

ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer and Landscape Architect:

Vicki Estrada

1) Landscape Architect

10/16/2018

Date

Seal:



- *Samir M*

2) For City Engineer

10/04/2018

Date

Seal:



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NOTICE INVITING BIDS

1. **SUMMARY OF WORK:** This is the City of San Diego's (City) solicitation process to acquire Construction services for **Chollas Community Park Comfort Station**. For additional information refer to Attachment **A**.
2. **FULL AND OPEN COMPETITION:** This contract is open to full competition and may be bid on by Contractors who are on the City's current Prequalified Contractors' List. For information regarding the Contractors Prequalified list visit the City's web site: <http://www.sandiego.gov>.
3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$2,470,000**.
4. **BID DUE DATE AND TIME ARE: NOVEMBER 27, 2018, at 2:00 PM.**
5. **PREVAILING WAGE RATES APPLY TO THIS CONTRACT:** Refer to Attachment D.
6. **LICENSE REQUIREMENT:** To be eligible for award of this contract, Prime contractor must possess the following licensing classification: **A**.
7. **SUBCONTRACTING PARTICIPATION PERCENTAGES:** Subcontracting participation percentages apply to this contract.
 - 7.1. The City has incorporated **mandatory** SLBE-ELBE subcontractor participation percentages to enhance competition and maximize subcontracting opportunities. For the purpose of achieving the mandatory subcontractor participation percentages, a recommended breakdown of the SLBE and ELBE subcontractor participation percentages based upon certified SLBE and ELBE firms has also been provided to achieve the mandatory subcontractor participation percentages:

| | |
|----------------------------------|--------------|
| 1. SLBE participation | 6.2% |
| 2. ELBE participation | 7.6% |
| 3. Total mandatory participation | 13.8% |
 - 7.2. The Bid may be declared non-responsive if the Bidder fails meet the following requirements:
 - 7.2.1. Include SLBE-ELBE certified subcontractors at the overall mandatory participation percentage identified in this document; **OR**
 - 7.2.2. Submit Good Faith Effort documentation, saved in searchable Portable Document Format (PDF) and stored on Compact Disc (CD) or Digital Video Disc (DVD), demonstrating the Bidder made a good faith effort to outreach to and include SLBE-ELBE Subcontractors required in this document within 3 Working Days of the Bid opening if the overall mandatory participation percentage is not met.

8. AWARD PROCESS:

- 8.1. The Award of this contract is contingent upon the Contractor's compliance with all conditions of Award as stated within these documents and within the Notice of Intent to Award.
- 8.2. Upon acceptance of bids and determination of the apparent low bidder, the City will prepare the contract documents for execution within approximately 21 days of the date of the bid opening. The City will then award the contract upon receipt of properly signed Contract, bonds, and insurance documents.
- 8.3. This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form by the City Attorney's Office.
- 8.4. The low Bid will be determined by the Base Bid alone.
- 8.5. Once the low bid has been determined, the City may, at its sole discretion, award the contract for the Base Bid alone.

9. SUBMISSION OF QUESTIONS:

- 9.1. The Director (or Designee) of the Public Works Department is the officer responsible for opening, examining, and evaluating the competitive Bids submitted to the City for the acquisition, construction and completion of any public improvement except when otherwise set forth in these documents. Any questions related to this solicitation shall be submitted to:

Public Works Contracts
525 B Street, Suite 750, (7th Floor)
San Diego, California, 92101
Attention: Angelica Gil - Contract Specialist

OR:

AngelicaG@sandiego.gov

- 9.2. Questions received less than 14 days prior to the date for opening of Bids may not be considered.
- 9.3. Questions or clarifications deemed by the City to be material shall be answered via issuance of an addendum and posted to the City's online bidding service.
- 9.4. Only questions answered by formal written addenda shall be binding. Oral and other interpretations or clarifications shall be without legal effect. It is the Bidder's responsibility to be informed of any addenda that have been issued and to include all such information in its Bid.

INSTRUCTIONS TO BIDDERS

1. PREQUALIFICATION OF CONTRACTORS:

- 1.1. Contractors submitting a Bid must be pre-qualified for the total amount proposed, including all alternate items, prior to the date of submittal. Bids from contractors who have not been pre-qualified as applicable and Bids that exceed the maximum dollar amount at which contractors are pre-qualified may be deemed **non-responsive** and ineligible for award.
- 1.2. The completed application must be submitted online no later than 2 weeks prior to the bid opening.
- 1.3. **Joint Venture Bidders Cumulative Maximum Bidding Capacity:** For projects with an engineer's estimate of \$30,000,000 or greater, Joint Ventures submitting bids may be deemed responsive and eligible for award if the cumulative maximum bidding capacity of the individual Joint Venture entities is equal to or greater than the total amount proposed.
 - 1.3.1. Each of the entities of the Joint Venture must have been previously prequalified at a minimum of \$15,000,000.
 - 1.3.2. Bids submitted with a total amount proposed of less than \$30,000,000 are not eligible for Cumulative Maximum Bidding Capacity prequalification. To be eligible for award in this scenario, the Joint Venture itself or at least one of the Joint Venture entities must have been prequalified for the total amount proposed.
 - 1.3.3. Bids submitted by Joint Ventures with a total amount proposed of \$30,000,000 or greater on a project with an engineer's estimate of less than \$30,000,000 are not eligible for Cumulative Maximum Bidding Capacity prequalification.
 - 1.3.4. The Joint Venture designated as the Apparent Low Bidder shall provide evidence of its corporate existence and furnish good and approved bonds in the name of the Joint Venture within 14 Calendar Days of receipt by the Bidder of a form of contract for execution.
- 1.4. Complete information and links to the on-line prequalification application are available at:

<http://www.sandiego.gov/cip/bidopps/prequalification.shtml>
- 1.5. Due to the City's responsibility to protect the confidentiality of the contractors' information, City staff will not be able to provide information regarding contractors' prequalification status over the telephone. Contractors may access real-time information about their prequalification status via their vendor profile on [PlanetBids™](#).

2. **ELECTRONIC FORMAT RECEIPT AND OPENING OF BIDS:** Bids will be received in electronic format (eBids) EXCLUSIVELY at the City of San Diego's electronic bidding (eBidding) site, at: <http://www.sandiego.gov/cip/bidopps/index.shtml> and are due by the date, and time shown on the cover of this solicitation.
- 2.1. **BIDDERS MUST BE PRE-REGISTERED** with the City's bidding system and possess a system-assigned Digital ID in order to submit an electronic bid.
- 2.2. The City's bidding system will automatically track information submitted to the site including IP addresses, browsers being used and the URLs from which information was submitted. In addition, the City's bidding system will keep a history of every login instance including the time of login, and other information about the user's computer configuration such as the operating system, browser type, version, and more. Because of these security features, Contractors who disable their browsers' cookies will not be able to log in and use the City's bidding system.
- 2.3. The City's electronic bidding system is responsible for bid tabulations. Upon the bidder's or proposer's entry of their bid, the system will ensure that all required fields are entered. **The system will not accept a bid for which any required information is missing.** This includes all necessary pricing, subcontractor listing(s) and any other essential documentation and supporting materials and forms requested or contained in these solicitation documents.
- 2.4. **BIDS REMAIN SEALED UNTIL BID DEADLINE.** eBids are transmitted into the City's bidding system via hypertext transfer protocol secure (https) mechanism using SSL 128-256 bit security certificates issued from Verisign/Thawte which encrypts data being transferred from client to server. Bids submitted prior to the "Bid Due Date and Time" are not available for review by anyone other than the submitter who has until the "Bid Due Date and Time" to change, rescind or retrieve its proposal should it desire to do so.
- 2.5. **BIDS MUST BE SUBMITTED BY BID DUE DATE AND TIME.** Once the bid deadline is reached, no further submissions are accepted into the system. Once the Bid Due Date and Time has lapsed, bidders, proposers, the general public, and City staff are able to immediately see the results on line. City staff may then begin reviewing the submissions for responsiveness, EOCP compliance and other issues. The City may require any Bidder to furnish statement of experience, financial responsibility, technical ability, equipment, and references.
- 2.6. **RECAPITULATION OF THE WORK.** Bids shall not contain any recapitulation of the Work. Conditional Bids may be rejected as being non-responsive. Alternative proposals will not be considered unless called for.

2.7. BIDS MAY BE WITHDRAWN by the Bidder only up to the bid due date and time.

2.7.1. Important Note: Submission of the electronic bid into the system may not be instantaneous. Due to the speed and capabilities of the user's internet service provider (ISP), bandwidth, computer hardware and other variables, it may take time for the bidder's submission to upload and be received by the City's eBidding system. It is the bidder's sole responsibility to ensure their bids are received on time by the City's eBidding system. The City of San Diego is not responsible for bids that do not arrive by the required date and time.

2.8. ACCESSIBILITY AND AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE: To request a copy of this solicitation in an alternative format, contact the Public Works Contract Specialist listed on the cover of this solicitation at least five (5) working days prior to the Bid/Proposal due date to ensure availability.

3. ELECTRONIC BID SUBMISSIONS CARRY FULL FORCE AND EFFECT

3.1. The bidder, by submitting its electronic bid, acknowledges that doing so carries the same force and full legal effect as a paper submission with a longhand (wet) signature.

3.2. By submitting an electronic bid, the bidder certifies that the bidder has thoroughly examined and understands the entire Contract Documents (which consist of the plans and specifications, drawings, forms, affidavits and the solicitation documents), and that by submitting the eBid as its bid proposal, the bidder acknowledges, agrees to and is bound by the entire Contract Documents, including any addenda issued thereto, and incorporated by reference in the Contract Documents.

3.3. The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certification, forms and affidavits submitted as part of this bid are true and correct.

3.4. The Bidder agrees to the construction of the project as described in Attachment "A-Scope of Work" for the City of San Diego, in accordance with the requirements set forth herein for the electronically submitted prices. The Bidder guarantees the Contract Price for a period of 120 days from the date of Bid opening. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent.

4. BIDS ARE PUBLIC RECORDS: Upon receipt by the City, Bids shall become public records subject to public disclosure. It is the responsibility of the respondent to clearly identify any confidential, proprietary, trade secret or otherwise legally privileged information contained within the Bid. General references to sections of the California Public Records Act (PRA) will not suffice. If the Contractor does not provide applicable case law that clearly establishes that the requested information is exempt from the disclosure requirements of the PRA, the City shall be free to release the information when required in accordance with the PRA, pursuant

to any other applicable law, or by order of any court or government agency, and the Contractor will hold the City harmless for release of this information.

5. CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM:

5.1. **Prior** to the Award of the Contract or Task Order, you and your Subcontractors and Suppliers must register with the City's web-based vendor registration and bid management system. For additional information go to:

<http://www.sandiego.gov/purchasing/bids-contracts/vendorreg.shtml>.

5.2. The City may not award the contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified in the Notice of Intent to Award letter, the City reserves the right to rescind the Notice of Award / Intent to Award and to make the award to the next responsive and responsible bidder / proposer.

6. JOINT VENTURE CONTRACTORS: Provide a copy of the Joint Venture agreement and the Joint Venture license to the City within 14 Calendar Days after receiving the Contract forms.

7. INSURANCE REQUIREMENTS:

7.1. All certificates of insurance and endorsements required by the contract are to be provided upon issuance of the City's Notice of Intent to Award letter.

7.2. Refer to sections 7-3, "LIABILITY INSURANCE", and 7-4, "WORKERS' COMPENSATION INSURANCE" of the Supplementary Special Provisions (SSP) for the insurance requirements which must be met.

8. REFERENCE STANDARDS: Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

| Title | Edition | Document Number |
|--|---------|-----------------|
| Standard Specifications for Public Works Construction ("The GREENBOOK") http://www.greenbookspecs.org/ | 2015 | PWPI070116-01 |
| City of San Diego Standard Specifications for Public Works Construction ("The WHITEBOOK")* https://www.sandiego.gov/publicworks/edocref/greenbook | 2015 | PWPI070116-02 |
| City of San Diego Standard Drawings* https://www.sandiego.gov/publicworks/edocref/standarddraw | 2016 | PWPI070116-03 |
| Citywide Computer Aided Design and Drafting (CADD) Standards https://www.sandiego.gov/publicworks/edocref/drawings | 2016 | PWPI092816-04 |

| Title | Edition | Document Number |
|---|---------|-----------------|
| California Department of Transportation (CALTRANS) Standard Specifications – http://www.dot.ca.gov/des/oe/construction-contract-standards.html | 2015 | PWPI092816-05 |
| CALTRANS Standard Plans http://www.dot.ca.gov/des/oe/construction-contract-standards.html | 2015 | PWPI092816-06 |
| California Manual on Uniform Traffic Control Devices Revision 1 (CA MUTCD Rev 1) - http://www.dot.ca.gov/trafficops/camutcd/ | 2014 | PWPI092816-07 |
| NOTE: *Available online under Engineering Documents and References at: http://www.sandiego.gov/publicworks/edocref/index.shtml | | |

9. **CITY'S RESPONSES AND ADDENDA:** The City, at its discretion, may respond to any or all questions submitted in writing via the City's eBidding web site in the **form of an addendum**. No other responses to questions, oral or written shall be of any force or effect with respect to this solicitation. The changes to the Contract Documents through addenda are made effective as though originally issued with the Bid. The Bidders shall acknowledge the receipt of Addenda at the time of bid submission.
10. **CITY'S RIGHTS RESERVED:** The City reserves the right to cancel the Notice Inviting Bids at any time, and further reserves the right to reject submitted Bids, without giving any reason for such action, at its sole discretion and without liability. Costs incurred by the Bidder(s) as a result of preparing Bids under the Notice Inviting Bids shall be the sole responsibility of each bidder. The Notice Inviting Bids creates or imposes no obligation upon the City to enter a contract.
11. **CONTRACT PRICING:** This solicitation is for a Lump Sum contract with Unit Price provisions as set forth herein. The Bidder agrees to perform construction services for the City of San Diego in accordance with these contract documents for the prices listed below. The Bidder further agrees to guarantee the Contract Price for a period of 120 days from the date of Bid opening. The duration of the Contract Price guarantee may be extended, by mutual consent of the parties, by the number of days required for the City to obtain all items necessary to fulfill all contractual conditions.
12. **SUBCONTRACTOR INFORMATION:**
- 12.1. **LISTING OF SUBCONTRACTORS.** In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act" of the California Public Contract Code, the Bidder shall provide the **NAME** and **ADDRESS** of each Subcontractor who will perform work, labor, render services or who specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also state within the description, whether the

subcontractor is a **CONSTRUCTOR, CONSULTANT** or **SUPPLIER**. The Bidder shall state the **DIR REGISTRATION NUMBER** for all subcontractors and shall further state within the description, the **PORTION** of the work which will be performed by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement may result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3, "Subcontracts", which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which Bidders are seeking recognition towards achieving any mandatory, voluntary (or both) subcontracting participation goals.

Additionally, pursuant to California Senate Bill 96 and in accordance with the requirements of Labor Code sections 1771.1 and 1725.5, by submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the California Department of Industrial Relations (DIR). **The Bidder shall provide the name, address, license number, DIR registration number of any Subcontractor - regardless of tier** - who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement pursuant to the contract.

12.2. LISTING OF SUPPLIERS. Any Bidder seeking the recognition of Suppliers of equipment, materials, or supplies obtained from third party Suppliers towards achieving any mandatory or voluntary (or both) subcontracting participation goals shall provide, at a minimum, the **NAME, LOCATION (CITY), DIR REGISTRATION NUMBER** and the **DOLLAR VALUE** of each supplier. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for materials and supplies unless vendor manufactures or substantially alters materials and supplies, in which case, 100% will be credited. The Bidder is to indicate within the description whether the listed firm is a supplier or manufacturer. If no indication is provided, the listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage.

12.3. LISTING OF SUBCONTRACTORS OR SUPPLIERS FOR ALTERNATES. For subcontractors or suppliers to be used on additive or deductive alternate items, in addition to the above requirements, bidder shall further note "ALTERNATE" and alternate item number within the description.

13. SUBMITTAL OF "OR EQUAL" ITEMS: See Section 4-1.6, "Trade Names or Equals" in The WHITEBOOK and as amended in the SSP.

14. AWARD:

14.1. The Award of this contract is contingent upon the Contractor's compliance with all conditions precedent to Award.

14.2. Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening and award the Contract approximately within 7 days of receipt of properly executed Contract, bonds, and insurance documents.

14.3. This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.

15. SUBCONTRACT LIMITATIONS: The Bidder's attention is directed to Standard Specifications for Public Works Construction, Section 2-3, "SUBCONTRACTS" in The GREENBOOK and as amended in the SSP which requires the Contractor to self-perform not less than the specified amount. Failure to comply with this requirement shall render the bid **non-responsive** and ineligible for award.

16. AVAILABILITY OF PLANS AND SPECIFICATIONS: Contract Documents may be obtained by visiting the City's website: <http://www.sandiego.gov/cip/>. Plans and Specifications for this contract are also available for review in the office of the City Clerk or Public Works Contracts.

17. ONLY ONE BID PER CONTRACTOR SHALL BE ACCEPTED: No person, firm, or corporation shall be allowed to make, file, or be interested in more than one (1) Bid for the same work unless alternate Bids are called for. A person, firm or corporation who has submitted a sub-proposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from submitting a Bid in its own behalf. Any Bidder who submits more than one bid will result in the rejection of all bids submitted.

18. SAN DIEGO BUSINESS TAX CERTIFICATE: The Contractor and Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, First floor and submit to the Contract Specialist upon request or as specified in the Contract Documents. Tax Identification numbers for both the Bidder and the listed Subcontractors must be submitted on the City provided forms within these documents.

19. BIDDER'S GUARANTEE OF GOOD FAITH (BID SECURITY) FOR DESIGN-BID-BUILD CONTRACTS:

19.1. For bids \$250,000 and above, bidders shall submit Bid Security at bid time. Bid Security shall be in one of the following forms: a cashier's check, or a properly

certified check upon some responsible bank; or an approved corporate surety bond payable to the City of San Diego for an amount of not less than 10% of the total bid amount.

- 19.2.** This check or bond, and the monies represented thereby, will be held by the City as a guarantee that the Bidder, if awarded the contract, will in good faith enter into the contract and furnish the required final performance and payment bonds.
- 19.3.** The Bidder agrees that in the event of the Bidder's failure to execute this contract and provide the required final bonds, the money represented by the cashier's or certified check will remain the property of the City; and the Surety agrees that it will pay to the City the damages, not exceeding the sum of 10% of the amount of the Bid, that the City may suffer as a result of such failure.
- 19.4.** At the time of bid submission, bidders must upload and submit an electronic PDF copy of the aforementioned bid security. Whether in the form of a cashier's check, a properly certified check or an approved corporate surety bond payable to the City of San Diego, the bid security must be uploaded to the City's eBidding system. Within twenty-four (24) hours after the bid due date and time, the first five (5) apparent low bidders must provide the City with the original bid security.
- 19.5.** Failure to submit the electronic version of the bid security at the time of bid submission AND failure to provide the original within twenty-four (24) hours may cause the bid to be rejected and deemed **non-responsive**.

20. AWARD OF CONTRACT OR REJECTION OF BIDS:

- 20.1.** This contract may be awarded to the lowest responsible and reliable Bidder.
- 20.2.** Bidders shall complete ALL eBid forms as required by this solicitation. Incomplete eBids will not be accepted.
- 20.3.** The City reserves the right to reject any or all Bids, to waive any informality or technicality in Bids received, and to waive any requirements of these specifications as to bidding procedure.
- 20.4.** Bidders will not be released on account of their errors of judgment. Bidders may be released only upon receipt by the City within 3 Working Days of the bid opening, written notice from the Bidder which shows proof of honest, credible, clerical error of a material nature, free from fraud or fraudulent intent; and of evidence that reasonable care was observed in the preparation of the Bid.
- 20.5.** A bidder who is not selected for contract award may protest the award of a contract to another bidder by submitting a written protest in accordance with the San Diego Municipal Code.

- 20.6.** The City of San Diego will not discriminate in the award of contracts with regard to race, religion creed, color, national origin, ancestry, physical handicap, marital status, sex or age.
- 20.7.** Each Bid package properly signed as required by these specifications shall constitute a firm offer which may be accepted by the City within the time specified herein.
- 20.8.** The City reserves the right to evaluate all Bids and determine the lowest Bidder on the basis of the base bid and any proposed alternates or options as detailed herein.

21. BID RESULTS:

- 21.1.** The availability of the bids on the City's eBidding system shall constitute the public announcement of the apparent low bidder. In the event that the apparent low bidder is subsequently deemed non-responsive or non-responsible, a notation of such will be made on the eBidding system. The new ranking and apparent low bidder will be adjusted accordingly.
- 21.2.** To obtain the bid results, view the results on the City's web site, or request the results by U.S. mail and provide a self-addressed, stamped envelope. If requesting by mail, be sure to reference the bid name and number. The bid tabulations will be mailed to you upon their completion. The results will not be given over the telephone.

22. THE CONTRACT:

- 22.1.** The Bidder to whom award is made shall execute a written contract with the City of San Diego and furnish good and approved bonds and insurance certificates specified by the City within 14 days after receipt by Bidder of a form of contract for execution unless an extension of time is granted to the Bidder in writing.
- 22.2.** If the Bidder takes longer than 14 days to fulfill these requirements, then the additional time taken shall be added to the Bid guarantee. The Contract shall be made in the form adopted by the City, which includes the provision that no claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
- 22.3.** If the Bidder to whom the award is made fails to enter into the contract as herein provided, the award may be annulled and the Bidder's Guarantee of Good Faith will be subject to forfeiture. An award may be made to the next lowest responsible

and reliable Bidder who shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made.

- 22.4.** Pursuant to the San Diego City Charter section 94, the City may only award a public works contract to the lowest responsible and reliable Bidder. The City will require the Apparent Low Bidder to (i) submit information to determine the Bidder's responsibility and reliability, (ii) execute the Contract in form provided by the City, and (iii) furnish good and approved bonds and insurance certificates specified by the City within 14 Days, unless otherwise approved by the City, in writing after the Bidder receives notification from the City, designating the Bidder as the Apparent Low Bidder and formally requesting the above mentioned items.
- 22.5.** The award of the Contract is contingent upon the satisfactory completion of the above-mentioned items and becomes effective upon the signing of the Contract by the Mayor or designee and approval as to form by the City Attorney's Office. If the Apparent Low Bidder does not execute the Contract or submit required documents and information, the City may award the Contract to the next lowest responsible and reliable Bidder who shall fulfill every condition precedent to award. A corporation designated as the Apparent Low Bidder shall furnish evidence of its corporate existence and evidence that the officer signing the Contract and bond for the corporation is duly authorized to do so.
- 23. EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK:** The Bidder shall examine carefully the Project Site, the Plans and Specifications, other materials as described in the Special Provisions, Section 2-7, and the proposal forms (e.g., Bidding Documents). The submission of a Bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work, the quantities of materials to be furnished, and as to the requirements of the Bidding Documents Proposal, Plans, and Specifications.
- 24. CITY STANDARD PROVISIONS:** This contract is subject to the following standard provisions. See The WHITEBOOK for details.
- 24.1.** The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.
- 24.2.** The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.
- 24.3.** The City of San Diego Municipal Code §22.3004 for Contractor Standards.
- 24.4.** The City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.

- 24.5.** Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.
- 24.6.** The City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).
- 24.7.** The City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.
- 25. PRE-AWARD ACTIVITIES:**

 - 25.1.** The contractor selected by the City to execute a contract for this Work shall submit the required documentation as specified in the herein and in the Notice of Award. Failure to provide the information as specified may result in the Bid being rejected as **non-responsive**.
 - 25.2.** The decision that bid is non-responsive for failure to provide the information required within the time specified shall be at the sole discretion of the City.

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

Marcon Engineering, Inc., a corporation, as principal, and
Arch Insurance Company, a corporation authorized to do
business in the State of California, as Surety, hereby obligate themselves, their successors and assigns,
jointly and severally, to The City of San Diego a municipal corporation in the sum of
Two Million Two Hundred Sixty Seven Thousand Eight Hundred Three Dollars and Zero Cents
(\$2,267,803.00) for the faithful performance of the annexed contract, and in the sum of **Two Million**
Two Hundred Sixty Seven Thousand Eight Hundred Three Dollars and Zero Cents (\$2,267,803.00)
for the benefit of laborers and materialmen designated below.

Conditions:

If the Principal shall faithfully perform the annexed contract with the City of San Diego, California, then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Article 2. Claimants, (iii) public works of improvement commencing with Civil Code Section 9100 of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND (continued)

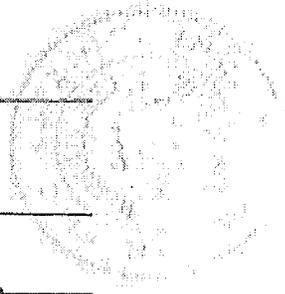
The Surety shall pay reasonable attorney's fees should suit be brought to enforce the provisions of this bond.

Dated December 17, 2018

Approved as to Form

MarCon Engineering, Inc.
Principal

By *Maryory Contreras*
Maryory Contreras
Printed Name of Person Signing for Principal



Mara W. Elliott, City Attorney

By *[Signature]*
Deputy City Attorney

Arch Insurance Company
Surety

By *[Signature]*
Lawrence E. McMahon Attorney-in-fact

Approved:

By *[Signature]*
Stephen Samara
Principal Contract Specialist
Public Works Department

865 South Figueroa Street, Ste. 2700
Local Address of Surety

Los Angeles, CA 90017
Local Address (City, State) of Surety

213-283-3500
Local Telephone No. of Surety

Premium is for Contract Term and Subject
to Adjustment Based on Final Contract
Price

Premium \$ 24,171.00

Bond No. SU1126908

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT Civil Code § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy or validity of that document.

STATE OF CALIFORNIA

County of San Diego

On DEC 17 2018 before me, Janice R. Martin, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

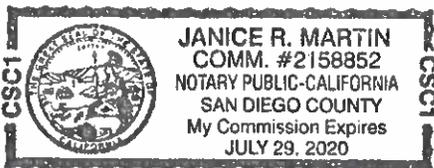
personally appeared Lawrence F. McMahon
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature [Handwritten Signature]
Signature of Notary Public Janice R. Martin



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer is Representing:
Surety Company

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____

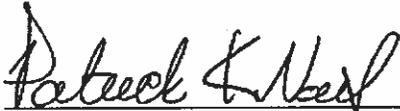


Signer is Representing:

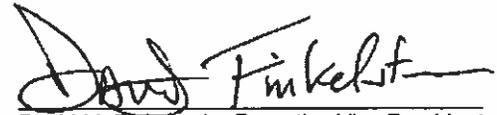
In Testimony Whereof, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this 11th day of June, 2018.

Attested and Certified

Arch Insurance Company


Patrick K. Nails, Secretary

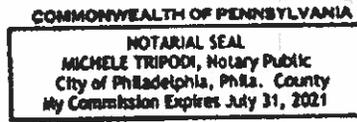


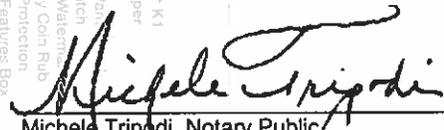

David M. Finkelstein, Executive Vice President

STATE OF PENNSYLVANIA SS

COUNTY OF PHILADELPHIA SS

I, Michele Tripodi, a Notary Public, do hereby certify that Patrick K. Nails and David M. Finkelstein personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.

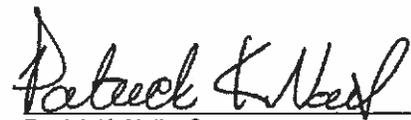



Michele Tripodi, Notary Public
My commission expires 07/31/2021

CERTIFICATION

I, Patrick K. Nails, Secretary of the Arch Insurance Company, do hereby certify that the attached Power of Attorney dated June 11, 2018 on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said David M. Finkelstein, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this _____ day of _____, 2018.
DEC 17 2018


Patrick K. Nails, Secretary

This Power of Attorney limits the acts of those named therein to the bonds and undertakings specifically named therein and they have no authority to bind the Company except in the manner and to the extent herein stated.

PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:

Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102



00ML0013 00 03 03
• Kan't Copy K1
• Security Paper
• Hidden Pantograph
• Color Match
• Artificial Watermark
• Anti-Copy Coin Rub
• Erasure Protection
• Security Features Box
• Microprint Protection
• Acid Free

• Kan't Copy K1
• Security Paper
• Hidden Pantograph
• Color Match
• Artificial Watermark
• Anti-Copy Coin Rub
• Erasure Protection
• Security Features Box
• Microprint Protection
• Acid Free

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON BLUE BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Note, Loan, Letter of Credit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:

That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the "Company") does hereby appoint:

Lawrence F. McMahon and Sarah Myers of San Diego, CA (EACH)

its true and lawful Attorney(s)-in-Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed:

Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding Ninety Million Dollars (\$90,000,000.00).

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on September 15, 2011, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect:

"VOTED, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on September 15, 2011:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on September 15, 2011, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company.

ATTACHMENTS

ATTACHMENT A
SCOPE OF WORK

SCOPE OF WORK

1. **SCOPE OF WORK:** New comfort station, picnic tables, landscaping, irrigation, water and sewer services.
 - 1.1. The Work shall be performed in accordance with:
 - 1.1.1. The Notice Inviting Bids and Plans numbered **35257-01-D** through **35257-63-D**, inclusive.
2. **LOCATION OF WORK:** The location of the Work is as follows:
See Appendix E – Location Map.
3. **CONTRACT TIME:** The Contract Time for completion of the Work, shall be **300 Working Days**.

ATTACHMENT B
INTENTIONALLY LEFT BLANK

ATTACHMENT C
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ATTACHMENT D
PREVAILING WAGES

PREVAILING WAGES

1. **PREVAILING WAGE RATES:** Pursuant to San Diego Municipal Code section 22.3019, construction, alteration, demolition, repair and maintenance work performed under this Contract is subject to State prevailing wage laws. For construction work performed under this Contract cumulatively exceeding \$25,000 and for alteration, demolition, repair and maintenance work performed under this Contract cumulatively exceeding \$15,000, the Contractor and its subcontractors shall comply with State prevailing wage laws including, but not limited to, the requirements listed below.
 - 1.1. **Compliance with Prevailing Wage Requirements.** Pursuant to sections 1720 through 1861 of the California Labor Code, the Contractor and its subcontractors shall ensure that all workers who perform work under this Contract are paid not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations (DIR). This includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work.
 - 1.1.1. Copies of such prevailing rate of per diem wages are on file at the City and are available for inspection to any interested party on request. Copies of the prevailing rate of per diem wages also may be found at <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Contractor and its subcontractors shall post a copy of the prevailing rate of per diem wages determination at each job site and shall make them available to any interested party upon request.
 - 1.1.2. The wage rates determined by the DIR refer to expiration dates. If the published wage rate does not refer to a predetermined wage rate to be paid after the expiration date, then the published rate of wage shall be in effect for the life of this Contract. If the published wage rate refers to a predetermined wage rate to become effective upon expiration of the published wage rate and the predetermined wage rate is on file with the DIR, such predetermined wage rate shall become effective on the date following the expiration date and shall apply to this Contract in the same manner as if it had been published in said publication. If the predetermined wage rate refers to one or more additional expiration dates with additional predetermined wage rates, which expiration dates occur during the life of this Contract, each successive predetermined wage rate shall apply to this Contract on the date following the expiration date of the previous wage rate. If the last of such predetermined wage rates expires during the life of this Contract, such wage rate shall apply to the balance of the Contract.
 - 1.2. **Penalties for Violations.** Contractor and its subcontractors shall comply with California Labor Code section 1775 in the event a worker is paid less than the prevailing wage rate for the work or craft in which the worker is employed. This shall be in addition to any other applicable penalties allowed under Labor Code sections 1720 – 1861.

- 1.3. Payroll Records.** Contractor and its subcontractors shall comply with California Labor Code section 1776, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Contractor shall require its subcontractors to also comply with section 1776. Contractor and its subcontractors shall submit weekly certified payroll records online via the City's web-based Labor Compliance Program. Contractor is responsible for ensuring its subcontractors submit certified payroll records to the City.
- 1.3.1.** Contractor and their subcontractors shall also furnish records specified in Labor Code section 1776 directly to the Labor Commissioner in the manner required by Labor Code section 1771.4.
- 1.4. Apprentices.** Contractor and its subcontractors shall comply with California Labor Code sections 1777.5, 1777.6 and 1777.7 concerning the employment and wages of apprentices. Contractor is held responsible for the compliance of their subcontractors with sections 1777.5, 1777.6 and 1777.7.
- 1.5. Working Hours.** Contractor and their subcontractors shall comply with California Labor Code sections 1810 through 1815, including but not limited to: (i) restrict working hours on public works contracts to eight hours a day and forty hours a week, unless all hours worked in excess of 8 hours per day are compensated at not less than 1½ times the basic rate of pay; and (ii) specify penalties to be imposed on contractors and subcontractors of \$25 per worker per day for each day the worker works more than 8 hours per day and 40 hours per week in violation of California Labor Code sections 1810 through 1815.
- 1.6. Required Provisions for Subcontracts.** Contractor shall include at a minimum a copy of the following provisions in any contract they enter into with a subcontractor: California Labor Code sections 1771, 1771.1, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860 and 1861.
- 1.7. Labor Code Section 1861 Certification.** Contractor in accordance with California Labor Code section 3700 is required to secure the payment of compensation of its employees and by signing this Contract, Contractor certifies that "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."
- 1.8. Labor Compliance Program.** The City has its own Labor Compliance Program authorized in August 2011 by the DIR. The City will withhold contract payments when payroll records are delinquent or deemed inadequate by the City or other governmental entity, or it has been established after an investigation by the City or other governmental entity that underpayment(s) have occurred. For questions or assistance, please contact the City of San Diego's Prevailing Wage Unit at 858-627-3200.

- 1.9. Contractor and Subcontractor Registration Requirements.** This project is subject to compliance monitoring and enforcement by the DIR. A contractor or subcontractor shall not be qualified to bid on, be listed in a bid or proposal, subject to the requirements of section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Labor Code section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.
- 1.9.1.** A Contractor's inadvertent error in listing a subcontractor who is not registered pursuant to Labor Code section 1725.5 in response to a solicitation shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive provided that any of the following apply: (1) the subcontractor is registered prior to bid opening; (2) within twenty-four hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5; or (3) the subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
- 1.9.2.** By submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the DIR in compliance with Labor Code sections 1771.1 and 1725.5, and Contractor shall provide proof of registration for themselves and all listed subcontractors to the City at the time of bid or proposal due date or upon request.
- 1.10. Stop Order.** For Contractor or its subcontractors engaging in the performance of any public work contract without having been registered in violation of Labor Code sections 1725.5 or 1771.1, the Labor Commissioner shall issue and serve a stop order prohibiting the use of the unregistered contractors or unregistered subcontractor(s) on ALL public works until the unregistered contractor or unregistered subcontractor(s) is registered. Failure to observe a stop order is a misdemeanor.
- 1.11. List of all Subcontractors.** The Contractor shall provide the list of subcontractors (regardless of tier), along with their DIR registration numbers, utilized on this Contract prior to any work being performed; and the Contractor shall provide a complete list of all subcontractors with each invoice. Additionally, Contractor shall provide the City with a complete list of all subcontractors (regardless of tier) utilized on this contract within ten working days of the completion of the contract, along with their DIR registration numbers. The City shall withhold final payment to Construction Management Professional until at least thirty (30) days after this information is provided to the City.

1.12. Exemptions for Small Projects. There are limited exemptions for installation, alteration, demolition, or repair work done on projects of \$25,000 or less. The Contractor shall still comply with Labor Code sections 1720 et. seq. The only recognized exemptions are listed below:

1.12.1. Registration. The Contractor will not be required to register with the DIR for small projects. (Labor Code section 1771.1)

1.12.2. Certified Payroll Records. The records required in Labor Code section 1776 shall be required to be kept and submitted to the City of San Diego, but will not be required to be submitted online with the DIR directly. The Contractor will need to keep those records for at least three years following the completion of the Contract. (Labor Code section 1771.4).

1.12.3. List of all Subcontractors. The Contractor shall not be required to hire only registered subcontractors and is exempt from submitting the list of all subcontractors that is required in section 4.20.11 above. (Labor code section 1773.3).

ATTACHMENT E
SUPPLEMENTARY SPECIAL PROVISIONS

SUPPLEMENTARY SPECIAL PROVISIONS

The following Supplementary Special Provisions (SSP) modifies the following documents:

1. The **2015 Edition** of the Standard Specifications for Public Works Construction (The "GREENBOOK").
2. The **2015 Edition** of the City of San Diego Standard Specifications for Public Works Construction (The "WHITEBOOK"), including the following:
 - a) General Provisions (A) for all Contracts.

SECTION 1 – TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

- 1-2 TERMS AND DEFINITIONS.** To the "WHITEBOOK", item 54, "Normal Working Hours", ADD the following:

The **Normal Working Hours** are **7:00 AM** to **4:00 PM**.

SECTION 2 - SCOPE AND CONTROL OF WORK

- 2-3.2 Self Performance.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall perform, with your own organization, Contract Work amounting to at least 30% of the base Bid.

- 2-5.4.2 Asset Specific Red-lines.** To the "WHITEBOOK", ADD the following:

1. **Fiber Optic and WIFI Device Red-lines.** Fiber Optic and WIFI Device Red-lines shall clearly record by dimension from 2 known fixed points and by depth of underground facilities all deviations, modifications, and changes in the Work. Records, deviations, modifications, and changes on the day the Work is performed shall reflect the actual Work location and shall be marked in red at the scale of the Plan sheet on which they are recorded. Red-lines shall show the equipment locations and associated information for the following:
 - a) Locations and depths of underground utilities.
 - b) Revisions to the routing of piping and conduits.
 - c) Actual equipment locations.
 - d) Pull Boxes.

- e) Electrical Meter, including meter address.
- f) Items abandoned in place.

2-7 SUBSURFACE DATA. To the City Supplement, ADD the following:

- 4. In preparation of the Contract Documents, the designer has relied upon the following reports of explorations and tests of subsurface conditions at the Work Site:
 - a) Updated Report of Geotechnical Investigation: North Chollas Community Park Phase 1C; Concession/ Restroom Building dated July 17, 2017 by Geocon INC.
 - b) Report of Geotechnical Investigation: North Chollas Community Park Phase 1C; Concession/ Restroom Building dated October 8, 2007 by Geocon INC
- 5. The reports listed above are available for review by contacting the Contract Specialist or visiting:

<https://filecloud.sandiego.gov/url/fzj89dibrzum5iap>

2-9.1 Permanent Survey Markers. To the "WHITEBOOK", item 3, DELETE in its entirety and SUBSTITUTE with the following:

- 3. You shall submit to the Engineer a minimum of 7 Calendar Days prior to the start of the Work a list of controlling survey monuments which may be disturbed. CMFS (or the private owner for Permit Work) shall perform the following:
 - a) Set survey points outside the affected Work area that reference and locate each controlling survey monument that may be disturbed.
 - b) File a Corner Record or Record of Survey with the County Surveyor after setting the survey points to be used for re-establishment of the disturbed controlling survey monuments.
 - c) File a Corner Record or Record of Survey with the County Surveyor after re-establishment of the disturbed controlling survey monuments.

ADD:

2-10 AUTHORITY OF THE BOARD AND THE ENGINEER. To the "GREENBOOK", Paragraph (2), DELETE in its entirety and SUBSTITUTE with the following:

The decision of the Engineer is final and binding on all questions relating to: quantities; acceptability of material, equipment, or work; execution, progress or sequence of work; requests for information (RFI), and interpretation of the Plans, Specifications, or other Contract Documents. This shall be precedent to any payment under the Contract. The Engineer shall be the single point of contact and shall be included in all communications.

2-14.3 Coordination. To the "WHITEBOOK", ADD the following:

- a) Other adjacent City projects are scheduled for construction for the same time period in the vicinity of Chollas Community Park Comfort Station Project. See Appendix "E" for the approximate location. Coordinate the Work with the adjacent projects.

2-16 CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM. To the "WHITEBOOK", item 1, DELETE in its entirety.

SECTION 3 - CHANGES IN WORK

3-3.2.3 Markup. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

- 1. Work paid under Allowance Bid items for permits, governmental fees, or direct payments specified in the Contract Documents shall not be subject to any markups.
- 2. The allowance for overhead and profit shall not exceed the values listed in the table below:

| Component | Overhead | Profit |
|------------------|-----------------|---------------|
| Labor | 10% | 10% |
| Material | 10% | 5% |
| Equipment | 10% | 5% |

- 3. Markups for materials shall be applied to the actual cost of the material before applying the sales tax.
- 4. When a Subcontractor is performing Extra Work, the allowance for overhead and profit shall be applied to the labor, materials, and equipment costs of the Subcontractor as follows:
 - a) Regardless of the number of Subcontractor tasks for Extra Work, you may only apply 10% for the first \$50,000 of the Subcontractor's portion of accumulated total cost.
 - b) If the accumulated costs of single or subsequent tasks exceed the \$50,000 threshold, you shall instead only apply 5% to any amounts in excess of the \$50,000.
 - c) You shall not apply 10% to any costs after the first \$50,000 of accumulated total costs from performing Extra Work.
 - d) Regardless of the number of hierarchical tiers of Subcontractors, you may only markup a Subcontractor's Work once.

3-5.1 **Claims.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

ADD:

3-5.1 **Claims.**

1. A Claim is a written demand by you that seeks an adjustment in the Contract Price, Contract Time, or other relief associated with a dispute arising under or relating to the Contract, including a breach of any provision thereof. A voucher, invoice, or other routine request for payment is not a Claim.
2. A Claim shall conform to these specifications and may be considered after the City has previously denied a request by you for a Change Order seeking the demanded relief.
3. You shall submit a Claim to the Engineer if a dispute occurs that arises from or relates to the Contract. The Claim shall seek all relief to which you assert you are entitled as a result of the event(s) giving rise to the dispute. Your failure to process a Claim in accordance with these specifications shall constitute a waiver of all relief associated with the dispute. Claims are subject to 6-11, "Right to Audit".
4. You shall continue to perform the Services and Work and shall maintain the Schedule during any dispute proceedings. The Engineer will continue to make payments for undisputed Services and Work.
5. The City's Claims process specified herein shall not relieve you of your statutory obligations to present claims prior to any action under the California Government Code.

3-5.1.1 **Initiation of Claim.**

1. You shall promptly, but no later than 30 Days after the event(s) giving rise to the Claim, deliver the Claim to the Engineer.
2. You shall not process a Claim unless the Engineer has previously denied a request by you for a Change Order that sought the relief to be pursued in the claim.

3-5.1.1.1 **Claim Certification Submittal.**

1. If your Claim seeks an increase in the Contract Price, the Contract Time, or both, submit with the Claim an affidavit certifying the following:
 - a) The Claim is made in good faith and covers all costs and delays to which you are entitled as a result of the event(s) giving rise to the Claim.
 - b) The amount claimed accurately reflects the adjustments in the Contract Price, the Contract Time, or both to which you believe you are entitled.
 - c) All supporting costs and pricing data are current, accurate, and complete to the best of your knowledge. The cost breakdown per item of Work shall be supplied.

- d) You shall ensure that the affidavit is executed by an official who has the authority to legally bind you.

3-5.1.2 Initial Determination.

1. The Engineer will respond in writing to your Claim within 30 Days of receipt of the Claim.

3-5.1.3 Settlement Meeting.

1. If you disagree with the Initial Determination, you shall request a Settlement Meeting within 30 Days. Upon receipt of this request, the Engineer will schedule the Settlement Meeting within 15 Working Days.

3-5.1.4 City's Final Determination.

1. If a settle agreement is not reached, the City shall make a written Final Determination within 10 Working Days after the Settlement Meeting.
2. If you disagree with the City's Final Determination, notify the Engineer in writing of your objection within 15 Working Days after receipt of the written determination and file a "Request for Mediation" in accordance with 3-5.2, "Dispute Resolution Process".
3. Failure to give notice of objection within the 15 Working Days period shall waive your right to pursue the Claim.

3-5.1.5 Mandatory Assistance.

1. If a third party dispute, litigation, or both arises out of or relates in any way to the Services provided under the Contract, upon the City's request, you shall agree to assist in resolving the dispute or litigation. Your assistance includes, but is not limited to the following:
 - a) Providing professional consultations.
 - b) Attending mediations, arbitrations, depositions, trials, or any event related to the dispute resolution and litigation.

3-5.1.5.1 Compensation for Mandatory Assistance.

1. The City will reimburse you for reasonable fees and expenses incurred by you for any required assistance rendered in accordance with 3-5.1.8, "Mandatory Assistance" as Extra Work.
2. The Engineer will determine whether these fees and expenses were necessary due to your conduct or failure to act.
3. If the Engineer determines that the basis of the dispute or litigation in which these fees and expenses were incurred were the result of your conduct or your failure to act in part or in whole, you shall reimburse the City for any payments made for these fees and expenses.
4. Reimbursement may be through any legal means necessary, including the City's withholding of your payment.

3-5.2.3 Selection of Mediator. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. A single mediator, knowledgeable in construction aspects and acceptable to both parties, shall be used to mediate the dispute.
2. To initiate mediation, the initiating party shall serve a Request for Mediation at the American Arbitration Association (AAA) on the opposing party.
3. If AAA is used, the initiating party shall concurrently file with AAA a "Request for Mediation" along with the appropriate fees, a copy of requested mediators marked in preference order, and a preference for available dates.
4. If AAA is selected to coordinate the mediation (Administrator), within 10 Working Days from the receipt of the initiating party's Request for Mediation, the opposing party shall file the following:
 - a) A copy of the list of the preferred mediators listed in preference order after striking any mediators to which they have any objection.
 - b) A preference for available dates.
 - c) Appropriate fees.
5. If the parties cannot agree on a mediator, then each party shall select a mediator and those mediators shall select the neutral third party to mediate the matter.

3-5.3 Forum of Litigation. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. It is the express intention that all legal actions and proceedings related to the Contract or Agreement with the City or to any rights or any relationship between the parties arising therefrom shall be solely and exclusively initiated and maintained in courts of the State of California for the County of San Diego.

ADD:

3-5.4 Pre-judgment Interest.

1. The parties stipulate that if a judgment is entered against a party for breaching this Contract, the pre-judgment interest shall be two percent (2%) per annum.

SECTION 4 - CONTROL OF MATERIALS

4-1.3.2 Inspection by the Agency. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. The City will provide inspection and testing laboratory services within the continental United States within a 200-mile radius of the geographical limits of the City.

4-1.3.3 Inspection of Items Not Locally Produced. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. When you intend to purchase materials, fabricated products, or equipment from sources located more than 200 miles (321.9 km) outside the geographical limits of the City, City Lab staff or a qualified inspection agency approved by the Engineer, shall be engaged at your expense to inspect the materials, equipment, or process.
2. This approval shall be obtained before producing any material or equipment. City Lab staff or inspector shall evaluate the materials for conformance with the requirements of the Plans and Specifications. You shall forward reports required by the Engineer. No materials or equipment shall be shipped nor shall any processing, fabrication or treatment of such materials be done without proper inspection by City Lab staff or the approved agent. Approval by said agent shall not relieve you of responsibility for complying with the requirements of the Contract Documents.
3. The Engineer may elect City Lab staff to perform inspection of an out-of-town manufacturer. You shall incur additional inspection costs of the Engineer including lodging, meals, and incidental expenses based on Federal Per Diem Rates, along with travel and car rental expenses. If the manufacturing plant operates a double shift, a double shift shall be figured in the inspection costs.
 - a) At the option of the Engineer, full time inspection shall continue for the length of the manufacturing period. If the manufacturing period will exceed 3 consecutive weeks, you shall incur additional inspection expenses of the Engineer's supervisor for a trip of 2 Days to the site per month.
 - b) When the Engineer elects City Lab staff to perform out-of-town inspections, the wages of staff employed by the City shall not be part of the additional inspection expenses paid by you.
 - c) Federal Per Diem Rates can be determined at the location below:

<https://www.gsa.gov/portal/content/104877>
4. The Engineer will perform inspections of out-of-town manufacturers for the items of Work specified here:
 - a) Not Applicable

ADD:

4-1.3.4 Inspection Paid For By the Contractor.

1. The special inspections required are listed as follows:
 - a) DEH (Department of Environmental Health) Restroom with Concession Building Inspection
 - b) Structural Inspections

ADD:

4-1.3.5 Preapproved Materials.

1. You shall submit in writing a list of all products to be incorporated in the Work that are on the AML.

4-1.6 Trade Names or Equals. To the City Supplement, ADD the following:

11. You shall submit your list of proposed substitutions for an "equal" item **no**

later than 5 Working Days after the determination of the Apparent Low Bidder and on the City's Product Submittal Form available at:

<http://www.sandiego.gov/publicworks/edocref/index.shtml>

SECTION 5 – UTILITIES

5-1.1 General. To the "WHITEBOOK", ADD the following:

9. **90 Calendar Days** prior to any paving work, you shall notify the utility owner to provide them adequate time to adjust their utility box frame and cover to finish grade.

5-2 PROTECTION. To the "WHITEBOOK", item 2, ADD the following:

- g) Refer to Appendix "K" for more information on the protection of AMI devices.

5-6 COOPERATION. To the "GREENBOOK", **ADD the following:**

1. Notify SDG&E at least 45 Working Days prior to excavating within 10 feet of SDG&E Underground High Voltage Transmission Power Lines (69 KV and higher).

SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF WORK

6-1.1 Construction Schedule. To the "WHITEBOOK", item 5, 9, 20, and 22, DELETE in their entirety and SUBSTITUTE with the following:

5. Monthly progress payments are contingent upon the submittal of an updated Schedule and cash flow forecast as discussed in item 22 of 6-1.1, "Construction Schedule" to the Engineer. The Engineer may refuse to recommend the whole or part of any monthly payment if, in the Engineer's opinion, your failure or refusal to provide the required Schedule and cash flow forecast information precludes a proper evaluation of your ability to complete the Project within the Contract Time and amount.
9. Inclusive to the Contract Time, include 15 Working Days to the Schedule for the generation of the Punchlist. You shall Work diligently to complete all Punchlist items within 30 Working Days after the Engineer provides the Punchlist.
20. The **120 Calendar Day** for the Plant Establishment Period is included in the stipulated Contract Time and shall begin with the acceptance of installation of the vegetation plan in accordance with Section 801-6, "MAINTENANCE AND PLANT ESTABLISHMENT".
22. With every pay request, submit the following:
 - a) An updated cash flow forecast showing periodic and cumulative construction billing amounts for the duration of the Contract Time. If there has been any Extra Work since the last update, include only the approved amounts.

- b) A curve value percentage comparison between the Contract Price and the updated cash flow forecast for each Project ID included in the Contract Documents. Curve values shall be set on a scale from 0% to 100% in intervals of 5% of the Contract Time. Refer to the Sample City Invoice materials in **Appendix D – Sample City Invoice** and use the format shown. Your invoice amounts shall be supported by this curve value percentage. For previous periods, use the actual values and percentages and update the curve value percentages accordingly. See “Cash Flow Curve Fitting Example” at the location below:

<https://www.sandiego.gov/publicworks/edocref>

ADD:

6-3.2.1.1 Environmental Document.

1. The City of San Diego has prepared a **MITIGATED NEGATIVE DECLARATION** for **North Chollas Community Park, LDR No. 98-0150**, as referenced in the Contract Appendix. You shall comply with all requirements of the **Mitigated Negative Declaration** as set forth in **Appendix A**.

6-3.2.2 Archaeological and Native American Monitoring Program. To the “WHITEBOOK”, ADD the following:

4. You shall retain a qualified archaeologist and Native American Monitor for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the archaeologist monitor. Notify the Engineer before noon of the Working Day before monitoring is required. See 2-11, “INSPECTION” for details.

6-3.2.2.1 PAYMENT. To the “WHITEBOOK”, item 1, DELETE in its entirety and SUBSTITUTE with the following:

1. The full compensation for the Archaeological and Native American monitoring program and report preparation, as described in the Contract Appendices, shall be included in the Lump Sum or Linear Foot Bid item for “**Archaeological and Native American Monitoring Program**” and shall include the payment for Work performed on laterals and other services, such as potholing and other trenching. No payment shall be made unless the qualified archaeologist is present to verify during the performance of the Work.

6-8.1.1 Requirements Preparatory to Requesting a Walk-through. To the “WHITEBOOK”, ADD the following:

2. You shall notify the Engineer to arrange a final inspection of permanent BMPs installed and shall obtain the completed, signed, and stamped DS-563 Form 30 Days prior to the issuance of the Notice of Completion.

SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

7-3 **INSURANCE.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

7-3 **INSURANCE.**

1. The insurance provisions herein shall not be construed to limit your indemnity obligations contained in the Contract.

7-3.1 **Policies and Procedures.**

1. You shall procure the insurance described below, at its sole cost and expense, to provide coverage against claims for loss including injuries to persons or damage to property, which may arise out of or in connection with the performance of the Work by you, your agents, representatives, officers, employees or Subcontractors.
2. Insurance coverage for property damage resulting from your operations is on a replacement cost valuation. The market value will not be accepted.
3. You shall maintain this insurance for the duration of this Contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this Contract. Your liabilities under the Contract, e.g., your indemnity obligations, is not deemed limited to the insurance coverage required by this Contract.
4. The payment for insurance shall be included in the Contract Price as bid by you. Except as specifically agreed to by the City in writing, you are not entitled to any additional payment. Do not begin any Work under this Contract until you have provided and the City has approved all required insurance.
5. Policies of insurance shall provide that the City is entitled to 30 Days (10 Days for cancellation due to non-payment of premium) prior written notice of cancellation or non-renewal of the policy. Maintenance of specified insurance coverage is a material element of the Contract. Your failure to maintain or renew coverage or to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

7-3.2 **Types of Insurance.**

7-3.2.1 **Commercial General Liability Insurance.**

1. Commercial General Liability Insurance shall be written on the current version of the ISO Occurrence form CG 00 01 07 98 or an equivalent form providing coverage at least as broad.

2. The policy shall cover liability arising from premises and operations, XCU (explosions, underground, and collapse), independent contractors, products/completed operations, personal injury and advertising injury, bodily injury, property damage, and liability assumed under an insured's contract (including the tort liability of another assumed in a business contract).
3. There shall be no endorsement or modification limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. You shall maintain the same or equivalent insurance for at least 10 years following completion of the Work.
4. All costs of defense shall be outside the policy limits. Policy coverage shall be in liability limits of not less than the following:

| <u>General Annual Aggregate Limit</u> | <u>Limits of Liability</u> |
|---|----------------------------|
| Other than Products/Completed Operations | \$2,000,000 |
| Products/Completed Operations Aggregate Limit | \$2,000,000 |
| Personal Injury Limit | \$1,000,000 |
| Each Occurrence | \$1,000,000 |

7-3.2.2 Commercial Automobile Liability Insurance.

1. You shall provide a policy or policies of Commercial Automobile Liability Insurance written on the current version of the ISO form CA 00 01 12 90 or later version or equivalent form providing coverage at least as broad in the amount of \$1,000,000 combined single limit per accident, covering bodily injury and property damage for owned, non-owned, and hired automobiles ("Any Auto").
2. All costs of defense shall be outside the limits of the policy.

7-3.2.3 Contractors Pollution Liability Insurance.

1. You shall procure and maintain at your expense or require your Subcontractor, as described below, to procure and maintain the Contractors Pollution Liability Insurance including contractual liability coverage to cover liability arising out of cleanup, removal, storage, or handling of hazardous or toxic chemicals, materials, substances, or any other pollutants by you or any Subcontractor in an amount not less than \$2,000,000 limit for bodily injury and property damage.
2. All costs of defense shall be outside the limits of the policy. Any such insurance provided by your Subcontractor instead of you shall be approved separately in writing by the City.
3. For approval of a substitution of your Subcontractor's insurance, you shall certify that all activities for which the Contractors Pollution Liability Insurance will provide coverage will be performed exclusively by the Subcontractor providing the insurance. The deductible shall not exceed \$25,000 per claim.

4. Contractual liability shall include coverage of tort liability of another party to pay for bodily injury or property damage to a third person or organization. There shall be no endorsement or modification of the coverage limiting the scope of coverage for either “insured vs. insured” claims or contractual liability.
5. Occurrence based policies shall be procured before the Work commences and shall be maintained for the Contract Time. Claims Made policies shall be procured before the Work commences, shall be maintained for the Contract Time, and shall include a 12 month extended Claims Discovery Period applicable to this contract or the existing policy or policies that shall continue to be maintained for 12 months after the completion of the Work without advancing the retroactive date.
6. Except as provided for under California law, the policy or policies shall provide that the City is entitled to 30 Days prior written notice (10 Days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies.

