer: Outdoor Creations; www.outdoorcreations.com
   2. Product: Custom fence pier cap as shown in Drawings.
   3. Description: 20" Square cap with concave chamfered top.
      a. Provide cast holes to recieve threaded rod fastener.
   4. Finish: Light Sandblast
   5. Color: Sandstone
   6. Substitution: See requirements in Contract Documents.

B. Shade Shelter Base Cap
   1. Manufacturer: Outdoor Creations; www.outdoorcreations.com
   2. Product: Custom shade shelter base cap as shown in Drawings.
   3. Description: 28" Square cap with concave chamfered top.
      a. Cap to be cast into 4 separate pieces to fit around shelter post per the drawings.
         1) Provide cast holes to recieve threaded rod fastener.
   4. Finish: Light Sandblast
   5. Color: Sandstone
   6. Substitution: See requirements in Contract Documents.

C. Entry Obelisk Base Cap
   1. Manufacturer: Outdoor Creations; www.outdoorcreations.com
   2. Product: Custom base cap as shown in Drawings.
   3. Description: 32" Square cap with concave chamfered top.
      a. Provide cast holes to recieve threaded rod fastener.
   4. Finish: Light Sandblast
   5. Color: Sandstone
   6. Substitution: See requirements in Contract Documents.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building structure, anchors, devices, and openings are ready to receive work of this section.

3.02 ERECTION

A. Erect units without damage to shape or finish. Replace or repair damaged panels.

B. Erect units level and plumb within allowable tolerances.

C. Align and maintain uniform horizontal and vertical joints as erection progresses.

3.03 PROTECTION

A. Protect installed caps from subsequent construction operations.

END OF SECTION 03 4500

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Section 04 2613
Masonry Veneer

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Clay brick veneer on cast-in-place pier and bases.

B. Mortar and grout.

C. Reinforcement and anchorage.

1.02 RELATED REQUIREMENTS

A. Section 03 3000- Cast-in-Place Concrete: Base for brick veneer

B. Section 03 4500-Precast Architectural Concrete: Cap

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

B. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019.

C. ASTM C91/C91M - Standard Specification for Masonry Cement; 2023.

D. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.

E. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale); 2022.

F. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.

G. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2018.

H. ASTM C476 - Standard Specification for Grout for Masonry; 2022.

I. BIA Technical Notes No. 46 - Maintenance of Brick Masonry; 2017.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, and mortar.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

1.07 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 BRICK UNITS

A. Manufacturers:
1. HC Muddox, www.hcmuddox.com
2. Modular
3. Size: 3 5/8" x 2 1/4" x 7 5/8"
4. Color: Old Town Red

2.02 MORTAR AND GROUT MATERIALS

A. Masonry Cement: ASTM C91/C91M Type N.
1. Color: Standary Gray
2. Joint Type: Concave.

B. Water: Clean and potable.

2.03 REINFORCEMENT AND ANCHORAGE

A. Non-Seismic Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
1. Mfr: Hohmann & Bernard, Inc: 2-Seal Concrete Seal Tie

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

3.02 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Brick Units:
1. Bond: As shown on the drawings.

3.03 PLACING AND BONDING

A. Remove excess mortar as work progresses.

B. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.04 CLEANING

A. Remove excess mortar and mortar smears as work progresses.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

3.05 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION 04 2613

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Section 04 4313
Stone Masonry Veneer

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Anchored field stone veneer at exterior wall.

B. Metal anchors and accessories for anchored veneer.

1.02 REFERENCE STANDARDS

A. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2014 (Reaffirmed 2019).

B. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014 (Reaffirmed 2019).

C. ASTM A580/A580M - Standard Specification for Stainless Steel Wire; 2018.

D. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.

E. ASTM C1242 - Standard Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems; 2022a.

F. ASTM C1528/C1528M - Standard Guide for Selection of Dimension Stone; 2020.

G. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry; 2019a.

H. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022.

1.03 SUBMITTALS

A. See Section 01 for submittal procedures.

B. Product Data: Provide data on stone units, mortar, and reinforcement.

C. Samples: Submit two stone samples illustrating minimum and maximum stone sizes, color range, texture, and markings.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type required by this section, with minimum 5 years of documented experience.

B. Installer Qualifications: Natural Stone Institute (NSI) Accredited Commercial B Contractor (light commercial); www.naturalstoneinstitute.org/#sle.

1.05 MOCK-UP

A. Construct stone wall mock-up, 3 feet long by 3 feet wide; include stone anchor accessories and corner condition in mock-up.

B. Locate where directed.

C. Mock-up may remain as part of the Work if accepted by owner.

1.06 FIELD CONDITIONS

A. Cold Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 STONE

A. Supplier: American Soil & Stone
   1. Jim Spahr, jim@americansoil.com (415)990-2629

B. Stone Veneer: Perma
   1. Thickness: 3"-5"
   2. Size: Mix of Cottage Brick, Drystack and Mason Mix to achive natural look.

2.02 MORTAR APPLICATIONS

A. At Contractor's option, mortar may be field-mixed from packaged dry materials, made from factory premixed dry materials with addition of water only, or ready-mixed.

B. Setting Bed Mortars: Setting bed used to adhere stone veneer units to scratch coat mortar or to bondable concrete or concrete masonry.
   1. Prepackaged/Preblended: ASTM C1714/C1714M, Type S.
   2. Color: Standard Gray

C. Pointing Mortars: Pointing or grouting mortars used to fill the joints between individual stone veneer units once the setting bed mortar has sufficiently cured.
   1. Prepackaged/Preblended: ASTM C1714/C1714M, Type N or Type S.
   2. Color: Tan

2.03 ACCESSORIES - ANCHORED VENEER

A. Wall Ties: Formed steel wire, stainless steel complying with ASTM A580/A580M, eye and pintle type, with provision for vertical adjustment after attachment.
   1. Product: Concrete 2-Seal veneer anchors by Hohmann & Bernard, Inc.

2.04 ACCESSORIES - ADHERED VENEER

A. Waterproofing and Crack Isolation Membrane at Exterior Installations: Provides topside protection from water intrusion; Specifically designed for bonding to concrete, masonry, cement board, or cementitious scratch coat substrates under stone veneer setting mortar; complies with ANSI A118.10 and ANSI A118.12.

2.05 STONE FABRICATION - ANCHORED VENEER

A. Nominal Thickness: 3-5 inch.

B. Nominal Face Size: 6 by 18 inch.

C. Pattern and Coursing: Random rubble.

D. Fabricate for 1/2" to 3" inch beds.

E. Joint type: Overgrout to appear rustic

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that support work and site conditions are ready to receive work of this section.

B. Verify that substrates to receive mortar scratch coat or setting bed comply with stone veneer manufacturer's instructions.

3.02 INSTALLATION - ANCHORED VENEER

A. Arrange stone coursing in random pattern with random joint width range throughout. Joint width range per the drawings.

B. Set stone in full mortar setting bed to fully support stone over bearing surface. Use setting buttons or shims to maintain correct joint width.

3.03 REINFORCEMENT AND ANCHORAGE - ANCHORED VENEER

A. Install horizontal joint reinforcement 16 inches on center.

3.04 CLEANING

A. Remove excess mortar as work progresses, and upon completion of work.

B. Replace defective mortar. Match adjacent work.

C. Use non-metallic tools in cleaning operations.

3.05 PROTECTION

A. During temporary storage on site, at the end of working day, and during rainy weather, cover stone work exposed to weather with non-staining waterproof coverings, securely anchored.

END OF SECTION 04 4313

Section 05 1200
Structural Steel Framing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural steel framing members, support members.

B. Base plates.

C. Grouting under base plates.

1.02 RELATED REQUIREMENTS

A. Section 05 5000 - Metal Fabrications: Steel fabrications affecting structural steel work.

1.03 REFERENCE STANDARDS

A. AISC (MAN) - Steel Construction Manual; 2017.

B. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges; 2022.

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.

E. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished; 2018.

F. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

G. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.

H. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.

I. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts; 2021a.

J. ASTM A673 - Standard Specification for Sampling Procedure for Impact Testing of Structural Steel; 2012

K. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2022.

L. ASTM E23 - Standard Test Methods for Notched Bar Impact Testing of Metallic Materials; 2016b

M. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; 2020.

N. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.

O. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

P. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172; 2019.

Q. RCSC (HSBOLT) - Specification for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections; 2020.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Shop Drawings:
   1. Submit Structural Steel Shop Drawings,:
      a. Include complete details and schedules for fabrication and shop assembly of members,
      b. Include details, schedules, procedures and diagrams showing the sequence of erection
      c. Include a fully detailed, well controlled sequence and technique plan for shop and field welding that minimizes locked in stresses and distortion
      d. Submit sequence and technique plan for review by the SEOR.
      e. Include details of cuts, connections, camber, and holes in accordance with Figure 4.5 of AWS D1.1-10 or AISC 360 Section J1.8, weld position plan and other pertinent data. Indicate welds by standard AWS symbols, and show size, length and type of each weld.
      f. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed for Work specified in other sections.
      g. Submit a list of steel items to be galvanized.

C. Product Data:
   1. Submit copies of fabricator’s specifications and installation instructions for the following products. Include laboratory test reports and other data required demonstrating compliance with these Specifications:
      a. Structural Steel Including Chemical and Physical properties.
      b. Welding electrodes
      c. Welding Gas
      d. Structural Steel Primer Paint
   2. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.

D. Manufacturer's Mill Certificate: Certify that products meet or exceed specified requirements.

E. Mill Test Reports: Indicate structural tensile and yield strength, destructive test analysis and non-destructive test analysis.

F. Welders Certificates: Field welders shall be Project certified in accordance with AWS D1. 1-10. Shop welders shall be Project certified for FCAWS in accordance with AWS D1. 1-10.

G. Weld Procedures: Submit weld procedures for all connections. Weld procedures shall be prequalified or qualified as described in AWS D1.1, Section 4, Part B for self shielded FCAW, Weld procedures shall indicate joints details and tolerances, preheat and interpass temperature, post-heat treatment, single or multiple stringer passes, peening of stringer passes for groove welds except for the first and the last pass, electrode type and size, welding current, polarity and amperes and root treatment. The welding variables for each stringer pass shall be recorded and averaged, from these averages the weld heat input shall be calculated. Welding shall not proceed until WPS have been reviewed and approved by the Engineer of Record.

1.05 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with the following Codes and Provisions as a Minimum Requirement:
   1. California Building Code, 2019 Edition, Chapter 22, & Chapter 17.
   2. AISC Standards:
      a. AISC 303-16 - Code of Standard Practice for Steel Buildings and Bridges
      b. AISC 360-16 - Specification for the Design, Fabrication and Erection of Structural Steel for Buildings
   3. AWS Standards:
      a. AWS D1.1 - Structural Welding Code - Steel

B. Maintain one copy of each document on site.

C. Fabricator Qualifications: A qualified steel fabricator that is accredited by one of the following:
   1. the International Accreditation Service (IAS) Fabricator Inspection Program for Structural Steel (AC172).
   2. AISC Certification in accordance with the AISC Certification Program for Structural Steel Fabricators - Standard for Steel Building Structures (AISC 201-06)

D. Erector: Company specializing in performing the work of this section

E. Testing Laboratory shall perform conformance testing in accordance with the CBC:
   1. Identified Structural Steel: Tests are waived for steel identified by heat number, accompanied by mill analyses and mill test reports, and properly tagged with an Identification Certificate so as to be readily identified for conformance with applicable ASTM. Comply with the CBC.
   2. Unidentified Structural Steel: Steel not identified and certified as specified above shall be tested according to following requirements. Structural steel fabricator shall cut samples under direction of the Special Inspector and Testing Laboratory shall machine or otherwise prepare the specimens and perform testing of each 5 tons or fraction thereof for each size of unidentified steel except, in the case of random pieces or of steel having Fy greater than 36 Ksi, testing of each piece is required. Tests required are:
      a. For pipe, one tension and elongation test and one flattening test for each size.
      b. For all other steel, one tension and elongation test and one bend test for each size.
      c. Contractor shall reimburse to Owner all costs paid by Owner for testing unidentified steel.

F. Testing & Inspection shall comply with the following:
   1. All steel used for structural purposes shall be identified.. Manufacturer's mill analyses and test reports are acceptable for properly identified steel, but the enforcement agency may require additional testing to determine the quality of the steel if there is any doubt as to its acceptability. Any steel not properly identified shall be tested to meet the minimum chemical and mechanical requirements of the ASTM standard appropriate for the steel specified for the structure.
   2. AISC 360-16 Chapter N - Tests of High-strength Bolts, Nuts and Washers. High-strength bolts, nuts and washers shall be sampled and tested by an approved independent testing laboratory for conformance with the requirements of Division III.
   3. AISC 360-16 Chapter N - Tests of End-welded Studs. End-welded studs shall be sampled, tested and inspected per the requirements of the Structural Welding Code – Steel, published by the American Welding Society.
   4. Inspection of shop fabrication shall be required for significant structural detailed connection and fabrication work as directed by the enforcement agency. This inspection shall be made by a qualified inspector approved by the enforcement agency. The inspector shall furnish the architect, structural engineer and the enforcement agency with a report that the materials and workmanship conform to the approved plans and specifications.
   5. Inspection of Welding. Inspection of all shop and field welding operations, including the installation of automatic end-welded stud shear connectors shall be made by a qualified welding inspector approved by the enforcement agency. Such inspector shall be a person trained and thoroughly experienced in inspecting welding operations. The inspector's ability to distinguish between sound and unsound welding shall be reliably established. The minimum requirements for a qualified welding inspector shall be as those for an AWS certified welding inspector (CWI), as defined in the provisions of the ANSI/AWS QCI-1-96, Standard for AWS Certification of Welding Inspectors published by the American Welding Society. All welding inspectors shall be approved by the enforcement agency.
      The ability of each welder to produce sound welds of all types required by the work shall be established by welder qualification satisfactory to the enforcement agency.
   6. Welding inspection of structural welding shall conform to the requirements of AWS D1.1 Structural Welding Code – Steel, published by the American Welding Society, except as modified by this section.
   7. The welding inspector shall make a systematic record of all welds. This record shall include in addition to other required records:
      a. Identification marks of welders.
      b. List of defective welds.
      c. Manner of correction of defects.
   8. The welding inspector shall check the material, equipment, details of construction and procedure, as well as the welds. The inspector shall also check the ability of the welder. The inspector shall verify that the installation procedure for automatic end-welded stud shear connectors is in accordance with the requirements of AWS D1.1, Structural Welding Code – Steel, published by the American Weld Society and the approved plans and specifications. The inspector shall furnish the architect, structural engineer and the enforcement agency with a verified report that the welding is proper and has been done in conformity with AWS D1.1, Structural Welding Code – Steel, published by the American Welding Society and the approved plans and specifications. The inspector shall use all means necessary to determine the quality of the weld. The inspector may use gamma ray, magnaflux, trepanning, sonics or any other aid to visual inspection, which the inspector

may deem necessary to be assured of the adequacy of the welding.

9. Inspection of High Strength Bolt Installations. Inspection of high-strength bolt installations shall be made by an inspector specially approved for that purpose by the enforcement agency. The inspector shall check the materials, equipment, details of construction and installation procedure. The inspector shall furnish the architect, structural engineer and the enforcement agency with a report that the work has been completed in every material respect in compliance with the approved plans and specifications.

1.06 DELIVERY STORAGE AND HANDLING

A. Store structural steel above grade on platforms, skids or other supports.

B. Protect steel from corrosion.

C. Storage and Care of Electrodes: Coatings of low-hydrogen type electrodes shall be thoroughly dry as used. Conform to AWS D1.1; use electrodes as taken from hermetically sealed packages within time limit specified therein after package is opened. Electrodes not used within allowable time period and electrodes that have been exposed more than one hour to air having a relative humidity of 75% or greater, or as required by the manufacturer, shall be dried according to AWS D1.1 before they are used, or shall be reconditioned according to electrode manufacturer's recommendations. Electrodes so dried or reconditioned not used within allowable time period after drying is completed shall be redried before use. Electrodes of any class that have been wet shall not be used under any conditions.

D. Store other materials in a weathertight and dry place until installed into the Work.

PART 2 PRODUCTS

2.01 MATERIALS

A. Steel Plates: ASTM A36/A36M, for non-weathered steel

B. Steel W Shapes and Tees: ASTM A992/A992M.

C. Cold-Formed Structural Tubing: ASTM A500/A500M, Grade B for non-weathered steel

D. Pipe: ASTM A53/A53M, Grade B, Finish black.

E. Shear Stud Connectors: Made from ASTM A108 Grade 1015 bars.

F. Structural Bolts and Nuts: Carbon steel, ASTM A307, Grade A and galvanized in compliance with ASTM A153/A153M Class C.

G. Unheaded Anchor Rods: ASTM F1554, Gr 36, 55 (with S1 weld supplement requirements) or 105 as inidcated on the drawings, plain, with matching ASTM A563 or ASTM A563M nuts and ASTM F436 Type 1 washers.

H. Headed Anchor Rods: ASTM F1554 Grade 36, plain.

I. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
   1. Electrodes: AWS D5.1, E70XX Series Low Hydrogen Electrodes as required for intended use. All electrodes shall have a minimum Notch -Toughness of 20 FT-Lb at -20 degree F.

J. Grout: Non-shrink, non-metallic aggregate type, complying with ASTM C1107/C1107M and capable of developing a minimum compressive strength of 7,000 psi at 28 days.

2.02 FABRICATION

A. Shop fabricate to greatest extent possible.

B. Cleaning and Straightening: Thoroughly wire brush material, clean of loose mill scale and rust, and straighten by methods that will not injure the steel prior to fabrication. Remove twists or bends after punching or working component parts of a member before the parts are assembled. Produce finished members free from twists, bends, and open joints when erected.

C. Contact: Pin components parts of built-up members and maintain in close contact using clamps or temporary bolting during welding operations. Accurately mill compression bearing surfaces of joints depending on contact bearings or saw cut square to axis, or as detailed. Cut other joints straight and true.

D. Joining: Provide members of the sizes, weights, shapes, and arrangements indicated, closely fitted and finished true to line and in precise position as necessary to allow proper joining of parts in the field. Drifting to enlarge unfair holes is not allowed without prior approval.

E. Drilling, Punching, and Reaming: Hole burning to make or enlarge previous holes is allowed only with prior approval. Prepare required holes in structural steel members for attachment or passage of Work of other trades. Precisely locate finished holes to ensure passage of all bolts through steel assemblies without drifting. Enlarge holes only by reaming. Poor matching of holes is cause for rejection.

F. Holes For Anchor Bolts: Punch and drill or ream holes in base and bearing plates. Do not make or enlarge the holes by burning except for grouting holes in column bases without prior approval by the Architect.

G. Gas Cutting: Use of a cutting torch is allowed where the metal being cut is not stressed during the operation, and provided stresses are not transmitted through a flame-cut surface. Make all gas cuts with a smooth regular contour. Deduct 1/8" from width of gas cut edges to determine effective width of members that are gas cut. Make radius of re-entrant gas cuts as large as possible, but 1" minimum.

H. Galvanizing: After fabrication, items indicated or specified to be galvanized shall be galvanized in largest practical sizes. Fabrication includes operations of shearing, punching, bending, forming, assembling or welding. Galvanized items shall be free from projections, barbs, or icicles resulting from the galvanizing process.

I. Welding:
   1. Type of steel furnished in welded structures shall provide chemical properties suitable for welding as determined by chemical analysis. Welds shall conform to the requirements of

CBC Chapter 17A.

2. Materials and workmanship shall conform to the requirements specified herein and to CBC requirements, modified as follows:
   a. No welded splices shall be permitted except those indicated on Drawings unless specifically reviewed by the Engineer of Record and the DSA.
   b. Drawings will designate joints in which it is important that welding sequence and technique be controlled to minimize shrinkage stresses and distortion.
3. Welding shall be performed in accordance with requirements of the AWS Structural Welding Code.

J. Shop Finish:
1. Notify the Inspector when Work is ready to receive shop prime coat. Work shall be inspected by the Inspector before installation of primer.
2. Structural steel and fittings, except galvanized items, which will be exposed when building is completed, shall receive a coat of primer.
3. The primer specified shall be spray applied, filling joints and corners and covering surfaces with a smooth unbroken film. The minimum dry film thickness of the primer shall be 2.0 mils.

2.03 CONNECTIONS

A. Make connections with bolts as noted on the Structural Drawings.

B. High-Strength Steel Bolting: For joints connected by high strength steel bolts, hardened washers, and nuts tightened to high tension, conform materials, method of installation and tension control, and wrenches to Reference Standards. Install all high-strength bolts under inspection.
1. Connections shall be the “bearing bolt type” (A325-N) unless noted to be “slip-critical” (A325-SC and A490-SC). Refer to drawings.
2. Bolt lengths shall be the grip plus 1-1/4".
3. Tightening of nuts shall be done with properly calibrated wrenches or by the turn-of-the-nut method for A325-SC and A490-SC bolts. Tightening of the nuts for A325-N bolts to snug tightness shall be to Ref. Spec.
4. Check calibrated wrenches individually for accuracy not less than once daily for actual conditions of application.
5. Clean all contact surfaces of bolted parts and threads free of scale, slag, burrs, pits, dirt, paint, and other foreign material or defects which would prevent solid seating of connected parts.
6. Install hardened washers per AISC Standards
7. Tighten bolts systematically from most rigid part of connection to the free edges.
8. Retighten first installed bolts that may have loosened by tightening of subsequent bolts so all bolts are tightened to correct tension.
9. Mark fully tightened bolts with identifying symbol.

2.04 WELDING:

A. Conform to CBC Section 1705A.2, AWS D1.1 as modified by referenced AISC Standards, and as indicated or noted on Drawings. Employ welding operators qualified in accordance with AWS D1.1, as applicable, who are thoroughly trained and experienced in arc welding and that produce uniformly reliable groove and fillet welds in flat, vertical, and overhead positions, and

make neat and consistent welds. Weld all structural steel joints by shielded electric-arc method unless otherwise shown, specified, or approved. Conform welding in both shop and field, including the prequalification of welds and welder qualifications, to AWS D1.1.

B. Preparation: Clean steel surfaces to be welded of all paint, grease, oil, mill scale, and foreign matter. Clean weld each time the electrode is changed. Chip full surface of hand guided and controlled flame cut edges before welding. Surfaces prepared with automatic or mechanically guided and controlled equipment need not be ground or chipped before welding.

C. Weld Finishing: Grind exposed welds subject to contact to smooth surfaces free of holes, slag, or other defects, flush with the adjoining surfaces. No finish treatment is required for permanently concealed welds and other exposed welds.

D. Procedures: During assembling and welding, hold components of a built-up member with adequate clamps or other means to keep parts straight and in close contact. Do no welding in wind until adequate protective screening is set up. Cut out defective welds or parts of welds with a chisel or air arc and replace.

E. Weld Characteristics: Conform to AWS D1.1. Clean and wire brush all welds. Visual inspection of finished welds must show uniform section, smoothness of welded metal, feather edges without undercuts or overlays, freedom from porosity and inclusions, and good fusion and penetration into base metal at edges and ends of fillet welds.

2.05 FINISH

A. Clean surfaces according to AISC Specifications. Apply one shop coat of specified metal primer to minimum 1.0 mil dry film thickness. Work primer into joints. Do not prime the following:

B. Shop prime structural steel members. Do not prime surfaces that will be fireproofed, field welded, in contact with concrete, or high strength bolted.

2.06 SOURCE QUALITY CONTROL

A. A qualified special inspector shall inspect high-strength bolted connections. The Owner will provide an independent testing laboratory to perform tests and prepare test reports in accordance with the CBC. The Inspector shall be responsible for monitoring the work of the special inspector and testing laboratories to ensure that the testing program is satisfactorily completed.

B. An AWS CWI certified special inspector shall inspect welded connections. The Owner will provide an independent testing laboratory to perform tests and prepare test reports in accordance with the CBC. The Inspector shall be responsible for monitoring the work of the special inspector and testing laboratories to ensure that the testing program is satisfactorily completed.

C. The independent testing laboratory shall conduct and interpret test and state in each report whether test specimens comply with requirements, and specifically state any deviations therefrom.

D. Provide access to all places where structural steel Work is being fabricated or produced so required inspection and testing can be performed.

E. The independent testing laboratory may inspect and/or test structural steel at plant before shipment; however, the Engineer of Record reserves the right at any time before Final Completion to deem materials not in compliance with the specified requirements as defective Work.

F. Correct defects in structural Work when inspections and laboratory test reports indicate noncompliance with specified requirements. Perform additional tests as may be required to reconfirm noncompliance of original Work, and as may be required to show demonstrate compliance of corrected Work.

G. Welding: Inspect and test during fabrication and erection of structural steel assemblies as follows:
   1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in the Work. Record Work required and performed to correct deficiencies.
   2. Inspect welds. Welds shall be visually inspected before performing any non-destructive testing. Groove weld shall be inspected by ultrasonic or other approved non-destructive test methods.
   3. Ultrasonic testing shall be performed by a specially trained and qualified technician who shall operate the equipment, examine welds, and maintain a record of welds examined, defects found, and disposition of each defect. Repair and test defective welds.
   4. Rate of Testing: Complete joint penetration welds contained in joints and splices shall be tested 100 percent either by ultrasonic testing or by radiography.
   5. Base metal thicker than 1-1/2 inches, when subjected to through-thickness weld shrinkage strains, shall be ultrasonically inspected by shear wave methods for discontinuities directly behind such welds. Tests shall be performed at least 48 hours after completed joint has cooled down to ambient air temperature.
   6. Any material discontinuities shall be reviewed based on the defect rating in accordance with the criteria of AWS D1.1 table 6.3 by the SEOR.
   7. Other method of non-destructive testing and inspection, for example, liquid dye penetrate testing, magnetic particle inspection or radiographic inspection may be performed on weld if required.
   8. Lamellar Tearing: Lamellar-tearing resulting from welding is a crack (with zero tolerance) and shall be repaired in accordance with AWS D1.1.
   9. Lamination: The rejection criteria shall be based on ASTM A 435.
   10. Where testing reveals lamination or conditions of lamellar tearing in base metal, the steel fabricator shall submit a proposed method of repair for review by the Architect. Test repaired areas as required.
   11. Magnetic Particle Testing: Magnetic particle testing when required shall be provided in accordance with AWS D1.1 for procedure and technique. The standards of acceptance shall be in accordance with AWS D1.1 - Qualification.

H. Welded studs shall be tested and inspected by the special inspector in accordance with requirements of AWS D1.1 – Stud Welding.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

B. Verify governing dimensions and conditions of the Work before commencing erection Work. Verify elevations of concrete and masonry bearing surfaces, and locations of anchor rods, bearing plates and other Embedments.

C. Provide temporary shoring and bracing, and other support during performance of the Work. Remove after steel is in place and connected, and after cast-in-place concrete has reached its design strength.

3.02 ERECTION

A. Erect structural steel in compliance with AISC 303.

B. Employ qualified riggers and plan erection to require minimum cutting. Erect members plumb, true to line and level, and in precise positions. Provide temporary bracing and guying to resist loads and stresses to which the structure may be subjected, including those due to erection equipment and its operation.

C. Anchor Bolts: Furnish and deliver anchor bolts with setting drawings and templates. Verify position of bolts prior to delivery of steel; report errors or deviation for correction.

D. Clean surfaces of base plates and bearing plates.
   1. Install base and bearing plates for structural members on wedges, shims, or setting nuts as required.
   2. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims; cut off flush with edge of base or bearing plate before packing with grout.

E. Maintain erection tolerances of structural steel within AISC Code of Standard Practice for Steel Buildings and Bridges.

F. Align and adjust steel members. Adjust for variations in elevation or alignment. Level and plumb structural members.

G. Do not permit thermal cutting during erection of structural steel.

H. Connections: Hold steel in correct position during welding and bolting, and provide for dead loads, wind, and all erection stresses. Do no welding or final bolting until members have been aligned and plumbed.
   1. Field Welding: Conform to requirements for shop fabrication.
   2. Common Bolts: Tighten and upset bolt threads to preclude loosening, or use approved self-locking nuts.

3. High-Strength Bolting: Tighten by turn of the nut method or with calibrated torque wrenches as specified for the shop high-strength bolting and according to Code, AISC Standards and the Reference Standard.

I. Where indicated for field connections, provide standard bolts complying with ASTM A325.

J. Install high strength steel bolts at locations indicated. Assembly and installation shall be in accordance with CBC requirements.

K. Erect structural steel plumb and level and to proper tolerances as set forth in the AISC Manual. Provide temporary bracing, supports or connections required for complete safety of structure until final permanent connections are installed.

L. Steel Columns: Set column bases in exact position for alignment, plumb and straight, supported on adjustable bolt supports or shims until grout has set. Set center of base true to column center within 1/16" and adjust column height exactly. Maintain bases at exact position and level during grouting. Fill grout space solid with non-shrink grout.

M. Damaged Members: During erection, straighten or replace members which are bent, twisted, or damaged as directed. If heating is required, perform heating by methods that ensure a uniform temperature throughout the entire member. When directed, remove members damaged to an extent impairing appearance, strength, or serviceability and replace with new members at no extra cost to the Owner.

N. Do not field cut or alter structural members without approval of Architect.

O. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

P. Grout solidly between column or other bearing plates and concrete/masonry bearing surfaces, complying with manufacturer's instructions for nonshrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.

3.03 FINISHING

A. After erection, spots or surfaces where paint has been removed, damaged, or burned off and field rivets, bolts, and other field connections not concealed in the Work, shall be cleaned of dirt, oil, grease, and burned paint and furnished with a spot coat of the same primer installed during shop priming.

B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Install paint to exposed areas with the same material installed during shop painting. Install by brush or spray to provide a minimum dry film thickness of 1.5 mils.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From true Alignment: 1/4 inch.

3.05 FIELD QUALITY CONTROL

A. Testing Agency The owner will engage An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

B. All welders shall be qualified for each process and position per AWS D1.1 Chapter 4, Part C - Performance Qualifications.

C. Testing Agency The owner will engage An independent testing agency will perform field quality control tests for all field welds and bolted connections as detailed in Section 1.5 above.
   1. High-Strength Bolts: Provide testing and verification of field-bolted connections in accordance with RCSC "Specification for Structural Joints Using High-Strength Bolts".
   2. Welded Connections: Visually inspect all field-welded connections. For all CJP welds test 100 percent of welds using the following:
      a. Ultrasonic testing performed in accordance with ASTM E164. An AWS Certified Welding Inspector shall operate ultrasonic testing equipment, examine welds, and maintain a record of welds examined, defects found, and disposition of each defect. Defective welds shall be repaired in accordance with AWS D1.1, latest revision, and costs for retesting defective welds shall be responsibility of the Contractor. Tests shall be complete tests according to AWS D1.1, latest revision.
      b. Backing Strips: Remove backing strips whenever ultrasonic indications arising from weld roots can be interpreted as either a weld defect or a backing strip, and retest weld if no root defect is visible. If no defect is disclosed by retest and no significant amount of the base and weld metal is removed, joint needs no further repair or welding. Repair all defects disclosed. Contractor shall bear the cost of removals and repairs.
      c. Ultrasonic Instrumentation: Calibrated by technician to evaluate the quality of welds in accordance with AWS D1.1-06, Sections 5 and 6.
      d. Acceptance Criteria: In accordance with larger reflector criteria of AWS D1.1, latest revision.

3.06 CLEAN UP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.07 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION 05 1200

Section 05 5000
Metal Fabrications

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel items, including:
   1. Guardrail
   2. Handrail
   3. Play portal
   4. Entry obelisk
   5. Playground signs
   6. Sand Transfer Handrail
   7. Low planter fence

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Placement of metal fabrications in concrete.

B. Section 04 2613 - Masonry Veneer: Placement of metal fabrications in masonry.

1.03 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.

C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

D. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2018.

E. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.

F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

G. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021.

H. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

I. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172; 2019.

J. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.

K. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

L. SSPC-SP 2 - Hand Tool Cleaning; 2018.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified steel fabricator that is accredited by IAS AC172.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Steel Bar: ASTM A108

D. Plates: ASTM A283/A283M.

E. Pipe: ASTM A53/A53M, Grade B Schedule 40black and hot-dip galvanized finish, as indicated.

F. Low Planter Fence
1. Galvanized steel pipe, 1-1/2" std.
2. Galvanized ball cap
3. 1-1/2" galvanized steel chain

G. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

H. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

I. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 MANUFACTURERS

A. Steel products to be fabricated from stock materials with the exception of the following products:
   1. Entry Obelisk - Select Pieces
      a. Manufacturer: Julius Blum www.juliusblum.com
      b. Item #566 Steel Ornamental Collar
      c. Item #541 Ornamental Railing Panel
   2. Enchanted Forest Welcome Sign - Select Pieces
      a. Manufacturer: King Architectural Metals
      b. Item # 13-10025-263 Forged Steel Scroll

2.03 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 FINISHES - STEEL

A. Fabricated steel items have the following finishes and colors:
   1. Guardrail: Hot-dip galvanized with areas of latex-acrylic paint per the drawings.
      a. Color: Orange
   2. Handrail: Hot-dip galvanized, primed and painted with latex-acrylic paint
      a. Color: Black
   3. Play portals: Hot-dip galvanized with areas of latex-acrylic paint
      a. Color: To be selected by Landscape Architect
   4. Entry obelisk: Hot-dip galvanized, primed and painted with latex-acrylic paint
      a. Color: Black
   5. Playground signs: Post to be Hot-dip galvanized, primed and painted with latex-acrylic paint
      a. Color: Black
   6. Sand Transfer Handrail: Hot-dip galvanized, standard gray.
   7. Low Planter Fence: Hot-dip galvanized, primed and painted with latex-acrylic paint.