7-3.2.4

Contractors Hazardous Transporters Pollution Liability Insurance.

1. You shall provide at your expense or require your Subcontractor to provide, as described below, Contractors Hazardous Transporters Pollution Liability Insurance including contractual liability coverage to cover liability arising out of transportation of hazardous or toxic, materials, substances, or any other pollutants by you or any Subcontractor in an amount not less than \$2,000,000 limit per occurrence/aggregate for bodily injury and property damage.
2. All costs of defense shall be outside the limits of the policy. The deductible shall not exceed \$25,000 per claim. Any such insurance provided by a subcontractor instead of you shall be approved separately in writing by the City.
3. For approval of the substitution of Subcontractor’s insurance the Contractor shall certify that all activities for which Contractors Hazardous Transporters Pollution Liability Insurance will provide coverage will be performed exclusively by the Subcontractor providing the insurance.
4. Contractual liability shall include coverage of tort liability of another party to pay for bodily injury or property damage to a third person or organization. There shall be no endorsement or modification of the coverage limiting the scope of coverage for either “insured vs. insured” claims or contractual liability. Occurrence based policies shall be procured before the Work commences and shall be maintained for the duration of this Contract. Claims Made policies shall be procured before the Work commences, shall be maintained for the duration of this contract, and shall include a 12 month extended Claims Discovery Period applicable to this contract or the existing policy or policies that shall continue to be maintained for 12 months after the completion of the Work under this Contract without advancing the retroactive date.

5. Except as provided for under California law, the policy or policies shall provide that the City is entitled to 30 Days prior written notice (10 Days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies.

7-3.3 Rating Requirements. Except for the State Compensation Insurance Fund, all insurance required by this Contract as described herein shall be carried only by responsible insurance companies with a rating of, or equivalent to, at least "A-, VI" by A.M. Best Company, that are authorized by the California Insurance Commissioner to do business in the State, and that have been approved by the City.

7-3.3.1 Non-Admitted Carriers. The City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State and is included on the List of Approved Surplus Lines Insurers (LASLI list).

All policies of insurance carried by non-admitted carriers shall be subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7-3.4 Evidence of Insurance. Furnish to the City documents e.g., certificates of insurance and endorsements evidencing the insurance required herein, and furnish renewal documentation prior to expiration of this insurance. Each required document shall be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf. We reserve the right to require complete, certified copies of all insurance policies required herein.

7-3.5 Policy Endorsements.

7-3.5.1 Commercial General Liability Insurance.

7-3.5.1.1 Additional Insured.

1. You shall provide at your expense policy endorsement written on the current version of the ISO Occurrence form CG 20 10 11 85 or an equivalent form providing coverage at least as broad.
2. To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.
3. The additional insured coverage for projects for which the Engineer's Estimate is \$1,000,000 or more shall include liability arising out of:
 - a) Ongoing operations performed by you or on your behalf,
 - b) your products,
 - c) your Work, e.g., your completed operations performed by you or on your behalf, or
 - d) premises owned, leased, controlled, or used by you.
4. The additional insured coverage for projects for which the Engineer's Estimate is less than \$1,000,000 shall include liability arising out of:

- a) Ongoing operations performed by you or on your behalf,
- b) your products, or
- c) premises owned, leased, controlled, or used by you.

7-3.5.1.2 Primary and Non-Contributory Coverage. The policy shall be endorsed to provide that the coverage with respect to operations, including the completed operations, if appropriate, of the Named Insured is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives. Further, it shall provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

7-3.5.1.3 Project General Aggregate Limit. The policy or policies shall be endorsed to provide a Designated Construction Project General Aggregate Limit that will apply only to the Work. Only claims payments which arise from the Work shall reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit shall be in addition to the aggregate limit provided for the products-completed operations hazard.

7-3.5.2 Commercial Automobile Liability Insurance.

7-3.5.2.1 Additional Insured. Unless the policy or policies of Commercial Auto Liability Insurance are written on an ISO form CA 00 01 12 90 or a later version of this form or equivalent form providing coverage at least as broad, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured, with respect to liability arising out of automobiles owned, leased, hired or borrowed by you or on your behalf. This endorsement is limited to the obligations permitted by California Insurance Code §11580.04.

7-3.5.3 Contractors Pollution Liability Insurance Endorsements.

7-3.5.3.1 Additional Insured.

1. The policy or policies shall be endorsed to include as an Insured the City and its respective elected officials, officers, employees, agents, and representatives, with respect to liability arising out of:
 - a) Ongoing operations performed by you or on your behalf,
 - b) your products,
 - c) your work, e.g., your completed operations performed by you or on your behalf, or
 - d) premises owned, leased, controlled, or used by you.

Except that in connection with, collateral to, or affecting any construction contract to which the provisions of subdivision (b) of § 2782 of the California Civil Code apply, this endorsement shall not provide any duty of indemnity coverage for the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives in any case where an agreement to indemnify the City and its respective elected officials, officers, employees, agents, and representatives would be invalid under subdivision (b) of §2782 of the California Civil Code.

2. In any case where a claim or loss encompasses the negligence of the Insured and the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives that are not covered because of California Insurance Code §11580.04, the insurer's obligation to the City and its respective elected officials, officers, employees, agents, and representatives shall be limited to obligations permitted by California Insurance Code §11580.04.

7-3.5.3.2 Primary and Non-Contributory Coverage. The policy or policies shall be endorsed to provide that the insurance afforded by the Contractors Pollution Liability Insurance policy or policies is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives with respect to operations including the completed operations of the Named Insured. Any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

7-3.5.3.3 Severability of Interest. For Contractors Pollution Liability Insurance, the policy or policies shall provide that your insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability and shall provide cross-liability coverage.

7-3.5.4 Contractors Hazardous Transporters Pollution Liability Insurance Endorsements.

7-3.5.4.1 Additional Insured.

1. The policy or policies shall be endorsed to include as an Insured the City and its respective elected officials, officers, employees, agents, and representatives, with respect to liability arising out of:
 - a) Ongoing operations performed by you or on your behalf,
 - b) your products,
 - c) your work, e.g., your completed operations performed by you or on your behalf, or
 - d) premises owned, leased, controlled, or used by you.

Except that in connection with, collateral to, or affecting any construction contract to which the provisions of subdivision (b) of §2782 of the California Civil Code apply, this endorsement shall not provide any duty of indemnity coverage for the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives in any case where an agreement to indemnify the City and its respective elected officials, officers, employees, agents, and representatives would be invalid under subdivision (b) of §2782 of the California Civil Code.

2. In any case where a claim or loss encompasses the negligence of the Insured and the active negligence of the City and its respective elected officials, officers, employees, agents, and representatives that are not covered because of California Insurance Code §11580.04, the insurer's obligation to the City and its respective elected officials, officers, employees, agents, and representatives shall be limited to obligations permitted by California Insurance Code §11580.04.

7-3.5.4.2 Primary and Non-Contributory Coverage. The policy or policies shall be endorsed to provide that the insurance afforded by the Contractors Pollution Liability Insurance policy or policies is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives with respect to operations including the completed operations of the Named Insured. Any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

7-3.5.4.3 Severability of Interest. For Contractors Hazardous Transporters Pollution Liability Insurance, the policy or policies shall provide that your insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability and shall provide cross-liability coverage.

7-3.6 Deductibles and Self-Insured Retentions. You shall pay for all deductibles and self-insured retentions. You shall disclose deductibles and self-insured retentions to the City at the time the evidence of insurance is provided.

7-3.7 Reservation of Rights. The City reserves the right, from time to time, to review your insurance coverage, limits, deductibles and self-insured retentions to determine if they are acceptable to the City. The City will reimburse you, without overhead, profit, or any other markup, for the cost of additional premium for any coverage requested by the Engineer but not required by this Contract.

7-3.8 Notice of Changes to Insurance. You shall notify the City 30 Days prior to any material change to the policies of insurance provided under this Contract.

7-3.9 Excess Insurance. Policies providing excess coverage shall follow the form of the primary policy or policies e.g., all endorsements.

7-4 Not Used. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

7-4 Workers' Compensation Insurance and Employers Liability Insurance.

1. In accordance with the provisions of §3700 of the California Labor Code, you shall provide at your expense Workers' Compensation Insurance and Employers Liability Insurance to protect you against all claims under applicable state workers compensation laws. The City, its elected officials, and employees will not be responsible for any claims in law or equity occasioned by your failure to comply with the requirements of this section.

2. Limits for this insurance shall be not less than the following:

| <u>Workers' Compensation</u> | <u>Statutory Employers Liability</u> |
|------------------------------|--------------------------------------|
| Bodily Injury by Accident | \$1,000,000 each accident |
| Bodily Injury by Disease | \$1,000,000 each employee |
| Bodily Injury by Disease | \$1,000,000 policy limit |

3. By signing and returning the Contract you certify that you are aware of the provisions of §3700 of the Labor Code which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code and you shall comply with such provisions before commencing the Work as required by §1861 of the California Labor Code.

7-4.1. Waiver of Subrogation. The policy or policies shall be endorsed to provide that the insurer will waive all rights of subrogation against the City and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from Work performed by the Named Insured for the City.

ADD:

7-6 THE CONTRACTORS REPRESENTATIVE. To the "GREENBOOK", ADD the following:

1. Both the representative and alternative representative shall be employees of the Contractor and shall not be assigned to a Subcontractor unless otherwise approved by the City in writing.

7-8.6 Water Pollution Control. To the "WHITEBOOK", ADD the following:

Based on a preliminary assessment by the City, this Contract is subject to **WPCP**.

7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS. ADD the following:

5. Prior to commencement of tree preservation work, the Contractor shall retain a Certified Arborist to review existing trees to remain within the limit of work and adjacent trees with trunks within 30' of the limit of work, to identify and evaluate existing conditions of the trees, possible hazards, and recommendations to preserve the health and well-being of the existing trees to remain. The Arborist

shall photograph existing conditions of trees to remain in the project area, and conditions which could be misconstrued as damage resulting from the work. File two sets of photos with the Engineer prior to commencement of work.

6. The Contractor shall walk the site with the Resident Engineer and the Arborist to discuss and clarify existing tree conditions, safety, protection, site limitations and concerns prior to construction. The Arborist shall make written recommendations to the Engineer in writing regarding any special concerns, hazards, or special measures required to protect the existing trees to remain, from damage and decline as a result of construction. Arborist's recommendations shall include special recommendations for protecting the health and well being of the trees and methods of protecting their roots from damage.
7. The existing tree canopy outlined on the plans is approximate and is to be established at the site. The Contractor shall meet with the Resident Engineer to establish and mark out the exact location of the limit of work at the vegetation canopy to avoid impact to existing desirable vegetation.
8. Protective fencing, or other measures, as recommended by the Arborist, and approved by the Resident Engineer, shall be installed by the Contractor, prior to the commencement of any other work. Fencing shall indicate the limit of construction activity, restricting the operation and movement of all equipment and vehicles, storage, trampling and other operations. Construction activities, and storage of materials shall be prohibited within areas to be protected. Orange vinyl construction fence, minimum 4' height shall be used to designate areas off limits due to tree protection. Stake the protection fence with steel construction stakes.
9. Payment for the Certified Arborist shall be included in the lump sum Bid Item for "**Construction of Park Improvements**". This will include full compensation for all labor, materials, tools, equipment, and incidents for doing all the work involved.

7-13.4 Contractor Standards and Pledge of Compliance. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. The Contract is subject to City's Municipal Code §22.3004 as amended 10/29/13 by ordinance O-20316.
2. You shall complete a Pledge of Compliance attesting under penalty of perjury that you complied with the requirements of this section.
3. You shall ensure that all Subcontractors complete a Pledge of Compliance attesting under penalty of perjury that they complied with the requirements of this section.
4. You shall require in each subcontract that the Subcontractor shall abide by the provisions of the City's Municipal Code §22.3004. A sample provision is as follows:

"Compliance with San Diego Municipal Code §22.3004. The Subcontractor acknowledges that it is familiar with the requirements of San Diego Municipal Code §22.3004 ("Contractor Standards"), and agrees to comply with requirements of that section. The Subcontractor further agrees to complete the Pledge of Compliance, incorporated herein by reference."

ADD:

7-13.8 Equal Pay Ordinance.

1. You shall comply with the Equal Pay Ordinance (EPO) codified in the San Diego Municipal Code (SDMC) in section 22.4801 through 22.4809, unless compliance is not required based on an exception listed in SDMC section 22.4804.
2. You shall require all of your Subcontractors to certify compliance with the EPO in their written subcontracts.
3. You shall post a notice informing your employees of their rights under the EPO in the workplace or job site.
4. By signing this Contract with the City of San Diego, you acknowledge the EPO requirements and pledge ongoing compliance with the requirements of SDMC Division 48, section 22.4801 et seq., throughout the duration of this Contract.

7-20 ELECTRONIC COMMUNICATION. To the "WHITEBOOK", ADD the following:

2. Virtual Project Manager shall be used on this Contract.

7-21.1 General. To the "WHITEBOOK", item 3, DELETE in its entirety and SUBSTITUTE with the following:

During the construction phase of projects, the minimum waste management reduction goal is 90% of the inert material (a material not subject to decomposition such as concrete, asphalt, brick, rock, block, dirt, metal, glass, and etc.) and 65% of the remaining project waste. You shall provide appropriate documentation, including a Waste Management Form attached as an appendix, and evidence of recycling and reuse of materials to meet the waste reduction goals specified.

7-22.1 General. To the "WHITEBOOK", ADD the following:

12. The contractor shall prepare and implement a Soil Management Plan (SMP) and Community Health and Safety Plan (CHSP). The plan shall be submitted to the City of San Diego Local Enforcement Agency (LEA) for review and approval prior to starting construction. Copies of the CHSP and SMP are to be provided to the onsite personnel for review, kept on-site and followed for the duration of the project. The Contractor shall provide notice to the LEA 48 hours prior to starting work on the project.

7-22.17 Monitoring of Potentially Petroleum Contaminated Soil. To the "WHITEBOOK", ADD the following:

5. The areas of known or suspected contamination are as follows:

Potential for Lead Contaminated Soils. See **Appendix G.**

SECTION 9 – MEASUREMENT AND PAYMENT

9-3.1 General. To the “WHITEBOOK”, ADD the following:

- 3. The lump sum bid item “**Construction of Park Improvements**” shall include for all costs associated with construction of the Park Improvements per contract documents including but not limited to the water and sewer line installation, paving, furnishings, landscaping and irrigation improvements. Any items included in the contract documents where a separate bid item is not included shall be included for payment in bid item “**Construction of Park Improvements**”.
- 4. The lump sum bid item “**Construction of Comfort Station**” shall include payment for all costs associated with construction of the Comfort Station.

9-3.7 Compensation Adjustments for Price Index Fluctuations. To the “WHITEBOOK” ADD the following:

- 5. This Contract is not subject to the provisions of The “WHITEBOOK” for Compensation Adjustments for Price Index Fluctuations for paving asphalt.

SECTION 200 – ROCK MATERIALS

200-1.1 General. To the “GREENBOOK”, ADD the following:

Rock products shall be derived from a single source and of the same stock to ensure uniformity of material. Physical samples shall be submitted for each rock product in accordance with the gradation tables in **Sections 200-1 “Rock Products” and 200-2 “Untreated Base Materials”** for approval by the City. Samples shall illustrate full variety of the color range and size for each item specified. When a rock product is specified for varying range sizes greater than 12 inches, a representative photo shall be provided for each size range. Photos shall be taken of the actual product to be furnished.

SECTION 201 - CONCRETE, MORTAR AND RELATED MATERIALS

201-1.1.2 Concrete Specified by Class and Alternate Class Table. MODIFY the following items/ changes to WHITEBOOK Table 201-1.1.2:

| Type of Construction | Concrete Class | Max. Slump |
|--|-------------------------------|------------|
| | (With Certified Truck Ticket) | |
| Concrete Pavement (Not integral w/ curb) | 560-C-3250 | 3-inch |
| Curb, Integral Curb and Pavement, Gutter, Walk, Alley Aprons: | 560-C-3250 | 4-inch |

ADD the following:

| | | |
|----------------------------------|------------|--------|
| Concrete Sidewalk | 560-C-3250 | 3-inch |
| Concrete Footings | 520-C-2500 | 4-inch |
| Integral Colored Concrete Paving | 560-C-3250 | 3-inch |

201-1.2.4 Chemical Admixtures. To the “GREENBOOK”, ADD the following to Subparagraph a):

Integral Colored Concrete.

Admixture for all integral colored concrete shall comply with the following:

Integral colored concrete shall consist of colored admixtures developed for use in ready mixed concrete. The product shall be made of the highest quality pigments, as well as other ingredients designed to enhance the color and improve the pigment dispersion, workability and finishing performance of the concrete.

The coloring method shall be designed for concrete flatwork applications (broom finishes, sandblast finishes, smooth finishes), as well as vertical surfaces, and other types of architectural concrete. Pigment shall be a permanent coloration, uniform throughout the concrete surface and interior, and shall be highly UV and fade resistant.

Provide sample panel of all colors to be used in the installation on identical surfaces for approval by Resident Engineer with coordination by the Landscape Architect prior to construction. Contractor shall provide a maintenance schedule for integral colored concrete.

Admixture: Scofield Chromix Admixtures for color-conditioned concrete, or approved equal.

Manufacturer: L. M. Scofield Company or approved equal
6533 Bandini Boulevard
Los Angeles, California 90040
1-800-800-9900

Color/ Finish: Color Concrete Paving: “C-21 Adobe Tan” with ‘Broom’ finish.

*Above colors per Scofield Color Chart A-312.10 – Standard Colors

Sealer: Per SSP section 201-1.2.7 “Concrete Sealers”.

Admixture products and procedures for installation shall be in strict accordance with the manufacturer’s specifications and recommendations, and those published by the American Concrete Institute (ACI) and the Portland Cement Association (PCA). Colored admixture shall be water-reducing, set-controlling for horizontal or vertical architectural concrete meeting the following requirements:

1. ASTM C979.
2. ASTM C494, “Specification for Chemical Admixtures for Concrete.”
3. Meet approval by the City of Los Angeles under the classification “Admixtures for Cement Reduction”

4. AASHTO M 194, CRD C 87.
5. Admixture shall be a colored, water-reducing, set-controlling admixture specifically developed and engineered for use in ready-mix concrete, which is resistant to color bleeding, laitance, and efflorescence.
6. Admixtures containing raw pigments which are not specifically designed for use in ready-mix concrete shall not be accepted.
7. Admixture shall be lime-proof, have maximum resistance to the effects of sunlight, and contains no calcium chloride.

ADD:

201-1.2.7 Concrete Sealers.

Concrete Sealer shall conform to the following specifications:

| | |
|----------------------|---|
| Product: | Cementone Clear Sealer, or approved equal |
| Manufacturer: | L. M. Scofield Company 1-800-800-9900 www.scofield.com |
| When to Apply: | After concrete has FULLY cured, ~ 28 days. |
| Surface Preparation: | Power wash clean of compounds, oil, and debris. Allow surfaces to DRY completely. |
| Spray Applicator | |
| Guidelines: | Airless Spray: 1500-2500 psi with 0.013-0.015 inch fan tip. HVLP Spray: 5-40 psi with 1.3-1.5mm tip. |
| Dried Color: | Clear gloss |
| Coating: | Uniform |
| Coverage: | (First Coat) 300-400 Sq. Ft/Gal. (Second Coat) 600-800 Sq. Ft/Gal. |
| VOC Content: | Meet ASTM C 309 Requirements < 100g/L (0.82./gal.) |
| Second Coat: | Per manufacturer recommendations. |
| Drying Time: | Min. 12 hrs foot traffic, 72 hrs hard wheel traffic |
| Temperature: | Apply above 45°F, Store from 45°F - 120°F |
| Shelf Life: | 2 Year, Opened 1 month |

Concrete Sealer shall be designed for application on interior/ exterior natural concrete and integral colored concrete of variable architectural finishes. Sealer shall be suitable for freshly placed (CIP or PIP) or existing concrete with little to no alteration of concrete color. When dry, sealed surface shall resist staining from other construction materials and common food products. Sealer shall be slip resistant.

A brushed, rolled or sprayed method of application shall leave the finish surface with adequate wet and dry slip resistance. The method of application shall be approved by the City.

Sealer shall leave no visible material between the concrete surface and sealer. The sealer shall be absorbed and locked into the pores surfaces and installed per manufacturer's directions.

Contractor shall prepare concrete paving surfaces per manufacturer's product data bulletin, paragraph 12 'Preparation' requirements.

Contractor shall apply sealer per manufacturer's product data bulletin, paragraph 13 'Application' requirements.

Sealer shall be applied to half of all concrete mock ups 28 days after curing time for review of performance and adherence to finishes.

ADD:

201-2.5 Tie Wire.

Tie wire shall be 16 gauge, black annealed.

ADD:

201-2.6 Reinforcing Supports.

All horizontal reinforcing shall be supported on approved chairs or supports to the specified height and locations as indicated on the plans.

ADD:

201-2.7 Dowel.

Dowels shall be sections of deformed steel reinforcing rod in sizes and lengths as indicated on the plans. Dowels shall be provided in locations where new concrete curbs abut existing concrete, new concrete paving abut existing concrete paving or walls, at expansion joints, and anywhere else as indicated on the plans. Provide dowels at the on-center spacing as indicated on the plan, centered vertically within the concrete slab section, with a minimum of two dowels abutting into any adjacent slab sections.

ADD:

201-11 ARCHITECTURAL CONCRETE PAVING

201-11.1 General.

The following decorative concrete pavings shall be constructed in compliance with Section 201 and additions herein.

201-11.2 Project Concrete Types and Finishes.

1. Concrete Type A - Natural Colored Concrete

- a) Color: Natural
- b) Finish: Light Broom Finish
- c) Concrete Class per spec **Section 201-1.1.2**
- d) Sealer: Type per **Section 201-1.2.7**.
- e) Joints: Per Landscape Construction Plans.
- f) Mock-up Sample per 'Concrete Paving Field-Constructed Mock-up Samples' below.
- g) Match approved referee sample, as acquired by the Landscape Architect, to compare for color, texture, finish, and other characteristics relating to aesthetic effects.

2. Concrete Type B - Integral Colored Concrete

- a) Color: 'C-21 Adobe Tan' by Scofield, or approved equal, per section 201-1.2.4(a) above.
- b) Finish: Light Broom Finish,
- c) Concrete Class per spec Section 201-1.1.2
- d) Sealer: Type per Section 201-1.2.7.
- e) Joints: Per Landscape Construction Plans.
- f) Mock-up Sample per 'Concrete Paving Field-Constructed Mock-up Samples' below.
- g) Match approved referee sample, as acquired by the Landscape Architect, to compare for color, texture, finish, and other characteristics relating to aesthetic effects.

201-11.3 Concrete Paving Mock-Up Samples.

Prior to the installation of any concrete paving work, the Contractor shall prepare field-constructed mock-up samples for each type and pattern of concrete required for the project for review and approval. Mock-up samples shall comply with the following requirements of using materials and same construction method, including special features for expansion joints, construction joints, form work, surface finishes, textures, color(s), and contiguous work, as indicated for final Work:

1. Locate Field-Constructed Mock-up Samples on the Project Site in location as directed by the Resident Engineer.
2. Notify the Resident Engineer, in writing, at least one (1) week in advance of the dates and times when Field-Constructed Mock-up Samples will be erected.
3. Demonstrate quality and range of aesthetic effects and workmanship in the Field-Constructed Mock-up Samples that will be produced in final Work.

4. Obtain the Resident Engineer's acceptance of Field-Constructed Mock-up Samples, in writing, before start of installation of Work.
5. Retain and maintain Field-Constructed Mock-up Samples during construction in an undisturbed condition as a standard for judging the completed Work.
6. When directed by the Resident Engineer, the Contractor shall demolish and remove Field-Constructed Mock-up Samples from Project Site.
7. Paving Samples: The Contractor shall provide a mockup paving sample for each type of paving finish proposed herein this Section, and as indicated on the Contract Drawings, for review and approval by the Resident Engineer.
 - a) Each mock up paving sample within this Section shall measure three (3') feet wide and six (6') feet long mock up, to compare the aesthetics of material colors, textures, and finishes.
 - b) When the Resident Engineer determines that a mockup sample does not meet requirements, retain it for reference and cast another paving mockup sample until the mockup sample is accepted.
 - c) Accepted mockups will be the standard by which remaining work will be evaluated for technical and aesthetic merit. Accepted mockup is a prerequisite to beginning job of installing paving Work. Submit variations from mockup materials or techniques for approval by the Resident Engineer prior to use.

SECTION 202 – MASONRY MATERIALS

202-4.2.1.1 Permeable Interlocking Concrete Pavers. To the "WHITEBOOK", ADD the following:

Permeable Interlocking Concrete Pavers shall conform to the following specifications:

| | |
|-----------------|--|
| Product: | Aqua-via Trio Paver, or approved equal |
| Nominal Size: | 4-3/8" x 8-3/4" |
| Laying Pattern: | Per Plans |
| Thickness: | 80mm |
| Mix: | Through Mix |
| Color Blend: | Charcoal Brown Buff |
| Paver Corners: | Hard corners; no bevels |
| Finish: | Lite Shot Blast |
| Gap Filler: | #9 Aggregate |
| Manufacturer: | Acker-Stone Industries 13296 Temescal Canyon Road Corona, CA 92883 www.ackerstone.com (951) 674-0047 |
| Quantities: | Per Plans |
| Standards: | ASTM C 936 (ASTM 2012) |

Installation: Per Whitebook **Section 301-7**
Mock-Up: Required for review by City prior to installation.

SECTION 206 - MISCELLANEOUS METAL ITEMS

ADD:

206-8 ACCESSIBLE SIGNAGE

206-8.1 General.

Signs shall be fabricated in conformance with the **SDM-117** standards for accessible parking signs and with the City of San Diego standards for signs. Sign Post shall be fabricated in conformance with **SDM-104**.

In the event **SDM-117** does not illustrate sign mounting details, refer to San Diego Regional Standard Drawing **SDM-104** for installation. Signs shall include:

- a) Accessible Parking with Minimum Fine Sign
- b) Tow Away Sign

SECTION 207 – GRAVITY PIPE

To the “WHITEBOOK”, ADD the following:

4. Storm drain lines shall be white SDR-35 Polyvinyl Chloride (PVC) pipe.

SECTION 209 – PRESSURE PIPE

209 PRESSURE PIPE. To the “WHITEBOOK”, ADD the following:

2. PVC products, specifically type C900 and C905, as manufactured or distributed by J-M Manufacturing Company or JM Eagle shall not be used on the Contract for pressurized pipe.

SECTION 210 – PAINT AND PROTECTIVE COATINGS

210-1.1.1 Anti-Graffiti Coating. To the “WHITEBOOK”, ADD the following:

Third and Fourth coat shall be Item 5600, matte finish. Install **per section 310-6, “Anti-Graffiti Coating Installation.”**

SECTION 213 - ENGINEERING GEOSYNTHETICS.

213-5 GEOTEXTILES AND GEOGRIDS. To the "GREENBOOK", ADD the following:

- a) Permeable Geotextile Fabrics used for general separation, drainage and filtration of landscapes materials shall be inert to biological degradation, and resist naturally encountered chemicals, alkalis and acids.
- b) Permeable Geotextile fabrics shall conform to the following specifications:
- c) Product: Mirafi 180N, or approved equal.
- d) Description Nonwoven Geotextile, N-Series
- e) Manufacturer: TenCate Geosynthetics Americas 706-693-2226
www.tencate.com/amer/geosynthetics/default.aspx
- f) Minimum Standards: Whitebook Table 213-5(A): NONWOVEN unless otherwise stated herein.

 Grab Tensile Strength: ASTM D4632, 205 lbs (912 N)/ min. ave. roll value
 CBR Puncture Strength: ASTM D6241, 500 Lbs (2224 N)/ min. ave. roll value
 Permittivity: ASTM D4491, 1.4 sec-1 min.
 Flow Rate: ASTM D4491, 95 gal./min./ft. sq.
- g) Installation: **Section 300-8 "Geotextiles for Drainage".**

SECTION 217 - BEDDING AND BACKFILL MATERIALS

217-2.2 Stones, Boulders, and Broken Concrete. To the "GREENBOOK", Table 217-2.2, DELETE in its entirety and SUBSTITUTE with the following:

TABLE 217-2.2

| Zone | Zone Limits | Maximum Size (greatest dimension) | Backfill Requirements in Addition to 217-2.1 |
|--|---|--|---|
| Street or Surface Zone | From ground surface to 12" (300 mm) below pavement subgrade or ground surface | 2.5" (63 mm) | As required by the Plans or Special Provisions. |
| Street or Surface Zone Backfill of Tunnels beneath Concrete Flatwork | | Sand | Sand equivalent of not less than 30. |
| Trench Zone | From 12" (300 mm) below pavement subgrade or ground surface to 12" (300 mm) above top of pipe or box | 6" (150 mm) | |

| | | | |
|--|--|--|--|
| Deep Trench Zone (Trenches 3' (0.9 m) wide or wider) | From 60" (1.5 m) below finished surface to 12" (300 mm) above top of pipe or box | Rocks up to 12" (300 mm) excavated from trench may be placed as backfill | |
| Pipe Zone | From 12" (300 mm) above top of pipe or box to 6" (150 mm) below bottom of pipe or box exterior | 2.5" (63 mm) | Sand equivalent of not less than 30 or a coefficient of permeability greater than 1-½ inches/hour (35 mm per hour). |
| Overexcavation | Backfill more than 6" (150 mm) below bottom of pipe or box exterior | 6" (150 mm) | Sand equivalent of not less than 30 or a coefficient of permeability greater than 1-½ inches/hour (35 mm per hour). Trench backfill slurry (100-E-100) per 201-1 may also be used. |

SECTION 218 – DETECTABLE WARNING TILES (DWT)

218-1 GENERAL. To the "WHITEBOOK", ADD the following:

- 2) Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark or dark-on-light. The material used to provide contrast shall be an integral part of the surface. (Sec. 11B-705.1.1.5)
- 3) Detectable warning surfaces shall be yellow conforming to FS 33538 of Federal Standard 595C. (Sec.11B-705.3)
- 4) Only DSA-AC detectable warning products and directional surfaces shall be installed as provided in the California Code of Regulations (CCR), Title 24, Part 1, Chapter 5, Article 2, 3 and 4. (Sec. 11B-05.3).

ADD:

SECTION 219 – SITE FURNISHING MATERIALS

219-1 SITE FURNISHINGS

219-1.1 Trash Receptacles.

Trash Receptacles shall conform to the following specifications:

Product: Santa Clara Series Side Opening Door Waste Container with Top.
Model #: QSSC2651SDW

Description: Precast concrete square trash receptacle with concrete top, locking steel side door with hinges, 40 gallon plastic liner and key. (Q30SD, QSPL28B, SDKEY, ZSDCABLK-R, H-9381)

Integral Color: Adobe Taupe

Finish: Top – Smooth
Body – Acid Etch

Door Color: Brown

No. of units: (4)

Concrete mix: GEN2 80% recycled concrete

Anti-Graffiti: Manufacturer applied **per Section 210 'Paint and Protective Coatings'; Matte finish.**

Attachment: Surface-mounted – epoxy in place

Manufacturer: Quick Crete Products Corp., Inc., or approved equal.
731 Parkridge Avenue
Norco, CA 92860
(951) 737-6240
www.quickcrete.com

219-1.2 Recycling Receptacles.

Recycle Receptacles shall conform to the following specifications:

Product: Santa Clara Series Side Opening Door Recycle Container with Top, "recycle logo" inset and painted blue.

Model #: QSSC2651SDW

Description: Precast concrete square recycle receptacle with concrete top, locking steel side door with hinges, 40 gallon plastic liner and key. (Q30SD/BL, QSPL28B, SDKEY, ZSDCABLK-R, H-9381)

Integral Color: Adobe Taupe

Finish: Top – Smooth
Body – Acid Etch

Logo Paint: QC Std Blue

Door: Blue

No. of units: (4)

Concrete mix: GEN2 80% recycled concrete

Anti-Graffiti: Manufacturer applied **per Section 210 'Paint and Protective Coatings'; Matte finish.**

Attachment: Surface-mounted – epoxy in place

Manufacturer: Quick Crete Products Corp., Inc., or approved equal.
731 Parkridge Avenue
Norco, CA 92860
(951) 737-6240
www.quickcrete.com

219-2 Tables.

Tables shall conform to the following specifications:

219-2.1 Round Food Court Table.

Product: Round Food Court Table Set
Model #: QR42FC
Description: Round table without umbrella hole, four benches, hardware including table plate (Q16FCPLT), bench angle bracket (Q7FCBRACKET), plated hex head bolt (Z1/241/2HEX), and bench bolt set (ZFC4BNCHBOLT).
Integral Color: Adobe Taupe
Finish: Acid Etch
No. of units: (2)
Anti-Graffiti: Manufacturer applied **per Section 210 'Paint and Protective Coatings'; Matte finish.**
Attachment: Surface-mounted – epoxy in place
Manufacturer: Quick Crete Products Corp., Inc., or approved equal.
731 Parkridge Avenue
Norco, CA 92860
(951) 737-6240
www.quickcrete.com

219-2.2 Round Food Court Table Set with Extended Table Top – Accessible.

Product: Round Food Court Extended Table Top Set with Accessible Pull Up Spaces.
Model #: QR42FC3EXT
Description: Round Food Court Table with extension table top for accessible pull up space.
Integral Color: Adobe Taupe
Finish: Acid Etch
No. of units: (1)
Anti-Graffiti: Manufacturer applied **per Section 210 'Paint and Protective Coatings'; Matte finish.**
Attachment: Surface-mounted – epoxy in place
Manufacturer: Quick Crete Products Corp., Inc., or approved equal.
731 Parkridge Avenue
Norco, CA 92860
(951) 737-6240
www.quickcrete.com

219-3**Bike Rack.**

Bike rack shall be 87" in length from end post to end post with undulating style loops bent from a continuous 2-3/8" OD Sch. 40 galvanized standard pipe. There shall be 7 loops bends to rack a maximum of 9 bicycles. Length of end post shall be long enough to accommodate the depth requirements as illustrated on the plans. Install **per section 318 "Site Furnishings Installation"**. Bike rack shall be:

Model No.: WLBR-9, or approved equivalent.
 Finish: Galvanized
 No. of units: (1)
 Attachment: Post embedment mounted into CIP concrete footing
 Manufacturer: LA Steelcraft Products Inc. (626) 798-7401
 1975 Lincoln Ave
 Pasadena, CA 91103
www.lasteelcraft.com

SECTION 300 - EARTHWORK

300-1.1

General. To the "WHITEBOOK", ADD the following:

Clearing and grubbing shall include the removal, relocation, adjusting, or salvaging of all facilities so indicated on the plans.

In addition, clearing and grubbing shall include, but not limited to the following items as shown on the plans and specified herein:

- 10) Deleterious materials resulting from clearing and grubbing operations shall be hauled away and disposed of legally at a site obtained by the Contractor.
- 11) Removal and disposal of pipe, steel posts, rubble, miscellaneous concrete and any additional items not specifically mentioned which may be found within the work limits and beneath the ground surface as a result of grading or trenching operations connected with the construction of project improvements.
- 12) Furnishing and applying water.
- 13) Adjustment to grade of miscellaneous items such as utility boxes, valves, manholes, pullboxes, posts.
- 14) The Contractor shall remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean-up of spillage will be at the Contractor's expense.
- 15) Clearing and grubbing shall also include any preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, materials and incidentals to the project site necessary for work on the project and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site.

Any asphalt pavement and concrete footing material removed during clearing operations shall be properly disposed at an approved off-site facility.

300-1.2 Preservation of Property. To the "GREENBOOK", ADD the following:

Items which are to remain or are to be salvaged and which are damaged during performance of work shall be repaired to their original condition or replaced with new by the Contractor at no additional cost to Owner. The Contractor shall protect all services and utilities which are to remain. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical utilities.

300-1.3.2 Requirements. To the "WHITEBOOK", DELETE item (1) in its entirety and SUBSTITUTE with the following:

- (1) **Bituminous Pavement.** Bituminous pavement shall be cut and removed in such a manner so as not to tear, bulge or displace adjacent paving by use of sawcutting, rockwheel, jackhammer or milling machine. Wheel type pressure cutters and drop hammer cutters shall not be permitted for final edge cut. Sawcutting of edges to be joined is required. Where only the surface of existing bituminous pavement is to be removed, the method of removal shall be approved by the Engineer, and a minimum laying depth of 25 mm (1 inch) of new pavement material shall be provided at the join line. Where bituminous pavement adjoins a trench, the edges adjacent to the trench shall be trimmed to neat straight lines before resurfacing to ensure that all areas to be resurfaced are accessible to the rollers used to compact the subgrade or paving materials. Concrete fragments that are free of reinforcing steel may be placed in fills, provided they are placed in accordance with 'Soil-Rock Fills' or 'Rock Fills' sections of this document.

ADD the following:

- (6) **Miscellaneous Materials.** Buried pavements and other materials, old subsurface pavements and other materials such as concrete planters, and other materials encountered under existing pavements, which are within designated excavation areas on the demolition plans shall be removed.
- (7) **Dust Control.** The Contractor shall take appropriate action to check the spread of dust to avoid the creation of a nuisance in the surrounding area. Do not use water if it results in hazardous or objectionable conditions, such as flooding, or pollution. Comply with all dust regulations imposed by local air pollution agencies.

ADD:

300-1.3.3 Execution.

- (1) **Paving:** Remove asphaltic concrete paving to depths as indicated on the plans or as required to allow for new improvements.
- (2) **Concrete:** Where concrete work is to be removed, saw cut concrete along straight lines to a depth of four inches minimum. At walls and other vertical surfaces, saw cuts shall be perpendicular to the vertical face and in alignment with the cut in the horizontal face. The remainder of the concrete shall be broken out, provided that the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, it shall be ground smooth or the sawcut shall be made entirely through the concrete.
- (3) **Filling:** Fill holes and other hazardous openings in accordance with **Section 300 "Earthwork"**.
- (4) **Title to Materials:** Title to all materials resulting from demolition, and all materials and equipment to be removed, is vested in the Contractor upon approval by the Resident Engineer of the Contractor's demolition and removal procedures, and authorization by the City to begin demolition. The City will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on or near the site.
- (5) **Salvaged Materials and Equipment:** Contractor to carefully remove materials and equipment with minimal damage that are designated to be salvaged on the plans. See **Section 7-21 "Construction And Demolition Waste Management"**.
- (6) **Debris and Rubbish:** Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean up spillage from streets and adjacent roads.
- (7) **Hazardous Materials:** refer to **Section 7-22 "Encountering or Releasing Hazardous Substances"** of the Whitebook for procedures when hazardous materials are encountered during excavation.
- (8) **Pavers:** Remove existing pavers, salvage and reuse at the entry road repair for electrical work. Return all salvaged pavers to the City.

300-2 UNCLASSIFIED EXCAVATION

300-2.1 General. To the "GREENBOOK", ADD the following:

In general, the on-site soils are suitable for reuse as fill if free from vegetation, debris, and other deleterious matter, with the exception of the following:

Per the Geotechnical Investigation Report, dated 10/8/2007, 'Undocumented Fill Removal and Replacement along Sewer Main Alignment'.

It is expected that the majority of the eastern portion of the sewer main (approximate station 15+00 to 18+00) will be excavated into native formational soils. Between approximate Stations 15+00 to the connection at Hubner Road, undocumented fill and/or alluvium may exist below the sewer main invert elevation. Based on exploratory borings (as found in the geotechnical report), it is expected that the thickness of undocumented fill and alluvium below the sewer main invert to be approximately 7 feet or less.

The Contractor shall remove all undocumented fill and alluvium below the sewer and replace it with compacted fill to reduce the potential for adverse settlement.

300-2.7 **SELECTED MATERIAL.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE the following:

Lead-contaminated materials encountered (limits per MND) in the designated excavation areas on the demolition plans shall not be used. Topsoil excavated within the limits of work may not be considered as selected material for the purpose of backfilling areas to be hydroseeded or for use as backfill for utilities.

300-2.9 **Payment.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

Unclassified Excavation shall be included in the lump sum Bid Item for "Construction of Park Improvements". This will include full compensation for furnishing all labor, materials, tools, equipment, and incidents, and for doing all the work involved in the excavation and embankments to achieve the subgrades and final grades as shown on the plans and as specified and as directed by the City.

300-4.1 **General.** To the "GREENBOOK", ADD the following:

The suitability of unclassified excavation as fill material shall be in accordance with the Geotechnical Report and prescribed recommendations found therein. Unclassified fill material shall be free of deleterious material.

ADD:

300-12 **Soils Report Conclusion and Requirements.**

300-12-1 **General.**

- 1) No soil or geologic conditions were encountered during our study that would preclude development of the restroom/concessions building and sewer main, provided the recommendations of this report are followed.
- 2) The site is underlain by surficial soils consisting of undocumented fill and alluvium. Formational materials of the Mission Valley and Stadium

Conglomerate Formations underlie the surficial soils. The surficial soils are considered compressible and unsuitable for support of building and structural improvements in their present condition and will require remedial grading. The formational units shall provide a suitable bearing strata for support of planned improvements.

- 3) The in situ soils can be excavated with light to moderate effort using conventional heavy-duty grading equipment. Cemented zones in the Mission Valley and Stadium Conglomerate Formations will require a very heavy effort to excavate and could result in oversize materials.
- 4) It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable OSHA rules and regulations in order to maintain safety and maintain the stability of adjacent existing improvements.
- 5) Subsurface conditions observed may be extrapolated to reflect general soil/geologic conditions; however, some variations in subsurface conditions between boring and trench locations and the contacts shown on the Geologic Map shall be anticipated.

300-12-2 Grading.

- 1) All grading shall be performed in accordance with the *Recommended Grading Specifications* contain in Appendix C (below) where the recommendations of this section conflict with those of Appendix C, the recommendation of this section take precedence. All earthwork shall be observed and all fill tested for proper compaction by Geocon Incorporated.
- 2) Prior to commencing grading, a pre-construction conference shall be held at the site with the grading and underground contractor, civil engineer, geotechnical engineer, City of San Diego personnel, and representatives from Estrada Land Planning in attendance. Special soil handling and/or grading can be discussed at that time.
- 3) The restroom/concessions building pad shall be cleared of existing grass, irrigation lines, and concrete hardscape within the building pad. Existing utility lines within the building pad that will be abandoned shall be completely removed to a horizontal distance of at least 5 feet outside of the building footprint area and the resulting excavation backfilled with properly compacted soil. The abandoned portion of the line left in-place shall be capped.
- 4) Because of the shallow depth of existing fill on the restroom/concessions building pad, no remedial grading will be required. However, we recommend the surface of the pad be scarified 12 inches, moisture conditioned as necessary to optimum or slightly above and recompacted to a relative compaction of at least 90 percent of the maximum dry density.
- 5) Because of the compressible nature of the undocumented fill and alluvium, we recommend undocumented fill and alluvium be completely removed and recompacted beneath the proposed sewer line. In some areas we expect

excavations to achieve sewer flow line elevation will remove a portion if not all of the undocumented fill. However, in other areas remedial removals below the flow line elevation will be required to remove compressible deposits. Where removals below the line are required, we recommend the removals extend to a horizontal distance of at least 3 feet beyond each edge of the pipe.

- 6) Fill soils shall be placed and compacted in layers to the design finish grade elevations. The layers shall be no thicker than will allow for adequate bonding and compaction. All fill (including scarified ground surfaces and utility trench backfill) shall be compacted to at least 90 percent of maximum dry density at optimum moisture content or slightly above as determined by ASTM D 1557-02. The placement of fill soil shall be observed and tested by a representative of Geocon Incorporated.

300-12.3 Foundation Recommendations.

- 1) Exterior slabs/hardscape shall be at least 4-inches thick and reinforced with 6x6-6/6 welded wire mesh. The mesh shall be placed within the upper one-third of the slab. Proper mesh positioning is critical to future performance of the slabs. It has been our experience that the mesh must be physically pulled up into the slab after concrete placement. The contractor shall take extra measures to provide proper mesh placement. Prior to placing concrete the slab sub-grade shall be moisture conditioned to near optimum moisture content and recompacted to a minimum of 90 percent relative compaction.
- 2) Exterior slabs/hardscape underlain by highly expansive soil ($EI > 90$) shall be at least 4-inches thick and reinforced with No. 3 steel reinforcing bars spaced 24-inches on center, both directions, placed at the slab midpoint. Prior to placing concrete the slab sub-grade shall be moisture conditioned to at least 3 percent over optimum moisture content and compacted to a minimum of 90 percent relative compaction.
- 3) To control the location and spread of concrete shrinkage and/or expansion cracks, it is recommended that crack control joints be included in the design of the concrete slab. Crack control joint spacing shall not exceed, in feet, twice the recommended slab thickness in inches (e.g., 8 by 8 feet for a 4-inch-thick slab). The crack control joints shall be created while the concrete is still fresh using a grooving tool, or shortly thereafter using saw cuts. The joint shall extend into the slab a minimum of one-fourth of the slab thickness. The structural engineer shall take into consideration criteria of the American Concrete Institute when establishing crack control spacing patterns.

300-12.4 Drainage.

- 1) Adequate drainage provisions are imperative. Under no circumstances shall water be allowed to pond adjacent to footings. The building pads shall be properly finished graded after the buildings and other improvements are in place so that drainage water is directed away from foundations, pavements, concrete slabs, and slope tops to controlled drainage devices.

300-13 GRADING.

300-13.1 General.

- 1) These Grading Specifications shall be used in conjunction with the Geotechnical Report for the project prepared by Geocon Incorporated. The text of the Geotechnical report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereafter in the case of conflict.
- 2) Prior to the commencement of grading, a geotechnical consultant (Consultant) will be retained by the City for the purpose of observing earthwork procedures and testing the fills for substantial conformance with the Geotechnical Report and these specifications. The Consultant shall provide adequate testing and observation services so that they may assess whether, in their opinion, the work was performed in substantial conformance with these specifications. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that personnel may be scheduled accordingly.
- 3) It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with the applicable grading codes or agency ordinances, these specifications and the approved grading plans. If, in the opinion of the Consultant, unsatisfactory conditions such as questionable soil materials, poor moisture condition, inadequate compaction, adverse weather, result in a quality of work not in conformance with these specifications, the Consultant will be empowered to reject he work and recommend to the City that grading be stopped until the unacceptable conditions are corrected.

300-13.2 Definitions.

- 1) **Consultant** shall refer to the soil engineering and engineering geology consulting firm retained by the City to provide geotechnical services for the project.
- 2) **Soil Engineer** shall refer to a California licensed Civil Engineer retained by the City, who is experienced in the practice of geotechnical engineering. The Soil Engineer shall be responsible for having qualified representatives on-site to observe and test the Contractor's work for conformance with these specifications.
- 3) **Engineering Geologist** shall refer to a California licensed Engineering Geologist retained by the City to provide geologic observations and recommendations during the site grading.
- 4) **Geotechnical Report** shall refer to a soil report (including all addenda) that was prepared specifically for the development of the project for which these Grading Specifications shall apply.

300-13.3**Materials.**

- 1) Materials for compacted fill shall consist of any soil excavated from the cut areas or imported to the site that, in the opinion of the Consultant, is suitable for use in construction of fills. In general, fill materials can be classified as soil fills, soil-rock fills or rock fills, as defined below.
 - a. Soil fills are defined as fills containing no rocks or hard lumps greater than 12-inches in maximum dimension and containing at least 40 percent by weight of material smaller than 3/4-inch in size.
 - b. Soil-rock fills are defined as fills containing no rocks or hard lumps larger than 4-feet in maximum dimension and containing a sufficient matrix of soil fill to allow for proper compaction of soil fill around the rock fragment or hard lumps as specified per the Geotechnical Report (Geocon 2007) section 6.3. Oversize rock is defined as material greater than 12-inches.
 - c. Rock fills are defined as fills containing no rocks or hard lumps larger than 3-feet in maximum dimension and containing little or no fines. Fines are defined as material smaller than 3/4-inch in maximum dimension. The quantity of fines shall be less than approximately 20 percent of the rock fill quantity.
- 2) Material of a perishable, spongy, or otherwise unsuitable nature as determined by the Consultant shall not be used in fills.
- 3) Materials used for fill, either imported or on-site, shall not contain hazardous materials as defined by the California Code of Regulations, Title 22, Division 4, Chapter 30, Articles 9 and 10; 40DFR; and any other applicable local, state or federal laws. The Consultant shall not be responsible for the identification or analysis of the potential presence of hazardous materials. However, if observations, odors or soil discoloration cause the Consultant to suspect the presence of hazardous materials, the Consultant may request from the City the termination of grading operations within the affected area.
- 4) The outer 15-feet of soil-rock slopes, measured horizontally, shall be composed of properly compacted soil fill materials approved by the Consultant. Rock fill may extend to the slope face, provided that the slope is not steeper than 2:1 (horizontal: vertical) and a soil layer not thicker than 12-inches is track-walked on to the face for landscaping purposes. This procedure may be utilized with approval from the Resident Engineer and Consultant.
- 5) Samples of soil materials to be used for fill shall be tested in the laboratory by the Geotechnical Consultant to determine the maximum density, optimum moisture content, and, where appropriate, shear strength, expansion and gradation characteristics of the soil.
- 6) During grading, if soil or groundwater conditions other than those identified in the Geotechnical Report are encountered by the Contractor, the Resident Engineer shall be notified immediately to evaluate the significance of the unanticipated condition.

300-13.4 **Compaction Equipment**

- 1) Compaction of *soil* or *soil-rock* fill shall be accomplished by sheepsfoot or segmented-steel wheeled rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers, or other types of acceptable compaction equipment. Equipment shall be of such a design that it will be capable of compacting the *soil* or *soil-rock* fill to the specified relative compaction at the specified moisture content.
- 2) Compaction of *rock* fills shall be performed in accordance with Section 300-13.5 (3).

300-13.5 **Placing, Spreading and Compaction of Fill Material**

- 1) *Soil* fill, as defined in 'Materials', shall be placed by the Contractor in accordance with the following requirements:
 - a. *Soil* fill shall be placed by the Contractor in layers that, when compacted, shall not exceed 8 inches. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to obtain uniformity of material and moisture in each layer. The entire fill shall be constructed as a unit in nearly level lifts. Rock materials greater than 12 inches in maximum dimension shall be placed in accordance with 'Solid Rock Fills', paragraph (2) below or 'Rock Fills', paragraph (3) below of these specifications.
 - b. In general, the soil fill shall be compacted at a moisture content at or above the optimum moisture content as determined by ASTM D 1557.
 - c. When the moisture content of soil fill is below that specified by the Geotechnical Consultant, water shall be added by the Contractor until the moisture content is in the range specified.
 - d. When the moisture content of the soil fill is above the range specified by the Consultant or too wet to achieve proper compaction, the soil fill shall be aerated by the Contractor by blading/mixing, or other satisfactory methods until the moisture content is within the range specified.
 - e. After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted by the Contractor to a relative compaction of at least 90 percent. Relative compaction is defined as the ratio (expressed in percent) of the in-place dry density of the compacted fill to the maximum laboratory dry density as determined in accordance with ASTM D 1557. Compaction shall be continuous over the entire area, and compaction equipment shall make sufficient passes so that the specified minimum relative compaction has been achieved throughout the entire fill.
 - f. Where practical, soils having an Expansion Index greater than 50 shall be placed at least 3 feet below finish pad grade and shall be compacted at a moisture content generally 2 to 4 percent greater than the optimum moisture content for the material.

- g. Properly compacted soil fill shall extend to the design surface of fill slopes. To achieve proper compaction, it is recommended that fill slopes be over-built by at least 3 feet and then cut to the design grade. This procedure is considered preferable to track-walking of slopes, as described in the following paragraph.
 - h. As an alternative to over-building of slopes, slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Upon completion, slopes shall then be track-walked with a D-8 dozer or similar equipment, such that a dozer track covers all slope surfaces at least twice.
- 2) *Soil-rock fill*, as defined in 'Materials', shall be placed by the Contractor in accordance with the following requirements:
- a. Rocks larger than 12 inches but less than 4 feet in maximum dimension may be incorporated into the compacted soil fill, but shall be limited to the area measured 15 feet minimum horizontally from the slope face and 5 feet below finish grade or 3 feet below the deepest utility, whichever is deeper.
 - b. Rocks or rock fragments up to 4 feet in maximum dimension may either be individually placed or placed in windrows. Under certain conditions, rocks or rock fragments up to 10 feet in maximum dimension may be placed using similar methods. The acceptability of placing rock materials greater than 4 feet in maximum dimension shall be evaluated during grading as specific cases arise and shall be approved by the Consultant prior to placement.
 - c. For individual placement, sufficient space shall be provided between rocks to allow for passage of compaction equipment.
 - d. For windrow placement, the rocks shall be placed in trenches excavated in properly compacted soil fill. Trenches shall be approximately 5 feet wide and 4 feet deep in maximum dimension. The voids around and beneath rocks shall be filled with approved granular soil having a Sand Equivalent of 30 or greater and shall be compacted by flooding. Windrows may also be placed utilizing an "open-face" method in lieu of the trench procedure, however, this method shall first be approved by the Consultant.
 - e. Windrows shall generally be parallel to each other and may be placed either parallel to or perpendicular to the face of the slope depending on the site geometry. The minimum horizontal spacing for windrows shall be 12 feet center-to-center with a 5-foot stagger or offset from lower courses to next overlying course. The minimum vertical spacing between windrow courses shall be 2 feet from the top of a lower windrow to the bottom of the next higher windrow.
 - f. Rock placement, fill placement and flooding of approved granular soil in the windrows shall be continuously observed by the Consultant.

- 3) Rock fills, as defined in 'Materials', shall be placed by the Contractor in accordance with the following requirements:
- a. The base of the rock fill shall be placed on a sloping surface (minimum slope of 2 percent). The surface shall slope toward suitable subdrainage outlet facilities. The rock fills shall be provided with subdrains during construction so that a hydrostatic pressure buildup does not develop. The subdrains shall be permanently connected to controlled drainage facilities to control post-construction infiltration of water.
 - b. Rock fills shall be placed in lifts not exceeding 3 feet. Placement shall be by rock trucks traversing previously placed lifts and dumping at the edge of the currently placed lift. Spreading of the rock fill shall be by dozer to facilitate seating of the rock. The rock fill shall be watered heavily during placement. Watering shall consist of water trucks traversing in front of the current rock lift face and spraying water continuously during rock placement. Compaction equipment with compactive energy comparable to or greater than that of a 20-ton steel vibratory roller or other compaction equipment providing suitable energy to achieve the required compaction or deflection per Paragraph (3).c. below shall be utilized. The number of passes to be made shall be determined as described in Paragraph (3).c. below. Once a rock fill lift has been covered with soil fill, no additional rock fill lifts will be permitted over the soil fill.
 - c. Plate bearing tests, in accordance with ASTM D 1196, may be performed in both the compacted soil fill and in the rock fill to aid in determining the required minimum number of passes of the compaction equipment. If performed, a minimum of three plate bearing tests shall be performed in the properly compacted soil fill (minimum relative compaction of 90 percent). Plate bearing tests shall then be performed on areas of rock fill having two passes, four passes and six passes of the compaction equipment, respectively. The number of passes required for the rock fill shall be determined by comparing the results of the plate bearing tests for the soil fill and the rock fill and by evaluating the deflection variation with number of passes. The required number of passes of the compaction equipment will be performed as necessary until the plate bearing deflections are equal to or less than that determined for the properly compacted soil fill. In no case will the required number of passes be less than two.
 - d. A representative of the Consultant shall be present during rock fill operations to observe that the minimum number of "passes" have been obtained, that water is being properly applied and that specified procedures are being followed. The actual number of plate bearing tests will be determined by the Consultant during grading.
 - e. Test pits shall be excavated by the Contractor so that the Consultant can state that, in their opinion, sufficient water is present and that voids

between large rocks are properly filled with smaller rock material. In-place density testing will not be required in the rock fills.

- f. To reduce the potential for “piping” of fines into the rock fill from overlying soil fill material, a 2-foot layer of graded filter material shall be placed above the uppermost lift of rock fill. The need to place graded filter material below the rock shall be determined by the Consultant prior to commencing grading. The gradation of the graded filter material will be determined at the time the rock fill is being excavated. Materials typical of the rock fill shall be submitted to the Consultant in a timely manner, to allow design of the graded filter prior to the commencement of rock fill placement.
- g. Rock fill placement shall be continuously observed during placement by the Consultant.

300-13.6 Observation and Testing.

- 1) The Consultant shall be the Owner’s representative to observe and perform tests during clearing, grubbing, filling, and compaction operations. In general, no more than 2 feet in vertical elevation of *soil* or *soil-rock* fill shall be placed without at least one field density test being performed within that interval. In addition, a minimum of one field density test shall be performed for every 2,000 cubic yards of *soil* or *soil-rock* fill placed and compacted.
- 2) The Consultant shall perform a sufficient distribution of field density tests of the compacted *soil* or *soil-rock* fill to provide a basis for expressing an opinion whether the fill material is compacted as specified. Density tests shall be performed in the compacted materials below any disturbed surface. When these tests indicate that the density of any layer of fill or portion thereof is below that specified, the particular layer or areas represented by the test shall be reworked until the specified density has been achieved.
- 3) During placement of *rock* fill, the Consultant shall observe that the minimum number of passes have been obtained per the criteria discussed in Section 300-13.5 paragraph 3c ‘Bearing Plate Tests’. The Consultant shall request the excavation of observation pits and may perform plate bearing tests on the placed *rock* fills. The observation pits will be excavated to provide a basis for expressing an opinion as to whether the *rock* fill is properly seated and sufficient moisture has been applied to the material. When observations indicate that a layer of *rock* fill or any portion thereof is below that specified, the affected layer or area shall be reworked until the *rock* fill has been adequately seated and sufficient moisture applied.
- 4) The City shall observe the placement of subdrains, to check that the drainage devices have been placed and constructed in substantial conformance with project specifications.
- 5) Testing procedures shall conform to the following Standards as appropriate:

a. Soil and Soil-Rock Fills:

- i. Field Density Test, ASTM D 1556, Density of Soil In-Place By the Sand-Cone Method.
- ii. Field Density Test, Nuclear Method, ASTM D 6938, Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).
- iii. Laboratory Compaction Test, ASTM D 1557, Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Pound Hammer and 18-Inch Drop.
- iv. Expansion Index Test, ASTM D 4829, Expansion Index Test.

b. Rock Fills:

- i. Field Plate Bearing Test, ASTM D1196-93 (Reapproved 1997) Standard Method for Non-reparative Static Plate Load Tests of Soils and Flexible Pavement Components, For use in Evaluation of Design of Airport and Highway Pavements.

300-13-7 Protection Of Work.

- 1) During construction, the Contractor shall properly grade all excavated surfaces to provide positive drainage and prevent ponding of water. Drainage of surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site. The Contractor shall take remedial measures to prevent erosion of freshly graded areas until such time as permanent drainage and erosion control features have been installed. Areas subjected to erosion or sedimentation shall be properly prepared in accordance with the Specifications prior to placing additional fill or structures.
- 2) After completion of grading as observed and tested by the Consultant, no further excavation or filling shall be conducted except in conjunction with the services of the Consultant.

300-13-8 Certifications and Final Reports.

- 1) Upon completion of the work, the Contractor shall have the City review and certify that the building pads are graded to within 0.1 foot vertically of elevations shown on the grading plan and that all tops and toes of slopes are within 0.5 foot horizontally of the positions shown on the grading plans. Upon completion of the subsurface drainage systems, the piping and cleanout locations and depths shall be field confirmed by the City and any field changes documented on the Contractor's field drawings for use in the preparation of As-builts.

300-13.9 Finish Grading.

Finish grades shall be measured at the top surface of materials.

The Contractor shall take every precaution to protect and avoid damage to underground utilities during grading and conditioning operations.

The Contractor shall coordinate all drainage work with all other trades. Established site drainage shall be maintained by the Contractor during all phases of landscape construction.

Final finish grades shall ensure positive drainage of the site with all surface drainage away from trails, buildings, play areas, walls, and toward drainage facilities, and catch basins or water courses.

Final grades shall be acceptable to the Resident Engineer. Grading operations shall conform to these grading specifications herein.

SECTION 301 – SUBGRADE PREPARATION, TREATED MATERIALS, AND PLACEMENT OF BASE MATERIALS

301-2.1 General. To the “GREENBOOK”, ADD the following:

Class II Aggregate Base shall be installed per this **Section 301-2 “Untreated Base”**.

301-2.4 Measurement and Payment. To the “GREENBOOK”, ADD the following:

Payment for Class II Aggregate Base shall be included in the lump sum Bid Item for “Construction of Park Improvements” and shall include full compensation for furnishing all labor, materials, equipment and incidentals necessary to perform the work as specified in the Standard Specifications, these Special Provisions and as directed by the City Engineer.

SECTION 303 - CONCRETE AND MASONRY CONSTRUCTION

303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.

303-5.1.1 General. To the “WHITEBOOK”, ADD the following:

This work shall consist of preparing the area on which the concrete work is to be placed, which may include preparation of sub-grade, removal of tree roots, and placement of base materials in accordance with these Specifications and as shown on the plans. The following types of miscellaneous concrete items are included:

- a) Standard Concrete Paving installed per **section 303-5.5.3 “Walk”**.
- b) Colored Concrete Paving installed per **section 303-5.5.3 “Walk”**.
- b) ADA Accessible Ramps installed per **section 303-5.5.5 “Alley Intersections, Access Ramps, and Driveways”**.

303-5.5.3 Walk. To the "GREENBOOK", First paragraph, DELETE in its entirety and SUBSTITUTE with the following:

The forms shall be set to place the finish surface in a plane sloping from one edge of paving to the other edge at a maximum of 1.5 percent perpendicular to the edge of paving, unless otherwise shown on the plans.

ADD the following:

After final troweling all walk surfaces shall receive a uniform light broom finish with a stiff fiber broom perpendicular to the edge of the walk, verify direction with City. Upon final curing walk surface shall meet or exceed a static coefficient of friction of .6 wet and approximately .8 dry. Finished surface shall meet ADAAG 4.5 requirements for paving.

303-5.9 Measurement and Payment. To the "GREENBOOK", DELETE and REPLACE with the following:

Payment for sidewalk, concrete paving, curb & gutters, and miscellaneous concrete items per **SSP Section 303-5.1.1 "General"** shall be included in the lump sum Bid Item for "Construction of Park Improvements" and shall include the complete structural section, reinforcing, subgrade preparation, compaction, formwork, and all specified finishes, admixtures, sealants, etc. and no other payment allowed therefore. The payment shall be segregated to conform to the bid items indicated on the bid schedule and includes any miscellaneous concrete items listed in **Section 303-5.1.1 "General"**.

303-7 COLORED CONCRETE.

303-7.1 General. To the "GREENBOOK", First sentence, DELETE 'Method A'.

ADD:

303-11 CONCRETE CURBS.

303-11.1 Concrete Mow Curb Installation.

Concrete Curbs shall be constructed as indicated on the plans. Concrete shall be 560-C-2500, cast in place using smooth forms set to provide the straight lengths as indicated on the plans. Reinforcing bar shall conform to section. Top surface of mow curb shall be light broom finish with trowelled edge, radii as indicated on the plans. Mow curb height shall be set to be flush with the adjacent finished grade.

SECTION 306 – OPEN TRENCH CONDUIT CONSTRUCTION

306-6.5.1 General. To the “WHITEBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

1. For PVC water pipes:
 - a) Bedding material shall:
 - i. Either be sand, crushed aggregate, or native free-draining granular material.
 - ii. 100% of the bedding material shall pass the no. 4 sieve and shall have an expansion when saturated with water of not more than 0.5%.
 - iii. Have a sand equivalent of SE 50. SE 30 or higher may be substituted for SE 50 as bedding material if all of the following requirements are met:
 - The top of the pipe and haunch areas are mechanically compacted by means of tamping, vibrating roller, or other mechanical tamper.
 - Equipment is of size and type approved by the Engineer.
 - 90% relative compaction or better is achieved.
 - b) When jetting, care shall be exercised to avoid floating of the pipe.
2. PVC sewer pipes shall be bedded in 3/8 inch (9.5 mm) or 1/2 inch (12.5 mm) crushed rock in accordance with 200-1.2, “Crushed Rock and Rock Dust”. Crushed rock for PVC sewer pipes may contain recycled Portland Cement Concrete and shall conform to gradation requirements for 3/8 inch or 1/2 inch nominal size as shown in Table 200-1.2.1 (A).
3. Storm drains and all types of non-PVC sewer mains shall be bedded in 3/4 inch (19 mm) crushed rock in accordance with 200-1.2, “Crushed Rock and Rock Dust”. Crushed rock for storm drains may contain recycled Portland Cement Concrete and shall conform to gradation requirements for 3/4 inch nominal size as shown in Table 200-1.2.1 (A). Bedding shall be placed to a depth of 4 inches (101.6 mm) below the outside diameter of the pipe or 1 inch (25.4 mm) below the bell of the pipe, whichever is greater.

SECTION 310 - PAINTING.

ADD:

310-6 ANTI-GRAFFITI COATING INSTALLATION.

310-6.1 Items to Receive Anti-Graffiti Coating.

Anti-graffiti coating shall be applied to building structure including their components such as masonry, mortar joints, caps, veneers, exposed portions of walls, etc.

Anti-graffiti coating, per this section, shall also be applied to precast concrete site furnishings, including benches, tables, litter receptacles, receptacles, etc. by the Manufacturer prior to installation and delivery to the site. The Contractor shall be responsible for conformance to **Section 210.1.1.1 "Anti-graffiti Coating"** and supplementary special provisions.

Additional components to precast concrete component such as grout joints, mortar joints, wall caps, veneers, stone veneers, etc. shall also have anti-graffiti coating applied by the Contractor.

Contractor shall apply anti-graffiti coating to concrete improvement mock-ups to show a representative example of the complete and finished installation.

310-6.2 Application. Application shall be applied by spray method unless otherwise approved or directed by the City. Anti-graffiti application shall conform to **Section 310-1 "General"** for Weather Conditions, Application, Thinning, and Protection of Work.

310-6.3 Payment. The payment for the Anti-Graffiti Coating Installation shall be included in the lump sum Bid Item for "Construction of Park Improvements". This shall include all labor, materials, equipment and incidentals shall be included in the price for the individual item to which it is applied and within the lump sum project cost. No additional compensation shall be allowed therefore.

SECTION 318 - NOT USED

ADD:

SECTION 319 - SITE FURNISHING INSTALLATION

319-1 General.

Deliver, store and handle all furnishing materials to prevent damage. Install all factory-fabricated site furnishings in conformance manufacturer's specifications, instructions and recommendations. Contractor shall provide the owner with one copy of complete manufacturers installation instructions and maintenance kit.

All components shall be firmly and permanently affixed to concrete surfaces and/or footings to the satisfaction of the Resident Engineer. Tamper-resistant connectors and/ or epoxies shall be used to prevent theft.

Site furnishings shall be installed accurately in the correct orientation, location and relationship with other improvements shown on the plans. For surface mount and/or coil rod application, epoxy shall be placed between site furnishing and mounting surface. Epoxy shall be placed in marked out location prior to site furnishing being

placed on top. No excess epoxy shall be visible (emerging) from the joint. All excess shall be cleaned from adjacent surface with no darkening and/ or staining of finished surfaces.

Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from installation work. Protect site furnishings from damage throughout construction work.

See construction plans and details for location and layout. See **Section 219 – Site Furnishings Materials**, of these Special Provisions for model numbers of furnishings.

Apply anti-graffiti coating per **Section 310-6**

319-1.1 Measurement and Payment.

Payment for Site Furnishings shall be included in the lump sum Bid Item for “Construction of Park Improvements” and shall include full compensation for furnishing: all metal fasteners with pant and/or protective coating, expansion shields, adhesives, epoxy, labor, material, equipment, tools and incidentals required to complete the work specified and no additional compensation will be made therefore.

319-1.2 Additional Installation Provisions

319-1.2.1 Trash & Recycling Receptacle Installation.

When trash and Recycling receptacles have maintenance door, Contractor shall verify maintenance door orientation with Resident Engineer prior to securing in place.

Install trash & Recycling receptacles 6-inches minimum from edge of hardscape and 10-feet minimum from seating areas.

319-1.2.2 Tables.

All tables shall be installed so there is a 4-foot minimum clearance from the outside edge of seating surfaces to other furnishings, posts and/or other vertical objects.

Accessible Tables.

Accessible tables shall be located where finish floor surfaces have a maximum slope of 1.5%, both directions.

319-1.2.3 Benches Installation.

Benches installed over permeable paver surfaces shall be secured using epoxy.

319-1.2.4 Bike Rack Installation.

Embed bicycle rack end post plumb into a 12-inch dia x 12-inch depth Cast in Place concrete footing to the depths indicated on the plans. Ensure the top of the bike rack will be 36 inches above the indicated finish surface after the concrete paving has been

constructed. Support the bike rack plumb for a minimum of 48 hours while footing cures.

SECTION 600 - ACCESS

ADD:

600-1 GENERAL. To the "WHITEBOOK", item 5, DELETE in its entirety and SUBSTITUTE with the following:

5. If the City's crews are unable to provide the citizens with the mandated services due to your failure to comply with these specifications, you shall collect trash, recyclables, and yard waste on the City's schedule and deliver to the City's designated locations. If you fail to perform this Work, you shall incur additional costs for the City to reschedule pick up of an area.

600-5 PAYMENT. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. The payment for access Work as specified in SECTION 600 – ACCESS shall be included in the Contract Price.

SECTION 700 - MATERIALS

700-10 To the "WHITEBOOK", "ADD" the following as pertinent to the electrical requirements of this project:

700-10 (Section 86-11) GENERAL ELECTRICAL REQUIREMENTS

700-10.1 (86-11.01) Description. All electrical work shall be in conformance with the plans, and State, Federal and Local Electric Codes, SDG&E Standards and City of San Diego Park and Recreation Department Consultant's Guide to Park Design and Development Design Manual, 2011. Work includes, but is not necessarily limited to, providing site power systems as follows:

1. Complete electrical primary & secondary conduit systems, including all metering/distribution equipment, panelboards, handholes, splice boxes, pads, and other associated components.
2. All conduit and feeder conductors for site work components supporting connection to the proposed new concession building.
3. Interception and extension of existing underground conduits allocated for future ballfield lighting into electrical room of proposed new concession building.
4. All required trenching, soil removal/replacement, compaction and pavement repairs, to current City standards.
5. Payment of all permit fees, utility company installation charges, SDG&E service orders, engineering fees, relocation costs, and related charges, as applicable.

- 700-10.2 (86-11.02) Schedule.** The Contractor shall obtain information and instructions from other Contractors on the site and other trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them under this section so that provisions for their work can be made without delaying the project.
- 700-10.3 (86-11.03) Accuracy of Data.** The electrical drawings are diagrammatic, but shall be followed as closely as actual construction and work in other sections will permit. All deviations from drawings required to conform to site conditions and to the work of others, shall be made as directed.
- 700-10.4 (86-11.04) Submittals.**
1. Materials List - Provide complete materials list of all proposed products, including catalog cuts of manufactured items.
- 700-10.5 (86-11.05) Quality Assurance.**
1. Manufacturer shall have the capability to produce the specified products to the delivery and quantity criteria of the project.
- 700-10.6 (86-11.06) Guarantee.** The contractor shall furnish a written guarantee against defective work, materials, and operation for a period of one full year after final acceptance.
1. All materials and equipment shall be new, free from defects and or the quality or rating shown or specified.
 2. Any defect due to missing or improper material or faulty workmanship existing or developed during the specified period shall be corrected and the resulting damage repaired without additional cost to the City. Such work shall be done at a time as directed by the Engineer.
- 700-1.7 (86-11.07) Product Handling.**
1. Protection - Use all means necessary to protect the materials of this section before, during, and after installation and to protect the work and materials, of all other trades.
 2. Replacements - In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the City.
- 700-10.8 (86-11.08) Covering Of Unreviewed Work.** No work shall be covered, or enclosed, without review, testing, and/or approval by Engineer. Work enclosed or covered prior to review and test shall be uncovered at Contractor's expense. After review, retest for approval and repair with material necessary to restore to original and proper condition.

700-11 (Section 86-12) ELECTRICAL COMPONENTS

700-11.1 (86-12.01) Conduit.

1. **Rigid Non-metallic Conduit** - Heavy-wall rigid non-metallic conduit, where permitted, shall be Carlon or equal, PVC Schedule 40 manufactured in accordance with NEMA TC-2, UL-651 and WC 1094A specifications.
2. Conduit shall be delivered to site in standard lengths with each length bearing the manufacturer's trademark or stamp and U.L. Labeled.
3. Conduit shall be minimum 3/4 inch or larger in diameter.
4. All conduits shall contain equipment grounding conductors.

700-11.2 (86-12.02) Wire/Conductors.

1. All wire and cable shall be rated for 600 volt, be color-coded, shall bear the Underwriters' Label, and shall be brought to the job in unbroken packages.
2. Wire coding shall be in accordance with the provisions of Section 210.5 of the latest edition of the National Electric Code.
3. All conductors unless noted otherwise shall be copper, No. 12 AWG minimum size. All conductors shall be stranded. Insulation type, unless otherwise noted, shall be as follows:
4. Feeder conductors: Type THW, 75 Degrees C.
5. Fixture and branch circuit conductors: Type THHN/THWN: XHHW or RHH - minimum 90 degrees C, unless otherwise noted.
6. Acceptable Manufacturers: General Wire and Cable Corp., Okonite Wire and Cable Corporation, Southwire or approved substitute.
7. All branch circuit conductors shall be labeled with circuit numbers.
8. One neutral conductor for each phase conductor pulled.
9. For wire #10 AWG and smaller provide Buchanan connectors or approved substitute. For wire #8 AWG and larger provide T&B "Lock-Tite" connectors or equal.
10. All connections shall be taped with rubber tape 1-1/2 times the thickness of the conductor insulation, then covered with Scotch #33 tape, or equal.
11. Splices in underground distribution systems shall be made only in accessible locations such as handholes, with a compression connector on the conductor

and by insulating and waterproofing by the following methods suitable for continuous submersion in water. Provide cast-type splice insulation by means of molded casting process employing a thermosetting epoxy resin insulating material applied by a gravity-poured method or by a pressure-injected method. Provide component materials of the resin insulation in a packaged form ready for convenient mixing without removing from the package. Do not allow the cables to be moved until after the splicing material has completely set.

700-11.3 (86-12.03) Pull/Splice Boxes (Below Grade) & Concrete Pads (Above Grade). All pull boxes shall be standard sizes. Provide cover lid as required for pedestrian or vehicular traffic condition, with bolted connections, and labeled "ELECTRICAL". All boxes shall be located 1" above grade in landscape areas and flush with pavement in paved or traffic areas. Above ground concrete pads in support of proposed new SDG&E equipment shall also be provided per SDG&E Standards. Grounding and barriers at pads shall be provided per SDG&E requirements.

700-11.4 (86-12.04) Site Lighting. Lighting fixtures at the electrical distribution building shall be per the schedule on the drawings or approved equal as accepted by the Engineer and shall include all accessories for a complete system.

700-11.5 (86-12.05) Other Materials. All other required materials shall be new, of highest quality for applicable use, and per approval of local agency, servicing utility, and City of San Diego. Distribution Switchboard and panelboards shall have copper busing.

SECTION 800 – MATERIALS

800-1.1.1 General. To the "GREENBOOK", ADD the following:

Topsoil shall be class "C" amended to meet class "A" Topsoil per **Section 800-1.1.2** of the Whitebook. Existing topsoil is to be collected, stockpiled and placed in all planting areas as indicated on the plans. All container planting areas shall have a minimum depth of topsoil as indicated in **Section 801-2.2.1** of the Whitebook.

800-1.2.2 Manure. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

Manure shall not be used.

800-1.2.4 Organic Soil Amendment. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

Organic Soil Amendment shall be Type 4, compost as follows:

Type 4 organic soil amendment (compost) shall be derived from Green Material (yard waste and/or food waste) that is composted in accordance with California Code of Regulations, Title 14, Chapter 3 Article 7, 17868.3 (15 Day Process to Further Reduce Pathogens and kill weed and other seeds). Incorporated into the soil, compost

improves soil texture; increases both nutrient and water holding capacity; and reduces the need for commercial fertilizer. Where applicable, Organic Soil Amendment can qualify as a component of LEED certification.

Type 4 organic soil amendment shall come from a compost facility that tests its compost on a quarterly basis and meets the requirements listed in **Table 800-1.2.4 (B)**. You shall provide a copy of the most recent quarterly test results and a current representative sample of the compost to be used on the project to the City prior to approval and the compost being used.

The City of San Diego's Miramar Greenery produces Type 4 organic soil amendment (compost) and complies with the U.S. Composting Council's Seal of Testing Assurance Program. The Miramar Greenery is located within the City's Miramar Landfill at State Hwy. 52 and Convoy St. in San Diego.

<http://www.sandiego.gov/environmental-services/miramar/greenery/>

Table 800-1.2.4 (B)

| Test Criteria | Acceptable Range | Unit of Measure | TMCC Test Method |
|----------------|------------------|--|--|
| pH | 6.0 – 7.5 | | 04.11-A 1:5 Slurry pH |
| Soluble salts | 0 - 10 | dS/m (mmhos/cm) | 04.10-A 1:5 Slurry Method |
| Organic Matter | 30 - 75% | % dry weight basis | 05.07-A Loss-on-ignition Organic Matter Method (LOI) |
| Stability | ≤ 8 | mg CO ₂ /g OM/day | 05.08-B carbon Dioxide Evolution Rate |
| Maturity | > 80% emergence | average % of control | 05.05-A Germination and vigor |
| Pathogens | | | |
| Fecal coliform | Pass | Pass/Fail per U.S. EPA Class A standard, 40CFR 503.32(a) | 07.01-B Fecal coliforms |
| Salmonella | Pass | Pass/Fail per U.S. EPA Class A standard, 40CFR 503.32(a) | 07.02 Salmonella |
| Heavy Metal | Pass | Pass/Fail per U.S. EPA Class A standard, | 04.06-Heavy Metals standards, |

| Test Criteria | Acceptable Range | Unit of Measure | TMCC Test Method |
|---------------|------------------|------------------------------------|--|
| | | 40CFR 503.13(a) Tables 1 and 3. | and Hazardous Elements. |
| Particle Size | ≥ 90% | % dry weight passing through 11mm | 02.02-B Sample Sieving for Aggregate Size Classification |

800-1.2.5 Mulch. To the “WHITEBOOK”, ADD the following:

4. Areas identified on the plans to receive container planting, excluding hydroseed areas, shall be mulched with **(g) Type 7 Mulch** (wood chips.) Average dimensions shall be 1" to 3" in length, 1/2" in thickness, and a natural dark brown color. Submit two (2) samples for approval by the City prior to installation.

5. Areas identified on the plans to receive hydroseed shall be **(m) Type 13 Hydro-mulch** (bonded fiber matrix.) The hydro-mulch slurry components shall consist of a BFM, Fertilizer, Mycorrhizal Inoculum, Seed Mix and Water. Slurry components shall be provided to the rates identified on the plans. Hydro-mulch slurry shall conform of the following specifications:

Bonded Fiber Matrix

Product shall be hydraulically-applied erosion control product Engineered Fiber Matrix™ (EFM™) and shall perform as a Bonded Fiber Matrix (BFM) product. EFM shall be 100% biodegradable, made in the United States and is composed of 100% recycled, thermally refined (within a pressurized vessel) virgin wood fibers, crimped interlocking biodegradable fibers, mineral activators and wetting agents (including high-viscosity colloidal polysaccharides, cross-linked biopolymers, and water absorbents). The EFM is phytosanitized, free from plastic netting, and when cured forms an intimate bond with the soil surface to create a continuous, porous, absorbent and flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth. Product may require a 4-24 hour curing period to achieve maximum performance.

Product: ProMatrix Engineered Fiber Matrix, or approved equal.

Manufacturer: PROFILE Products LLC
750 Lake Cook Road, Suite 440
Buffalo Grove, IL 60089
www.profileproducts.com
(800) 366-1180

Standards: Meet or exceed the "Technical Data" standards, "Composition", and "Packaging Data" as provided by the Profile Products, ProMatrix Engineered Fiber Matrix Data Sheet dated 04/2012.

Installation: Strict compliance with the manufacturer's instructions and recommendations.

Fertilizer

Fertilizer shall be derived from composting green materials, i.e., chipped, shredded, or ground vegetation; or recycled wood and/or Biosolids. Fertilizer shall comply with the regulations and be derived from a permitted/regulating composting facility who is a participant in the United States Composting Council "Seal of Testing Assurance" Program. Particle size shall be screened at 3/8 inch and contain approximately 80% 1/4-inch minus and up to 20% up to 3/8-inch.

Product: Hydropost, or approved equal.

Manufacturer: S&S Seeds, Inc
6155 Carpinteria Ave
Carpenteria, CA 93013

Application: Strict compliance with the manufacturer's instructions and recommendations.

Mycorrhizal Inoculum

Mycorrhizal Inoculum shall be certified that the product contains one or more species of mycorrhizal fungi at a minimum rate of 120 propagules per cubic centimeter.

Product: AM 120 Mycorrhizal Inoculum, or approved equal.

Manufacturer: Reforestation Technologies International (RTI)
www.reforest.com
(831) 424-1495

Application: Strict compliance with the manufacturer's instructions and recommendations.

Seed Mixture: **Seed Mixture compliant with requirements per section 800-1.3.**

Water

As required by the manufacturer's recommendations.

800-1.2.6 Inorganic Soil Amendments. To the "WHITEBOOK", ADD the following:

3. Soil sulfur shall be 99.5% elemental. Sizing on stacked screen shall be approximately: 8 mesh 4.3%; 20 mesh 7.8%; 50 mesh 46.9%; 100 mesh 39.3%; 200 mesh 1.7%.

4. Soil conditioner shall be granular, tri-c humate plus, a blend of humate and gypsum or approved equal, and shall contain 25% humic acids. It shall be free flowing, suitable for application with approved equipment and shall contain the minimum available percentages of 7% calcium and 5% sulphur.

ADD:

800-1.2.7 Herbicides and Pesticides.

Herbicides and pesticides shall be used in their appropriate applications with strict adherence to manufacturers' specifications and instructions. Herbicides and pesticides shall be applied by licensed applicators. The Contractor shall obtain approval for any and all pesticide and herbicide use in writing from the City.

Pre-emergent herbicide for shrub and groundcover areas (planted from flats) shall be Treflan, Surflan, Eptan, or approved equivalent.

Post-emergent herbicide for all areas shall be Round Up, Diquat, Montar, or approved equivalent, except for areas where it may contact standing or running water.

Post-emergent herbicide for all areas where herbicide may come in contact with standing or moving water shall be Aquamaster, Rodeo, or approved equal specifically approved for use near water bodies. These herbicides are approved for use within the riparian areas by the City and County of San Diego because it has been determined to be non-toxic to aquatic organisms. Other herbicides shall be approved by the City and County of San Diego prior to use on only the most noxious weeds, and only under the direct supervision of the City.

800-1.3 Seed. To the "WHITEBOOK", ADD the following:

7. Hydroseed seed types shall be in conformance with the seed mixture identified on the plans. Seeds shall meet or exceed the percent live seed (% seed purity x % germination rate = % live seed) identified on the plans.

Contractor shall submit current data of **percent seed purity, percent germination rate** and **% pure live seed** counts for all seeds specified in the mixture for approval. The data submitted shall be prepared on the seed manufacturer's or seed distributors letterhead, list the date, and be prepared for the contractor.

800-1.4.1

General. To the "WHITEBOOK", ADD the following:

8. Contractor shall notify the City a minimum of 48 hours before each plant delivery so the City can schedule a review.
9. Availability: Within 2 weeks of the start of work, the Contractor shall place orders for all plant material in sufficient time to reserve or grow the plants for the project. No substitutions will be allowed. If plants are not available, the Contractor shall have the specified species contract grown by a reputable plant nursery. Provide nursery name and resume for review and approval prior to contract growing.
10. Quality and Size: Plants shall be in accordance with the California State Department of Agriculture Regulations for Nursery Inspections of Rules and Grading. Nursery tags must be submitted to the Landscape Architect. Sizes shall conform to the dimensions indicated on the planting plan.
11. Quantities: Plant quantities indicated on the plans are for Contractor's convenience only. Quantities of all plant materials shall be furnished as needed to complete work as shown on the Plans.
12. The City is the sole judge as to acceptability of each plant. Vigorous, healthy, well-proportioned plants are the intent of this specification. Plants which are even moderately "overgrown," or are showing signs of decline or lack of vigor are subject to rejection. The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock, or as specified in the special conditions or plans. Plants larger in size than specified may be used with the approval of the Landscape Architect, but the use of larger plants will make no change in contract price. If the use of larger plants is approved, the ball of earth and spread of roots for each plant shall be increased proportionately.
13. Rejection or Substitution: The City reserves the right to reject any plant material found to be defective or not in conformance with plans and specifications. Plants shall be subject to inspection and approval or rejection at the project site at any time before or during progress of work, for size, variety, condition, latent defects, and injuries. All plants not conforming to the requirements herein specified shall be considered defective, and such plants, whether in place and installed or not, shall be marked as rejected and immediately removed from the site and replaced with new plants by the Contractor at his expense. Rejected plant material shall be replaced within one week of written notice, unless otherwise approved by the Resident Engineer.

Substitutions will not be permitted except if proof is submitted that any plant specified is not obtainable, then a proposal will be considered for use of the nearest equivalent size or variety and cost. All substitutions are subject to City's written approval.
14. Right to Changes: The Landscape Architect reserves the right to change the species, variety, and/or sizes of plant material to be furnished, provided that the cost of such plant changes do not exceed the cost of plants in the original bid,

and with the provision that the Contractor shall be notified, in writing, at least thirty (30) days before the planting operation has commenced.

800-1.4.2 Trees. To the "WHITEBOOK", ADD the following:

3. All trees shall:
 - a) Be of the specified type and size as indicated on the Plans, selected from high quality, well-shaped and proportioned Southern California-grown nursery container stock. Field grown stock grown in climatic regions which are different (as determined by the City) to those conditions found at the project site, shall have been acclimated to a climate similar to their intended locations prior to delivery and shall be accompanied by letter and/or certificate from the nursery that the plant materials are suitable for said locations or they will not be accepted.
 - b) Have grown in containers for sufficient time to permit full rooting within the container to bind the soil but not so long as to create a root bound condition. No container plants that have cracked or broken balls of earth, when taken from the container, shall be planted. No plants with damaged roots, broken root balls, or root bound, when taken from the container shall be planted.
 - c) Have a main leader branch and not a co-dominant branching structure, unless the tree is intended to be multi-trunk.
 - d) Be free of weeds, native grasses, Bermuda grass, and Kikuyu grass.

800-1.4.3 Shrubs. To the "GREENBOOK",ADD the following:

Field grown stock grown in climatic regions which are different (as determined by the City) to those conditions found at the project site, shall have been acclimated to a climate similar to their intended locations prior to delivery and shall be accompanied by letter and/or certificate from the nursery that the plant materials are suitable for said locations or they will not be accepted.

Contractor shall assure that shrubs are grown in containers for sufficient time to permit full rooting within the container to bind the soil but not so long as to create a root bound condition. No container plants that have cracked or broken balls of earth, when taken from the container, shall be planted. No plants with damaged roots, broken root balls, or root bound, when taken from the container shall be planted.

Containers for shrubs shall be free of weeds, native grasses, Bermuda grass, and Kikuyu grass.

800-1.5.3 Tree Stakes. To the "WHITEBOOK", ADD the following:

3. Tree stakes shall be two (2) inch diameter lodge pole stakes, pointed on one end. For trees with container sized greater than 36" box shall utilize three (3) inch diameter lode pole stakes, pointed on end with a minimum length of 10'-0".

800-1.5.4 Tree Ties. To the "WHITEBOOK", ADD the following:

4. Ties shall be made of minimum 1-inch width material and shall be of suitable length to wrap the trunk caliper and prevent rubbing when installed in a 'figure 8' method around stake and tree.

ADD:

800-1.7 Perforated Pipe.

Perforated pipe for tree drain: Shall be 4" Polyvinyl chloride SDR35 perforated pipe. Perforated pipe shall meet ASTM F-758 and AASHTO M-278. Pipe shall be supplied with a spun bonded filter sleeve to protect pipe from soil intrusion.

800-2.1.5 Copper Pipe. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

Copper pipe shall be Type "L" in accordance with ASTM B 88; brass pipe; brass piping shall be I.P.S. red brass; solder: 50/50 lead and tin.

Type "K" copper pipe shall be used to extend the existing water main at the meter to the new reduced pressure principle backflow assembly.

800-2.2.7 Valve Boxes. To the "WHITEBOOK", ADD the following:

4. Valve boxes shall be sized accordingly to allow wires in pull boxes to be loose and maintain a three-inch (3") clearance from the lid.

800-2.2.8 Master Control Valve. To the "WHITEBOOK", ADD the following:

3. Master valve conductors shall be compliant with Section 800-3.2.2. Master valve conductor shall be installed below grade adjacent to flow sensor data cable conduit.

800-2.2.15 Backflow Preventer Enclosure. To the "WHITEBOOK", ADD the following:

The backflow preventer enclosure shall conform to the following specifications:

Product: Strong Box - Stainless Steel Smooth Touch Backflow Enclosure

Model#: SBBC-30SS
Manufacturer: V.I.T. Products Inc, or approved equal.
(760) 735-2450
www.vitproducts.com
Dimensions: 31.5" (L) x 29.5" (H) x 17.75" (W)
Installation: In strict adherence to manufacturer's recommendations.

Model SBBC-30SS Description

The Backflow cage enclosure shall be of a vandal resistant nature manufactured of formed stainless steel tubing and rod, coated with a performance polymer alloy coating. All locking and mounting hardware shall be manufactured entirely of stainless steel. The frame of the enclosure shall be constructed of 1-1/4" tubing as a minimum, including the drop down door which inserts into the open end of the frame. The top, sides and end panels shall be constructed of rod forming a 1" x 2-1/2" rectangular pattern as a maximum opening. The vertical rods shall be a minimum of 3/16" thick and the horizontal rods shall be a minimum of 1/8". These rods shall be welded together forming grids. These grids shall be welded into the tube frames 1/2" welds not more than 4" apart. The enclosure shall be cleaned and coated with not less than 3 mils power coat.

Each enclosure shall have a mounting pad which shall be used as installation frame. Enclosure hardware on the mounting frame shall be stainless steel. Mounting frame shall be installed using 4 each; 3/8" "L" anchor bolts submerged in concrete a minimum of 2". The backflow cage enclosure shall remain bolted to the frame in open and closed positions. Enclosure and door shall close with concealed locking tab with 7/16" hole to accept padlock.

800-2.4 Sprinkler Equipment. To the "WHITEBOOK", ADD the following:

All materials and equipment used in all irrigation work shall be new and without flaws or defects and of quality and performance as specified, unless otherwise specified on the plans.

Prior to installation of any irrigation work, the Contractor shall submit an irrigation materials submittal for review and approval by the City. The submittal shall include a list of all materials and equipment they propose to use. If the Contractor propose to use materials or equipment other than those listed as approved, they shall submit in writing to the City a request to deviate from the approved list. Samples and product data of the materials or equipment shall accompany the request to assist the evaluation of the proposal.

SECTION 801 - LANDSCAPE AND IRRIGATION INSTALLATION

801-1 **General.** To the "WHITEBOOK", ADD the following:

5. All plants outside the limit of work shall be protected in place.
6. Do not operate equipment, which generates fumes or excessive heat, within 20' of the trees to remain. Fumes and heat can damage trees.
7. The grade around existing trees to remain shall remain as existing to avoid disturbance of roots and avoid burying the roots under additional soil.
8. When excavation must be carried out under or near the dripline of a tree identified to be protected in place, the construction of improvements shall minimally damage the root zone by root pruning as outlined in **Section 801-7.3 "Root Pruning for Sidewalk Replacement."** Depth of root pruning shall occur to the depth necessary to construction improvements. Exposed roots of trees shall be covered and shaded by moist burlap or canvas until backfill is placed.
9. Buried utilities and irrigation piping and equipment shall be located out of root zones wherever possible. In cases where utilities must cross root zones, tunnels shall be utilized in lieu of trenches. Tunneling within the rooting area of a tree to remain shall be done under the supervision of the City.
10. Trenching, excavation and soil disturbance within the drip line of vegetation to remain shall not be permitted except as specifically allowed by the City. It is the intent of the plans that the Contractor shall provide an alternate routing of irrigation, electrical and all trenching to avoid cutting through roots of existing vegetation to remain.
11. Upon completion of all work, remove tools, equipment, tree preservation materials and other measures from the site.
12. Repair all areas, structures and surfaces damaged and requiring repair resulting from tree preservation measures. Repair adjacent construction or surfaces soiled or damaged by tree preservation measures.
13. Payment for pruning of existing trees and vegetation to remain shall be included in the lump sum Bid Item for "Construction of Park Improvements" and no additional payment will be made.

801-2.2.1 **General.** To the "WHITEBOOK", Item 3, First Sentence, DELETE in its entirety and substitute with the following:

3. Class "C" topsoil shall be scarified and cultivated to a finely divided condition to a depth of 12 inches minimum below finish grade.

ADD:

801-2.2.1.1 Weed Eradication.

Soil preparation and planting shall not be allowed until all weeds are removed from within the limits of planting areas as indicated on the plans.

The Contractor's labor shall possess demonstrated ability to identify the difference between desirable native species and invasive weeds.

Weed eradication for entire project site. After irrigation installation, but before planting installation, the Contractor shall irrigate the entire project site three (3) to four (4) times over seven (7) to ten (10) days to germinate existing weed seeds. Allow weed seeds to grow until they reach a maximum height of two to three inches (2" - 3"). A post-emergent herbicide shall then be applied per **Section 800-1.2.7 "Herbicides and Pesticides"**. Avoid contact of herbicide with the existing plants to remain.

All herbicides used shall be compatible with use in the vicinity of water and shall be applied in accordance with the label specifications by personnel holding a valid pesticide and herbicide applicator's license. Herbicide use shall be approved by the City prior to application.

Pulled weeds and debris shall be transported and disposed of properly offsite immediately using approved methods to prevent any seed dispersal on the site.

The eradication of exotic plant species is required prior to any planting. All exotic vegetation within the planting areas shall be removed. Herbicide shall be applied to weedy vegetation (e.g., giant reed (*Arundo donax*), tamarisk (*Tamarix* sp.), pampas grass (*Cortaderia jubata*), tree tobacco (*Nicotina glauca*), yellow star-thistle (*Centaurea melitnesis*), cocklebur (*Xanthium* sp.), castor bean (*Ricinus communis*), annual beardgrass, and Bermuda grass (*Cynodon dactylon*), etc.) within the project area. All weedy species shall be cleared approximately two weeks following herbicide application.

The City shall inspect the site prior to planting and during revegetation. The planting of hydroseed shall be conducted on a weed free site.

Manual weed eradication shall continue during planting and during the plant establishment period and maintenance period; no herbicides shall be used following the initial weed eradication unless authorized by the City. Weed seedlings and sprouts shall be removed before attaining 12-inches in height and/or before producing seed.

All areas where weed removal creates bare areas in excess of 25 square feet shall be reseeded.

Weed eradication for shrub and groundcover areas (planted from flats). Three (3) to four (4) days after these plants have been installed; the Contractor shall apply the pre-emergent herbicide per manufacturer's specifications and instructions.

801-2.2.2 Fertilizing and Conditioning Procedures. Paragraphs 1 and 2 of the City Supplement, DELETE in its entirety and SUBSTITUTE with the following:

1. The planting area shall be ripped to a depth of 15" prior to bringing the planting area to finish grade. Where necessary to meet grades indicated on the plans, place additional Class A topsoil in planting areas. The planting area shall be brought to finish grade before spreading the soil amendment materials specified.
2. Soil amendments materials shall be uniformly spread at the prescribed rates as recommended in the soil test results outlined in **Section 800-1.1.2 "Class 'A' Topsoil"** or as modified by the Landscape Architect based on the test results review. All hardscape shall be dry at time of application.

The following rates and materials are provided for bidding purposes only, actual rates and materials may vary.

The Contactor shall provide the following rates of soil conditioning and amendment materials.

- A) Soil amendments for all planting areas 3:1 or less in steepness (except hydroseeded areas):
- | | |
|------------------|-------------------------|
| Soil conditioner | 4 cu. Yds/1,000 sq. Ft. |
| Gypsum | 120 lbs/1,000 sq. Ft. |
| Iron sulfate | 10 lbs/1,000 sq. Ft. |
| Soil sulphur | 10 lbs/1,000 sq. Ft. |
- B) After leaching, apply:
- | | |
|---------------------|----------------------|
| 10-10-10 fertilizer | 25 lbs/1,000 sq. Ft. |
|---------------------|----------------------|
- C) Post Planting Fertilizer Type:
- | | |
|-----------------------------|-----------------|
| Trees (per tree) | 1/2 lbs/ 12-4-6 |
| Shrubs, Vines (per 1000 sf) | 6 lbs/ 12-4-6 |
| Groundcover (per 1000 sf) | 6 lbs/ 12-4-6 |

Paragraph 4 and 6 of the City Supplement, DELETE in its entirety and REPLACE with the following:

4. After spreading, the soil amendments shall be cultivated into the upper 15-inches (381 mm) of soil by suitable equipment operated in at least 2 directions at right angles.

After amending soil as described above, all planting areas shall be sprayed with "Sarvon", or equal, at the rate of 6 gallons/acre (or 1 qt./2,000 sq. ft.) immediately prior to Deep Water Leaching.

Deep Water Leaching:

- A) After complete installation and testing of the irrigation system and tilling soil amendments, all on-grade areas shall be deep water leached, compacted and settled by repeated application of irrigation water until the soil has received a minimum of 12" of water, and has been thoroughly moistened to a depth of 24".
- B) After leaching operation, soil samples shall be taken by Contractor at the same locations indicated in the prior soil samples to verify the planting areas conform with agricultural suitability requirements outlined in **Section 800-1.1.2 "Class 'A' Topsoil"**.

6. All planting areas shall be fertilized in a uniform manner at the application rate identified in the soil analysis recommendations. Apply fertilizer with acceptable equipment and when plants/ planting areas are in dry condition, apply irrigation immediately after fertilizer application.

To the City Supplement, ADD the following:

8. Post Planting Fertilizer:

The Contractor shall apply Post-Planting Fertilizer sixty (60) days after planting and once again at the end of the post-construction maintenance period.

801-2.3 Finish Grading. To the "WHITEBOOK", Item 1, ADD the following:

Finish grade shall insure positive drainage from the site. Surface drainage shall be away from all building foundations. The City shall approve the final grades and elevations before planting operations may begin.

ADD:

801-2.4 Measurement and Payment.

The payment for the Topsoil shall be included in the lump sum Bid Item for "Construction of Park Improvements". This shall include full compensation for furnishing all material, delivery, placement, fees, labor, equipment, water, tools and incidentals required to complete the work specified. No additional compensation will be made therefore.

801-4.1 General. To the "WHITEBOOK", ADD the following:

7. The Contractor shall be responsible for managing the site and performing planting, maintenance and corrective measures to the best advantage of the plant material to promote healthy growth, establishment and success of the plantings. This shall include providing for drainage, irrigation, repair of damaged features, correction of deleterious conditions, maintaining a proper soil moisture level, weeding, fertilization, protection, temporary measures to promote establishment and other reasonable maintenance and construction

efforts needed to provide for the successful establishment of the plant materials during the entire contract period.

The Contractor shall not install planting as shown in the plans when it is obvious in the field that conditions exist which are detrimental to plant survival and growth. Such conditions shall be brought to the attention of the City. The successful establishment of the plantings during the entire contract period is the Contractor's responsibility.

Actual planting shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted horticultural practice, as approved by the City. No planting shall be done in any areas until it has been satisfactorily prepared in accordance with these specifications. Soil moisture level prior to planting shall be no less than 75% of field capacity. The determination of adequate soil moisture for planting shall be the sole judgment of the City and his decision shall be final. The Contractor shall obtain approval from the Resident Engineer of planting pits before planting operations shall begin. If the soil moisture level is found to be insufficient for planting, all planting pits shall be filled with water and allowed to drain before starting planting operations. No more plants shall be distributed in the planting area on any day than can be planted and watered on that day. All plants shall be planted and watered as herein specified immediately after the removal of the containers. Containers shall not be cut prior to placing the plants in the planting area.

8. Percolation Test: Prior to installing landscaping, Contractor shall perform percolation tests in representative areas of the site selected and approved by the City to verify acceptable amended soils drainage for planting areas.

Contractor shall provide a minimum of two percolation tests.

Percolation Tests shall be performed as follows:

- a) Dig a pit 2'x 2' x 2' deep. Contractor shall employ a system of measurement to track infiltration rates in the units of inches per hour, such as a marked stake at the center of the pit. Contractor shall clearly mark planting pit and provide a safety barrier or cover for safety.
- b) Pits shall be filled with 18" of water and allowed to completely drain.
- c) Pits shall then be filled with 12" of water and allowed to drain. The second fill must drain at a minimum rate of 0.5 inches per hour, for four hours.

The contractor shall be responsible for tracking infiltration rates with means necessary to report accurate infiltration rate in the specified units per pit.

- d) Report to the City the length of time that the water takes to completely drain from each pit and the observed infiltration rate.

If water does not drain at the minimum desired infiltration rate, the City will confer with the Landscape Architect to make a determination whether additional drainage measures will be required, especially at tree plantings.

No plants shall be installed until percolation tests have been observed by the City and a determination made that no further drainage measures are required.

Planting shall not be performed if plant pits contain standing water, or if pits are over saturated to a condition which may result in an unhealthful condition for the plant. It is the Contractor's responsibility to provide a suitable growing condition for the plant material and to maintain that condition throughout the entire contract period.

9. Upon arrival at the construction site, the City's Landscape Inspector will inspect the plants for any damage that may have occurred in transit. Plants that have been damaged in transit may be rejected at no cost to the City in accordance with **Section 800-1.4.1 "General"**.

801-4.2 Protection and Storage. To the "WHITEBOOK", ADD the following:

2. The Contractor's on-site plant storage area shall be approved by the City prior to the delivery of any plant materials.
3. All plants to remain on-site shall be watered as necessary during the entire construction contract to provide for plant health and survival. Watering shall be done under the direction of the City.

801-4.6.1 Tree Staking. To the "WHITEBOOK", ADD the following:

All 15 gallon, 24" box and 36" box size trees shall be double staked. Trees over 36" box shall utilize three (3) evenly spaced stakes installed to the same methods outlined in City of San Diego Standard **Detail SDL-101**. Refer to **Section 800-1.5.3** of these Special Provisions for approved staking materials.

Installed tree ties exhibiting inadequate length and/or tree support as determined by the City will not be accepted.

Payment for tree staking shall be included in the Contract Price paid for trees and no separate payment will be allowed therefore.

801-4.9.3 Seeding and Mulching. To the "GREENBOOK", ADD the following:

Install a 3" minimum depth layer of mulch in all tree, shrub, and groundcover planting areas unless otherwise indicated on the plans. Mulch types 1 through 9 shall not be installed in planting areas designated as turf, synthetic turf, hydroseed, decomposed

granite, cobble, and/ or rock mulch. Mulch shall be installed with a uniform depth and tapered down 3" clear of the trunk or crown of the plant.

Hydro-mulching shall occur only after weed abatement, soil preparation and final grading of the planting area. Hydro-mulch shall be applied by Method B as specified in **801-4.8.2**. Hydro-mulch shall be applied in a two-step application process with the slurry component rates identified on the plans. "Application Two" shall immediately follow "Application One." The second application shall be applied in the perpendicular direction to previous application. The two-step application process allows the seed mixture to be in close contact with the conditioned soil media.

All bare spots shall be re-seeded and mulched by the Contractor within thirty days of the initial application.

Mulch shall be measured by the square foot. The contract unit price paid for mulch shall be included in the lump sum Bid Item for "Construction of Park Improvements" project cost and shall include full compensation for furnishing all labor, materials, tools, equipment, all incidentals necessary to provide a complete installation, and for doing all the work involved in supplying and installing bark mulch, complete-in-place, as shown on the plans, as specified in these Special Provisions and as directed by the City.

801-5.1 General. To the "WHITEBOOK", ADD the following:

Contractor shall check and verify the water pressure at point of connection (POC) prior to beginning of work. Notify City of any discrepancy between pressure indicated on plans and actual water pressure.

Contractor shall check and verify all site conditions, utilities, and services prior to trenching. Verify point of connection location prior to beginning of work.

Plans are diagrammatic and approximate. All piping, valve boxes, backflow preventers, etc., shall be located in planting areas if possible. No irrigation equipment except pipe crossings and electrical crossings shall be located in or under sidewalks and streets except where street crossings or trench rerouting is required to protect existing trees.

All irrigation equipment shall be installed, flushed out, pressure tested, and the coverage test approved prior to plant installation.

Existing irrigation systems shall be inventoried and tested prior to the removal, capping, or modification of systems. It is intended that the systems remain operable during the construction and shall be provided with 'high line' supply as needed to maintain operability. Control systems shall remain in place until the new irrigation

controller is operational. A temporary battery-operated controller may be used at the slope revegetation location until the solar controller can be relocated.

801-5.3.1 General. To the "WHITEBOOK", ADD the following:

Trenches through paved areas shall be resurfaced in accordance with **Section 306-13 "Trench Resurfacing"**.

Concrete thrust blocks, minimum 1 cu. ft. with sufficient bearing area to resist the thrust of water, shall be constructed against undisturbed earth at all changes of direction exceeding 45 degrees for pressure mainline pipe larger than 2", thrust blocks shall be installed at gate valves, tees, elbows, crosses, and ends of pipe runs; or wherever the City deems one to be necessary. Thrust blocks are to be installed as per Standard Drawings **SDW-151**, sized for 4" pipe.

Contractor shall install sleeves where any waterline or controller wire passes under paving. Sleeves shall extend 12" beyond each side of the improvement. The letter "E" for electrical or the letter "W" for water shall be stamped or chiseled on the improvement directly above the sleeve. The sleeves shall be a minimum 18" deep for electrical and the sleeves 21" below grade for water. Sleeves for water mainlines within vehicular paving shall be placed at 36" depth. Sleeves shall be Schedule 40 PVC, typical. The diameter of the sleeve shall be two (2) pipe sizes larger than the diameter of waterline within.

All pressure pipe shall have a continuous blue colored trench marker metallic tape placed nine inches (9") below finished grade directly above the buried pipe. (See **Section 800-3.2.2.3 "Trench Marker Tape"** for material.)

Avoid installing pipe through proposed tree locations to avoid conflict with root ball.

801-5.4 Installation of Valves, Valve Boxes, and Special Equipment. To the "WHITEBOOK", paragraph 6, ADD the following:

The Contractor shall rework the locking toggles of the concrete valve boxes by replacing the existing clevis pin and sheet metal clip with a cadmium-plated machine bolt and self-locking nut. Apply oil to lubricate and to prevent rust. The Contractor shall paint the identification number of the valve and the controller clock on the cover of the valve box. Valve boxes shall be sized accordingly to allow wires in pull boxes to be loose and maintain a three-inch (3") clearance from the lid. All wires in pull boxes shall be loose and shall not come within three inches 75 mm (3 inches) from lid. Boxes shall be sized accordingly to accommodate this requirement.

To paragraph 7, ADD the following:

Backflow preventers shall be installed as specified on the contract documents.

801-5.5.1 General. To the "WHITEBOOK", ADD the following:

Plans are diagrammatic and approximate. Precise location of heads / bubblers shall be field adjusted to meet minor variations in the plan.

801-5.7.1 General. To the "GREENBOOK", ADD the following:

Flush all pipes clean prior to installing sprinkler heads. Do not allow water from irrigation flushing to enter plant pits where water would result in over-saturation of soil creating an unhealthful condition for plant materials.

801-5.7.2.1 General. To the "WHITEBOOK", ADD the following:

3. Mains larger than 2 inches, asbestos cement mains, mains employing socket and spigot gasket joints shall be tested in accordance with **Section 306-8 "Prefabricated Pressure Pipe"**. If leaks develop, repair leaking portions and repeat test until entire system is proven watertight. Test shall be observed and approved by City prior to backfilling trenches.

801-5.7.3 Sprinkler Coverage Test. To the City Supplement, ADD the following:

When system is complete, and prior to planting, the Contractor shall perform a coverage test in the presence of the City and Landscape Architect.

801-6 MAINTENANCE AND PLANT ESTABLISHMENT. To the "WHITEBOOK", ADD the following:

10. All disturbed areas receiving hydroseed and/or container plants shall include a 120-Day Plant Establishment Period and 25-month Revegetation Maintenance and Monitoring Period in accordance with the Long-Term Revegetation Maintenance Agreement.

11. **Operations and Maintenance Manuals.** Prepare and deliver to the Resident Engineer within ten calendar days prior to completion of construction, two (2) three ring hard cover binders containing the following information:

Index sheet stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturers' representatives.

Catalog and parts sheets on all material and equipment.

Contractor Guarantee statement.

Complete operating and maintenance instructions for all equipment.

In addition to the above mentioned maintenance manuals, provide the maintenance personnel with instructions for maintaining equipment and show evidence of such instruction in writing to the Resident Engineer at the conclusion of the project.

Payment for operation and maintenance manuals shall be included in the lump sum price for "Irrigation", and no additional compensation shall be allowed.

EQUAL OPPORTUNITY CONTRACTING PROGRAM (EOCP) SECTION A – GENERAL REQUIREMENTS

- 4.1 Nondiscrimination in Contracting Ordinance.** To the “WHITEBOOK”, subsection 4.1.1, paragraph (2), sentence (1), DELETE in its entirety and SUBSTITUTE with the following:

You shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, or suppliers.

END OF SUPPLEMENTARY SPECIAL PROVISIONS

TECHNICAL

SECTION 03310 - CONCRETE WORK

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Submit shop and placement drawings of all reinforcing.
 - 1. Placement drawings shall show the locations and spacing of reinforcing in the various parts of the structure with details as required, in accordance with ACI Detailing Manual. Cutting and bending lists submitted without placement drawings will be returned without review as incomplete. Placement drawings shall be complete so that placement of the reinforcing may proceed without reference to the design drawings.
 - 2. Mechanical couplers: Where mechanical couplers are required or permitted to be used to splice reinforcement steel, manufacturer's literature shall be submitted which contains instructions and recommendations for installation for each type of coupler used; certified test reports which verify the load capacity of each type and size of coupler used; and shop drawings which show the location of each coupler with details of how they are to be installed in the formwork.
- B. Submit mill tests and manufacturer's certification of compliance with CBC (2016 edition). Provide the following tests:
 - 1. Portland Cement Test: One sample shall be taken for each 100 tons of cement except when used in bulk loading ready mix plants where separate bins for pre-tested cement are not available, grab samples shall be taken for each shipment of cement placed in the bin with not less than one sample being taken for each day's pour and such samples shall be subsequently tested if required by the Resident Engineer.
 - a. For normal weight concrete, test aggregates in accordance with ASTM C33.
 - b. Tests on component materials and for compressive strength and shrinkage of concrete will be performed as specified herein. Test for determining slump will be in accordance with the requirements of ASTM C 143.
 - 2. Tests of Reinforcing Bars: Where samples are taken from bundles as delivered from the mill, with the bundles identified as to heat number, and provided the mill analyses accompany the report then one tensile test and one bend test shall be made from a specimen from each 10 tons or fraction thereof of each size of reinforcing steel.

- a. Where positive identification of the heat number cannot be made or where random samples are to be taken, then one series of tests shall be made from each 2-1/2 tons or fractions thereof, of each size of reinforcing steel.
3. Batch Plant Inspection: Except as provided below, the quality and quantity of materials used in transit mixed concrete and in batched aggregate shall be continuously inspected at the location where materials are measured by a specially approved inspector.
 - a. Exception: Batch plant inspection may be waived if the concrete plant complies fully with the requirements of CBC Standard 19-4 and has been certified to comply with the requirements of the National Ready Mix concrete Association. The plant must be equipped with an automatic batcher in which the total batching cycle, except for the measuring and introduction of an admixture, is completed by activating a single starter device.
 4. Placing Record: A record shall be kept on the work of the time and date of placing the concrete in each portion of the structure. Such record shall be kept until the completion of the structure and shall be open to the inspection of the Resident Engineer.
 5. Composite Construction Cores: Three test cores of the completed concrete construction shall be taken to demonstrate the shear strength along the contact surfaces. The cores shall be tested when the cast in place concrete is approximately 28 days old and shall be tested by a shear loading parallel to the joint between the precast concrete and the cast in place concrete. The minimum unit shear strength of the contact surface area of the core shall be not less than 100 pounds per square inch. The Resident Engineer or his representative shall designate the location for sampling.
 6. Grout
 - a. Compression test specimens will be taken during construction from the first placement of each type of grout, and at intervals thereafter as selected by the Resident Engineer to insure continued compliance with these specifications. The specimens will be made by the Resident Engineer or its representative.
 - b. Compression tests and fabrication of specimens for cement grout and non-shrink grout will be performed as specified in ASTM C 109 at intervals during construction as selected by the Resident Engineer. A set of three specimens will be made for testing at 7 days, 28 days, and each additional time period as appropriate.