B. Prime paint steel items.
   1. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required.

C. Prepare surfaces to be primed in accordance with SSPC-SP2.

D. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

E. Prime Painting: One coat.

F. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

2.05 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Perform field welding in accordance with AWS D1.1/D1.1M.

D. Obtain approval prior to site cutting or making adjustments not scheduled.

E. After erection, prime welds, abrasionsand surfaces not shop primed or galvanized , except surfaces to be in contact with concrete.

F. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply or brush or spray to provide minimum dry film thickness of 0.051 mm (2.0 mils).

G. At all galvanized products, clean all damaged areas and re-coat using specified galvanizing coating per manufacturer's criteria.

3.04 TOLERANCES

A. Maximum Offset From True Alignment: 1/4 inch.

B. Maximum Out-of-Position: 1/4 inch.

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Section 06 1000
Rough Carpentry

This section was originally included in error.

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural dimension lumber framing.

B. Nonstructural dimension lumber framing.

C. Rough opening framing for doors, windows, and roof openings.

D. Sheathing.

E. Roofing nailers.

F. Preservative treated wood materials.

G. Miscellaneous framing and sheathing.

H. Concealed wood blocking, nailers, and supports.

I. Miscellaneous wood nailers, furring, and grounds.

J. Wall sheathing

K. Roof sheathing

1.02 RELATED REQUIREMENTS

A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 03 3000 - Cast-in-Place Concrete: Setting anchors in concrete.

C. Section 05 1200 - Structural Steel Framing: Prefabricated beams and columns for support of wood framing.

D. Section 05 5000 - Metal Fabrications: Miscellaneous steel connectors and support angles for wood framing.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

B. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; 2018, with Errata (2019).

C. AWPA U1 - Use Category System: User Specification for Treated Wood; 2023.

D. PS 1 - Structural Plywood; 2019.

E. PS 1-19 - PS 1-19; Dec 2019.

F. PS 2 - Performance Standard for Wood Structural Panels; 2018.

G. PS 20 - American Softwood Lumber Standard; 2021.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals for submittal procedures.

B. Structural Composite Lumber: Submit manufacturer's published structural data including span tables, marked to indicate which sizes and grades are being used; if structural composite lumber is being substituted for dimension lumber or timbers, submit grading agency structural tables marked for comparison.

C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

D. Sustainable Forest Certification: A voluntary third party certification in conformance with Scientific Certification System (SCS) that timber harvested meets forest management and ecological standards that comply with project goals. Forest Stewardship Council and Smartwood are accepted certifications.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 1-19 and requirements of specified grading agencies.
   1. Species: Douglas Fir-Larch, unless otherwise indicated.
   2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Sizes: Nominal sizes as indicated on drawings, S4S.

B. Moisture Content: S-dry or MC19.

C. Stud Framing (2 by 2 through 2 by 8):
   1. Species: Per plan.
   2. Grade: Per plan.

D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16):
   1. Species and Grades: As indicated on drawings for various locations.

E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: S4S, No. 2.

2.03 TIMBERS FOR CONCEALED APPLICATIONS

A. Sizes: Nominal sizes as indicated on drawings, S4S.

B. Moisture Content: S-dry (19 percent maximum).

C. Beams and Posts 5 inches and over in thickness:
   1. Species: Douglas Fir-Larch.
   2. Grade: No. 1.

2.04 STRUCTURAL COMPOSITE LUMBER

A. Structural Composite Lumber: Factory fabricated beams, headers, and columns, of sizes and types indicated on drawings; structural capacity as published by manufacturer.
   1. Columns: Use laminated veneer lumber with manufacturer's published E (modulus of elasticity): 2,000,000 psi, minimum. Fb = 2,900 psi, minimum.
   2. Beams: Use laminated veneer lumber with manufacturer's published E (modulus of elasticity): 2,000,000 psi, minimum. Fb = 2,900 psi, minimum.
   3. Products:
      a. RedBuilt LLC; Redbuilt Laminated Veneer Lumber: www.redbuilt.com//#sle.
      b. Substitutions: See Section 01 6000 - Product Requirements.

2.05 CONSTRUCTION PANELS

A. Roof Sheathing: PS 2 type, rated Structural I Sheathing.
   1. Bond Classification: Exterior.
   2. Span Rating: 32.
   3. Performance Category: 1/2 PERF CAT.

B. Wall Sheathing: Plywood, PS 1, Grade C-D, Exposure I, rated Structural I Sheathing.

C. Other Applications:
   1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
   2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
   3. Other Locations: PS 1, C-D Plugged or better.

2.06 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

B. Joist Hangers: Hot dipped galvanized steel, sized as noted on plans.
   1. Provide hangers manufactured by Simpson Strong-Tie.

2.07 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

PART 3 EXECUTION

3.01 PREPARATION

3.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 FRAMING INSTALLATION

A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.

B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.

C. Install structural members full length without splices unless otherwise specifically detailed.

D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AWC (WFCM) Wood Frame Construction Manual.

E. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches of bearing at each end.

F. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.

G. Provide bridging at joists in excess of 8 feet span as detailed. Fit solid blocking at ends of members.

H. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

3.04 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

B. Provide the following specific nonstructural framing and blocking:
1. Cabinets and shelf supports.
2. Wall brackets.
3. Handrails.
4. Grab bars.
5. Towel and bath accessories.
6. Wall-mounted door stops.
7. Chalkboards and marker boards.
8. Wall paneling and trim.
9. Joints of rigid wall coverings that occur between studs.
10. Decorative panels

3.05 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

B. Provide wood curb at each roof opening except where prefabricated curbs are specified and where specifically indicated otherwise; form corners by alternating lapping side members.

3.06 INSTALLATION OF CONSTRUCTION PANELS

A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
1. At long edges provide solid edge blocking where joints occur between roof framing members, where noted on plans.
2. Nail panels to framing; staples are not permitted.

B. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.

3.07 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.08 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements for additional requirements.

3.09 CLEANING

A. Waste Disposal: See Section 01 7419 - Construction Waste Management and Disposal.
   1. Comply with applicable regulations.
   2. Do not burn scrap on project site.
   3. Do not burn scraps that have been pressure treated.
   4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or “waste-to-energy” facilities.

B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.

C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION 06 1000

Section 06 2000
Wood Entry Monument

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wood Entry Monument

B. Hardware and attachment accessories.

1.02 RELATED REQUIREMENTS

A. Section 03 3000: Cast-In-Place Concrete: Setting anchors in concrete

B. Section 10 14 00: Architectural Dimensional Lettering: Sign letters

C. ~~Section 04 2613: Masonry Veneer~~

D. Section 09 9113 - Exterior Painting: Painting of finish carpentry items.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.06 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire retardant requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store finish carpentry items under cover, elevated above grade, and in a dry, well-ventilated area not exposed to heat or sunlight.

B. Protect from moisture damage.

C. Handle materials and products to prevent damage to edges, ends, or surfaces.

1.08 PROJECT CONDITIONS

A. Coordinate the work with installation of associated and adjacent components.

PART 2 PRODUCTS

2.01 LUMBER MATERIALS

A. Softwood Lumber: Redwood species
   1. Grading Agency: Redwood Inspection Services, RIS (GR).
   2. Sizes: Nominal sizes as indicated on the drawings.
   3. Grade: Heart B
   4. Kin-dried: Yes
   5. Finish: Paint-ready
   6. Moisture Conent: S-dry or MC19.

2.02 FASTENINGS

A. Fasteners for Exterior Applications: Stainless steel; length required to penetrate wood substrate 1-1/2 inch minimum.

B. PPBZ Porch Post Base at each sign post, sized to accept lumber per the drawings.

2.03 FABRICATION

A. Shop assemble work for delivery to site.

B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

2.04 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

PART 3 EXECUTION

3.01 INSTALLATION

A. Set and secure materials and components in place, plumb and level.

3.02 PREPARATION FOR SITE FINISHING

A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION 06 2000

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Section 07 9513
Expansion Joint Cover Assemblies

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Expansion joint cover assembly for boardwalk/play equipment separation.

1.02 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Provide joint assembly profiles, profile dimensions, anchorage devices and available colors and finish. To be ordered after boardwalk and playground installation.

PART 2 PRODUCTS

2.01 EXPANSION JOINT COVER ASSEMBLIES

A. 12" wide ADA aluminum threshold - Covering entire gap between boardwalk and play equipment, as shown on Drawings.
   1. Lengths: As indicated on Drawings.
   2. Fastener: Stainless steel vandal resistant screws.
   3. Manufacturer: InPro 808 Series Floor Expansion Joint Cover or approved equal.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joint preparation and dimensions are acceptable and in accordance with manufacturer's requirements.

3.02 INSTALLATION

A. Align work plumb and level, flush with adjacent surfaces.

B. Rigidly anchor to substrate to prevent misalignment.

END OF SECTION 07 9513

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Section 09 9113
Exterior Painting

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
1. Metal Fabrications including galvanized handrails, guardrails, signs and play portal.
2. Wood Entry Monument

D. Do Not Paint or Finish the Following Items:
1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
2. Items indicated to receive other finishes.
3. Items indicated to remain unfinished.
4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, zinc, and lead.
6. Brick, glass unit masonry, architectural concrete, natural/cast stone, integrally colored plaster and stucco.
7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 05 5000 - Metal Fabrications: Shop-primed items.

B. Section 06 2000-Wood Entry Monument

1.03 DEFINITIONS

A. Comply with ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2019.

C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.

D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

E. Bay Area Air Quality Management District Rule 8-3

F. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

G. SSPC-SP 2 - Hand Tool Cleaning; 2018.

H. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.05 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Manufacturer's installation instructions.

B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
   1. Where sheen is specified, submit samples in only that sheen.
   2. Where sheen is not specified, discuss sheen options with Landscape Architect before preparing samples, to eliminate sheens not required.
   3. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as factory finished metals and roof tiles, have been approved.

C. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

D. Manufacturer's Instructions: Indicate special surface preparation procedures.

E. Maintenance Materials: Furnish the following for City's use in maintenance of project.
   1. See Section 01 for additional provisions.
   2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer.
   1. If a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Landscape Architect is obtained using the specified procedures for substitutions.

B. Paints:
   1. Base Manufacturer: Dunn Edwards Paints, www.dunnedwards.com
   2. Behr Process Corporation: www.behr.com/#sle.
   3. PPG Paints: www.ppgpaints.com/#sle.
   4. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
   5. Valspar Corporation: www.valsparpaint.com

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties,

and capable of drying or curing free of streaks or sags.
2. Supply each paint material in quantity required to complete entire project's work from a single production run.
3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:
1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
b. Architectural coatings VOC limits of California.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Colors: To be selected from manufacturer's full range of available colors.
1. Selection to be made by Landscape Architect after award of contract.
2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to City.

2.03 PAINT SYSTEMS - EXTERIOR

A. Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including profiled, cleaned and primed hot-dip galvanized steel.
1. Two top coats and one coat primer.
2. Top Coat(s): Exterior Acrylic Latex.
a. Products:
1) PPG Paints Sun Proof Exterior Latex, 76-110XI Series, Satin. (MPI #15)
2) PPG Paints Acri-Shield Max Exterior Latex, 739-10 Series, Satin. (MPI #15)
3) Sherwin-Williams Pro Industrial Acrylic, Semi-Gloss.
4) Approved equal.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Non-Alkyd Adhesive Primer for Galvanized Metal.
a. Products:
1) ULTRASHIELD® Galvanized Metal Primer by Dunn-Edwards.
2. Latex Primer for Exterior Wood; MPI #6.
a. Products:
1) Sherwin-Williams Exterior Latex Primer, B42W8041. (MPI #6)

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Sacrificial Anti-Graffiti Coating at Entry Monument: Clear, wax emulsion for coating porous or painted surfaces; capable of being removed from substrate with only hot water.
   1. Products:
      a. DryWired; Anti-Graffiti: www.drywired.com/#sle.

C. Patching Material: Latex filler.

D. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. Test shop-applied primer for compatibility with subsequent cover materials.

E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
   2. Prepare surface according to SSPC-SP 2.

H. Ferrous Metal:

1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance.

D. Sand wood and metal surfaces lightly between coats to achieve required finish.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION 09 9113

Section 09 9750
Anti-Graffiti Coating

PART 1 - GENERAL

1.01 Description

A. Provide all labor materials and equipment necessary for anti-graffiti coating application as specified herein.

B. Related Work:
1. Work of this Section shall comply with the Contract Documents including, but not necessarily limited to, General Conditions and the General Requirements.
2. Section 03 3000 - Cast-in-Place Concrete
3. ~~Section 04 2613 - Masonry Veneer~~
4. ~~Section 04 4313 - Stone Masonry Veneer~~

1.02 Submittals

A. Comply with pertinent conditions in the Section 01 - General Conditions.

B. Product Data:
1. Materials list of items proposed to be provided under this Section;
2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
3. Manufacturer's recommended installation procedures which, when approved by the City, will become the basis for accepting or rejecting actual installation procedures used on the Work.

C. Applicator shall submit to the City a pre-warranty application form to verify amounts of materials to be used.

1.03 Quality Assurance

A. The Contractor shall contact the manufacturer prior to bidding the work so as to become familiarized with current costs, application procedures and notification requirements.

B. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

C. Applicator shall complete and file a "Job Report" with manufacturer certifying conformance of application procedures and quantities to the manufacturer's requirements.

D. Applicator Qualifications: Engage an applicator who is approved by the manufacturer and who employs only persons trained for the application of graffiti-resistant coatings.

E. Mock-Up:
   1. Before full-scale application, test products to be used on a mock-up or test panel.
   2. Apply products using manufacturer-approved application methods, determining actual requirements for surface preparation, coverage rate, number of coats, and application procedures.
   3. After 48 hours, review effectiveness of protections, compatibility with substrates, and ability to achieve desired results.
   4. Test panel shall not be allowed to be a part of the actual construction.
   5. Size: 4 feet by 4 feet minimum.
   6. Do not apply graffiti resistant coating until the mock-up is approved by the City.

1.04 Product Handling

A. Deliver materials to the job-site in satisfactory sealed containers with labels intact with manufacturer's name, brand name, type of material and batch number.

B. Store materials in suitable location where directed by the City, in original unopened containers in compliance with manufacturer's printed instructions.

C. Inspected for approval before containers are opened and any condemned materials to be removed from the job-site.

D. Protect anti-graffiti coating materials from exposure to weather or damage caused by other construction operations.

1.05 GUARANTEE

A. The Contractor shall furnish the Owner with a written guarantee, which guarantees that during a period of two (2) years from Date of Completion and acceptance of the work, the coating will not turn white, peel, chip, or crack, and that the Contractor will without addtional cost to the Owner, promptly make any repairs required as result of ordinary wear and tear of the elements, and further guarantees that any defective material or work shall be properly repaired or replaced without additional cost to the Owner.

1.06 Warranty

A. Manufacturer shall provide a written warranty for 10 years to include material only when said materials are applied in accordance with manufacturer's guidelines. Refer to manufacturer for warranty policy.

1.07 Maintenance

A. Extra Materials: Furnish the City with five (5) factory sealed 1-gallon containers of each of the following:
   1. Graffiti removal material recommended by the manufacturer for the substrate and the graffiti protection system specified.
   2. Restorer for the coating material specified, designed to restore graffiti resistance as required.

PART 2 - PRODUCTS

2.01 Materials

A. Materials shall be the products of one manufacturer, and the products shall be by the manufacturer upon which the design is based, or the products of a manufacturer approved in advance by the City in accordance with applicable conditions in the General Conditions.

2.02 Products

A. Manufacturers:
   1. "VandlGuard TEN" by Rain Guard Products Co., www.rainguard.com.
   2. "World's Best Graffiti Coating:, manufactured by Urban Restoration Group, Inc. www.graffitiremovalinc.com
   3. "Blok-Lok" with Graffiti Control by Rain Guard Products

B. Completed graffiti protection shall include the following performance criteria:
   1. Shall be a 3-coat system.
   2. Shall be "non-sacrificial" type.
   3. Shall have a flat nonglossy, or low luster sheen appearance.
   4. Shall be nonyellowing and contain no waxes, urethanes or other yellowing resins.
   5. Shall cause little or no change in the appearance of the treated surface.
   6. Shall allow moisture vapor transmission.
   7. Can sustain unlimited graffiti removals for a period of up to 10 years.
   8. Shall be renewable and repairable.
   9. Be 98% effective in removing all graffiti on masonry surfaces.
   10. Dirt pickup shall not be increased by coating.
   11. Conform to all State and City waste disposal regulations including but not limited to those involving Proposition 65.
   12. Anti-graffiti treatment must be resistant to rain, weather, abrasion, peel, ultra-violet, and be clear and non-yellowing.
   13. Anti-graffiti treatment should be able to withstand repeated removal of all types of paint and other graffiti materials with little or no defacement of or change to the original surface.

C. After application of materials, a field demonstration or test will be performed to the satisfaction of City, which will include:
   1. Spray paint applied to material to simulate graffiti attack.
   2. Attack allowed to stand 14 days before removal.
   3. Removal by manufacturer's recommended process shall determine that at least 98% of the graffiti has been removed.

2.03 Equipment

A. All clear materials shall be applied by airless spray equipment. Tip size .015-.021.

PART 3 - EXECUTION

3.01 LOCATIONS TO RECEIVE ANTI-GRAFFITI COATING

A. Cast-in-place concrete seatwalls/planter walls.

~~B. Stone veneered wall.~~

~~C. Concrete/brick fence piers.~~

~~D. Concrete/brick post bases.~~

E. Restroom building siding~~, masonry and brick surfaces.~~

3.02 SURFACE CONDITIONS

A. Examine the areas and conditions on which materials of this section will be applied. Correct conditions detrimental to timely and proper completion of the work. Do not proceed with contracted work of this section until such detrimental conditions are corrected at no added cost to the Owner.

3.03 Environmental Conditions

A. Do not proceed with application of anti-graffiti materials when the ambient temperature is less than 45 degrees F., when low temperature of 40 degrees F. or less is predicted within a period of 24 hours, or if rain is expected in the next 24 hours.

B. Do not apply materials in rainy conditions or within 5 days after surfaces have become wet from rainfall or other moisture.

3.04 INSPECTION

A. Applicator shall notify Manufacturer's representative a minimum of 72 hours prior to scheduled application for field inspection.

3.05 Application

A. Preparation of Surface (as applicable):
   1. Do not commence application until surface is structurally sound, clean, dry, and free from excess dust, loose paint, greasy stains and efflorescence.
   2. Form oils should be completely removed.
   3. All cracks, voids, beeholes or mortar shrinkage shall be properly repaired and primed if necessary to make the surface uniform.
   4. Allow substrate to dry and age at least 3 weeks before applications of anti-graffiti coating.
   5. Porous concrete block should be sealed with approved "Rainproof Acryseal WD" or Monochem Aquaseal HD a minimum of 48 hours before application of anti-graffiti coating material.

6. Remove existing graffiti with "WipeOut" graffiti remover or approval equal. "WipeOut" product of National Chemsearch, Irving Texas, phone (1-(800)-527-9921).
7. The Contractor shall use the application tools and methods as recommended by the coating manufacturer and approved by the City.
8. Applicator/Contractor is responsible for daily application of a small test area on surface to be coated before starting daily general application to assure desired results, especially if there have been temperature changes during application.

B. Application of Anti-Graffiti Coating:
1. Coverage: Apply materials at rate per square foot recommended by the material manufacturer. All surfaces shall be entirely coated.
2. Application Sequence: per manufacturer's instructions.
3. Anti-graffiti coating process should achieve a non-yellowing, durable, clear film completely protecting the substrate from penetration of paint, ink, crayons, dirt, air pollutants, grime and similar materials and help maintain and protect the original appearance of the surface.

C. Protection: Applicator shall be responsible for protection of this and all adjacent work from damage during application with dropcloths or other suitable materials.

3.06 Clean-up and Repairs

A. Required Clean-Up: The Contractor shall carefully remove all protection materials from adjacent surfaces and any residue resulting from this operation. Completely remove oversprays and spills as soon as possible before curing and excess materials from the job-site.

B. Repairs: Any soiling of the work of this section shall be repaired by the installer of the anti-graffiti material as approved by the City, at no added cost to the City.

END OF SECTION 09 9750

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Section 10 1410
Architectural Signage

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Architectural signage, including:
   1. City logo on entry monument
   2. ~~Enchanted forest welcome sign~~
   3. Park information sign
   4. Playground age signs

1.02 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.03 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.

C. Shop Drawings: indicating each sign design, fully dimensioned, with installation/mounting details.

D. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.

E. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Axe Signs and Wayfinding
   1. https://www.signcompanysanmateo.com/
   2. (650) 405-1618

B. Approved equal. See requirements in Contract Documents.

2.02 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

2.03 SIGN TYPES

A. City logo on entry monument

~~B. Enchanted forest welcome sign~~

C. Park information signs

D. Playground age signs

E. Materials:
   1. High pressure laminate (HPL)/ Embedded phenolic resin informational sign, 1/2" thick. Exterior grade, matte finish, single-sided. Ease all edges and corners.
      a. Design, colors, and fonts are shown in the Drawings.
      b. Digital artwork to be provided to contractor.
      c. Tamper-proof stainless steel fasteners

2.04 ACCESSORIES

A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal.

B. Exposed Screws: Stainless steel, tamper proof.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install neatly, with horizontal edges level.

C. Locate signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.

D. Install as indicated on the Drawings.

E. Locate signs where indicated:

F. Protect from damage until Substantial Completion; repair or replace damaged items.

END OF SECTION 10 1410

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Section 10 1419
Dimensional Letter Signage

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal sign letters at entry monument.

1.02 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Manufacturer's product literature for each type of dimensional letter sign, indicating style, font, colors, locations, and overall dimensions of each sign.

C. Shop Drawings:
   1. Include dimensions, locations, elevations, materials, text and graphic layout, and attachment details.

D. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

E. Manufacturer's qualification statement.

1.03 Quality Assurance

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.04 Delivery, Storage, and Handling

A. Package dimensional letter signs as required to prevent damage before installation.

B. Store under cover and elevated above grade.

PART 2 PRODUCTS

2.01 Manufacturers

2.02 Dimensional Letters

A. Letters - "Central Park Playground"
   1. Material: Aluminum sheet, flat cut.
   2. Thickness: 1/4 inch minimum.
   3. Letter Height: As indicated on the drawings.
   4. Text and Typeface: As indicated on the drawings.

a. Character Font: As indicated on the drawings.
5. Finish: Dark Bronze Anodized
6. Color: As selected.
7. Mounting: Flush stud mount.

B. Letters - "City of San Mateo Parks and Recreation"
1. Material: Aluminum sheet, flat cut
2. Thickness: 1/4"
3. Letter Height: As indicated on the drawings.
4. Text and Typeface: As indicated on the drawings.
5. Finish: Dark Bronze Anodized
6. Mounting: Flush stud mount.

PART 3 EXECUTION

3.01 Examination

A. Verify that substrate surfaces are ready to receive work.

B. Notify Landscape Architect if conditions are not suitable for installation of signs; do not proceed until conditions are satisfactory.

3.02 Installation

A. Install in accordance with manufacturer's instructions.

B. Install with horizontal edges level.

C. Protect from damage until Date of Substantial Completion; repair or replace damaged items.

End of Section 10 1419

Section 11 6813
Playground Equipment

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Playground layout (staking).

B. Manufactured playground equipment.

C. Location of each item of playground equipment is indicated on drawings.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Footings for playground equipment.

B. Section 32 1816.13 - Playground Protective Surfacing: Protective surfacing in playground area.

1.03 DEFINITIONS

A. Use Zone: Area under and around a play event within which the ground surfacing must meet fall impact attenuation requirements of ASTM F1292 when tested at the fall height specified for the play event.

B. Fall Height: Vertical distance between the finished elevation of the designated play surface and the finished elevation of the protective surfacing beneath it, as defined in ASTM F1487.

C. Protective Surfacing: Resilient ground surfacing, specified in Section 32 1816.13. The characteristics of the protective surfacing are based on the fall height of the playground equipment. Changes in either the surfacing or the fall height, particularly reducing the resilience of the protective surfacing or increasing the fall height, will reduce safety-related performance.

D. Subgrade: Surface of the ground on which the protective surfacing is installed; the subbase for the protective surfacing is installed over the subgrade.

1.04 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

B. ASTM A135/A135M - Standard Specification for Electric-Resistance-Welded Steel Pipe; 2021.

C. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.

D. ASTM A513/A513M - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing; 2020a.

E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

F. ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test; 2022.

G. ASTM F1292 - Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment; 2022.

H. ASTM F1487 - Standard Consumer Safety Performance Specification for Playground Equipment for Public Use; 2021.

I. AWPA U1 - Use Category System: User Specification for Treated Wood; 2023.

J. CPSC Pub. No. 325 - Public Playground Safety Handbook; 2015.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meetings: Convene a meeting one week before starting earthwork for playground to discuss coordination between various installers.
   1. Require attendance by personnel responsible for grading and installers of playground equipment, protective surfacing, footings, and adjacent work.
   2. Include representatives of Contractor.
   3. Notify Landscape Architect at least 2 weeks prior to meeting.

1.06 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Substitutions:
   1. Substitutions that will increase fall height, platform height, or maximum equipment height will not be considered; submit shop drawings with proposed modifications clearly identified and sufficient information to determine compliance with specified criteria.
   2. Substitutions that require changes to the site design will not be considered.
   3. Substitutions that, in the opinion of the City, lack equivalent play value, architectural aesthetic, or quality, will not be considered.

C. Product Data: For manufactured equipment, provide manufacturer's product data showing materials of construction, compliance with specified standards, installation procedures, safety limitations, and the number of users permitted.
   1. Wood Finishes: Provide information on wood finish chemical content and toxicity level.
   2. Certifications: Provide International Play Equipment Manufacturers Association (IPEMA) certification that product complies with ASTM F1487, excluding section 10 and 12.6.1.

D. Shop Drawings: Detailed scale drawings showing play equipment layout, Use Zone perimeters, and fall height for each play event.

1. Show locations and dimensions of footings and anchorage points.
2. Show locations of related construction such as walkways and roadways, fences, site furnishings, and plantings.

E. Samples: For each item that a color must be selected, provide color chart showing full range of colors and finishes.

F. Maintenance Data: Provide manufacturer's recommended maintenance instructions and list of replaceable parts for each equipment item, with address and phone number of source of supply.

G. Warranty: Submit manufacturer warranty and ensure that forms have been completed in City's name and registered with manufacturer.

1.07 QUALITY ASSURANCE

A. Maintain one copy of the latest edition of ASTM F1487 and CPSC Pub. No. 325 at project site.

B. Installer Qualifications: Company specializing in playground construction shall perform the work in this Section. Company shall be play equipment manufacturer approved installer.
1. Provide documentation that company has installed at least 5 playgrounds of a smiliar scale for public agencies, that have been in successful service for a minimum of 5 year; provide adresses.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store equipment to project site in accordance with manufacturer's recommendations.

B. Store materials in a dry, covered area, elevated above grade.

1.09 WARRANTY

A. See Section 01 - General Conditions for additional warranty requirements.

B. See individual Manufacturer's warranty for play equipment.

PART 2 PRODUCTS

2.01 PLAYGROUND EQUIPMENT - GENERAL

A. Design Assumptions: Because the safety of the playground depends on strict compliance with design criteria, this information is provided for Contractor's information.
1. Playground has been designed for children ages 2-12 years.
2. Separate areas for different age groups are indicated on drawings.
3. If deviations from specified dimensions, especially fall heights, is required, obtain approval prior to proceeding; follow approval request procedure as specified for substitutions.

B. Mount equipment on concrete footings, unless otherwise indicated.

1. Playground protective surfacing constitutes a resilient layer installed over a subbase (non-resilient) that is installed over subgrade; top of footings and anchorage devices is to be covered by full depth of resilient portion of protective surfacing.
2. Unless otherwise note in the Drawings, footings shall be per the manufacturer's details, and should be included in Contractor's scope of work at no extra cost to the City.

C. Provide supports as required to mount equipment at proper height above finish and sub-grades to allow installation of sufficient depth of protective surfacing; portion of support below top of surfacing must comply with specified requirements for equipment.

D. Paint portion of support that is intended to be installed below top surface of protective surfacing a different color, or mark in other permanent way, so that installers and maintainers of protective surfacing can easily determine whether sufficient depth has been installed.

E. Provide permanent label for each equipment item stating age group that equipment was designed for, manufacturer identification, and warning labels in accordance with ASTM F1487.

2.02 PLAYGROUND EQUIPMENT

A. Comply with ASTM F1487 and CPSC Pub. No. 325; provide equipment complying with specified requirements for relevant age group(s).

B. Playground Equipment numbers listed below references Play Equipment Plans in the Drawing set.

C. Manufacturers:
1. Richter Spielgerate, https://www.richter-spielgeraete.de/en/
   a. Contact/Sales Representative: Chelsea Hoffman, APE Studio, Inc. www.apeoriginal.com **917.789.3120 (cell)**
   b. Quote Reference No: 1137-02-E04
   c. Quote number represents multiple play components, as listed below: per the drawings.
      1) P-01, P-04, P-07, P-08, P-09, P-10, P-11, P-13, P-14, P-16, P-17, P-18, P-19, P-20, P-21, P-23, P-24, P-25, P-26, P-29, P-30, P-37, P-38, P-39, P-40, P-41, P-42, P-43, P-44, P-45, P-46, P-47
2. Columbia Cascade Co., www.playground.columbia-casscade.com
   a. Contact/Sales Representative: Chris Kirn, chrisk@timberform.com (503)223-1157
   b. Quote Reference No:
      1) P-27, P-28
3. Elephant Play, www.elephantplay.com
   a. Contact/Sales Representative: Mike Etchison, mike.etchison@RecreationSC.com 858-442-3670
   b. Quote Refrence No:
      1) P-22
4. Kompan, www.kompan.com
   a. P-02, Snail Springer
   b. P-03, Bee Springer
5. Percussion Play, www.percussionplay.com
   a. Contact/Sales Representative: Daniel Fry, fry@percussionplay.com
   b. Quote Reference No: QU/92193
   c. Quote number represents multiple play components, as listed below:

1) P-31, P-32, P-33, P-34, P-35, P-36

6. ID Sculpture, Inc., www.idsculpture.com
   a. Contact/Sales Representative: Andris Zobs, andris@idsculpture.com
   b. Quote Reference No:
      1) P-06, P-15
7. Duncan and Grove, Ltd., www.duncanandgrove.com
   a. Contact/Sales Representative: Sean Procyk, sp@duncanandgrove.com
   b. Quote Reference No:
      1) P-05
      2) Additional items are included in this quote that are not considered play equipment:
         (a) Windmill Flowers
         (b) Robinia Post Fence

2.03 MATERIALS

A. Steel Pipe and Tube: Comply with ASTM A135/A135M, ASTM A500/A500M, or ASTM A513/A513M; hot-dipped galvanized and free of excess weld and spatter.
   1. Tensile Strength: 45,000 psi, minimum.
   2. Yield Point: 33,000 psi, minimum.
   3. Galvanizing: Hot-dip metal components in zinc after fabrication, in accordance with ASTM A123/A123M; remove tailings and sharp protrusions and burnish edges.

B. Extruded Aluminum: ASTM B221 or ASTM B221M, Alloy 6061, 6062, or 6063.
   1. Tensile Strength: 39,000 psi, minimum.
   2. Yield Point: 36,500 psi, minimum.

C. Chain: Corrosion resistant zinc plated steel; minimum size 4/0; polyvinyl chloride (PVC) coating.

D. Rope Cable: Strands of steel cable with UV-stabilized polypropylene synthetic covering; ends capped to prevent fraying.

E. Hardware: Provide without hazardous protrusions, corners, or finishes, and that require tools for removal after installation; countersunk fasteners are preferred.
   1. Use stainless steel for metal-to-metal connections; select type to minimize galvanic corrosion of materials connected by hardware.
   2. Use stainless steel for wood-to-wood and wood-to-metal connections.
   3. Use stainless steel with plastic components.
   4. Bearings: Self lubricating.
   5. Hooks, Including S-Hooks: Closed loop; maximum gap 0.04 inches, less than the thickness of a dime.
   6. Rails, Loops, and Hand Bars: Same metal as item is mounted on or aluminum; with powder coating.
   7. Anchors: In accordance with manufacturer's recommendations.

F. Boards and Timbers: Free of holes, cracks, and loose knots; do not use wood or wood coatings that contain pesticides; do not utilize used lumber.

G. Polyvinyl Chloride (PVC) Coating: Ultraviolet (UV) stabilized and mold-resistant; slip-resistant finish; prime parts to be coated with clear acrylic thermosetting solution, and preheat prior to dipping in liquid PVC.
   1. Thickness: 0.08 inch, minimum, plus/minus 0.02 inch.
   2. Hardness: 85 durometer, when tested in accordance with ASTM D3363.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that playground area has been graded to subgrade elevations required and that excess soil, rocks, and debris have been removed.

B. Verify that playground equipment footings have been installed in proper locations and at proper elevations.

C. Verify location of underground utilities and facilities in playground area; damage to underground utilities and facilities will be repaired at Contractor's expense.

3.02 PREPARATION

A. Stake layout of entire Use Zone perimeter before starting any work and before subbase under resilient surfacing is laid.
   1. Verify that Use Zone perimeters do not overlap hard surfaces, whether currently installed or not.
   2. Verify that Use Zones are free of obstructions that would extend into resilient portion of protective surfacing.
   3. If conflicts or obstructions exist, notify Landscape Architect.
   4. Do not proceed until revised drawings have been provided, showing corrected layout, and obstructions have been removed.

3.03 INSTALLATION

A. Coordinate work with preparation for and installation of protective surfacing specified in Section 32 1816.13; install protective surfacing after playground equipment installation.

B. Install in accordance with CPSC Pub. No. 325, ASTM F1487, manufacturer's instructions, and requirements of authorities having jurisdiction (AHJ).

C. Anchor equipment securely below bottom elevation of resilient surfacing layer.

D. Install without sharp points, edges or protrusions, entanglement hazards, pinch, crush, or shear points.

E. Do not modify play events on site without written approval of manufacturer.

F. Install required signage if not factory-installed.

G. Coordinate with work of other sections that is integral to play areas and components, including but not limited to:
   1. Elevated Boardwalk
   2. Play Portals
   3. Site-built mounds

3.04 FIELD QUALITY CONTROL

A. City or City's representative will inspect playground equipment after installation to verify that playground meets specified design safety and accessibility requirements.

B. Repair or replace rejected work until compliance is achieved.

3.05 CLEANING

A. Restore adjacent existing areas that have been damaged from the construction.

B. Clean playground equipment of construction materials, dirt, stains, filings, and blemishes due to shipment or installation; clean in accordance with manufacturer's instructions, using cleaning agents as recommended by manufacturer.

C. Clean playground area of excess construction materials, debris, and waste.

D. Remove excess and waste material and dispose of off-site in accordance with requirements of authorities having jurisdiction (AHJ).

3.06 PROTECTION

A. Protect installed products until Date of Substantial Completion.

B. Replace damaged products before Date of Substantial Completion.

END OF SECTION 11 6813

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Section 13 1213
Water Play

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Small water play feature including nozzle, pump and supply lines.

1.02 SYSTEM DESCRIPTION

A. The contract documents describe a small interactive water play system that consists of a low-flow nozzle that is activated by a user-powered pump. This performance narrative is intended to describe the function of the system. The Contractor shall be responsible to prepare complete shop drawings illustrating a fully functional system for a separate submital review.

B. The system shall include, but not be limited to:
1. See Saw Pump
2. Nozzle, Richter Item #5.18830 Spray head with small flange with soft water jet, integrated cleaning mechanism.
3. 1" water main supply line
4. 3/4" supply line from pump to nozzle
5. Core-drilled landscape boulder
6. Trench drain. See Section 32 33 00 Site Furnishings.
7. All work and material for a complete and operational system
8. System training with City representative.

1.03 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete.

B. Section 32 4000 - Landscape Boulders and Stone.

C. Section 32 33 00 - Site Furnishings

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section. Coordinate the installation of water play system with pump manufacturer and Contractor.

1.05 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Provide data on accessories.

C. Shop Drawings:

1. Indicate location layout of supply lines, sizes, connections, drains, nozzle and pump.
2. Product information (manufacturer, item numbers, etc)
3. System operation narrative

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 WARRANTY

A. See Section 01 - General Conditions for additional warranty requirements.

B. Provide five year manufacturer warranty for pump and nozzle.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Richter Spielgerate
1. See Saw Pump and Nozzle per quote # 1137-02-E05
2. Contact: Chelsea Hoffman choffman@apeoriginal.com

PART 3 EXECUTION

3.01 EXAMINATION

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions, and approved shop drawings.

B. Coordinate placement of supply lines, pump and nozzle with paving and boulder layout.

3.03 CLOSEOUT ACTIVITIES

A. Demonstrate propoer operation and maintenance procedures of equipment to City's designated representa

END OF SECTION 13 1213

Section 13 3000
Pre-Manufactured Metal Structures

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufacturer-engineered, shop-fabricated shade structure at picnic area.

~~B. Manufacturer-engineered, shop-fabricated circular shade trellis.~~

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete.

1.03 REFERENCE STANDARDS

A. AISC 360 - Specification for Structural Steel Buildings; American Institute of Steel Construction, Inc.; 2010.

~~B. ASCE 55 - Tensile Membrane Structures; 2016~~

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2012.

D. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; American Welding Society; 2012.

E. AWS D1.1/D1.1M - Structural Welding Code - Steel; American Welding Society; 2010.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene two weeks before starting work of this section. Attendees shall include:
   1. Contractor
   2. Manufacturer's representative
   3. City's representative.

1.05 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Shop Drawings: Complete shop drawings suitable for permitting, including footings, stamped and signed by a CA licensed Structural Engineer. Schematic drawings are included in the plans for reference.

C. Samples: Submit samples of metal roof and poweder coat colors.

D. Project Record Documents: Record actual locations of concealed components and utilities.

1.06 QUALITY ASSURANCE

A. Design structural components, develop shop drawings, and perform shop and site work under direct supervision of a Professional Structural Engineer experienced in design of this Work.
   1. Design Engineer Qualifications: Licensed in California.
   2. Conform to applicable code for submission of design calculations as required for acquiring permits.

B. Perform welding in accordance with AWS D1.1.

C. Tensile Membrane Structures
   1. Tensile membrane structures consisting of tensioned membranes stretched over flexible and nonflexible structural suport elements.
   2. Provide smooth, uniform membrane surface with even-curved edges and interfaces; without wrinkles. cuts, abrasions, stains, marks, surface defects or seaming aberrations.

D. Manufacturer Qualifications: Company specializing in the manufacture of products similar to those required for this project.
   1. Not less than 3 years of documented experience

E. Erector Qualifications: Company specializing in performing the work of this section with minimum 5 years experience.

1.07 WARRANTY

A. See Section 01 - General Conditions for additional warranty requirements.

B. Provide standard manufacturer warranty in Owner's name.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Steel Shade Structure at Picnic Area
   1. Icon Shelter Systems, Inc. www.iconshelters.com or approved equal.
      a. Contact/Sales Representative: Gary Kimbrough, Park Planet, gary@parkplanet.com
      b. ~~Quote Reference No: Q-23-1755~~
      c. Product No: RH28x44-9TM2C-P4
      d. ~~Type: Custom Hip Two-Tier Clerestory~~
      e. Slope: 4: 12 roof slope
      f. Roof: 24 ga. pre-cut multi-rib metal roof
      g. ~~Options: Cupola~~
      h. ~~Posts: Quad posts for site built bases~~ Single posts.
      i. Height: 9' eave height
      j. Provide electrical cutouts as shown on the drawings
      k. Colors: To be selected by Landscape Architect from Manufacturer's full range

B. Steel and Fabric Shade Trellis
   1. Custom Canopies, Inc., www.customshadecanopies.com, or approved equal.
      a. Contact/Sales Representative: Gary Kimbrough, Park Planet, gary@parkplanet.com
      b. Quote Reference No: Q23-1617
      c. Product: 56' Circular T-Bar Flat Sail Custom
      d. Fabric Size: 21'x12'
      e. Height: 8' eave height, sloping to 10'
      f. Colors: To be selected by Landscape Architect from Manufacturer's full range

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that foundation, floor slab, mechanical and electrical utilities, and placed anchors are in correct position

3.02 ERECTION - SHADE STRUCTURES

A. Install in accordance with manufacturer's instructions.

B. Exercise care when cutting prefinished material to ensure cuttings do not remain on finish surface.

C. Locate end laps over supports. End laps minimum 2 inches. Place side laps over bearing.

D. Use concealed fasteners.

E. Install sealant and gaskets to prevent weather penetration.

3.03 TOLERANCES

A. Framing Members: 1/4 inch from level; 1/8 inch from plumb.

B. Siding and Roofing: 1/8 inch from true position.

END OF SECTION 13 3000

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Section 13 3423.13
Pre-Engineered Restroom Building

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Owner-supplied, Contractor-installed, manufacturer-engineered, site-built restroom building.

1.02 RELATED REQUIREMENTS

A. Section 01 - General Conditions

B. Section 09 9750 - Anti Graffiti Coating

C. Section 26 - Electrical

D. Section 03 3000 - Cast-in-Place Concrete: Concrete pad, foundations and anchor bolts.

E. Section 31 2200 - Grading

F. Section 31 2316.13 - Trenching

G. Section 32 1123 - Aggregate Base Courses

H. Section 33 - Utilities

I. Scope of Supply and Design Submittal for Central Park by Romtec

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting2 weeks prior to start of this work; require attendance by, at a minumum:
   1. Contractor's foreman and superintendent
   2. City's representative
   3. Manufacturer's representative
   4. Other subcontractors as deemed necessary due to adjacent or related work.

1.05 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Submit product data sheets, including material descriptions, dimensions and profiles of components and finishes, and preparation instructions and recommendations.

C. Shop Drawings: Submit plans, elevations, sections, construction details, and utility connections as necessary for this work.
   1. Include design engineer's stamp or seal on each sheet of shop drawings.

D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in City's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than 10years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with minimum 5 years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's unopened packaging and store until ready for installation.

B. Protect components and accessories from corrosion, deformation, damage and deterioration when stored at job site. Keep materials free from dirt and foreign matter.

PART 2 PRODUCTS

2.01 PRE-ENGINEERED RESTROOM

A. Manufacturer: Romtec Inc., www.romtec.com
   1. Contact: Cody Dooley, cdooley@romtec.com 541-496-3541
   2. Plan Set # CEP01
   3. Final Shop Drawings and Calculations are included in the Bid package.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, adjacent areas and conditions, and supporting foundation, with installer present, for compliance with manufacturer's requirements, including installation tolerances and other conditions affecting performance of this work.

B. Examine installed anchor bolts for accuracy, and verify that bearing surfaces are ready to receive this work.

C. Examine rough-in of required utility services prior to placement of structure. See Division 33.

3.02 COORDINATION

A. The specified pre-engineered public restroom building requires coordination between the General Contractor (who is responsible for a complete installation of the restroom building - i.e., prepares the site pad, utilities, and builds the restroom on-site with select components supplied by restroom manufacturer) and the restroom building manufacturer (who completes the architectural design, engineering, supplies select materials, and delivery.) Refer to manufacturer's drawings for a complete list if materials supplied by the manufacturer and those supplied by the contractor. It is the Contractor's responsibility to have a full understanding of responsible scope of work prior to bidding.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions. Contractor is responsible for a complete, working installation.

B. Connect utilities and demonstrate funtionality of all building systems with Owner.

3.04 SYSTEM STARTUP

A. Provide manufacturer's field representative to perform systems startup.

B. Adjust for proper operation with manufacturer's published tolerances.

C. Demonstrate operation of system to City's authorized representative.

3.05 ADJUSTING

A. Adjust doors, operable windows, and hardware to operate smoothly and properly without binding, and verify that locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving components in accordance with manufacturer's written instructions.

C. Touch-up, repair or replace damaged products or exposed finishes prior to Date of Substantial Completion.

END OF SECTION 13 3423.13

Section 26 05 05 - Selective Demolition for Electrical

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical demolition.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that abandoned wiring and equipment serve only abandoned facilities.

B. Demolition drawings are based on casual field observation and existing record documents.

C. Report discrepancies to Engineer before disturbing existing installation.

D. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

A. Disconnect electrical systems in walls, floors, and ceilings to be removed.

B. Coordinate utility service outages with utility company.

C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.
   1. Obtain permission from Owner at least 24 hours before partially or completely disabling system.
   2. Make temporary connections to maintain service in areas adjacent to work area.

3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing installations to accommodate new construction.

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.

E. Disconnect and remove abandoned panelboards and distribution equipment.

F. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.

G. Repair adjacent construction and finishes damaged during demolition and extension work.

H. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

I. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

End of Section

Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Single conductor building wire.

B. Underground feeder and branch-circuit cable.

C. Service entrance cable.

D. Wiring connectors.

E. Electrical tape.

F. Heat shrink tubing.

G. Oxide inhibiting compound.

H. Wire pulling lubricant.

I. Cable ties.

1.02 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.

1.03 REFERENCE STANDARDS

A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2013.

B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2011 (Reapproved 2017).

C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010 (Reapproved 2014).

D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2014).

E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2017.

F. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes; 2013.

G. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

H. NECA 121 - Standard for Installing Nonmetallic-Sheathed Cable (Type NM-B) and Underground Feeder and Branch-Circuit Cable (Type UF); 2007.

I. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; 2009.

J. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2017.

K. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

L. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.

M. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.

N. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.

O. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.

P. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.

Q. UL 493 - Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables; Current Edition, Including All Revisions.

R. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.

S. UL 854 - Service-Entrance Cables; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate the installation of direct burial cable with other trades to avoid conflicts with piping or other potential conflicts.
3. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
4. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

B. Manufactured Wiring System Shop Drawings: Provide plan views indicating proposed system layout with components identified; indicate branch circuit connections.

C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

D. Project Record Documents: Record actual installed circuiting arrangements. Record actual routing for underground circuits.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.

B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.

C. Nonmetallic-sheathed cable is not permitted.

D. Underground feeder and branch-circuit cable is permitted only as follows:
   1. Where not otherwise restricted, may be used:
      a. For damp, wet, or corrosive locations as a substitute for NFPA 70, Type NMC nonmetallic-sheathed cable, when nonmetallic-sheathed cable is permitted.
   2. In addition to other applicable restrictions, may not be used:
      a. Where exposed to damage.

E. Service entrance cable is permitted only as follows:
   1. Where not otherwise restricted, may be used:
      a. For overhead service drop, installed in raceway to service head.
      b. For underground service entrance, installed in raceway.

F. Armored cable is not permitted.

G. Metal-clad cable is not permitted.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

A. Provide products that comply with requirements of NFPA 70.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.

D. Comply with NEMA WC 70.

E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.

F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.

G. Conductor Material:
1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
3. Tinned Copper Conductors: Comply with ASTM B33.

H. Conductor Color Coding:
1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
2. Color Coding Method: Integrally colored insulation.
a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
3. Color Code:
a. 480Y/277 V, 3 Phase, 4 Wire System:
1) Phase A: Brown.
2) Phase B: Orange.
3) Phase C: Yellow.
4) Neutral/Grounded: Gray.
b. 208Y/120 V, 3 Phase, 4 Wire System:
1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
4) Neutral/Grounded: White.
c. 240/120 V High-Leg Delta, 3 Phase, 4 Wire System:
1) Phase A: Black.
2) Phase B (High-Leg): Orange.
3) Phase C: Blue.
4) Neutral/Grounded: White.
d. 240/120 V, 1 Phase, 3 Wire System:
1) Phase A: Black.
2) Phase B: Red.
3) Neutral/Grounded: White.
e. Equipment Ground, All Systems: Green.
f. Isolated Ground, All Systems: Green with yellow stripe.

2.03 SINGLE CONDUCTOR BUILDING WIRE

A. Description: Single conductor insulated wire.

B. Conductor Stranding:
1. Feeders and Branch Circuits:
a. Size 10 AWG and Smaller: Solid.

b. Size 8 AWG and Larger: Stranded.

C. Insulation Voltage Rating: 600 V.

D. Insulation:
1. Copper Building Wire: Type THHN/THWN-2 or XHHW-2, except as indicated below.

2.04 UNDERGROUND FEEDER AND BRANCH-CIRCUIT CABLE

A. Description: NFPA 70, Type UF multiple-conductor cable listed and labeled as complying with UL 493, Type UF-B.

B. Provide equipment grounding conductor unless otherwise indicated.

C. Conductor Stranding:
1. Size 10 AWG and Smaller: Solid.
2. Size 8 AWG and Larger: Stranded.

D. Insulation Voltage Rating: 600 V.

2.05 SERVICE ENTRANCE CABLE

A. Service Entrance Cable for Above-Ground Use: NFPA 70, Type SE multiple-conductor cable listed and labeled as complying with UL 854, Style R.

B. Service Entrance Cable for Underground Use: NFPA 70, Type USE single-conductor cable listed and labeled as complying with UL 854, Type USE-2, and with UL 44, Type RHH/RHW-2.

C. Conductor Stranding: Stranded.

D. Insulation Voltage Rating: 600 V.

2.06 WIRING CONNECTORS

A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.

B. Connectors for Grounding and Bonding: Comply with Section 26 05 26.

C. Wiring Connectors for Splices and Taps:
1. Copper Conductors Size 8 AWG and Smaller: Use compression connectors.
2. Copper Conductors Size 6 AWG and Larger: Use compression connectors.
3. For all lighting circuit coductors: Use Caltrans Method B (ES-13A) at light poles.

D. Wiring Connectors for Terminations:
1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
2. Copper Conductors Size 8 AWG and Larger: Use compression connectors where connectors are required.
3. Stranded Conductors Size 10 AWG and Smaller: Use crimped terminals for connections to terminal screws.

4. Conductors for Control Circuits: Use crimped terminals for all connections.

E. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.

F. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.

G. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F (105 degrees C) for standard applications and 302 degrees F (150 degrees C) for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
1. Manufacturers:
   a. 3M: www.3m.com.
   b. Ideal Industries, Inc: www.idealindustries.com.

H. Compression Connectors: Provide circumferential type or hex type crimp configuration.
1. Manufacturers:
   a. Burndy LLC: www.burndy.com.
   b. Ilsco: www.ilsco.com.
   c. Thomas & Betts Corporation: www.tnb.com.

I. Crimped Terminals: Nylon-insulated, with insulation grip and terminal configuration suitable for connection to be made.
1. Manufacturers:
   a. Burndy LLC: www.burndy.com.
   b. Ilsco: www.ilsco.com.
   c. Thomas & Betts Corporation: www.tnb.com.

2.07 ACCESSORIES

A. Electrical Tape:
1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F (105 degrees C).
2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F (-18 degrees C) and suitable for continuous temperature environment up to 221 degrees F (105 degrees C).
3. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil (0.76 mm); suitable for continuous temperature environment up to 194 degrees F (90 degrees C) and short-term 266 degrees F (130 degrees C) overload service.
4. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil (2.3 mm).

B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.

C. Oxide Inhibiting Compound: Listed; suitable for use with the conductors or cables to be installed.

D. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.

E. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that interior of building has been protected from weather.

B. Verify that work likely to damage wire and cable has been completed.

C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.

D. Verify that field measurements are as indicated.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

A. Circuiting Requirements:
   1. Unless dimensioned, circuit routing indicated is diagrammatic.
   2. When circuit destination is indicated without specific routing, determine exact routing required.
   3. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.

B. Install products in accordance with manufacturer's instructions.

C. Perform work in accordance with NECA 1 (general workmanship).

D. Install underground feeder and branch-circuit cable (Type UF-B) in accordance with NECA 121.

E. Installation in Raceway:
   1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
   2. Pull all conductors and cables together into raceway at same time.
   3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
   4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.

F. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.

G. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.

H. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.

I. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.

J. Make wiring connections using specified wiring connectors.
   1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
   2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
   3. Do not remove conductor strands to facilitate insertion into connector.
   4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
   5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

K. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
   1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
      a. For taped connections, first apply adequate amount of rubber splicing electrical tape, followed by outer covering of vinyl insulating electrical tape.
   2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
      a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
      b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
   3. Wet Locations: Use heat shrink tubing.

L. Insulate ends of spare conductors using vinyl insulating electrical tape.

M. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.

N. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.04 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is only required for conductors larger than #6. The resistance test for parallel conductors listed as optional is required.

1. Disconnect surge protective devices (SPDs) prior to performing any high potential testing. Replace SPDs damaged by performing high potential testing with SPDs connected.

C. Correct deficiencies and replace damaged or defective conductors and cables.

End of Section

Section 26 05 26 - Grounding and Bonding for Electrical Systems

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Grounding and bonding requirements.

B. Conductors for grounding and bonding.

C. Connectors for grounding and bonding.

D. Ground rod electrodes.

E. Ground access wells.

1.02 RELATED REQUIREMENTS

A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
   1. Includes oxide inhibiting compound.

B. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

A. IEEE 81 - IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System; 2012.

B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

C. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings; 2007.

D. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2017.

E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

F. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Verify exact locations of underground metal water service pipe entrances to building.
   2. Coordinate the work with other trades to provide steel reinforcement complying with specified requirements for concrete-encased electrode.
   3. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:

1. Do not install ground rod electrodes until final backfill and compaction is complete.

1.05 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.

B. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

C. Field quality control test reports.

D. Project Record Documents: Record actual locations of grounding electrode system components and connections.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.

B. Do not use products for applications other than as permitted by NFPA 70 and product listing.

C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.

D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

E. Grounding System Resistance:
   1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Engineer. Precipitation within the previous 48 hours does not constitute normally dry conditions.
   2. Grounding Electrode System: Not greater than 25 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.
   3. Between Grounding Electrode System and Major Electrical Equipment Frames, System Neutral, and Derived Neutral Points: Not greater than 0.5 ohms, when tested using "point-to-point" methods.

F. Grounding Electrode System:
   1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
      a. Provide continuous grounding electrode conductors without splice or joint.

b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.

2. Concrete-Encased Electrode:
   a. Provide connection to concrete-encased electrode consisting of not less than 20 feet (6.0 m) of either steel reinforcing bars or bare copper conductor not smaller than 4 AWG embedded within concrete foundation or footing that is in direct contact with earth in accordance with NFPA 70.
3. Ground Ring:
   a. Provide a ground ring encircling the building or structure consisting of bare copper conductor not less than 3/0 AWG in direct contact with earth, installed at a depth of not less than 30 inches (750 mm).
4. Ground Rod Electrode(s):
   a. Provide single electrode unless otherwise indicated or required.
   b. Space electrodes not less than 10 feet (3.0 m) from each other and any other ground electrode.
   c. Where location is not indicated, locate electrode(s) at least 5 feet (1.5 m) outside building perimeter foundation as near as possible to electrical service entrance; where possible, locate in softscape (uncovered) area.
5. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
6. Ground Riser: Provide common grounding electrode conductor not less than 3/0 AWG for tap connections to multiple separately derived systems as permitted in NFPA 70.

G. Service-Supplied System Grounding:
1. For each service disconnect, provide grounding electrode conductor to connect neutral (grounded) service conductor to grounding electrode system. Unless otherwise indicated, make connection at neutral (grounded) bus in service disconnect enclosure.
2. For each service disconnect, provide main bonding jumper to connect neutral (grounded) bus to equipment ground bus where not factory-installed. Do not make any other connections between neutral (grounded) conductors and ground on load side of service disconnect.

H. Grounding for Separate Building or Structure Supplied by Feeder(s) or Branch Circuits:
1. Provide grounding electrode system for each separate building or structure.
2. Provide equipment grounding conductor routed with supply conductors.
3. For each disconnecting means, provide grounding electrode conductor to connect equipment ground bus to grounding electrode system.
4. Do not make any connections and remove any factory-installed jumpers between neutral (grounded) conductors and ground.

I. Separately Derived System Grounding:
1. Separately derived systems include, but are not limited to:
   a. Transformers (except autotransformers such as buck-boost transformers).
   b. Generators, when neutral is switched in the transfer switch.
2. Provide grounding electrode conductor to connect derived system grounded conductor to common grounding electrode conductor ground riser. Unless otherwise indicated, make connection at neutral (grounded) bus in source enclosure.

3. Provide bonding jumper to connect derived system grounded conductor to nearest metal building frame and nearest metal water piping in the area served by the derived system, where not already used as a grounding electrode for the derived system. Make connection at same location as grounding electrode conductor connection.
4. Where common grounding electrode conductor ground riser is used for tap connections to multiple separately derived systems, provide bonding jumper to connect the metal building frame and metal water piping in the area served by the derived system to the common grounding electrode conductor.
5. Outdoor Source: Where the source of the separately derived system is located outside the building or structure supplied, provide connection to grounding electrode at source in accordance with NFPA 70.
6. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
7. Where the source and first disconnecting means are in separate enclosures, provide supply-side bonding jumper between source and first disconnecting means.

J. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:
1. Use insulated copper conductors unless otherwise indicated.
a. Exceptions:
1) Use bare copper conductors where installed underground in direct contact with earth.
2) Use bare copper conductors where directly encased in concrete (not in raceway).

C. Connectors for Grounding and Bonding:
   1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
   2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
      a. Exceptions:
         1) Use mechanical connectors for connections to electrodes at ground access wells.
   3. Unless otherwise indicated, use mechanical connectors or exothermic welded connections for accessible connections.
      a. Exceptions:
         1) Use exothermic welded connections for connections to metal building frame.
   4. Manufacturers - Mechanical and Compression Connectors:
      a. Burndy LLC; _____: www.burndy.com.
      b. Thomas & Betts Corporation; _____: www.tnb.com.
   5. Manufacturers - Exothermic Welded Connections:
      a. Burndy LLC; _____: www.burndy.com.
      b. Cadweld, a brand of Erico International Corporation; _____: www.erico.com.

D. Ground Rod Electrodes:
   1. Comply with NEMA GR 1.
   2. Material: Copper-bonded (copper-clad) steel.
   3. Size: 3/4 inch (19 mm) diameter by 10 feet (3.0 m) length, unless otherwise indicated.
   4. Where rod lengths of greater than 10 feet (3.0 m) are indicated or otherwise required, sectionalized ground rods may be used.
   5. Manufacturers:
      a. Erico International Corporation; _____: www.erico.com.

E. Ground Access Wells:
   1. Description: Open bottom round or rectangular well with access cover for testing and inspection; suitable for the expected load at the installed location.
   2. Size: As required to provide adequate access for testing and inspection, but not less than minimum size requirements specified.
      a. Round Wells: Not less than 8 inches (200 mm) in diameter.
      b. Rectangular Wells: Not less than 12 by 12 inches (300 by 300 mm).
   3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 10 inches (250 mm).
   4. Cover: Factory-identified by permanent means with word "GROUND".

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that work likely to damage grounding and bonding system components has been completed.

B. Verify that field measurements are as indicated.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or provide ground plates.
   1. Outdoor Installations: Unless otherwise indicated, install with top of rod 6 inches (150 mm) below finished grade.
   2. Indoor Installations: Unless otherwise indicated, install with 4 inches (100 mm) of top of rod exposed.

D. Make grounding and bonding connections using specified connectors.
   1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
   2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
   3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
   4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
   5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

E. Identify grounding and bonding system components in accordance with Section 26 05 53.

3.03 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.13.

C. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.

D. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

E. Submit detailed reports indicating inspection and testing results and corrective actions taken.

End of Section

Section 26 05 29 - Hangers and Supports for Electrical Systems

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.02 RELATED REQUIREMENTS

A. Section 26 05 33.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.

1.03 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2015.

D. MFMA-4 - Metal Framing Standards Publication; 2004.

E. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for channel (strut) framing systems and post-installed concrete and masonry anchors.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
   1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
   2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
   3. Do not use products for applications other than as permitted by NFPA 70 and product listing.
   4. Steel Components: Use corrosion resistant materials suitable for the environment where installed.

a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
1. Conduit Straps: One-hole or two-hole type; malleable iron.
2. Conduit Clamps: Bolted type unless otherwise indicated.

C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.

D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
1. Comply with MFMA-4.
2. Channel Material:
a. Indoor Dry Locations: Use zinc-plated steel or galvanized steel.
b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
3. Minimum Channel Thickness: Steel sheet, 12 gage, 0.1046 inch (2.66 mm).
4. Minimum Channel Dimensions: 1-5/8 inch (41 mm) width by 13/16 inch (21 mm) height.
5. Manufacturers:
a. Cooper B-Line, a division of Eaton Corporation: www.cooperindustries.com.
b. Thomas & Betts Corporation: www.tnb.com.
c. Unistrut, a brand of Atkore International Inc: www.unistrut.com.
d. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.

E. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
2. Concrete: Use preset concrete inserts or expansion anchors.
3. Solid or Grout-Filled Masonry: Use expansion anchors.
4. Hollow Masonry: Use toggle bolts.
5. Hollow Stud Walls: Use toggle bolts.
6. Steel: Use machine bolts or welded threaded studs.
7. Wood: Use wood screws.
8. Preset Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
a. Comply with MFMA-4.
b. Channel Material: Use galvanized steel.
c. Manufacturer: Same as manufacturer of metal channel (strut) framing system.
9. Post-Installed Concrete and Masonry Anchors: Evaluated and recognized by ICC Evaluation Service, LLC (ICC-ES) for compliance with applicable building code.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive support and attachment components.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.

D. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

E. Unless specifically indicated or approved by Engineer, do not provide support from suspended ceiling support system or ceiling grid.

F. Unless specifically indicated or approved by Engineer, do not provide support from roof deck.

G. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

H. Equipment Support and Attachment:
   1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
   2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
   3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
   4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

I. Conduit Support and Attachment: Also comply with Section 26 05 33.13.

J. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.

K. Secure fasteners according to manufacturer's recommended torque settings.

L. Remove temporary supports.

3.03 FIELD QUALITY CONTROL

A. Inspect support and attachment components for damage and defects.

B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

C. Correct deficiencies and replace damaged or defective support and attachment components.

End of Section

Section 26 05 33.13 - Conduit for Electrical Systems

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Galvanized steel rigid metal conduit (RMC).

B. PVC-coated galvanized steel rigid metal conduit (RMC).

C. Rigid polyvinyl chloride (PVC) conduit.

D. Conduit fittings.

E. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
   1. Includes additional requirements for fittings for grounding and bonding.

B. Section 26 05 29 - Hangers and Supports for Electrical Systems.

C. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2015.

B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

C. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); 2013.

D. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2003.

E. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.

F. NEMA RN 1 - Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit; 2005 (Reaffirmed 2013).

G. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; 2013.

H. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2016.

I. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

J. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.

K. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.

L. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.

M. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate the arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
4. Coordinate the work with other trades to provide roof penetrations that preserve the integrity of the roofing system and do not void the roof warranty.
5. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

1.05 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

B. Shop Drawings:

C. Project Record Documents: Record actual routing for conduits installed underground, conduits embedded within concrete slabs, and conduits 2 inch (53 mm) trade size and larger.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.

B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.

C. Underground:
   1. Under Slab on Grade: Use galvanized steel rigid metal conduit, PVC-coated galvanized steel rigid metal conduit, or rigid PVC conduit.
   2. Exterior, Direct-Buried: Use galvanized steel rigid metal conduit, PVC-coated galvanized steel rigid metal conduit, or rigid PVC conduit.
   3. Exterior, Embedded Within Concrete: Use galvanized steel rigid metal conduit, PVC-coated galvanized steel rigid metal conduit, or rigid PVC conduit.
   4. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit where emerging from underground.
   5. Where rigid polyvinyl (PVC) conduit larger than 2 inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit elbows for bends.
   6. Where steel conduit is installed in direct contact with earth, use corrosion protection tape to provide supplementary corrosion protection or use PVC-coated galvanized steel rigid metal conduit.
   7. Where steel conduit emerges from concrete into soil, use corrosion protection tape to provide supplementary corrosion protection for a minimum of 4 inches (100 mm) on either side of where conduit emerges or use PVC-coated galvanized steel rigid metal conduit.

D. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit.

E. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit.

F. Exposed, Exterior: Use galvanized steel rigid metal conduit.

G. Concealed, Exterior, Not Embedded in Concrete or in Contact With Earth: Use galvanized steel rigid metal conduit.

2.02 CONDUIT REQUIREMENTS

A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.

B. Fittings for Grounding and Bonding: Also comply with Section 26 05 26.

C. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.

D. Provide products listed, classified, and labeled as suitable for the purpose intended.

E. Minimum Conduit Size, Unless Otherwise Indicated:
   1. Branch Circuits: 1/2 inch (16 mm) trade size.
   2. Branch Circuit Homeruns: 3/4 inch (21 mm) trade size.
   3. Control Circuits: 1/2 inch (16 mm) trade size.
   4. Flexible Connections to Luminaires: 3/8 inch (12 mm) trade size.
   5. Underground, Interior: 3/4 inch (21 mm) trade size.

6. Underground, Exterior: 1 inch (27 mm) trade size.

F. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Manufacturers:
1. Allied Tube & Conduit: www.alliedeg.com.
2. Wheatland Tube Company: www.wheatland.com.

B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.

C. Fittings:
1. Manufacturers:
a. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com.
b. Thomas & Betts Corporation: www.tnb.com.
2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
3. Hazardous (Classified) Locations: Use fittings listed and labeled as complying with UL 1203 for the classification of the installed location.
4. Material: Use malleable iron or die cast zinc.
5. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.04 PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Manufacturers:
1. Thomas & Betts Corporation; _____: www.tnb.com.

B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit with external polyvinyl chloride (PVC) coating complying with NEMA RN 1 and listed and labeled as complying with UL 6.

C. Exterior Coating: Polyvinyl chloride (PVC), nominal thickness of 40 mil (1.02 mm).

D. PVC-Coated Fittings:
1. Manufacturer: Same as manufacturer of PVC-coated conduit to be installed.
2. Non-Hazardous Locations: Use fittings listed and labeled as complying with UL 514B.
3. Hazardous (Classified) Locations: Use fittings listed and labeled as complying with UL 1203 for the classification of the installed location.
4. Material: Use steel or malleable iron.
5. Exterior Coating: Polyvinyl chloride (PVC), minimum thickness of 40 mil (1.02 mm).