- c. Compression tests and fabrication of specimens for epoxy grout will be performed as specified in ASTM C 579, Method B, at intervals during construction as selected by the Resident Engineer. A set of three specimens will be made for testing at 7 days, and each earlier time period as appropriate.
 - d. All grout, already placed, which fails to meet the requirements of these specifications, is subject to removal and replacement at the cost of the Contractor.
 - e. The cost of all laboratory tests on grout will be borne by the Owner, but the Contractor shall assist the Resident Engineer in obtaining specimens for testing. However, the Contractor shall be charged for the cost of any additional tests and investigation on work performed which does not meet the specifications. The Contractor shall supply all materials necessary for fabricating the test specimens.
- C. Submit mix design a minimum of seven days prior to placement. Provide the following submittals in accordance with ACI-301:
- 1. Mill tests for cement.
 - 2. Admixture certification. Chloride ion content must be included.
 - 3. Aggregate gradation and certification.
 - 4. Materials and methods for curing.
- D. Product Data: Submit manufacturer's product data for all material provided and installed under this section of work, including curing compounds, colored concrete and concrete sealer.
- E. Samples: Provide 4-foot square test sample of exposed aggregate concrete and stamped concrete for each color and pattern indicated. Samples must be reviewed and approved prior to scheduling actual concrete pours.
- F. Grout: Submit the following:
- 1. Manufacturer's literature containing instructions and recommendations on the mixing, handling, placement, and appropriate uses for each type of non-shrink and epoxy grouts proposed for use in the WORK.
 - 2. Certified test results verifying the compressive strength, shrinkage, and expansion properties for proposed non-shrink and epoxy grouts.

1.02 PRODUCT DELIVERY

- A. Storage of Materials: Cement and aggregates shall be stored at the work in such manner as to prevent deterioration or intrusion of any foreign matter. Cement shall be kept dry and any material which has deteriorated or which has been damaged shall not be used.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Normal Weight Aggregates: Normal sand-gravel aggregates conforming to ASTM C 33. The coarse aggregates shall be prepared and handled in two or more size groups for combined aggregates with a maximum size greater than 3/4-inch.
- B. Cement: "Standard Specifications for Portland Cement" ASTM C 150, Type V.
- C. Water: Potable, clean and free from deleterious amounts of acids, alkali, oil, or organic materials.
- D. Admixtures: All admixtures shall be compatible and by a single manufacturer capable of providing qualified field service representation. Admixtures shall be used in accordance with manufacturer's recommendations. If the use of an admixture is producing an inferior end result, the Contractor shall discontinue use of the admixture. Admixtures shall not contain thiocyanates nor more than 0.05 percent chloride ion, and shall be non-toxic after 30 days.
 - 1. Air-entraining agent meeting the requirements of ASTM C 260 shall be used. Sufficient air-entraining agent shall be used to provide a total air content of 3 to 5 percent. The Owner reserves the right, at any time, to sample and test the air-entraining agent received on the job by the Contractor. The air-entraining agent shall be added to the batch in a portion of the mixing water. The solution shall be batched by means of a mechanical batcher capable of accurate measurement. Air content shall be tested at the point of placement.
 - 2. Set controlling and water reducing admixtures: Admixtures may be added at the Contractor's option to control the set, effect water reduction, and increase workability. The addition of an admixture shall be at the Contractor's expense. The use of an admixture shall be subject to acceptance by the Resident Engineer. Concrete containing an admixture shall be first placed at a location determined by the Resident Engineer. Admixtures specified herein shall conform to the requirements of ASTM C 494. The required quantity of cement shall be used in the mix regardless of whether or not an admixture is used.
 - a. Concrete shall not contain more than one water reducing admixture. Concrete containing an admixture shall be first placed at a location determined by the Resident Engineer.
 - b. Set controlling admixture shall be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently over 80 degrees F, a set retarding admixture shall be used.
 - c. Normal range water reducer shall conform to ASTM C 494, Type A. The quantity of admixture used and the method of mixing shall be in accordance with the Manufacturer's instructions and recommendations.

2.02 REINFORCING MATERIALS

- A. Reinforcing bars, except as otherwise indicated, shall be new, deformed steel conforming to ASTM A 615, grade 60.
- B. All reinforcing to be welded shall be ASTM A706, grade 60.
- C. Accessories shall include all necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcement during concrete placement. Concrete blocks (dobies), used to support and position reinforcement steel, shall have the same or higher compressive strength as specified for the concrete in which it is located. Wire ties shall be embedded in concrete block bar supports.
- D. Mechanical Couplers
 - 1. Mechanical couplers shall be provided where shown and where approved by the Resident Engineer. The couplers shall develop a tensile strength which exceeds 125 percent of the yield strength of the reinforcement bars being spliced at each splice.
 - 2. Where the type of coupler used is composed of more than one component, all components required for a complete splice shall be supplied. This shall apply to all mechanical splices, including those splices intended for future connections.
 - 3. The reinforcement steel and coupler used shall be compatible for obtaining the required strength of the connection. Straight threaded type couplers shall require the use of the next larger size reinforcing bar or shall be used with reinforcing bars with specially forged ends which provide upset threads which do not decrease the basic cross section of the bar.
 - 4. Contractor shall submit manufacturer catalog showing conformance with specifications and location where it will be used for approval by Engineer of Record.

2.03 JOINT MATERIALS

- A. Premoulded Expansion Joint Filler: 1/2" thick, depth as required by slab thickness of premoulded, resilient, non-bituminous material.
- B. Joint Cap: Plastic expansion joint cover cap with removable cover to receive sealant, by White Cap, JP Specialties, or equal.
- C. Sealant: Expansion joint sealer and backer rod shall be in accordance with Section 07920.

2.04 FORM MATERIALS

- A. Forms for Unexposed Finish Concrete: Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.
- B. Forms for Exposed Finish Concrete: Form concrete surfaces which will be exposed in finished structure with plywood, metal, metal framed plywood faced, or other acceptable panel type materials to provide continuous, straight, smooth exposed surfaces. Provide in largest practical sizes to minimize joint locations and to conform to joint layout indicated.
 - 1. Use plywood complying with US Product Standards PS-1, "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled and edge sealed, with each piece bearing legible inspection trademark.
- C. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

2.05 MISCELLANEOUS

- A. Curing Paper: ASTM C 171, reinforced, non-staining type.
- B. Curing Compound: Liquid membrane forming compound conforming to ASTM C 309, Type 1, Class B, all-resin and free of paraffin or petroleum. Curing compound and areas receiving it must be approved in advance by the Resident Engineer.
 - 1. Brand of curing compound to be used on slabs where resilient flooring is to be applied shall be approved by installer of resilient flooring.
 - 2. No sealer or curing compound shall be applied to concrete surfaces which are to receive ceramic tile. All surfaces must be cured a minimum of 28 days prior to tile installation.
 - 3. Curing compound where the interior finished floor surface is exposed concrete shall be clear sealer hardener as specified.
- C. Sand Fill for Concrete Slabs on Grade: Imported clean sand.
- D. Vapor Barrier: Polyethylene vapor barrier conforming to ASTM D 2103, with a nominal thickness of 10 mils.
- E. Non-Shrink Grout: Sika, Master Flow, or equal, non-shrink, non-metallic grout. Non-shrink grout shall be a prepackaged, inorganic, non-gas-liberating, non-metallic, cement-based grout requiring only the addition of water. Manufacturer's instructions shall be printed on each bag or other container in which the materials are packaged. The specific

formulation for each class of non-shrink grout indicated herein shall be that recommended by the manufacturer for the particular application.

1. Class B non-shrink grouts shall have a minimum 28 day compressive strength of 5000 psi and shall meet the requirements of CRD C 621.
 - a. Class B non-shrink grout shall be used for the repair of all holes and defects in concrete members which are not water-bearing and not in contact with soil or other fill material, grouting under all base plates for structural steel members, and grouting railing posts in place.
 - b. Prepackaged grouts shall have ingredients measured by means recommended by the manufacturer.

- F. Integral color: Powdered pigments, by LM Scofield Company, or equal. Color shall be as indicated.

- G. Gravel: Pea gravel not to exceed 3/8 inch maximum particle size.

- H. Colored Sealer Hardener: *Lithochrome*, by LM Scofield Company, or equal. Color shall be as indicated.

- I. Stamped Concrete: Bomanite Corp., pattern as indicated.

2.06 MIXES

- A. Provide mix design in accordance with ACI 318. Include manufacturer literature for all admixtures used in mix design.

- B. Provide concrete of the strengths indicated in the structural general notes.

- C. Base mix design on maximum 4" slump for normal weight concrete with a maximum water-cement ratio of 0.50.

- D. Ready-Mix Concrete: Mixed and delivered in accordance with the requirements of ASTM C 94.
 1. Concrete may be rejected if not placed in final position within 1-1/2 hours after water is first added to the batch, or if not in such condition that it can be properly placed.
 2. Each mixer truck shall be accompanied by a Public Weighmaster's Certificate.

PART 3 - EXECUTION

3.01 FORMS

- A. All forms shall conform to the shape, lines, and dimensions of the members as called for on the plans, and shall be substantial and sufficiently tight to prevent leakage of mortar. Provide openings in formwork as required.
- B. Construction: Conform to the requirements of ACI-347 "Recommended Practice for Concrete Formwork", except as modified herein. Provide chamfers as noted or detailed, otherwise provide square corners. Provide offsets, recesses, etc., as required.
- C. Form Coatings: Coat contact surfaces of forms with a form-coating compound before reinforcement is placed. Apply in accordance with manufacturer's recommendations.
- D. Inserts and Anchors: Comply with ACI-318 "Building Code Requirements for Reinforced Concrete", for embedded conduits and piping, except as modified by the drawings.
 - 1. Carefully check all other trades before completing forms and placing concrete to determine that all embedded items are in place.
 - 2. Set all miscellaneous anchors, bolts, ties, dowels, plates, etc. All must be set and tied prior to pouring.
 - 3. Cooperate completely with other trades in the proper settings, aligning and securing of all items built into and dependent on the concrete work.
- E. Forms shall be reviewed by the Resident Engineer prior to concrete pour.
- F. Removal of Forms: The supporting forms shall not be disturbed until the concrete has hardened sufficiently to permit their removal with safety.
 - 1. In no case shall the forms be removed from walls and footings sooner than five days.
 - 2. Forms shall be removed in accordance with requirements of the ACI-347 "Recommended Practice for Concrete Formwork" without damage to concrete and in a manner to ensure complete safety of the structure.
 - 3. Freshly stripped surfaces shall not be painted up or touched in any manner before having been inspected.

3.02 PLACING REINFORCEMENT

- A. All reinforcement shall be bent and placed in accordance with the "Code of Standard Practice" of the Concrete Reinforcing Steel Institute. All steel shall be thoroughly cleaned

of mill scale, rust and coatings that will destroy or reduce the bond. Steel shall be accurately positioned and secured in place with annealed wire of not smaller than No. 14 gage.

- B. All horizontal slab and pavement steel shall be supported on precast concrete blocks or approved chairs of the proper size and spaced so as to keep the steel at the proper height in the slab.
- C. Provide "Concrete Encased Electrode" (CEE) ground consisting of steel reinforcing bar of at least 1/2" diameter at least 20' in length encased in concrete foundation at telephone and electric room per National Electric Code and as indicated.
- D. Fabrication
 - 1. Reinforcement steel shall be accurately formed to the dimensions and shapes shown, and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as indicated. Stirrups and tie bars shall be bent around a pin having a diameter not less than 1-1/2-inch for No. 3 bars, 2-inch for No. 4 bars, and 2-1/2-inch for No. 5 bars. Bends for other bars shall be made around a pin having a diameter not less than 6 times the bar diameter, except for bars larger than 1 inch, in which case the bends shall be made around a pin of 8 bar diameters. Bars shall be bent cold.
 - 2. The Contractor shall fabricate reinforcement bars for structures in accordance with bending diagrams, placing lists, and placing drawings.
 - 3. Fabricating Tolerances: Bars used for concrete reinforcement shall meet the following requirements for fabricating tolerances:
 - Sheared length: + 1 inch
 - Depth of truss bars: + 0, - 1/2 inch
 - Stirrups, ties, and spirals: + 1/2 inch
 - All other bends: + 1 inch
- E. Unless otherwise specified, reinforcement placing tolerances shall be within the limits specified in Section 7.5 of ACI 318 except where in conflict with the requirements of the CBC.

3.03 CONCRETE PLACEMENT

- A. Concrete shall not be placed until all reinforcement is securely and properly fastened in its correct position and items required to be embedded in the concrete have been placed and anchored, forms cleaned and oiled as specified; and until the form work has been reviewed by the Resident Engineer for general conformance to the construction documents.

- B. All concrete shall be placed upon clean, damp surfaces free from standing water, and never upon soft mud, dry porous earth, or upon fills that have not been subject to approved puddling or tamping so that ultimate settlement has occurred.
 - 1. Concrete shall not be placed in water nor shall water be allowed to rise over freshly placed concrete until the concrete has obtained its final set.
- C. Concrete shall be deposited in approximately horizontal layers, not to exceed twelve inches in thickness, unless otherwise authorized, and the pour shall be carried on in a continuous operation, as far as practicable, until the placing in the course, section, panel or monolith is completed.
- D. Concrete in foundation walls shall be consolidated with the aid of approved mechanical vibrating equipment. The intensity, duration, and vibration shall be sufficient to accomplish thorough compaction. The concrete shall be compacted and worked in an approved manner into all corners and angles of the forms and around reinforcement and embedded fixtures.
- E. Concrete Floor Slabs on Grade (Other than Apparatus Area):
 - 1. After all utilities or other installations required under the slab have been installed, place 2" of sand over compacted grade, place vapor barrier over sand, and then place another 2" of sand over vapor barrier and bring to uniform surface to receive concrete slab.
 - 2. Dampen top layer of sand prior to placing concrete.
- F. Concrete Floor Slabs on Grade (Apparatus Area):
 - 1. After all utilities or other installations required under the slab have been installed, place 4" of gravel over compacted grade, place vapor barrier over gravel, and then place 2" of sand over vapor barrier and bring to uniform surface to receive concrete slab.
 - 2. Dampen top layer of sand prior to placing concrete.
- G. *Color Hardener: Apply color hardener in amounts and application method per manufacturer's recommendation, if color is required by the Resident Engineer.*

3.04 CURING

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Initial Curing: Initial curing shall immediately follow the finishing operation. Concrete shall be kept continuously moist for a minimum of three days. One of the following methods shall be used.
 - a. Ponding or continuous sprinkling.
 - b. Absorptive mat or fabric kept continuously wet.
- B. Curing Compounds for non-exposed Concrete Areas
 1. Slabs-On-Grade: Apply specified curing compound to concrete faces.
 - a. Apply uniformly in continuous operation by power sprayer or roller in accordance with manufacturer's recommendations. No sealer or curing compound shall be applied to concrete surfaces which are to receive ceramic tile. All surfaces must be cured a minimum of 28 days prior to tile installation.
 - b. Maintain continuity of coating and repair damage during curing period.
 - c. Protect surfaces from abrasion during curing period.

3.05 MONOLITHIC SLAB FINISHES

- A. After screeding and leveling concrete to proper elevation, tamp with heavy grille tamper until at least 3/8" of mortar has been brought to the surface; as soon as the surface becomes workable, work with float, pushing down all coarse aggregate, filling all holes and leveling surface to a true and even surface, level, or sloped as detailed.
 1. Refer to drawings for location of finishes.
- B. Slabs to receive ceramic tile shall be floated to a uniform sandy finish. Surfaces shall be left clean, free of dust, oil, grease, wax, tar, paint, curing agents, sealers, form release agents or and deleterious substance which may reduce or prevent tile adhesion.
- C. Smooth Trowel Finish (For interior concrete finish floors and sub-floors for resilient flooring and carpet): Float and trowel to a perfectly smooth finish. Steel trowel finish shall be composed of at least three separate steel trowel operations.

3.06 EXTERIOR SLAB FINISHES

- A. After screeding and leveling concrete to proper elevation, tamp with heavy grille tamper until at least 3/8" of mortar has been brought to the surface; as soon as the surface becomes workable, work with float, pushing down all coarse aggregate, filling all holes and leveling surface to a true and even surface, level, or sloped as detailed.
 1. Refer to drawings for location of finishes.

- B. Surfaces to receive stamped concrete finish shall utilize patterned stamps as indicated to provide uniform finish.
 - 1. Contractor shall be a licensed Bomanite Contractor trained in the use of manufacturer's stamped concrete system.
 - 2. After placing concrete, screed to grade and float to a uniform surface. While concrete is still plastic, apply imprinted tools for indicated impression.
 - 3. Cure concrete per manufacturer's recommendations and as specified in Paragraph 3.04.A.
- C. All exterior walking surfaces not indicated otherwise shall have a medium broomed finish (Coefficient of Friction .60).

3.07 FINISHING FORMED SURFACES

- A. Rough-Formed Surfaces: Provide a rough-formed finish on formed concrete surfaces not exposed to view in the finished work. This is the concrete surface having texture imparted by form facing material used, with tie-holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.
- B. Smooth-Formed Surfaces: Provide a smooth-formed finish on formed concrete surfaces exposed to view in the finished work. This is an as-cast concrete surface with selected form facing material, arranged in an orderly and symmetrical manner, with a minimum of seams. Repair and patch defective areas with fins and other projections completely removed and smoothed.
- C. Related Uniform Surfaces: At tops of walls, horizontal offsets, and similar uniformed surfaces adjacent to a formed surface, strike off smooth and finish with a texture to match the adjacent formed surface. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.08 JOINTS

- A. Locate as indicated on the drawings.
- B. Construction Joints: Wet hardened concrete and keep wet for twenty-four hours before placing concrete.
- C. Interior Slab Control Joints: Provide expansion and weakened plan control joints where indicated on drawings. Install as indicated and according to manufacturer's instructions.

1. **Sawcut joints will only be permitted where approved in advance by Resident Engineer.**
 2. **All sawcutting of joints must be completed within 8 hours of concrete pour.**
- D. Expansion joints shall receive expansion material and sealant as specified. Provide void caps over all expansion joints. After curing, detach removable cap and seal. Install in accordance with Section 07920, Sealants. Finish sealant to 1/8 inch below surface of slabs. No traffic shall be permitted over sealed joints until sealant is thoroughly dry.

3.09 PATCHING AND FINISHING

- A. All exposed concrete which is above grade and is not formed as shown on the drawings, or for any reason is out of alignment, or is not true, or is not plumb or level, or is not in plane, or shows a defective surface, or is not otherwise in true and continuous form, shall be considered as not conforming with the intent of the specifications.
1. The maximum permissible deviation from true straight surfaces shall be 1/8" in ten feet.
 2. All surfaces not meeting the above requirements shall be machine ground and honed to come within the above tolerance or shall be removed and replaced.
- B. Contractor shall remove defective concrete from the job, or if permission is given, patch defective concrete at no cost to the Owner. Removal shall be accomplished by sawcutting around the defective area at the nearest construction joint.
- C. After the forms have been removed, all concrete surfaces shall be inspected and any pour joints, voids, stone pockets or other defective areas permitted by Resident Engineer to be patched, and all tie holes, shall be patched before the concrete is thoroughly dry.
1. Defective areas shall be chipped away to a depth of not less than one inch with the edges perpendicular to the surface.
 2. The area to be patched and a space of at least six inches wide entirely surrounding it shall be wetted to prevent absorption of water from the patching mortar.
 3. A grout of equal parts of Portland cement and sand with sufficient water to produce a brushing consistency shall then be well brushed into the surface, followed immediately by the patching mortar.
 4. The patch shall be finished in such manner as to match the adjoining surface in both texture and color.

3.10 SEALING

- A. Thoroughly clean all exposed concrete surfaces per manufacturer's recommendations, to provide a clean, dust free surface.

- B. After allowing the surface to dry, apply the two-component sealer in accordance with manufacturer's recommendations.

3.11 FIELD QUALITY CONTROL

- A. Cylinders shall be taken by an approved Testing Laboratory per Specification Section 01410, "Testing and Inspection", and shall be made in accordance with ASTM C 31. Concrete shall be tested in accordance with "Standard Method of Making Compression Tests of Concrete" ASTM C 39.
 - 1. At least five identical cylinders shall be tested for each one-hundred cubic yards or fraction thereof of each type and strength of structural concrete, and shall be tested at the ages of seven and twenty-eight days.
 - 2. Contractor to notify the designated testing lab of pour times prior to placement of any concrete. Contractor shall ensure testing laboratory is present at the site at all times during placement of concrete.
- B. If minimum ultimate strength of test cylinders falls below compressive strengths called for on the plans, permission may be granted to Contractor to demonstrate that concrete meets specifications by taking cores, and testing as specified in ASTM C 42.
 - 1. Costs of such re-testing will be paid for by Contractor.
 - 2. If compressive tests of core specimens fail to show compressive strength assumed in design, concrete will be deemed defective and shall be replaced or adequately strengthened at no cost to the Owner.

3.12 PROTECTION OF FINISHED CONCRETE SURFACES

- A. Contractor shall take all necessary precautions to protect completed work.
 - 1. In areas where concrete forms the finished floor surface Contractor shall cover concrete with appropriate material to protect finish from damage from tools and equipment.
 - a. Protection of surfaces shall be a minimum of 3/8" plywood or equivalent material. Material shall be installed in a semi-permanent manner to prevent all damage to finish surfaces which may occur.
 - b. Wheeled vehicles and lifts shall not be driven on concrete floors without protection. In addition, place drip pans under units to prevent any oils from being spilled on finished concrete surfaces.

2. Should damage, chipping or staining occur at any finished concrete surfaces, Contractor shall be responsible to remove concrete to nearest joint and reinstall to match the remaining surfaces, at no additional cost to the Owner.

3.13 GROUTING PROCEDURES

- A. Prepackage Grouts: All mixing, surface preparation, handling, placing, consolidation, curing, and other means of execution for prepackaged grouts shall be done according to the instructions and recommendations of the manufacturer.
- B. Base Plate Grouting:
 1. For base plates, the original concrete shall be blocked out or finished off a sufficient distance below the plate to provide for a one-inch thickness of grout or a thickness as indicated.
 2. After the base plate has been set in position at the proper elevation by steel wedges or double nuts on the anchor bolts, the space between the bottom of the plate and the original pour of concrete shall be filled with non-shrink-type grout. The mixture shall be of a trowelable consistency and tamped or rodded solidly into the space between the plate and the base concrete. A backing board or stop shall be provided at the back side of the space to be filled with grout. Where this method of placement is not practical or where required by the Resident Engineer, alternate grouting methods shall be submitted for acceptance.
- C. Consolidation: Grout shall be placed in such a manner, for the consistency necessary for each application, so as to assure that the space to be grouted is completely filled.

END OF SECTION 03310

SECTION 04220 - CONCRETE MASONRY UNITS

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Codes and Standards:
 - 1. California Building Code, current edition.
 - 2. American Society of Testing and Materials (ASTM)
- B. Concrete block shall be tested in accordance with ASTM C 140 and the California Building Code.
- C. Prisms shall be made and tested in accordance with Method B of ASTM E 447.

1.02 SUBMITTALS

- A. Certification: Prior to deliver of concrete masonry materials to the job site, deliver to the Resident Engineer a letter from the manufacturer of the proposed masonry units certifying that all such units to be delivered to the job site are in strict conformance with the provisions of this Section.
- B. Submit manufacturer's data for all products and materials used and specified herein.
- C. Samples: Submit sample sections of block and mortar to be used on the project.

PART 2 - PRODUCTS

2.01 CONCRETE BLOCKS

- A. Blocks shall conform to the requirements of ASTM C 90, Type I, medium weight, and open end. Provide special shapes where required for lintels, corner jambs, sash, control joints, headers, bonding and other special conditions. Sizes shall be as indicated on the drawings.
 - 1. Units shall be 8x8x16 and 16x8x16 precision block, Regalstone, by RCP Block, or equal.

2.02 MORTAR

- A. All mortar for concrete block shall conform to ASTM C 270 and shall have compressive strength indicated on Drawings.

- B. Mortar shall be freshly prepared and uniformly mixed and be of spreadable, workable consistency.
- C. Mortar shall be retempered with water as required to maintain high plasticity. Retempering on mortar boards shall be done only by adding water within a basin formed with the mortar and the mortar worked into the water. Any mortar which is unused after two and one-half hours from the initial mixing time shall not be used.
- D. After all ingredients are in the batch mixer they shall be mechanically mixed for not less than three minutes.
- E. If mortar is to be colored, inert coloring pigments may be used, but not to exceed six percent by weight of cement.
- F. The use of fire clay, rock dust, dirt and other deleterious materials is prohibited in mortar.
- G. Sand for mortar shall conform to ASTM C 144.
- H. Color of mortar shall be #MC86, by Davis Colors, or equal.

2.03 REINFORCEMENT STEEL

- A. Reinforcement Bars: New, deformed billet steel bars conforming to ASTM A 615, Grade 60.
- B. Deliver bars new and free from rust and mill scale in original bundles with mill tags intact.

2.04 GROUT

- A. Grout shall conform to ASTM C 476 requirements and shall have minimum strength indicated on Drawings.
- B. Fine grout shall be proportioned by volume of one part Portland cement and 2-1/4 to 3 parts sand.
- C. Coarse grout shall be proportioned by volume, shall consist of one part Portland cement, 2-1/4 to 3 parts sand and one to 2 parts coarse aggregate.
- D. Laboratory design mixes are acceptable in lieu of the above proportions and are required if the minimum strength is more than 2000 psi. Grout shall be of fluid consistency with proper proportions of sand to gravel for pouring or pumping.

- E. Aggregate for masonry grout shall conform to ASTM C 404.

2.05 JOINT MATERIALS

- A. Premoulded Expansion Joint Filler: 1/2" thick, depth as required by wall thickness, of premoulded, resilient, non-bituminous material.
- B. Sealant: Expansion joint sealer and backer rod shall be in accordance with Section 07920.

2.06 OTHER MATERIALS

- A. All other materials not specifically described but required for a complete and proper installation of the work of this Section, shall be as selected by the Contractor subject to acceptance by the Resident Engineer.
- B. *Anti-Graffiti Coating: Shall be as specified in section 09860.*

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 COORDINATION

- A. Carefully coordinate with all other trades to ensure proper and adequate interface of the work of other trades with the work of this Section.

3.03 MIXING MORTAR

- A. Use a mechanical mixer of one sack minimum capacity. Mix mortar for at least three minutes after all materials have been added. Mix only as much mortar as can be used in one hour after water has been first mixed into the batch.

3.04 INSTALLATION

- A. Masonry shall not be started when the horizontal and vertical alignment of the foundation is out of plumb or line one inch or more.
- B. Care shall be taken to prevent grout and mortar stains. Keep wall continually clean; if grout does run over, clean immediately.

- C. All masonry shall be laid true, level and plumb in accordance with the Drawings.
- D. The masonry units shall be cut accurately to fit all plumbing, ducts, openings, electrical work, etc., and all holes are to be neatly patched.
- E. No construction support shall be attached to the wall except where specifically permitted by the Resident Engineer.
- F. The top surface of the concrete foundation shall be clean and free of laitance and the aggregate exposed before starting masonry construction.
- G. Where no bond pattern is shown, the wall shall be laid up in straight, uniform courses with regular half or running bond.
- H. All work, bond patterns or special details as shown on the Drawings shall be accurately and uniformly executed.

3.05 JOINTS

- A. The starting joint on foundations shall be laid with full mortar coverage on the bed joints except that the area where the grout occurs shall be free from mortar so that the grout will be in contact with the foundation.
- B. Mortar joints shall be straight, clean, and uniform in thickness and shall be tooled concave. Unless otherwise specified or details on the plans, in hollow unit masonry the horizontal and vertical mortar joints shall be 3/8" thick.
- C. Unless otherwise specified, all joints shall be tooled with a concave surface. Tooling shall be done when the mortar is partially set and still sufficiently plastic to bond. All tooling shall be done with a tool that compacts the mortar.
- D. Vertical head joints shall be butted for a thickness equal to the face shell of the unit and these joints shall be shoved tightly so that the mortar bonds well with both units.
- E. If it is necessary to remove a unit after it has been set in place, the unit shall be removed from the wall, cleaned and set in fresh mortar.
- F. All work, bonds or special details shall be accurately and uniformly executed. Face joints shall be tooled as shown on the Plans and in the Specifications.
- G. Provide control joints at a maximum spacing of 30 feet on center.

3.06 REINFORCING

- A. When a foundation dowel does not line up with a vertical core, it shall be sloped at not more than one horizontal to six vertical. Dowels shall be grouted into a core in vertical alignment even though it is in an adjacent cell to the vertical wall reinforcing.
- B. Reinforcing bars shall be straight except for bends around corners and where bends or hooks are detailed on the Plans.
- C. Reinforcing steel where spliced shall be lapped a minimum of 40 bar diameters.
- D. When full length vertical bars are used, they shall be held in position at top and bottom at intervals not exceeding 200 bar diameters of the reinforcement.
- E. Horizontal reinforcing shall be laid on the webs of bond beam units and shall be solidly grouted in place. Reinforcing in channel units shall be spaced off the bottom of the unit.
- F. Vertical reinforcing shall have a minimum clearance of 1/2" from the masonry.

3.07 GROUTING

- A. General:
 - 1. Reinforcement shall be in place before grouting starts.
 - 2. Mortar droppings shall be kept out of a grout space.
 - 3. All grout shall be mechanically vibrated in place.
 - 4. Vertical cells to be filled shall have vertical alignment to maintain a continuous unobstructed cell area not less than two inches by three inches.
 - 5. Cells containing reinforcement shall be solidly filled with grout and pours shall be stopped one inch below the top of a course to form a key or joints.
 - 6. Grouting at beams over openings shall be done in one continuous operation.
 - 7. All cells containing reinforcement, anchor bolts and inserts shall be grouted solidly without exception. Unless otherwise noted, all walls are to be solid grouted (all cells filled with grout).
 - 8. Columns, beams, joists, and similar structural members shall be anchored to the wall with anchor bolts or their equivalent. Anchors shall be fully, solidly embedded in place. Embedment shall not be less than 2/3 of the wall thickness unless otherwise noted.
 - 9. Grout shall be poured in lifts of eight feet maximum height unless approved in advance in writing by the Resident Engineer.

3.08 ANTI-GRAFFITI COATING

- A. *Apply in accordance with Section 09860. All exterior faces of site walls are to receive coating.*

END OF SECTION 04220

SECTION 05120 - STRUCTURAL STEEL

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Submit shop Drawings including complete details and schedules for fabrication and shop assembly of members. Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by AWS symbols, and show size length, and type of weld. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages. Identify details by reference to sheet and detail number on the Drawings.

1.02 QUALITY ASSURANCE

- A. Fabrication and Erection:
 - 1. Perform all work in accordance with the applicable provisions of the AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings," and AWS "Structural Welding Code," latest approved edition.
 - 2. All structural steel, both in the shop and in field shall be transported and handled and erected in such manner as will preclude any injury thereto and in no case shall the material be subjected to any undue stresses in any part of connection or member.
- B. Coordination: Coordinate the work in the structural steel section with that of all other sections. Provide all punchings and drilling indicated on the drawings, or required for the attachment of their work to the structural steel framing for pipe and duct supports, anchors, aluminum sash, doors and similar work. Provide necessary drilling and punching; accurately locate and arrange to receive and engage the same.
- C. Field Measurements: Before starting work, secure all field measurements pertaining to or affecting the work of this section and verify the locations and exact position of all anchor bolts occurring therein.
- D. Certification of Materials: Identify all structural steel by heat or melt number and accompany with mill analysis and test reports. Furnish evidence to the Resident Engineer that the materials conform with the requirements of these specifications.
- E. Design of Members and Connections: Details shown are typical; similar details apply to similar conditions, unless otherwise indicated. Verify dimensions at site whenever possible without causing delay in the work.

1. Promptly notify Resident Engineer whenever design of members and connections for any portion of structure are not clearly indicated.

1.03 TESTING

- A. Testing Laboratory: A qualified testing laboratory shall be as approved by the Resident Engineer. Testing and inspection shall be as required by the Drawings and these Specifications.
- B. Mill Tests and Inspection of Structural Steel:
 1. Tests of Mill Order A 36 Steel: Where steel, ordered from the mill, cut to lengths, is identified by heat or melt numbers and is accompanied by mill analysis test reports, material shall be used without further local tests, provided an affidavit is given that materials conform with requirements. In case of controversy, tension and bend tests of materials, either locally or at mill, as required for local stock will be required.
 2. Test of Unidentified Steel: In the event structural steel cannot be identified by heat or melt numbers and is accompanied by mill analysis and test report, such stock may be used, provided 1 tension and 1 bend test is made for each 50 tons or fractional part, of stock as may be used in work. Complete 4 sided surface inspection may be required for materials. Each piece of high-strength local stock steel shall be tested and stamped.
- C. Any steel that cannot be identified or whose source is questionable shall be rejected and removed from the jobsite.
- D. Inspecting the structural steel will be performed in the mill, shop and field but such inspections or tests shall not relieve the Contractor of his responsibility to furnish satisfactory materials. The Resident Engineer shall have the right to inspect and reject faulty materials or workmanship at any time prior to the final acceptance of the erected structural steel.
- E. Tests of Welding and Bolting: An approved Testing Laboratory shall inspect shop and field welding and high tensile bolting. Testing laboratory shall comply with regulations of the local building inspection department and shall certify in writing, upon completion of work, that welding and high tensile bolting has been performed in accordance with the Drawings and Specifications and applicable city ordinances.
- F. Testing of Complete Penetration Welds: The Testing Laboratory shall inspect welded connections of column to column, girder to column, or girder to girder by ultrasonic or other approved non-destructive tests.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Materials shall be delivered to the site in undamaged condition, stored in fully covered, well ventilated areas, and protected from the elements. Store materials above the ground upon platforms, pallets, skids or other supports. Keep materials free from dirt, grease and other foreign matter, and protect from corrosion. Material showing evidence of damage will be rejected. Immediately remove rejected materials from the work.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials shall conform with the following requirements and shall be free from scale, defects and imperfections, of recent manufacture and unused. Where two or more identical articles or pieces of equipment are required, they shall be of the same manufacture.
- B. Structural steel shall conform with ASTM A992 or A572, Grade 50 for shapes unless noted otherwise. Structural steel shall conform with ASTM A36 for plates and bars unless noted otherwise.
- C. Welding electrodes shall conform with AWS D1.1, E70, series. Electrodes for welding reinforcing steel to be low hydrogen electrodes.
- D. Headed Welded Studs: Nelson "Granular Flux-Filled Shear Connector and Anchor Studs," - "KSM Shear Connector Studs" or approved equal, manufactured of C1015, 1010, 1017, or 1020 cold-rolled steel conforming to ASTM A 108.
- E. Pipe columns shall be ASTM A 53, Grade B.
- F. Tube steel shall be ASTM A 500, Grade B, 46 ksi.
- G. Galvanizing shall conform with ASTM A 123.

PART 3 - EXECUTION

3.01 WELDING

- A. Structural welding shall be done by the electric submerged or shielded metal arc process and shall have inspection by the laboratory of record. Operators shall be thoroughly trained and experienced in arc welding of structures, capable of making uniformly reliable butt and fillet welds in flat, vertical and overhead positions and by producing

neat and consistent work in actual operation. Each operator shall have passed all welding tests of the American Welding Society.

- B. Surfaces to be welded shall be free of any paint, grease, loose scale and foreign matter. Clean welds each time the electrode is changed and chip clean all burned or flame-cut edges before welds are deposited thereon. The same electrode may be used with various thicknesses of plate, but change current used and number of passes made proportionately.
- C. After being deposited, brush welds with wire brushes. Welds shall exhibit uniform section, smoothness of welded metal, feathered edges without undercuts or overlays, and freedom from porosity and clinkers. Visual inspection at edges and ends of fillet and butt joint welds shall indicate a good fusion with penetration into base metal.
- D. During assembly and welding, hold component part of a built-up member with sufficient clamps or other adequate means to keep the parts straight and in close contact. In welding, precautions shall be taken to minimize "lockup" stresses and distortion due to heat. No welding shall be done under windy conditions until adequate wind protection screening has been provided. Any welds or parts of welds which are found to be defective shall be cut out with a chisel and replaced.
- E. The maximum space between members to be butt welded shall not exceed 1/4", except at web doubler plates. Bevel all pieces or members up to 1/8" thickness to form a single or double "vee" before being welded. Bevel welds over 3/8" in thickness to form a double "vee" wherever possible.
- F. Lay fillet welds in the position indicated on the drawings and to the sizes shown. In measuring fillet welds, consider only the effective portion. The maximum space between pieces for members to be fillet welded shall not exceed 1/16".

3.02 ERECTION

- A. Erect all structural steel with qualified riggers and carefully plan and lay out so that a minimum of cutting shall be required. Erect work plumb, square and true to line and level, and in precise position, as indicated. provide temporary bracing and guys, wherever necessary, to provide for the loads and stresses to which the structure may be subjected, including those due to erection equipment and their operation, and leave in place as long as it may be required for safeguarding all parts of the work.
- B. As erection progresses, securely bolt up work as required to maintain the steel in proper position while field bolting and welding is being done and as required to take care of all deadloads, wind and erection stresses. No field bolting or welding shall be done until the work has been properly aligned, plumbed and leveled.

- C. Set each column base plate in exact position as to alignment, plumb and height. The center of each base shall be true to the column center within a tolerance of 1/16", and its height shall be adjusted in exact position. Maintain all bases at the exact position and level while they are being grouted.
- D. Carry out erection of structural steel work in proper sequence with the work of other trades, and frame, bed and anchor to concrete and related work in strict accordance with the detail drawings and approved setting drawings.
- E. Field Modification: Written acceptance from the Resident Engineer must be obtained before using cutting torch for field modification or refabrication of structural steel. The structural steel fabricator shall be responsible for errors in fabrication and for correct fit in the field.
- F. Allowable Tolerances: Comply with requirements of AISC Code of Standard Practice. Bases of all columns shall be located on the established column lines within plus or minus 1/8". All leveling and plumbing shall be based on a mean temperature of 70 degrees F. Compensate for difference in temperature at time of erection.

3.03 CONNECTIONS

- A. Unfinished Bolts: Make field connections with unfinished bolts only where indicated.

3.04 ANCHOR BOLTS

- A. Inspect the installation of anchor bolts, make all necessary field measurements and, if necessary, furnish templates to insure that all structural steel will fit the job conditions. Locate all columns as indicated on the drawings. Setting of anchor bolts in hardened or existing concrete, which may be necessary because of error or oversight, shall be made in suitable drilled holes and solidly grouted in place, under the direction of the Resident Engineer.

3.05 FINISH

- A. Clean all steel of any grease, rust, mill scale or other foreign matter. Material to be embedded in concrete shall not be primed.

END OF SECTION 05120

SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Submit shop Drawings including complete details and schedules for fabrication and shop assembly of members. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

1.02 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Materials shall be delivered to the site in undamaged condition, stored in fully covered, well ventilated areas, and protected from the elements. Store materials above the ground upon platforms, pallets, skids or other supports. Keep materials free from dirt, grease and other foreign matter, and protect from corrosion. Material showing evidence of damage will be rejected. Immediately remove rejected materials from the work.

1.03 QUALITY ASSURANCE

- A. Fabrication and Erection:
 - 1. Perform all work in accordance with the applicable provisions of the AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings," and AWS "Structural Welding Code," latest approved edition.
 - 2. All structural steel, both in the shop and in field shall be transported and handled and erected in such manner as will preclude any injury thereto and in no case shall the material be subjected to any undue stresses in any part of connection or member.
- B. Coordination: Coordinate the work in the structural steel section with that of all other sections. Provide all punching and drilling indicated on the drawings, or required for the attachment of their work to the structural steel framing for pipe and duct supports, anchors, aluminum sash, doors and similar work. Provide necessary drilling and punching; accurately locate and arrange to receive and engage the same.
- C. Field Measurements: Before starting work, secure all field measurements pertaining to or affecting the work of this section and verify the locations and exact position of all anchor bolts occurring therein.

- D. Certification of Materials: Identify all structural steel by heat or melt number and accompany with mill analysis and test reports. Furnish evidence to the Resident Engineer that the materials conform with the requirements of these specifications.
- E. Design of Members and Connections: Details shown are typical; similar details apply to similar conditions, unless otherwise indicated. Verify dimensions at site whenever possible without causing delay in the work.
 - a. Promptly notify Resident Engineer whenever design of members and connections for any portion of structure are not clearly indicated.

PART 2- PRODUCTS

2.01 MATERIALS

- A. Steel Sections: ASTM A 36.
- B. Steel Tubing: ASTM A 500, Grade B.
- C. Bolts, Nuts, and Washers: ASTM A 307.
- D. Welding Materials: AWS D1.1; type required for materials being welded.
- E. Primer: Fed. Spec. TT-P-31, red; for shop application and field touch-up.
- F. Touch-up Primer for Galvanized Surfaces: Fed. Spec. TT-P-641.

2.02 FABRICATION

- A. Verify dimensions on site prior to shop fabrication.
- B. Fabricate items with joints tightly fitted and secured.
- C. Fit and shop assemble in largest practical sections, for delivery to site.
- D. Grind exposed welds flush and smooth with adjacent finished surface. Ease exposed edges to small uniform radius.
- E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of structure, except where specifically noted otherwise.
- F. Make exposed joints butt tight, flush, and hairline.

- G. Supply components required for anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrication, except where specifically noted otherwise.

2.03 GALVANIZING

- A. All items noted on drawings and parts embedded in concrete, or in contact with concrete shall be galvanized by the hot-dip process, conforming to ASTM A123-68a. All required hot-dip galvanizing shall be done after fabrication in the largest sections possible. Items too large for available dip tanks shall be sprayed by approved methods, with molten zinc to coating thickness of .003" to .004".
- B. Weight of the zinc coating per square foot of actual surface area shall average not less than 2.0 ounces, and no individual specimen shall show less than 1.8 ounces.
- C. All shop galvanized metal work necessitating field welding which in any manner removes the original galvanizing shall be restored by field cold galvanizing with "Galvaloy", "Galvicon", "Drygalv" or equal.

2.04 FINISH

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact bond with concrete or where field welding is required.
- C. Prime paint items scheduled with one coat; except, apply two coats to surfaces inaccessible after assembly or erection.
- D. Galvanize items to minimum 1.25 oz/sq ft zinc coating in accordance with ASTM A386.
- E. Provide zinc-coated or cadmium plated fasteners for exterior use and where built into exterior walls.
- F. Field painting shall be in accordance with Section 09900, Painting.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Obtain Resident Engineer approval prior to site cutting or making adjustments not scheduled.
- B. Clean and strip site primed steel items to bare metal where site welding is scheduled.

- C. Make provision for erection loads with temporary bracing. Keep work in alignment.
- D. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate sections.

3.02 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. All welding shall be by certified welders. All welding shall be done in shop to the greatest extent possible. Perform welding in accordance with AWS D1.1.
- C. Wall Supported Items: Attach all wall supported items by use of expansion anchors in concrete or masonry walls, and by lag bolting to adequate blocking installed in wood stud walls.
- D. After installation, touch-up field welds, scratched or damaged surfaces with primer.

END OF SECTION 05500

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with applicable provisions of the following codes and standards, unless modified by the specifications or drawings.
 - 1. California Building Code (CBC), current edition, Chapter 23, "Wood".

1.02 SUBMITTALS

- A. Submit manufacturer's Data for all items to be used under this section of work.
 - 1. Framing Connectors and Supports: Submit manufacturer's literature indicating compliance with plans and code requirements.
- B. Submit manufacturer's Certification that wood materials meet the requirements specified.
 - 1. Treated Wood: Pressure preservative treatment: Provide plant certification of compliance with specified standards and stating process employed and preservative retention values.
 - 2. Treatment for above ground use: Certification of kiln-drying after treatment.
- C. Samples: Submit samples of sand-basted timber and exposed wood materials.

PART 2 - PRODUCTS

2.01 GRADE STAMPS

- A. Framing lumber: Identify all framing lumber by the grade stamp of the West Coast Lumber Inspection Bureau.
- B. Plywood: Identify all plywood as to species, grade, and glue type by the stamp of the American Plywood Association.
- C. Other: Identify all other materials of this Section by the appropriate stamp of the agency listed in the reference standards, or by such other means as are approved by the Resident Engineer.

2.02 GENERAL REQUIREMENTS

- A. Moisture content at time of placing:
 - 1. Untreated lumber shall not exceed 19%.
 - 2. Treated lumber shall not exceed 19%, kiln dry after pressure treatment.
 - 3. Exposed Lumber shall not exceed 15%, kiln dried.
 - 4. Exposed Timbers shall not exceed 19%, kiln dried. Timber is considered as material having a nominal dimension of 4 inches or greater in the smallest dimension.
 - 5. Plywood shall not exceed 15%.
- B. Sizing and surfacing: Mill size. All exposed surfaces of wood members shall be surfaced smooth except as indicated otherwise.
- C. Pressure preservative treatment: AWWA Standards, using chromated zinc chloride or Wolman Salt (Tanalith). Touch-up parts made raw by curing or drilling.
- D. Brush-On Preservative Treatment shall be "Woodtox", "Woodlife" or an approved equal.
- E. Seal Coat: Where specified, and at cut ends and concealed faces apply a heavy saturation coat of penetrating sealer, except for treated wood, where treatment has included a water repellent.

2.03 LUMBER

- A. See drawings for grades for specific uses and locations.

2.04 TIMBER (FOR EXPOSED COLUMNS, BEAMS AND TRELIS)

- A. Timber Species: Redwood (FOHC) rough sawn unless otherwise indicated.
 - 1. Exposed timber shall re-sawn finish to match approved samples.

2.05 WOOD SOFFITS & TRIM

- A. T1-11 Plywood siding with regular reveal at 4" spacing, Clear, Grade B or Better with exposed face rough sawn unless otherwise indicated.
- B. Trim and Fascia Boards shall be Douglas Fir, Clear, No. 1 or Better with exposed face smooth unless otherwise indicated.

2.06 PLYWOOD

- A. Structural plywood, U.S. Product Standard PS-1 per Structural Wood Notes.

1. OSB Board will not be permitted.
- B. All plywood shall be grade-marked by the American Plywood Association (APA). Remove all sheets not grade marked.
- C. Plywood used for structural purposes shall have exterior glue.

2.07 BUILDING PAPER

- A. Sisalkraft "Orange Label", Rickdraft, Ludlow, or approved equal, waterproof, conforming to Fed. Spec. UU-B-790, or 15 lb. asphalt-saturated rag felt conforming to ASTM D 226.

2.08 WATERPROOF MEMBRANE

- A. Sheet Waterproofing: Jiffy Seal 140/60, by Protecto Wrap Co., Bituthene 3000, by W. R. Grace Company, or equal.

2.09 ROUGH HARDWARE

- A. Furnish all items of rough hardware, connections, bolts, etc., required to complete the work. Bolts, nuts, and washers where exposed to elements shall be hot-dipped galvanized, conforming to ASTM A 153.
 1. Nails: Common wire. Use galvanized nails for all exposed framing. Use cement coated nails for floor sheathing.
 2. Bolts: Standard mild steel, square or hexagonal head machine bolts with matching nuts and cut washers, or carriage bolts with square nuts and cut washers as indicated.
 3. Lag Bolts and Screws: Conform to Fed. Spec. FF-B-561B, of sizes shown or noted on drawings.
 4. Toggle Bolts: Galvanized conforming to Fed. Spec. FF-B-588B(2), of sizes shown or noted on drawings.
 5. Concrete and Masonry Anchors: Where anchors are not included in the concrete or masonry construction, anchors shall be galvanized machine screws or bolts with standard expansion-shield type concrete anchors, "Wej-It" Concrete Anchors as manufactured by Wej-It Expansion Products, Inc., Ramset Fasteners' "Dynabolt", McCulloch Industries, "Kwik-Bolt", or approved equal, of the size and types noted on drawings or as required. Do not use expansion bolts or anchors where other type anchors are shown or noted on the drawings.
 6. Powder-Driven Fasteners: "Drive-It" system of the Power Tool Corporation, "Ramset" system of Ramset Fasteners, Inc., the equivalent system of Remington-Dupont, or approved equal. Use washers with all fasteners. Powder-driven fasteners shall not be used except where first approved by the Resident Engineer in writing.

7. Framing Anchors: Simpson Co. Strong-tie connectors or approved equal, galvanized framing connectors and joist hangers as detailed, not less than 16 gage before galvanizing, having minimum design and load capacity given on the drawings, with manufacturer supplied nails.
8. Exposed Connections: As indicated.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 WORKMANSHIP

- A. All rough carpentry shall produce joints true, tight, and well nailed, with all members assembled in accordance with the Drawings and with all pertinent codes and regulations.
 1. Contractor shall be responsible for shimming, trimming and other measures as required to provide framing smooth, plumb and ready to receive finish material.
- B. Selection of lumber pieces:
 1. Carefully select all members. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making connections.
 2. Cut out and discard all defects which will render a piece unable to serve its intended function. Lumber may be rejected by the Resident Engineer, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.
- C. Shimming: Do not shim sills, joists, short studs, trimmers, headers, lintels, or other framing components, unless noted otherwise.

3.03 TREATED LUMBER

- A. Use only treated lumber for all wood bucks and nailing grounds in, or in contact with, concrete.

3.04 TIMBER FRAMING

- A. Prior to installation, seal ends, cut edges and concealed faces using seal coat as specified.
- B. Install beams and girders with crown edge up, minimum 4 inch bearing.
- C. Wood Posts shall be secured to supporting and supported members by approved anchoring devices as indicated.
- D. Exposed timber shall receive a stained finish as specified.

3.05 WOOD SOFFITS

- A. Prior to installation, seal ends, cut edges and concealed faces using seal coat as specified.
- B. Plan installation to minimize butt joints and maximize use of full length runs of siding. Butt joints shall occur only over framing. Stagger joints in adjacent courses.
- C. Nailing: Pre-drill Nail holes at ends and near edges of boards if necessary to prevent splitting. Nail at each stud or furring line.
- D. Sealants: At trim, corners and butt joints of board siding apply sealant per Section 07920, "Sealants". Apply bead of sealant to substrate and then place siding on top of sealant and shove-to so as to extrude sealant. After sealant has cured cut away excess sealant using a sharp tool.
- E. Soffits and trim shall receive a stained finish as specified.

3.06 INSTALLATION OF PLYWOOD SHEATHING

- A. Placement:
 - 1. Place all plywood with face grain perpendicular to supports and continuously over at least two supports, except where otherwise specifically indicated on the Drawings.
 - 2. Center joints accurately over supports. Unless otherwise specifically shown on the Drawings, stagger the end joints of plywood panels to achieve a minimum of continuity of joints.
 - 3. Leave 1/8 inch spacing between adjacent plywood sheathing at edge joints and 1/16 spacing at end joints.

- B. Protection of Plywood: Protect all plywood from moisture by use of all required waterproof coverings until the plywood has in turn been covered with the next succeeding component or finish.

3.07 WOOD FURRING

- A. Install wood furring as indicated and required for installation of finished surfaces.

3.08 FASTENING

- A. Nailing:

1. Use only common wire nails or spikes of the dimension shown on the Nailing Schedule, except where otherwise called for on the Drawings.
2. For conditions not covered in the Nailing Schedule, provide penetration into the piece receiving the point of not less than 1/2 the length of the nail or spike provided, however, that 16d nails may be used to connect two pieces of two inch nominal thickness.
3. Do all nailing without splitting wood. Pre-bore as required. Replace all split members. Shear wall plates and studs shall be sized in accordance with local code requirements to prevent splitting, regardless of whether or not those sizes are explicitly shown in details and schedules.

- B. Bolting: Drill holes 1/16 inch larger in diameter than the bolts being used. Drill straight and true from one side only. Bolt threads shall not bear on wood. Use washers under head and nut where both bear on wood; use washers under all nuts.

- C. Screws: For lag screws and wood screws, pre-bore holes same diameter as root of thread; enlarge holes to shank diameter for length of shank. Screw, do not drive, all lag screws and wood screws.

- D. Where powder-driven anchors are approved for use, plates anchored to concrete floor shall be attached with pins not over 32 inches on center. All vertical furring shall be attached to concrete with pins not over 4 feet on center. Each pin shall penetrate to a minimum of 1-1/2 inch. Use washers with all pins. There shall be a minimum of 2 anchors for each member.

3.09 BACKING

- A. Provide all blocking and backing required for fixtures, wall stops, toilet accessories, signage and other conditions requiring backing.

3.10 CLEANING UP

- A. Keep the premises in neat, safe, and orderly condition at all times during execution of this portion of the Work, free from accumulation of sawdust, cut ends, and debris.

END OF SECTION 06100

SECTION 07410 - PRE-FORMED METAL ROOFING

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Applicator Qualifications: Submit certification from the roofing material manufacturer that the applicator has been approved by the manufacturer.
- B. Quality Standard: Fabricate and install metal roofing work in accordance with Sheet Metal and Air Conditioning Contractor's National Association, Inc. (SMACNA), "Architectural Sheet Metal manual, unless specifically noted otherwise.
- C. Wind Uplift: Provide roof panel system meeting requirements of Underwriter's Laboratory, Inc. for Class 90 wind uplift resistance.
- D. Roof Covering Classification: Provide Class A roof covering.

1.02 SUBMITTALS

- A. Guarantee: Furnish manufacturer's written warranty covering failure of Kynar finish for a period of 20 years due to corrosion, rupture or perforation. Provide installer warranty covering water tightness of the roofing system for a period of five years from date of substantial completion.
- B. Materials List: Submit a complete list of materials prior to application of roofing.
- C. Shop Drawings: Detailed drawings clearly indicating metal roofing component profiles, joints, transitions, fastening methods, accessory items and relationship of roofing materials to adjacent construction.
- D. Product Data: Submit manufacturer's technical product data, installation instructions and recommendations for each type of roofing and wall panel required. Include data substantiating that materials comply with requirements.
- E. Samples: Submit (2) 12" Panel Samples showing shape and a representative color for roof panels.
- F. Certifications: Prior to commencement of construction, Contractor shall submit a letter from the manufacturer's warranty department which indicates the following:
 - 1. All contractor documents relating to the roof system have been reviewed and are acceptable.

2. All materials specified are physically and chemically compatible with each other, and the system, as designed, is suitable for the specified warranty.
3. The roof contractor is an approved applicator of the material manufacturer.
4. The address and location of the project.

1.03 PRODUCT HANDLING, STORAGE AND DELIVERY

- A. Protect against damage and discoloration.
- B. Handle panels with non-marring slings.
- C. Do not bend panels.
- D. Store panels above ground, with one end elevated for drainage.
- E. Protect panels against standing water and condensation between adjacent surfaces.
- F. If panels become wet, immediately separate sheets, wipe dry with clean cloth, and allow to air dry.
- G. Deliver materials in manufacturer's original, unopened containers and rolls with labels intact and legible.
- H. Handle rolled goods so as to prevent damage to edge or ends.
- I. Protect materials against damage by construction traffic.

1.04 JOB CONDITIONS

- A. Environmental Requirements:
 1. Apply roofing in dry weather.
 2. Do not apply roofing when ambient temperature is below 40` F. (4` C).
- B. Protection:
 1. Provide special protection to avoid traffic on completed work.

1.05 PRE-ROOFING CONFERENCE

- A. Prior to starting the application of the roofing system and insulation there will be a pre-roofing conference with the Architect to assure: (1) a clear understanding of the drawings and specifications; (2) on-site inspection of the roofing substrate and pertinent structural details relating to the roofing system; and (3) providing the roofing system and other components secured to the roofing. The conference shall be attended by the Architect, Owner's representative, Contractor, roofing materials manufacturer, roofing subcontractor, flashing and sheet metal subcontractor. All conflicts shall be resolved and confirmed in writing.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Sheet Metal Roof Deck: "Tee Panel", by Berridge Manufacturing Company, AEP Span or equal.
 - 1. Zincalume Steel Sheet: Commercial quality 24 gage steel sheet, zincalume coating, ASTM A 792, with Kynar paint system finish.
 - 2. Design standard: "Tee Panel" Deck.
 - a. Panels shall have 12" spacing between ribs, with a 1" rib height.
 - b. Panel assembly shall bear Underwriters Laboratories Label UL580-Class90.
 - 3. Substitutions: Comparable products of other manufacturers will be considered under standard substitution procedures.