E. PVC-Coated Supports: Furnish with exterior coating of polyvinyl chloride (PVC), minimum thickness of 15 mil (0.38 mm).

2.05 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

A. Manufacturers:
   1. Cantex Inc: www.cantexinc.com.
   2. Carlon, a brand of Thomas & Betts Corporation: www.carlon.com.
   3. JM Eagle: www.jmeagle.com.

B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.

C. Fittings:
   1. Manufacturer: Same as manufacturer of conduit to be connected.
   2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

2.06 ACCESSORIES

A. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil (0.51 mm).

B. Conduit Joint Compound: Corrosion-resistant, electrically conductive; suitable for use with the conduit to be installed.

C. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.

D. Pull Strings: Use nylon cord with average breaking strength of not less than 500 pound-force (2225 N).

E. Sealing Compound for Sealing Fittings: Listed for use with the particular fittings to be installed.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive conduits.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.

D. Install intermediate metal conduit (IMC) in accordance with NECA 101.

E. Install PVC-coated galvanized steel rigid metal conduit (RMC) using only tools approved by the manufacturer.

F. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.

G. Conduit Routing:
1. Unless dimensioned, conduit routing indicated is diagrammatic.
2. When conduit destination is indicated without specific routing, determine exact routing required.
3. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
4. Arrange conduit to provide no more than the equivalent of four 90 degree bends between pull points.
5. Arrange conduit to provide no more than 400 feet (1320 m) between pull points.
6. Route conduits above water and drain piping where possible.
7. Maintain minimum clearance of 12 inches (300 mm) between conduits and piping for other systems.

H. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
3. Use metal channel (strut) with accessory conduit clamps to support multiple parallel surface-mounted conduits.

I. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
3. Use suitable adapters where required to transition from one type of conduit to another.
4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
6. Where spare conduits stub up through concrete floors and are not terminated in a box or enclosure, provide threaded couplings equipped with threaded plugs set flush with finished floor.
7. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
8. Secure joints and connections to provide maximum mechanical strength and electrical continuity.

J. Penetrations:

1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
2. Make penetrations perpendicular to surfaces unless otherwise indicated.
3. Conceal bends for conduit risers emerging above ground.
4. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.

K. Underground Installation:
1. Minimum Cover, Unless Otherwise Indicated or Required:
   a. Underground, Exterior: 24 inches (610 mm).
2. Provide underground warning tape in accordance with Section 26 05 53 along entire conduit length for service entrance where not concrete-encased.

L. Provide grounding and bonding in accordance with Section 26 05 26.

3.03 FIELD QUALITY CONTROL

A. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

B. Where coating of PVC-coated galvanized steel rigid metal conduit (RMC) contains cuts or abrasions, repair in accordance with manufacturer's instructions.

C. Correct deficiencies and replace damaged or defective conduits.

3.04 CLEANING

A. Clean interior of conduits to remove moisture and foreign matter.

3.05 PROTECTION

A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

End of Section

Section 26 05 33.16 - Boxes for Electrical Systems

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 26 05 29 - Hangers and Supports for Electrical Systems.

1.02 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2010.

C. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.

D. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013.

E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.

F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.

H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.

I. UL 508A - Industrial Control Panels; 2013.

J. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for outlet and device boxes, junction and pull boxes, cabinets and enclosures, and underground boxes/enclosures.

1.04 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 BOXES

A. General Requirements:
   1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
   2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
   3. Provide products listed, classified, and labeled as suitable for the purpose intended.
   4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
   5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

B. Outlet and Device Boxes Up to 100 cubic inches (1,650 cu cm), Including Those Used as Junction and Pull Boxes:
   1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
   2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
   3. Use cast iron boxes or cast aluminum boxes where exposed galvanized steel rigid metal conduit is used.
   4. Use suitable concrete type boxes where flush-mounted in concrete.
   5. Use suitable masonry type boxes where flush-mounted in masonry walls.
   6. Use raised covers suitable for the type of wall construction and device configuration where required.
   7. Use shallow boxes where required by the type of wall construction.
   8. Do not use "through-wall" boxes designed for access from both sides of wall.
   9. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
   10. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.

C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
   1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
   2. NEMA 250 Environment Type, Unless Otherwise Indicated:
      a. Indoor Clean, Dry Locations: Type 1, painted steel.
      b. Outdoor Locations: Type 4X, stainless steel.
   3. Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
      a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
      b. Boxes 6 square feet (0.56 sq m) and Larger: Provide sectionalized screw-cover or hinged-cover enclosures.
   4. Cabinets and Hinged-Cover Enclosures, Other Than Junction and Pull Boxes:
      a. Provide lockable hinged covers, all locks keyed alike unless otherwise indicated.
      b. Back Panels: Painted steel, removable.

D. Underground Boxes/Enclosures:
   1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
   2. Size: As indicated on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive boxes.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.

E. Box Supports:
   1. Secure and support boxes in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.

F. Install boxes plumb and level.

G. Underground Boxes/Enclosures:
   1. Install enclosure on gravel base, minimum 6 inches (150 mm) deep.
   2. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.

H. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

I. Close unused box openings.

J. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.

K. Provide grounding and bonding in accordance with Section 26 05 26.

3.03 CLEANING

A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.04 PROTECTION

A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

End of Section

Section 26 05 53 - Identification for Electrical Systems

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

1.02 REFERENCE STANDARDS

A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs; 2011.

B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels; 2011.

C. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

A. Existing Work: Unless specifically excluded, identify existing elements to remain that are not already identified in accordance with specified requirements.

B. Identification for Equipment:
   1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
      a. Panelboards:
         1) Identify ampere rating.
         2) Identify voltage and phase.
         3) Identify power source and circuit number. Include location when not within sight of equipment.
         4) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil.
         5) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
   2. Use warning signs to identify electrical hazards for entrances to all rooms and other guarded locations that contain exposed live parts operating at 600 V nominal or less with the word message "DANGER; Electrical hazard; Authorized personnel only" or approved equivalent.

C. Identification for Conductors and Cables:
   1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 05 19.
   2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or

branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Nameplates:
   1. Materials:
      a. Indoor Clean, Dry Locations: Use plastic nameplates.
      b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
   2. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch (1.6 mm); engraved text.
      a. Exception: Provide minimum thickness of 1/8 inch (3 mm) when any dimension is greater than 4 inches (100 mm).
   3. Stainless Steel Nameplates: Minimum thickness of 1/32 inch (0.8 mm); engraved or laser-etched text.
   4. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch (0.8 mm); engraved or laser-etched text.
   5. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch (25 mm) high; Four, located at corners for larger sizes.

B. Identification Labels:
   1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
   2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

C. Format for Equipment Identification:
   1. Minimum Size: 1 inch (25 mm) by 2.5 inches (64 mm).
   2. Legend:
      a. Equipment designation or other approved description.
   3. Text: All capitalized unless otherwise indicated.
   4. Minimum Text Height:
      a. Equipment Designation: 1/2 inch (13 mm).
      b. Other Information: 1/4 inch (6 mm).
   5. Color:
      a. Normal Power System: White text on black background.

2.03 VOLTAGE MARKERS

A. Minimum Size:
   1. Markers for Equipment: 1 1/8 by 4 1/2 inches (29 by 110 mm).

B. Color: Black text on orange background unless otherwise indicated.

2.04 UNDERGROUND WARNING TAPE

A. Materials: Use foil-backed detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.

B. Foil-backed Detectable Type Tape: 3 inches (76 mm) wide, with minimum thickness of 5 mil (0.1 mm), unless otherwise required for proper detection.

C. Legend: Type of service, continuously repeated over full length of tape.

D. Color:
   1. Tape for Buried Power Lines: Black text on red background.
   2. Tape for Buried Communication, Alarm, and Signal Lines: Black text on orange background.

2.05 WARNING SIGNS AND LABELS

A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.

B. Warning Signs:
   1. Materials:
      a. Indoor Dry, Clean Locations: Use factory pre-printed self-adhesive vinyl signs.
      b. Outdoor Locations: Use factory pre-printed rigid aluminum signs.
   2. Rigid Signs: Provide four mounting holes at corners for mechanical fasteners.
   3. Minimum Size: 7 by 10 inches (178 by 254 mm) unless otherwise indicated.

C. Warning Labels:
   1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
      a. Do not use labels designed to be completed using handwritten text.
   2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
   3. Minimum Size: 2 by 4 inches (51 mm by 102 mm) unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
   1. Surface-Mounted Equipment: Enclosure front.
   2. Flush-Mounted Equipment: Inside of equipment door.

3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
4. Elevated Equipment: Legible from the floor or working platform.
5. Branch Devices: Adjacent to device.
6. Interior Components: Legible from the point of access.
7. Conductors and Cables: Legible from the point of access.

C. Install identification products centered, level, and parallel with lines of item being identified.

D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.

E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.

F. Install underground warning tape above buried lines with one tape per trench at 3 inches (75 mm) below finished grade.

G. Secure rigid signs using stainless steel screws.

H. Mark all handwritten text, where permitted, to be neat and legible.

3.03 FIELD QUALITY CONTROL

A. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

End of Section

Section 26 27 26 - Wiring Devices

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Receptacles.

1.02 RELATED REQUIREMENTS

A. Section 26 05 33.16 - Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

A. FS W-C-596 - Connector, Electrical, Power, General Specification for; 2017h.

B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

C. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2010.

D. NEMA WD 1 - General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2015).

E. NEMA WD 6 - Wiring Devices - Dimensional Specifications; 2016.

F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.

H. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.01 WIRING DEVICE APPLICATIONS

A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.

C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.

2.02 WIRING DEVICE FINISHES

A. Provide wiring device finishes as described below unless otherwise indicated.

B. Wiring Devices, Unless Otherwise Indicated: Gray with gray galvanized steel wall plate.

C. Wiring Devices Installed in Unfinished Spaces: Gray with galvanized steel wall plate.

D. Wiring Devices Installed in Wet or Damp Locations: Gray with specified weatherproof cover.

2.03 RECEPTACLES

A. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
   1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
   2. NEMA configurations specified are according to NEMA WD 6.

B. Convenience Receptacles:
   1. Standard Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; duplex.

C. GFCI Receptacles:
   1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
   2. Standard GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
   3. Weather Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

PART 3 EXECUTION

3.01 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.02 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.

B. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of wiring devices provided under this section.
   1. Mounting Heights: Unless otherwise indicated, as follows:
      a. Wall Switches: 48 inches (1200 mm) above finished floor.
      b. Wall Dimmers: 48 inches (1200 mm) above finished floor.
      c. Receptacles: 18 inches (450 mm) above finished floor or 6 inches (150 mm) above counter.
   2. Locate wall switches on strike side of door with edge of wall plate 3 inches (80 mm) from edge of door frame. Where locations are indicated otherwise, notify Engineer to obtain direction prior to proceeding with work.

C. Install wiring devices in accordance with manufacturer's instructions.

D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

E. Where required, connect wiring devices using pigtails not less than 6 inches (150 mm) long. Do not connect more than one conductor to wiring device terminals.

F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.

G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

H. Install wiring devices plumb and level with mounting yoke held rigidly in place.

I. Install wall switches with OFF position down.

J. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.

K. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

L. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

3.03 FIELD QUALITY CONTROL

A. Inspect each wiring device for damage and defects.

B. Operate each wall switch and wall dimmer with circuit energized to verify proper operation.

C. Test each receptacle to verify operation and proper polarity.

D. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.

E. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.04 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

End of Section

Section 31 1000
Site Clearing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Clearing and protection of vegetation.

B. Removal of existing debris.

1.02 RELATED REQUIREMENTS

A. Section 01 57 00 Temporary Controls

B. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.

C. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products.

D. Section 01 7419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

E. Section 31 2323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

F. Section 31 2323 - Fill: Filling holes, pits, and excavations generated as a result of removal operations.

1.03 SUBMITTALS

A. See Section 01 3300 - Administrative Requirements, for submittal procedures.

B. Site Plan: Showing:
   1. Areas for temporary construction and field offices (if part of construction operation).

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 SITE CLEARING

A. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

3.02 EXISTING UTILITIES AND BUILT ELEMENTS

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Protect existing structures and other elements that are not to be removed.

3.03 VEGETATION

A. Do not remove or damage vegetation beyond the limits indicated on drawings.

B. In areas where vegetation must be removed but no construction will occur other than pervious paving, remove vegetation with minimum disturbance of the subsoil.

C. Vegetation Removed: Do not burn, bury, landfill, or leave on site, except as indicated.
1. Clear and grub areas dictated by Demolition plan.

D. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to City.

3.04 DEBRIS

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION 31 1000

Section 31 2200
Grading

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Removal of topsoil.

B. Rough grading the site for site structures, and landscaped areas.

C. Finish grading.

1.02 RELATED REQUIREMENTS

A. Section 31 1000 - Site Clearing.

B. Section 31 2316 - Excavation.

C. Section 31 2323 - Fill: Filling and compaction.

D. Section 32 9223 - Sodding: Finish ground cover.

E. Project Geotechnical Investigation Report (by Ninyo & Moore, dated January 19th, 2023)

1.03 SUBMITTALS

A. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

PART 2 PRODUCTS

2.01 MATERIALS

A. Topsoil: See Section 32 92 23 Sodding.
   1. Graded.
   2. Free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds and foreign matter.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that survey bench mark and intended elevations for the Work are as indicated.

B. Verify the absence of standing or ponding water.

3.02 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Stake and flag locations of known utilities.

C. Locate, identify, and protect from damage above- and below-grade utilities to remain.

D. Notify utility company to remove and relocate utilities.

E. Provide temporary means and methods to remove all standing or ponding water from areas prior to grading.

F. Protect site features to remain, including but not limited to bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs, from damage by grading equipment and vehicular traffic.

G. Protect trees to remain by providing substantial fencing around entire tree at the outer tips of its branches; no grading is to be performed inside this line.

3.03 ROUGH GRADING

A. Remove topsoil from areas to be further excavated, re-landscaped, or re-graded, without mixing with foreign materials.

B. Do not remove topsoil when wet.

C. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded.

D. Do not remove wet subsoil , unless it is subsequently processed to obtain optimum moisture content.

E. When excavating through roots, perform work by hand and cut roots with sharp axe.

F. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

G. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack surface water control.

3.04 SOIL REMOVAL

A. Stockpile excavated topsoil on site.

B. Stockpile subsoil to be re-used on site; remove remainder from site.

C. Stockpiles: Use areas designated on site; pile depth not to exceed 6 feet; protect from erosion.

3.05 FINISH GRADING

A. Before Finish Grading:
   1. Verify building and trench backfilling have been inspected.
   2. Verify subgrade has been contoured and compacted.

B. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove soil contaminated with petroleum products.

C. Where topsoil is to be placed, scarify surface to depth of 3 inches.

D. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 3 inches.

E. Place topsoil in areas indicated on plans as turf. Refer to turf detail for depth.

F. Place topsoil where required to level finish grade.

G. Place topsoil during dry weather.

H. Remove roots, weeds, rocks, and foreign material while spreading.

I. Near plants spread topsoil manually to prevent damage.

J. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.

K. Lightly compact placed topsoil.

L. Maintain stability of topsoil during inclement weather. Replace topsoil in areas where surface water has eroded thickness below specifications.

3.06 REPAIR AND RESTORATION

A. Existing Facilities, Utilities, and Site Features to Remain: If damaged due to this work, repair or replace to original condition.

B. Trees to Remain: If damaged due to this work, trim broken branches and repair bark wounds; if root damage has occurred, obtain instructions from Architect as to remedy.

C. Other Existing Vegetation to Remain: If damaged due to this work, replace with vegetation of equivalent species and size.

3.07 CLEANING

A. Remove unused stockpiled topsoil and subsoil. Grade stockpile area to prevent standing water.

END OF SECTION 31 2200

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Section 31 2301
Storm Water Pollution Prevention

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Implement approved SWPPP (Storm Water Pollution Prevention Plan), uploaded to SMARTS (Stormwater Mulit-Application & Reports Tracking System).

B. Provide, implement and maintain Tempory BMP's as shown on the Erosion Control Plan in the drawings.

C. Prevention of erosion due to construction activities.

D. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.

E. Restoration of areas eroded due to insufficient preventive measures.

F. Compensation of City for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.02 RELATED REQUIREMENTS

A. Section 31 1000 - Site Clearing: Limits on clearing; disposition of vegetative clearing debris.

B. Section 31 2200 - Grading: Temporary and permanent grade changes for erosion control.

C. Section 32 1123 - Aggregate Base Courses: Temporary and permanent roadways.

D. Section 03 3000 - Cast-in-Place Concrete: Concrete for temporary and permanent erosion control structures indicated on drawings.

1.03 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 2009).

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. EPA (NPDES) - National Pollutant Discharge Elimination System (NPDES), Construction General Permit; current edition.

1.04 PERFORMANCE REQUIREMENTS

A. Comply with all requirements of U.S. Environmental Protection Agency for erosion and sedimentation control, as specified for the National Pollutant Discharge Elimination System (NPDES), Phases I and II, under requirements for the 2009-009-DWQ Construction General Permit (CGP) and it's amendments.

B. Also comply with all more stringent requirements of State of California Erosion and Sedimentation Control Manual.

C. Contractor shall coordinate and schedule with the City to have the City's hired Qualified SWPPP Practitioner, (QSP), onsite during construction as required by the General Permit.

D. The QSP shall provide all training, inspections, Rain Event Action Plans, (REAP's), and updated Stormwater Pollution Prevention Plan updates as required by the General Permit.

E. 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. Obtain and pay for permits and provide security required by authority having jurisdiction.
   2. City will withhold payment to Contractor equivalent to all fines resulting from non-compliance with applicable regulations.

F. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.

G. 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.
   2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 25 years.

H. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this 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.

I. 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 this 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.

J. 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.

K. 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.

L. Open Water: Prevent standing water that could become stagnant.

M. Maintenance:
   1. Maintain temporary preventive measures until permanent measures have been established.
   2. Address any issues or deficiences identified during the QSP's site inspections in a timely manner.

1.05 SUBMITTALS

A. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.

B. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

C. Ad Hoc reports shall be uploaded to SMARTS and hard copies provided to City.

D. Approved NOT (Notice of Termination), shall be submitted to to SMARTS and a hard copy provided to owner.

PART 2 PRODUCTS

2.01 MATERIALS

A. Mulch: Use one of the following:

1. Straw or hay.
2. Wood waste, chips, or bark.
3. Erosion control matting or netting.

B. 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, 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, minimum, in cross-machine direction; 124 lb-f, 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, minimum, when tested in accordance with ASTM D4533.
7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.

C. Silt Fence Posts: One of the following, minimum 5 feet long:
1. Hardwood, 2 by 2 inches in cross section.

D. Fiber Rolls: 12" Diameter wheat, encased in jute netting, or an approved equal.

E. Gravel: See Section 32 1123 for aggregate.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 SCOPE OF PREVENTIVE MEASURES

A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.

B. Construction Entrances: Traffic-bearing aggregate surface.
1. Width: As required; 10 feet, minimum.
2. Length: 25 feet, minimum.
3. Provide at each construction entrance from public right-of-way.
4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.

C. Linear Sediment Barriers: Made of silt fences or straw wattles.

1. Provide linear sediment barriers:
   a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
   b. Perpendicular to flow across the bottom of existing and new drainage channels and swales that traverse disturbed areas or carry runoff from disturbed areas; space at maximum of 200 feet apart.

D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:
   1. Gravel bags oriented to filter sediments from the direction of flows.
   2. Premanufactured sedimentation rolls/socks placed per the manufacturer's recommendations for storm drain inlet protection proceedures.

E. Soil Stockpiles: Protect using one of the following measures:
   1. Cover with polyethylene film, secured by placing soil on outer edges.
   2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.

F. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.
   1. Wood Waste: Use only on slopes 3:1 or flatter; no anchoring required.

G. Good housekeeping procedures as required by the General Permit.

H. Specified material delivery and storage area with adequate containment measures, as required in the General Permit.

I. Concrete waste cleanout measures as required by the General Permit.

J. Maintenance of Best Management Practices as required by the General Permit.

3.04 INSTALLATION

A. Traffic-Bearing Aggregate Surface:
   1. Excavate minimum of 6 inches.
   2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
   3. Place and compact at least 6 inches of 1.5 to 3.5 inch diameter stone.

B. Silt Fences:
   1. Store and handle fabric in accordance with ASTM D4873.
   2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
   3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch high barriers, minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
   4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32 inch high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.
   5. Install with top of fabric at nominal height and embedment as specified.
   6. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.

7. Fasten fabric to wood posts using one of the following:
   a. Four 3/4 inch diameter, 1 inch long, 14 gage nails.
   b. Five 17-gage staples with 3/4 inch wide crown and 1/2 inch legs.
8. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.

C. Mulching Over Small and Medium Areas:
   1. Dry Straw and Hay: Apply 4 to 6 inches depth.
   2. Wood Waste: Apply 2 to 3inches depth.

3.05 MAINTENANCE

A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.

B. Repair deficiencies immediately.

C. Silt Fences:
   1. Promptly replace fabric that deteriorates unless need for fence has passed.
   2. Remove silt deposits that exceed one-third of the height of the fence.
   3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.

D. Clean out temporary sediment control structures weekly and relocate soil on site.

E. Place sediment in appropriate locations on site; do not remove from site.

3.06 CLEAN UP

A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Architect

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 31 2301

Section 31 2316
Excavation

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Excavating for footings, slabs on grade, paving, and site structures.

B. Trenching for utilities.

1.02 RELATED REQUIREMENTS

A. Section 31 2200 - Grading: Grading.

B. Section 31 2316.13 - Trenching: Excavating for utility trenches outside the building to utility main connections.

C. Section 31 2323 - Fill: Fill materials, backfilling, and compacting.

D. Project Geotechnical Investigation Report (by Ninyo & Moore, Dated January 19th 2023)

1.03 REFERENCE STANDARDS

A. City of San Mateo Standard Specifications and Drawings (Current Version)

B. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.

PART 2 EXECUTION

2.01 EXAMINATION

A. Verify that survey bench mark and intended elevations for the work are as indicated.

2.02 PREPARATION

A. Identify required lines, levels, contours, and datum locations.

B. See Section 31 2200 for topsoil removal.

C. Locate, identify, and protect utilities that remain and protect from damage.

D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

E. Grade top perimeter of excavation to prevent surface water from draining into excavation. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by Architect.

2.03 EXCAVATING

A. Excavate to accommodate new structures and construction operations.

B. Notify Landscape Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.

C. Do not interfere with 45 degree bearing splay of foundations.

D. Provide temporary means and methods, as required, to remove all water from excavations until directed by Architect. Remove and replace soils deemed suitable by classification and which are excessively moist due to lack of dewatering or surface water control.

2.04 SHORING AND BRACING

A. Provide materials for shoring and bracing as may be necessary for safety of personnel, protection of work, and compliance with requirements of governmental agencies having jurisdiction.

B. Maintain shoring and bracing in excavations regardless of the time period excavations will be open.

C. Carry shoring and bracing down as excavation progresses.

2.05 CLEANING

A. Stockpile excavated material to be re-used in area designated on site in accordance with Section 31 2200.

B. Remove excavated material that is unsuitable for re-use from site.

C. Remove excess excavated material from site.

2.06 PROTECTION

A. Divert surface flow from rains or water discharges from the excavation.

B. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.

C. Protect open excavations from rainfall, runoff, freezing groundwater, or excessive drying so as to maintain foundation subgrade in satisfactory, undisturbed condition.

D. Keep excavations free of standing water and completely free of water during concrete placement.

END OF SECTION 31 2316

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Section 31 2316.13
Trenching

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Backfilling and compacting for utilities as discovered

1.02 RELATED REQUIREMENTS

A. Section 31 2200 - Grading: Site grading.

B. Project Geotechnical Investigation Report (by Ninyo & Moore, dated January 19th, 2023)

1.03 DEFINITIONS

A. Finish Grade Elevations: Indicated on drawings.

1.04 REFERENCE STANDARDS

A. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18 in.) Drop; 2021, with Errata (2022).

B. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2019.

C. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)); 2012 (Reapproved 2021).

D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)); 2012 (Reapproved 2021).

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Materials Sources: Submit name of imported materials source.

C. Compaction Density Test Reports.

1.06 DELIVERY, STORAGE, AND HANDLING

A. When necessary, store materials on site in advance of need.

PART 2 PRODUCTS

2.01 FILL MATERIALS

A. Refer to Section 31 23 23.

B. General Fill: Subsoil excavated on-site.
   1. Free of lumps larger than 4 inches, rocks larger than 2 inches, and debris.

C. Granular Fill - Gravel: Pit run washed stone; free of shale, clay, friable material and debris.
   1. Graded in accordance with ASTM C136/C136M, within the following limits:
      a. No. 4 sieve: 90 to 100 percent passing.
      b. No. 200: 0 to 10 percent passing.

2.02 SOURCE QUALITY CONTROL

A. Soil tests to be provided for all imported soils and fills

B. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that survey bench marks and intended elevations for the work are as indicated.

3.02 PREPARATION

A. Identify required lines, levels, contours, and datum locations.

B. See Section 31 2200 for additional requirements.

C. Grade top perimeter of trenching area to prevent surface water from draining into trench. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by the Architect.

3.03 TRENCHING

A. Notify Landscape Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.

B. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.

C. Cut trenches wide enough to allow inspection of installed utilities.

D. Hand trim excavations. Remove loose matter.

E. Remove excavated material that is unsuitable for re-use from site.

F. Remove excess excavated material from site.

G. Provide temporary means and methods, as required, to remove all water from trenching until directed by the Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.

H. Determine the prevailing groundwater level prior to trenching. If the proposed trench extends less than 1 foot into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by the Architect.

I. Provide Sheeting and Shoring necessary for protection of the Work and safety of personnel.
   1. Prior to backfilling, remove all sheeting
   2. Do not permit sheeting to remain in the trenches except when, in the opinion of the Engineer, field conditions or the type of sheeting or methods of construction such as use of concrete bedding are such as to make removal of sheeting impracticable. In such cases, the Engineer may permit portions of sheeting to be cut off and remain in the trench.

3.04 PREPARATION FOR UTILITY PLACEMENT

A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.

B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.

C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

3.05 BACKFILLING

A. Backfill to contours and elevations indicated using unfrozen materials.

B. Employ a placement method that does not disturb or damage other work.

C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.

D. Maintain optimum moisture content of fill materials to attain required compaction density.

E. Correct areas that are over-excavated.
   1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.

F. Reshape and re-compact fills subjected to vehicular traffic.

G. For Trenching in roadway, see Standard Detail for Trench Excavation and Surface Restoration on plans.

3.06 BEDDING AND FILL AT SPECIFIC LOCATIONS

A. Use general fill unless otherwise specified or indicated on the plans.

3.07 TOLERANCES

A. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.08 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.

B. If tests indicate work does not meet specified requirements, remove work, replace and retest.

C. Frequency of Tests: One per 250 lineal feet under paved surfaces, minimum one per trench..

3.09 CLEANING

A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

END OF SECTION 31 2316.13

Section 31 2323
Fill

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Filling, backfilling, and compacting for building volume below grade.

B. Backfilling and compacting for utilities outside the building to utility main connections.

C. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.02 RELATED REQUIREMENTS

A. Section 31 2200 - Grading: Site grading.

B. Section 31 2316.13 - Trenching: Excavating for utility trenches outside the building to utility main connections.

C. Section 32 9300 - Planting: Imported planting topsoil.

D. Project Geotechnical Investigation Report (by Ninyo & Moore, dated January 19th, 2023)

1.03 REFERENCE STANDARDS

A. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18 in.) Drop; 2021, with Errata (2022).

B. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2019.

C. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)); 2012 (Reapproved 2021).

D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)); 2012 (Reapproved 2021).

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Comply with submittal requirements for imported planting topsoil specified in Section 32 91 13 Landscape Soil Preparation.

C. Materials Sources: Submit name of imported materials source.

D. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used, including manufactured fill.

E. Compaction Density Test Reports.

PART 2 PRODUCTS

2.01 FILL MATERIALS

A. General Fill: Subsoil excavated on-site.
   1. Graded.
   2. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.

B. Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter.
   1. Graded in accordance with ASTM C136/C136M; within the following limits:
      a. No. 4 sieve: 100 percent passing.
      b. No. 14 sieve: 10 to 100 percent passing.
      c. No. 50 sieve: 5 to 90 percent passing.
      d. No. 100 sieve: 4 to 30 percent passing.
      e. No. 200 sieve: 0 percent passing.

C. Topsoil: See Section 32 91 13

PART 3 EXECUTION

3.01 EXAMINATION

A. Identify required lines, levels, contours, and datum locations.

B. See Section 31 2200 for additional requirements.

C. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.

D. Verify areas to be filled are not compromised with surface or ground water.

3.02 PREPARATION

A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.

B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.

C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.

D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.03 FILLING

A. Fill to contours and elevations indicated using unfrozen materials.

B. Employ a placement method that does not disturb or damage other work.

C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.

D. Maintain optimum moisture content of fill materials to attain required compaction density.

E. Correct areas that are over-excavated.
   1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.

F. Compaction Density Unless Otherwise Specified or Indicated in the project Geotech Report Appendix A:
   1. Under paving, slabs-on-grade, and similar construction: 90 percent of maximum dry density.
   2. At other locations such as under rubber and curbs: 95 percent of maximum dry density.
   3. Geotechnical Engineer shall test compaction recommendations are met on site per requirements in the Geotechnical Report
   4. As recommended by Soils Report

G. Reshape and re-compact fills subjected to vehicular traffic.

H. Maintain temporary means and methods, as required, to remove all water while fill is being placed as required, or until directed by the Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.

3.04 CLEANING

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

B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

END OF SECTION 31 2323

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Section 32 0190
Operation and Maintenance of Planting

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Maintain plants in manner that promotes health, growth, color and appearance, to quality levels specified; replace dead, dying, and damaged plants at no extra cost to City.
   1. It is Contractor's responsibility to determine type and quantity of soil amendments and fertilizer required.
   2. Perform soil analysis to determine type and quantity of soil amendments; test enough soil samples to obtain a comprehensive analysis; submit reports.

B. Maintain newly planted landscape plants, including turf (lawns), trees, shrubs, hedges, vines, ground cover, perennials, flowering bulbs, and annuals.

C. Maintain established landscape plants, including turf (lawns), trees, shrubs, hedges, vines, ground cover, perennials, flowering bulbs, and naturalized wildflowers.

D. Renovate the following established landscape plants within the project boundaries: turf (lawns).

E. Operate permanent irrigation system.

F. Clean up landscaped areas.

G. Maintenance Period: The time frame covered by these requirements is 90 days:
   1. Start Date: Project Date of Substantial Completion.

1.02 RELATED REQUIREMENTS

A. Section 31 2200 - Grading.

B. Section 32 8423 - Irrigation System.

C. Section 32 9223 - Sodding.

D. Section 32 9300 - Planting.

1.03 REFERENCE STANDARDS

A. ANSI A300 Part 1 - American National Standard for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning); 2017.

B. ANSI Z133.1 - American National Standard for Arboricultural Operations - Safety Requirements; 2017.

C. ASTM D4972 - Standard Test Methods for pH of Soils; 2019.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Soil Tests and Analysis: Submit report showing number of samples, test results, and recommendations for soil amendments and fertilizer.

C. Product Data: Manufacturer's data sheets on each fertilizer, herbicide, pesticide, and other chemical material to be used, showing trade name, chemical composition, mixing instructions, recommended application rate, storage and handling instructions, and application instructions.
   1. Pesticides and Herbicides: Also include U.S. EPA registration number and Material Safety Data Sheets.

D. Certificates: Certification of composition of the following as delivered:
   1. Fertilizer.
   2. Mulch.
   3. Pesticides.
   4. Herbicides.
   5. Other chemical materials.

E. Installer Qualifications: As specified.

1.05 QUALITY ASSURANCE

A. Installer Qualifications:
   1. Maintenance Contractor: The contractual entity that performed the planting installation.
   2. Pruners: Certified member, or supervised by certified member, of International Society of Arboriculture.
   3. Pesticide Applicators: Certified by authorities having jurisdiction.
   4. Herbicide Applicators: Certified by authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver U.S. EPA-controlled materials to site in original containers with legible labels indicating registration number and registered uses.

B. Deliver fertilizer and manufactured soil amendments to site in original containers bearing manufacturer's chemical analysis, name, trade name or trademark, and indication of compliance with applicable state and federal laws and regulations ; alternatively, bulk delivery with equivalent certificate is acceptable.

C. Store fertilizer, soil amendments, and mulch in dry locations away from contaminants.

D. Do not store pesticides, herbicides, or other chemical treatment materials in locations where they could damage seeds or plants.

PART 2 PRODUCTS

2.01 FERTILIZERS AND SOIL AMENDMENTS

A. Fertilizers: Free flowing granular organic type containing nitrogen, phosphorus, and potassium, plus trace minerals and micro-nutrients; controlled release type is preferred.
   1. Determine type and quantity based on soil analysis.

B. Soil Amendments: Type and quantity as required to achieve specified results, based on soil analysis.

C. Decomposed Wood Derivatives: Ground bark, sawdust, humus or other green wood waste material; free of stones, sticks, and fully composted or stabilized with nitrogen.

D. Recycled Compost: Well decomposed, stable, weed free; derived from food, agricultural or industrial residuals, biosolids, yard trimmings, or source-separated or mixed solid waste; with no objectionable odors and not resembling the raw material from which it was made; no substances toxic to plants.

E. Worm Castings: Commercially packaged, without worms or food source.

F. Manure: Unleached horse, chicken, or cattle manure, well rotted, containing maximum 25 percent by volume of straw, sawdust, and other bedding materials and no chemicals or ingredients harmful to plants; heat treated to kill weed seeds.

2.02 APPLIED MATERIALS

A. Organic Mulch: Maintain general appearance of existing mulched areas; use one of the following types:
   1. Walk on bark wood chips ranging in size from 1/2 inch to 2 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. If soil analysis has not already been performed, take sufficient samples to obtain a comprehensive analysis; perform analysis in accordance with ASTM D4972.

3.02 LANDSCAPE MAINTENANCE - GENERAL

A. Protect existing vegetation, pavements, and facilities from damage due to maintenance activities; restore damaged items to original condition or replace, at no extra cost to City.

B. General Cleanup: Remove debris from all landscape areas at least once a week and from turf areas before each mowing.
   1. Debris consists of trash, rubbish, dropped leaves, downed branches and limbs of all sizes, dead vegetation, rocks, and other material not belonging in landscaped areas.

2. Remove debris from site and dispose of properly.

C. Watering, Soil Erosion, and Sedimentation Control: Comply with federal, state, local, and other regulations in force; prevent over-watering, run-off, erosion, puddling, and ponding.
   1. Repair temporary erosion control mechanisms provided by others.
   2. Repair eroded areas and replant, when caused by inadequate maintenance.
   3. Prevent sediment from entering storm drains.

D. Trees: Exercise care to avoid girdling trees; provide protective collars if necessary; remove protective collars at end of maintenance period.

E. Fertilizing: Apply fertilizer only when necessary.

F. Drainage Channels: Remove obstructions in gutters, catch basins, storm drain inlets, yard drains, swales, ditches, and overflows.
   1. Remove grates from catch basins to clean.
   2. Prevent encroachment of other vegetation on turfed surface drainage channels.

G. Health Maintenance: Inspect all plants regularly for health:
   1. Eradicate diseases and damaging pests, regardless of severity or speed of effect.
   2. Treat accidental injuries and abrasions.
   3. If a plant is unhealthy but not yet dead, according to specified definitions, determine reason(s) and take remedial action immediately.
   4. Remove dead plants immediately upon determining that they are dead.

H. Pesticide and Herbicide Application: Comply with manufacturer's instructions and recommendations and applicable regulations.
   1. Obtain City's approval prior to each application.
   2. Apply in manner to prevent injury to personnel and damage to property due to either direct spray or drifting, both on and off City's property.
   3. Use backflow preventers on hose bibbs used for mixing water; prevent spills.
   4. Inspect equipment daily before application; repair leaks, clogs, wear, and damage.
   5. Do not dispose of excess mixed material, unmixed material, containers, residue, rinse water, or contaminated articles on site; dispose of off site in legal manner.
   6. Rinse water may be used as mix water for next batch of same formulation.
   7. Contractor is responsible for all recordkeeping, submissions, and reports required by laws and regulations.

I. Replanting: Perform replacement and replanting immediately upon removal of dead plant.

3.03 IRRIGATION

A. Irrigation: Do not allow plants to wilt; apply water as required to supplement rainfall; do not waste water; do not water plants or areas not needing water; do not water during rainfall; shut off water flow when finished; repair leaks.
   1. New automatic irrigation system may be used.
   2. City's water source may be used.
   3. Do not drive water trucks over turf, seeded areas, or planting beds.
   4. Provide backflow preventers on hose bibbs used for irrigation hoses.

B. Automatic Irrigation System: Obtain and follow manufacturer's operating and maintenance instructions.
   1. Adjust to water landscape areas only.
   2. Adjust sprinkler heads, drippers, valves, pumps, and controllers as required for optimum operation.
   3. During system warranty period notify Landscape Architect and system installer promptly of defects and leaks that adversely affect irrigation performance.
   4. After end of system warranty period, service and repair all defects and leaks.

3.04 TURF MAINTENANCE

A. Maintain turf in manner required to produce turf that is healthy, uniform in color and leaf texture, and free from weeds and other undesirable growth.
   1. Obtain and follow the recommendations of local agricultural extension service office.
   2. Bare Spots - Lawns: 2 percent of total area, maximum; 6 inches square, maximum.
   3. Keep turf relatively free of thatch, woody plant roots, diseases, nematodes, soil-borne insects, stones larger than 1 inch in diameter, and other materials detrimental to grass growth.
   4. Limit broadleaf weeds and patches of foreign grass to a maximum of 2 percent of the total area.
   5. When new grass is planted in existing turf areas, quality will be evaluated when grass is 1 inch high.

B. Mowing: During growing season(s) mow turf to uniform height, in manner that prevents scalping, rutting, bruising, and uneven or rough cutting.
   1. Prior to mowing clean all debris and leaves from turf surface.
   2. Schedule frequency of mowing so that no more than one-quarter to one-third of grass leaf length is removed during a cutting.
      a. Maximum grass height before mowing: 4 inches.
      b. Height of turf is measured from the soil surface.
   3. Make each successive mowing at approximately 45 degrees to the previous mowing, if practical.
   4. Cool Season Grasses:
      a. Reduce mowing height in fall and spring.
      b. Use rotary type mowers; mulcher type mowers may be used.
   5. Warm Season Grasses:
      a. Increase mowing height slightly as fall approaches.
      b. Use reel type mowers; do not use mulcher mowers.

C. Trimming: Immediately after each mowing, neatly trim perimeter of each turf area and around obstructions within turf area; match height and appearance of adjacent turf.
   1. Adjacent to Pavements: Cut edges of turf to form a distinct, uniform turf edge.
   2. Adjacent to Planting Beds and Permanently Mulched Areas: Cut edges of turf to form a distinct, uniform turf edge.
   3. Around Palm Trees: Do not use string trimmer as it slowly damages the bark, leaving tree susceptible to disease.
   4. Around Other Trees and Poles: Where no planting bed or mulched area exists, trimming with string trimmer is acceptable.
   5. At Fences: Trim on both sides of fence.

6. Irrigation Heads and Valve Boxes: Trim neatly so grass doesn't interfere with operation.

D. Fertilizer: Apply as recommended by manufacturer and at rate indicated by soil analysis.
   1. Cool Season Grasses: Apply at least once, in Fall before first frost; do not apply high nitrogen fertilizer during Summer; Spring application is optional but must be reduced in quantity.
   2. Warm Season Grasses: Make two applications, in Spring when grass begins to green up, and in Fall about 6 weeks before average first frost.

E. Resodding: Comply with requirements of Section 32 9223.

3.05 PLANTING BED MAINTENANCE

A. Planting beds include all planted areas except turf.

B. Begin maintenance immediately after plants have been installed; inspect at least once a week and perform needed maintenance promptly.

C. Keep planting beds free of pests; remove weeds and grass by hand before reaching 1 inch height.

D. Do not allow climbing, twining, or creeping plants to encroach into other species.

E. Ground Cover and Vines:
   1. Trim to encourage dense, well-developed growth covering intended areas.
   2. Do not allow plants to grow up trees, shrubs, or vines or encroach into turf or drainage channels, unless the drainage channel is intended to be planted with ground cover.
   3. Remove existing plants grown up trees, shrubs, and vines.

F. Flowering Plants: Remove dead flower heads; do not trim off leaves of flowering bulbs until they are brown.

G. Replace mulch as required and remove debris.

3.06 TREE AND SHRUB MAINTENANCE

A. Trees will be considered dead when main leader has died back or when 25 percent or more of crown has died ; except as otherwise indicated for palm trees.

B. Shrubs will be considered dead when 25 percent or more of plant has died.

C. Inspect woody plants for health by scraping up to 1/16 inch square area of bark; no green cambium layer below bark shall be evidence of death.

D. Adjust stakes, guys and turnbuckles, ties, and trunk wrap as required to promote growth and avoid girdling.

E. Fertilizing: Fertilize all trees at least once during maintenance period, preferably in the Fall; use accepted standards for determining type and method of fertilization.

F. Pruning: Unless otherwise indicated, prune only to maintain balanced natural shape; follow recommendations of ANSI A300 and ANSI Z133.1 and best local practices for species involved.

G. Shrubs: Prune at least once during maintenance period at best time to influence ultimate shape and size for the particular species.
   1. Prune to balance the plant's form and according to its natural growth characteristics.
   2. Remove water shoots, suckers, and branches not complying with desired shape and size.

H. Young Trees: Prune at least once during maintenance period at best time to influence ultimate shape and size for the particular species; do not remove or cut off leader.

I. Palm Trees: Palm trees are extremely susceptible to disease. Wounds in the bark must be avoided as puncture wounds never heal.
   1. Remove diseased and damaged fronds and all seed pods and fruit clusters; do not remove any green fronds; cut fronds close to trunk.
   2. Unless fronds come off easily, do not pull or rip them off as this causes permanent wounds to the trunk.
   3. Preferred tool is manual pruning saw. Do not use a machete to remove fronds as an overstrike will wound the trunk. Be very careful using chain saws for the same reason.
   4. Do not use climbing spikes.
   5. Prior to pruning each tree, disinfect tools with 50 percent chlorine bleach solution, or other approved disinfectant to prevent transmission of diseases.

J. Renovation of Established Trees (Except Palm Trees):
   1. Remove dead, damaged, and diseased branches and limbs and structurally weak limbs that may be a safety hazard.
   2. Prune existing trees under direction of City.

3.07 CLEANING

A. Remove fallen deciduous leaves in Fall; removal may wait until all leaves have fallen.

B. Clean adjacent pavements of plant debris and other debris generated by maintenance activities.

C. Remove and dispose of general cleanup debris and biodegradable debris in a proper manner; City's trash collection facilities may be used.

D. Remove and dispose of general cleanup debris and biodegradable debris in a proper manner.
   1. Biodegradable Debris: City will designate a compost pile on site where biodegradable debris may be deposited; branches and bark are not considered biodegradable.
   2. Branches and Bark: City will designate a wood chip storage area; machine-chip all branch and bark debris.
   3. Non-Biodegradable Debris: City's trash collection facilities may be used.

3.08 CLOSEOUT ACTIVITIES

A. 10 days prior to end of maintenance period, submit request for final inspection.

B. Final inspection will be conducted by City.

END OF SECTION 32 0190

Section 32 1123
Aggregate Base Courses

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base course.

B. Paving aggregates.

1.02 RELATED REQUIREMENTS

A. Section 31 2200 - Grading: Preparation of site for base course.

B. Section 32 1313 - Concrete Paving: Finish concrete surface course.

1.03 REFERENCE STANDARDS

A. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil–Aggregate Subbase, Base, and Surface Courses; 2017 (Reapproved 2021).

B. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2019.

C. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method; 2015, with Editorial Revision (2016).

D. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2015.

E. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2017, with Editorial Revision (2020).

F. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); 2017a, with Editorial Revision (2021).

1.04 SUBMITTALS

A. See Section 01 - Genereal Conditions for submittal procedures.

B. Materials Sources: Submit name of imported materials source.

C. Aggregate Composition Test Reports: Results of laboratory tests on proposed and actual materials used.

1.05 DELIVERY, STORAGE, AND HANDLING

A. When necessary, store materials on site in advance of need.

B. When aggregate materials need to be stored on site, locate where directed by City.

PART 2 PRODUCTS

2.01 MATERIALS

A. Class 2 Aggregate Base conforming to Caltrans Standard Specifications 2018.

B. Permeable Class 2: Natural Washed stone, free of shale, clay, friable material and debris.
   1. Graded in the following limits:
      a. 1 inch sieve: 100 percent passing.
      b. 3/4 inch sieve: 90-100 percent passing.
      c. 3/8 inch sieve: 40-100 percent passing
      d. No. 4 sieve: 25 to 40 percent passing
      e. No. 8 sieve: 18 to 33 percent passing.
      f. No. 30 sieve: 5 to 15 percent passing.
      g. No. 50 sieve: 0 to 7 percent passing.
      h. No. 200 sieve: 0 to 3 percent passing.

C. 3/4 inch drain rock:
   1. Crushed, washed
   2. Max size: 1 inch
   3. Minimum size: 3/8 inch

D. Use of recycled concrete aggregate is prohibited

2.02 SOURCE QUALITY CONTROL

A. Where aggregate materials are specified using ASTM D2487 classification, test and analyze samples for compliance before delivery to site.

B. If tests indicate materials do not meet specified requirements, change material and retest.

C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that survey bench marks and intended elevations for the work are as indicated.

B. Verify substrate has been inspected, gradients and elevations are correct, and is dry.

3.02 PREPARATION

A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.

B. Do not place aggregate on soft, muddy, or frozen surfaces.

3.03 INSTALLATION

A. Place aggregate in maximum 4 inch layers and roller compact to specified density.

B. Level and contour surfaces to elevations and gradients indicated.

C. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.

D. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.

E. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.04 TOLERANCES

A. Flatness: Maximum variation of 1/4 inch measured with 10 foot straight edge.

B. Scheduled Compacted Thickness: Within 1/4 inch.

C. Variation From Design Elevation: Within 1/2 inch.

3.05 FIELD QUALITY CONTROL

A. See Section 01 for general requirements for field inspection and testing.

B. Compaction density testing will be performed on compacted aggregate base course in accordance with ASTM D1556, ASTM D2167, or ASTM D6938.

C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

D. Proof roll compacted aggregate at surfaces that will be under slabs-on-grade.

3.06 CLEANING

A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

END OF SECTION 32 1123

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Section 32 1216
Asphalt Paving

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base course.

B. Single course bituminous concrete paving.

C. Double course bituminous concrete paving.

D. Surface sealer.

E. Asphalt restraint edging.

1.02 RELATED REQUIREMENTS

A. Section 31 2200 - Grading: Preparation of site for paving and base.

B. Section 31 2323 - Fill: Compacted subgrade for paving.

C. Section 32 1123 - Aggregate Base Courses: Aggregate base course.

D. Project Geotechnical Investigation Report (by Ninyo & Moore, dated January 19th, 2023)

1.03 REFERENCE STANDARDS

A. AI MS-2 - Asphalt Mix Design Methods; 2015.

B. AI MS-19 - Basic Asphalt Emulsion Manual; 2008.

C. ASTM D946 - Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction; 2009a.

1.04 QUALITY ASSURANCE

A. Perform Work in accordance with State of CA Highways standard.

B. Mixing Plant: Complying with State of CA Highways standard.

C. Obtain materials from same source throughout.

1.05 FIELD CONDITIONS

A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F, or surface is wet or frozen.

B. Place bitumen mixture when temperature is not more than 15 F degrees below bitumen supplier's bill of lading and not more than maximum specified temperature.

1.06 SUBMITTALS

A. See Section 01- General Conditions for Submittal procedures.

B. Certificate of Compliance: Submit certification by the materials and mix producers indicating that the materials are in compliance with these specifications. Certification shall be signed by the material and mix producers.

1.07 WARRANTY

A. Asphalt restraint edging: 15-year limited material warranty for asphalt restraint edging from manufacturing defects in workmanship or material.

PART 2 PRODUCTS

2.01 MATERIALS

A. Asphalt Cement: ASTM D946.

B. Aggregate for Base Course: Class 2 per Caltrans Standard Specifications 2018 Section 26.

C. Asphalt Concrete Surfacing shall consist of a mixture of mineral aggregate and paving asphalt, mixed at a a central mixing plant.

D. Grade of asphalt shall be PG64-16

E. Density shall be 95% of maximum laboratory density as determined by Caltrans standard specifications 2018.

F. Mineral Grade shall be Type A, 1/2" maximum size aggregate, medium grading and shall conform to the requirements set forth in Caltrans standard specifications 2018.

G. Provide a dry, free flowing, dust free chemical compound, soluble in water, capable of inhibiting growth of vegetation. Use Amspray Corp "pavex" or approved equal.

H. Asphalt restraint edging
1. Product: Permaloc AsphaltEdge, with 0.210 inch (5.33 mm) thick exposed top lip x 4 inch (102mm) high x 8 feet (2.44 meters) long, extruded aluminum, alloy 6005, T-5 hardness as manufactured by Permaloc Corporation, Holland MI 49424, telephone (800) 356-9660 or (616) 399-9600. Horizontal base to have upward facing angle profile designed to

integrate restraint and asphalt surfaces for straight-line and curvilinear applications. Section shall have holes in base spaced 4 inches (102 mm) apart along its length to receive anchors.

2. Connection Method: Section ends shall splice together with horizontal 0.060 inch (1.52 mm) thick x 1 inch (25 mm) wide, or 0.530 inch (13.5 mm) wide for 1 inch (25 mm) high edging x 4 inches (102 mm) long aluminum sliding connector.
3. Anchors: 3/8 inch x 10 inches (9.5 mm x 254 mm) bright spiral steel spike, 3/16 inch x 1-1/2 inches (4.8 mm x 38 mm) or longer Ardox concrete nail, or drive pin fastener equal to Hilti DX 40 powder actuated pin or Ramset Trakfast Automatic Fastening System pin.
4. Finish: Black DuraFlex. Paint finish shall comply with AAMA 2603 for electrostatically baked on paint.
5. Install per manufacturer's recommendations.

I. Tack Coat: Homogeneous, medium curing, liquid asphalt.

2.02 ASPHALT PAVING MIXES AND MIX DESIGN

A. Asphalt Base Course: 3.0 to 6 percent of asphalt cement by weight in mixture in accordance with AI MS-2.

B. Asphalt Wearing Course: 5 to 7 percent of asphalt cement by weight in mixture in accordance with AI MS-2.

2.03 SOURCE QUALITY CONTROL

A. Test mix design and samples in accordance with AI MS-2.

2.04 WEED KILLER/SOIL STERILANT

A. Provide a dry free-flowing dust-free chemical compound, soluble in water, capable of inhibiting growth of vegetation, and approved for use on this project
   1. Tinted for visual identification, shall be as follows:
      a. United States Borax Corp. "Polybochlorate" or equal.
      b. Amspray Corp. "Pavex"
      c. Elanco "Spike 801"
      d. Approved Equal

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that compacted subgrade is dry and ready to support paving and imposed loads.

B. Verify gradients and elevations of base are correct.

3.02 AGGREGATE BASE COURSE

A. Place and compact aggregate base course.

B. Install per Section 32 11 23 - Aggregate Base Courses

3.03 PREPARATION - PRIMER

A. Apply primer in accordance with manufacturer's instructions.

B. Apply primer on aggregate base or subbase at uniform rate of 1/3 gal/sq yd.

C. Apply primer to contact surfaces of curbs, and gutters.

D. Use clean sand to blot excess primer.

3.04 PREPARATION - TACK COAT

A. Apply tack coat in accordance with manufacturer's instructions.

B. Apply tack coat on asphalt or concrete surfaces over subgrade surface at uniform rate of 1/3 gal/sq yd.

C. Apply tack coat to contact surfaces of curbs, gutters and other concrete and existing asphalt edges.

3.05 PLACING ASPHALT PAVEMENT - SINGLE COURSE

A. Install Work in accordance with State of CA Highways standards.

B. Place asphalt within 24 hours of applying primer or tack coat.

C. Install gutter drainage grilles and frames in correct position and elevation.

D. Compact pavement by rolling to specified density. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.

E. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

3.06 PLACING ASPHALT PAVEMENT - DOUBLE COURSE

A. Place asphalt binder course within 24 hours of applying primer or tack coat.

B. Place asphalt wearing course within two hours of placing and compacting binder course.

C. Compact pavement by rolling to specified density. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.

D. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.07 SEAL COAT

A. Apply seal coat to asphalt surface course and asphalt curbs in accordance with AI MS-19 and State of California Standard Specfications.

3.08 TOLERANCES

A. Flatness: Maximum variation of 1/4 inch measured with 10 foot straight edge.

B. Variation from True Elevation: Within 1/2 inch.

3.09 FIELD QUALITY CONTROL

A. See Section 01 for general requirements for quality control.

B. Provide field inspection and testing. Take samples and perform tests in accordance with AI MS-2.

3.10 PROTECTION

A. Immediately after placement, protect pavement from mechanical injury for 5 days or until surface temperature is less than 140 degrees F.

END OF SECTION 32 1216

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Section 32 1313
Concrete Paving

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete sidewalks, integral curbs, and gutters, and miscellaneous flatwork, including integral colored ~~and seeded aggregate paving~~.

B. Joints.

1.02 RELATED REQUIREMENTS

A. Section 03 1000 - Concrete Forming and Accessories.

B. Section 03 2000 - Concrete Reinforcing.

C. Section 03 3000 - Cast-in-Place Concrete.

D. Section 31 2200 - Grading: Preparation of site for paving and base.

E. Section 31 2323 - Fill: Compacted subbase for paving.

F. Section 32 1123 - Aggregate Base Courses: base course.

G. Section 32 1216 - Asphalt Paving: Asphalt wearing course.

H. Section 32 1416 - Brick Unit Paving.

I. Project Geotechnical Investigation Report (by Ninyo & Moore, dated January 19th 2023)

1.03 REFERENCE STANDARDS

A. ACI 211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.

B. ACI 301 - Specifications for Concrete Construction; 2020.

C. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

D. ACI 305R - Guide to Hot Weather Concreting; 2020.

E. ACI 306R - Guide to Cold Weather Concreting; 2016.

F. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.

G. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

H. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.

I. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2023.

J. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

K. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).

L. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.

M. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).

N. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2022.

O. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.

P. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2018.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Provide data on - surface retarder, joint filler, admixtures, and curing compound.

C. Samples for Pigment Color Selection: Submit manufacturer's complete sample chip set, including pigment number and required dosage rate for each color.

D. Concrete mix design.

1.05 QUALITY CONTROL

A. Seeded Aggregate Paving Contractor Qualifications: provide evidence to indicate successful experience in providing decorative concrete finish similar to that specified herein.

B. Supervision: On site superintendent must have experience with a minumum of (3) decorative seeded aggtregate installations.

C. Slip Resistance: Provide a finish with a slip resistance of equal or greater than .65 when tested by the City in accordance with ASTMF489.

D. Seeded aggregate must be engineered to prevent alkali-silica reaction.

1.06 MOCK-UPS

A. Provide 4'x4', 4" thick mockup panel of concrete finish with surface retarder and integral color concrete for approval by Landscape Architect. Contractor shall pour up to 3 mock-ups until desired finish is achieved and approved. Approved panel shall remain on-site as referee sample for subsequent paving.
   1. Mock-up may not remain as a part of the work.
   2. Mock-ups that are not approved shall be removed from the site.

PART 2 PRODUCTS

2.01 FORM MATERIALS

A. Form Materials: As specified in Section 03 1000, comply with ACI 301.

2.02 REINFORCEMENT

A. Reinforcing Steel and Welded Wire Reinforcement: Types specified in Section 03 2000.

B. Dowels: ASTM A615/A615M, Grade 40 - 40,000 psi yield strength; deformed billet steel bars; unfinished finish.

2.03 CONCRETE MATERIALS

A. Obtain cementitious materials from same source throughout.

B. Cement: ASTM C150/C150M, Type II Portland cement, gray color.

C. Fly Ash: ASTM C618, Class C or F.

D. Water: Clean, and not detrimental to concrete.

E. Air-Entraining Admixtures: ASTM C260/C260M.

F. Chemical Admixtures: ASTM C494/C494M, Type A - Water Reducing, Type C - Accelerating, and Type G - Water Reducing, High Range and Retarding.

G. Color Additives: Pure, concentrated mineral pigments specifically intended for mixing into concrete and complying with ASTM C979/C979M.
   1. Concentration: 100% dosage rates on weight of Portland cement, fly ash, silica fume, and other cementitious materials but not aggregate or sand.
   2. Manufacturer: Davis Colors or approved equal.
   3. Color: Concentration shall be 100% dose rate to achieve color to match manufacturer's color chips.
      a. Integral Colored Paving: ~~Sequoia Sand~~ Per the drawings.

2.04 ACCESSORIES

A. Surface Retarder:
   1. Manufacturer: Dayton Superior, www.daytonsuperior.com
   2. Product: Top-Cast 05 Light Blue (sandblast finish)
   3. In locations specified on the drawings.

B. Control Joint Sealant:
   1. Manufacturer: W.R. Meadows
   2. Product: Pourthane SL Self-Leveling Joint Sealant
   3. Color:
      a. Standard Gray Concrete: Limestone
      b. Integral Colored Concrete: Desert Tan

C. Expansion Joint Dowels
   1. Per the drawings.

2.05 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer.

C. Concrete Properties:
   1. Compressive strength, when tested in accordance with ASTM C39/C39M at 28 days; 3000 psi.
   2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
   3. Water-Cement Ratio: Maximum 50 percent by weight.
   4. Maximum Slump: 3 inches.

2.06 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify compacted subgrade is acceptable and ready to support paving and imposed loads.

B. Verify gradients and elevations of base are correct.

3.02 SUBBASE

A. See Section 32 1123 for construction of base course for work of this Section.

3.03 PREPARATION

A. Moisten base to minimize absorption of water from fresh concrete.

3.04 FORMING

A. Place and secure forms to correct location, dimension, profile, and gradient.

B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

3.05 REINFORCEMENT

A. Place reinforcement as indicated on Contract Documents and Project Geotechnical Investigation Report

3.06 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Do not place concrete when base surface is wet.

C. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.

D. Place concrete continuously over the full width of the panel and between predetermined construction joints.

E. Apply surface retarder to all exposed surfaces per the drawings in accordance with manufacturer's instructions.

3.07 JOINTS

A. Align curb, gutter, and sidewalk joints.

B. Place 1/2 inch wide expansion joints at locations indicated on Drawings and to separate paving from vertical surfaces and other components and in pattern indicated.
   1. Secure to resist movement by wet concrete.
   2. Caulk with joint sealer per manufacturer's instructions.

C. Provide sawn joints as indicated on Drawings.

~~3.08 SEEDED AGGREGATE~~

~~A. Wash scheduled concrete surfaces with surface retarder exposing aggregate.~~

B. Include broadcast spreading of aggregate into plastic concrete.

C. Materials:
   1. Seeded aggregate, 1/2" angular stone
   2. Color: Gold/tan. Submit samples for approval.
   3. Application Rate: 75% coverage
   4. Sealant on seeded aggregate: HLQ-125, manufactured by Sinak Corp., www.sinakcorp.com, or approved equal.

3.09 TOLERANCES

A. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.

B. Maximum Variation From True Position: 1/4 inch.

3.10 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in General Conditions.
   1. Provide free access to concrete operations at project site and cooperate with appointed firm.
   2. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

B. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.11 PROTECTION

A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.

B. Do not permit pedestrian traffic over pavement until 75 percent design strength of concrete has been achieved.

END OF SECTION 32 1313

Section 32 1320
Stamped Concrete

PART 1 - GENERAL

1.01 SCOPE

A. Work includes decorative concrete stamping, including:
   1. Animal tracks at tot area

1.02 RELATED WORK IN OTHER SECTIONS

A. Concrete work - refer to Section 32 1313 Concrete Paving.

1.03 ARTWORK TO BE PROVIDED

A. Digital electronic file of graphics to be provided by Landscape Architect.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Use skilled workers who are thoroughly trained and experienced and who are completely familiar with the requirements and methods to perform the scope of work as specified under this Section.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Proline Decorative Concrete Systems, www.prolinestamps.com
   1. Custom polymer concrete stamps of animal tracks

B. Approved Equal

C. Sealer: Seal all stamped surfaces with Glaze N' Seal Wet Look Sealer, or approved equal.

PART 3 - EXECUTION

3.01 STAMPED TRACKS

A. Employ skilled and experienced stamping operators to perform finishing.

B. Produce finished surfaces of uniform texture and appearance.

3.02 CLEANING

A. Upon completion of the work, inspect all work and repoint imperfections. Clean up all extra stamping materials and debris from site.

END OF SECTION 32 1320

Section 32 1416
Brick Unit Paving

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Brick pavers and bands.

B. Sand Materials.

C. Mixes.

1.02 RELATED REQUIREMENTS

A. Section 32 1313 - Concrete Paving: Concrete footer at edge band.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.

C. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.

D. ASTM C902 - Standard Specification for Pedestrian and Light Traffic Paving Brick; 2022.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittals procedures.

B. Product Data: Provide data on characteristics of paver unit, special shapes, dimensions, setting and grouting materials.

C. Product Data: Provide characteristics of polymeric sand, including base material, additive(s), compressive strength, and color.

1.05 QUALITY ASSURANCE

A. Paver Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum 5 years documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with 5 years documented experience.

1.06 FIELD CONDITIONS

A. Do not install mortar when surrounding air or substrate surface temperature is below 50 degrees F prior to, during, and 48 hours after completion of work.

B. Do not install mortar when surrounding air or substrate surface temperature is above 90 degrees F during and 48 hours after completion of the work.

C. Do not install mortar when wind velocity exceeds 15 mph or relative humidity exceeds 50 percent.

D. At end of working day, or during rainy weather, cover work exposed to weather with waterproof coverings, securely anchored.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Clay Brick Pavers:
   1. HC Muddox, www.hcmuddox.com
      a. Band: Utility brick, solid. 3 5/8" x 3 5/8" x 11 5/8"
      b. Field: Modular brick, solid. 3 5/8" x 2 1/4" x 7 5/8"
      c. Pattern
         1) Band: Soldier course
         2) Field: Running bond
      d. Color:
         1) Band: Ebony
         2) Field: Old Town Red
      e. Edges: Square
      f. Texture: Wire-cut

2.02 SAND MATERIALS

A. Sand for Base: ASTM C33/C33M, clean, washed river or bank sand containing maximum of 50 percent particle size of No. 50 sieve.

B. Polymeric Sand: Fine sand complying with ASTM C144 combined with polymer binders for creating semi-solid joints between pavers.

2.03 MIXES

A. Cementitious Bed: Portland cement mix complying with the following:

B. Joint Mortar: ASTM C270, Type S, using the Proportion Specification.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify substrate is ready to support brick and imposed loads.

B. Verify gradients and elevations of substrate are correct.

C. Verify that bricks are completely dry prior to joint sand installation.

3.02 PREPARATION

3.03 INSTALLATION - SAND SETTING BED

A. Spread sand evenly over prepared substrate surface to a nominal thickness of 1-1/2 inches.

B. Dampen and roller compact sand to level surface.

C. Screed and scarify top 1/2 inch of sand.

D. Place brick units in running bond pattern per the drawings, from straight reference line.

E. Sprinkle sand over surface and sweep into joints. Moisten joints and recover with additional sand until firm joints are achieved. Remove excess sand.

F. Tamp and level bri units with mechanical plate vibrator until units are firmly bedded, level, and to correct elevation and slope gradient.

3.04 INSTALLATION - MORTAR SETTING BED AT BAND

A. Locate control and expansion joints directly above joints in structural base and where indicated on drawings; use joint filler to form full depth joint before laying mortar bed.

B. Place a full cementitious mortar bed of minimum 1 inch thickness over entire paver area.

C. Place paver units in soldier course pattern from straight reference line.

D. Miter corners.

E. Maintain uniform joint width of 3/8 inch between pavers, and at abutting vertical surfaces and protrusions.

F. Keep control and expansion joints free of mortar, for sealant installation.

G. Fill joints with mortar; pack and work into voids; neatly tool surface to flush joint.

H. Seal control and expansion joints with sealant, in accordance with sealant manufacturer's instructions; use joint filler, backer rod, and or bond breaker tape to achieve width-to-depth ratio recommended by sealant manufacturer.

3.05 CLEANING

A. Do not clean pavers until pavers and mortar are dry.

B. Clean soiled surfaces using cleaning solution. Do not harm pavers, joint materials, or adjacent surfaces.

C. Use non-metallic tools in cleaning operations.

D. Rinse surfaces with clean water.

E. Broom clean paving surfaces. Dispose of excess sand.

3.06 PROTECTION

A. Do not permit traffic over unprotected paver surface.

B. Do not permit traffic for 48 hours after pavement placement.

END OF SECTION 32 1416

Section 32 1816.13
Playground Protective Surfacing

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Protective surfacing for playground area:
   1. Poured-in-Place Rubber
   2. Synthetic Turf and accessories
   3. Bonded Rubber
   3. Engineered Wood Fiber
   4. Playground Sand

B. Accessories.

C. Subbase under resilient surfacing.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Containment curbs.

B. Section 11 6813 - Playground Equipment: Playground layout (staking).

C. Section 32 1123 - Aggregate Base Courses: Subbase for resilient surfacing.

D. Section 32 1313 - Concrete Paving: Subbase for resilient surfacing.

1.03 REFERENCE STANDARDS

A. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2023.

B. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2019.

C. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)); 2012 (Reapproved 2021).