2.02 ACCESSORY MATERIALS

- A. Fasteners: Corrosion-resistant metal of same material and color as the material being fastened, or other material recommended by metal roofing manufacturer. Install washers where required. Match finish and color of exposed fastener heads to finish and color of sheet material being fastened.
- B. Sealant:
 - 1. Use noncuring type for concealed joints.
 - 2. Use nonsag elastomeric type for exposed as specified in Section 07920, "Sealants".
- C. Underlayment: No. 30 asphalt saturated felt.

- D. Zinc-Molybdate Alkyd Paint: FS TT-P-645.
- E. Bituminous Coating: Heavy Bodied, sulfur-free, asphalt-based paint; FS-C-494.
- F. Flashing: In accordance with Section 07620.
- G. Miscellaneous Materials: Provide all additional materials as recommended by the manufacturer and necessary for proper installation of the specified product.

2.03 FABRICATION - GENERAL

- A. Form sheet metal to match profiles indicated, substantially free from oil-canning, fish mouths, and other defects.
 - 1. Unless otherwise shown on drawings or specified herein, fabricate panels in continuous one-piece lengths and fabricate flashings and accessories in longest practical lengths.
- B. Comply with SMACNA "Architectural Sheet Metal Manual" for applications indicated.
- C. Conceal fasteners and expansion provisions wherever possible.
 - 1. Exposed fasteners are not allowed on faces of sheet metal exposed to public view unless there is no alternative and approval has been given in shop drawing review.
- D. Form a 1/2- inch hem on underside of exposed edges.
- E. Fabricate cleats and attachment devices from compatible, noncorrosive metal recommended by sheet metal manufacturer.
 - 1. Gauge: As recommended by SMACNA or metal manufacturer for application, but in no case less than gauge of metal being secured.

2.04 FASTENERS

- A. As indicated and as recommended by the manufacturer for type of installation.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Before commencing any roofing work, make thorough examination of all preparatory work, such as carpentry, sheet metal work, reglets, mechanical and plumbing connections, and make sure that such work and provisions are satisfactory and acceptable in every way. Immediately notify the Owner, in writing, of any and all unsatisfactory and unacceptable work and conditions. Starting of roofing and flashing installation constitutes Contractor's acceptance of surface and correctness and soundness of such work.
 - 1. Verify that nailers, blocking, and other attachment provisions for sheet metal work are properly located and securely fastened to resist effects of wind and thermal stresses.

3.02 PREPARATION

- A. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 1. Verify prior to fabrication.
 - 2. If field measurements differ from drawing dimensions, notify Architect prior to fabrication.
- B. PROTECTION
 - 1. Treat, or isolate with protective material, any contacting surfaces of dissimilar materials to prevent electrolytic corrosion.
 - 2. Require workmen who will be walking on Roofing Panels to wear clean, soft-soled work shoes that will not pick up stones or other abrasive material which could cause damage and discoloration.
 - 3. Protect Work of other Trades against damage and discoloration. Coat the back side of metal roofing with bituminous coating where it will be in contact with wood, dissimilar metal, or cementitious construction.
- C. Coordinate sheet metal roofing with other sheet metal work and substrate construction to provide a complete and water-tight installation.

3.03 INSTALLATION

- A. Underlayment: Apply two layers of No. 30 felt at right angles to roof pitch.

1. Horizontal laps shall be 4" with sidelaps 6" minimum.
 2. Underlayment shall be securely nailed per manufacturer's recommendations.
 3. Turn felt up not less than 6" at vertical surfaces or as required under flashing.
 4. Apply a double layer of felt over ridges and hips by overlapping not less than 12".
 5. Apply a full-width (36") strip of felt under all metal valleys.
- B. General: Comply with sheet metal manufacturer's installation methods and recommendations in the SMACNA "Architectural Sheet Metal Manual."
1. Install panel seams vertically.
 2. Lap panels away from prevailing wind direction.
 3. Do not stretch or compress panel side-lap interlocks.
 4. Secure panels without warp or deflection.
 5. Fully engage interlocking seams.
 6. Require workmen who will be walking on Roofing Panels to wear clean, soft-soled work shoes that will not pick up stones or other abrasive material which could cause damage and discoloration.
 7. Protect Work of other Trades against damage and discoloration.
- C. ALLOWABLE ERECTION TOLERANCE
1. Maximum Alignment Variation: 1/4 inch in 40 feet.
- D. Sealed Joints: Form minimum 1-inch hooked joints and embed flange into sealant or adhesive. Form metal to completely conceal sealant or adhesive.
1. Use joint adhesive for nonmoving joints specified not to be soldered.
 2. Moving joints: When ambient temperature is moderate (40-70 degrees F) at time of installation, set joined members for 50 percent movement either way. Adjust setting position of joined members proportionally for temperatures above 70 degrees F. Do not install sealant at temperatures below 40 degrees F. Refer to Section 07920, "Sealants" 7 for handling and installation requirements for joint sealers.
 3. Install gaskets, joint fillers and sealants where indicated and where required for weatherproof performance of panel systems.

E. FLASHING

1. Install per manufacturer's directions and as indicated.
2. Overlap roof panels at least 6 inches.
3. Install flashings to allow for thermal movement.
4. Install pipe flashing systems in accordance with manufacturer's recommendations.

F. CUTTING AND FITTING

1. Neat, square and true. Torch cutting is prohibited.
2. Where necessary to saw cut panels, debur and treat with galvanic paint.

3.04 CLEANUP AND CLOSE OUT

A. Remove protective film from prefinished sheet metal immediately after installation.

1. Touch-up damaged paint surfaces with air dry touch up paint provided by manufacturer. Follow directions carefully to minimize color irregularities. Small brush application only - do not spray touch-up paint.

B. Repair or replace work which is damaged or defaced, as directed by the owner.

1. Refinish marred and abraded areas of prefinished sheet using finish manufacturer's recommended methods and materials. Replace units which, in the opinion of the owner, cannot satisfactorily be refinished in place.

C. Protect sheet metal work as recommended by the installer so that completed work will be clean, secured, and without damage at substantial completion.

1. At completion of each day's work and at Work Completion, sweep Panels, Flashing and Gutters clean. Do not allow fasteners, cuttings, filings or scraps to accumulate.

END OF SECTION 07410

SECTION 07620 - FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Quality Standards: In addition to complying with all pertinent codes and regulations, comply with all pertinent recommendations contained in "Architectural Sheet Metal Manual", current edition, of the Sheet Metal and Air conditioning Contractors National Association (SMACNA).

1.02 SUBMITTALS

- A. Submit complete materials list of all items proposed to be furnished and installed under this section.
- B. Submit scaled shop drawings showing layout, joining, profiles, and anchorages of fabricated work, including major counter flashings, expansion joint systems, and interface of the work with the work of adjacent trades.

1.03 JOB CONDITIONS

- A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Zinc-Coated Steel: Commercial quality with 0.20% copper, ASTM A 525 except ASTM A 527 for lock-forming, G90 hot-dip galvanized, mill phosphatised where indicated for painting, 22 gage minimum except as otherwise indicated.
- B. Solder: For use with steel, provide 50 - 50 tin/lead solder (ASTM B 32), with rosin flux.
- C. Fasteners: Same metal as flashing and sheet metal or, other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- D. Bituminous Coating: Fed. Spec. TT-C-494 or SSPC-Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15- mil dry film thickness per coat.

- F. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, non-drying, nonmigrating sealant.
- G. Elastomeric Sealant: Generic type recommended by manufacturer of metal and fabricator of components being sealed; comply with Fed. Spec. TT-S-0027, TT-S-00230, or TT-S-001543.
- H. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.

2.02 FABRICATED UNITS

- A. Metal Fabrication:
 - 1. Shop-fabricate work to greatest extent possible.
 - 2. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices.
 - 3. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work.
 - 4. Form work to fit substrates.
 - 5. Comply with material manufacturer instructions and recommendations for forming material.
 - 6. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- B. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams not less than 3/4 inch wide, tin edges to be seamed, form seams, and solder.
- C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently water and weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant concealed within joints.
 - 1. Provide expansion and contraction joints at not more than 40 foot intervals. Space joints evenly.
- D. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

- E. Separations: Provide for separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer and/or fabricator.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual".
 - 1. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated.
 - 2. Install work such that all laps, joints and seams will be permanently watertight and weatherproof.
- B. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
- C. Nailing will not be permitted through exposed faces of flashings.
- D. Install cleats for sheet metal items 18 inches and over in width. Fasten cleats evenly at 12 inches on center. Cleats shall be at least 2 inches wide, 3 inches long, and of the same material and thickness as the sheet metal being installed.
- E. Underlayment: Apply two layers of No. 30 felt at right angles to roof pitch.
 - 1. Horizontal laps shall be 4" with sidelaps 6" minimum.
 - 2. Underlayment shall be securely nailed per manufacturer's recommendations.
 - 3. Turn felt up not less than 6" at vertical surfaces or as required under flashing.
 - 4. Apply a double layer of felt over ridges and hips by overlapping not less than 12".
 - 5. Apply a full-width (36") strip of felt under all metal valleys. Provide at least one layer of felt under all metal work.
- F. Provide neoprene washers at exposed fastenings, to protect sheet metal and form a watertight connection.
- G. Pipe Vent Flashing shall be installed as indicated.

3.02 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.
- B. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction, to ensure that work will be without damage or deterioration, other than natural weathering, at time of substantial completion.

END OF SECTION

SECTION 07920 - SEALANTS

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

A. Qualifications of Installers:

1. Proper installation of sealants require that installers be thoroughly trained and experienced in the necessary skills and thoroughly familiar with the specified requirements.
2. For installation of sealants throughout the Work, use only personnel who have been specifically trained in such procedures and who are completely familiar with the joint details shown on the Drawings and the installation requirements called for in this Section.

B. Adhesion Tests: Manufacturer shall perform adhesion tests on substrates.

1.02 SUBMITTALS

A. Submit the following:

1. A complete materials list showing all items proposed to be furnished and installed under this Section.
2. Specifications, color charts, installation instructions, and general recommendations from the materials manufacturers showing procedures under which it is proposed that the materials will be installed.
3. Certification that materials conform with the requirements of the U.S. Federal Specifications.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

- ##### A. Deliver to the job site in unopened containers or cartons, each bearing product name and color.
- ##### B. Store materials in waterproof, dry sheds. Do not permit material to freeze or be stacked in such a way as to cause damage to the containers.

1.04 WARRANTY

- A. Provide a warranty to the Owner, signed by the applying contractor or firm, agreeing to make any repairs or replacements required because of faulty materials or workmanship, at no additional cost to the Owner, for a period of three years from date of completion of the Work. Exterior Work that does not remain weathertight and all Work which does not retain all properties inherent in the product will be considered faulty.

1.05 MISCELLANEOUS CAULKING AND SEALING WORK

- A. The entire extent of sealing work is not necessarily fully or individually described here or on the drawings. Sealing shall be provided wherever required to prevent light leakage as well as moisture leakage. Refer to drawings for conditions and related parts of the work.

PART 2 - PRODUCTS

2.01 SEALANTS

- A. Type A Sealant: Fed. Spec. TT-S-227E, Class A, Type II, multi-component polyurethane sealant, Tremco "Dymeric", Mameco "Vulkem 227", Sika Corp. "Sikaflex 2C N/S", Sonneborn NP2, or equal.
- B. Type B Sealant: Fed. Spec. TT-S-230, Type 2, non-sag, chemically curing, 25-35 Shore A hardness, single component, synthetic-rubber, solvent release type, polyurethane base sealant, Mameco "Vulkem 116", Tremco "Dymonic", Sika Corp. "Sikaflex 1A or 15LM", Sonneborn NP1, or equal.
- C. Type C Sealant: Fed. Spec. TT-S-227E, Type 1, Class A, 25-40 Shore A hardness, multi-component, polyurethane, self-leveling joint sealant. Vulkem "245", Sonneborn Bldg. Products, Inc. "Sonalstic Paving Joint Sealant", Sika Corp. "Sikaflex 2C S/L", or equal.
- D. Type D Sealant: Fed. Spec. TT-S-1657, Type 1 or 2, butyl-base sealant, PTI 707, Tremco "Butyl", or equal.
- E. Acoustic Sealant: Fed. Spec. TT-S-1657 butyl sealer, pre-extruded, non-hardening, non-skinning mastic of sufficient dimension to maintain constant contact with adjoining surfaces (not less than 3/8 inch diameter or 1/4 by 1/2 inch if in flat form), packaged in rolls. Tremco "Acoustical Sealant", Lowery's "10A Acoustical Sealer", or equal.

- F. Primer, if required, shall be non-staining and as recommended by the sealant manufacturer.
- G. Backup: Shall be a polyethylene foam rod of rope, closed cell and 25% wider than the joint width.
- H. Bond breaker, if required, shall be as recommended by the sealant manufacturer.
- I. Solvents or cleaning agents shall be as recommended by the sealant manufacturer.
- J. Colors:
 - 1. Color of sealants shall match color of adjacent work. Colors for each sealant installation will be selected from manufacturer's standard colors by the Resident Engineer.
 - 2. In concealed installation, standard gray or black sealant may be used.

PART 3 - EXECUTION

3.01 WORKMANSHIP

- A. At the start of the installation the manufacturer shall supply instruction in the use of his product to insure proper installation.
- B. As work progresses, immediately remove sealant that may be adhered to adjacent materials.

3.02 JOINT DIMENSIONS

- A. Joint dimension shall be as shown on the drawings. In joints up to 1/4 inch in width the depth of the sealant shall be the same as the joint width.
- B. In open joints over 1/4 inch wide, the depth of the sealant shall be approximately one-half the width of the joint, but in no case less than 1/4 inch deep.
- C. When open joints exceed the depth requirements, insert backup material to the necessary depth stated above. If not, place bond breaker tape in bottom of joint.
- D. When perimeter joints around frames that are to be sealed do not have built-in stops, insert backup material to provide a joint with a minimum depth of 3/8 inch and a maximum depth of 1/2 inch.

3.03 APPLICATION

- A. Back-up Material: Install in clean dry joints at the proper depth to provide sealant dimensions as specified earlier.
- B. Masking: If required, shall be applied in continuous strips aligned with joint edge. Remove tape immediately after joints have been tooled.
- C. Primer: If required, shall be used where recommended by the Sealant manufacturer.
- D. Sealant: Shall be applied under pressure to clean dry joint, using hand or power guns, or other approved methods.
 - 1. Nozzles shall be of the proper size and shape to form the required bead and completely fill the joint. Joint shall be filled from the bottom, making sure air bubbles are not left in the joint.
 - 2. Joints shall be tooled as directed or approved, using lubricants recommended by the manufacturer. Joints shall be slightly concave and recessed at least 1/8" from the top of the joint.

3.04 SEALANT APPLICATION SCHEDULE

- A. Type A: In general, at exterior or perimeters of openings in exterior walls such as concrete-to-concrete, metal-to-metal, metal-to-concrete, masonry, or stucco.
- B. Type B: In general, at interior or perimeters of openings in exterior walls such as metal-to-metal, metal-to-concrete, masonry, or stucco.
- C. Type C: In general, for use on areas subject to foot or vehicle traffic.
- D. Type D: In general, for interior wall penetrations for piping or conduit which are to be covered by escutcheon or other trim or plate.
- E. Acoustic Sealant: In general, for sound retardant sealant at sound-rated partitions or partitions with sound-retardant material therein.

3.05 MISCELLANEOUS SEALING WORK

- A. The entire extent of sealing work is not necessarily fully or individually described herein. Sealing shall be provided wherever required to prevent light leakage as well as moisture leakage. Refer to drawings for conditions and related parts of the work.
- B. All penetrations and openings in exterior walls shall be sealed in compliance with CBC Title 24 standards.

3.06 CLEANING

- A. At the completion of this work, all surfaces adjoining joints shall be cleaned of all excess sealant and left in a neat condition subject to the approval of the Resident Engineer.

END OF SECTION 07920

SECTION 08110 - METAL DOORS AND FRAMES

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Qualifications of Manufacturer: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with history of successful production acceptable to the Resident Engineer.
- B. Comply with "Recommended Specifications, Standard Steel Doors and Frames", SDI 100, by the Steel Door Institute.

1.02 SUBMITTALS

- A. Manufacturer's data - Submit the following:
 - 1. Complete materials list of all items proposed to be furnished and installed under this Section.
 - 2. Shop Drawings showing details of each frame type, elevations of each door design type, details of all openings, and all details of construction, installation, and anchorage.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Supports and Anchors: Fabricate of not less than 18 gage galvanized sheet steel.
- B. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into concrete or masonry walls, complying with ASTM A 153, Class C or D as applicable.
- C. Shop Applied Paint: Use rust-inhibitive baked enamel or paint, suitable as a base for specified finish paints.

2.02 FABRICATION

- A. Comply with SDI 100 for minimum materials and construction requirements.
- B. Exposed Fasteners: Provide countersunk flat Phillips or Jackson heads for exposed screws and bolts.

C. Finish Hardware Preparation:

1. Prepare hollow metal units to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping in accordance with final Finish Hardware Schedule and templates provided by hardware suppliers. Comply with applicable requirements of ANSI A115.
2. Reinforce hollow metal units to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at site.
3. Locate finish hardware in accordance with "Recommended Locations for Builders Hardware", published by the National Builders Hardware Association.

D. Shop Painting:

1. Clean, treat and paint exposed surfaces of fabricated hollow metal units.
2. Clean steel surfaces of mill scale, rust, oil, grease, dirt and other foreign materials before the application of the shop coat of paint.
3. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive field-applied paint.

2.03 DOORS

- A. Materials: Commercial quality, stretcher leveled, cold rolled steel conforming to ASTM A 366 or hot rolled steel, pickled and oiled conforming to ASTM A 569, free from scale, pitting or surface defects; with edges, angles and corners square.
- B. Construction: Doors shall be full flush type, 1-3/4 inch thick, fabricated from 16 gage steel sheets. Top and bottom edges to be flush and closed with minimum 16 gage channels. All edges shall be full seam welded.
- C. Internal Construction: Vertical and/or horizontal steel, rigidly formed members welded to the face panels with sound deadening material filling all interior hollow spaces; or polyurethane, polystyrene or mineral core bonded to the inside of both faces.
- D. Louvers: Louvers for doors shall be inverted Y type. Weld or tenon louver blades to frame and fasten the entire louver assembly to the door with moldings. Moldings on the inside shall be detachable. Mouldings on the outside shall be an integral part of the louver. Form louvers of 16 gage steel. On exterior doors provide metal framed insect screens rigidly secured to louvers to permit ready removal. Louvers shall have a minimum of 45 percent net-free opening.

2.04 STEEL FRAMES

- A. Provide metal frames of the types and styles indicated on the Drawings or schedules and complying with SDI 100 for minimum materials and construction requirements.
- B. Fabricate frames of welded construction; 14 gauge. Miter all corners. Reinforce all hinge pockets with additional hinge reinforcement straps.
- D. Door Silencers: Provide 3 silencers on strike jambs of frames.
- E. Anchors: Provide anchors to secure the frame to adjoining construction. Provide steel anchors, zinc-coated or painted with rust- inhibitive paint, not lighter than 18 gauge.
 - 1. Wall Anchors: Provide a minimum of three anchors for each jamb. Locate anchors opposite top and bottom hinges and midway between.
 - a. Stud Partitions: Weld or otherwise securely fasten anchors to backs of frames. Design anchors to be fastened to wood studs.
 - b. Masonry Walls: Install masonry wall anchors in masonry walls, as wall is being constructed, and grouted in place. Weld or otherwise securely fasten anchors to backs of frames.
 - 2. Floor Anchors: Provide floor anchors drilled for 3/8-inch anchor bolts at bottom of each jamb member.

2.05 INFILTRATION/EXFILTRATION

- A. When measured in accordance with ASTM E 283-73, doors shall not have an infiltration rate in excess of 0.5 cfm/sq. ft. per single doors or 1.0 cfm per sq. ft. per double door when subject to a pressure differential equivalent to that of a 25 mph wind.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install metal doors, frames and accessories in accordance with manufacturer's data, and as specified herein.
- B. Setting Frames:
 - 1. Comply with the provisions of SDI 100, unless otherwise indicated.
 - 2. Set frames prior to construction of enclosing walls. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
 - 3. When installed in prepared openings, install sealant between frame and wall in compliance with the requirements of Section 07920.
- C. Door Installation:
 - 1. Fit doors accurately in their respective frames, within clearances specified in SDI 100.
 - 2. Clearance: Unless indicated otherwise, for non-rated doors provide clearances of 1/8" at jambs and heads; 1/8" at meeting stiles for pairs of doors; and 1/4" from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4" clearance from bottom of door to top of threshold.

3.03 ADJUST AND CLEAN

- A. Final Adjustments: Check and readjust operating finish hardware items in hollow metal work just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames which are warped, bowed or otherwise damaged.
- B. Prime Coat Touch-up: Immediately after erection, sand smooth all rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
- C. Painting of Metal Doors and frames is specified in Section 09900, "Painting".

END OF SECTION 08110

SECTION 08330 - ROLLING COUNTER DOORS

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Furnish all materials, services, testing, transportation and equipment necessary for and reasonably incidental to the completion of all work of this section, as indicated on drawings and specified herein. Work, materials and equipment not indicated or specified which is necessary for a complete and proper operation of the work of this Section in accordance with the true intent and meaning of the Contract Documents shall be provided and incorporated at no additional cost to the Owner.
- B. Furnish each rolling counter door as a complete unit produced by one manufacturer, including hardware, accessories, mounting and installation components.
- C. Wind Loading: Design and reinforce rolling counter doors to withstand a 20 lb. per sq. ft. wind loading pressure unless otherwise indicated.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, roughing-in diagrams, and installation instructions for each type and size of rolling counter door. Include operating instructions and maintenance information.
 - 1. Submit product data for all materials to be supplied and installed under this section of work.
- B. Shop Drawings: Submit shop drawings for rolling counter doors, including special components and installations which are not fully dimensioned or detailed on manufacturers data sheets.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Types: Provide spring counterbalanced, overhead coiling type counter shutters designed for various applications specified below. Furnish counter shutters complete with guides, hardware, fastenings, operating mechanism, and accessories.
 - 1. Counter Shutters: Surface mounted type operated by lifting handles. Shutters shall be Overhead Door Corp.; 650 Series, or approved equal.

- B. Curtains: Non-Rated Counter Shutters: Form curtains of interlocking flat faced midget slats fabricated from 22 gage stainless steel. Provide alternate slats with endlocks. Bottom bar shall be tubular in shape and provided with double vinyl astragal.
1. Endlocks: Malleable iron castings galvanized after fabrication, secured to curtain slats with galvanized rivets. Provide locks on alternate curtain slats for curtain alignment and resistance against lateral movement.
 2. Windlocks: Malleable iron castings secured to curtain slats with galvanized rivets. Space windlocks approximately 24" o.c. on both edges of curtain.
- C. Counterbalancing: Counterbalance doors by means of adjustable steel helical torsion spring, mounted around a steel shaft and mounted in a spring barrel and connected to the door curtain with the required barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members. Provide helical torsion springs designed to counterbalance the weight of the shutter so that effort required to operate the shutter shall not exceed 35 pounds. Springs shall be adjustable from outside the end bracket plate.
1. Counterbalance Barrel: Fabricate spring barrel of hot-formed structural quality carbon steel, welded or seamless pipe, of sufficient diameter and wall thickness to support roll-up of curtain without distortion of slats and limit barrel deflection to not more than 0.03" per ft. of span under full load.
 - a. Provide spring balance of one or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Provide cast steel barrel plugs to secure ends of springs to barrel and shaft.
 - b. Fabricate torsion rod for counterbalance shaft of case-hardened steel, of required size to hold fixed spring ends and carry torsional load.
 - c. Springs shall be rated for 100,000 cycles.
- D. Operation: Equip counter shutters for push-up operation.
1. Equip shutters specified for push-up operation with lift handles and slide bolts on the bottom bar, and manufacturer's standard locking device.
- E. Integral Frame: Fabricate jambs, head, fascia, and hood of not lighter than 16 gage stainless steel and sill of not lighter 14 gage stainless steel. Provide continuous channel of sufficient depth to retain curtain integrally formed into the jamb frames. Guides shall incorporate silicone treated wool pile or plastic strips to assure quiet operation.
1. Countertop shall be as specified in Section 10850, "Miscellaneous Accessories".

- F. Guides: Provide continuous formed stainless steel channel of sufficient depth to retain curtain in guides. Guides shall incorporate silicone treated wool pile or plastic strips to assure quiet operation.
- G. Hoods: Fabricate hoods of 24 gage stainless steel formed to fit bracket curvature and securely attached thereto. Provide intermediate supports as necessary to prevent excessive sag.
- H. Finishes:
 - 1. Stainless Steel: Give surfaces of stainless steel curtain slats, bottom bars, guides, and hoods a No. 4 finish.
 - 2. Other Surfaces: Shop prime all other surfaces, except faying surfaces, with rust inhibiting paint. Field painting is specified in Section 09900.
 - 3. Weather Seals: Provide vinyl or neoprene weatherstripping for exterior exposed doors except where otherwise noted. At door heads, use 1/8" thick continuous sheet secured to inside of curtain coil hood. At door jambs, use 1/8" thick continuous strip secured to exterior side of jamb guide.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install door and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports in accordance with final shop drawings, manufacturer's instructions, and as specified herein.
- B. Coordination: Coordinate all work with that of other trades. Insure that all required backing for mounting systems are in place. Coordinate electrical requirements to verify that necessary wiring and controls are in place. No exposed conduit and/or wiring will be permitted.
- C. Upon completion of installation including work by other trades, lubricate, test and adjust doors to operate easily, free from warp, twist or distortion and fitting weathertight for entire perimeter.

END OF SECTION 08330

SECTION 08710 - FINISH HARDWARE

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Manufacturer: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.
- B. Items of hardware not definitely specified herein but necessary for completion of the work shall be provided. Such items shall be of type and quality suitable to the service required and comparable to adjacent hardware. Where size or shape of members is such as to prevent the use of types specified, hardware shall be furnished of suitable types having as nearly as practicable the same operation and quality as the type specified.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturers technical product data for each item of hardware. Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.
- B. Hardware Schedule: Submit hardware schedule in manner indicated below.
 - 1. Submit five (5) typewritten copies of the schedule of hardware. Schedule shall be arranged sequentially by door number with the hardware type identified. Hardware shall not be ordered for purchase until the schedule has been reviewed by the Resident Engineer.
 - 2. Submit catalog cuts of each item.
 - 3. Check door thicknesses, details of trim, clearance for hinges, strikes, closers, fastener requirements, and fire rating requirements before preparing schedule.
 - 4. Submit keying schedule.
 - 5. Review of the schedule by the Resident Engineer shall not be construed as certifying the schedule as being complete.
- C. Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware.

1.03 KEYING

- A. All cylinders shall be Best, 7-pin interchangeable core and keyed to match existing factory registered Grand Masterkey system. All seven pins to be operational. Provide

removable cores with all locks. Furnish permanent cores to Owner for final installation.

- B. Temporary cores (construction cores) shall be installed by contractor for security purposes. Temporary cores shall be keyed alike and interchangeable with Best cores.
- C. Contractor shall provide Owner with copies of control key and operating key upon project completion.
- D. All keys and cores shall have visual key control.
- E. All keys shall be stamped "Do Not Duplicate".

PART 2 - PRODUCTS

2.01 FINISHES

- A. Refer to hardware schedule in Part 3.

2.02 MANUFACTURERS

- A. Refer to hardware schedule in Part 3.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations.
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protection with finishing work specified in the Division-9 sections. Do not install surface-mounted items until finishes have been completed on the substrate.
- C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.02 ADJUST AND CLEAN

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application.
- B. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in each space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- C. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

3.03 MANUFACTURER'S REFERENCE CODE:

Approved Substitutions:

- | | |
|------------------|-------------------|
| 1. Hager | Stanley, McKinney |
| 2. Best | Folger Adams |
| 3. Dorma | Norton 7500 |
| 4. Quality | B.B.W., Trimco |
| 5. Pemko | Reese, Ultra |
| 6. Glynn-Johnson | Rixson, A.B.H. |

3.04 HARDWARE GROUPS: All products as specified or approved equal.

Hardware Set 1 - ALL GENDER TOILET ROOM DOOR

Door(s):

105

| Qty | Description | Catalog Number | Finish | Mfr |
|------|----------------|------------------------|--------|-----|
| 1 EA | CONT. HINGE | 700 | 630 | IVE |
| 1 EA | DORMITORY LOCK | 45H-7-T-14J | 630 | BES |
| 1 EA | LOCK GUARD | LG12 | 630 | IVE |
| 1 EA | SURFACE CLOSER | 4040XP HEDA SRI TBSRT | 689 | LCN |
| 1 EA | KICK PLATE | 8400 10" X 2" LDW B-CS | 630 | IVE |
| 1 EA | FLOOR STOP | FS18S | BLK | IVE |

| | | | | | |
|---|-----|-----------|---------------------------------------|-----|-----|
| 1 | EA | RAIN DRIP | 142AA (IF REQUIRED) | AA | ZER |
| 3 | EA | SILENCER | SR64 | GRY | IVE |
| 1 | SET | | SIGNAGE SPECIFIED IN SECTION 10 14 00 | | B/O |

Hardware Set 2 - TOILET ROOM DOORS

Door(s):

106 107

| Qty | | Description | Catalog Number | Finish | Mfr |
|------------|-----|--------------------|--|---------------|------------|
| 1 | EA | CONT. HINGE | 700 | 630 | IVE |
| 1 | EA | INTRUDER LOCK | 45H-7-IND-14J | 630 | BES |
| 1 | EA | PERMANENT CORE | KEY SYSTEM AS DIRECTED BY CITY LOCK SHOP | 626 | BES |
| 1 | EA | SURFACE CLOSER | 4040XP H SRI TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 2" LDW B-CS | 630 | IVE |
| 1 | EA | FLOOR STOP | FS18S | BLK | IVE |
| 3 | EA | SILENCER | SR64 | GRY | IVE |
| 1 | SET | | SIGNAGE SPECIFIED IN SECTION 10 14 00 | | B/O |

Hardware Set 3 - ELECTRICAL ROOM DOOR W/PH

Door(s):

104

| Qty | | Description | Catalog Number | Finish | Mfr |
|------------|----|--------------------|-------------------------|---------------|------------|
| 3 | EA | HINGE | 3CB1 4.5 X 4.5 NRP | 630 | IVE |
| 1 | EA | PANIC HARDWARE | LD-PA-AX-98-NL-OP-110MD | 630 | VON |
| 1 | EA | RIM CYLINDER | 20-022 X SDG&E QUAD KWY | 626 | SCH |
| 1 | EA | DOOR PULL | VR910 NL | 630 | IVE |
| 1 | EA | SURFACE CLOSER | 4040XP HEDA SRI TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 2" LDW B-CS | 630 | IVE |
| 1 | EA | FLOOR STOP | FS18S | BLK | IVE |
| 1 | EA | RAIN DRIP | 142AA (IF REQUIRED) | AA | ZER |
| 3 | EA | SILENCER | SR64 | GRY | IVE |

Hardware Set 4 - PLUMBING CHASE DOOR

Door(s):

| Qty | | Description | Catalog Number | Finish | Mfr |
|-----|----|------------------|--|--------|-----|
| 3 | EA | HINGE | 3CB1 4.5 X 4.5 NRP | 630 | IVE |
| 1 | EA | MORTISE LOCK | 45H-7-TD-14J (LESS O.S. TRIM) | 630 | BES |
| 1 | EA | PERMANENT CORE | KEY SYSTEM AS DIRECTED BY CITY LOCK SHOP | 626 | BES |
| 1 | EA | ANTI-VANDAL PULL | 1096HA | 630 | TRI |
| 1 | EA | SURFACE CLOSER | 4040XP SHCUSH SRI TBSRT | 689 | LCN |
| 1 | EA | RAIN DRIP | 142AA (IF REQUIRED) | AA | ZER |
| 1 | EA | DOOR SWEEP | 39A | A | ZER |
| 1 | EA | THRESHOLD | 103A-226 (OR AS DETAILED) | A | ZER |
| 3 | EA | SILENCER | SR64 | GRY | IVE |

Hardware Set 5 - CONCESSIONS/STORAGE ROOM DOORS

Door(s):

100 103

| Qty | | Description | Catalog Number | Finish | Mfr |
|-----|----|------------------|--|--------|-----|
| 3 | EA | HINGE | 3CB1 4.5 X 4.5 NRP | 630 | IVE |
| 1 | EA | MORTISE LOCK | 45H-7-TD-14J (LESS O.S. TRIM) | 630 | BES |
| 1 | EA | PERMANENT CORE | KEY SYSTEM AS DIRECTED BY CITY LOCK SHOP | 626 | BES |
| 1 | EA | ANTI-VANDAL PULL | 1096HA | 630 | TRI |
| 1 | EA | SURFACE CLOSER | 4040XP HEDA SRI TBSRT | 689 | LCN |
| 1 | EA | FLOOR STOP | FS18S | BLK | IVE |
| 1 | EA | RAIN DRIP | 142AA (IF REQUIRED) | AA | ZER |
| 1 | EA | DOOR SWEEP | 39A | A | ZER |
| 1 | EA | THRESHOLD | 103A-226 (OR AS DETAILED) | A | ZER |
| 3 | EA | SILENCER | SR64 | GRY | IVE |

Hardware Set 6 - CONCESSION STORAGE DOOR

Door(s):

102

| Qty | Description | Catalog Number | Finish | Mfr |
|------|----------------|--|--------|-----|
| 3 EA | HINGE | 3CB1 4.5 X 4.5 NRP | 630 | IVE |
| 1 EA | STOREROOM LOCK | 45H-7-D-14J | 630 | BES |
| 1 EA | PERMANENT CORE | KEY SYSTEM AS DIRECTED BY CITY LOCK SHOP | 626 | BES |
| 1 EA | KICK PLATE | 8400 10" X 2" LDW B-CS | 630 | IVE |
| 1 EA | WALL STOP | WS406/407CVX [REQUIRES WALL BACKING] | 630 | IVE |
| 3 EA | SILENCER | SR64 | GRY | IVE |

Hardware Set 7 - STORAGE DOORS

Door(s):

101

| Qty | Description | Catalog Number | Finish | Mfr |
|-------|-------------------|--|--------|-----|
| 6 EA | HINGE | 3CB1 4.5 X 4.5 NRP | 630 | IVE |
| 1 SET | AUTO FLUSH BOLT | FB31P | 630 | IVE |
| 1 EA | DUST PROOF STRIKE | DP2 | 626 | IVE |
| 1 EA | MORTISE LOCK | 45H-7-TD-14J (LESS O.S. TRIM) | 630 | BES |
| 1 EA | PERMANENT CORE | KEY SYSTEM AS DIRECTED BY CITY LOCK SHOP | 626 | BES |
| 1 EA | ANTI-VANDAL PULL | 1097HA | 630 | TRI |
| 1 EA | COORDINATOR | COR X FL | 628 | IVE |
| 2 EA | SURFACE CLOSER | 4040XP HEDA SRI TBSRT | 689 | LCN |
| 2 EA | FLOOR STOP | FS18S | BLK | IVE |
| 2 EA | DOOR SWEEP | 39A | A | ZER |
| 1 EA | ASTRAGAL | 43STST | STST | ZER |
| 1 EA | THRESHOLD | 103A-226 (OR AS DETAILED) | A | ZER |
| 2 EA | SILENCER | SR64 | GRY | IVE |

Hardware Set 8 - ROLL-UP DOORS

Door(s):

100A 100B

| Qty | Description | Catalog Number | Finish | Mfr |
|-----|-------------|---------------------------------------|--------|-----|
| | | HARDWARE BY DOOR / FRAME MANUFACTURER | | |

END OF SECTION 08710

SECTION 09100 - METAL SUPPORT SYSTEMS

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Gypsum suspended ceiling systems shall be designed and constructed in accordance with Title 24 of California Code of Regulations.
- B. Materials shall comply with applicable CBC standards.

1.02 SUBMITTALS

- A. Submit manufacturer's data for all products provided under this section of work.
- B. Provide Shop Drawings for ceiling framing layout, indicating size, spacing, and pertinent details for proposed ceiling support system.

PART 2 - PRODUCTS

2.01 SUSPENSION SYSTEMS FOR CEILINGS

- A. Gypsum Board: Specified in Section 09250.
- B. Hanger Wire: Galvanized annealed steel wire, gages as indicated or specified herein.
- C. Tie Wire: No. 18 and No. 16 double-annealed, copper bearing, galvanized steel wire.
- D. Runner Channels: 1-1/2" channels, 1.12 lbs./ft. minimum, hot rolled.
- E. Furring Channels: 7/8", 25 gage galvanized hat channels.
- F. Finish of channels shall be an approved factory-applied bituminous paint, except zinc coated at exterior soffits.

2.02 CEILING FRAMING MEMBERS

- A. 18 gage galvanized metal studs, sized as required for the spans provided.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Details of Construction:

1. Gypsum board ceilings shall not support materials or building components other than grills, light fixtures, small electrical conduits, small ducts and the like. All such components shall be supported either directly from main runners, or by supplemental framing which is supported by main runners. No Vertical loads other than gypsum board dead load shall be applied to cross-furring.
2. Vertical Support System:
 - a. There are many possible variations of hanger and main runner sizes and spacings listed in Table No. 47-A, Title 24, CCR, and all of the combinations are acceptable. However, both hangers and main runners are most frequently spaced 4'-0" o.c. This is acceptable provided the following requirements are met:
 - 1) Vertical hanger wires are No. 8 gage and galvanized; however, if ceiling is non-accessible, a No. 12 gage wire may be used.
 - 2) Main runners are 1-1/2" channels, 1.12 lbs./ft. minimum, hot rolled.
 - 3) Cross-furring may be 7/8", 26 gage galvanized hat channels at 24" maximum o.c.
 - b. The following requirements apply to all wire hanger/runner combinations:
 - 1) Hangers shall be saddle-tied around main runners to develop the full strength of the hangers.
 - 2) Cross-furring shall be saddle-tied to the main runners with one strand of No. 16 or two strands of No. 18 gage tie wire.
 - 3) Main runners shall be spliced by lapping and interlocking flanges 12" minimum and tying near each end with double loops of No. 16 gage wire.
 - 4) Cross-furring shall be spliced by lapping and interlocking the pieces 8" minimum and tying near each end with double loops of No. 16 gage wire.

B. Light Fixture Support:

1. All recessed or drop-in light fixtures shall be supported directly by main runners or by supplemental framing which is supported by main runners.
2. Surface mounted fixtures shall be attached to a main runner with a positive clamping device made of material with a minimum of 14 gauge. No rotational spring catches will be allowed.

C. Lateral System:

1. Provide seismic brace to ceiling above. Use No. 12 gage diagonal wires spaced on an 8' x 12' grid and within 6'-0" of walls. Seismic brace to be located at intersection of main runner and cross-furring member. Provide connection between diagonal wires and main runner so as to prevent slipping for a 200 lbs. approximate seismic load.
 - a. 8 gage (minimum) hanger wires may be used for up to and including 4'-0" x 4'-0" grid spacing along main runners. Splices will not be permitted in any hanger wires unless specifically approved by City of San Diego, Development Services Department.
 - b. Provide trapeze or other supplementary support members at obstructions to maintain hanger spacing. Provide additional hangers, struts or braces as required at all ceiling breaks, soffits or discontinuous areas. Hanger wires that are more than 1 in 6 out of plumb are to have counter-sloping wires.
 - c. Ceiling grid members may be attached to not more than 2 adjacent walls. Ceiling grid members shall be at least 1/2 inch free of other walls. If walls run diagonally to ceiling grid system runners, one end of main and cross runners shall be free with a minimum of 1/2 inch clear at wall.
 - d. At the perimeter of the ceiling area where main or cross runners are not connected to the adjacent wall, provide interconnection between the runners at the free end to prevent lateral spreading. A metal strut or a 16 gage wire with a positive mechanical connection to the runner may be used.
 - e. Provide sets of four 8 gage splayed bracing wires oriented 90 degrees from each other at the following spacing:
 - 1) Place sets of bracing wires at a spacing not more than 8 feet by 12 feet on center.
 - 2) Provide bracing wires at locations not more than half the spacings given in "1" above from each perimeter wall and at the edge of vertical ceiling offsets. The slope of these wires shall not exceed 45 degrees from a horizontal plane and shall be taut without causing the ceiling to lift. Compression struts attached to the ceiling and the structure shall be provided at bracing points. Splices in bracing wires are not permitted.
 - f. Fasten hanger wires with not less than 3 tight turns. Fasten bracing wires with 4 tight turns. Make all tight turns within a distance of 1-1/2 inches. Hanger or bracing wire anchors to the structure shall be

installed in such a manner that the direction of the wire aligns as closely as possible with the direction of the forces acting on the wire.

- g. Separate all ceiling hanging and bracing wires at least 6 inches from all unbraced ducts, pipes, conduit, etc. It is acceptable to attach lightweight items, such as single conduit not exceeding 3/4" nominal diameter, to hanger wires using connectors acceptable to County of San Diego, Development Services Department.

3.02 CLEAN-UP AND PROTECTION

- A. At all times keep the premises clean and orderly where work is being conducted.
- B. Adequately protect all other work from damage due to the work of this Section.
- C. Upon final completion of the work, remove all tools and equipment and unused materials and leave the work in a clean and orderly manner.

END OF SECTION 09100

SECTION 09250 - GYPSUM WALLBOARD

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Provide manufacturer's data for all material to be supplied under this section of work.
- B. Provide certification that materials meet these specifications.
- C. Provide manufacturer's printed instructions for installation of assemblies.
- D. Provide samples of texture finishes for approval.

1.02 STORAGE AND HANDLING

- A. Deliver materials in manufacturer's unopened containers, packages or bundles identified with manufacturer's name, brand, type, and grade clearly marked.
- B. Store in dry areas and protect from dampness and deterioration.
- C. Protect ready-mixed products from freezing.
- D. Protect metal products from rusting.
- E. Deliver fire-rated materials bearing testing agency label and required fire classification number.

1.03 PROJECT CONDITIONS

- A. Do not install wallboard products unless installation areas comply with minimum temperature and ventilation requirements recommended by manufacturer. As a minimum, provide temperatures above 50 degrees F. during and after installation.
- B. Under slow drying conditions, allow additional drying time between coats of joint treatment.
- C. Protect installed materials from drafts during hot, dry weather.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Provide gypsum wallboard materials manufactured by United States Gypsum, Georgia Pacific, or equal.
- B. Gypsum Board:
 - 1. Standard: ASTM C 36; or Fed. Spec. SS-L-30, Type III, Grade R, Class I; 1/2 inch and 5/8 inch thick, tapered edges, ends square cut, maximum permissible lengths.
 - 2. Water-resistant: ASTM C 630, 5/8 inch thick, tapered edges, ends square cut, maximum permissible lengths.
 - a. Seal all edges per manufacturer's recommendations.

2.02 GYPSUM WALLBOARD ACCESSORIES

- A. Provide gypsum wallboard accessories in accordance with Gypsum Association GA-216, and as shown on Drawings and specified.
- B. Provide all accessories such as corner beads and edge trim as metal fabrications (26 gauge minimum).
- C. Provide suspension system for applications of gypsum wallboard using the components required by Drawings, and in accordance with ASTM C 645 and Specification Section 09100.
- D. Hanger Wire: Provide No. 8 prestraightened hanger wires.
- E. Furring Channels: Provide hat or z-type furring channels fabricated from minimum 22 gauge galvanized steel.
- F. Joint Treatment:
 - 1. Tape: Perforated, conforming to ASTM C 475 or Fed. Spec. SS-J-570, Type II.
 - 2. Compound: Powdered or ready-mixed conforming to ASTM C 475 or Fed. Spec. SS-J-570, Type I. Taping and topping joint compound or all-purpose joint compound may be used.
- G. Priming Prior to Texturing: Provide primer of type as recommended by manufacturer.
- H. Texturing:
 - 1. Wall Texturing: Provide materials manufactured by U. S. Gypsum, or equal.
 - 2. Ceiling Texturing: Provide materials manufactured by U. S. Gypsum, or equal.

PART 3 - EXECUTION

3.01 COORDINATION

- A. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work which is to be placed in or behind framing and gypsum wallboard. Allow such items to be installed after framing is completed.
 - 1. Contractor shall be responsible for inspection and acceptance of the wall and ceiling framing. Contractor shall verify that all framing is straight, plumb, and level, and ready for installation of gypsum wallboard. Commencement of gypsum wallboard installation indicates acceptance of framing.

3.02 GYPSUM BOARD INSTALLATION

- A. Install gypsum board in accordance with Gypsum Association GA-216 recommendations.
- B. Erect gypsum board in direction most practical and across studs with ends and edges occurring over continuous firm bearing.
- C. Use screws when fastening gypsum board to framing.
- D. Treat cut edges and holes in moisture resistant gypsum board with sealant.
- E. Place corner beads and trim/molds as shown or required. Use longest practical lengths. Place edge trim and molds where gypsum board abutts dissimilar materials and at all board terminations exposed to view. Construct reveals required by Drawings.
- F. Tape, fill, and sand exposed joints, edges, corners, and openings to produce surfaces ready to receive finishes except at non-exposed-to-view conditions. Feather coats onto adjoining surfaces so that camber is maximum of 1/16 inch. Finishing of taping is not required at areas to receive tiles, and areas above exposed-to-view ceilings.
- G. Remove and correct or replace defective work in a manner acceptable to the Resident Engineer.
- H. Hang ceiling and soffit systems level and plumb, in true alignment with adjacent surfaces and walls. Hang in a flat plane, level to within 1/8 inch in 10 feet in any direction verified by water level or laser instrument.
- I. Construct tight fitting joints in exposed ceiling members, continuously around openings and obstructions

3.03 TRIM

- A. Apply edge casing plumb and true to all openings and exposed ends of wallboard abutting another material or as specifically detailed otherwise. Use continuous lengths where possible.
- B. Apply corner bead plumb and true to all exposed exterior corners in continuous lengths whenever possible.
- C. The drawings do not purport to show all locations and all requirements for metal trim in connection with the work of this Section. Carefully study the drawings and the job conditions; provide in place, all metal trim recommended by the manufacturer of the gypsum wallboard used and as required for a finished installation.

3.04 APPLICATION OF TEXTURE FINISH

- A. Surface Preparation and Primer: Prepare and prime drywall and other surfaces in strict accordance with texture finish manufacturer's instructions. Apply primer to all surfaces to receive texture finish. Primer shall be installed to prevent "Joint-Banding" from transferring through finished painting.
- B. Finish Application: Mix and apply finish to drywall and other surfaces indicated to receive finish in strict accordance with manufacturer's instructions to produce a uniform texture without starved spots or other evidence of thin application, and free of application patterns.
 - 1. Finish shall be light orange peel, per approved sample.
- C. Remove any texture droppings or overspray from door frames, windows and other adjoining work.

END OF SECTION 09250

SECTION 09860 - ANTI-GRAFFITI COATINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. This section shall cover anti-graffiti coating and its application.

1.02 QUALITY ASSURANCE

- A. **Manufacturer's Certification:** Prior to start of installation of the work of this Section, and during progress of that work, secure a visit to the job site by an authorized representative of the manufacturer of the anti-graffiti coating material, who shall inspect and shall certify:
 - 1. That the surfaces to which anti-graffiti coating was applied were in a condition suitable for that application;
 - 2. That the materials applied conform to the specified requirements;
 - 3. That the materials were applied in complete accordance with the manufacturer's current recommendations.

1.03 SUBMITTALS

- A. **Data:** Submit manufacturer's product data and installation procedures for materials to be supplied under this section of work.
- B. **Certification:** Upon completion of the work of this Section, and as a condition of its acceptance, deliver to the City the certification required under Paragraph 1.01.A above.
- C. **Warranty:** Accompanying the certification, deliver to the City the manufacturer's standard warrantee, stating that the anti-graffiti coating will remain intact and resist graffiti for a period of five years following date of application. If the surface coated does not clean up as warranted, the manufacturer will supply materials to recoat such problems with coatings at no charge to the City.

1.04 QUALITY ASSURANCE

- A. **Qualifications:**
 - 1. Use skilled workers who are thoroughly trained and experienced and who are completely familiar with the specified requirements and methods.
- B. **Regulatory Requirements:**
 - 1. Comply with applicable codes and regulations. All products must comply with

current VOC requirements for the air quality management City where application takes place. Where those requirements conflict with this Specification, comply with the more stringent provisions.

C. Field Samples:

1. Apply the system as specified in a designated area. This will serve as an indication that applicator can provide acceptable results and will be used as the standard for the rest of the work.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Acceptance at Site:

1. Material shall be delivered to Project in original containers, completely sealed and bearing name of coating contained therein.

B. Storage and Protection:

1. Use all means necessary to protect the materials of this Section before, during, and after installation.

1.06 PROJECT/SITE CONDITIONS

A. Project Conditions:

1. Do not apply coatings when surface temperature is more than 90 degrees F. in the shade, or when the relative humidity is more than 70 percent. Do not apply coating when adverse weather conditions are imminent.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Anti-graffiti coating shall be manufactured by Monopole Inc.

2.02 MATERIALS

- A. First coat: Aquaseal ME12 (Item 5200)
Second Coat: Permashield Base (Item 6100)
Third Coat: Permashield Premium (Item 5600 for matte finish or Item 5650 for gloss finish)
Fourth Coat: Permashield Premium (Item 5600 for matte finish or Item 5650 for gloss finish)

B. Colors and Quantities:

1. Check with manufacturer as to the ability to match selected colors.
2. Product may not be available in small quantities.
3. Finish paint colors containing organic yellow colorants will bleed. Avoid selecting these colors.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:

1. Prior to the commencement of the Work of this Section, examine the installed work of other trades and verify that all such work is complete or properly corrected to the points where this installation may properly commence. Commencement of work will indicate that applicator has accepted the conditions.

3.02 PREPARATION

A. Protection:

1. Protect and cover finished work and materials of all other trades which may be affected by work of this Section during coating application. Protect all surrounding vegetation and adjacent areas from overspray.

B. Surface Preparation:

1. Substrates to receive sealers or primers prior to graffiti resistant coatings must be cleaned of all dirt, bondbreakers, and all other foreign materials which will adversely affect the required appearance of the finished product.
2. Power wash all surfaces in accordance with manufacturer's recommendations.

3.03 APPLICATION

A. General:

1. Apply primers, paints, and coatings in strict accordance with the manufacturer's recommendations as accepted by the Engineer.
2. The number of coats specified is the minimum that will be applied. Apply additional coats when undercoats, stains, or other conditions show through final paint coat, until paint film is of uniform color and appearance.
3. When additional coats of the graffiti resistant coating are required, allow no more than 48 hours between coats.

4. Apply a total dry film thickness of not less than 1.2 mils for primers and paint finishes and not less than 1.5 mils for graffiti resistant coatings.

3.04 CLEANING, TOUCH-UP, AND REFINISHING

A. General:

1. Carefully remove all splatters, spots, and blemishes caused by work of this Section.
2. Upon completion of the work; remove all rubbish, cans, and accumulated materials. All areas must be left in a clean and orderly condition.
3. Runs, sags, misses, holidays, stains, and other defects in the coated surfaces, including inadequate coverage and mil thickness will be satisfactorily touched-up or refinished.

B. Removal of Graffiti:

1. Gramover Graffiti Remover, a water soluble solvent, or equal.

C. Curing of Polyurethane Enamels:

1. Seven to ten days curing time required in order for coating to resist graffiti.

END OF SECTION 09860

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Extent of painting work is indicated on drawings and schedules, and as herein specified.
- B. Work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.
- C. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.
- D. Work includes field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated.
- E. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.
- F. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Resident Engineer will select these from standard colors or finishes available.
- G. Following categories of work are not included as part of field-applied finish work.
 - 1. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items.
 - 2. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, pipe spaces, and shafts.
 - 3. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting.
 - 4. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting.

- H. Following categories of work are included under other sections of these specifications:
 - 1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, metal fabrication, metal doors and frames, and similar items.
 - 2. Unless otherwise specified, shop priming of fabricated components such as architectural woodwork, wood casework, and shop-fabricated or factory-built mechanical and electrical equipment or accessories is included under other sections of these specifications.
 - 3. Mechanical and Electrical Work: Painting of mechanical and electrical work is specified in Division 15 and 16, respectively.
- I. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.02 QUALITY ASSURANCE

- A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
- B. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

1.03 SUBMITTALS

- A. Manufacturer's Data:
 - 1. Complete materials list of all items proposed to be furnished and installed under this Section.
 - 2. Manufacturers' specifications and other data required to demonstrate compliance with the specified requirements.
 - 3. For information only, submit two copies of manufacturer's specifications and application instructions for each material.
- B. Samples: Following the selection of colors and glosses by the Resident Engineer, submit samples for the Resident Engineer's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.
 - 1. Submit Four draw-down samples of each paint color and gloss type indicated.

1.04 PRODUCT HANDLING

- A. Deliver all materials to the job site in original, new, and unopened containers bearing the manufacturer's name and label.
- B. Provide proper storage to prevent damage to, and deterioration of, paint materials.
- C. Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.
- D. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Resident Engineer and at no additional cost to the Owner.

1.05 JOB CONDITIONS

- A. Surface Temperatures: Do not apply solvent-thinned paints when the temperature of surfaces to be painted and the surrounding air temperature are below 45 degrees F, unless otherwise permitted by the manufacturer's printed instructions.
- B. Weather Conditions: Do not apply paint in rain, fog, or mist; or when the relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by the manufacturer's printed instructions. Applications may be continued during inclement weather within the temperature limits specified by the paint manufacturer during application and drying periods.

1.06 REGULATORY REQUIREMENTS

- A. All material and application of material shall comply with all air pollution control regulations.

1.07 EXTRA STOCK

- A. Amount: Upon completion of the work of this Section, deliver to the Owner an extra stock equaling 10% of each color, type, and gloss of paint used on the Work, but not more than five gallons for each.
- B. Packaging: Tightly seal each container and clearly label with the contents and location used.

1.08 GUARANTEE

- A. Guarantee the painting work, in writing, against peeling, fading, cracking, blistering, or crazing for a period of three years from the time the Notice of Completion is filed.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Principal paint materials, unless otherwise indicated, shall be as manufactured by Sherwin Williams, Dunn-Edwards Corp., or equal.
- B. Colors and Glosses: The Resident Engineer will select colors to be used in the various types of paint specified and indicated and will be the sole judge of acceptability of the various glosses obtained from the materials proposed to be used in the Work.
- C. Undercoats and Thinners: Provide undercoat paint produced by the same manufacturer as the finish coat. Use only the thinners recommended by the paint manufacturer, and use only to the recommended limits. Insofar as practicable, use undercoat, finish coat, and thinner material as parts of a unified system of paint finish.

2.02 APPLICATION EQUIPMENT

- A. For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer of the particular paint.
- B. Compatibility: Prior to actual use of application equipment, use all means necessary to verify that the proposed equipment is actually compatible with the material to be applied and that the integrity of the finish will not be jeopardized by use of the proposed application equipment.

2.03 OTHER MATERIALS

- A. All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be new first-quality of their respective kinds, and as selected by the Contractor subject to the approval of the Resident Engineer.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Inspection: Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. Verify that painting may be completed in strict accordance with the original design and with the manufacturer's recommendations.

- B. Discrepancies: Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 MATERIALS PREPARATION

- A. Mix and prepare painting materials in strict accordance with the manufacturer's recommendations.
- B. Store materials not in actual use in tightly covered containers.
- C. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.
- D. Stirring: Stir all materials before application to produce a mixture of uniform density, and as required during the application of materials. Do not stir into the material any film which may form on the surface. Remove the film and, if necessary, strain the material before using.

3.03 SURFACE PREPARATION

- A. Perform all preparation and cleaning procedures in strict accordance with the paint manufacturer's recommendations.
- B. Remove all removable items which are in place and are not scheduled to receive paint finish, or provide surface-applied protection prior to surface preparation and painting operations.
- C. Following completion of painting in each space or area, reinstall the removed items by using workmen skilled in the necessary trades.
- D. Clean each surface to be painted prior to applying paint or surface treatment.
- E. Remove oil and grease with clean cloths and cleaning solvents of low toxicity and a flash point in excess of 100 degrees F, (38 degrees C) prior to start of mechanical cleaning.
- F. Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall onto wet newly painted surfaces.
- G. Preparation of Metal Surfaces:
 - 1. Thoroughly clean all surfaces until they are completely free from dirt, oil, and grease. Clean cutting oil from exposed pipes.