D. ASTM F1292 - Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment; 2022.

E. ASTM F1487 - Standard Consumer Safety Performance Specification for Playground Equipment for Public Use; 2021.

F. ASTM F2075 - Standard Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment; 2020.

G. AWPA U1 - Use Category System: User Specification for Treated Wood; 2023.

H. CPSC Pub. No. 325 - Public Playground Safety Handbook; 2015.

1.04 DEFINITIONS

A. Use Zone: The area beneath and immediately adjacent to a play structure or equipment (play event) that is designated for unrestricted circulation around equipment, and on whose surface it is predicted that a user would land when falling from or exiting the equipment.

B. Critical Fall Height: The maximum fall height at which the protective surfacing meets the requirements of ASTM F1292.

C. Fall Height: The vertical distance between the finished elevation of the designated play surface and the finished elevation of the protective surfacing beneath it as defined by ASTM F1487.

D. Protective Surfacing: Resilient ground surfacing. The characteristics of the protective surfacing are based on the fall height of the playground equipment. Changes in either the surfacing or the fall height, particularly reducing the resilience of the protective surfacing or increasing the fall height, will reduce safety-related performance.

E. Subbase: A layer under the resilient layer of the protective surfacing but over the subgrade; may be rigid, as in concrete or bituminous, or aggregate.

F. Subgrade: The surface of the ground on which the protective surfacing is installed.

1.05 SYSTEM DESCRIPTION

A. A. Performance Requirements: Provide a 2 layer rubber-urethane playground surfacing system which has been designed, manufactured and installed to meet the following criteria:
   1. Shock Attenuation (ASTM F1292):
      a. Gmax: Less than 200.
      b. Head Injury Criteria: Less than 1000.
   2. Flammability (ASTM D2859): Pass.
   3. Tensile Strength (ASTM D412): 60 psi (413 kPa).
   4. Tear Resistance (ASTM D624): 140%.
   5. Water Permeability: 0.4 gal/yd2/second.
   6. Accessibility: Comply with requirements of ASTM F1951.

1.06 SUBMITTALS

A. See Section 01 - General Conditions, for submittal procedures.

B. Product Data: For all manufactured surfacing products, provide manufacturer's product data showing materials of construction, compliance with specified standards, installation procedures, and safety limitations.
   1. Include IPEMA certifications where required.
   2. Verification Samples: Submit manufacturer’s verification samples of 6" x 6" minimum from the manufacturer's full range of color samples.

3. Quality Assurance/Control Submittals: Submit the following:
   a. Certificate of qualifications of the playground surfacing installer.
4. Closeout Submittals: Submit the following:
   a. Warranty documents specified herein.

C. Maintenance Data:
1. For manufactured surfacing products, provide manufacturer's recommended maintenance instructions and list of repair products, with address and phone number of source of supply.
2. For loose fill surfacing products, provide detailed re-ordering information to enable City to match installed material exactly.

1.07 QUALITY ASSURANCE

A. Maintain one copy of the latest edition of ASTM F1487 and CPSC Pub. No. 325 at project site.

B. Manufacturer Qualifications: Company regularly engaged in manufacturing products specified in this section, with not less than 10 years of documented experience.
1. Surfacing installed in minimum 20 sites and been in successful service minimum 7 years.
2. Utilize an installer approved and trained by the manufacturer of the playground surfacing system or a direct employee of the manufacturer’s installation division, having experience with other projects of the scope and scale of the work described in this section.
3. International Play Equipment Manufacturers Association (IPEMA) certified.

C. Installer Qualifications: Company certified by manufacturer for training and experience installing the protective surfacing; provide installer's company name and address, and training and experience certificate.

D. Artificial Turf: Product must be installed by manufacturer's certified installer.

1.08 PRE-INSTALLATION MEETING

A. Convene a meeting one week before starting earthwork for playground to discuss coordination between various installers.
1. Require attendance by personnel responsible for grading and installers of playground equipment, protective surfacing, footings, and adjacent work.
2. Include representatives of Contractor.
3. Notify Landscape Architect at least 2 weeks prior to meeting.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store protective surfacing to project site in accordance with manufacturer's recommendations.

B. Store materials in a dry, covered area, elevated above grade.

1.10 PROJECT/SITE CONDITIONS

A. A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 95 degrees F (32 degrees C).

Exception to the temperature requirements can be made by the manufacturer of the surfacing system. Do not install in steady or heavy rain.

1.11 WARRANTY

A. Provide minimum 5 year warranty for playground surfacing.

PART 2 PRODUCTS

2.01 DESIGN CRITERIA

A. Because the safety of the playground depends on strict conformance to the design criteria, this information is provided for Contractor's information.
   1. The protective surfacing constitutes a resilient layer installed over a non-resilient layer, which is installed over the subgrade, with the top of playground equipment footings and anchorage devices covered by full depth of the resilient portion of the protective surfacing.

B. If deviation from specified depth is required, it is the Contractor's responsibility to make all changes required to maintain specified top elevation and required impact attenuation at no extra cost to City; obtain approval prior to proceeding; follow approval request procedure as specified for substitutions.

2.02 MATERIALS

A. Poured-In-Place Rubber Surfacing: Weather-resistant wear layer over impact attenuating substrate over aggregate or concrete subbase per the Drawings.
   1. Poured-In-Place Primer:
      a. Material: Urethane.
   2. Poured-In-Place Rubber Base Course (buffings):
      a. Material: 100% recycled blend of shredded SBR (styrene butadiene rubber) and urethane.
      b. The type of playground equipment determines the required base course thickness, and the base course thickness may be different at various locations on the playground site. Depending on ASTM F1292 requirements for critical fall height (5’, 6’, 7’, 8’, 10’, or 12’), select basemat thickness from options provided in subparagraph below (1-1/2", 2”, 2 1/2", 3", 4" or 4 1/2" respectively). Specify project requirements below and coordinate with working drawings.
   3. Poured-In-Place Colored Wear Course: Blend of recycled EPDM (ethylene propylene diene monomer) rubber and aliphatic urethane binder.
      a. Wear Layer Thickness: 1/2 inch, minimum, 5/8" maximum.
      b. Coefficient of Friction, when wet: 0.9, minimum, when tested in accordance with ASTM D2047.
      c. Dry Static Coefficient of Friction (ASTM D2047): 1.0.
      d. Dry Skid Resistance (ASTM E303): 89.
      e. Wet Skid Resistance (ASTM E303): 57.
      f. Wear Layer Color(s): As selected from manufacturer's full range of bright colors, including special order colors. See Drawings for colors. Submit samples.
   4. Resilient Depth: As required to achieve specified Critical Fall Height as defined in ASTM F1292 but not more than depth indicated; maintain top elevation flush with adjacent

grades.

5. Certification: Provide IPEMA certification of ASTM F1292 Critical Fall Height at thickness specified.
6. Products:
   a. "SpectraPour Supreme" Poured Rubber
      1) Manufacturer: Spectra Turf: www.spectraturf.com.
      2) Tru-Color HP Granules
      3) Contact: mbhollowell@spectraturf.com
   b. "Tot Turf Supreme" Poured Rubber System
      1) Manufacturer: Robertson Recreational Surfaces: www.totturf.com.
         (a) Contact: Frank Horwath. (510) 260-9025
   c. Substitutions: See requirements in Contract Documents.

B. Synthetic Turf Surfacing: Artificial grass layer over impact attenuating substrate over rigid subbase.
   1. Syntheti: SYNLawn Play Platinum
      a. Basis of Design: SYNLawn Sythetic Grass Play Platinum manufactured by SYNLawn. www.synlawnbayarea.com (510) 215-2000
         1) Product: STX43
         2) Infill: Envirofill
         3) Installation: See Quality Assurance Section 1.06 above.
      b. Substitutions: See requirements in Contract Documents.
      c. Steel Edge resty
         1) Composite lumber header, size per details
         2) "Turf Claw" Synthetic turf adhesive by SynLok
         3) Straightcurve Zero-Flex Hardline garden edging in weathered steel, www.straighcurve.com
            (a) Install corner pieces to achieve layout per plan

C. Poured-In-Place Bonded Rubber Permeable Surfacing: Shredded rubber bonded with polyurethane adhesive, allowing water penetration, over aggregate subbase.
   1. Rubber: 100 percent recycled shredded styrene butadiene rubber (SBR) shreds or granules.
   2. Color: As selected from manufacturer's full range, see the drawings.
   3. Products:
      a. Playground Bonded Rubber, manufactured by Robertson Recreational Surfaces. www.totturf.com.
         1) Contact: Frank Horwath. (510) 260-9025
      b. Bonded Rubber Mulch, manufactured by SpectraTurf
         1) Contact: mbhollowell@spectraturf.com
      c. Substitutions: See requirements in Contract Documents.

D. Engineered Wood Fiber Loose Fill: Manufactured for the purpose of protective surfacing; complying with ASTM F2075; do not use mulch manufactured from recycled pallets, or lumber containing nails or metal fasteners.
   1. Depth - As shown on the Drawings.
   2. Certification: Provide IPEMA certification of ASTM F1292 Critical Fall Height at thickness specified.
   3. Manufacturers:
      a. Fibar Systems, www.fibar.com/#sle or approved equal.

E. Playground Sand Fill: Natural sand, not processed. Uniformly graded, cleaned and washed; free of dust, clay, dirt, organic material, hazardous substances such as ploy urethane, lead, and foreign objects; naturally rounded particles.
   1. Depth: As indicated on drawings.
   2. Submit physical samples and supplier safety data sheet.
   3. Supplier: Lyngso, www.lyngsogarden.com, #1 Olympia Sand

F. Geotextile Fabric: Nonwoven polypropylene sheet.

G. Aggregate Subbase: As specified in Section 32 1123.

H. Artificial Turf Accessories
   1. 2" x 4" Plastic lumber header
   2. 2" x 8" Plastic lumber header
   3. Turf Claw glue by Syn Loc, or equal
   4. 3/8" diameter concrete anchor, see Drawings for location
   5. Redhead screws, see Drawings for location

PART 3 EXECUTION

3.01 EXAMINATION

A. Playground equipment installer will perform playground layout prior to installation of footings; verify correctness of layout before starting this work.

B. Verify that playground equipment and site furnishings and irrigation system located within playground area are complete.

C. Verify location of underground utilities and facilities in the playground area. Damage to underground utilities and facilities will be repaired at Contractor's expense.

D. Verify that subgrades are at proper elevations and that smooth grading is complete.

E. Verify that proper depth of surfacing is marked on base supports of playground equipment.

3.02 PREPARATION

A. Correct subgrade irregularities to ensure that required depth of protective surfacing can be installed, and subgrade elevation is in accordance with manufacturer's requirements.

B. Inside Use Zones remove all obstructions that would extend into the resilient protective surfacing.

C. Remove rocks, debris, and other similar items.

D. Install containment curbs with top surface flush with intended elevation of top surface of protective surfacing.

3.03 SUBBASE

A. Install aggregate subbase as indicated on drawings and in Section 32 1123. Compact aggregate to maximum 95 percent, in accordance with ASTM D1557.

B. When applicable, install concrete subbase as indicated on drawings and in Section 03 3000.
   1. Thickness: 4 inches or per the drawings.
   2. Remove curing compounds and other substances that will adversely affect adhesion.

C. Install with top surface of subbase no higher than grades and levels indicated and not more than 1/4 inch lower than grades and levels indicated.

D. Install in true, even plane, sloped to provide positive drainage.

E. Flatness Tolerance: 1/4 inch in 10 feet, maximum.

F. Cure subbase at least 7 days but not less than required by manufacturer of resilient surfacing.

3.04 RESILIENT SURFACING LAYER

A. Install in accordance with CPSC Pub. No. 325, ASTM F1487, manufacturer's instructions, and requirements of authorities having jurisdiction (AHJ).

B. Install proper thickness throughout Use Zone(s).

C. Clean and dry surface of subbase.

D. Cover aggregate subbase with geotextile fabric:
   1. Verify that aggregate is free of ruts or protruding objects.
   2. Lap minimum 4 inches width at seams. Adhere seams in accordance with manufacturer's recommendations.
   3. Install fabric smooth, and free of tensile stresses, folds, or wrinkles.
   4. Protect fabric from clogging, tears, or other damage during surfacing installation.
   5. Repair or replace damaged fabric in accordance with manufacturer's recommendations.

E. Poured In Place Surfacing:
   1. Mix components mechanically on-site in accordance with manufacturer's directions; do not mix by hand.
   2. Install seamlessly; ensure complete bond to subbase.
   3. Cover footings and foundations and adhere tightly around penetrating elements.
   4. Maintain full thickness of resilient layers within Use Zone; cover or abut containment curbs as indicated on drawings; completely cover tapered transition edges.
   5. Hand trowel exposed surface to smooth, even finish.
   6. Impact Attenuation Layer: Install entire layer in one continuous pour on the same day.
   7. Wear Surface: Bond wear surface to substrate with adhesive. Apply adhesive in small quantities so that wear surface can be applied before adhesive dries.
      a. Install surfacing seamlessly. When wear surface is composed of different color patterns, pour surface continuously and seamlessly.

b. When seams are required due to color change or field conditions, place adjacent wear surface as soon as possible, before initial pour has cured. Coat edge of initial pour with adhesive and apply wear surface mixture immediately.
c. Add a minimum of 1/16 inch depth to specified surfacing depth to ensure required impact attenuation performance is met.
d. Install wear surface to cover foundations and adhere tightly around elements penetrating the surface.

3.05 LOOSE FILL SURFACING

A. Install in accordance with CPSC Pub. No. 325, ASTM F1487, and requirements of authorities having jurisdiction (AHJ).

B. Cover Subgrade with Geotextile:
1. Lap minimum 4 inches width at seams. Adhere seams in accordance with manufacturer's recommendations.
2. Install smooth, and free of tensile stresses, folds, or wrinkles.
3. Protect from clogging, tears, or other damage during surfacing installation.
4. Repair or replace damaged geotextile in accordance with manufacturer's recommendations.

C. Install loose fill to depths indicated, with smooth even surface flush with tops of containment curbs.

D. Sand: Determine finished elevation after sand has been settled with water and percolating.

3.06 FIELD QUALITY CONTROL

A. City or City's representative will inspect playground surfacing after installation to verify that surfacing is of proper type and depth and that playground meets specified design safety and accessibility requirements.

B. Repair or replace rejected work until compliance is achieved.

3.07 CLEANING AND PROTECTION

A. Restore adjacent existing areas that have been damaged from the construction.

B. Clean playground equipment of construction materials, dirt, stains, filings, and blemishes due to shipment or installation. Clean in accordance with manufacturer's instructions, using cleaning agents as recommended by manufacturer.

C. Clean playground area of excess construction materials, debris, and waste.

D. Remove excess and waste material and dispose of off-site in accordance with requirements of authorities having jurisdiction.

E. Protect installed products until Date of Substantial Completion.

F. Replace damaged products before Date of Substantial Completion.

END OF SECTION 32 1816.13

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Section 32 3119
Decorative Metal Fences and Gates

PART 1 GENERAL

1.01 WORK INCLUDED

A. Decorative steel picket fencing system.

B. All hardware, attachments, and accessories as required to provide a complete installation.

1.02 RELATED WORK

A. Section 03 3000 Cast-in-Place Concrete

B. Section 05 5000 Metal Fabrications

C. Section 32 1313 Concrete Paving

1.03 QUALITY ASSURANCE

A. Installer – Work to be performed only by workers thoroughly skilled and specially trained in the techniques of the manufacturer, and who are completely familiar with the published recommendations of the manufacturer and have at least three (3) years of experience installing the selected system. Installer to be approved by the manufacturer.

1.04 REFERENCES

A. ASTM A36 - Standard Specification for Carbon Structural Steel

B. ASTM A 123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

C. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

D. ASTM A513 - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing

E. ASTM A-653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

F. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus

G. ASTM F2200 - Standard Specification for Automated Vehicular Gate Construction

1.05 SUBMITTALS

A. Product Data – Submit material specifications and manufacturer's installation instructions

B. Shop Drawings to include:
   1. Layout of fences and gates showing all dimensions, sizes, thickness, gauges, finishes, joining, attachments, gate operator and attachments, gate loops, and relationships to adjacent work.
   2. Gate elevations indicating the Finish Grade along the length of the gate.
   3. Post foundations details.
   4. Gate hardware (including hinges, latches, strike, etc.).

C. Maintenance Data: Indicate lubrication requirements and frequency and periodic adjustments required.

1.06 PRODUCT HANDLING

A. Protection
   1. Materials to be stored at the job site in a safe, dry place with all labels intact and legible at time of installation.
   2. Use all means to protect materials before, during, and after installation. Do not allow products to become wet or damp.

B. Replacements: In the event of damage, including water intrusion, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.07 WARRANTY

A. Provide manufacturer's standard limited warranty of 25 years from date of installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. All selected materials listed in this section are based on the products of Iron Fence Shop (www.ironfenceshop.com) as a standard of quality. Substitutions: See requirements in Contract Documents.

B. Fence Panel:
   1. Product: Classic, 36" high
   2. Grade: Signature (Commercial)
   3. Finish: Hot-Dip Galvanized with a 2.5mils polyester-based TGIC powder coating.
   4. Color: Satin Black

C. Gate:
   1. Product: Classic Arched Walk Gate, 36" high, 4' wide
   2. Grade: Signature (Commercial)

3. Finish: Hot-Dip Galvanized with a 2.5mils polyester-based TGIC powder coating.
4. Color: Satin Black
5. Gate Hardware: Per the drawings.

PART 3 EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which gate items are to be installed, and correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Follow manufacturer's recommendations for installation preparations. Furnish setting drawings, diagrams, templates, instructions, and directions for installation of anchorage, such as steel column, welded angle, and miscellaneous items having integral anchors, which are to be embedded in concrete construction. Coordinate delivery of such items to project site. Verify the gate posts are plumb and gate moves freely.

3.03 FENCING INSTALLATION

A. Fastening to In-Place Construction - Provide anchorage devices and fasteners as required by drawings for securing miscellaneous metal fabrications to in-place construction.

B. Install system in strict accordance with manufacturer's instructions.

C. Contractor to arrange fence posts to maximize clearance between fence posts and existing trees. Contractor to use care when digging footings for fence posts to avoid damage to existing tree trunks and roots.

D. Cutting, Fitting, and Placement
   1. Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications.
   2. Set work accurately in location, alignment, and elevation, and make plumb, level, true and free from rack, measured from established lines and levels.
   3. Provide temporary bracing or anchors in formwork for items, which are to be built into concrete or similar construction.
   4. Fit exposed connections accurately together to form tight hairline joints.
   5. Weld connections, which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. 6.Grind exposed joints smooth, and touch up shop paint coat or galvanizing. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

E. Touch-Up Painting
   1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply or brush or spray to provide minimum dry film thickness of 0.051 mm (2.0 mils).

2. At all galvanized products, clean all damaged areas and re-coat using specified galvanizing coating per manufacturer's criteria.

END OF SECTION 32 3119

Section 32 3300
Site Furnishings

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tables

B. Adirondack Chair

C. Benches

D. ~~Pebble Seats~~

E. Waste/Recycling Receptacle

F. BBQ Grill

G. ~~Drinking Fountain/Bottle Filler~~

H. Bike Rack

I. ~~Tree Grate~~

J. ~~Trench Grate~~

K. ~~Skate Deterrent~~

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Footings

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

C. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Product Data: Provide manufacturer's specifications and descriptive literature, installation instructions, and maintenance information.

C. Samples: Submit one set of manufacturer's available colors for metal furnishings.

D. Samples: Submit one set of manufacturer's available colors and finishes for precast furnishings.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.

1.06 WARRANTY

A. Provide manufacturer’s warranty against defects in materials or workmanship.

PART 2 PRODUCTS

2.01 Tables

A. Picnic Table - 8FT and Picnic Table 8FT ADA
   1. Mfr: Outdoor Creations, www.outdoorcreations.com
   2. Model: 100FS and 100FS2E
   3. Options:
      a. 8ft one-piece table with 8ft seats and 8ft table with double-entry seats (ADA)
      b. Material: Concrete
      c. Color: Black

B. Picnic Table - 6FT and Picnic Table 6FT ADA
   1. Mfr: Outdoor Creations, www. outdoorcreations.com
   2. Model: 101FSS and 101FS2E
   3. Options:
      a. 6ft one-piece table with 6ft seats and 6ft table with double-entry seats (ADA)
      b. Material: Concrete
      c. Color: Black

C. Picnic Table - Square and Square ADA
   1. Mfr: Outdoor Creations, www. outdoorcreations.com
   2. Model: Square Court Table 108S and 108AC
   3. Options:
      a. Square table top with 4 or 3(ADA) flat seats
      b. Material: Concrete
      c. Color: Black

D. Picnic Table - Round and Round ADA
   1. Mfr: Outdoor Creations, www. outdoorcreations.com
   2. Model: Round Court Table 107S and 107AC
   3. Options:

a. Round table top with 4 or 3(ADA) flat seats
b. Material: Concrete
c. Color: Black

E. Picnic Table - Tot Table
1. Mfr: Richter, www.richter-spielgeraete.com
2. Model: Toddler's Table with 8 Stools
3. Options:
a. Product No: 4.35050
b. In-ground mount

2.02 Adirondack Chair

A. Mfr: Thomas Steele, www.thomas-steele.com

B. Model: Monona Outdoor Adirondack Chair

C. Options:
1. Ipe Slats
2. Powdercoat Color: Orange
3. Surface mount

2.03 Benches

A. Bench - Backed
1. Mfr: DuMor, inc.
2. Model: 88-60PL
3. Options:
a. 6ft bench
b. Material: Ipe slats
c. Support option: S-2 surface mount
d. Powdercoat color: Bronze

B. Bench - Mounted to top of wall
1. Mfr: Thomas Steele, www.thomas-steele.com
2. Model: Sawyer Flat Bench, Top Wall Mount
3. Options:
a. 6ft length
b. Surface mount onto wall
c. Material: Ipe
d. Powdercoat color: Bronze

2.04 Pebble Seats

A. Mfr: QCP, www.qcp-corp.com
1. Model: Kernel Seats

B. Product Nos: Q2-KERNEL-S (small) , Q2-KERNEL-L (large)
1. Colors: To be selected from a mix of standard colors
2. Material: Solid SRC

3. Finish: Honed
4. Surface mount per manufacturer

2.05 Waste/Recycling Receptacles

A. Waste/Recycling Receptacles
   1. Mfr: Outdoor Creations, Inc.
   2. Model: 514 Garbage or Recycling Enclosure
   3. Options:
      a. Color: Black

2.06 BBQ Grills

A. BBQ Grill
   1. Mfr: Outdoor Creations, Inc.
   2. Model: 3001-A Group BBQ
   3. Options:
      a. Matching Grill 3001-A-G
      b. Install per manufacturer's recommendations
      c. Color: Black

2.07 Drinking Fountain/Bottle Filler

A. Mfr: Most Dependable Fountains

B. Model: 10145SMSSFA

C. Options:
   1. Bowl sand strainer
   2. Safe stream bubbler
   3. Color: Textured Black

2.08 Bike Rack

A. Mfr: Dumor

B. Model: Bike Rack 188-07

C. Options:
   1. Powdercoat: Black
   2. Mounting for concrete paving

2.09 Tree Grate

A. Mfr: Urban Accessories, www.urbanaccessories.com

B. Model: OT Title 24 Tree Grate

C. Options:
   1. 6'x6' grate

2. Installation as indicated on the drawings
3. Rust Conditioner finish

2.10 Trench Drain Grate

A. Mfr: Iron Age Designs

B. Model: Interlaken IR6-20I993

C. Grate at Bubbling Boulder:
1. 6" wide
2. 3'-2" radius
3. Rust Conditioner finish

D. Grate at Restroom:
1. 6" wide
2. Custom radius to fit site conditions
3. Rust Con

2.11 Skate Deterrent

A. Mfr: Skate Stoppers, www.skatestoppers.com

B. Model: Architectural Series White Oak Family

C. Options:
1. For 3/4" radius wall
2. Material: Cast silicone bronze
3. Anchor with pins and epoxy per manufacturer

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify proper installation of mounting surfaces, preinstalled anchor bolts, and other mounting devices; and ready to receive site furnishing items.

B. Do not begin installation until unacceptable conditions are corrected.

3.02 INSTALLATION

A. Install site furnishings in accordance with approved shop drawings, and manufacturer's installation instructions.

B. Provide level mounting surfaces for site furnishing items.

END OF SECTION 32 3300

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Section 32 4000
Landscape Boulders and Stone

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Landscape boulders at planted areas and concrete seatwalls

B. Stone block for terraces and edges

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete

B. Section 04 43 13 - Stone Masonry Veneer: Wall veneer stone adjacent to stone blocks

1.03 SUBMITTALS

A. Samples - submit the following:
   1. Landscape Boulders
      a. Photographs taken at supplier or quarry that are representative of the size range, color, shape, and rock type. Boulders shown should be individually depicted so as to be clearly seen, and not on a palette or in a pile with other rock or rubble.
      b. Owner and Landscape Architect reserve the right to visit supplier's yard or quarry to make final selections.
   2. Stone Blocks
      a. Photographs taken at supplier or quarry that are representative of the size range, color, shape, and rock type. Blocks shown should be individually depicted so as to be clearly seen, and not on a palette or in a pile with other rock or rubble.
      b. Owner and Landscape Architect reserve the right to visit supplier's yard or quarry to make final selections.

1.04 QUALITY ASSURANCE

A. Provide all rock in this section from a source less than 200 miles away from project site.

B. Procure all boulders and block from the same source/quarry.

PART 2 PRODUCTS

2.01 LANDSCAPE BOULDERS

A. Description: Landscape Boulders, quantity and sizes per plans. Boulders should be free of evidence of significant cracks,fissures, and fragmentation, and generally spherical in shape. Any one dimension of a boulder (height, width, depth) should not be more than 2-times any

other dimension.

B. Type: Hooker Creek Granite Boulders

C. Suppliers:
   1. American Soil, www.americansoil.com
   2. Contact: Jim Spahr, jim@americansoil.com 415-990-2629

2.02 STONE BLOCKS

A. Description: Stone bocks, ranging from 16"-18" tall x 24"-60" long x 12"-30" wide.

B. Finish: Natural finish from quarry. If needed, boulders to be cut to size per the drawings at stone supplier. Soften any sharp edges.

C. Type: Perma blocks

D. Suppliers:
   1. American Soil, www.americansoil.com
   2. Contact: Jim Spahr, jim@americansoil.com 415-990-2629

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Verify that boulders and blocks are of good quality without cracks or fissures .

B. Verify subgrades are ready to recieve work.

Section 32 4012
Site Sculptures

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pre-manufactured cast bronze site sculptures.

B. Accessories: Wood post for sculpture installation.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

PART 2 PRODUCTS

2.01 Bronze Site Sculptures

A. Manufacturer: Art of Bronze
   1. Contact: David Spellerberg, info@artofbronze.com

B. Items:
   1. "Alert" Fox Sculpture
   2. ~~"The Great One" Turtle Sculpture~~ Raven, Item # ABE071A
   3. "Watchtower" Red-Tailed Hawk Sculpture
   4. "Squirrel" Sculpture
      a. All sculptures come from manufacturer with mounting rods.
      b. Secure "~~Squirrel~~" sculpture to wood table with tamper proof screws.

Raven

2.02 ACCESSORIES

Squirrel

A. Fox and ~~Turtle~~ Sculpture - install into boulder per the drawings. See Section 32 4000 Landscape Boulders and Stone

B. Red-Tailed Hawk Sculpture - install into approx. 6" dia. natural log pole. Pole shall have natural form with possible exposed bark, as to look like as much as a natural tree as possible. Wood species shall be redwood, cedar or oak. Submit photos for approval by Landscape Architect.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Verify that surfaces for sculpture installation are ready to recieve work.

3.02 INSTALLATION

A. Install in accordance with drawings.

END OF SECTION 32 4012

Section 32 6810
Pre-Manufactured Boardwalk System

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Furnish and install pre-engineered, prefabricated galvanized structural steel framed boardwalk designed to rest on structural pile supports, with prefabricated deck panels constructed from wood decking, including all fittings, accessories, and fasteners in accordance with the plans.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete

B. Section 05 1200 - Structural Steel Framing

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a meeting one week before starting earthwork for boardwalk to discuss coordination between various installers.
   1. Require attendance by personnel responsible for grading, footings, structural steel and playground equipment.
   2. Include representatives of Contractor.
   3. Include playground CPSI.
   4. Notify Landscape Architect at least 2 weeks prior to meeting.

1.04 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Substituations:
   1. Substitutions that require changes to the site design will not be considered.
   2. Substituations that, in the opinion of the Owner, are not equivalent in quality will not be considered.

C. Product Data:
   1. Manufacturer’s product data showing materials of construction and compliance with standards.
   2. Installation process and requirements.

D. Shop Drawings:
   1. Shop drawings for all components of the steel frame walkway and deck system, inluding guardrails and handrails. Include boardwalk layout and connection to adjacent project improvements.
   2. Structural calculations to be stamped and signed by a licensed Engineer in the State of CA.

E. Certificate of steel origin (United States)

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications:
   1. Proof of manufacturer in good standing with all agencies including, reporting agencies, banks, and the state for which it operates.
   2. Proof of business operations greater than 7 years.
   3. Affidavit of employed American Welding Society certified welders.
   4. Three references for similar scale projects.

B. Installer Qualifications: Company specializing in steel construction shall perform the work in this Section.
   1. Provide documentation that the company has installed at least 5 structures of similar scale for public agencies, that have been in successful service for a minumum of 5 years.

1.06 WARRANTY

A. Provide Manufacturer's Workmanship of the frames is warrantied against defect for the life of the boardwalk. During this period, if the product is covered by the warranty and fails under normal use, manufacturer will repair or replace at original owners' discretion. The decking and other non-frame elements of the boardwalk are excluded. "Lifetime" is defined as the lifetime of the product in use.

B. Material warranty of all non-boardwalk frame material is that of the original manufacturer. Non-boardwalk material includes but is not limited to decks, handrail, curb rail, benches, or other fixtures.

PART 2 - PRODUCTS

2.01 BOARDWALK SYSTEM - GENERAL

2.02 MATERIALS

A. Frames: Galvanized structural steel frame sections constructed from ASTM A500 Structural Steel. Sizes per the drawings.
   1. All frames must meet or exceed the International Building Code requirements of 100psf pedestrian load capacity with an allowable deflection of L/360.
   2. Frame connections to be fabricated from ¼" A36 Structural Steel.
   3. Entire post-fabrication frame assembly to be hot dipped galvanized (HDG) with a minimum of 3.9 mill thickness of zinc-based galvanizing.
   4. All post-galvanized frame assemblies must be hand rasped and free of any sharp edges without compromising the galvanized integrity.
   5. All welds must exceed the American Welding Society (AWS) specifications for structural elements.
   6. All welding must be performed by an American Welding Society (AWS) certified welder.
   7. All guardrails must meet or exceed the International Building Code requirements of 70psf of force in any direction.

B. Decking
   1. All decking must meet or exceed International Building Code requirements of 100psf load capacity.
      a. Prefabricated deck panels constructed from 2x6" composite lumber.
      b. Prefabricated deck panels constructed with 2x4" composite lumber stringers and all fasteners are applied from below.
      c. All fasteners used in fabrication are to be stainless steel.
   2. All boardwalk decking surfaces are to be ADA compliant.
   3. Manufacturer: Lumberock, www.lumberock.com, Marine-grade composite decking

C. Manufacturer:
   1) Wickcraft Company, Inc.
   2) 2317 Daniels Street
   3) Madison, WI 53718
   4) Phone: (608) 244-9177
   5) Contact: Patrick Walters

2.03 ERECTION

1. The CONTRACTOR shall be solely responsible for all installation permits, safety, and environmental concerns.
2. All materials and construction practices for foundation, railing, and decks, are to be installed per local codes and industry standards.
3. Installed products are to be done so in accordance with manufacturer's instructions and recommendations to maintain warranty.
4. Pile locations must be determined suitable and adequate before installation.
   a. Suitable and adequate is to be determined by the drawings for the project.
   b. Any necessary information about the site conditions including soil load conditions are to be provided by the City.

3.02 VERIFICATION OF CONDITIONS

A. Verify that the boardwalk area has been graded to subgrade elevations required and that excess soil, rocks and debris have been removed.

B. Verify location of tree trunks and roots in relation to the boardwalk. Take caution to avoid disturbance to trees per the Tree Protection Plan.

C. Verify that pier footings have been installed in proper locations and at proper elevations.

D. Verify location of underground utilities in boardwalk area; damage to underground utilities will be repaired at the Contractor's expense.

3.03 PERPARATION

A. Stake layout of entire boardwalk in conjunction with playground equipment use zones and adjacent curb to ensure proper layout.

B. Verify that there are no conflicts with surrounding tree branches.

C. If conflicts or obstructions exist, notify Landscape Architect.

3.04 INSTALLATION

A. Coordinate work of other sections that is integral to boardwalk and components, including but not limited to:
   1. Play equipment
   2. Play Portals
   3. Adjacent flatwork and curbs

3.05 FILED QUALITY CONTROL

A. City or City's represenative will inspect boardwalk system after installation to verify that boardwalk meets specified design, safety and accessibility requirements.

B. Playground CPSI shall inspect the boardwalk system after installation to ensure adjacent playground equipment will meet compliance.

C. Inspect boardwalk for protruding screws, fasteners, loose deck boards or sharp edges on galvanized members.

D. Repair or replace rejected work until compliance is achieved.

3.06 CLEANING

A. Restore adjacent existing areas that have been damaged from the construction.

B. Clean boardwalk of construction materials, dirt, stains and blemishes due to installation. Clean according to manufacturer's recommendations.