2. On galvanized surfaces, use solvent for the initial cleaning and then treat the surface thoroughly with phosphoric acid etch. Remove all etching solution before proceeding.
3. Allow to dry thoroughly before application of paint.
4. Apply primer the same day pretreatment is applied.

3.04 PAINT APPLICATION

- A. On all removable panels and all hinged panels, paint the back sides to match the exposed sides.
- B. Apply one heavy coat of flat black paint on all construction visible through screen vents and grilles.
- C. Drying: Allow sufficient drying time between coats. Modify the period as recommended by the material manufacturer to suit adverse weather conditions.
- D. Brush and Roller Application: Apply all coats onto the surfaces in an even film. Cloudiness, spotting, holidays, laps, brush or roller marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.
- E. Spray Application: Wherever spray application is used, apply each coat to provide the equivalent hiding of brush-applied coats. Do not double back with spray equipment for the purpose of building up film thickness of two coats in one pass.
- F. Completed work shall match the approved Samples for color, texture, and coverage. Remove, refinish, or repaint all work not in compliance with specified requirements.

3.05 PAINTING SCHEDULE - EXTERIOR

| | Sherwin Williams | Dunn-Edwards |
|-------------------------------|----------------------------------|---------------------|
| A. Ferrous Metal - Gloss: | | |
| 1st Coat: | Controls Rust Primer B49WJ900 | 43-4 Bloc-Rust |
| 2nd Coat: | Controls Rust Enamel B35WJ951 | 42-23 Loc-Kote |
| 3rd Coat: | Controls Rust Enamel B35WJ950 | QD 60 Rancho |
| B. Non-Ferrous Metal - Gloss: | | |
| Pretreatment | SSPC SP-1 | GE123Galv-Etch |

| | | |
|-----------|------------------------------|------------------------------|
| 1st Coat: | DTM Wash Primer B71Y1 | QD 43-7 Galv- Alum |
| 2nd Coat: | DTM Acrylic Gloss B66-100 | 42-23 Loc-Kote |
| 3rd Coat: | DTM Acrylic Gloss B66-100 | QD 60 Rancho House & Trim |

C. Wood:

| | | |
|-----------|---------------------------------|------------------------------|
| 1st Coat: | A-100 Latex Primer B42W41 | E 22-1 Super U-365 |
| 2nd Coat: | A-100 Acrylic Flat A8 Series | E 22-1 Super U-365 |
| 3rd Coat: | A-100 Acrylic Flat A8 Series | QD 60 Rancho House & Trim |

D. Stucco:

| | | |
|-----------|---------------------------------|-----------------------------------|
| 1st Coat: | A-100 Latex Primer B42W41 | E 22-1 Super U-365 |
| 2nd Coat: | A-100 Acrylic Flat A8 Series | E 22-1 Super U-365 |
| 3rd Coat: | A-100 Acrylic Flat A8 Series | QD 60 Rancho House & Trim Trim |

3.07 PAINTING SCHEDULE - INTERIOR

A. Finish - Semi-Gloss Paint:

1. Gypsum Board:

| | | |
|-----------|---------------------------------|---------------------------|
| 1st Coat: | Preprite High Build B28W601 | W 101 Vinylastic |
| 2nd Coat: | Promar 200 Semigloss B20W200 | E 22-1 Super |
| 3rd Coat: | Promar 200 Semigloss B20W200 | E 5 Series Semi- Gloss |

2. Wood:

| | | |
|-----------|---------------------------------|-----------------------|
| 1st Coat: | Preprite Classic B28W101 | E 22-1 Super U-365 |
| 2nd Coat: | Promar 200 Semigloss B31W200 | E 22-1 Super U-365 |

| | | | |
|----|---------------------------|---|---|
| | 3rd Coat: B31W200 | Promar 200 Semigloss | QD 2 Series |
| 3. | Metal, Ferrous: | | |
| | 1st Coat: | Controls Rust B49WJ900 | W 711 Vanprime or QD 43-7 Galv-Alum |
| | 2nd Coat: | Promar 200 Semigloss B31W200 | E 22-1 Super U-365 |
| | 3rd Coat: B31W200 | Promar 200 Semigloss | QD 2 Series |
| 4. | Metal, Non-Ferrous: | | |
| | Pretreatment 1st Coat: | SSPC SP-1 DTM Primer Finish B66W1 | GE123Galv-Etch W 711 Vanprime or QD 43-7 Galv-Alum |
| | 2nd Coat: | Promar 200 Semigloss B31W200 | E 22-1 Super U-365 |
| | 3rd Coat: B31W200 | Promar 200 Semigloss | QD 2 Series |

END OF SECTION 09900

SECTION 10160 - PLASTIC TOILET PARTITIONS

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Codes and Standards: In addition to conforming with all pertinent codes and regulations, fabricate and install the toilet partitions in strict accordance with the published recommendations of the manufacturer of the products selected.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's detailed technical data for materials, fabrication, and installation, including catalog cuts of anchors, hardware, fastenings, and accessories.
- B. Shop Drawings: Submit shop drawings for fabrication and erection of toilet partition assemblies not fully described by product drawings, templates, and instructions for installation of anchorage devices built into other work.
- C. Samples: Submit full range of color samples for each type of unit required. Submit 6" square samples of each color and finish on same substrate to be used in work, for color verification after selections have been made.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver items in manufacturer's original unopened protective packaging.
- B. Store materials in original protective packaging to prevent soiling, physical damage, or wetting.
- C. Product Handling: Use all means necessary to protect toilet partitions before, during and after installation and to protect the installed work of other trades. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Resident Engineer and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All toilet partitions shall be floor mounted, overhead braced type; high density solid polyethylene plastic, by Comtec industries, Global Products Corp., Santana Products Co., or equal.

1. Color shall be as selected by Architect from manufacturer's standard colors.
- B. Hardware and Fittings: Stainless steel, ASTM A 167, Type 302/304, satin finish.
- C. Brackets: For connections to walls, panels and pilasters shall be either anodized extruded aluminum or chromium plated die-cast zinc alloy stirrup brackets.
- D. Hinges:
1. Top hinge shall be the manufacturer's standard, supported both above and below the pivot bracket; with pivot pin mounted within door structure with compensation for vertical movement of door concealed by moveable encasing member.
 2. Bottom hinge shall be the manufacturer's standard, so designed that by either spring tension or gravity it returns the door when unlocked to a predetermined position.
 3. Hinge brackets shall be die-cast, zinc alloy or brass, chromium plated, fastened to pilasters with one-way sex bolts.
- E. Door Latches:
1. Latch housing and working parts shall be housed within the door thickness. Latch bolt shall be stainless steel.
 2. Flush exterior escutcheon plate shall be slotted for emergency access.
 3. Keeper and door stop shall be chrome plated brass with rubber bumper and secured with pilaster with one-way sex bolts.
- F. Door Handles:
1. Door handles shall be >U-Shaped= handle and shall be provided on both inside and outside of door.
- G. Coat Hook and Bumper: Provide chrome plated combination coat hook and bumper attached with one-way sex bolts.
- H. Fastenings: Exposed fastenings shall be chrome plated, one-way type screws and bolts.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Surface Conditions: Prior to all work of this Section, carefully inspect the installed work of other trades and verify that all such work is sufficiently complete to permit the installation of the work of this Section and that the finished installation will be in complete accordance with the original design and the approved shop drawings. In the event of discrepancy, immediately notify the Resident Engineer and proceed as directed.
 - 1. Check areas scheduled to receive partitions for correct dimensions, plumbness of walls and soundness of wall and ceiling surfaces that would affect installation of holding brackets. Verify installation of solid blocking or backing as required.
 - 2. Verify spacing of plumbing fixtures to assure compatibility with installation of partitions.

3.02 INSTALLATION

- A. Install all toilet partitions in strict accordance with the approved shop drawings and the manufacturer's published recommendations.
- B. Provide clearances of not more than 1/2 in. between stiles and panels.
- C. Provide clearances of not more than 1 in. between panels and walls.
- D. Secure panels to walls with not less than two stirrup brackets, attached near top and bottom of panel.
- E. Locate wall brackets so that holes for wall anchorages occur in masonry or tile joints where applicable.
- F. Conceal evidence of drilling, cutting, and fitting to room finish.

3.03 CLEAN-UP AND ADJUST

- A. Adjust and lubricate hardware for proper operation after installation.
- B. Set hinges on inward swing doors to hold doors open approximately 30° from closed position when unlatched.
- C. Set hinges on outward swing doors to hold doors open approximately 10° from closed position when unlatched.

- D. Perform final adjustments to leveling devices and hardware.
- E. Clean exposed surfaces and partitions, hardware, fittings, and accessories.

END OF SECTION 10160

SECTION 10202 - METAL WALL LOUVERS

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Comply with pertinent provisions of Section 01300.
- B. Submit shop drawings indicating details of fabrication and erection, anchorage, accessories, and finishes.

PART 2 - PRODUCTS

2.01 LOUVERS

- A. Sheet metal louvers shall be weather resistant type, with insect screens and made to withstand a wind load of not less than 30 pounds per square foot. Louvers shall be inverted 'Y' type, formed of zinc-coated steel sheet not less than 16 gauge.
 - 1. Screens and Frames: Provide 18 x 16 heavy mesh insect screen, zinc-coated steel. Mount screens in removable, rewirable frames of same material and finish as louvers. Coordinate screens with installation of mechanical plenum ductwork.
- B. Finish shall be as follows: Hot dipped zinc-coated and factory primed finish with field applied topcoat finish. Color as indicated.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Check to assure that dimensions conform to drawings.
- B. Do not install louvers until defects have been corrected.
- C. Install louvers as shown in shop drawings. Coordinate installation with other trades, including mechanical ductwork.
 - 1. Connection of mechanical plenum ductwork to wall louvers shall be by Division 15, Mechanical.
- D. Clean surfaces of louvers and adjacent structure.
- E. Repair any damage to louvers to match original, or replace.

END OF SECTION 10202

SECTION 10440 - IDENTIFYING DEVICES

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Submit fully detailed shop drawings giving sizes, methods of attachment, and all required accessories.

PART 2 - PRODUCTS

2.01 IDENTIFYING DEVICES

- A. Toilet Room Accessibility Signs: Comply with Title 24, California Administrative Code and Americans with Disabilities Act (ADA) with raised and braille letters and as indicated. Provide room identification signage with tactile and braille, as well as door signage (12 " equalateral Triangle for men, 12" diameter circle for women), 1/4" thick Plexiglass, adhesive applied. Symbols and lettering as indicated.
- B. Exterior Building Signage: 1/4" aluminum plate cut out letters. Letters shall be sized as indicated. Letter style shall be Helvetica Medium. Color to be white Kynar finish, after fabrication. Mounting shall be projected, with threaded studs set in adhesive, letters to project 1/2" from furthest protruding face of concrete masonry.

PART 3 - EXECUTION

3.01 IDENTIFICATION SIGNAGE INSTALLATION

- A. Install toilet room accessibility signs on door as indicated.
- B. Install interior room identification signage on wall adjacent to doors, mounting heights shall be 60" above FFE, and as required by code.
- C. Install exterior building signage as indicated above and in accordance with manufacturer's recommendations.

END OF SECTION 10440

SECTION 10800 - TOILET ACCESSORIES

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Data to illustrate each accessory at large scale and show installation method including requirement for blocking and backing, by others.

1.02 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Pack accessories individually in a manner to protect accessory and its finish.
- B. Protect adjacent or adjoining finished surfaces and work from damage during installation of work of this section.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Manufacturer: Bobrick Washroom Equipment, Inc., or equal. Items shall be as indicated.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Deliver inserts and rough-in frames to jobsite at appropriate time for building-in. Provide templates and rough-in measurements as required. Verify that all required backing and blocking is provided.
- B. Before starting work notify Resident Engineer in writing of any conflicts detrimental to installation or operation of units.
- C. Verify with Architect exact location of accessories.

3.02 INSTALLATION

- A. Install fixtures, accessories and items in accordance with manufacturer's printed instructions.
- B. Install true, plumb and level, securely and anchored to substrate.

END OF SECTION 10800

SECTION 10850 - MISCELLANEOUS ACCESSORIES

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Manufacturer's Data to describe and illustrate each accessory at large scale and show installation method including requirement for blocking and backing, by others.

1.02 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Pack accessories individually in a manner to protect accessory and its finish.
- B. Protect adjacent or adjoining finished surfaces and work from damage during installation of work of this section.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Stainless Steel Countertops: Type 316, 14 gauge stainless steel countertop. Fabricate in shop to greatest extent possible to sizes and shapes indicated.
 - 1. Where joints are required verify joint location with Architect prior to fabrication.
- B. Corner Guard: Type 316, 16 gauge, Stainless Steel, 2-1/2" x 2-1/2" x 60" corner guards, by Miller Protection Systems, American Floor Products Co. Inc., or equal. Corner guards shall be installed at all interior gypsum wallboard corners.

2.02 OTHER MATERIALS

- A. All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be as recommended by the manufacturer of the materials used.
- B. Provide fasteners properly selected for the material to be fastened and the substrate to which the material will be fixed, designed to develop proper and adequate strength commensurate with the use.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Deliver inserts and rough-in frames to jobsite at appropriate time for building-in. Provide templates and rough-in measurements as required.
- B. Examine the areas and conditions under which materials are to be placed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.
- C. Verify that required solid blocking and backing is provided as necessary for installation of specified units.

3.02 INSTALLATION

- A. Stainless Steel Countertops: Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data. Weld all joints and grind smooth, with joints inconspicuous in finished work. Reinforce joints as required.
 - 1. Keep components clean during installation. Remove adhesives, sealants and other stains. Keep clean until Date of Substantial Completion. Replace stained and damaged components.
- B. Corner Guard: Install in continuous sections per manufacturer's recommendations.
- C. Install all items true, plumb and level, securely and anchored to substrate.

END OF SECTION 10850

SECTION 15400 - PLUMBING

PART 1 - GENERAL

1.1 SUMMARY:

- A. The "Mechanical General Provisions," Section 15050 is a part of this section and applies as fully as if repeated herein.
- B. The work under this section includes everything necessary for and incidental to executing and completing the plumbing work, except as hereinafter specifically excluded. All work shall include up to 5 feet outside of the building unless noted otherwise on the drawings.
- C. Work included shall be as indicated on the drawings, including but not limited to the following:
 - 1. Sanitary Soil, Waste and Vent System.
 - 2. Domestic Water System including Water Heater.
 - 3. Plumbing Fixtures and Equipment.
 - 4. Sterilization and Tests.
- D. Work not included:
 - 1. Cutting and blocking of structure for fixtures and piping.
 - 2. Forming and pouring of concrete for housekeeping pads.

1.2 GENERAL REQUIREMENTS:

- A. Reference to Other Sections: The applicable requirements from the following specification sections shall form a part of the plumbing work and the Contractor shall consult them in detail for general and specific requirements:

| | |
|---------------|--------------------------------|
| Section 15050 | Mechanical General Provisions. |
| 15800 | Ventilating. |

1.3 ENERGY CONSERVATION:

- A. Based on the latest edition of the *California Energy Commission* (CEC), the work will comply as follows:
 - 1. The plumbing system equipment and fixtures shall meet the fuel type, input, volume, and quantity that are identical to the proposed design. The standard design shall assume recovery efficiency or thermal efficiency and standby loss as specified in Sections 111 or 113 of the *Building Energy Efficiency Standards*.

PART 2 - PRODUCTS

2.1 INSULATION:

- A. Domestic hot water piping, hot water return piping, and 8 feet of cold water pipe at the

water heating equipment shall be insulated with JM "Micro-Lok" Fiberglass, or equal with pressure sensitive closure system jacket. The conductivity range of the insulation shall be 0.24-0.28 BTU-IN/HR-SF-°F with a mean temperature rating of 100°F. Insulation is equal to Johnson-Manville, Certain-Teed Fiberglass.

- B. The insulation shall be applied over clean, dry pipe with all joints butted firmly together. The factory-attached tape shall be pasted smoothly over the insulation.
- C. Fittings shall be insulated with Manville Products #301 cement or equal to a thickness equal to the adjoining pipe insulation and finished with 4-oz. canvas pasted on or finished with "Zeston" premolded PVC insulated fittings or equal.
- D. Where piping is exposed to view, factory-applied 6-oz. canvas jacket or PVC jacketed shall be installed.
- E. Toilet room fixture traps, drains, and hot water supply to wall of fixtures accessible to the handicapped shall be insulated with Handy Shield safety covers by Plumberex Specialty Products, Truebro Lav-Guard, or equal.

2.2 FITTINGS AND PIPING:

A. Soil, Waste, and Vent Piping Within the Building:

1. Above Grade:

- a. Cast iron "no-hub" conforming to CISPI 301 NSF listed with neoprene gasket and Type 301 stainless steel clamping device conforming to CISPI 310 with NSF listing. Or, cast iron "No-Hub" conforming to CISPI 301 NSF with neoprene gasket and type 304 stainless steel clamping device conforming to ASTM C1540, equal to Huskey HD 2000 for mid-range and Huskey SD4000 heavy for high rise.
- b. Provide no-hub fitting restraint bracing for pipes 4" and larger per CISPI handbook. Bracing shall be used to prevent horizontal and vertical movement, equal to Holodrite # 117 series.
- c. At space limitations and waste pipe over watertight areas, use DWV copper drainage tubing with cast brass fittings.

2. Below Grade:

- a. Cast iron "no-hub" conforming to CISPI 301 NSF listed with neoprene gasket and Type 301 stainless steel clamping device conforming to CISPI 310 with NSF listing. Or, cast iron "No-Hub" conforming to CISPI 301 NSF with neoprene gasket and type 304 stainless steel clamping device conforming to ASTM C1540, equal to Huskey HD 2000 for mid-range and Huskey SD4000 heavy for high rise.
- b. Provide no-hub fitting restraint bracing for pipes 4" and larger per CISPI handbook. Bracing shall be used to prevent horizontal and vertical movement, equal to Holodrite # 117 series.
- c. If corrosive soil condition exists below grade pipe and fittings shall be coated or wrapped.

- d. At contractor's option, Bell and Spigot cast iron conforming to ASTM A74 with compression gaskets conforming to ASTM C564.
- B. Domestic Water Piping:
- 1. Above Grade: Lead free Type L copper tubing hard drawn:
 - a. Lead free wrought copper solder sweat fittings and lead-free solder.
 - 2. Below Grade: Lead free Type K copper tubing annealed, straight lengths with lead free wrought copper solder sweat fittings and lead-free solder.
 - a. If corrosive soil condition exists below grade pipe and fittings shall be coated or wrapped.

2.3 PIPING SPECIALTIES:

- A. Unions: In copper tubing 3" and smaller, Lead free Nibco 733-LF, or equal.
- B. Isolation Unions: Wilkins Lead free DUxLC 3" and smaller, or equal.
- C. Water hammer arresters in accordance with PDI-WH-201 standards, JR Smith 5000 Series PPP or equal. Install with access panel.
- D. Floor drain trap primers:
 - 1. Trap Primer: Precision Plumbing Products, Inc. (PPP) "Prime-Rite" Model PR-500 automatic floor drain trap primer valve with corrosion resistant fittings and copper reservoir or equal. Install PPP floor drain trap primer distribution unit DU-U Series as required. Install with access panel.
 - 2. Trap Primer: Sloan VBF-72-A1 PPP FVP-1VB (for use with flush valve water closet), or equal.
- E. Fixture Supplies: Flexible stainless steel braided, compression fittings equal to Sanitary Dash, Speedway, or Brasscraft.
- F. Strainers 3" and Smaller: Lead free 250 lb., W.W.P., cast bronze, screwed, "Y" Pattern, 20 mesh, S.S. screen; Wilkins SXL100 Series, Watts, Armstrong or equal.
- G. Escutcheons: 1" wide chrome or nickel-plated rust resistant.

2.4 VALVES:

- A. Water:
 - 1. Ball Valves: Bronze 2 Piece, full port, lead free ANSI/NSF 372 certified sizes ½" through 2" Nibco T-585-80 LF/S-585-80LF, Apollo #77CLF, Milwaukee Valve UPBA400 (FNPT)/UPBA450 (Sweat) full port, bronze lead free, or legend #T/S 901, or equal.
 - 2. Check Valves:
 - a. Silent check, 2-½" and smaller: Lead free ANSI/NSF 372 certified class 125, bronze, Y-Pattern, horizontal swing, renewable disc, threaded or solder; Nibco F-910-B-LF series, Milwaukee Valve UP509 (FNPT)/UP1509 (Sweat) (Bronze Disc) or equal.
 - 3. Balancing Valves: Lead free bronze body/brass ball construction with glass and

carbon filled TFE seat rings. Valves to have differential pressure read-out ports across valve seat area. Read-out ports shall be fitted with internal EPT inserts and check valves. Valve bodies to have ¼" NPT tapped drain/purge port. Valves to have memory stop feature to allow valve to be closed for service and then reopened to setpoint without disturbing balance position. All valves to have calibrated nameplates to assure specific valve settings. All valves shall be provided with molded insulation to permit access for balance and readout. ITT Bell and Gossett CB series, TACO, or equal.

4. Stops: Lead free angle or straight valve loose key with escutcheon at wall penetration. Stop and escutcheon shall be chrome plated T&S brass, Nibco or equal.
 5. Mixing Valve: Lead free under counter mixing valve for lavatory faucets, thermostatic tempering, one valve to serve one to four faucets equal to Symmons.
 6. Water Pressure Regulator (PRV): Sizes 2½" and Larger: Automatic Control Valve, 304 stainless steel with EDPM diaphragm equal to Watts 115-LASD, sizing is based on gallon per minute flow. Sizes 2" and Smaller: Wilkins #500xL, or equal.
 7. Master Tempering Valve and Automatic Balancing Valve System: Master tempering valve shall be constructed of solid brass with triple duty check stops and balancing poppet design, minimum flow rate of .5 gpm, adjustment range of 400F to 1600F, and feature minimum flow control to ASSE 1017. Automatic balancing valve assembly with temperature/pressure gauges, flow meter, volume control, and in-line check valves.
- B. Combination pressure and temperature relief valve: With minimum 3" extension, Wilkins, Watts, or equal sized for proper pressure relief setting and BTU rating.
- C. Reduced Pressure Backflow Preventer (RPBFP): Lead free 175 PSI at 1400F, bronze body, celcon check seats, stainless steel relief valve seats, bronze body ball valve test cocks, nonrising stem gate valves (threaded for ¾" through 2" and flanged for 2-½" through 10"), air gap drain fitting (route drain to receptor); Wilkins #975XL2 2" and smaller; #375XL 2½" and larger, or equal.
- D. Thermometers, gauges, temperature sensing devices; and aquastat shall be equal to Honeywell, Weiss, or equal.

2.5 YARD BOXES:

- A. "Brooks Products" 3TL concrete with hinged cast-iron locking traffic cover, or equal in walks and traffic areas, No. 3MA with reinforce concrete cover in planter areas. Cover to be marked with name of service.

2.6 CLEANOUTS:

- A. Cleanouts shall be manufactured by Zurn, J.R. Smith, Josam or equal.
- B. Floor Cleanouts: Zurn ZN 1400-K-HD, J.R. Smith Fig. 4104-F-NB, or equal with satin nickel bronze non-skid adjustable round top, flashing device. For carpeted areas install carpet markers-C.
- C. Wall Cleanouts: Zurn Z-1446, J.R. Smith Fig. 4532, or equal with stainless steel or chrome

plated cover and screws.

- D. Outside Cleanouts: Josam 58850 series, J.R. Smith Fig. 4253-U, Zurn Z1474-IN-VP, or equal low type anchoring flange in finished grade areas. Vandal proof covers to be marked "Cleanout." Encase anchoring flange in 20" square x 6" concrete pad, top of cleanout flush with finished surface. Option: J.R. Smith Fig. 4280, Josam 58480, Zurn Z1449, or equal cleanout in yard box specified above with 6" thick concrete, 8" all around box.

2.7 FLASHINGS:

- A. "Stoneman" No. 1100-4 or equal, four pound, seamless lead flashing assembly. Flashing shall have reinforced boot complete with cast-iron counterflashing sleeve and Permaseal waterproofing compound. All vent pipes shall be terminated 12" above the roof. (Roof penetrations per roofing inspector standards.)

2.8 HANGERS, SUPPORTS AND ACCESS PANELS:

- A. Hangers and supports shall comply with the currently adopted edition of the California Plumbing Code and the IAPMO installation standards. Provide seismic support per the California Building Code.
- B. Hangers and Supports:
 - 1. Split Ring or Loop Hangers with Swivel Adjuster, Solid Rods and Rod Sockets: B-line, Unistrut, Tolco, or PHD, or equal.
 - 2. Concrete Inserts: B-line, Unistrut, Tolco, or PHD. Power driven anchors are not acceptable.
 - 3. Trapeze Hangers: B-line, Unistrut, Tolco, or PHD, or equal channel with pipe clamps and guides as required (include type to be used in submittal).
 - 4. Riser Clamps: B-line, Unistrut, Tolco, or PHD or equal.
 - 5. Offset Pipe Clamps: B-line, Unistrut, Tolco, or PHD or equal.
 - 6. Hot and Cold Water Pipe Isolation: 1-inch hair felt, Stoneman Trisolators or B-line, Isolators or equal.
 - 7. Provide and install galvanized pipe saddle at hangers under pipe inserts for insulated piping.
 - 8. Floor or Roof Supports: Pipe Pier by Erico or equal.
- C. Access Panel for Valves and Water Hammer Arresters: Milcor, Elmdor, Karp, or equal painted steel, size as required for easy access, fire rated as required to match fire rating of wall assembly. Minimum size shall be 12" x 12".
- D. Fixture Supports: Furnish wall hung fixtures with supports by Zurn or J.R. Smith or equal to accommodate specified fixtures.
- E. Secondary Pipe Positioning & Supports: Makeshift, field devised methods of plumbing pipe support, such as with the use of scrap framing materials, are not allowed. Support and positioning of piping shall be by means of engineered methods that comply with IAPMO PS 42-96. These shall be Hubbard Enterprises/HOLDRITE support systems or Owner-approved equivalent.

- F. Support of piping, tubing, and equipment shall be accomplished by means of engineered products, specific to each application. Makeshift, field devised methods shall not be allowed.

2.9 PLUMBING EQUIPMENT:

- A. The equipment described in Part 2 of this Section shall be furnished and installed complete under this section of the specifications. See "Equipment Schedule" on drawings for size, capacity, and electrical characteristics.
- B. Water heaters shall be listed in the State of California Energy Commission Directory of Certified Water Heaters.
- C. Thermal Expansion Absorber: Provide at water heaters and boilers where there is a reduced pressure backflow preventor in the system, equal to Flexcon WH series, Amtrol ST series, Extrol, State ETC Series, Wilkins HXT series, or equal.
- D. Water heaters installed in seismic zones shall be supported from the adjoining structure by the use of DSA approved safety restrain devices. Use QuickStrap from Hubbard Enterprises/HOLDRITE or Owner-approved equivalent.

2.10 PLUMBING FIXTURES:

- A. General Requirements:
 - 1. All fixtures shall comply with State of California Energy Commission requirement for maximum flow. Submit manufacturer's certification of compliance.
 - 2. Furnish and install fixtures as specified on the plumbing fixture connection schedule.
- B. P-Traps, chrome plated drawn brass with 17 gauge tubing drain to wall. Trap arms under lavatories and escutcheon at wall shall also be chrome plated.
- C. Job Conditions:
 - 1. Check millworks shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.
 - 2. Plumbing fixture trim and exposed supplies and waste shall be brass with polished chrome plated finish. Individual angle stops, or, if so specified, screwdriver stops, shall be provided for all supplies, and unless integral with valves or faucets, unless otherwise approved by Resident Engineer, shall be mounted under the fixture. Exposed supplies and wastes to wall shall be provided with polished chrome plated wall escutcheons.
 - 3. Fixtures with hangers or supporting arms shall have hangers or arms securely mounted on a ¼" thick x 6" wide steel wall plate, which shall extend at least one stud beyond the first and last fixture mounting points. Concealed arm assemblies shall be attached to plates by four 3/8" x 1-¼" steel bolts and nuts, and hangers and exposed arms by 5/16" minimum full thread steel studs and jamb nuts. Plates shall be drilled and tapped at the time of fixture installation. Where light weight steel studs are used, fixture supports shall have manufactured floor mounted legs for attachment of supporting arms.
 - 4. Supplies shall be with stops and flexible riser.

5. Traps above floor shall be tubular brass "P" traps with bronze nuts unless otherwise indicated.
- 2.11 PLUMBING EQUIPMENT SPECIFICATION SCHEDULE:
- A. See Water Heater Schedule on Sheet MP.1.
- 2.12 PLUMBING FIXTURE SPECIFICATION SCHEDULE:
- A. See Fixture Connection Schedule on Sheet MP.1.
- 2.13 PIPE WRAPPING:
- A. Steel Piping in Concrete or Underground:
 1. Wrap with approved tape products.
 2. Wrap joints and fittings in the field with "Polyken" tape and primer or equal.
- 2.14 SLEEVES:
- A. General:
 1. Where pipes pass through concrete, masonry, or stud walls, or pass through ceilings, provide rust-proof sleeves of the size required.
 2. Provide UL-listed fire rated sealant (specialty products, or equal) at all penetrations of fire-rated assemblies and between buildings along property line.
- 2.15 PIPE PENETRATION CURB:
- A. Provide pipe penetration curbs for all piping extending through roofing/weather proofing membranes.
- 2.16 KITCHEN EQUIPMENT CONNECTIONS:
- A. Coordinate with kitchen equipment installer. Furnish and connect drains, vent, and water utilities. Furnish and install adapters, valves, flexible connectors, backflow devices, hoses, etc., to extend the point of connection as required.
- 2.17 OTHER PRODUCTS:
- A. Provide all other products necessary for complete installation and operation including rough-ins as required for washers and dryers. Such products shall be subject to the review of the Resident Engineer.

PART 3 – EXECUTION

- 3.1 INSULATION INSTALLATION:
- A. Install insulation after piping has been installed, tested, and accepted and after pipes are in a clean, dry condition. All joints in insulation shall be butted firmly together and sealed with jacket lap strip.
 - B. Apply insulation to all fittings and valve bodies. Flanges and unions shall not be covered.
 - C. Where the insulation supports the weight of the pipe, install a 12" insert of rigid galvanized steel, at each pipe clamp or hanger, an insert of rigid "Kaylo" 12" long, shall be installed between pipe and hanger. High density fiberglass inserts shall be installed with galvanized saddles.

3.2 PIPE INSTALLATION:

- A. No-Hub Cast-Iron Soil Pipe Institute Handbook (Chapter 4) and the IAPMO IS-6.
- B. Joints in copper tubing shall be made by first thoroughly cleaning the surface of the pipe and fittings, applying a copperized flux and sweating with lead free solder for all water piping and condensate piping above grade and below grade. Verify with lead free manufacturer's the type of solder and flux that is compatible with their product.
- C. All pipe shall be carefully cleaned before installation. The ends of threaded steel pipe shall be reamed out full size with a long tapered reamer so as to be partially bell-mouthed and perfectly smooth. Openings in pipes, drains, fitting apparatus and equipment shall be kept covered or plugged to prevent foreign substance from entering.
- D. The grade of all sanitary sewers, storm drains and waste lines shall be as indicated on drawings. Sections of pipe shall be installed so as to provide smooth and uniform invert. Water shall not be allowed in the trenches while the sewer lines are being laid. Dirt, cement, or any other superfluous material shall be carefully removed from piping as the work progresses. Constant inspection shall be made of pipe and fittings during and after all installation for possible fractures and failures caused by installation. Backfill so as not to disturb pipe or jointing.
- E. Flush out all water mains, sanitary and condensate drains with water so as to obtain free flow. Remove all obstructions and defects discovered. Remove and replace pipe already installed and found to be defective or which has had grade or joints disturbed at no additional cost.
- F. Run piping free of traps, sags, or bends. Grade and valve for complete drainage and control of the system.
- G. All piping shall be installed to maintain headroom and keep passageways and openings clear. Install piping parallel and straight with adjacent walls or ceilings to present a uniform appearance. All piping, except where noted otherwise on plans, shall be concealed in walls or above ceilings. Route piping to avoid electrical rooms. Do not route waste piping above kitchen areas. Do not route plastic pipe in return air plenums unless it is plenum-rated with a flame spread index of 25 or less and a smoke developed index of 50 or less.
- H. Bending or forcing of pipe will not be allowed. Use fittings for all offsets or changes in alignment of piping.
- I. Proper provision shall be made for expansion and contraction by means of fittings and anchors and supports of all piping.
- J. Bushings and long screw fittings will not be allowed.
- K. Install water hammer arresters at all flush valves, foot valves, dish and clothes washers and quick closing valves per PDI-WH-201 standards. The completed system shall be free of water hammer noise.
- L. Unions shall be installed after each screw-type valve, connections for all equipment, appliances, and as required for erection and maintenance. No unions shall be installed in concealed locations. Unions are not required on installations using grooved joint couplings. Install isolation unions or waterway fittings on all connections between

dissimilar metals.

- M. Provide grounding and bonding of metallic gas piping per the National Gas Code and the National Electric Code. Use mechanical or welded clamps and copper wire. Coordinate grounding with other grounding elements provided by the electrical contractor.
- N. No holes for pipe or equipment will be allowed in any structural members without written consent of the Resident Engineer. Where pipes are to pass through or interfere with any member, or where notching, boring or cutting of the structure is necessary, the work shall be done by the General Contractor as directed. Isolate pipe from coming in direct contact with the structure.
- O. Unless otherwise specified herein, all equipment and fixtures shall be installed in accordance with the manufacturer's printed recommendations.
- P. Any minor changes in work, which has not been installed, shall be made by the Contractor without additional compensation, except changes which are caused by architectural revisions resulting in an increase or decrease of the size or quantity of the materials specified or indicated on the drawings. The Contractor shall submit an estimate of the cost of or credit for such changes which are not judged to be of a minor nature and shall proceed only upon the written authorization of the Resident Engineer.
- Q. All piping shall be isolated from other piping, studs, ducts, any part of the building, framing, hangers, conduit, etc., with 1" strips of hair felt or pipe isolators.
- R. For buried piping, backfill with sand 6" all around, tamp and backfill to grade as specified in Section 15050, "Excavation and Backfill."
- S. Provide and install polished chromium plate split ring escutcheons for pipes exposed in the building.
- T. Provide for suds relief at dishwashers, kitchen sinks, and clothes washer per California Plumbing Code, section 711.0.

3.3 CLEANOUTS:

- A. Cleanouts shall be caulked into or clamped to pipe where shown on plans. Install under counter tops where they occur or in walls to avoid exposed condition. Cleanouts shall be accessible in all cases and shall be brought to surface on "Y" branches. All cleanouts shall be provided with removable floor or wall plate as specified in Part 2.

3.4 PIPE HANGER AND SUPPORTS:

- A. Installation shall comply with the currently accepted edition of the California Plumbing Code.
- B. Piping shall be firmly held in place by adjustable split ring malleable iron hangers, supports and pipe rests, located adjacent to fitting at each offset or change of direction, at the ends of branches over 5' long, at base of riser pipes and along piping where necessary to prevent sags, bends, or vibration. All hangers and supports shall be of design which will support weight of pipe, fluid and insulation and prevent sagging.
- C. Pipe clamps shall be heavy gauge iron, factory fabricated to fit against supporting surface when installed. Makeshift devices will not be acceptable. Plumbing tape is not

allowed.

- D. Seismically brace all piping and equipment as specified in Section 15050 and per California Building Code.
- E. Hangers supported by concrete structure shall be attached by cast-iron manufactured concrete inserts installed at the time concrete is poured and each insert shall be provided with through rods lapped over structural reinforcing. Power driven fasteners are not acceptable.
- F. Hangers supported by structural steel shapes shall be attached by cast-iron clamps designed for use on the specific steel shape and equipped with retainers.
- G. All hangers shall be attached to halter rods by means of adjustable swivel, turnbuckle or double nut arrangement to allow height adjustment.
- H. Vertical piping shall be suitably supported from the building structure where required by means of malleable iron or steel pipe clamps of ample size, either bolted or welded to the pipe and supported at the floor slab. Supports shall also act as anchors to allow for expansion and contraction of the piping. Provide rubber isolators for clamps where required for elimination of vibration and sound to the structure. Vertical "no-hub" components shall be secured at each joint and at each floor.
- I. Miscellaneous Supports: Floor and wall brackets, etc., shall be provided where required in accordance with the best standard practice of the trade. In the event additional structural steel is required to transmit loads to maintain structure, same shall be provided at no additional cost to the Owner.
- J. Support or piping, tubing, and equipment shall be accomplished by means of engineered products, specific to each application. Makeshift, field-devised methods shall not be allowed.
- K. Horizontal Cast-Iron Piping:
 - 1. Supports shall maintain alignment and prevent sagging and shall be placed within 18" of the hub or joint. When the developed length between supports exceeds 4 feet, they shall be provided at each side of every joint. Supports shall also be provided at each horizontal branch connection. Suspended lines shall be braced to prevent horizontal movement as specified in Section 15050.
 - 2. Hanger rod sizes shall be in accordance with Table 3-1 of the California Plumbing Code.
 - 3. Trap arms and similar branches shall be firmly secured against movement in any direction. Closet bends shall be stabilized by firmly clamping and blocking. Where vertical closet stubs are used they shall be completely stabilized against all movement.
- L. Horizontal copper tubing and steel pipe spacing shall be in accordance with Table 3-2 of the California Plumbing Code.
- M. Support pipes on roof with pads and anchors per the roofing contractor.
- N. All hangers for water piping shall be sized for use over trisolator or 1-inch hair felt.

3.5 SLEEVES AND OPENINGS:

- A. Provide standard weight black steel pipe sleeves for each pipe passing through foundation, walls, partitions, roofs, and ceiling pipe sleeves shall be flushed with wall or floor.
 - 1. Set pipe sleeves in place before concrete is poured.
 - 2. For uninsulated pipe, provide sleeves that are two pipe sizes larger than the pipe passing through the opening, or provide a minimum of ½" clearance between inside of the opening and outside of the pipe.
 - 3. For insulated pipe, provide sleeves of adequate size to accommodate the full thickness of pipe covering with clearance for packing and caulking.
- B. Caulk the space between sleeve and pipe or pipe covering.
- C. Finish and Escutcheons:
 - 1. Smooth up rough edges around sleeves with plaster or spackling compound.
 - 2. Provide escutcheons on all pipes exposed to view where passing through walls, partitions, ceilings, and similar locations.
 - a. Size the escutcheons to fit pipe and covering.
 - b. Hold escutcheons in place with set screw, or set in full bed of sealant.
 - c. Where directed by Resident Engineer, paint escutcheon to match adjacent finish color.
- D. Sleeve diameter for piping through a masonry wall above grade or through floors shall be #10 gauge galvanized sheet steel and shall extend completely through the walls or floor finishing flushed on both sides. The sleeve shall be 1" larger than the pipe with caulking to make the opening airtight.
- E. Sleeves through the fire walls or floors shall be packed with UL Listed fireproof wicking or other suitable noncombustible material.

3.6 VALVES:

- A. Provide valves in water and gas systems. Locate and arrange so as to give complete regulation of apparatus and fixtures.
- B. Provide valves in at least the following locations:
 - 1. In branches and/or headers of water piping serving a group of fixtures.
 - 2. Shut-off valves at piping supply to the facility.
 - 3. For shutoff of risers and branch mains.
 - 4. For flushing and sterilizing the system.
 - 5. A ball valve at the base of each riser at the ceiling of the parking level.
 - 6. WYE Strainer at main supply.
 - 7. Pressure regulator at the water supply to the facility.
- C. Locate valves for easy accessibility and maintenance.

3.7 WATER HAMMER ARRESTORS:

- A. Provide water hammer arrestors on hot water lines and cold water lines.
 - 1. Install in upright position at all quick closing valves, solenoids, isolated plumbing fixtures, and supply headers at plumbing fixture group.
 - 2. Locate and size in accordance with Plumbing and Drainage Institute Standard WH-201.
 - 3. Install water hammer arrestors behind access panels or ceiling panels.

3.8 BACKFLOW PREVENTION:

- A. Protect plumbing fixtures, faucets with hose connections, and other equipment having plumbing connections against possible back-siphonage.
- B. Arrange for testing of backflow devices as required by the governmental agencies having jurisdiction.
- C. Provide a reduced pressure backflow preventer at water connections for HVAC equipment, irrigation systems, pool and spa equipment, carbonation units, and as required per code.
- D. When supplying and equipment with make-up water and the water has been softened provide the following permanent sign at the backflow device: "Warning: Supplied by Soft Water."

3.9 CONCRETE:

- A. Provide concrete required for the work of this Section in strict accordance with pertinent provisions of Division 3.

3.10 FIXTURE INSTALLATION:

- A. All plumbing fixtures shall be bedded and caulked along joint at walls, counter tops, and other intersecting surfaces with white adhesive caulking.
- B. Plumbing fixture trim and exposed supplies and "P" trap and arm shall be brass with polished chrome plated finish. Individual wheel handle, loose key stops, or, when so specified, screwdriver stops, shall be provided for all supplies, and unless integral with valves or faucets, or unless otherwise permitted, shall be mounted under the fixture. Exposed supplies and wastes to wall shall be provided with polished chrome plated brass wall escutcheons.
- C. Fixtures with hangers or supporting arms shall have hangers or arms securely mounted on a ¼" thick x 6" wide steel wall plate which shall extend at least one stud beyond the first and last fixture mounting points. Concealed arm assemblies shall be attached to plates by four ¾" x 1-¼" steel bolts and nuts, and hangers and exposed arms by 5/16" minimum full thread steel studs and jamb nuts. Plates shall be drilled and tapped at the time of fixture installation.
- D. Wall plates shall be recessed flush with studs and shall be securely attached to each stud crossed. In steel stud construction, a 1-½" x 18" long furring channel shall be attached to each notched stud with fillet welds 1" long on 6" centers front and back. Plates shall be continuous fillet welded at both top and bottom to each furring channel. Provide backing for each plumbing fixture requiring same, at the time roughing-in is

done.

- E. Where drains are specified with clamping collars, the water proofing membrane and flashing shall be carefully cut to fit the drain, then anchored between drain and collar with rustproof bolts. See Part 2 for flashings.
- F. Traps above floor shall be cast brass "P" traps with bronze nuts unless otherwise indicated.
- G. Provide branch tailpieces off air vent lines where required.
- H. Install stainless steel mounting ring as required for all flat rim sinks and lavatories installed in counter tops.
- I. All fixtures designated for use by the disabled shall be in compliance with current applicable codes, Title 24, and *California Disabled Accessibility* guide book.
 - 1. Water Closets: Installed height shall be a minimum of 17" and a maximum of 19" measured to the top of the toilet seat. Flush controls shall be operable by an oscillating handle with a maximum operating force of 5 lbf. The handle shall be located so it is operable without requiring excessive body movement.
 - 2. Urinals: The elongated rim on urinals shall project a minimum of 14" from the wall and the height of the rim shall be at a maximum of 17" above the floor. Hand operated controls shall be mounted no more than 44" above the floor.
 - 3. Lavatories: Lavatories shall be mounted with a clearance of at least 29" from the floor to the bottom of the apron with knee clearance under the front lip extending a minimum of 30" in width with 8" minimum depth at the top. Toe clearance shall be the same width and a minimum of 17" deep from the front of the lavatory. Hot water and drain pipes under lavatories shall be insulated. There shall be no sharp or abrasive surfaces under lavatories. Lever-operated faucet controls shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. The force required to activate controls shall be no greater than 5 lbf.
 - 4. Drinking Fountains: The drinking fountain shall be a minimum of 18" depth. Provide clear and unobstructed space not less than 27" in height and 18" in depth, the depth measurements being taken from the front edge of the fountain. The bubbler shall be activated by a hand-operated lever type control located within 6" of the front of the fountain. The bubbler outlet orifice shall be located within 6" of the front of the drinking fountain and shall be within 36" of the floor. The water stream from the bubbler shall be substantially parallel to the front edge of the drinking fountain.
- J. Fit-up connections to equipment (furnished by others) shall be provided with valves, unions, flexible connectors, and adapters to make a final connection. Piping stubouts for equipment will be extended to make the final connection. The connection shall be made with devices recommended by the equipment manufacturer. Field verify exact point of connection prior to start of work.

3.11 SEISMIC RESTRAINT:

A. General:

- 1. Furnish and install seismic restraint for all piping, equipment, etc., installed

under the contract. All restraints shall meet the requirements of the current California Building Code.

2. Seismic restraints shall be designed and installed in accordance with good engineering practice to the approval of a Professional Engineer. The design and installation of restraints shall be generally in accordance with the current editions of the California Building Code all of which shall form and become a part of this installation.

B. Seismic Equipment:

1. All manufactured equipment, pumps, tanks, water heaters, unit heaters, compressors, etc., shall be complete with manufacturers' designed and rated seismic restraint anchor points and attachments so that they may be easily bolted down or restrained in the field. Equipment attachment anchor points shall be certified by the manufacturer. The equipment manufacturers of any mechanical equipment used on this project must design their equipment so that the strength and anchorage of the internal components of the equipment exceeds the force level used to restrain and anchor the equipment itself to the supporting structure.

3.12 PROTECTION OF PIPING SYSTEMS:

- A. It shall be the responsibility of the Contractor to install and maintain pipe and equipment which is reasonably clean and free from rust, dirt, scale, etc. Where necessary, the Contractor shall provide temporary airtight covers at all pipe and equipment openings.
- B. Before turning the systems over to the Owner, all piping systems shall be thoroughly flushed of all scale and dirt. Drains shall be installed at the low points to facilitate flushing of the piping systems.

3.13 PAINTING:

A. General:

1. Prime paint all ferrous metal items, except items to be encased in concrete, areas adjacent to field welds, and roof drains.
2. Clean all items free of loose mill scale, rust, and other contaminants.
3. For roof-mounted equipment, provide factory prefinish on all exposed surfaces.
4. Touch-up scratches and abrasions to be invisible to the unaided eye from a distance of 5'0".

3.14 REQUIREMENTS FOR FINAL INSPECTION:

- A. All requirements shall be completed prior to final inspections.
- B. Thoroughly clean all parts of the piping, valves, and equipment. Exposed parts which are to be painted shall be thoroughly cleaned of cement, plaster, oil and grease spots. Such surfaces shall be carefully wiped and all cracks and corners scraped out.
- C. Exposed metal work shall be carefully brushed down with steel brushes to remove rust and other spots, leaving a smooth and clean surface. Trap elements shall be removed during the cleaning and flushing period, after which they shall be replaced and adjusted.

- D. Electrical device covers shall not be installed until the finished coating of paint is completed. Device handles and receptacles shall be covered and/or protected during the painting operation to preserve the original factory bright new finish.
- E. All potable water lines shall be sterilized with chlorine. The chlorine residual concentration shall indicate not less than 50 parts per million (ppm) and shall be retained for a period of not less than 24 hours. Repeat procedure if the residual concentration has decreased below 25 PPM. After test is in compliance with this specification, flush the system until the residual is not more than 0.5 PPM. All work and certification of performance must be done by qualified personnel. Submit certification to Resident Engineer.

NOTE: During construction phase, install Tee's and ball valves at locations directed and as required to facilitate sterilization and testing. Identify and indicate on the as-built plans the location of valves and ensure that they are accessible and are in a position not to cause cross-connections or artificial pressure loss in the system.

3.15 TESTS AND ADJUSTMENTS:

- A. No piping work, fixtures, or equipment shall be concealed or covered until inspected by the Resident Engineer/Owner's Representative, who shall be notified when the work is ready for inspection. All work shall be completely installed, tested as required by local code, this section and the State Ordinances and State Safety Orders, and shall be leak-tight before inspection is requested. All tests shall be repeated as required by those making the inspection.
- B. All domestic water piping shall be flushed out, tested at 150 psig and shall be left under pressure of supply main or a minimum of 50 psi, whichever is greater, for the balance of the construction period. No air testing is allowed. Tests are to be applied for a minimum period of one hour. Final pressures at the end of the test period shall be not more nor less than that caused by expansion or contraction of the test medium due to temperature changes.
- C. Soil, waste, vent, condensate and storm drain piping within the building shall be tested with a minimum of 10-foot head at each joint for a minimum of 3 hours with no loss in head.
- D. Plumbing fixtures shall be filled with water and checked for leaks and retarded drainage flow. Faucet aerators and shower heads shall be removed and cleaned thoroughly and flow shall be adjusted to eliminate dripping or splashing.
- E. Final pressures at the end of the test period shall be no more nor less than that caused by expansion or contraction of the test medium due to temperature changes.
- F. All protective coating systems shall be visually inspected for breaks in the coating system, any holidays revealed shall be promptly repaired per manufacturer's instructions for repair of damaged pipe coatings.
- G. Cross-Connection Tests By Testing Agency: Comply with NFPA 99. Pressurize each system with nitrogen in accordance with Table 3. Check 100 percent of the outlets in each system. Include anesthesia gas evacuation in vacuum systems.

3.16 DRAWINGS OF RECORD:

- A. In addition to the "As-Built" drawings required, two complete sets of blue line mechanical drawings shall be provided by the Resident Engineer for the purpose of showing a complete picture of the work as actually installed.
- B. These drawings shall serve as work progress report sheets and the Contractor shall make all notations, neat and legible, thereon daily as the work proceeds. The drawings shall be available for inspection at all times and shall be kept at the job at a location designated.
- C. At the completion of the work, these as-built drawings shall be signed by the Contractor indicating approval thereof, dated and returned to the Resident Engineer.
- D. The dimensions, locations and invert elevations of buried piping shall be accurately recorded on the as-built drawings. Dimensions shall be from permanent building walls (not from column lines).

3.17 GUARANTEE:

- A. All work under this section shall be guaranteed in writing in accordance with the "Mechanical General Provisions," Section 15050.
- B. All material except as otherwise noted shall be new, free from defect and of the quality and rating shown or specified.
- C. Any defect due to missing or improper material or faulty workmanship existing or developing during the warranty period shall be corrected and the resulting damage repaired.
- D. The warranty period shall be one year from date of acceptance of the project, except for items guaranteed by the manufacturer for a longer period.

3.18 OPERATING INSTRUCTION AND SERVICE MANUAL:

- A. The Contractor shall carefully prepare an operating instruction and service manual for the entire system including all equipment, excepting Owner-furnished equipment. The manual shall be submitted for review to the Resident Engineer at least 30 days prior to completion of the work. Failure to submit manual will delay final inspection and acceptance of the work. Contents shall be bound in a durable loose-leaf binder, complete with index.
- B. The following items shall be included in the manual. This list may not be complete and is to be used as a guide:
 - 1. Part numbers of all replaceable items.
 - 2. Manufacturer's cut sheets and rating tables, including brochures on all fixtures, equipment and materials installed.
 - 3. Oiling, lubrication and greasing instructions, including maintenance time schedule.
 - 4. Test data on all equipment.
 - 5. Serial numbers of all principal pieces of equipment.
 - 6. The names, addresses, phone and emergency phone numbers of the

manufacturers' and subcontractors' suppliers.

7. Valve chart indicating location of valves for the project.
 8. Written guarantee.
 9. Prints of complete as-built drawings, signed by the Contractor.
 10. Reviewed submittal data and shop drawings in binder.
 11. Test and balance data and copies of building inspections check lists signed off by the Inspector.
 12. Potable water piping sterilization certificate.
 13. Pipe and equipment identification schedule.
- C. After review of the manual by the Engineer, two copies of each manual shall be furnished for distribution.

3.19 IDENTIFICATION OF PIPING AND EQUIPMENT:

- A. Identify all equipment with nameplates bearing equipment name and number using 1-½" wide, white Bakelite with ½" black letters permanently mounted in a conspicuous place.
- B. Markings: Each piping system shall be identified and the direction of flow indicated by means of legends, color bands and flow arrows, all as manufactured by W.H. Brady, Seton or equal. The markings shall be applied after all painting and cleaning of the piping and insulation is completed. The stick-ons shall be taped all around the pipe in addition to being cemented on.
- C. Location:
1. The identification shall be applied to all piping except those located in furred spaces without access to permit entrance of personnel and piping buried in the ground or concrete.
 2. The symbol and flow arrow shall be applied at all valve locations, at all points where piping enters or leaves a wall, partition, cluster of piping or similar obstruction and at approximately 30-foot intervals on runs with at least one symbol or flow arrow in each space or room.
 3. Variation or changes in locations and spacing may be made only with the direction of the Resident Engineer to meet conditions.
 4. Wherever two or more pipes run parallel, the printed symbol and other markings shall be applied in the same relative locations so as to be in either vertical or horizontal linearity, whichever the case may be.
 5. The markings shall be located so as to be conspicuous and legible at all times from any reasonable point.
- D. Sizes shall be as recommended in ANSI A13.1.
- E. As an alternate to the above, the Contractor may submit a system of painted stenciled letters on a color coded background per ANSI A13.1. Complete data, color chart and sizes shall be submitted for review.

- F. Valve charts shall be provided for each piping system and shall consist of schematic drawings of piping layouts showing and identifying each valve and describing its function. Upon completion of the work and after approval by the Resident Engineer, one copy of each chart, sealed to rigid backboard with clear lacquer placed under glass and framed, shall be mounted in the mechanical room where directed by the Owner. Two additional unmounted copies shall be delivered to the Owner. Valve lists shall be furnished as required.
- G. Name Tags: Provide 1¼" plastic square of 1¼" round with ¼" letters for all valves, Seton or approved equal. Black letters on white tags and marked for type of service intended. Attach tags to valve handles by "S" hooks. Furnish four printed lists showing valve number, service and location. One of these lists shall be individually framed with metal frames and glass fronts and mounted where directed by the Owner after approval. One additional copy shall be furnished as required.

3.20 BALANCING WATER SYSTEMS:

- A. The systems shall be balanced using the cocks and balance valves specified to obtain desired flow quantities through all heating elements, coils, etc. A full typed report of the balancing shall be provided to the Consultant for approval and, following acceptance of the report, a copy shall be incorporated within each maintenance manual specified. The Contractor shall include separately for his own work as required to coordinate with the testing agency and balancing water systems.
- B. Testing forms shall be equivalent to those available from A.A.B.C. and data shall consist of at least the following:
 - 1. Temperature drop across heating elements, cooling coils, heating coils, etc. Radiant ceiling systems to be balanced to give equal temperature drop.
 - 2. Flow quantities in litre/sec for all systems equipped with flow meters. Pressure drop through 3-way valve bypasses to be adjusted in proper relation to systems parts bypassed.

3.21 DOMESTIC HOT WATER COMMISSIONING

- A. Functional Performance Tests:

| | |
|---|-------------------|
| 1. Time required to reach set point at fixtures: | 30-45 seconds |
| 2. Temperature required at fixtures: | 105-110 degrees F |
| 3. Temperature set point at primary mixing valve: | 120 degrees F |
| 4. Quantity of fixtures to be tested: | 10% |
| 5. Capacity testing for temperature at peak flow: (typically tested at mop sink) | 30-45 minutes |

END OF SECTION15400

SECTION 15800 - VENTILATING

PART I - GENERAL

1.1 SUMMARY

- A. The responsibilities of the Contractor shall include the following systems and equipment complete, and any additional work shown on the drawings or hereinafter specified.

Exhaust Fans

Ductwork

Air Distribution

Vibration Isolation

Automatic Control

Test and Balance

- B. The Contractor shall provide all sheet metal work as shown on the drawings or as required for the mechanical systems. Sheet metal work shall be as specified in this section.

1.2 GENERAL REQUIREMENTS:

- A. Reference to Other Sections: The applicable requirements from the following sections shall form a part of the heating, ventilating and air conditioning work and the Contractor shall consult them in detail for general and specific requirements.

| | | |
|---------|-------|-------------------------------|
| Section | 15050 | General Mechanical Provisions |
| | 15400 | Plumbing |

1.3 RELATED WORK:

- A. The following work will not be furnished under this section of the specifications but will be furnished by other trades.
1. Power voltage wiring and connections thereto and all power voltage conduit.
 2. Openings in walls, floor, roofs.
 3. Louvers in doors.
 4. Concrete work.
 5. Cutting, patching and furring.
 6. Flashing.
 7. Final painting.
 8. Equipment foundation pads.

1.4 SHOP DRAWINGS:

- A. Submit for approval, in accordance with Section 15050, six copies of fully dimensioned shop drawings for all specified equipment, controls and ductwork construction details. Manufacturer's equipment drawings are to be complete with capacity and sound level ratings as indicated in the drawings or specifications. Contractor shall also submit all manufacturer's internal wiring diagrams for electrical equipment and shall prepare other wiring diagrams showing the interlocking of the various controls and safety devices of the heating, ventilating and air conditioning systems. Submit performance curves for all fans (except propeller types and rooftop type) and for all water pumps 1 HP and larger. Equipment capacity tables requiring interpolation or extrapolation are not acceptable.
- B. Submit for approval, installation drawings which show exact dimensions and locations of openings required in floors, roofs and walls for ducts, air intakes and exhaust, roof exhausters, piping etc.
- C. For duct and piping shop drawing development, the contractor shall obtain the most the current architectural, structural and electrical CAD files to be overlaid on to mechanical duct and piping shop drawings.

PART 2 - PRODUCTS

2.1 DUCTWORK AND ACCESSORIES:

- A. Exhaust ducts, plenum chambers, housing, panels, unless otherwise specified herein or on the drawings, shall be fabricated from zinc- coated (galvanized) steel sheets conforming to the latest ASTM specification A-653. Zinc-coating shall be of the "Commercial" class. Where gauge numbers of metals are indicated or specified, they shall represent the manufacturer's standard gauge numbers, prior to galvanizing.
- B. Exposed Ductwork: All exposed ductwork shall be free from dings and dents. All rectangular and round ductwork shall have Ductmate System connections or equal. All exposed round ducts shall be spiral type duct and shall be installed so seams line up at connections to appear as a single duct run. All exposed ductwork shall be supported using threaded rods. Sheet metal straps are not acceptable. All exposed duct fittings (i.e., elbows, branch tees, etc.) shall be two gages heavier than the duct they are connected to.
- C. Volume Dampers:
 - 1. Damper blades shall be manufactured of 16 gauge sheet metal.
 - 2. Rectangular dampers shall be opposed blade type. Frame shall be 16 gauge galvanized steel. Where dimensions of duct exceed 18" x 12", blades shall not be over 8" wide. Bearings shall be provided; holes punched in ductwork to serve as bearings will not be accepted. Locking quadrant sizes shall be as follows: Up to 40 square-inches shall be 1/41 quadrant; up to 18" x 12" shall be 9/16" quadrant, and over 18" x 12" shall be 1/2,, quadrant.

3. Round dampers up to 9" diameter may be installed in sheet metal spin fittings when used for balancing air distribution devices. Frames for dampers 10" diameter and above shall be 16 gauge galvanized steel. Dampers above 20" diameter shall be reinforced. Quadrant sizes shall be as follows: up to 9" diameter shall be ¼ quadrant, 10" through 20" diameter shall be 1/3 quadrant, and over 20" diameter shall be 1/2 quadrant.

D. Access Doors:

1. Duct access doors to all fire dampers and smoke/fire dampers shall be insulated type as manufactured by Duro Dyne, Pottorf, Karp or equal. Doors shall be 24 gauge metal, 24 gauge frame, insulation shall be 1" fiberglass, covered with 28 gauge metal, with loose pin hinges, and cam-lock latches. Door frame shall contain foam gasket, and a sponge rubber gasket shall be attached to back of each door frame to insure tight seal between duct and frame. Finish shall be factory applied. Service shall be stenciled on door, e.g., "Fire Damper" in 1/2 letters. Size shall be 16" by 12" where space and duct size permit. On small ducts and in restricted space, 12" x 10" may be used.
2. Access doors installed in round ductwork shall be rolled plate and shall be at least 2 gauges thicker than the gauge required for the duct. Doors shall be close-fitting with foam strip gasket and a minimum of 2 quick fastening latches. Doors for ducts up to 12" diameter shall be provided with 2 hinges and for ducts above 12" diameter provide one continuous hinge.

- E. Flexible Connectors: Furnish and install connections at the point where ductwork casing connects to fans, and where shown on the drawings. Connectors shall be manufactured by Duro Dyne or equal. Indoor flexible connectors shall be Noeprene #10003 MFN metal fab or equal. Outdoor flexible connectors shall be Durolon #10002 MFD metal fab or equal. Connectors shall be securely clamped to ductwork, fans and apparatus by means of bolted metal straps.

F. Flexible Ducts:

1. Flexible ducts shall consist of an exterior reinforced laminated vapor barrier, 1 1/2" thick fiberglass insulation (K = .25 ~ 75°F), encapsulated spring steel wire Helix and impervious smooth, non-perforated interior vinyl liner. Individual lengths of flexible ducts shall contain factory fabricated steel connection collars.
2. Flexible ducts shall be supported at or near mid-length with 2" wide, 28 gauge steel collar attached to the structure with an approved duct hanger. Installation shall minimize sharp radius turns or offsets. The maximum length shall be 7 feet and can be used at the terminal ends only, except that flexible ducts may be used to cross seismic joints without offsets.
3. Insulated low pressure flexible duct shall be Thermaflex MKE or approved equal.

2.2 EQUIPMENT:

A. Exhaust Fans:

1. In-Line Fans:

- a Fan shall be factory assembled with square housing for in-line mounting in duct. Fans shall be Greenheck or approved equal.
- b Wheel shall be backwardly inclined centrifugal type constructed of steel or aluminum that has been statically and dynamically balanced.
- c The housing shall be constructed of formed steel, square shaped, with factory applied finish. One of the sides shall be hinged and shall support the motor and wheel assembly allowing the assembly to swing out for cleaning and inspection.
- d Drive shall be belt type. Motor shall be open drip-proof type with inherent thermal protection. Provide belt guard.
- e Ratings shall be in accordance with the appropriate A.M.C.A. approved test codes and procedures and bear the A.M.C.A. certified rating seal.

2. Ceiling Exhaust Fans:

- a Ventilator shall have steel housing finished in baked enamel and insulated with at least ~/2" acoustic insulation. Housing shall have adjustable mounting brackets.
- b Automatic Backdraft Damper shall be located within duct connector, and shall have cushioned stops to prevent clatter. Damper/duct connector and wiring adapter plate shall be adjustable for either horizontal or vertical installation.
- c Blower shall be removable and shall have a centrifugal blower type wheel. All motors are to be lifetime lubricated type, mounted with neoprene torsion mounts to isolate vibration. RPM not to exceed number listed for each model.
- d Air Delivery shall be no less and sound levels no greater than listed for each model. All air and sound ratings shall be certified by AMCA. Units shall be UL listed.

- B. AIR D Performance: Shall provide the required air throw and spread with no apparent drafts or excessive air movement within the air conditioned area. Any air distribution accessories required to effect these conditions shall be provided and installed by the Contractor. Grilles, registers or ceiling diffusers causing excessive air movement, drafts or objectionable noise, shall be replaced at no cost to the Owner. Paint inside of all ducts including volume dampers, etc., behind registers and diffusers with two coats flat black enamel.

2.3 DISTRIBUTION:

- A. Locations: All devices shall be installed in approximately the location indicated on the drawings but the Contractor shall verify the exact locations at the building, and with the drawings, making any minor changes as may be required and as approved by the

Owner.

- B. Air Distribution shall be "Titus" Manufacture of the model numbers listed, Metal Aire or Krueger or equal.

| LAY-IN TYPE CEILING | |
|-----------------------------------|--|
| Ceiling Diffusers: | Model PCS3FW, Perforated 24 x 24 panel, Type 3 Border |
| Return Registers: | Model PAR3FW, Perforated 24 x 24 panel, Type 1 Border |
| PLASTER CEILING | |
| Ceiling Diffusers: | Model PCS3FW, Perforated, Flush Face, Surface Mount |
| Return Registers: | Model PAR3FW, Perforated, Flush Face, Surface Mount |
| SIDEWALL REGISTERS | |
| Supply: | Model 300, O.B.D., Double Deflection, Sponge Rubber Gasket |
| Return: | Model 350, O.B.D., Sponge Rubber Gasket |
| Return Grilles with Filter Frame: | Model 350 RF1, W/1" Filter Frame, Hinged Face and (Quarter Turn Fasteners) (Knurled Knob Fasteners). |

2.4 AUTOMATIC CONTROL:

- A. Summary: The temperature control manufacturer as described under this heading shall furnish and install a complete system of automatic controls as shown on plans and as specified hereinafter. All control equipment shall be the product of one manufacturer and shall be basically of the electric type. Control equipment shall be Honeywell, Inc. or equal..
- B. Drawings and Checkout: The Temperature Control Contractor shall submit shop drawings of the entire control system to the Resident Engineer for approval before starting work. The control system shall be completely checked out, adjusted and calibrated to perform all required functions for proper operation.
- C. Electrical Wiring: See paragraph 3.7 of this section.

2.5 MOTORS, DRIVES, GUARDS AND STARTERS:

- A. Motors shall be built to the specifications of the National Electric Manufacturer's Association (NEMA). The motor shall be ball bearing, drip-proof, squirrel cage induction type for full voltage start, to operate at speeds not to exceed 1750 rpm except when indicated otherwise. The motors shall be Lincoln, Electro Dynamic, Sterling, or approved

equivalent. Motors mounted outdoors shall have encapsulated windings and have weatherproof hood. The minimum service factor shall be 1 .15.

- B. Drives shall have one belt for units under 5 horsepower, at least 2 belts for units 5 horsepower to 25 horsepower, and 3 belts for units 25 horsepower and over. Belts shall be V-belt design sized for at least 150 percent of the motor horsepower. Motor pulleys shall be of the variable pitch up to 7-1/2 horsepower and fixed pitch type, 10 horsepower and larger. Pulleys shall be cast-iron with steel bushings. Provide additional new pulleys where required to drive fans at speeds necessary to give the indicated volumes. Belts shall be Bates, B.F. Goodrich, Goodyear or equal.
- C. V-belt drives for the fans shall be properly protected by metal guards. Guards shall be made of not less than 16 gauge expanded metal $\frac{1}{2}$ -inch mesh, on an angle iron frame so as to securely close in the top, bottom and both sides of the drive. Ample allowance shall be made in guard for motor and belt adjustment. The guard shall be provided with openings so that the rpm of the fans may be obtained. Guards on equipment outside of building shall be of weatherproof design.
- D. All guards shall be given a prime coat and one heavy coat of machinery gray enamel.
- E. All guards shall conform to California General Industrial Safety Order Requirements
- F. Starters shall be across-the-line type or part winding type as required, with overload protection on all legs and shall be manual or magnetic where shown on the drawings. Starters shall be complete with NEMA Type I, enclosures with built-in "Hand-Off-Automatic" switch. Magnetic starters exposed to weather shall have NEMA Type 4 enclosure.

PART 3 - EXECUTION

3.1 DUCTWORK:

- A. Ductwork fabrication and installation shall conform to the recommendation of the latest edition of the duct construction standards as published by the Sheet Metal and Air conditioning Contractors National Association, Inc., (SMACNA). These standards shall govern type of seams and joints, reinforcing and supports, corner closures duct hangers, elbows, turning vanes (use double vane type), tapers offsets; streamliners, branches from mains, tee connections, volume dampers, access doors in ducts, fire damper installation, casings and housing. All unwrapped exposed ducts shall be cross-broken; beading will not be acceptable. Ducts that are wrapped shall be cross-broken or beaded.
- B. Volume dampers shall be caulked in the ducts to avoid bypass. Damper blade position on all dampers shall be indicated by filing a notch in the exposed operation rod or splitter damper rod. Volume control dampers shall be installed in all branch ducts, whether shown on drawings or not, to allow balancing of the system. Where damper frames and blades constitute an obstruction in excess of 15 percent of the duct area, the duct shall be increased in size to receive the damper.

- C. All duct seams and joints exposed to weather shall be caulked watertight with acrylic sealant and shall have 4-inch minimum width of 6-ounce canvas pasted on with lagging adhesive.

3.2 EQUIPMENT INSTALLATION:

- A. The installation of all air conditioning equipment and exhaust fans shall be strictly in accordance with the manufacturer's instruction and installation book. All recommendations of manufacturer shall be followed, required clearances maintained, and factory approval secured for each installation. All equipment shall be securely fastened to its base. All parts of the installation shall be made weatherproof. A copy of the manufacturer's installation and service manual shall be kept with each piece of equipment at all times to allow an inspector to determine if the installation meets requirements.
- B. All work shall be performed by skilled mechanics, under the supervision of a competent foreman and in accordance with the best standards of practice of the trade.

3.3 ROOF AND WALL PENETRATIONS:

- A. All penetrations of roof and exterior walls shall be flashed watertight with lead or galvanized iron.
- B. Flashing shall comply with requirements for flashing in Sheet Metal Section.
- C. Pipe flashing shall be counterflashing sleeve type with 4 pound seamless lead flashing with 8" skirt. The joint shall be sealed with Permaseal water-proofing compound or equal.

3.4 IDENTIFICATION OF MECHANICAL EQUIPMENT:

- A. Equipment: Equipment shall be identified by stenciling the identification plainly (such as EF-1 as shown on equipment schedule) on the service side. Lettering to be minimum size of 1". This applies to fans, boiler, etc.

3.5 ELECTRICAL WORK:

- A. Power voltage wiring and connections thereto and all power voltage conduit shall be furnished and installed under the Electrical Division of the specifications.
- B. Low voltage and line voltage control wiring and connections thereto and all low and line voltage control conduit shall be furnished and installed under the Mechanical Sections of the specifications.
- C. Relays, push button stations, control equipment, etc., shall be furnished under the Mechanical Section of the specifications, except as noted on the drawings. Check drawings closely for starters that will be furnished under the Electrical Division which will be in Motor Control Panels. Magnetic motor starters, except those furnished with packaged mechanical equipment, will be furnished under Mechanical Division.

- D. Disconnect switches shall be furnished, installed and connected under the Electrical Division of the specification.

3.6 EARTHQUAKE RESTRAINT:

- A. Provide a means to prohibit excessive motion of all mechanical equipment during an earthquake.
- B. All mechanical equipment, both hanging and base mounted, shall be provided with mounting connection points of sufficient strength to resist lateral seismic forces equal to 0.5 of equipment operating weight.

3.7 SHOP PRIMING PROCEDURES:

- A. Ferrous metal items, except items to be encased in concrete and areas adjacent to field welds shall be thoroughly cleaned and prime painted.
- B. Surfaces shall be cleaned free of loose mill scale, loose rust, accessible weld slag or flux deposit, dirt and other foreign matter by hand wire brushing. Oil and grease deposits shall be removed by solvent.
- C. After cleaning, surfaces shall be given one shop coat of prime paint applied thoroughly and evenly to dry surfaces. Surfaces inaccessible after assembly or erection shall be given an additional shop coat of slightly different color than first coat.
- D. After erection, rough up with prime paint all members where shop coat has been damaged, welds and area adjacent to welds and field bolts.

3.8 TEST AND BALANCE:

- A. The Contractor shall furnish all labor, equipment and services necessary for and incidental to air and water systems testing and balancing.
- B. Include an extended warranty of one year after final acceptance by Owner, during which time the Owner may request a recheck or resetting of any outlet, coil or device listed in the test report. Provide technicians to assist in making any test or adjustment required.
- C. Contractor shall at his own expense, procure the service of an independent air balance and testing agency approved by the Owner, which specializes in the balancing and testing of heating, air conditioning and ventilating systems, to balance, adjust and test all air moving equipment, air distribution systems and exhausting systems as herein specified. All instruments used by this agency shall be accurately calibrated and maintained in good working order. If requested, the test shall be conducted in the presence of the Owner and/or his representative.
- D. Air balance and testing shall not begin until system has been completed and is in full working order. The Contractor shall put all heating, ventilating and air conditioning systems and equipment in full operation and shall continue the operation of same during each working day of testing and balancing. The Contractor shall submit, within

fifteen (15) days after receipt of Contract, one copy of submittal data for the testing and balancing of the air conditioning, heating and ventilating systems. The air balance agency shall provide proof of having successfully completed at least five projects of similar size and scope and shall be a certified member of the Associated Air Balance Council and/or National Environmental Balancing Bureau and/or Testing Adjusting & Balancing Bureau (TABB) unless otherwise approved.

- E. Test and balance agency shall include an extended warranty of ninety (90) days after completion of test and balancing work, during which time the Owner, at his discretion, may request a recheck or resetting of any outlet, supply air fan, or exhaust fan as listed in test report. The agency shall provide technicians to assist the Engineer in making any test he may require during this period of time. Commissioning agent shall conduct "spot checks" on air distribution to verify air balancing.
- F. The Air Conditioning Contractor shall award the test and balance Contract to the approved agency upon receipt of his Contract to proceed with air conditioning installation, to allow the air balance agency to schedule this work in cooperation with other trades involved and comply with the completion date.
- G. Upon completion of the air conditioning system, the air balance agency shall perform the tests, compile the test data, and submit six copies of the complete test data to the Contractor for forwarding to the Owners for evaluation and approval.

3.9 OPERATING AND MAINTENANCE MANUALS:

- A. The Contractor shall furnish three Operating and Maintenance Manuals. The information in these manuals shall be bound in a hardback, loose-leaf binder or approved equivalent. The following shall be inscribed on the cover: the words "OPERATING AND MAINTENANCE MANUAL," the name and location of the building or project, and the name of the Contractor. The following shall be included in the Manual:
 - 1. Identification: The Manual shall include the names, addresses and telephone numbers of each Sub-Contractor installing equipment and systems and of the local representative for each major item of equipment.
 - 2. Index: The Manual shall have a Table of Contents and information shall be assembled with tab sheets to conform to the Table of Contents.

3.10 OPERATING AND MAINTENANCE INSTRUCTIONS:

- A. Manufacturer's Literature: Manufacturer's instructions for operation and maintenance of all mechanical equipment, including replacement parts list.
- B. Written Instruction: Typewritten instructions for operation and maintenance of the system composed of Operation Instruction, Maintenance Instructions and Maintenance Schedule.
- C. Operation and Maintenance Instructions: A brief description of the system indicating proper setting of switches and other equipment shall be furnished for the purpose of providing control of the system and its components by the operator.

- D. Maintenance Schedule: A list of each item of equipment requiring maintenance, showing all the components of each item of equipment, and the month of the year (service schedule) when each item or component of equipment shall be inspected or serviced, as recommended and scheduled by the manufacturers.
- E. Verbal Instructions: Upon completion of the work, and at a time designated by the Owner, a competent Engineer from each supplier of major items or equipment shall be furnished to instruct the Owner's representative in the operation and maintenance of the equipment supplied by his company.
- F. Mounting Frames: Wood frame and glass cover of adequate size to mount directories and typewritten instructions, securely mounted where indicated by the Owner, shall be provided.
- G. Binders: A complete set of the above data along with control diagrams as installed, typewritten sequence of operations, complete catalog data, calibration information, spare parts lists, etc., for all control equipment shall be placed in a loose leaf binder with permanent cover, permanent identification section dividers and index. Provide three complete sets and deliver to the Owner.
 - 1. Manufacturer's Literature: Include Manufacturer's literature for all mechanical equipment. All equipment shall be identified by make, model and serial number. Electrical characteristics shall be noted. A complete parts list shall be included.
 - 2. Operating Instructions: Provide a brief description of the system including proper setting of switches and other equipment. This may be provided as a part of the manufacturer's literature. If included in literature provide an index indicating on what page each item is located. Adjustments requiring the technical knowledge of the service agency personnel need not be included.
 - 3. Maintenance Instructions: Provide a list of each item of mechanical equipment requiring inspection, lubrication or service with a description of the schedule and performance of such maintenance including types of lubricant for each item of equipment. This may be provided as a part of the Manufacturer's Literature. If included in literature provide an index indicating on what page each item is located.
 - 4. Controls: Provide system control drawings including complete catalog data, calibration information, spare parts lists, etc. A typewritten sequence shall be included with the diagram referring to component numbers or designations hereon.

3.11 POSTED OPERATING INSTRUCTIONS:

- A. Provide directories, control diagrams, and sequence of operation.
- B. The above shall be mounted in a wood frame with glass cover of sufficient size and mounted in the equipment room or where directed by the Resident Engineer.

END OF SECTION 15800

SECTION 15050 - MECHANICAL GENERAL PROVISIONS

PART 1 - GENERAL REQUIREMENTS

1.1 GENERAL CONDITIONS:

The general conditions and Division 1 are a part of this section and the contract for this work and apply to this section as fully as if repeated herein. This section, 15050, applies to all Division 15 categories, including but not limited to:

| | | |
|---------|-------|-------------|
| Section | 15400 | Plumbing |
| | 15800 | Ventilating |

- A. Reference to Other Sections: The applicable requirements from the above sections shall form a part of the mechanical work and each section shall consult the other sections in detail for general and specific requirements.

1.2 SCOPE:

These Division 15 specifications and the accompanying drawings are intended to comprise the furnishing of all labor, and the furnishing and installing of all materials, equipment and supplies as specified herein and required for the satisfactory completion by the Contractor of all work pertaining to mechanical trades.

1.3 EXPLANATION OF DRAWINGS AND REFERENCE TO SCHEDULES:

- A. The drawings and these specifications are complementary to each other in that all apparatus, materials and equipment outlined in the drawings and/or specified herein shall be considered essential to the contract.
- B. The specifications are intended to describe the quality and character of the materials and equipment and methods of installation. All miscellaneous items of work and materials necessary for the completion of the installation shall be provided, whether or not mentioned in the specifications or shown on the drawings.
- C. Space allotted, clearances, access, electrical data, structural supports, etc., on drawings, is for equipment models and sizes as listed in schedules on plans. The Contractor shall assume the responsibility for the coordination with other trades required in the use of equal or substitute equipment or materials and pay all difference in cost arising from such substitutions, regardless of approval.
- D. Separate Sections cover the Site Work, Architectural Work and the Electrical Work. The Contractor shall familiarize themselves with the entire specification.
- E. Should there be any question as to the scope of the work for which the Contractor is responsible, they shall ask the Architect for an interpretation before submitting their bid. In the event that the Contractor finds discrepancies or omissions, or is in doubt as to the exact meaning of the plans and/or specifications, they shall, before submitting bid, submit an RFI for clarification.

- F. For purposes of clearness and legibility, drawings are essentially diagrammatic and, although size and location of equipment are drawn to scale wherever possible, the Contractor shall make use of all data in all the contract documents and shall verify this information at building site.
- G. The drawings indicate required size and points of termination of pipes, and suggest proper routes to conform to structure, avoid obstructions and preserve clearances. However, it is not intended that drawings indicate all necessary offsets, and it shall be the work of the Contractor to make the installation in such a manner as to conform to structure, avoid obstruction, preserve headroom and keep openings and passageways clear.
- H. It is intended that all apparatus be located symmetrical with architectural elements. Refer to architectural details in completing the correlating work.
- I. The Contractor shall fully inform themselves regarding any and all peculiarities and limitations of the spaces available for the installation of all work and materials furnished and installed under the contract. They shall exercise due and particular caution to determine that all parts of their work are made quickly and easily accessible.
- J. The Contractor shall study all drawings and specifications to determine any conflict with ordinances and statutes. Any errors or omissions shall be reported, and any changes shall be shown in the as-built drawings and the additional work performed at no cost to the Owner.
- K. The submittal of bid shall indicate that the Contractor has examined the site and the drawings and has included all required allowances in their bid. They shall also determine in advance and make allowances for the methods of installing and connecting the equipment, the means of getting equipment in to place and they shall make themselves familiar with all the requirements of the contract. No allowance will be made for any error resulting from the Contractor's failure to visit job site and to review drawings, and bid shall include costs for all required drawings and changes as outlined above.
- L. The Contract Drawings indicate the extent, the general location and arrangement of equipment, piping, ductwork, etc. Equipment, piping and ductwork shall be located to avoid interference with electrical, plumbing and structural features. All locations for mechanical work shall be checked and coordinated with the building, structural, electrical work.
- M. If any conflicts occur necessitating departures from the Contract Drawings, details of departures and reasons therefore shall be submitted as soon as practical for written approval, and the piping, ductwork, fixtures or equipment affected shall not be installed until approval is received.
- N. Reference to Drawing Schedules:
 - 1. Refer to equipment schedule for unit identification number and corresponding capacity and design requirements.

2. Wherever schedules or notes appear on the Drawings or in the specifications in which sizes and capacities of equipment are indicated, the equipment furnished and installed under this contract shall meet the following requirements under operating conditions:

1.4 DEFINITIONS:

- A. "Provide" shall mean "provide complete in place," that is, "furnish and install."
- B. "Piping" shall mean pipes, fittings, valves and all like pipe accessories connected thereto.
- C. Pressure ratings specified, such as for valves and the like, is the design working pressure and is for and with reference to the fluid which the device will serve.
- D. "Ductwork" shall mean ducts, plenums, compartments, casings or any like devices, including the building structure, which is used to convey or contain air.
- E. "Building Boundary" shall mean exterior building walls.
- F. "Mechanical Work" shall mean all work specified and shown in the Division 15, "Mechanical," categories. Mechanical Work generally includes: Plumbing, Heating, Ventilating, Air Conditioning and Fire Protection systems.

1.5 CODES AND STANDARDS:

- A. All work, material or equipment shall comply with the requirements of codes, ordinances and regulations of the local Government having jurisdiction at the location of the work, including the regulations of serving utilities, and any participating Government agencies having jurisdiction.
- B. The latest editions of the following Specifications, Codes and Standards shall form a part of these specifications, the same as if herein written out in full, and all materials and installations include but not be limited to:
- C. CMC (California Mechanical Code)
- D. ASHRAE (American Society of Heating, Refrigeration and Air Conditioning)
- E. UL (Underwriters' Laboratories, Inc.)
- F. AMCA (Air Moving and Conditioning Associates)
- G. California State Division of Industrial Safety
- H. SMACNA HVAC Duct Construction Standards
- I. CBC (California Building Code)
- J. NFPA (National Fire Protection Association)
- K. San Diego County Codes
- L. California Administrative Code, Title 24
- M. Requirements of the State Fire Marshall
- N. National Electrical Code
- O. ASTM (American Society for Testing and Materials)

- P. AGA (American Gas Association)
- Q. OSHA
- R. CPC (California Plumbing Code)
- S. No requirement of these drawings and specifications shall be construed to void any of the provisions of the above standards. No apparatus, equipment, device or construction shall be installed which will provide a cross connection permitting any backflow or siphonage from any source into the domestic water supply system.

1.6 PERMITS AND FEES:

Obtain all permits, patent rights, and licenses that are required for the performing of the work by all laws, ordinances, rules and regulations, or orders of any officer and/or body, give all notices necessary in connection therewith, and pay all fees relating thereto and all costs and expenses incurred on account thereof. No work shall be covered before inspection by the jurisdictional authority and the Resident Engineer.

1.7 SUPERVISION AND COOPERATION:

- A. The Contractor shall include the services of experienced superintendents for each sub-section who shall be constantly in charge of the work, together with the qualified journeymen, helpers, and laborers, required to properly unload, install, connect, adjust, start, operate and test the work involved, including equipment and materials furnished by others.
- B. The work under this section shall be in cooperation with the work of other trades to prevent conflict or interference and to aid rapid completion of the overall project.

1.8 PROJECT SITE VISIT:

Periodic visits to the project site by the Engineer are for the expressed purpose of verifying compliance with the contract documents. Such site visits shall not be construed as construction supervision, i.e., the Engineer assumes no responsibility for providing a safe place for the performance of the work by the Contractor or the Contractor's employees or the safety of the supplies of the Contractor. Neither shall such site visits relieve the Contractor of the responsibility for the discovery of their own errors and the correction of them, nor of the responsibility of properly performing the work.

1.9 COORDINATION:

- A. The Contractor shall be responsible for providing all information, drawings or layouts of equipment or work under this section which affect the work of the other trades.
- B. In case changes in the indicated locations or arrangements are necessary due to developed conditions in the construction, or rearrangement of furnishings, or equipment, these changes shall be made without extra cost to the Owner, provided the change is ordered before work directly connected is installed, and no extra materials are required.

1.10 EXISTING UTILITIES:

- A. The location of utilities shown on the plumbing plans is the best known information available at time of design. The Contractor shall contact the appropriate agencies and confirm the information and make arrangements for connection thereto, prior to excavation and installation of any piping or systems.
- B. Prior to installation of any waste and soil lines the Contractor shall physically verify whether the building sewer can be installed and properly connected to the sewer main. Any work requiring added expense which is caused by the Contractor to make such physical verification shall be borne by the Contractor.

1.11 UTILITY SERVICES DURING CONSTRUCTION:

All water and electric power used for construction shall be paid for by the Contractor.

1.12 SUBMITTALS AND SHOP DRAWINGS:

- A. Equipment and materials shall be submitted to the Resident Engineer for approval within 30 days after award of Contract and prior to fabrication or purchase of equipment and materials.
- B. Installation of materials or ordering of equipment prior to approval of submittals is done entirely at the risk of the Contractor.
- C. Unless otherwise specifically directed in the following specifications, the submittals by the Contractor to the Resident Engineer shall be as follows:
 - 1. Submit all items at one time in a neat and orderly manner with index tabs. A partial submittal will not be acceptable.
 - 2. Reference catalog cuts and brochures of products to proper paragraph in specifications. Furnish numerical index by specification article number, listing product name, catalog number and reference to page number of submittal brochure.
 - 3. Cross reference individual catalog numbers of substitute products to number of specified materials.
 - 4. Bind submittal in booklet form.
 - 5. Submit manufacturers' certification that equipment meets or exceeds the minimum requirements as specified.
 - 6. Where materials, equipment and installations are specified to conform with societies or agencies such as ANSI, ASHRAE, SMACNA, etc., submit certification of such compliance.
 - 7. The submittal shall be complete and with catalog data and information properly marked to show, among other things, material capacity and performance to meet capacities or performance as specified or indicated. Arrange the submittals in the same sequence as the specifications and reference in the upper right-hand corner, the particular specification provision for which each submittal is intended. Incomplete submittals will be rejected,

unless prior approval for partial submittal has been obtained.

8. The Contractor is responsible for confirmation of code approval of material and equipment. Certification of code conformance by the manufacturer shall be submitted for:
 9. Water heaters.
 10. Backflow preventors.
 11. If the Contractor submits a product that is specified, a complete set of brochures, rating tables, etc., is still required for future reference.
 12. Review of the submittal is only for general conformance with design concept of project and general compliance with information given in the contract documents. The Contractor is responsible for confirmation and correlation of the dimensions, quantities and sizes, for information that pertains to fabrication methods or construction techniques, and for coordination of work of all trades. Deviations from drawings and specifications shall be clearly and completely indicated (by a separate letter) in the submittal.
 13. For items which are not manufactured and which have to be specifically fabricated including drawings and typical duct construction and complicated portions of ductwork, six copies of shop drawings and detail description shall be submitted. Shop drawings shall be submitted with such promptness as to allow ample time for examination and any re-submittal.
- D. For duct and piping shop drawing development, the contractor shall obtain the most current architectural, structural and electrical CAD files to be overlaid on to mechanical duct and piping shop drawings.

1.13 SUBSTITUTIONS:

- A. Substitution of an article, device, product, material, fixture, form or type of construction, other than those specified by name, make or catalog number must be reviewed and approved by the City. The contractor awarded the project, may propose substitutions as part of the submittal package as value engineering items. Written approval cannot be finalized until submittals are examined and credit to the owner is established.
- B. If the use of substituted equipment results in an increase in the cost, including the work of other trades, the Contractor shall be solely responsible for payment of said increase in cost.

1.14 GUARANTEE:

- A. In addition to the guarantees required elsewhere, all work, materials and equipment provided under the mechanical sections shall be guaranteed for a period of one year from the date of acceptance of the work by the Owner. Should any trouble develop during this period due to defective materials or faulty workmanship, the Contractor shall immediately furnish all necessary labor and materials to correct the trouble without cost to the Owner. The Contractor, under this guarantee, shall be responsible

for all damages to any part of the premises caused by equipment furnished under this section.

- B. Furnish written certified guarantee, in acceptable form, to the Owner, against defective workmanship, materials and operating equipment. Further guarantee to rebalance and adjust entire system, or any part thereof as required for perfect operation for a period of at least one year after acceptance. Compressors shall have five year warranty. Repair, replace and make satisfactorily operative any and all defective items and work, holding the Owner free from any cost and liability in connection therewith, for the term of the guarantee.

1.15 DAMAGE BY LEAKS:

The Contractor shall be responsible for damage to the grounds, walks, roads, buildings, furnishings, piping systems, electrical systems and their equipment and contents, caused by leaks in the piping systems being installed or having been installed herein. They shall repair at their expense all damage so caused.

1.16 EMERGENCY REPAIRS:

The Owner reserves the right to make emergency repairs as required to keep equipment in operation without voiding the Contractor's guarantee bond nor relieving the Contractor of his responsibilities.

PART 2 – PRODUCTS

The specification of the mechanical products is detailed in the individual specification sections of Division 15.

PART 3 – EXECUTION

3.1 INSTALLATION INSTRUCTIONS:

- A. The requirements of "mechanical" installation is detailed in the individual specification sections of Division 15. In addition the following general requirements shall apply:
 1. Obtain Manufacturer's printed installation instruction to aid in properly executing work of installing equipment whenever such instructions are available. Submit three copies of such instructions to the Resident Engineer prior to time of installation for use of supervising the work.
 2. Erect equipment in a neat and workmanlike manner. Align, level and adjust for satisfactory operation. Install so that connecting and disconnecting of piping and accessories can be made readily, and so that all parts are easily accessible for inspection, operation, maintenance and repair. Minor deviation from arrangements shown on drawings may be made, as approved by the Resident Engineer.

3.2 PROTECTION OF PIPING SYSTEMS:

- A. It shall be the responsibility of the Contractor to install and maintain pipe and

equipment which is reasonably clean and free from rust, dirt, scale, etc. Where necessary, the Contractor shall provide temporary airtight covers at all pipe and equipment openings.

- B. Before turning the systems over to the Owner, all piping systems shall be thoroughly flushed of all scale and dirt. Drains shall be installed at the low points to facilitate flushing of the piping systems.

3.3 PROTECTION OF AIR HANDLING SYSTEMS:

- A. The Contractor shall continuously maintain adequate protection to keep dirt and foreign matter from getting into the air handling system.
- B. Ductwork shall not be left open for any extended period of time. Open section and open fittings shall be capped wherever they occur until such time as final connections are made to equipment, grilles, register, etc.

3.4 PROTECTION OF ELECTRICAL SYSTEMS:

Do not route liquid filled pressure and drain piping over electrical equipment, switchboards motor control centers and the like. When unavoidable, install galvanized drain pans to prevent liquid from dripping or squirting onto such equipment.

3.5 EXCAVATION AND BACKFILL:

- A. See "Earthwork" section of the specifications for requirements. In addition, the following shall apply:
 - 1. Execute all excavation to grades to accommodate elevations indicated and where invert elevations are not indicated, provide minimum coverage (above top of pipes) as follows:
 - a. Any piping under building slab (top of pipe to underside of slab) 18-inches.
 - b. Steel, cast iron, and copper in other locations 30-in.
 - c. Clay and Plastic piping in other locations - 36-in.
 - 2. Excavation for pipes shall be cut a minimum of six-inches below the required grade. A six-inch bed of sand or other approved material shall be then placed and properly compacted to provide an accurate grade and uniform bearing throughout the length of the pipe, except for plastic piping for which sand shall be used.
 - 3. Sand used shall be washed river sand normally used for backfill purposes, free of clods or lumps of clay, rock, debris and rubbish.
 - 4. Backfilling shall not be placed until the work has been inspected, tested and approved by the Resident Engineer.
 - 5. PVC piping excepted, backfill to point 12-inches above top of piping with fine earth (excavated material may be used) free of excessive amounts of clay, debris, rubbish, rocks, or clods, as approved by the Resident Engineer. Backfill above 12-inches from top of piping may be with excavated material. Apply backfill by hand in 6-inch deep layers the full width of the trench. Moisten each

layer (do not flood or puddle), and hand tamp to a minimum 90 percent compaction before proceeding with the next layer of backfill. Note: PVC piping shall be backfilled with sand to a point 12-inches above top of piping, remainder of trench may be backfilled with fine earth as specified above.

6. Clods or lumps one-inch in size or larger will not be permitted in the backfill. If the excavated material is not suitable adequate material shall be provided by hauling from other locations.
7. Surplus earth or material remaining after backfilling shall be removed from the site as indicated in Section entitled "Earthwork."
8. Do not excavate under or near foundations or footings except in manner permitted and approved by the Resident Engineer. Do not backfill until installed piping has been successfully tested and approved for backfill by the jurisdictional inspector and the Resident Engineer.

3.6 RECORD DRAWINGS:

- A. The Contractor shall keep an accurate dimensional record of the as-built locations of all work under this Contract. This record shall be kept up-to-date at all times on blue line prints as the job progresses, and shall be available for inspection at all times.
- B. Upon completion of the work, obtain from the Resident Engineer one complete set of reproducible prints of the applicable Contract Documents. Record all changes and information contained on the Record Drawings onto the new set of reproducible prints in an orderly and legible manner.
- C. Submit two blueline prints of the completed reproducible Record Set for approval. Make such changes and correction as may be required for final approval.
- D. When final approval is received, sign the reproducible Record Set and stamp or note "As-Built" and submit to the Resident Engineer.
- E. Final observation will not be made until these approved as-built drawings have been received by the Resident Engineer.

3.7 CUTTING AND PATCHING:

- A. Perform all cutting and fitting required for work of this Section in rough construction of the building.
- B. All patching of finished construction of building shall be performed under the section of specification covering these materials.
- C. All cutting of concrete work by this Contractor shall be by core drilling or concrete sawing. No cutting or coring shall be done without first obtaining the permission of the Resident Engineer.
- D. Information regarding requirements for openings, recesses, chases in the walls, partitions, framing or openings shall be provided for work under the appropriate sections of the specifications in advance of the work. Should this be neglected, delayed or incorrect and additional cutting is found to be required, this work shall be accomplished at no additional cost to the Owner.

- E. All access panels shall be approved by the Architect as to location, appearance, and finish.

3.8 VIBRATION ELIMINATION AND CONNECTORS:

Rotating or reciprocating mechanical equipment shall be mounted on or suspended from vibration isolators to prevent vibration and structural borne noise transmission to the building. Refer to each mechanical trade section of these specifications for specific details. Flexible duct connection shall be used between all fan openings and sheet metal work. Flexible connectors shall be used in piping connections to rotating or reciprocating equipment. See individual mechanical sections for specifications.

3.9 REQUIREMENTS FOR FINAL INSPECTION:

- A. All of the following items must be completed prior to final inspections. No exception and no final payment will be made until all items are completed and approved. For specific requirements see the individual section in the Division 15 Category.
 - 1. Cleaning equipment and premises
 - 2. Test and balance of systems
 - 3. Test and balance reports are reviewed by the Engineer
 - 4. Service manual
 - 5. Pipe and valve identification
 - 6. Pipe and valve identification schedule
 - 7. Operation tests
 - 8. Operating instructions
 - 9. As-built drawings
 - 10. Certification of water sterilization

3.10 EARTHQUAKE RESTRAINT:

- A. General:
- B. All earthquake resistant designs for mechanical equipment, such as air handling units, water heaters, blowers, motors, ductwork, mechanical and plumbing piping, shall conform to the regulations of the California Building Code.
- C. The restraints which are used to prevent disruption of the function of the piece of equipment because of the application of the horizontal force shall be such that the forces are carried to the frame of the structure in such a way that the frame will not be deflected when the apparatus is attached to a mounting base and equipment pad, or to the structure in the normal way, utilizing the attachments provided. Equipment, piping, ductwork, etc. shall be secured to withstand a force in any direction equal to the value shown in Table 16.
- D. Piping:
 - 1. All Plumbing piping shall be secured by bracing at every fourth hanger transversely and every eighth hanger longitudinally. Bracing shall be done in accordance with

the NFPA Code, and as described in paragraph "Sway Bracing for Protection Against Earthquakes," of that code.

2. As approved by code authority, the SMACNA "Guidelines for Seismic Restraints of Mechanical Systems" may be used as a guide.
- E. No sway bracing is required for pipes that are installed on very short hangers (12-inches or less).
- F. As approved by the code authority a bracing system as manufactured by "Superstrut" or "Pipe Shields Inc." may be used.

3.11 ADJUSTMENTS OF SYSTEMS AND OPERATION TESTS:

- A. When the work included in these specifications is complete, and at such time as directed by the Resident Engineer, the Contractor shall adjust all parts of the systems, advising the Resident Engineer when this has been done and the work is ready for their final tests. Refer to "Balancing and Testing Procedures" in Section 15800.
- B. The Owner may require operation of parts or all of the systems prior to final acceptance. If it becomes necessary for temporary use of the systems before all parts are complete, the Contractor shall adjust all parts as far as possible in order to make such temporary use as effective as possible. After temporary use and before acceptance tests, all systems shall be readjusted to meet permanent operational requirements. This occupancy shall not be construed as final acceptance cost of utilities for such operation will be paid by the Owner.
- C. Operation Test:
1. At completion, the Contractor shall operate all mechanical systems for a period of at least one eight-hour day to demonstrate fulfillment of the requirements of the contract. During this time all adjustments shall be made to the equipment until the entire system is in satisfactory operating condition acceptable to the Resident Engineer and the Owner.
 2. Final Operation and Instruction: Upon completion of the installation of the equipment and after final acceptance, at a time approved by the Owner, the Contractor shall place a competent person at the building who shall operate the systems for a period of one eight-hour day instructing the Owner's Representatives in all details of operation and maintenance.
 3. Any required instructions from manufacturer's representatives shall be given during this period. The one day specified under "Operation Test" does not substitute for this day of final operation and instruction.
 4. All arrangements for operation periods shall be made through the Owner, and the Resident Engineer.
- D. For specific requirements see individual Mechanical Sections.

3.12 RUBBISH REMOVAL AND CLEANING:

Upon completion of the work under this section, the Contractor shall remove all surplus materials, equipment and debris incidental to their work, and leave the premises clean and orderly.

3.13 SERVICE:

Ninety (90) days free service shall be provided after completion of the job including changing of filters. Replacement filters shall be provided by the Owner and shall be on the job site.

3.14 PAINTING:

- A. Excepting piping identification specified in the specific section all painting is specified in the Painting Section of the Specifications.
- B. Surfaces to be painted shall be cleaned of cement, plaster and other spills.
- C. Factory finishes shall be repaired to original condition when scratched or dented.

END OF SECTION 15050

SECTION 16010 - ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. The General Conditions, Supplementary Conditions, Special Requirements, and applicable portions of Division 1 of the Specification are a part of this Division and the requirements contained herein are supplementary to them.
- B. This Division is an integrated whole comprising interrelated and interdependent Sections and shall be considered in its entirety in determining requirements. Refer to other sections of this Division for additional requirements or information regarding the topics of this Section.

1.02 SUBMITTALS

A. General

- 1. Engineer's review of the submittal is only for general conformance with design concept of the project and general compliance with the information given in the contract documents. The submittal procedure is required in an effort to minimize the problems which occur due to the discovery of Contractor non-compliance at the construction site. The Contractor is responsible for confirmation and correlation of the dimensions, quantities and sizes, for information that pertains to fabrication methods or construction techniques and for coordination of work of all Divisions of the work. Deviations, if any, from Contract Documents shall be clearly and completely indicated (by a separate letter if deviations are extensive) in the submittals, and the lack of such is deemed complete compliance with Contract Documents without any deviations. Submittals favorably processed will not relieve the Contractor of responsibility for deviations not so reported nor for errors in the submittal.

- 2. Contractor Stamp: All submittals shall be stamped with the following text or equivalent and signed by the Contractor's representative.

"IT IS HEREBY CERTIFIED THAT THE PRODUCTS SHOWN AND MARKED IN THIS SUBMITTAL ARE IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND CAN BE INSTALLED IN THE ALLOCATED SPACES EXCEPT WHERE DEVIATIONS ARE NOTED.

CERTIFIED BY: _____ DATE: _____ "

- 3. All submittals shall be complete and with catalog data and information properly marked to show, among other things, equivalency of product (where substitution is requested), adequacy in capacity and performance to meet minimum capacities of performance as specified or indicated.

Arrange the submittals in the same sequence as these specifications and reference (at the upper right-hand corner) the particular specification provision for which each submittal is intended. Incomplete submittals will be rejected.

4. Refer to the other sections of this Division for specific requirements.

B. Material List

Within 15 days after award of Contract, the Contractor shall submit for approval a complete list of materials proposed for use. Furnish names and addresses of manufacturers, catalog numbers (where applicable) types and trade names. For purposes of uniformity, only one manufacturer will be accepted for each class or type of material. This list is in addition to Shop Drawings.

C. Shop Drawings:

Submit shop drawings with such promptness as to cause no delay in the work. Do not commence fabrication of the equipment until the approved drawings are approved by the Resident Engineer.

D. Other Submittals: As required by other sections of this Division.

1.03 DEFINITIONS (as used on Division 16 drawings and herein)

A. "Provide" means furnish, install and connect unless otherwise described in specific instances.

B. "Extend", "Submit", "Repair" and similar words mean that the Contractor shall accomplish the action described.

C. "Codes" or "Code" means all codes, laws, statutes, rules, regulations, ordinances, orders, decrees, and other requirements of all legally constituted authorities and public utility franchise holders having jurisdiction.

D. "Verify Location" when noted for an item, means that the locations of the item within the room is tentative and not necessarily as shown on the drawings. Contractor shall request the exact location of the item from the Engineer's Representative during construction. The item may be located anywhere in the room at no additional cost to the City.

E. "Products", "materials" and "equipment" are used interchangeably and mean materials, fixtures, equipment, accessories, etc.

F. "Utility areas" are defined as mechanical, electrical, telephone, janitorial, and similar rooms or spaces which are normally used or occupied only by custodial or maintenance personnel. "Public areas" are defined as the rooms or spaces which are not included in the utility areas definition.

1.04 DESCRIPTION

- A. Provide a complete and operable installation, including all labor, supervision, materials, equipment, tools, apparatus, transportation, warehousing, rigging, scaffolding and other equipment and services necessary to accomplish the work in accordance with the intent and meaning of these contract documents.

1.05 RELATED WORK

- A. Coordination: Refer to Engineering, Civil, Structural and Mechanical Drawings for the construction details and coordinate the work of this Division with that of other Divisions. Order the work of this Division so that progress will harmonize with that of other Divisions and all work will proceed expeditiously. The work of this Division shall include direct responsibility for the correct placing and connection of electrical work in relation to the work of other Divisions.
- B. Examine other Divisions for work related to the work of this Division especially Division 22 - PLUMBING.

1.06 EXISTING CONDITIONS

- A. Visit the site prior to bidding and investigate the existing conditions which affect or will be affected by the work of this Division. Become thoroughly familiar with the working conditions and take into account any special or unusual features peculiar to this job. By the act of submitting a Bid, the Contractor will be deemed to have complied with the foregoing, to have accepted such conditions, and to have made allowance therefore in preparing his Bid.
- B. The location of existing concealed utility lines are shown in accordance with reference data which must be considered to be approximate. The Bidder shall include adequate funds in his Bid to cover costs of connection regardless of their exact location. There may be existing utility lines in addition to these indicated. Exercise extreme caution during trenching operations. Repair the damage caused by such operations to existing utility lines at no cost to the City, whether the lines are shown on drawings or not.

1.07 DRAWINGS AND SPECIFICATIONS

- A. Drawings and specifications are intended to complement each other. Where a conflict exists between the requirements of the drawings and/or the specifications, request clarification.
- B. The Engineer shall interpret the drawings and the specifications, and his decision as to the true intent and meaning thereof and the quality, quantity, and sufficiency of the materials and workmanship furnished thereunder shall be accepted as final and conclusive.
- C. In case of conflicts not clarified prior to Bidding deadline, use the most costly alternative (better quality, greater quantity, or larger size) in preparing the Bid. A

clarification will be issued to the successful Bidder as soon as feasible after the Award and if appropriate a deductive change order will be issued.

- D. All provisions shall be deemed mandatory except as expressly indicated as optional by the word "may" or "option".

1.08 ELECTRIC POWER AND TELEPHONE SERVICES

- A. The Contractor shall notify and coordinate with the serving utilities that the project is under construction and apply for permanent service in the name of the City. Furnish pertinent information to them including the required dates for permanent service. Verify service locations and conform to utility company requirements. Payment for charges for permanent service connections levied by the utilities will be paid under the Bid Item "SDG&E Fee Allowance (EOC Type I)".
- B. Contractor shall arrange and pay for the Construction power and lighting including the utility service.

1.09 PERMITS AND INSPECTIONS

- A. Obtain, schedule and pay for permits, licenses, approvals, tests, and inspections required by legally constituted authorities and public utility franchise holders having jurisdiction over the work.

1.10 OBSERVATION OF CONSTRUCTION

- A. Afford the Engineer's representative every facility for evaluating the skill and competence of the mechanics and to examine the products. Concealed work shall be reopened when so directed during his periodic visits.

1.11 CODES AND REGULATIONS

- A. By submitting a Bid, Contractor is deemed to represent himself as competent to accomplish the work of this Division in conformance with applicable Codes. In case of conflict between the Contract Documents and Code requirements, the Codes shall take precedence. Should such conflicts appear, cease work on the parts of the contract affected and immediately notify the Engineer in writing. It shall be the Contractor's responsibility to correct, at no cost to the City, any work he executes in violation of Code requirements. Specific references to Codes elsewhere in this Division are either to aid the Contractor in locating applicable information or to deny him permission to use options which are permitted by Codes.
- B. Applicable Codes: (Current editions unless otherwise noted):
 - 1. National Electrical Code.
 - 2. Uniform Building Code

3. CCR Titles (as applicable)
4. Fire Marshal Regulations
5. Regulations of all other authorities having jurisdiction.

C. Where conflict or variation exists among Codes, the most stringent shall govern.

1.12 RECORDS AND DOCUMENTATION

Accumulate the following and deliver to the Engineer's representative prior to final acceptance of the work.

A. Record (as-built) Drawings:

1. Maintain in good order in the field office a complete set of electrical prints. Update the drawings daily with neat and legible annotations in red ink showing the work as actually installed.
2. The actual size, location and elevation of all buried lines, boxes, monuments, and stubouts shall be accurately located and diminished from building walls or other permanent landmarks.
3. Furnish the originals.

B. O&M Manuals: Furnish copies of an operating and maintenance manual as indicated in Division 1. Each manual shall be bound and indexed and shall include the following:

1. Operating and service instructions for systems and equipment as required by other sections of this Division. A spare parts list recommended for purchase by City shall be included.
2. Updated approved materials list, shop drawings, and catalog information as required by SUBMITTALS subsections.
3. List of material and equipment manufacturers (with names, addresses and phone numbers of local suppliers) in order to expedite ordering of replacement parts by the City. This list may be integrated with the material list.

C. Permits and Certificates of Inspection: Furnish the originals.

D. Testing procedures and test results required in this and other sections: Furnish two copies.

E. Other data required by other sections of this Division: Furnish two copies.

1.13 TOOLS

- A. Provide all special tools needed for proper operation and routine adjustment and maintenance of systems and equipment. Deliver tools to Engineer's representative and request a receipt for same.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials shall be new, in accordance with the specifications of the Institute of Electrical and Electronic Engineers (IEEE), National Electrical Manufacturer's Association (NEMA), National Fire Production Association (NFPA), and the National Electrical Code (NEC), and shall have an Underwriter's Laboratories (UL) listing and bear their label where such services is available.
- B. Materials for the same purpose shall be of the same make and shall be the manufacturer's latest standard design that complies with the specification requirements.

2.02 SUBSTITUTIONS

- A. Substitutions will be allowed only in strict conformance with the General Conditions of the Contract and Whitebook section 4-1.6.
- B. Whenever in specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name or by name of manufacturer such specification shall be deemed to be used for the purpose of facilitating description of material, process, or article desired and shall be substantially equal or better in every respect to that so indicated or specified. If material, process, or article offered by Contractor is not, in opinion of Engineer, substantially equal or better in every respect to that specified, then Contractor shall furnish material, process, or article specified. Burden of proof as to equality of any material, process, or article shall rest with Contractor. Contractor shall submit request together with substantiating data for substitution of an "or equal" item in accordance with Whitebook section 4-1.6. Provision authorizing submission of "or-equal" justification data shall not in any way authorize an extension of time for performance of this contract.
- C. When no specific make of material, apparatus or equipment is mentioned, a first-class specification grade product shall be used that conforms to the requirements of the contract documents and is acceptable to the Resident Engineer.
- D. The Contractor shall assume any extra costs to other work or trades resulting from the use of substitutions. All substitutions accepted shall be provided at no extra charge.

PART 3 - EXECUTION

3.01 WORKMANSHIP AND INSTALLATION METHODS

- A. Workmanship shall be in conformance with the "NECA (National Electrical Contractors Association) Standards of Installation" and the best standard practice of the trade except where indicated otherwise.
- B. Execute the work so as to contribute to ease of operation and maintenance, maximum accessibility and best appearance. Execute it so that the installation will conform and adjust itself to the building structure, its equipment and its usage. The work shall be symmetrical, plumb, uniform, properly aligned and firmly secured in place.
- C. Install equipment in accordance with the manufacturer's instructions and recommendations unless otherwise noted or specified.

3.02 COORDINATION WITH STRUCTURAL REQUIREMENTS

- A. The placement of conduits, etc., and the location, size and reinforcement of holes in the building structure shall conform to the structural drawings and specifications. When the requirements of the Electrical Division of the specifications or drawings are in conflict with the structural requirements, the structural requirements shall take precedence. Where the safety of the building structure is threatened, due to electrical work or holes required for such work, modifications shall be made as directed by the Engineer.

3.03 LOCATIONS, SIZES, ROUTINGS AND CLEARANCES

- A. For the purpose of clearness and legibility, the drawings are essentially diagrammatic. The size and location of equipment is shown to scale wherever possible, but the Contractor shall make use of all the data in the Contract Documents, and shall verify such information. Contractor is responsible for the equipment provided by him fitting in the spaces available while maintaining required working, ventilation, and equipment maintenance access space. Exercise particular care that such space is not infringed by the work of other Divisions.
- B. Conduit Routing: The drawings show the points of termination of the conduits, and may suggest a route for the conduit. However, it shall be the responsibility of the Contractor to install the conduits with a minimum number of bends in such a manner as to conform to the structure, avoid obstructions, preserve headroom, keep openings and passageways clear, and meet all Code requirements with such offsets and special fittings as may be required. Conduit shall be run concealed in building structure unless otherwise indicated.

3.04 TESTS

A. General

1. Demonstrate that all components of the work of this Division have been provided and that they operate in accordance with the Contract Documents.
2. Provide instruments and personnel for tests and demonstrations. Submit signed test results.
3. Notify the Engineer in writing, seven days in advance of tests to allow presence of his representative.

B. Specific: Refer to the other sections of this Division for test requirements.

3.05 DELIVERY, HANDLING, STORAGE OF MATERIALS AND PROTECTION OF WORK

- A. Protect materials against dirt, water, chemical and mechanical damage both while in storage and during construction.
- B. Cover materials in such a manner that no finished surfaces will be damaged, marred or splattered with plaster or paint, and all moving parts will be kept clean and dry.
- C. Replace or refinish all damaged materials including fronts of panels and switchboard sections as directed by Engineer's representative.
- D. Keep raceways, boxes, cabinets, and other openings closed to prevent entry of foreign matter.

3.06 CLEANUP AND HOUSEKEEPING

- A. Cleaning shall be done as the work proceeds. Remove waste and debris weekly to keep the site as clean as is practical. Vacuum clean dirt and debris from interiors of switch-boards, panelboards, transformers, and similar items. Leave exposed parts of the electrical work in a neat, clean and usable condition, with painted surfaces unblemished and plated metal surfaces polished. Clean lighting fixtures and wipe lamps clean.

END OF SECTION 16010

SECTION 16200 - POWER DISTRIBUTION EQUIPMENT

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Material List and Manufacturers Literature.
- B. Shop Drawings.
- C. O& M Manuals

1.02 ACCEPTABLE MANUFACTURERS

- A. Switchboards, circuit breakers, service/metering equipment, safety switches and ground fault protection: Square D or approved equal.
- B. Fuses: Bussmann, Littell Fuse, Gould/Shawmut, or approved equal.
- C. Motor Starters: Square D or approved equal.
- D. Lighting Contactors: Square D or approved equal.
- E. All power distribution equipment shall be by the same Manufacturer.