3.07 PROTECTION

A. Protect installed boardwalk until Date of Substatial Completion.

B. Replace damaged boardwalk before Date of Substatial Completion.

END OF SECTION 32 6810

Section 32 8423
Irrigation System

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe and fittings,emitters, bubblers, and accessories.

B. Automatic valves

C. Manual valves

D. Control system

E. Low flow irrigation

F. Pop-up spray/rotary systems

1.02 DESCRIPTION

A. Provide all material, labor, equipment transportation, and services necessary for the furnishing and installation of the complete automatic sprinkler irrigation system as shown on the drawings and as specified herein. The work includes, but is not limited to:
   1. Trenching, stockpiling excavation materials and refilling trenches.
   2. Providing a complete system including piping, valves, fittings, sprinklers, automatic controls, and emitters and final adjustment of heads to ensure complete coverage.
   3. Line voltage connections to all irrigation controllers; low voltage control wiring from controller to remote control valves.
   4. Electrical service and hookup to automatic controller
   5. Automatic controller assembly and installation.
   6. Submittals, tests, as-built and record drawings.
   7. Erosion control and repair of damage due to over watering and erosion.
   8. Warranty replacement.
   9. Cleanup, inspection and approval.

1.03 RELATED REQUIREMENTS

A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables.

B. Section 31 2316.13 - Trenching: Excavating and backfilling for irrigation piping.

C. Section 31 2323 - Fill: Backfilling for irrigation piping.

D. Section 32 9300 - Planting

1.04 REFERENCE STANDARDS

A. ASTM D2241 - Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series); 2020.

B. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2020.

C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.

1.05 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Detail Drawings: Submit detailed drawings for Owner approval, for all assemblies not detailed on the drawings.

C. Controller Charts:
1. The Landscape Architect shall accept Record drawings before controller charts are prepared. Provide one controller chart for each controller supplied. The chart shall show the area controlled by the automatic controller and shall be the maximum size that the controller door will allow.
2. The chart is to be a reduced drawing of the actual “as-built” system. However, in the event the controller sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when reduced. The chart shall be a black line or blue line ozalid print and a different color shall be used to indicate the area of coverage for each station. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum of 10 mils. These charts shall be completed by the Contractor and approved by the Landscape Architect prior to final observation of the irrigation system.

D. Operation and Maintenance Data:
1. Provide instructions for operation and maintenance of system and controls, seasonal activation and shutdown, and manufacturer's parts catalog.

E. Maintenance Materials: Provide the following for City's use in maintenance of project.
1. Extra Sprinkler/Rotor Heads: One of each type and size.
2. Extra Valve Keys for Manual Valves: One.
3. Extra Valve Box Keys: One.
4. Extra Quick Coupler Keys: One.
5. Prepare and deliver to the Architect, within 10 calendar days prior to completion of construction, two hardcover binders with three rings containing the following information:
    a. Index sheet stating Contractor’s address and telephone number, list of equipment with name and addresses of local manufacturer’s representative.
    b. Catalog and part sheets on every material and equipment installed under this contract.
    c. Contractor's Guarantee statement that all equipment has been installed per plans and specifications.
    d. Complete operating and maintenance instruction on all major equipment.

F. Irrigation Schedule:
   1. Watering schedule shall include watering times and start times for each valve. Schedule shall indicate watering times for each day of the week as applicable. The schedule shall be broken out to include seasonal adjustments.
   2. Submit the Watering Schedule to the Architect for approval. The amount of water used per the irrigation schedule shall not exceed the projected water usage shown on the irrigation calculations and plans.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Handling of PVC Pipe and Fittings: The Contractor is cautioned to exercise care in handling, loading, unloading, storing and installation of PVC pipe and fittings. All PVC pipe shall be transported in a vehicle that allows the length of pipe to lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and, if installed, shall be replaced with new piping.

1.07 JOB CONDITIONS

A. The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the Architect. In the event this notification is not performed, the irrigation Contractor shall assume full responsibility for any revision necessary.

1.08 SUBSTITUTIONS

A. Procedure: Submit information in conformance with the substitution requirements of Section 01, General Conditions.

B. Provide descriptive catalog literature, performance charts and flow charts for each item to be substituted.

1.09 REGULATORY REQUIREMENTS

A. Requirements of Regulatory Agencies: All work and materials shall be in full conformance with the latest rules and regulations of the California Plumbing and Electric codes.

B. Manufacturer's Directions: Manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this contract furnish directions covering points not shown in the drawings and specifications.

C. Underwriters Laboratories: Electrical wiring, controls, motors, and devices shall be UL listed, and so labeled.

1.10 INSTALLATION MEETINGS

A. Contractor shall be responsible for notifying the Architect or Designated Representative in advance for the following observation meetings, according to the time indicated: (Certain meetings may be grouped if prior approval is granted).

1. Coordinate one week prior to commencing work of this Section.
2. Pressure supply line installation and testing: 48 hours.
3. Automatic controller location: 48 hours.
4. Coverage test: 48 hours.
5. Final site review: 7 days.

B. When observations have been conducted by other than the Architect or Designated Representative, show evidence in writing of when and by whom these observations were made.
   1. Final Observation:
      a. The Contractor shall operate each system in its entirety for the Architect or Designated Representative at time of final observation. Any items deemed not acceptable by the Architect or Designated Representative, or not in compliance with these specifications and drawings, shall be reworked to the complete satisfaction of the Architect or Designated Representative.
      b. The Contractor shall show evidence to the Architect or Designated Representative that the City has received all accessories, charts, record drawings, and equipment as required before final observation can occur.

1.11 COORDINATION

A. Coordinate the work with site backfilling, landscape grading and delivery of plant life.

1.12 WARRANTY

A. The warranty for the sprinkler irrigation system shall be made in accordance with the following form.

B. A copy of the warranty form shall be included in the operations and maintenance manual.

C. The warranty form shall be retyped onto the Contractor's letterhead and contain the following information

D. WARRANTY FOR SPRINKLER IRRIGATION SYSTEM
   1. We hereby warrant that the sprinkler irrigation system we have furnished and installed is free from defects in materials and work quality, and the work has been completed in accordance with the drawings and specification. We agree to repair or replace any defects in material or work quality that may develop during the period of one year from the date of acceptance, except those that may be caused by ordinary wear and tear, unusual abuse or neglect. We also agree to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the City. We shall make such repairs or replacements within a reasonable time, as determined by the City, after receipt of written notice. In the event of our failure to make such repairs or replacements within a reasonable time after receipt of written notice from City, we authorize the City to proceed to have said repairs or replacements made at our expense, and we will pay the costs and charges therefore upon demand.
   2. PROJECT:_____
   3. CONTRACTOR:_____PHONE NO.:_____
   4. ADDRESS:_____BY:_____
   5. _____
   6. DATE OF ACCEPTANCE:_____BY:_____

PART 2 PRODUCTS

2.01 IRRIGATION SYSTEM

A. Manufacturers:
   1. As shown on plans.

B. Substitutions: See Section 01.

2.02 PIPE MATERIALS

A. PVC Pipe (Sizes up through 3"): ASTM D 2241; 200 psi pressure rated upstream from controls, 160 psi downstream; solvent welded sockets.

B. PVC Pipe (3" - 6" sizes): ASTM D 2241; 200 psi (1.38 MPa) pressure rated upstream from controls, 160 psi (1.10 MPa) downstream; rubber gasketed joints.

C. Pressure and Non-Pressure Main Line Piping and Fittings: Sizes 1 1/2 inches and smaller shall be Schedule 40 PVC.

D. Non-pressure lines (buried): Shall be PVC Schedule 40.

E. Fittings: Type and style of connection to match pipe and shall meet the requirements for service at an operating pressure of 150 pounds per square inch, unless otherwise specified.

F. Pipe Risers at Valves: 160 psi PVC pipe.

G. Solvent Cement: ASTM D2564 for PVC pipe and fittings.

H. Sleeve Material: PVC Material per plan.

I. PVC nipples: Schedule 80 with molded threads.

J. All PVC pipe must bear the following markings:
   1. Manufacturer’s name.
   2. Nominal pipe size.
   3. Schedule or class.
   4. Pressure rating in AST (not required on drip tubing).
   5. NSF (National Sanitation Foundation) approval (not required on drip tubing).
   6. Date of extrusion.

2.03 OUTLETS

A. Manufacturer:
   1. As indicated on the drawings.
   2. Substitutions: See Division 01, General Provisions

B. Emitter: Non-clogging, self-cleaning per the model numbers shown on the drawings.

C. Tree Bubbler: Fixed outlet capable of watering deep root systems directly.

D. Quick Coupler: Two piece body with purple cover .

2.04 VALVES

A. Manufacturers:
   1. As indicated on the drawings
   2. Substitutions: See Division 01, General Provisions

B. Ball Valves: As indicated on the drawings.

C. Quick Coupling Valves: As indicated on the drawings.

D. Remote Control Valves: As indicated on the drawings.

E. Valve Boxes
   1. Remote control Valves: Christy B09 or equal.
   2. Quick couplers: Christy F08 or equal.
   3. Gate valves: Christy N30 or equal.
   4. Valve box extensions shall be by the same manufacturer as the valve box.
   5. Emboss, letters on valve boxes to indicate contents of valve box. (ie. GV = Gate Valve, QC = Quick Coupler, RC = Remote Control Valve, MV = Master Valve, BV = Ball Valve)

2.05 CONTROLS

A. Controller: As indicated on the drawings.

2.06 ELECTRICAL (LOW VOLTAGE)

A. Connections between controller and remote control valves shall be made with direct burial AWG-UH, 600-volt wire, insulation thickness 3/64 inch, utilizing low-density high molecular weight polyethylene insulation.

B. Splices, where permitted, shall be waterproofed using Rain Bird, Pen-Tite Connectors or fusible heat shrinking tubing, and housed in a box. Boxes for other irrigation use may be utilized for this purpose.

C. Wire sizing shall be minimum of #14 “UF” 600 volt underground wiring, unless a shielded cable is used in which case #16 wire may be used. Common wires to be #12 and white in color. Each "hot" valve wire shall have a distinct and unique color other than white with no repetition of colors.

D. All electrical connections must be waterproof and moisture-resistant and shall be done with 3M™ Scotchcast™ 3570G Connector Sealing Packs.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify location of existing utilities.

B. Verify that required utilities are available, in proper location, and ready for use.

3.02 PREPARATION

A. Drawings are generally diagrammatic and indicative of the work to be installed. Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan accordingly, furnishing such fittings, etc., as may be required.

B. All scaled dimensions are approximate. The Contractor shall check and verify all size dimensions and receive Architect or Designated Representative's approval prior to proceeding with work under this section.

C. Coordinate installation of irrigation system, including pipe, so there will be NO interference with utilities or other construction or difficulty in planting trees, shrubs, and ground covers. The Contractor shall carefully check all grades to satisfy him/her that he may safely proceed before starting work on the irrigation system.

D. All piping or equipment shown diagrammatically on drawings outside planting areas shall be installed inside planting areas whenever possible.

E. Layout and stake locations of system components.

F. Review layout requirements with other affected work. Coordinate locations of sleeves under paving to accommodate system.

3.03 TRENCHING

A. Trench and backfill in accordance with Section 31 2316 and Section 31 2323.

B. Excavate trenches to required depths. Follow approved layout for each system.

C. Trench bottom shall be flat to ensure piping is supported continuously on an even grade.

D. Where lines occur under paved areas, consider dimension to be below the subgrade.

E. Trench Size:
   1. As indicated on the drawings.

F. Trench to accommodate grade changes and slope to drains.

G. Maintain trenches free of debris, material, or obstructions that may damage pipe.

3.04 INSTALLATION

A. Assemblies:
1. Install pipe, valves, controls, and outlets in accordance with manufacturer's instructions.
2. Line Clearance: All lines shall have a minimum clearance of 6 inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another.
3. Connect to utilities.
4. Install all assemblies specified herein in accordance with respective detail. In absence of detail drawings or specification pertaining to specific items required to complete work, perform such work in accordance with best standard practice, with prior approval from Architect or Designated Representative.
5. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
6. On PVC to metal connections, the Contractor shall work the metal connections first. Teflon tape or approved equal shall be used on all threaded PVC to PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be welded.
7. Quick Coupling Valves: Unless otherwise indicated, locate valves within 12 inches of hardscape.
8. Set outlets and box covers 1 inch above finish grade in turf areas and 2 inches above finish grade in shrub planters.
9. Provide for thermal movement of components in system.
10. Use threaded nipples for risers to each outlet.

B. Electrical Supply:
1. Low voltage wiring shall be placed in the same ditch and taped on bottom side of main lines unless otherwise approved.
2. Wire is to be taped a maximum 12 feet on center.
3. Provide a minimum 12-inch expansion loop at each connection and directional change.
4. Use a continuous wire between controller and remote control valves. Except as otherwise approved, do not splice wire at any point. All approved splices shall be enclosed in an acceptable box.
5. Each controller shall be provided with separate 2-wire path.

C. Automatic Controller:
1. Install as per manufacturer’s instructions. Remote control valves shall be connected to controller in numerical sequence as shown on the drawings.
2. Controller shall be mounted inside lockable electrical cabinet.
3. Controller shall be programmed to read flows from valve stations.
4. Manufacturer's representative shall be on site for initial programming and startup of controller.
5. Contractor shall coordinate controller communication service plan, connectivity and startup with manufacturer and City.

D. Mark valves with neoprene valve markers containing locking device. Set valve markers in pipe risers extending from top of valve to finish grade.

E. System Flush: After piping is installed, but before outlets are installed and backfilling commences, open valves and flush system with full head of water.

F. Sprinkler Heads:
   1. Install the sprinkler heads as designated on the drawings and in accordance with their respective detail.
   2. Spacing of heads shall not exceed the maximum indicated on the drawings. In no case shall the spacing exceed the maximum recommended by the manufacturer.

G. Valve Boxes:
   1. All buried valves and equipment shall be installed with a proper box as specified in Part 2 - Products.
   2. Fill area under box with a minimum of 1 cubic feet of pea gravel before box is installed.
      a. Identification tags shall be attached to each remote control valve, showing number that corresponds with controller sequence. Tags shall be manufactured of polyurethane Behr Desopaid, yellow in color with black letters 2-3/4 inches by 2-1/4 inches.
      b. All boxes shall be permanently marked on top, designating type of equipment installed as noted in drawing.

3.05 FIELD QUALITY CONTROL

A. Prior to backfilling, test system for leakage at main piping to maintain 100 psi pressure for two hours.

B. System is acceptable if no leakage or loss of pressure occurs and system self drains during test period.

C. Testing of pressure main lines shall occur prior to installation of electrical control valves, quick couplers or any other equipment that might prevent a proper test from being performed.

D. All piping under paved areas shall be tested under hydrostatic pressure of 150 pounds per square inch, and proved watertight, prior to paving.

E. If leaks develop, replace joints and repeat test until entire system is proven watertight.

F. All hydrostatic tests shall be made only in the presence of the Architect or Designated Representative of the City. No pipe shall be completely backfilled until it has been inspected, tested and approved in writing.

G. Furnish necessary force pump and all other test equipment.

H. Upon completion of each phase of work, entire system shall be tested and adjusted to meet site requirements.

I. Low voltage wire under paving shall be tested for continuity, prior to paving.

3.06 BACKFILLING

A. Backfill trench and compact to specified subgrade elevation. Protect piping from displacement.

B. Buried pipe in trenches shall be center loaded only until all required tests are performed. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand or other approved materials, free from large clods of earth or stones. Backfill shall be mechanically compacted in landscaped areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill will conform to adjacent grades without dips, sunken areas, humps or other surface irregularities.

C. A fine granular material backfill will be initially placed on all lines. No foreign matter larger than 1/2 inch in size will be permitted in the initial backfill.

D. Flooding of trenches will be permitted only with approval of the Architect or Designated Representative.

E. If settlement occurs and subsequent adjustments in pipe, valves, sprinkler heads, lawn or planting, or other construction are necessary, the Contractor shall make all required adjustments without cost to the City.

3.07 TEMPORARY REPAIRS

A. The City reserves the right to make temporary repairs as necessary to keep the sprinkler system equipment in operating condition. The exercise of this right by the City shall not relieve the Contractor of his responsibilities under the terms of the warranty as herein specified.

3.08 SYSTEM STARTUP

A. Prepare and start system in accordance with manufacturer's instructions.

B. Adjust control system to achieve time cycles required.

3.09 MAINTENANCE

A. The entire sprinkler irrigation system shall be under full automatic operation for a period of seven days prior to any planting.

B. The Architect or Designated Representative reserves the right to waive or shorten the operation period.

3.10 CLEANUP

A. Cleanup shall be performed as each portion of the work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained to the work of others shall be repaired and work returned to its original condition.

3.11 OPERATING INSTRUCTIONS

A. The Contractor shall be required to train City's maintenance personnel in proper operation of all major equipment. Provide written evidence of the person or persons so trained to the Architect or Designated Representative.

3.12 CLOSEOUT ACTIVITIES

A. Instruct City's personnel in operation and maintenance of system. Use operation and maintenance material as basis for demonstration.

B. Irrigation Schedule: See Submittal Requirements above.

C. Irrigation Audit: Shall be performed by a third party representative hired by the City. Contractor shall coordinate keys to controllers and valve boxes for use by the auditor.

3.13 MAINTENANCE

A. See Section 01 - General Conditions for additional requirements relating to maintenance service.

END OF SECTION 32 8423

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Section 32 9223
Sodding

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparation of subsoil.

B. Placing topsoil.

C. Fertilizing.

D. Sod installation.

E. Maintenance.

1.02 RELATED REQUIREMENTS

A. Section 31 2200 - Grading: Preparation of subsoil and placement of topsoil in preparation for the work of this section.

B. Section 31 2323 - Fill: Topsoil material.

C. Section 32 0190 - Operation and Maintenance of Planting: Post-occupancy maintenance.

D. Section 32 93 00 - Planting: soil amendment, compost and fertilizing.

1.03 DEFINITIONS

A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.04 REFERENCE STANDARDS

A. TPI (SPEC) - Guideline Specifications to Turfgrass Sodding; 2006.

1.05 SUBMITTALS

A. See Section 01 - General Conditions for submittal procedures.

B. Certificate: Certify grass species and location of sod source.

C. Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer .

D. Herbicides: Submit manufacturer's analysis. Schedule for application of herbicides must be approved by the Inspector.

E. Test Reports: Provide the following soils tests and submit the results to the Inspector: Test reports shall be performed by a certified soils laboratory.
   1. Import Soil: Submit test reports of representative sample(s) for approval prior to delivery and for every 100 yards delivered to the site. Test for agricultural suitability, fertility, particle size analysis; including recommendations for soil amendment, and fertilization during the maintenance period.
   2. Organic Amendments, Compost: Test for partial organic amendment evaluation.
   3. All Other Fertilizers and Amendments: For standard products, submit manufacturer's analysis. For all other products, submit analysis by testing laboratory.

F. All submittals for soil amendments and fertilizers must be accompanied by a letter on contractor's company stationary listing exact quantities in gallons, lbs, tons, cubic yards or cubic feet. These quantities will be checked for accuracy before construction and with delivery tickets during construction.

G. Maintenance Contract.

1.06 SOIL TESTING AND ANALYSIS

A. Existing site soil: Provide testing of existing site soil.
   1. Contractor shall arrange for and pay for soil testing of existing site soil.
      a. Testing Laboratory: Recognized laboratory for soil and plant disease analysis for ornamental horticulture. Tesing laboratory to perform all work in accordance with the current methods of the Association of Official Agricultural Chemists.
      b. Recommended Laboratory: Waypoint Analytical (408)727-0330.

B. Imported topsoil: provide testing of proposed import material.
   1. Contractor shall arrange and pay for soil testing of imported topsoil.
      a. Testing Laboratory: Recognized laboratory for soil and plant disease analysis for ornamental horticulture. Testing laboratory is to perform all work in accordance with the current methods of the Association of Official Agricultural Chemists.
      b. Recommended laboratory: Waypoint Analytical, (408) 727-0330.
   2. Testing is not required if recent tests are available for imported topsoil. Submit these test results to the testing laboratory for approval. Indicate, by test results, information necessary to determine suitability.
   3. Import material that is unable to be sufficiently amended for horticultural suitability as described in these specifications will be rejected.
   4. Soil Analysis Requirements. For existing site soil and proposed imported material, analysis report shall include, at a minimum:
      a. Soil texture.
      b. Infiltration rate determined by laboratory test or soil texture infiltration rate table.
      c. pH.
      d. Total soluble salts.
      e. Sodium.
      f. Essential nutrients.
      g. Percent organic matter.

h. Recommendations for amending the soil with compost to bring the soil organic matter to a minimum of 6% by dry weight and incorporating natural, non-synthetic fertilizers to recommended levels for turf grass.

1.07 QUALITY ASSURANCE

A. Sod Producer: Company specializing in sod production and harvesting with minimum five years experience, and certified by the State of California.

B. Installer Qualifications: Company approved by the sod producer.

C. Testing Laboratory: Recognized laboratory for soil and plant disease analysis for ornamental horticulture, approved by the Inspector. Testing laboratory is to perform all work in accordance with the current methods of the Association of Official Agricultural Chemists.

1.08 REGULATORY REQUIREMENTS

A. Comply with regulatory agencies for fertilizer and herbicide composition.

B. Provide certificate of compliance from authority having jurisdiction indicating approval of fertilizer and herbicide mixture.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Sod:
1. Deliver sod on pallets. Protect exposed roots from dehydration.
2. Do not deliver more sod than can be laid within 24 hours.
3. Notify Owner's Representative of delivery schedule in advance so material can be inspected upon arrival at project site. Immediately remove unacceptable material from project site.

B. Fertilizer:
1. Fertilizer: Deliver organic fertilizer, approved by OMRI, to site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name, trade name, trademark and conformance to state law, bearing name and warranty of producer.

1.10 PROJECT/SITE CONDITIONS

A. General: Do not perform work when climate and existing site conditions will not provide satisfactory results.

B. Vehicular accessibility on site shall be as directed by City authorized representative. Repair damage to prepared ground and surfaces caused by vehicular movement during work under this section to original condition at no additional cost to the City.

C. Perform soil preparation just prior to planting operations and in accordance with final planting schedule. Coordinate with irrigation system installation to avoid damage to work of one by the other.

D. Utilities: Determine location of underground utilities (irrigation lines included) and perform work in a manner which will avoid damage, Hand excavate, as required.

PART 2 PRODUCTS

2.01 MATERIALS

A. Sod:
   1. Field Turfgrass Sod quality; cultivated grass sod; type indicated in plant schedule on Drawings; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft. Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.

B. Substitutions: See requirements in Contract Documents.

C. Soil materials, including amendments, compost and fertilizers, shall be per Section 32 93 00.

2.02 ACCESSORIES

A. Herbicide: As approved. Herbicide shall not inhibit or damage grass development.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that prepared soil base is ready to receive the work of this section.

B. Verity the soils analysis reports are adequate.

3.02 PREPARATION

A. Prepare subgrade in accordance with Section 31 2200.

B. Place topsoil in accordance with Section 31 2200.

3.03 FERTILIZING

A. Apply soil amendments in accordance with soils analysis results and manufacturer's instructions.

B. Apply fertilizer in accordance with soils analysis results and manufacturer's instructions.

C. Verify adequate time has elapsed to allow herbicides to deplete enough from soils to avoid damage to sod.

D. Apply after smooth raking of topsoil and prior to installation of sod.

E. Apply fertilizer no more than 48 hours before laying sod.

F. Mix thoroughly into upper 2 inches of topsoil.

G. Lightly water to aid the dissipation of fertilizer.

3.04 LAYING SOD

A. Moisten prepared surface immediately prior to laying sod.

B. Lay sod immediately after delivery to site to prevent deterioration.

C. Lay sod smooth and tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.

D. Where new sod adjoins existing grass areas, align top surfaces.

E. Where sod is placed adjacent to hard surfaces, such as curbs, pavements, etc., place top elevation of sod 1/2 inch below top of hard surface.

F. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.

G. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

3.05 MAINTENANCE

A. Provide maintenance at no extra cost to City; City will pay for water.

B. Provide a separate maintenance contract for specified maintenance service.

C. Provide maintenance of sodded areas for three months (90 days) from Date of Substantial Completion.

D. Maintain sodded areas immediately after placement until grass is well established and exhibits a vigorous growing condition.

E. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.

F. Neatly trim edges and hand clip where necessary.

G. Immediately remove clippings after mowing and trimming.

H. Water to prevent grass and soil from drying out.

I. Roll surface to remove irregularities.

J. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.

K. Immediately replace sod to areas that show deterioration or bare spots.

L. Protect sodded areas with warning signs during maintenance period.

END OF SECTION 32 9223

Section 32 9300
Planting

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Imported planting soil (topsoil).

B. Preparation and amendment of subsoil and topsoil.

C. Fine grading.

D. New trees, plants, and ground cover.

E. Mulch and Fertilizer.

F. Tree staking.

G. Root barriers.

H. Warranty Replacement.

I. Tree Pruning.

1.02 RELATED REQUIREMENTS

A. Section 31 10 00 - Site Clearing.

B. Section 31 2200 - Grading: Preparation of subsoil and placement of topsoil in preparation for the work of this section.

C. Section 31 2323 - Fill.

D. Section 32 84 23 - Irrigation System.

E. Section 32 92 23 - Sodding.

F. Section 32 0190 - Operation and Maintenance of Planting: Post-occupancy maintenance.

1.03 DEFINITIONS

A. Weeds: Any plant life not specified or scheduled.

B. Plants: Living trees, plants, and ground cover specified in this Section , and described in ANSI Z60.1.

C. Topsoil: uppermost layer of soil, usually 2-inches to 8-inches deep, with higher concentration of organic matter and microorganisms than subsoil layers.

1.04 REFERENCE STANDARDS

A. ANSI/AHIA Z60.1 - American National Standard for Nursery Stock; 2014.

B. ANSI A300 Part 1 - American National Standard for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management - Standard Practices (Pruning); 2017.

1.05 SUBMITTALS

A. See Section 01 - General Conditions.

B. Submit list of plant life sources.

C. Nursery certificates or invoices for each plant verifying conformance with the drawings:
1. Container size.
2. Quantity.
3. Genus, species, cultivar, hybrid, variety.

D. Submit purchase invoices from nurseries for review.

E. Samples: Submit the following to the City for acceptance:
1. Amendments: 1 pint minimum volume of each amendment in sealed plastic bag or container. Submittal shall be labeled with weight and source of each item. Each submittal shall represent a true sample of material to be provided at the project site.
2. Imported Planting Soils: 1 pint minimum volume of each mulch in sealed plastic bag or container. Submittal shall be labeled with weight and source of each item. Each submittal shall represent a true sample of material to be provided at the project site.
3. Mulch: 1 pint minimum volume of each mulch in sealed plastic bag or container. Submittal shall be labeled with weight and source of each item. Each submittal shall represent a true sample of material to be provided at the project site.
4. Root Control Barrier: One square foot sample panel, accompanied by product data.

F. Product Data: Submit the following product information to the City for acceptance:
1. Pesticides and Herbicides: Manufacturer product cut sheets; Material Safety Data Sheets.
2. Fertilizers: Manufacturer product cut sheets; Material Safety Data Sheets
3. Tree Staking Materials: Manufacturer's literature.
4. Mulch: documentation verifying recycled content and source of material.
5. Compost technical data sheet including compost laboratory report.
6. Root Control Barrier: Manufacturer's literature.

G. Test Reports: Provide soil testing analysis results and recommendations to the City:
1. Import Soil: Submit test reports of representative sample(s) for approval prior to delivery and for every 100 yards delivered to the site. Test for agricultural suitability, fertility, particle size analysis; including recommendations for soil amendment, and fertilization during the maintenance period.
2. Compost technical data sheet including compost laboratory report.

H. Maintenance data: types, application frequency, and recommended coverage of fertilizer.

1.06 SOIL TESTING AND ANALYSIS

A. Existing site soil: Provide testing of existing site soil.

B. Contractor shall arrange and pay for soil testing of existing site soil.
   a. Testing Laboratory: Recognized laboratory for soil and plant disease analysis for ornamental horticulture. Testing laboratory is to perform all work in accordance with the current methods of the Association of Official Agricultural Chemists.
   b. Recommended laboratory: Waypoint Analytical, (408) 727-0330.

C. Imported topsoil: provide testing of proposed import material.
   1. Contractor shall arrange and pay for soil testing of imported topsoil.
      a. Testing Laboratory: Recognized laboratory for soil and plant disease analysis for ornamental horticulture. Testing laboratory is to perform all work in accordance with the current methods of the Association of Official Agricultural Chemists.
      b. Recommended laboratory: Waypoint Analytical, (408) 727-0330.
   2. Testing is not required if recent tests are available for imported topsoil. Submit these test results to the testing laboratory for approval. Indicate, by test results, information necessary to determine suitability.
   3. Import material that is unable to be sufficiently amended for horticultural suitability as described in these specifications will be rejected.
   4. Soil Analysis Requirements. For existing site soil and proposed imported material, analysis report shall include, at a minimum:
      a. Soil texture.
      b. Infiltration rate determined by laboratory test or soil texture infiltration rate table.
      c. pH.
      d. Total soluble salts.
      e. Sodium.
      f. Essential nutrients.
      g. Percent organic matter.
      h. Recommendations for amending the soil with compost to bring the soil organic matter to a minimum of 6% by dry weight and incorporating natural, non-synthetic fertilizers to recommended levels for planting area.

D. Existing site soil to receive planting, and proposed imported fill and topsoil shall be tested.

1.07 QUALITY ASSURANCE

A. Nursery Qualifications: Company specializing in growing and cultivating the plants with five years documented experience.

B. Installer Qualifications:
   1. Contractor specializing in installing and planting the plants with five years documented experience.
   2. Contractor must have a valid California C-27 Contractor's license.
   3. Contractor shall provide evidence of sufficient experience with similar projects (size and complexity) competed for public agencies:

a. At least five recently installed projects with location, date completed, owner, contact person and phone number.

1.08 MATERIALS AND SUPPLIES

A. Use local products and suppliers:
   1. All stone and non-hardscape material shall be produced within 200 miles of the project site, unless contractor provides documentation that material of an acceptable quality that meets the intent of the specifications and drawings cannot be sourced.
   2. The Contractor shall use local products and suppliers for all other landscape items to the extent possible.
   3. The Contractor is encouraged to suggest substitutions in favor of local materials where appropriate to be approved by Owner's Representative.

B. Use recycled and salvaged materials:
   1. The Contractor shall use salvaged and recycled-content products as specified and is encouraged to suggest substitutions in favor of recycled content or salvaged materials where appropriate to be approved by Owner's Representative.
   2. Materials for reuse may be found at the CalRecycle website, www.calrecycle.ca.gov, or at www.stopwaste.org.

1.09 REGULATORY REQUIREMENTS

A. Comply with regulatory agencies for fertilizer and herbicide composition.

B. Plant Materials: Certified by federal department of agriculture; free of disease or hazardous insects.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer. Store fertilizers and amendments, bark mulch, compost, soil mixes, and other materials which could stain concrete and similar surfaces in such a manner that staining does not occur.

B. Plants: Maintain all plant material in a healthy growing condition prior to and during planting operations. Protect plants at all times from sun and drying winds. Plants that cannot be planted immediately upon delivery shall be kept in the shade, well protected and watered. Plant material delivered to the site must be planted within 3 days of site delivery. Plants that cannot be installed on this work schedule shall be returned to the grower until installation requirements can be met.

1.11 SUBSTITUTIONS, ADDITIONS, DELETIONS

A. General: See requirements in Contract Documents.

B. The Architect reserves the right to substitute plant material of sizes equal to material specified, as the work progresses, at no additional cost to the City.

C. When requesting substitutions for plant material, the Contractor shall provide the Architect with the following:
   1. Contact information for nurseries Contractor was unable to obtain plant material. Minimum of three are required.
   2. Three (3) alternate plant suggestions as part of the initial request. Provide foliage/flower color, growth habit, and sunset zone of each.
   3. Substitution requests which do not include the above requirements will be denied until requirements have been met.

1.12 FIELD CONDITIONS

A. General: Become familiar with the anticipated growing conditions prior to commencement of work. Notify the Inspector immediately in writing of any conditions, which will prevent the proper execution of the warranty responsibilities specified. Failure to so notify the Inspector constitutes acceptance of the growing conditions. Any removal, repair or replacement of plant material required by unsuitable conditions found after work has begun shall be done at no additional cost to the City.

B. Do not install plant life when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.

C. Do not install plant life when wind velocity exceeds 30 mph.

1.13 WARRANTY

A. Plant Material: Warrant that all plants under this Contract will be vigorous, healthy, free of dead or dying branches and branch tips, bearing foliage of normal density and color, and will otherwise comply with the requirements of this Section, for a period of one year from date of Final Acceptance. Any delay in completion of planting operations which extends the planting into more than one growing season shall extend the warranty period correspondingly.

B. Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty commencing on date of replacement.

C. Replacements: Without cost to the City, in a timely manner and as directed by the Inspector, replace all plants not meeting the requirements above throughout the course of the warranty period. Replacements shall closely match adjacent specimens of the same species in size and shall comply with all requirements of this specification.

D. Species: Replace all plant material determined by the City within two years following the final acceptance of the project, to be untrue to the species, clone and/or variety specified, to the equal condition of adjacent plants at the time of replacement, at no additional cost to the City.

PART 2 PRODUCTS

2.01 PLANTS

A. Trees, Plants, and Ground Cover: Species and size identifiable in plant schedule, grown in climatic conditions similar to those in locality of the Work.
   1. Size:
      a. Plants shall conform to measurements specified. Measure plants when branches are in their normal position. Height and spread dimensions specified refer to the main body of plant and not branch tip to tip. Take caliper measurements at a point on the trunk 6 inches above natural ground line for trees up to 4 inches in caliper, and at a point 12 inches above the natural ground line for trees over 4 inches in caliper.
      b. The measurements specified are the measurements after pruning, where pruning is required. Plants that meet the measurements specified, but do not possess a normal balance between height, spread, and caliper, shall be rejected.
      c. Plants larger than specified may be used if approved by the City, and if provided at no additional cost to the City. If larger plants are approved, the root ball shall be increased in proportion to the size of the plant; irrigation system shall also be adjusted as required to accommodate larger plants.

B. Acclimatization: The General Contractor is responsible for supplying plant material that has been properly acclimated and conditioned, in accordance with good horticultural practices, for the exposure, wind and humidity levels, soil conditions, etc., encountered at the project site and in the proposed plant location.

C. Quality: Plants shall be superior in form, compactness and symmetry; sound, healthy and vigorous, well branched and densely foliated when in leaf; free of disease, insect pests, eggs or larvae, and free from physical damage or adverse conditions that would prevent thriving growth. The District or Landscape Architect reserves the right to reject any plant specimen that exhibits any or all of the following characteristics. Contractor shall replace rejected plant(s) promptly, at no additional cost to the Owner:
   1. Poor health or vigor.
   2. Broken or damaged leader.
   3. Unbalanced growth habit.
   4. Disproportionate height to width ratio based on particular species characteristics.
   5. Poor form.
   6. Damaged limbs.
   7. Evidence of disease or pathogens.
   8. Root bound.

D. Species: Tag one of each plant prior to delivery to the site; label with genus, species and variety. Any plants not so identified will be subject to rejection by the City. Plants may be cross referenced with nurseries invoice at the discretion of the Architect.

E. Root Ball:
   1. Do not supply any bare root or ball and burlapped stock unless approved by the City.
   2. Sizes: As specified on the plans. Where no root ball dimensions have been specified, supply material in container sizes specified.

3. Material: Root ball shall consist of a soil or soil mix that is compatible with the soil or soil mix into which the plant will be planted, and that provides for thorough drainage, aeration, and adequate moisture and nutrient retention. Having sufficient density and firmness that when planted, the plant will stand upright and stable without need for additional support.
4. Containers: All plant material shall have been grown in the containers in which delivered for at least six months, but not over two years. Stock appearing to not have been in their containers for this term shall be rejected.
5. Root Pruning: Where root pruning is required to provide material of the specified size, or for planting in the sloped containers, the pruning is to be done under the direction of a Certified Arborist. No root pruning is to be done within one year of installation unless approved by the City.

F. Trunks and Branches: Do not prune plants before delivery. All trunks are to be straight and of uniform taper, larger at the bottom unless otherwise specified. Plants with damaged or crooked leaders, or multiple leaders, unless specified, will be rejected. Plants with abrasions of the bark, sun scalds, disfiguring knots, or fresh cuts of limbs over 3/4 inch, which have not completely callused, will be rejected. Any plant unable to stand upright without support will be rejected.

2.02 SOIL MATERIALS

A. General:
1. All soils to be used in areas to be planted on the project shall be free of rocks over one inch in diameter, and free of foreign debris.
2. Soil shall be free from sub-base/aggregate, refuse, plants or roots, clods, weeds, viable weed seeds, sticks, solvents, petroleum products, concrete, base rock, or other deleterious or extraneous material.
3. Soil shall be free of soil-borne diseases, and capable of sustaining healthy plant life.

B. Imported Topsoil:
1. Topsoil shall be fertile, friable soil, sandy-loam as defined by the USDA. All imported topsoil used on the job shall be from the same source.
   a. Amend persuant to soil testing recommendations.
   b. Transport imported topsoil directly from source to final position. If stockpiling is required, locations and amounts of stockpiles will be designated by the City.
   c. The City reserves the right to take additional samples of imported topsoil at the site. If subsequent testing proves material to be at variance with the approved sample, remove rejected soil from the site and replace immediately at no additional cost to the City.

C. Existing On-Site Soils:
1. Existing topsoil, stockpiled from site clearing activities, amended with the following:

Amendment	**Amount per 1,000 square feet**
Blood Meal (12-0-0)	6 pounds
Feather Meal (12-0-0)	14 pounds
Oyster Shell Lime	65 pounds
Gypsum (Calcium Sulfate)	12 pounds
Compost	3 cubic yards

   a. For areas where California native plants are installed, omit the blood meal.

D. Backfill Mix: site soil uniformly blended with the following:

Amendment	Amount per Cubic Yard of Backfill
Blood Meal (12-0-0)	1/3 pound
Feather Meal (12-0-0)	3/4 pound
Oyster Shell Lime	3-1/2 pounds
Gypsum (Calcium Sulfate) Compost	2/3 pound 3 cubic yards

1. For areas where California native plants are installed, omit the blood meal.

2.03 FERTILIZERS

A. Fertilizers shall be non-synthetic, as recommended by the soils report.

B. Synthetic, quick-release fertilizers shall not be permitted.

C. Fertilizers prohibited in the Generic Materials List by the Organic materials Review Institute (OMRI) are prohibited in the project.

2.04 COMPOST

A. Well decomposed, stable and weed free.

B. Derived from one or more locally sourced organic materials, such as food waste or urban plant debris, agricultural crop residue, or herbivorous animal manures, with a preference for urban plant debris and food waste.

C. Shall not contain mixed solid waste.

D. Shall contain no substances toxic to plants.

E. Shall not possess objectionable odors.

F. Shall not resemble the feedstock or original material from which it was derived.

G. Shall be certified organic by the Organic Materials Review Institute (OMRI).

H. The following minimum specifications must be confirmed by the supplier:

Sodium (Na)	% dry weight	< 0.5
Total Nitrogen Phosphorus and Potassium (NPK)	Sum % dry weight	> 2.0
Carbon Nitrogen Ratio	Carbon:Nitrogen	≤ 25:1
Organic Matter Content	% by dry weight basis	> 35
pH	pH units	6.5 - 8.5
Moisture Content	% wet weight basis	> 35
Particle Size or Sieve Size	% under ½" or 25mm by dry weight	> 95%
Stability Indicator: Carbon Dioxide (C02) Evolution Rate	Mg CO2-C/g OM per day	< 8
Maturity Indicator: Cucumber Bioassay		
Seed Emergence	%, relative to control	> 80%
Seed Vigor	%, relative to control	> 80%
Select Pathogens		
Fecal Coliform Bacteria	MPN/gram dry weight	< 1,000
Salmonella	MPN/gram dry weight	< 3
Metals		
Arsenic	mg/kg (ppm)	< 16
Cadmium	mg/kg (ppm)	< 8
Chromium	mg/kg (ppm)	< 100
Copper	mg/kg (ppm)	< 400
Lead	mg/kg (ppm)	< 100
Mercury	mg/kg (ppm)	< 4
Nickel	mg/kg (ppm)	< 80
Selenium	mg/kg (ppm)	< 5
Zinc	mg/kg (ppm)	< 500
Physical Contaminants		
Glass	% dry weight	< 1
Plastic	% dry weight	< 1
Metal	% dry weight	< 1
Bulk Density	lbs/CY dry weight lbs/CF dry weight	< 19 and < 41 < 500 and < 1,100

I. All compost shall be obtained from the same source.

J. Recommended product: "Z-Best Organic Compost", produced by Zanker Recycling: www.zankerrecycling.com.

2.05 MULCH

A. Mulch shall meet one or more of the following requirements:
   1. Recycled from local, organic materials such as, tree trimmings, plant or clean wood waste.
   2. Provided by on-site chipping from removed trees.
   3. Comprised of other recycled mulch materials including engineered wood fiber, peach pits, grape seeds, tumbled pottery chips.

B. Mulch shall be free of growth or germination inhibiting ingredients.

C. Mulch shall have been baked to remove unwanted seed growth.

D. Mulch shall not be artificially colored.

E. Size: 1/2" - 1" chips.

F. Walk on bark, mini mulch, small bark, etc. Submit samples for approval.

2.06 HERBICIDES AND PESTICIDES

A. General: products shall be listed as allowed by OMRI in its generic materials list: www.omri.org.

B. Synthetic herbicides and pesticides are not permitted.

2.07 ACCESSORIES

A. Drain Rock: 3/4" diameter river rock or approved equal.

B. Soil Separator Fabric:
   1. "Mirafi 140N", as manufactured by Mirafi.
   2. "Trevira Spunbond 1120", as manufactured by Hoechst Fibers Industries.
   3. Approved equal.

C. Stakes: Softwood lumber, pointed end.
   1. Lodgepole stakes, length as required to meet dimensions required per plans.
      a. Container sizes up to 24-inch box: 2-inch diameter.
      b. Container sizes larger than 24-inch box: 3-inch diameter.

D. Trunk Protectors: 'ArborGard+' Tree Trunk Protector: www.benmeadows.com.

E. Root Control Barrier: "Deep Root Control Barrier", Type UB24-2: www.deeproot.com.

PART 3 EXECUTION

3.01 ORDERING, REVIEW AND ACCEPTANCE OF PLANT MATERIAL

A. Ordering:

1. Within 30 calendar days after award of contract, submit written certification to the City of the quantity and species of plant material ordered, and the nursery(s) supplying the material.
2. The Contractor is responsible for providing all plant material in the quantities and sizes specified on the drawings, and for making all arrangements in advance that may be required to obtain these materials. If any material specified will be unavailable at the time of planting, submit written verification to the City along with the bid.

B. Review of Plant Material: Before planting operations begin, all plant materials shall be reviewed for conformance to the design intent of the Contract Documents by the City. Submit written request for review of plant material at least 10 days prior to commencement of planting operations. Review by the City does not waive the right of rejection during planting or any time thereafter.

C. Rejection of Material: The City reserves the right to review and reject plant material at any time, and at the place of growth, for nonconformance to the Specifications. Do not install plant material, which has not been reviewed at the project site by the City.

3.02 EXAMINATION

A. Verify that prepared subsoil and planters are ready to receive work.

B. Saturate soil with water to test drainage.

C. Verify that irrigation system is installed and fully operational.

D. Verify that required underground utilities are available, in proper location, and ready for use.

3.03 GRADING

A. General: All areas to be planted on the project shall be free of rocks over one inch in diameter to a depth of 8” minimum below finish grade, and free of foreign debris, subsoil, refuse, plants or roots, clods, weeds, sticks, solvents, petroleum products, concrete, base rock, or other deleterious or extraneous material. Areas to be planted shall be free of soil-borne diseases and capable of sustaining healthy plant life. Do all work necessary to bring site soil, import soil and planter backfill to compliance with these requirements. Remove from the project site and dispose of in a legal manner any soils and material not meeting these requirements. Subject to acceptance of the City, all soil and material not meeting these requirements shall be the property of the Contractor.
   1. Surface Drainage: Contractor is responsible for proper surface drainage of planted areas. Report in writing to the City any discrepancies in the Contract Documents, obstructions on the site, or any other conditions, which the Contractor feels prevent establishing proper drainage, and obtain the Inspector's instructions prior to proceeding with the work affected.
   2. Final Contouring:
      a. Handle and place the soil to depths required. Remove all rocks and clods over one inch in diameter. Provide for surface drainage and cut all necessary drain swales.
      b. Work soil sufficiently so that after rolling and after full settlement has occurred, the site will be graded to within ±0.10 of a foot from the lines, grades and elevations shown, and as may be directed by the Inspector. Finished surface shall be smooth and

uniform and shall be free of depressions that retain standing water or any surface irregularities that would impede proper drainage. Unless otherwise noted, all soil finish grades shall be 1-1/2 inches below finish grade of adjacent walks, pavements and curbs, and top of wall elevations.

3. Erosion Repair: Repair all erosion damage that occurs until Final Acceptance. Take all measures necessary to prevent erosion occurring during work under this Section. Provide and amend replacement soil in accordance with this Section.

3.04 PREPARATION OF SUBSOIL

A. Loosen top 10 inches of undisturbed and compacted soil.

B. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

C. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated subsoil.

3.05 PLACING TOPSOIL

A. Spread topsoil to a minimum depth of 6 inches over area to be planted. Rake smooth.

B. Amend top 6 inches of soil with amendments indicated in Part 2 herein.
   1. Thoroughly blend to form an homogenous layer.

C. Place topsoil during dry weather and on dry unfrozen subgrade.

D. Remove vegetable matter and foreign non-organic material from topsoil while spreading.

E. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.

F. Place topsoil mix to the depths specified to obtain finish grades shown on the drawings. Soil mix shall be handled in a manner so as to prevent segregation of ingredients. Thoroughly water planter backfill mix after placement to compact and settle mix.

3.06 FERTILIZING

A. Apply fertilizer in accordance with recommendations of soil analysis.

B. Apply after initial raking of topsoil.

C. Mix thoroughly into upper 2 inches of topsoil.

D. Lightly water to aid the dissipation of fertilizer.

3.07 EXCAVATION OF PLANTING PITS ON-GRADE

A. General: Excavate plant pits by hand or with a backhoe; use of augers will not be permitted. Prior to planting and backfill, scarify the sides and bottom of the pit as required to eliminate any glazed surfaces. Excavate container-grown tree, shrub, and vine holes to the following

dimensions:

1. 1, 5, and 15 gallon containers: Two times the size of the root ball in width and depth.
2. 24-inch boxes and larger: Large enough to allow one foot of space around the ball in all directions.
3. Holes on mounds: Dig plant holes on mounds deeper than normal.
4. Excess Soil: Transport and dispose of off-site in a legal manner any excess excavated soil.
5. Obstructions: If rocks, underground construction work, tree roots or other unknown obstructions are encountered in the excavation of plant holes, alternate locations may be selected by City. Report all such conditions in writing to the City. If a change in the location of the planting pit is unacceptable to the City, the original planting pit shall be over-excavated to remove the obstructions to a minimum dimension of 12" beyond the sides and bottom of the tree pit as typically specified. Obtain the City's instructions prior to proceeding with the work affected.

3.08 DETRIMENTAL SOILS AND DRAINAGE

A. General: Prior to planting, test drain all planting areas as follows:
   1. On-Grade Plant Pits: Fill with 12 inches of water. Water should drain completely in 48 hours.
   2. Plant Beds: Irrigate until soil is saturated. Saturated condition should not remain after 24 hours.

B. Drainage Chimneys:
   1. General: For plant pits failing the initial drainage test, provide drainage chimneys as shown on the drawings and as directed by the City.
   2. Neatly auger drainage chimneys to a depth directed by the City. Remove loose soil from hole and plant pit. Locate chimneys at perimeter of plant pit. Repeat test for proper drainage.
   3. Once required drainage test has been passed, backfill chimneys with drain rock, flush with bottom of pit. Cover chimneys with soil separator.

C. Failure of Drainage Test: report in writing to the City all areas not passing these tests and all soil conditions that the Contractor considers detrimental to growth of plant material. State condition and proposal and cost estimate for correcting the condition. Obtain the City's instructions prior to proceeding with the work affected. Repeat drainage testing and correction of conditions in this manner as necessary until tests are passed. Failure to perform drainage tests and/or to notify the City in writing of the conditions specified above renders the Contractor responsible for all plant failure that occurs as a result of inadequate drainage or detrimental soil conditions, as determined by the City.

3.09 PLANTING

A. General: Do not plant any material that has not been reviewed by the Inspector upon delivery to the project site or that has been rejected for any reason. Do not plant under unfavorable weather conditions.

B. Place plants for best appearance.

C. Set plants vertical.

D. Remove non-biodegradable root containers. After removing plants from their containers, disentangle any small roots that encircle the container. Do not cut or otherwise disturb the root ball. Inspect all plants for rootbound condition; do not install rootbound plants or plants found to have cracked or broken root balls when taken from the container.

E. Care should be exercised to prevent damage or breakage to limbs, and ropes or other lines should not be allowed to damage bark.
   1. Container Stock:
      a. General: Do not lift or handle container plants by tops, stems, or trunks at any time.
      b. Boxed Stock: Remove bottom of box prior to placement of plant in planting pit. Cut bands and remove box sides just prior to backfilling.
      c. Canned Stock: Remove canned stock carefully after cans have been cut on two sides with acceptable cutter. Do not use spade to cut cans.
      d. Ball and Burlap Stock: Dig ball and burlap (B & B) plants with firm balls of earth of diameter not less than that recommended by the American Standard for Nursery Stock, and of sufficient depth to include the fibrous and feeder roots. Plants moved with ball will not be accepted if the ball is cracked or broken before or during planting operations.

F. Set plants in pits or beds, partly filled with prepared plant mix, at a minimum depth of 6 inches under each plant. Remove burlap, ropes, and wires, from the root ball.

G. Saturate soil with water when the pit or bed is half full of topsoil and again when full.

H. Top-dress Fertilizing On-Grade: When plant installation is complete, fertilize all planting areas (excluding lawn areas) with organic top-dress fertilizer at the rate of 4 lbs. per 100 square feet.

I. Anti-Desiccant: At Contractor's option, spray all evergreen and deciduous plant material in full leaf with anti-desiccant, in accordance with manufacturer's instructions. Apply an adequate film over trunks, branches, twigs and foliage. Take precautions as necessary to prevent damage, particularly from sun scald.

J. Mulching: Install a 3-inch deep layer of mulch in all planting areas, excluding lawn areas. Spread mulch uniformly to form a smooth cover free of bare spots and mounds.
   1. Mulch is in addition to compost layer.
   2. Settlement: As shown on the drawings, the crowns of all plants shall be at least 1/2 inch above the surrounding grade after all settlement has occurred.
   3. Watering Basins On-Grade: Form a watering basin, an excavated ring around the root ball of the plant for each tree and shrub. Do not form watering basins in lawn areas.

3.10 GROUND COVER PLANTING

A. Planting: Plant ground cover plants through wood bark mulch at the specified triangular spacings. Make planting hole with a hand mattock avoiding mixing surface applied herbicide into planting hole.

3.11 LAYOUT OF PLANT MATERIAL

A. General: The City will review for conformance to the design intent of the Contract Documents locations of all plants in the field prior to planting. Notify the City and schedule layout review sufficiently in advance of planting to allow for review and adjustment without disrupting construction schedule.

B. Adjustments: The City reserves the right to make minor adjustments in the layout of all plant material; adjust irrigation system as necessary.

3.12 INSTALLATION OF ACCESSORIES

A. Install trunk protectors on all new trees located in turf areas.

3.13 PLANT SUPPORT

A. General: Complete staking and guying immediately after planting. Perform in accordance with reference standards, unless otherwise shown on the drawings or directed by the City. Securely stake or guy all trees planted on the site using staking or guying type shown on the drawings. The City reserves the right to make modifications to staking and guying procedures as required to accommodate field conditions at no additional cost to the City.
   1. Staking: Stake trees with one as shown on the drawings.

3.14 PRUNING

A. Prune plants only at the direction of the City and according to reference standards to preserve the natural character of the plant. Remove all dead wood, suckers and broken or badly bruised branches. Remove sucker basal and lateral growth to prevent resprouting; retain normal side branching. Use only disinfected, sharp tools. Improperly pruned trees will be subject to rejection by the City. Apply tree seal to cuts over one inch diameter in accordance with manufacturer's instructions.

B. Prune trees as recommended in ANSI A300 Part 1.

C. Prune newly planted trees as required to remove dead, broken, and split branches.

3.15 FIELD QUALITY CONTROL

A. Plants will be rejected if a ball of earth surrounding roots has been disturbed or damaged prior to or during planting.

B. Deficient Soils: Remove all soils determined by the City to be deficient and provide all additional amendments as directed to modify deficient soils at no additional cost to the City.

3.16 MAINTENANCE

A. See Section 32 0190 - Operation and Maintenance of Planting for post-occupancy maintenance.

3.17 CLEANUP

A. Sweep site clean of all excess materials used in these operations. Excess soils shall be swept up and removed off site. Do not wash excess materials into adjacent drainage facilities.

END OF SECTION 32 9300

Section 33 0110.58
Disinfection of Water Utility Piping Systems

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Disinfection of site domestic water lines specified in Section 33 1416.

1.02 REFERENCE STANDARDS

A. AWWA B300 - Hypochlorites; 2018.

B. AWWA B301 - Liquid Chlorine; 2018.

C. AWWA B302 - Ammonium Sulfate; 2016.

D. AWWA B303 - Sodium Chlorite; 2018.

E. AWWA C651 - Disinfecting Water Mains; 2014, with Addendum (2020).

1.03 SUBMITTALS

A. See Section 01 3300 - Administrative Requirements, for submittal procedures.

B. Test Reports: Indicate results comparative to specified requirements.

C. Certificate: Certify that cleanliness of water distribution system meets or exceeds specified requirements.

D. Disinfection report:
1. Type and form of disinfectant used.
2. Date and time of disinfectant injection start and time of completion.
3. Test locations.
4. Initial and 24 hour disinfectant residuals (quantity in treated water) in ppm for each outlet tested.
5. Date and time of flushing start and completion.
6. Disinfectant residual after flushing in ppm for each outlet tested.

1.04 QUALITY ASSURANCE

A. Water Treatment Firm: Company specializing in disinfecting potable water systems specified in this Section with minimum three years documented experience.

B. Testing Firm: Company specializing in testing potable water systems, certified by governing authorities of California.

PART 2 EXECUTION

2.01 EXAMINATION

A. Verify that piping system has been cleaned, inspected , and pressure tested.

B. Schedule disinfecting activity to coordinate with start-up, testing, adjusting and balancing, demonstration procedures, including related systems.

2.02 DISINFECTION

A. Use method prescribed by the applicable state or local codes, or health authority or water purveyor having jurisdiction, or in the absence of any of these follow AWWA C651.

B. Provide and attach equipment required to perform the work.

C. Inject treatment disinfectant into piping system.

D. Maintain disinfectant in system for 24 hours.

E. Flush, circulate, and clean until required cleanliness is achieved; use municipal domestic water.

F. Replace permanent system devices removed for disinfection.

END OF SECTION 33 0110.58

Section 33 1416
Site Water Utility Distribution Piping

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water pipe for site conveyance lines.

B. Pipe valves.

C. Pipe and fittings for site water lines inculding domestic water lines.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Concrete for thrust restraints.

B. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

C. Section 33 0110.58 - Disinfection of Water Utility Piping Systems: Disinfection of site service utility water piping.

1.03 REFERENCE STANDARDS

A. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2021a.

B. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40; 2021.

C. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80; 2020.

D. ASTM D2855 - Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets; 2020.

E. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes using Flexible Elastomeric Seals; 2019.

F. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service; 2019.

G. AWWA C504 - Rubber-Seated Butterfly Valves; 2015.

H. AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service; 2015.

I. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. through 60 In. (100 mm through 1500 mm); 2022.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with requirements, standard specifications, and standard drawings approved by the City of San Mateo.

PART 2 PRODUCTS

2.01 WATER PIPE

A. PVC Pipe: ASTM D1785 Schedule 80.
   1. Fittings: ASTM D2466, PVC.
   2. Joints: ASTM D2855, solvent weld.

B. PVC Pipe: AWWA C900 Class 100:
   1. Fittings: AWWA C111/A21.11, schedule 80 per ASTM D2467.
   2. Joints: ASTM D3139 compression gasket ring.

C. Trace Wire: Magnetic detectable conductor, clear plastic covering, imprinted with "Water Service" in large letters.

2.02 VALVES

A. Valves: Manufacturer's name and pressure rating marked on valve body.

B. Ball Valves Up To 2 Inches:
   1. Brass body, Teflon coated brass ball, rubber seats and stem seals, Tee stem pre-drilled for control rod, AWWA inlet end, compression outlet with electrical ground connector, with control rod, valve key, and extension box.

2.03 BEDDING AND COVER MATERIALS

A. As specified and shown on the plans.

2.04 ACCESSORIES

A. Concrete for Thrust Restraints: Concrete type specified in Section 03 3000.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building service connection and municipal utility water main size, location, and invert are as indicated.

3.02 TRENCHING

A. See the sections on excavation and fill for additional requirements.

B. Hand trim excavation for accurate placement of pipe to elevations indicated.

C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.03 INSTALLATION - PIPE

A. Maintain separation of water main from sewer piping in accordance with City code.

B. Route pipe in straight line.

C. Install pipe to allow for expansion and contraction without stressing pipe or joints.

D. Install trace wire 6 inches above top of pipe; coordinate with Section 31 2316.13.

3.04 INSTALLATION - VALVES AND HYDRANTS

A. Set valves on solid bearing soil.

B. Center and plumb valve box over valve. Set box cover flush with finished grade.

3.05 SERVICE CONNECTIONS

A. Coordinate Service connection with City and water service provider.

3.06 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with Division 01 General Requirements.

B. Disinfection:

1. Disinfect per Section 33 0110.58 - Disinfection of Water Utility Piping Systems.

END OF SECTION 33 1416

Section 33 3113
Site Sanitary Sewerage Gravity Piping

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sanitary sewerage drainage piping, fittings, and accessories.

B. Connection of sanitary system to municipal sewers.

C. Connection of restroom sewer plumbing to sanitary sewer system.

D. Connection of drinking fountain to sanitary sewer system.

E. Cleanout access.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Concrete for cleanout base pad construction.

B. Section 31 2316 - Excavation: Excavating of trenches.

C. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

D. Section 31 2323 - Fill: Bedding and backfilling.

1.03 REFERENCE STANDARDS

A. ASTM C425 - Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings; 2022.

B. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2021a.

C. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2021.

D. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2021.

1.04 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.

B. Product Data: Provide data indicating pipe, and pipe accessories.

C. Project Record Documents:
   1. Record location of pipe runs, connections, manholes, cleanouts, and invert elevations.
   2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

PART 2 PRODUCTS

2.01 SEWER PIPE MATERIALS

A. Provide products that comply with applicable code(s).

B. Plastic Pipe: ASTM D3034, Type PSM, Poly(Vinyl Chloride) (PVC) material; inside nominal diameter of what is shown on plans, bell and spigot style solvent sealed joint end.

C. Use extra strength, minimum of SDR 35.

D. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

2.02 PIPE ACCESSORIES

A. Trace Wire: Magnetic detectable conductor, clear plastic covering, imprinted with "Sewer Service" in large letters.

2.03 CLEANOUT MANHOLE

A. Lid and Frame: Cast iron construction, hinged lid.

B. Base Pad: Cast-in-place concrete of type specified in Section 03 3000, levelled top surface to receive concrete shaft sections, sleeved to receive sanitary sewer pipe sections.

2.04 BEDDING AND COVER MATERIALS

A. As specified and shown on plans.

PART 3 EXECUTION

3.01 GENERAL

A. Perform work in accordance with City Standards

B. Perform work in accordance with Caltrans Standard Specifications and Standard Plans for portion of work within Caltrans ROW.

3.02 TRENCHING

A. See Section 31 2316.13 for additional requirements.

B. Hand trim excavation for accurate placement of pipe to elevations indicated.

C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.03 INSTALLATION - PIPE

A. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.

B. Install pipe, fittings, and accessories in accordance with manufacturer's instructions. Seal watertight.
   1. Plastic Pipe: Also comply with ASTM D2321.

C. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet.

D. Connect to municipal sewer system .

E. Install trace wire 6 inches above top of pipe; coordinate with Section 31 2316.13.

3.04 INSTALLATION - CLEANOUTS

A. Form bottom of excavation clean and smooth to correct elevation.

B. Form and place cast-in-place concrete base pad, with provision for sanitary sewer pipe end sections.

C. Establish elevations and pipe inverts for inlets and outlets as indicated on plans.

D. Mount lid and frame level in grout, secured to top cone section to elevation indicated.

3.05 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with Division 01 General Requirements.

B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to City.

3.06 PROTECTION

A. Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 33 3113

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Section 33 4211
Stormwater Gravity Piping

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Stormwater drainage piping.

B. Stormwater pipe accessories.

C. Dry Wells.

1.02 RELATED REQUIREMENTS

A. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

B. Section 31 2323 - Fill: Bedding and backfilling.

1.03 REFERENCE STANDARDS

A. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2021a.

B. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications; 2020.

C. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2021.

D. ASTM D2321 - Standard practice for underground installation.

E. ASTM D3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials; 2021.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Division 01 - General Requirements – Administrative Requirements.

B. Product Data: Provide data indicating area drains, inline drains, grates, pipe and pipe accessories.

C. Project Record Documents:
   1. Record location of pipe runs, connections and invert elevations.

PART 2 PRODUCTS

2.01 STORM WATER DRAINAGE PIPE MATERIALS

A. Provide pipe and associated materials of the size indicated on the Drawings and meeting the following requirements.
   1. High Density Polyethylene Pipe (HDPE):
      a. Acceptable products:
         1) "Hi-Q" High Density Polyethylene storm drain and fittings, manufactured by Hancor, Inc., P.O. Box 1047, Findlay, OH 45839. Phone: (800)892-3351
         2) "N-12" High Density Polyethylene storm drain and fittings, manufactured by Advanced Drainage Systems, 4640 Trueman Boulevard, Hillard, OH 43026. Phone: (800) 821-6710, Fax: (614) 658-0204.
         3) City-approved equivalent.

B. Plastic Pipe: ASTM D1785, Schedule 80, Poly Vinyl Chloride (PVC) material; inside nominal diameter of 6 to 12 inches, bell and spigot style solvent sealed joint end.

C. Plastic Pipe: ASTM D3350, SDR 26; High Density Polyethylene (HDPE) solid wall pipe; inside nominal diameter of 6 inch, with cell classification of 335434C or better, thermal butt fusion joints in accordance with manufacturer's recommendations.

D. Smooth Polyvinyl Chloride Pipe (PVC) and fittings: Shall be polyvinyl chloride pipe, SDR 26 Spigot, Type I P.V.C. 1120, NSF approved. Comply with ASTM D3034.

E. Unless otherwise noted, Contractor has option of using either HDPE or PVC pipe as specified.

2.02 PIPE ACCESSORIES

A. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

B. Trace Wire: Magnetic detectable conductor, clear plastic covering, imprinted with "Stormwater Service" in large letters.

2.03 DRY WELL

A. General:
   1. Install prefabricated dry well with precast reinforce concrete, complete with metal frames and covers or gratings. Prefabricated structures shown on the plans and approved by the engineer.

B. Materials:
   1. Frames and covers or gratings:
      a. Provide traffic-rated grate from same manufacturer as prefabricated dry well.
      b. Lockable
   2. Precast concrete dry well:
      a. Contractor may select this option in lieu of cast-in-place concrete catch basins.

1) Acceptable products:
   (a) Manufactured by Christy, 44100 Christy Street, Fremont, CA 94538. Phone: (800) 486-7070, Fax: (510) 490-6804.
   (b) Manufactured by Central Precast Concrete Inc., 471 West College Avenue, Santa Rosa, CA 95401. Phone: (707) 546-5016, Fax: (707) 571-7768.
   (c) Manufactured by Brooks Products, 1850 Parco Avenue, Ontario, CA 91761. Phone: (888) 307-7470, Fax: (909) 947-7741.
   (d) City-approved equivalent.

2.04 BEDDING AND COVER MATERIALS

A. As specified and shown on plans.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed.

B. Correct conditions detrimental to timely and proper completion of the work.

C. Do not proceed until unsatisfactory conditions are corrected.

3.02 TRENCHING

A. See Section 31 2316.13 for additional requirements.

B. Hand trim excavation for accurate placement of pipe to elevations indicated.

C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.03 INSTALLATION

A. General:
   1. Carefully examine each pipe prior to placing.
      a. Promptly set aside defective pipe and damaged pipe.
      b. Clearly identify defects.
      c. Do not install defective pipe or damaged pipe.
   2. Place pipe to the grades and alignment indicated, with a tolerance of one in 1000 vertical and one in 500 horizontal, unless otherwise directed by the Architect.
   3. Provide adequate facilities for lowering pipe safely into the trenches.
   4. Do not place pipe in water, nor place pipe when trench or weather is unsuitable for such work.

B. High Density Polyethylene: Installation shall be in accordance with ASTM D2321 and as recommended by the pipe manufacturer. Backfill shall be ASTM D2321 Class I, II, or III soils, or USCS material corresponding to these ASTM designations. Backfill material shall be placed in 6-inch lifts and compacted to 90 percent minimum density per AASHTO T99.

C. Install pipe, fittings, and accessories in accordance with manufacturer's instructions. Seal watertight.
   1. Plastic Pipe: Also comply with ASTM D2321.

D. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet.

E. Install trace wire 6 inches above top of pipe; coordinate with Section 31 2316.13.

F. Use water tight seals, including at pipe to structure connections

G. Install dry well, grate, extensions, and all related appurtenances per manufacturer's instructions

3.04 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with Division 01 - General Requirements.

B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to City.

3.05 PROTECTION

A. Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 33 4211