1.03 SHORT CIRCUIT (FAULT CURRENT DUTY) AND SELECTIVITY REQUIREMENTS

- A. The available short circuit current values indicated for the distribution system may be accommodated in the following several ways. If the available short circuit current is not indicated for a specific distribution system component, use the nearest upstream value indicated. Bus bar bracing shall be adequate for the values indicated.
 - 1. Provide a fully rated distribution system.

PART 2 - PRODUCTS

2.01 SWITCHBOARDS - UNDER 600 VOLTS

- A. All new switchboards shall be by the same manufacturer.
- B. Sections shall be shipped connected together by the manufacturer, or separated and ready for field connection by the Contractor, in sizes that will allow them to be moved through the doors into their positions in the building.
- C. Sections shall be free standing, with front access, as shown or required, of angle iron or formed steel framework with steel panels enclosing all except the bottom. No raw or sharp metal edges shall be visible. Sections shall be constructed to UL standards.

- D. Finish shall be manufacturer's standard cataloged ANSI 61 enamel over primer for indoor use, as shown on the drawings. Finish shall be applied by the manufacturer.
- E. Bussing shall be copper, and shall be formed and braced to withstand the effects of a fault current of minimum 50,000 amperes symmetrical. Copper bussing shall be silver plated at joints, and be connected with bolts and lock washers torqued as recommended by the manufacturer. All joints shall be made by welding or use of bolts and Bellville washers made up tight. Main bussing shall extend through all sections of the switchboard, and shall be of a current carrying capacity equal to the current rating of the main protective device as shown on the drawings. Neutral bussing shall be rated 100%. Busses shall be spaced according to the UL and NEC standards for bare busbar. Provide top and bottom provisions for future crossbus and cable extension. The vertical bus shall be drilled and tapped to accommodate new and future breakers, switches and devices. Cross busses near the bottom of the boards shall be insulated or barriered.
- F. A continuous copper ground bus shall be provided through all sections of the switchboard. All non-current carrying parts of the switchboard shall be solidly connected to this ground bus. The ground bus shall be sized to an ampacity of not less than 33% of the rating of the respective main bus.
- G. With a 70EF temperature in the room where installed, the phase, neutral, and ground bus shall be sized and rated for 100% continuous current carrying capacity based upon an ampere per square inch formula. Bus current carrying capacity ratings and physical sizing shall not be based on temperature rise alone. Copper bus shall have a minimum conductivity of 1000A/Square Inch. The temperature in any interior part of the switchboard shall not exceed 115EF.
- H. Underground pull section and metering compartment shall be constructed in conformance with SDG&E specifications.
- I. All lugs for cable connections shall be positive pressure bolted clamp type.
- J. Exterior plates and blank spaces not presently utilized shall be held in place by rigid supports arranged to prevent screws and plates from falling against energized parts. Interiors shall be fastened to the enclosure by adjustable supports to provide for proper alignment.
- K. Securely anchor switchboards to the housekeeping pad.
- L. Provide a nameplate for each switchboard section and each item on the face of the switchboard as specified in the Section 16 30 00 - "Basic Materials and Methods." Switchboard submittal shall contain a nameplate schedule.
- M. After installation, the boards shall be carefully cleaned. Any damaged paint shall be retouched with matching paint provided by the manufacturer of the switchboards.

- N. When the equipment is energized, live parts shall be protected by faceplates which shall not be removed or left unplaced without the immediate presence of the Electrical Contractor.
- O. Circuit breakers, switches, meters, ground fault protection, starters and other equipment to be included as an assembled part of a switchboard shall comply with the paragraphs where those items are specified.

2.02 CIRCUIT BREAKERS

- A. General: Breakers 400 ampere frame and larger shall be solid state trip (SST) type unless other special types are indicated on drawings. Breakers with smaller than 400 ampere frames may be thermal magnetic trip (TM) or SST type unless otherwise indicated on drawings. Thermal magnetic breakers rated 200 ampere and larger shall have adjustable instantaneous trip. Mounting height of breaker operating handles shall not exceed 6½' above floor (consider housekeeping pad for floor mounted gear when determining the measurement).
- B. Short circuit interrupting capacity shall be as indicated on the drawings and shall in no case be less than 10,000 RMS symmetrical amps at the applied voltage.
- C. Breakers shall be molded case bolt-on type, except where other types are shown. Clamp-on, push-on, or plug-in type are not acceptable. Removable handle ties and dual, quad or tandem breakers are not acceptable. Mounting hardware, accessories, faceplates, and enclosures shall be provided as necessary for the intended use. Circuit breakers shall be listed for 75° C terminations.
- D. Ground fault circuit interrupter (GFCI) type circuit breakers shall occupy the same space in a panel as a conventional breaker of the same rating and shall have a push-to-test button on the front. A ground current of 5 milliamps (±) or more shall trip the breaker in less than 1/40 second, Each outlet on a GFI circuit shall be tested after installation and results of the test submitted in writing to the Engineer.
- E. Submittal shall include interrupting capacities in RMS symmetrical amps at the applied voltage. Letter designations are not sufficient.
- F. Light duty commercial/residential type thermal magnetic breakers. Use only in Panels (not in Power Panels). Westinghouse Quicklag or equal.

2.03 PANELS

- A. Panelboards for lighting and miscellaneous power shall be the dead front safety type equipped with bolt-on circuit breakers of the numbers and sizes shown on the drawing and herein. Multiple pole breakers shall have an internal common trip. Tie handles will not be permitted. Breakers serving multiwire branch circuits passing through fixtures, shall be multiple pole breakers, even if indicated as single pole on the drawings. Breakers shall have a SWD listing. Provide GFCI type breakers as indicated on drawings and when required by Code.

- B. General Electric type AQ, Cutler Hammer type PR1, or equal for 208/120V.
- C. Busbars shall be copper, braced for the available short circuit current, and have the capacities required on the plans but not less than the ampere frame size of the protective device supplying the panelboard. All panelboards shall be equipped with a copper equipment ground bus. When indicated in panel schedule, provide an oversized neutral comprised of split neutral busbars and each half shall have the same ampere rating as the phase busbars and be equipped with double lugs. Termination lugs shall be rated for 75°C.
- D. Each branch circuit shall have a permanently fixed number. Provide a typewritten directory mounted in a metal frame with a clear plastic front cover on the inside of the cabinet door giving the circuit number and a complete description of all outlets controlled by each panel circuit breaker. Consult Resident Engineer for correct room and/or furniture system module designation scheme (not necessarily those shown on drawings). Mark "spares" with pencil only and leave "spaces blank.
- E. Provide a nameplate for each panelboard indicating the panel designation (such as "PANEL 3A") as indicated on drawings, the voltage system (such as 208/120V-3PH-4W"), and origin of feeder (such as "FED FROM SWBD MSA").
- F. Special panelboard construction or features shall be as shown on drawings. For circuit breakers, switches, contactors and other equipment to be included as an assembled part of the panelboard, refer to the paragraph where those items are specified.
- G. Refer to Paint, Finishes and Colors, Section 16 30 00 "Basic Materials and Methods."
- H. Doors shall be fastened to trim with concealed hinges and provided with flush type combination catch and lock. All locks shall be keyed alike. Mount floor standing panelboards on a base. Refer to Concrete Equipment Bases subsection.

2.04 SAFETY SWITCHES

- A. Externally operated switches shall be quick-make, quick-break, with interlocking cover. Switches and enclosures shall be heavy duty type for fused switches and normal duty type if for disconnect service only. Provide Class J rejection clips if used with fuses. Switches used in indoor dry locations shall have NEMA 1 enclosures. Switches exposed to wet or outdoor conditions shall have non-metallic NEMA 4X enclosures.
- B. Provide a nameplate on each disconnect switch as specified in "NAMEPLATES". Nameplate shall show item controlled, voltage, phase, and source of power.
- C. In case of a substitution of material or equipment protected, the disconnect, fuses, circuit conductors, conduit, and feeder circuit breaker shall be resized accordingly and provided at no additional cost.

2.05 FUSES

- A. Fuses for feeders and motor branch circuits shall be time delay current limiting type with 200,000 AIC. The time delay shall be minimum 10 sec. at 500% load for 600A or smaller fuses and 4 sec. at 500% load for larger than 600A. Fuses 600 amp. and smaller shall be class RK1. Fuses larger than 600 amp. shall be class L.
- B. Upon City's acceptance of the electrical distribution system, provide the Resident Engineer with spare fuses and cabinet to hold same as follows: Three fuses of each rating installed 601 amperes and larger, 10% of each type and rating installed 0 to 600 amperes but not less than three of each. Fuses shall be provided in a 24" X 30" X 6"D spare fuse cabinet where noted on the drawings. Fuse cabinet shall have hinged, key lockable door with engraved nameplate. Written documentation of spare fuses furnished shall be submitted by the Contractor and approved by the City Representative prior to completion of project.
- C. Fuse sizes shown on drawings are for reference only based on specified mechanical/plumbing equipment. Final determination of fuse sizes shall be made by Contractor based on approved mechanical/plumbing equipment nameplate ratings.
- D. Fuses shall be installed so that the rating can be clearly read from the front of the open switch without removing the fuse.

2.06 MOTOR STARTERS - INDIVIDUALLY MOUNTED

- A. Starters used in indoor dry locations shall have NEMA 1 enclosures. Starters exposed to wet or outdoor conditions shall have non-metallic NEMA 4X enclosures. Provide a nameplate for each starter unit indicating the load served (such as "EXH. FAN E-1").
- B. Magnetic: Shall be combination starters. Provide with a motor circuit protector unless specifically indicated on drawings to be with a fused switch. Provide accessories (start/stop pushbuttons, H.O.A. switches, red neon pilot running lights, interlock contacts, control transformer, etc.) as required by this Division and by Division 15 - Mechanical plans and specifications. Confirm ratings (watts, volts, amps, etc.) with mechanical control system supplier prior to ordering of components. Each starter unit shall, as a minimum, have in its cover an overload reset, hand-off-auto selector switch and a red pilot running light. Equip each starter unit with the number of auxiliary N.O. and N.C. contacts required but at least four N.O./N.C. convertible contacts. Equip each starter with an overload relay in each undergrounded wire. Select overload ratings to match the characteristics of the motors actually installed. Refer to 16800 - "Utilization Equipment". Control voltage shall be per mechanical documents except for external mechanical control circuits. Source shall be unit transformers in each starter compartment. Transformer shall be 100 VA minimum rating.

- C. Manual: Toggle type with integral melting alloy overload protection. Where shown on the drawings, fractional horsepower motors shall have toggle type manual starters with thermal overload protection in each phase. Provide a padlocking-off device on the handle.

2.07 LIGHTING CONTACTORS

- A. 20 amp, mechanically held with coil clearing feature with number of poles as indicated on drawings.
- B. Provide enclosures as specified in Section 16 30 00 "Basic Materials and Methods."
- C. Provide nameplates for each contactor or relay identifying the item controlled as specified under "NAMEPLATES", Section 16 30 00 "Basic Materials and Methods."

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Installation shall conform to the requirements of the NEC and to the manufacturer's shop drawings and mounting instructions. Equipment base for floor standing equipment shall have an adequate number of anchor bolt holes to put the base in direct contact shear and tension with the mounting surface at all anchor bolt locations. Refer to Section 16 30 00 "Basic Materials and Methods", for seismic restraints requirements.

3.02 GROUNDING

- A. Grounding and bonding shall be in accordance to Section 16400, "Wiring Methods, Raceways and Conductors."

END OF SECTION 16200

SECTION 16300 - BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Material List and Manufacturer's Literature.

1.02 CUTTING AND PATCHING

- A. Perform drilling, cutting, and patching of the general construction work whether existing or new, which may be required for the installation. Patch with the same materials, workmanship and finish as the original work and accurately match all surrounding work. Such work shall be done by a craftsman accredited in the applicable trade and be acceptable to the Resident Engineer.

PART 2 - PRODUCTS

2.01 IDENTIFICATION SYSTEMS

- A. Nameplates:
 - 1. Provide nameplates for safety switches, switchboards, breakers mounted in switchboards, relay cabinets, signal terminal cabinets, individually mounted enclosed breakers, panelboards, starters, timeclocks, remote control switches and similar items. Nameplates shall be laminated black-white-black backlite or phenolic plastic with 1/4" high lettering engraved through the outer covering except where specifically described otherwise. Affix with self-tapping machine screws (no rivets or glue). The screws shall not project beyond the backside face of enclosure doors, or panels.
 - 2. Inscribe as indicated on drawings or herein. If not indicated, the inscription shall describe the equipment served.
- B. Refer to DEVICE PLATES for engraving requirements.
- C. Refer to Section 16 40 00 "Wiring, Methods, Raceways, and Conductors" for tagging and color coding requirements.

2.02 PAINT, FINISHES AND COLORS

- A. General: Painting requirements of this Subsection are supplementary to the Painting Sections of these specifications.
- B. Switchboards, panels, terminal cabinets, equipment enclosures, wireways, boxes, conduit etc.: Standard grey or galvanized manufacturers finish unless otherwise noted hereinafter.

1. Exceptions in public areas:
 - a. Flush panels and cabinets: Fronts shall have factory applied primer and field applied oil base semi-gloss enamel finish coat (except metal plated parts) to match adjacent wall surfaces.
 - b. Surface panels, cabinets and wireways: Same as (a) "Flush panels" except also paint the enclosure (can) using the same paint as is on adjacent surface in lieu of semi-gloss paint. Apply etching compound (galvanized surfaces) and undercoater prior to finish coat.
 - c. Surface and Flush Boxes: Paint to match adjacent surfaces as described in (b) "Surface panels".
 - d. Exposed conduit: Paint to match adjacent surfaces as described in (b) "Surface panels".
- C. Ferrous metal miscellaneous parts (except stainless steel): Galvanized in accordance with ASTM A123 or A153.
- D. Lighting fixtures in public areas: Standard manufacturer's finish except as modified by LIGHTING Section, including Fixture Schedule. Exception: Paint the trims of recessed fixtures to match adjacent wall or ceiling surface if so directed by Resident Engineer.
- E. Wiring devices, device plates and floor boxes in public areas: As specified in WIRING DEVICES and DEVICE PLATES Subsections.

2.03 WIRING DEVICES

- A. Acceptable Manufacturers: Pass & Seymour, Hubbell, Leviton, or equal.
- B. Switches:
 1. AC general use snap switches shall be toggle handle, quiet operating, specification grade, UL listed and verified to meet Federal Specification W-S-896 and NEMA WD-1 heavy duty tests.
 2. Switches shall be rated 120/277 volts 20 amps. Switches shall have HP ratings as follows:
 - a. 20 amp rating - 1 HP @ 120V, 2 HP @ 240V.
 3. Toggle handle color shall be white, except switches controlling emergency (standby) circuits shall be red, including dimmer switches.
 4. Switches shall be constructed with oversized silver-cadmium alloy contacts, permanent lubrication, and binding head screws suitable for

#10 AWG wire. Connection shall be made by wrapping the wire around the screw or tightening a screw clamp. Push-in type connections are not acceptable. Switches may have built-in pigtail connection in lieu of screw connection. Switches shall have means for grounding.

5. Switches shall be Pass & Seymour #20AC1, Hubbell 1221-G or equal.
6. Keyed and momentary contact switches, required but not listed, shall be of the same manufacturers and identical quality as those listed above.
7. Illuminated mushroom pushbuttons for gas solenoid and shop power shut-down shall be 2¼" diameter, red, equal to Square 'D' 9001 series, mounted on stainless steel plate. Provide red engraved plate with 1/4" high white lettering above pushbutton. Plate shall be fastened with four screws, one at each corner.

C. Receptacles:

1. Receptacle outlets shall be Hard Use Specification Grade of standard NEMA configuration.
2. General receptacle outlets shall be 20 amp, 125 volt, 2 pole, 3 wire. The attachment screw shall have an automatic grounding clip. A green grounding screw shall be mounted on the bridge which shall run around the back of a break and impact resistant plastic body. The bridge shall be securely locked to the body. Outlets shall be UL listed and verified to meet Federal Specification WC 596 and NEMA WD 1 heavy duty performance tests. Contacts shall be extra heavy duty copper alloy or bronze double wipe type. Outlets shall have binding head screws suitable for #10 AWG wire. Connection shall be made by wrapping the wire around the screw or tightening a clamp. Push-in type connections are not acceptable. Outlets may have built-in pigtail connection in lieu of screw connection.
3. Receptacle device fronts shall be white, except devices on emergency (standby) power circuits shall be red.
4. Outlets shall be Pass & Seymour 5362, or equal.
5. Ground fault circuit interrupter (GFCI) outlets shall be specification grade 20 amp duplex grounding receptacle suitable for mounting in a standard outlet box. A ground current of 5 milliamps ± shall trip the circuit open in less than 1/30 second. There shall be a test button and a reset button on the front. Internal circuits shall lock-out power to the device if damaged or incorrectly wired. Each GFCI outlet shall be tested after installation and results of the test submitted in writing. GFI receptacles shall be Leviton #8899, or equal with warning fault light.
6. Industrial type outlets shall be by Crouse-Hinds Appleton, or Russellstoll,

and shall be rated for the amps, volts, poles, and wires indicated on the drawings.

7. Special power outlets, not listed above, shall be standard NEMA configuration as noted on drawings and shall be of at least equal grade and quality to those listed above.

2.04 DEVICE PLATES

- A. Acceptable Manufacturers: Pass & Seymour, Hubbell, Leviton or equal.
- B. Plates for flush wiring devices, including telephone outlets, shall be smooth, nylon, or type 302 stainless where indicated. Wiring devices and device plates shall be the same manufacturer. Color shall be white or stainless steel.
- C. Provide switch and device plates with engraved designations wherever called for by words, set off in quotation marks near a switch location, or by symbol. If inscription is not detailed on drawings request it from the Resident Engineer. Engraving shall be in 1/8" high block type letters filled with black enamel.
- D. Finish plates for all surface mounted devices shall be pressed steel galvanized. Cover plates for flush mounted junction boxes in finished areas shall be selected by Resident Engineer.
- E. For surface interior outlet and junction boxes of the pressed steel knockout type, use" raised galvanized steel plates for devices and flat galvanized steel for blank plates.
- F. Provide a plate for each outlet, receptacle, switch, device and box.
- G. Each switch, receptacle device, etc. which is installed in an outlet box with coverplate shall have the panel and circuit number labeled on inside face of coverplate with indelible pen.
- H. Receptacles in wet locations shall be installed with a hinged outlet cover/enclosure clearly marked "Suitable For Wet Locations While In Use" and "UL Listed". A gasket shall be provided between the enclosure and the mounting surface, and between the hinged cover and mounting plate/base.
- I. Ganged devices shall have gang plates exactly matching the arrangement and quantity of devices. All plates shall fit the box perfectly with no field modification necessary. Plates on surface mounted boxes shall not overhang the box. All plates shall be manufactured specifically for the type of outlet, device and box to which they are applied.

2.05 MULTI-OUTLET ASSEMBLIES

- A. Multi-outlet assemblies shall be factory built and field assembled 2-piece surface raceways having outlets in the cover and shall be installed where shown on the plans. Exact mounting height and installation shall be coordinated closely with other trades involved.
- B. Multi-outlet assemblies shall be Wiremold #2000-"GA" series or equal, with outlets 12" on center and white finish.
- C. Outlets shall be specification grade, NEMA 5-15R, single, grounding, pre-wired type.
- D. Provide a code sized, insulated, grounding conductor throughout, sized for the largest circuit. Connect to each outlet.
- E. Systems shall be complete with all required matching fittings, couplings, bases, covers, boxes, and other material which shall be designed and manufactured to be used together without modification except for cutting bases and covers to length.
- F. All runs shall follow the horizontal and vertical building lines. Work improperly fitted, tightened, aligned or mounted will not be acceptable.
- G. Systems shall be complete with all required matching fittings, couplings, bases, covers, boxes, and other material which shall be designed and manufactured to be used together without modification except for cutting bases and covers to length.
- H. Submit components for review as required under "SUBMITTALS".

2.06 BACKBOARD

- A. Fire-resistant, 3/4" thick plywood with exterior waterproof glue. Mount with "A" side out. Prime and then paint with 2 coats of semi-gloss enamel to match color of adjacent surface. Do not paint over fire resistant label. Backboards shall be used only in interior locations.
- B. Securely mount backboard to wall structure. Use wood screws supplemented with toggle bolts in drywall with wood studs.
- C. Neatly arrange equipment on board and attach to board with round head wood screws.

2.07 LIGHTING CONTROL CABINETS

- A. Cabinets shall contain all components required for proper operation of the system shown. Install flush or surface as shown on the drawings.

- B. Fronts shall match panelboards. Cabinets shall be galvanized or painted steel where recessed, and finish matching the front where surface mounted. Fronts shall be secured with machine screws set flush, and doors shall have flush hinges and latches with locks to match panelboards.
- C. Provide an identification nameplate as specified in Section 16 30 00 - "Basic Materials and Methods."
- D. Wiring diagrams shown on the drawing for the various systems are to show basic operation of systems and are not necessarily suitable for construction of the panels. Exact wiring diagrams shall be mounted or provided on the inside of the cabinet.

PART 3 - EXECUTION

3.01 EQUIPMENT DISCONNECTS

- A. Provide equipment disconnect switches as indicated on drawings and as required to conform to Code. Safety switches shall be horsepower rated when used with motors. Toggle switches and toggle type manual motor starters without overload protection shall be used, within their ratings, in lieu of safety switches for motor disconnects where shown on the drawings.

3.02 INSTALLATION OF OUTLETS AND EQUIPMENT

- A. All outlets, wall switches or wiring devices may be located within a radius of 12 feet from original location shown on plans at no additional charge to the City if such request is made prior to installation of the rough-in for the item.
- B. Accurately place outlet boxes independently and securely fasten to the structure and, in concealed work, provide with plaster rings and set flush with finished surface of walls or ceilings.
- C. Coordinate the location and mounting heights of wall-mounted receptacles, light switches, fire alarm and signal devices with casework, shelving, furniture, and other equipment shown on Engineering and Interiors drawings and Americans with Disabilities Act (ADA), CBC, ANSI, and all other applicable codes governing the project. Conflict between electrical and Engineering drawings shall immediately be brought to the attention of the Resident Engineer for resolution before the installation of the devices.
- D. Outlet and junction boxes for interior use shall be metallic. Plastic, fiber or composition boxes will not be permitted. See section 16 40 00 "Wiring Methods, Raceways, and Conductors" for additional requirements.
- E. Protectively cover all devices, outlet boxes, cabinets, etc., before plastering and painting.

3.03 CONCRETE HOUSEKEEPING BASES FOR EQUIPMENT:

- A. Floor standing switchboards, transformers, cabinets, and similar equipment shall be mounted on concrete bases.
- B. Bases shall be 1½" high and shall extend 1" beyond edge of equipment unless specifically indicated otherwise. Exception: Housekeeping base for main switchboard shall not extend beyond front of enclosure. Verify size of equipment before fabrication of base.

3.04 FIRE RATED SEPARATIONS:

- A. Where electrical equipment or materials of this Division penetrate fire separations, maintain the integrity of the separation by providing Code approved fire rated penetrations or by providing an enclosure around the penetration which effectively continues the separation. Refer to Division 1 for supplementary requirements to these basic requirements.

3.05 SEISMIC RESTRAINTS

- A. Provide the work in compliance with the most stringent seismic requirements for Zone 4, of applicable Codes including the Title 24 and California Code of Regulations (CCR) California Building Code for essential services facilities, but with the requirements herein as minimum standards. Provide seismic restraints for materials and equipment of this Division, including (but not limited to) the items listed below. The attachments shall resist forces applied to the center of gravity of the components. Criteria shall be the operating weight of the item times .5g for horizontal forces and .33g for vertical forces. Design for the horizontal force to be applied in any direction. Wall mounted or suspended components shall, in addition, resist a downward force of 200 pounds minimum added to the operating weight.
 - 1. Switchboards, standby generator, automatic transfer switch, and all free-standing panels or cabinets and similar equipment.
 - 2. Suspended lighting fixtures.
 - 3. Lighting fixtures integral with ceiling or directly mounted to ceiling.
 - 4. Suspended conduit hangers and trapezes.
- B. Suspended electrical conduit, 2½" nominal size and larger, shall have individual hangers not longer than 12" from the top of the pipe to the bottom of the support for the hanger. If a longer hanger is used, Contractor shall apply seismic restraints. Supporting calculations and details shall be submitted for Title 24 compliance review.
- C. Four 12 gauge hanger wires shall be provided to each recessed troffer one located at each diagonal corner. In addition troffers shall be fastened with two

self tapping screws at each end of fixture through housing to main runners of the T-bar grid. Installation of these screws shall in no way deform the fixture housing. Provide spacers between the fixture housing and the T-bar grid where required.

- D. Provide bracing and anchorage of conduit hangers and trapezes in accordance with SMACNA published "Guidelines for Seismic Restraints of Mechanical Systems".
- E. Pendant, suspended, or stem mounted lighting fixtures shall have approved earthquake resistant hangers if code required and have movable joints at ceiling, and movable joints at ceiling and fixture when more than one stem is used per fixture. In addition, fixtures shall have stranded steel aircraft cable attached to the structure and to the fixture at each point of support, in addition to the fixture hanger. Cables shall be installed slack and shall be capable of supporting four times the vertical load. Fixtures shall be capable of swinging 45° in any direction. Where a 45° swing would cause the fixture to strike a wall or other object, suitable cables or other means of bracing shall be added to prevent the fixture from swinging against the other object.
- F. Carefully review the space available to insure that the restraint systems proposed will not impair the required equipment clearance, working space or access.
- G. Submit details of the seismic anchorages and receive approval of the Resident Engineer prior to installation. Details shown on the drawings are for reference only and may not be suitable for the actual equipment to be installed. Exception: Details for seismic anchorage may be omitted for equipment installed on a floor or roof and weighing less than 500 lbs, but the installation shall be subject to the approval of the Resident Engineer.

3.06 CHECKING AND TESTING OF EQUIPMENT AND SYSTEMS:

- A. Switchgear, panels, disconnects, contactors, and other equipment installed under this section shall be inspected for defects, and tested for proper operation.
- B. Enclosures and cabinets shall be checked for cleanliness inside and out and for defective or damaged finish.
- C. Systems shall be tested for short circuits, open circuits and wrong connections and shall be free from mechanical and electrical defects. Circuits shall be tested for proper neutral, phase rotation, and ground connections. Ground rods shall be tested for resistance and a report submitted listing each rod by location and its resistance to ground.
- D. GFCI outlets and GFCI branch circuit breakers shall be tested by applying a ground current of 5-milliamps, ± 1 ma, which shall trip the unit off in less than 1/40 second. Each test shall be recorded and the record shall include the type of test equipment used, results of test, location of device tested, date of test, and name of test technician. "Test" button operation shall be successfully demonstrated but will not be acceptable as a substitute for the trip test described.

- E. Where required or directed, systems shall be tested in the presence of the City to demonstrate that equipment furnished, installed or connected functions in the manner intended.
- F. The Contractor shall furnish all necessary instruments and equipment and all power sources and connections required for making required tests, and shall immediately correct any defective work at no additional charge.
- G. Bolted connections shall be torque tightened to manufacturer's specifications.
- H. For additional checking and testing of systems see the Sections where those systems are specified.

END OF SECTION 16300

SECTION 16400 - WIRING METHODS, RACEWAYS AND CONDUCTORS

PART 2 - GENERAL

2.01 SUBMITTALS

- A. List of material submitted with shop drawings.

2.02 ACCEPTABLE MANUFACTURERS

- A. Metallic Conduit: Triangle, PWC, Wheeling Steel, Youngstown Sheet & Tube Co., Allied Tube & Conduit Co., Wheatland, or approved equal.
- B. Non-Metallic Conduit: Carlon, CertainTeed, Pacific Western, or approved equal.
- C. Liquidtight Flexible Conduit: American Brass Co., Columbia Cable and Electric Corp., International Metal Hose, Appleton, or approved equal.
- D. Conduit Bodies and Fittings: Appleton Electric, Crouse Hinds, Gedney Electric Mfg. Co., Thomas & Betts, Steel City, or approved equal.
- E. Floor Boxes: FSR, Inc or approved equal.
- F. Wireways: Square D, Hoffman, Nepco, or approved equal.
- G. Wire and Cable (600V): BICC Cable, Anaconda, Okonite, Paronite, Circle, Phelps-Dodge, Simplex, General Cable, Cyprus-Rome, Pirelli, Triangle, or approved equal.
- H. Wire Pulling Compound: Minerallac, Wyrease, Ideal, or approved equal.
- I. Solderless connectors and lugs: Burndy, OZ, T&B, Dossert, or approved equal.
- J. Cable Supports: OZ, PLM, or approved equal.
- K. Underground Pullboxes, Handholes and Manholes: Newbasis, Jensen Precast, Utility Vault Co., San Diego Precast, or approved equal.

PART 3 - PRODUCTS

3.01 CONDUITS

A. General

1. Types and applications shall be in conformance with Codes and with this specification.
2. Minimum sizes: $\frac{3}{4}$ " underground or in concrete except that $\frac{1}{2}$ " is permissible where such a run terminates in a box containing a single wiring device. Homeruns shall be min $\frac{3}{4}$ ".

B. Types:

1. Rigid steel and intermediate steel conduit and fittings: Hot-dip galvanized with threaded couplings.
2. Electrical Metallic Tubing and fittings: Same finish requirements as for rigid steel. Use permitted only in dry, concealed locations (above suspended ceilings and inside stud walls) and interior exposed locations (10' minimum above floor) where not subject to mechanical damage. Fittings: Compression type Steel City #TC715 or T&B, #5123 series steel or malleable iron. Exception: Fittings for EMT 2" trade size and larger may be die-cast.
3. Flexible steel conduit and fittings: Same finish requirements as for rigid steel. Use permitted only for vibration isolation at equipment, for connections to lighting fixtures in accessible ceilings, and where indicated on drawings. Fittings: "Jake" or malleable iron squeeze type.
4. Liquidtight flexible steel conduit and fittings: Same finish requirements as for rigid steel except PVC jacketed. Use in lieu of standard flexible conduit in damp or wet locations. Fittings: Appleton ST series or American Brass Sealtite type U.A.
5. Rigid non-metallic conduit and fittings:
 - a. Polyvinyl chloride type EB (2" and larger sizes only) or PVC schedule 40. Use permitted only for underground runs. Turnups and risers from underground to above grade and elbows shall be PVC coated rigid steel. Conduit type for electric service conductors shall be subject to approval by SDG&E.
 - b. Provide a ground conductor and increase the conduit size if required to accommodate it. If plastic conduit is used for any part of a run, install a ground wire in the conduit for the full length between accessible junction boxes or cabinets.

c. All underground conduit shall PVC.

C. Installation - General:

1. Continuously check the work of the other Divisions to prevent any interference between the various installations. Should structural difficulties or work of other Divisions prevent the routing of conduit as indicated on the drawings, make necessary deviations there from as directed by the Resident Engineer.
2. Route conduit so as to clear beams, plates, footings and structural members, whether or not indicated on the plans. Do not run conduit through any structural member of the building, except as specifically directed by the Resident Engineer. Under no circumstances run conduits through column footings or grade beams.
3. Conduit installed in concrete work shall be carefully laid and rigidly supported in the forms in such a manner as to provide proper clearance so that all boxes and outlets will be in exact locations after concrete has set and forms have been removed.
4. Conduit shall not be installed in slab on grade.
5. Provide sleeves for conduits passing through poured concrete walls, and concrete or concrete fireproofed steel beams. Provide 18 gauge galvanized steel and place in correct position in forms before concrete is poured. Sleeve shall be at least 1/2" above finish floor all around. Pack void between sleeve and conduit as follows:
 - a. Where conduit is run between floors in a fireproof shaft, pack with Duxseal.
 - b. Where conduit penetrates a fire rated separation, any of the following packing methods may be used to restore the integrity of the separation if Code approved: cement, mineral fiber sprayed with a flame retardant coating, or Dow Corning 3-6548 RTV silicon foam, 3M caulk #CP25, 3M putty #303, or equal. Seal shall be water tight and shall be accomplished prior to wire pulling.
6. Wherever conduit crosses a structural expansion joint, or wherever conduit is connected to two separate structures, provide a suitable expansion joint. Crouse-Hinds "XD" or equal.
7. Provide floor, wall and ceiling plates for all conduit passing through walls, floors or ceilings. Plates shall be prime coated cast iron, split-ring type.
8. Do not run conduit closer than 6" to any uninsulated hot water or steam pipe, heater flue or vent. If pipe is insulated, the clearance may be

reduced to 2". Provide condulets for exposed runs of conduit where junction, bends or offset are required, whether such condulets are indicated on the plans or not. No bends are permitted around corners, beams, wall or equipment. No running threads are permitted. Run a die over factory threads to ensure that they are clean and free from all coating material and that good metallic contact with the fittings is obtained. Paint the exposed portion of field cut threads with a suitable zinc rich paint.

9. Upon completion of each run of conduit, test the run and clear it of any obstructions. Plug each conduit end with conduit pennies and bushings or manufacturers seals until ready for pulling wire. Provide a 200 pound test nylon or polypropylene pull rope in each empty conduit.
10. Where panels and cabinets are installed flush with walls, extend empty conduits from panel to an accessible space above or as indicated on plans. Provide a minimum of one 3/4" conduit for each three single pole spare circuit breakers or spaces, or equivalent, but not less than three conduits.
11. Equipment requiring a floor service connection shall be provided with a conduit coupling in the conduit set with the top of the coupling flush with the top of the slab.

D. Installation - Above Grade:

1. All conduit above grade shall be EMT metallic. Flex conduit is not allowed unless otherwise noted.
2. Run all conduit concealed, except as otherwise indicated. All exposed interior and exterior conduit runs shall be approved by the electrical engineer and Engineer prior to installation.
3. Run exposed conduit parallel with or at right angles to walls or as directed by the Resident Engineer.
4. Where conduits are placed in partitions necessitating cutting of any structural member, provide metal ties as directed by Resident Engineer in accordance with applicable structural requirements.
5. Conduit installed on fan units or other equipment shall not obstruct any removable panel, access door or control.
6. Conduit passing through the roof: Flash and counterflash. Method shall be compatible with roofing system and acceptable to the Resident Engineer.
7. Conduit 1" and smaller over metal channel for lath and plaster or acoustical ceilings shall be tied to the supporting channels with 12 gauge

galvanized tie wire spaced at a maximum of 10' intervals. Conduits shall not obstruct accessibility of ceiling or removal of panels. Do not use ceiling wires for support. Support exposed conduit 1" and smaller from building with T & B, or equal, pipe straps spaced at a maximum of 10' intervals. Attach supports with machine screws, nuts and lock washers in metal; wood screws in wood; and expansion shields or inserts in masonry or concrete. Perforated strap iron shall not be used. Conduits larger than 1" shall be suspended on pipe racks with Grinnell No. 107B, or equal, split-ring hangers and rods from concrete inserts.

E. Installation - Below Grade, General:

1. Only PVC conduit shall be used underground.
2. Bury underground conduit (except under buildings) to a 24" minimum depth below finished grade to top of conduit or concrete envelope (when encased) except that for conduit below a road or driveway the dimension shall be 30" minimum. Deeper burial depths shall be as indicated on drawings, or as required by SDG&E.
3. Encasement:
 - a. Provide a 3" thick (minimum) concrete cover around conduits below grade. Provide not less than 2" of concrete between adjacent conduits in the same encasement except that power conduits shall be separated 3" minimum from signal (control/instrumentation/ communications/public telephone) conduits.
 - b. Provide non-metallic spacers to prevent deflection of the conduits. Tie conduits to spacers and anchor to prevent floating or displacement during pouring of concrete.
 - c. Reinforce the concrete envelope at all points where conduits cross fill or loose soil, or water, gas, storm or sewage mains. Reinforcement shall consist of 3/4" reinforcing rod between each two ducts in bottom layer, and one rod laid at each lower corner of concrete envelope. Lay rods parallel to conduits, centered between conduits and placed halfway between bottom of conduit and bottom of concrete envelope. Extend reinforcing 4 feet beyond each end of fill or pipe main.
 - d. Exception: Provide utility service conduits in accordance with this Section and with serving utility requirements except that the portion underground beyond 5 feet from the building need only meet serving utility and Code Requirements.
 - e. Exception (Branch Circuit Conduits): 1 1/4 " and smaller sizes, may be installed below slab encased in 2" thick encasement. PVC

Schedule 40 may be installed below floor slab with 6" of sand around in lieu of concrete encasement. PVC Schedule 40 may be installed below grade in unpaved or planted areas with 6" of sand below and 2" of lean concrete cap on top, in lieu of concrete encasement.

4. The ends of all underground conduits entering buildings shall be capped or sealed with acceptable compound, such as Crouse Hinds "Chico A", after installation of wire. Cap empty conduit stubouts at both ends. In landscaped areas, terminate in a waterproof J-box.
 5. Provide a plastic warning tape in the backfill over the ductlines and approximately 12" below grade. Tape shall be run continuously along the entire length of the underground utility lines. Tape shall be polyethylene plastic with metallic tracer wire manufactured specifically for warning and identification of buried utility lines. Tape shall be of the type provided in rolls, 6" minimum width, color coded for electric lines (red), with warning and identification imprinted in bold black letters continuously and repeatedly over entire tape length.
 6. Risers to grade shall be PVC schedule 80. Paint such risers with a compatible plastic paint, of color to match adjacent structure. Exception: Risers to base of exterior lighting poles may be PVC schedule 40.
 7. At transitions between different conduit types, ream the smaller inside diameter conduit to a smooth taper to prevent conductor damage.
- F. Installation - Below Grade, Under Building:
1. Underground conduit under buildings shall be PVC schedule 40. Schedule 40 is not a substitution for steel elbows and steel conduits at footings, walls and stub-ups.
- G. Installation - Below Grade, Not Under Building:
1. Special conditions for use of Type EB plastic conduit:
 - a. The finished raceway systems must retain a circular cross section and must be proven clear by mandrelling.
 - b. Maximum change of direction for field bends shall be 22E. All bends in excess of 22E shall be factory formed or shall utilize factory formed bend segments or couplings.
 - c. Type EB is limited to raceways 3" and larger and is not a substitution for steel elbows and steel conduits at footings, walls and schedule 40 PVC under buildings or building slabs.

3.02 WIREWAYS AND WIRING GUTTERS

- A. Construct of galvanized sheet steel which has been primed and given a final coat of grey enamel. Covers shall be hinged and fastened with brass machine screws spaced not more than 12" apart. When covers are on the bottom, provide removable wire supports not more than 3' apart. Sections shall be securely attached to each other and to cabinets, boxes, or duct to insure ground continuity. Securely attached or support the wireway or gutter from the building structure at points no more than 4' apart. Size shall be as indicated on drawings unless larger is required to conform to NEC standards. When suspended from roof or ceiling, the support spacing shall be not more than 4' and 3/8" diameter rods shall be used. When attached to wall, use expansion anchors or toggle bolts (wood plugs are not acceptable.)
- B. Power gutter assemblies: If used, mount gutter to a 3/4" plywood backboard. Gutter and backboard shall be sized to accommodate the equipment. Arrange equipment neatly and symmetrically on backboard.

3.03 OUTLET, JUNCTION AND PULL BOXES

- A. Outlet boxes, junction boxes and covers shall be galvanized one-piece pressed steel knockout type. Exception: Exposed conduit boxes shall be cast metal if connected to rigid or intermediate conduit.
- B. The size of each box for lighting and receptacle outlets shall be determined by the number of wires or conduits, or size of conduits, entering the box, but shall be no less than 4" square X 2-1/8" deep unless prohibited by structural conditions.
- C. Provide pull boxes and junction boxes where indicated on plans or where required by Code. Size to properly accommodate conductors with Code requirements as minimum. When necessary pull and junction boxes are not indicated on drawings and are to be placed in a public space, coordinate the location with the Resident Engineer. Boxes of outlet box size which are in public spaces shall be flush mounted and shall have single gang ring and blank device plate painted to match adjacent surface.
- D. Equip outlet boxes with plaster rings as may be required.
- E. Use approved factory-made knockout seals in all boxes where knockouts are not intact.
- F. Use offset bar hangers fitted with fixture studs to support outlet boxes in stud partitions and in furred or plastered ceilings.
- G. Provide exterior semi-recessed lighting fixture backboxes prior to stucco and lath application.
- H. Floor outlet boxes shall be combination power/telephone/data type as indicated. Provide non-metallic covers, color to be selected by Engineer.

3.04 WIRE AND CABLE (600 volt)

- A. General: Deliver wire and cable to the site in their original unbroken packages, plainly marked or tagged with UL label, size and insulation type, and manufacturers name.
- B. Conductors: Soft drawn copper, stranded. Minimum size No. 12 except as noted. Aluminum conductors will not be permitted.
- C. Insulation: Thermoplastic type THWN or THHN. Use conductors with 150°C insulation in abnormally high ambient temperatures as applicable. Type THHN may be used in dry locations. All ampacities shall be based on 75 °C maximum temperature.
- D. Connections and Terminations:
 - 1. Use Pressure indentor type or self-threading spring wire connectors for sizes up to the catalog capacity of the connector. 3M Scotchlok, Ideal Supernut or Buchanan B-Cap.
 - 2. Use clamp type pressure connectors complete with clip held insulating cover for large sizes or capacities. As manufactured by Burndy, O.Z. or T & B.
 - 3. Wrap joints with two layers of plastic tape, half lapped, Scotch No. 33. Underground (below grade) splices shall be epoxy encapsulated.
- E. Installation:
 - 1. Install wiring in conduit unless noted otherwise. Raceways shall be clean and dry before cable installation.
 - 2. Do not use mechanical devices for pulling No. 2 AWG and smaller wire. Torque limiting types may be used for No. 1 and larger sizes but tensions shall not exceed cable manufacturer's recommendations.
 - 3. Pulling compound: Minerallac #100, Wyrease or Ideal 77 Yellow Or equal.
 - 4. Form wire into pigtail splices with 8" leads for connections to wiring devices and fixtures.
 - 5. Wire and cable tags: Provide wire marker on each conductor in electrical panel, pull box, outlet, and junction box. This includes all disconnects and connections. If more than one neutral conductor is present, mark each related circuit # and Panel #. Tags may be pressure sensitive plastic, embossed stainless steel or brass ribbon.
- F. Color Coding:
 - 1. General: Insulation for wires No. 6 and smaller shall be factory color coded and for larger sizes where available from the factory. When factory

color is not available provide 1" band of colored pressure sensitive tape on each end. Colors shall be consistent throughout the respective system.

2. Power Circuits: 208/120-volt system
Phase A - Black

Phase B - Red

Phase C - Blue

Neutral - White

Ground - Green

PART 4 - EXECUTION

4.01 GROUNDING AND BONDING

- A. Ground and bond the electrical system and equipment in accordance with the most stringent of applicable codes but with the requirements herein and on drawings to be the minimum standards.
- B. System Grounding Electrode:
 1. Provide a "UFER" made electrode. The electrode shall comprise a 50' #3/0 bare copper cable imbedded in the concrete foundation footing. Locate the cable 3" up from bottom of the foundation. Installation shall be in accordance with NEC 250-50.
 2. Where available on the premises and in accordance with Code requirements, the water piping system and metal building frame shall be bonded together to form a grounding electrode system as described in NEC 250-50.
 3. Test: Resistance to ground of the electrode shall be a maximum of 10 ohms. If the resistance is in excess of 10 ohms, provide one or more ground rods bonded to the electrode described hereinbefore until the required resistance is obtained. Space rods a minimum of 6' apart. Bond wire shall be the same size as the grounding electrode connector. Test the electrode using the "fall of potential" method (described in IEEE No. 142) using a Biddle Earth Megger. Perform test not less than 48 hours after rainfall. No conductive agents, chemicals, water, etc., shall be applied to improve grounding.
- C. Transformer (Individually mounted) Grounding Electrode: Provide an electrode in accordance with NEC 250-30(c) except that plate or pipe electrodes shall not be used.
- D. Building Disconnect Equipment Grounding: Provide a grounding electrode and

connection to the building disconnect equipment in accordance with NEC 250-32 unless NEC 250-32 exception (a.) is complied with. The electrode may be any type conforming to NEC 250-H. This grounding requirement is not in lieu of the equipment grounding conductor required in a non-metallic conduit feeder to the building.

- E. Equipment grounding: Provide a separate grounding conductor in the same raceway with all feeder and all branch circuit conductors in accordance with NEC 250-E&F.
- F. Bonding: In accordance with NEC 250-G. Piping system bonding in accordance with 250-104 and 50.
- G. Ground rods: 3/4" diameter X 10' copper clad steel. Drive full length into earth with the top 3" minimum below grade or underside of slab.
- H. Connections: Multiple bolt silicon bronze connectors, Burndy or O.Z. Electric; or exothermic welded, Burndy or Erico Cadweld products Or equal.

END OF SECTION 16400

SECTION 16600 - LIGHTING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Provide U.L. listed lighting fixtures complete with lamps at light outlets indicated on the drawings. Each fixture shall bear the U.L. Label, and shall comply with Code Requirements. Exterior fixtures shall be U.L. approved for the location and shall be so labeled.
- B. Fixtures are listed and described in the Fixture Schedule and in the following paragraphs. Fixture catalog numbers are to be used as a guide only and be understood to be preceded by the words "similar to" and followed by the words "except as modified by the total fixture description both text and pictorial". Provide accessories, features and adaptations necessary to meet the requirements of the description.
- C. If the fixture designation is omitted from a light outlet, assume a fixture of the type used in similar areas in preparing the Bid. Confirm type with Engineer prior to ordering.

1.02 SUBMITTALS

- A. Type written material list with all catalog numbers indexed to the drawings and specifications.
- B. Catalog cuts of all lighting fixtures, ballasts, and lamps.
- C. Shop Drawings

1.03 ACCEPTABLE MANUFACTURERS

- A. Ballast: Advance, Valmont Electric, Jefferson, Universal, or Sola, unless specifically indicated or approved equal.
- B. Lamps: Sylvania, General Electric, N.A. Phillips or Venture, unless specifically indicated or approved equal.

1.04 LAMP REPLACEMENT

- A. Replace lamps which burn out after City's use or acceptance of the project or of an area in the case of beneficial occupancy.
- B. Lamps (except incandescent) which burn out within 1 year.
- C. Incandescent lamps which burn out after usage which is less than 80% of rated life.

PART 2 - PRODUCTS

2.01 GENERAL PRODUCTS REQUIREMENTS

- A. Fixtures shall be complete with all required accessories and equipment, including lamps, necessary for a complete installation.
- B. Fixtures and luminaires of one type shall be of one manufacturer and of identical finish and appearance. All lamps of the same type shall be by the same manufacturer.
- C. Fixtures and trims shall be assembled and installed with care to avoid and eliminate light leaks. Where necessary, gasketing, patching, or other effective means shall be used. There shall be no entry for insects or dirt into any fixture.
- D. Totally enclosed lamp compartments of HID luminaires located outside shall have activated charcoal filters to allow breathing without transfer of contaminants.
- E. Verify the ceiling or wall construction, and the mounting requirements of each fixture and provide plaster frames, special flanges, concrete pour housings, boxes, brackets, adapters, hangers, stems, canopies, special ballasts or lenses, and other materials necessary to properly purchase and mount the fixture.
- F. Two hanger wires shall be provided for each recessed troffer. Locate at diagonal corners.
- G. Where required, all fixtures shall be provided with tamper resistant screw.
- H. Submit shop drawings on all fixtures as required under "Submittals." "Shop drawings" may be catalog data sheets if complete information including mounting hardware is shown and identified. Shop drawings shall include mounting details and show compatibility with the ceiling, pole, bracket or other equipment.
- I. Finish: Treat surface mounted fixtures and exposed trim of recessed fixtures with a rust-inhabitant process. This process shall be Bonderlite or Oakite Cryscoat or equal zinc phosphate bonding process. Refer to PAINT, FINISHES, AND COLORS Subsection.
- J. Optical Systems: Lighting fixtures for use with MH lamps shall have the optical system specifically designed for a clear MH lamp of the wattage indicated.
- K. Reflectors for multi-phosphorous lamps, including all compact fluorescent lamps, shall be low-iridescent finish to minimize rainbow effect on reflector.
- L. Ballast Wiring: Where multiple level switching of fluorescent fixtures is indicated on the drawings, wire ballast for symmetrical grouping of lamps. For example in four lamp fixtures, two inner and two outer lamps shall be switch controlled. Two

three-lamp fluorescent fixtures mounted end to end shall have the center lamps connected to one two-lamp ballast in either fixture.

- M. Fixture Pendants: Pendant fixtures shall have metal stems. Non-metallic (cord type) stems will not be permitted. Where a pendant fixture has a standard non-metallic stem, replace it with a metal stem before installation.
- N. All pendant fixtures shall be supported by metal stems provided with ball swivel hangers at both ends of stems which permit lateral movement to 45 degrees maximum from the vertical. Provide a stainless steel safety cable inside of each stem securely attached to the fixture body and to the building structure independent of the outlet box.

2.02 LIGHT TRANSMITTING PLASTICS

- A. All plastic shall be 100% virgin acrylic.
- B. Pattern #12 lenses shall be minimum .125" thick overall with .08" prism depth.
- C. Provide lenses for soffits and lighting coves according to the following schedule. Lens dimensions shall be selected based on actual dimensions of the installed soffit or cove.
- D. 5/8" x 5/8" x 7/16" deep aluminum louver. A.L.P. series Para-Lite 2.
- E. Locations: Soffits in all toilet rooms. See Engineering drawings.

2.03 POLES

- A. All poles shall be designed by the pole manufacturer to safely support the total Effective Projected Area (EPA) of luminaires, arms and accessories with a wind rating of 100 MPH with 1.3 gust factor.

2.04 BALLAST

- A. Electronic Fluorescent Ballasts:
 - 1. All ballasts shall be UL listed, Class P, High Power factor (above 90%), sound rated A and shall be warranted for a minimum of two years from date of installation, including a replacement labor allowance.
 - 2. Ballast input wattage for a two lamp F032/T8/32 watt application shall be 58 watts or less.
- B. Electronic Ballast:
 - 1. Provide electronic ballasts in all fluorescent fixtures for which they are available. Electronic ballasts shall be high power factor, sound rated 'A', contain no PCB and be listed by U.L. Ballasts shall have fewer than 32

components and operate at 20 to 35 KHZ. Ballast shall be fully potted and within steel case, operating temperature of ballasts shall not exceed 80EC at any point on the case. Ballast shall be surge and transient protected to 6000 volts and shall comply with FCC or NEMA limits as to EMI or RFI and not interfere with the operation of other electrical equipment. Ballast shall carry a three year unconditional warranty for labor and materials. Ballasts shall be approved by the local utility company for energy rebates.

- C. Emergency battery pack ballasts for fluorescent lighting fixtures shall consist of an automatic power failure device, single pole test switch, and fully automatic solid-state charge and indicator light in a self-contained power pack furnished by the fixture manufacturer as an integral part of the fixture. Electronic circuitry shall be self-testing in design and automatically test the unit every 30 days for 30 seconds, and initiate a 90 minute discharge test once a year. An embedded microcontroller will continually monitor battery charging current and voltage. Audible alarm and a light-emitting diode will be provided to indicate test results and status conditions. Charger shall be either trickle, float, constant current or constant potential type, or a combination of these. Battery shall be maintenance free nickel cadmium type with capacity to supply power to one or two lamps for each fixture in emergency mode for 90 minutes minimum with a light output of 1100 lumens minimum. Unit shall be capable of operating a dead fluorescent lamp.
- D. Fluorescent and HID ballasts and emergency battery pack ballasts shall be guaranteed for three years.

2.05 LAMPS

- A. Lamp wattage, type, color and style shall be as shown on the fixture schedule. All lamps of the same type shall be by the same manufacturer.
- B. Incandescent lamps shall be inside frosted, 130 volt rating.
- C. Fluorescent lamps shall be 32 watt, 2850 lumen energy saving type T8, 4100K or equal, unless noted otherwise in the fixture schedule.
- D. H.I.D. lamps shall be by GE, Venture, Sylvania, or N.A. Phillips, Osram, Mercury lamps shall be color corrected. Metal halide lamps shall be specifically selected to provide a uniform match of lamp color appearance. The Engineer shall be the judge of what constitutes reasonable uniformity of color.

2.06 LENSES

- A. Light transmitting plastics:
 - 1. All plastic shall be 100% virgin acrylic. Pattern #12 lenses shall be minimum .125" thick overall with .08" prism depth.

B. Glass:

1. Glass used for lenses, refractors, and diffusers in incandescent lighting fixtures shall be tempered for high impact and heat resistance; the glass shall be crystal clear in quality with a transmittance of not less than 88%. For exterior fixtures use tempered Borosilicate glass, Corning #7740 or equal. For fixtures directly exposed to the elements and aimed above the horizontal, use Corning Vycor glass or equal.

2.07 EMERGENCY/EGRESS FIXTURES

A. Exit Sign Fixtures:

1. Emergency exit sign fixtures with illumination by LED's (Light Emitting Diodes), providing even illumination of letters through an optical diffuser to meet or exceed requirements of NFPA Life Safety Code 101 UL-924, and the OSHA code. The power supply shall be dual input 120/277V 60 Hz. All components shall be solid state, with surge protection and short circuit protection and each LED shall be individually driven such that failure of one will not affect another.

B. Self-Contained Emergency Lighting Unit:

1. Provide compact, wall mounted emergency lighting unit containing the following:
 - a. Six or 12 volt nickel cadmium battery capable of supplying 50 watts for a period of at least three hours, with guaranteed life of at least five years.
 - b. FULLY DISCHARGED to FULLY CHARGED period of 12 hours.
 - c. Two sealed beam 25 watt, fully adjustable lamps mounted on unit.
 - d. Relay automatically energizing lights upon loss of 120/277 volt, 60 Hz power.
 - e. Toggle switch in each lamp circuit so that each lamp may be turned off individually.
 - f. Time delay relay to keep units energized for ten minutes after normal lighting is restored.
 - g. Protective circuits shall include low voltage battery disconnect, and brownout protection.
 - h. Each unit shall have diagnostic circuitry which shall constantly monitor the charger performance and battery voltage.

- i. Each unit shall be programmed to exercise the battery and check emergency operation by automatically performing a 5 minute discharge/diagnostic test every 28 days and a 30 minute discharge/diagnostic cycle every six months.

PART 3 - EXECUTION

3.01 FIXTURE MOUNTING

- A. Provide fixture supports, including supports for any lighting fixtures furnished by others. Design (including the frames) of recessed fixtures shall be compatible with the ceiling construction. Verify the type of ceiling and suspension method prior to ordering fixtures. Engineers favorable review of the shop drawings for both the ceiling system and the lighting fixtures, with "No Exception Taken" or "approved" on the Engineer's stamp, will not relieve the Contractor of the ceiling/lighting fixture compatibility requirement.
- B. Mount pendant fixtures at the heights indicated on the drawings, unless otherwise directed by Engineer. Fixture shall be approved earthquake resistant hangers if code required and have movable joints at ceiling and fixture when more than one stem is used per fixture. Support fixtures mounted on suspended ceiling directly from the structure above using a #9 wire. The runner shall not be used in the support linkage, but shall be bypassed with a suitable device.
- C. Securely clip or bolt recessed fluorescent fixtures to ceiling support system by a Code approved method.
- D. Attach surface fixtures mounted on accessible panel type suspended ceiling to main runner with a positive clamping device made of minimum 14 gauge steel. Rotational spring catches will not be permitted. Attach a suspension wire to the main runners within 6" of the location so that the fixture loads the runner (at least two wires per fixture). Mount fixtures on combustible ceilings on spacers as required by Code unless Code approved for mounting directly on ceiling.

3.02 FIXTURE INSTALLATION

- A. Provide outlet boxes for recessed fixtures in a manner approved by the code. Provide appropriately temperature rated insulation for branch wires to recessed fixtures.
- B. Provide fixtures in a manner to prevent light leaks. For exterior fixtures provide seals and gasketing to prevent insect entry into the fixtures. If soffit recessed fixtures are not available with a sealed housing, provide effective gasketing for the lens and for the lens trim/soffit surface interface.

3.03 LIGHTING STANDARDS AND BASES (FOOTINGS)

- A. Carefully clean out the edges and corners at the bottom of the excavations to give a level compacted floor for the footing. Shape the footing by forms from the top down to 6" below grade.
- B. Conduits and anchor bolts shall be held in place with templates or other approved means during placing of concrete, and shall rise vertically in the base.
- C. Provide a 1/2" chamfer around the perimeter of the top of the base and dress the green concrete (sides and top) with a sacking finish. Top surface shall be dead level so the flange of the standard can bear directly against the concrete. Stainless steel shims may be used for minor adjustments required to make the standard plumb by they shall have adequate bearing area against the concrete and shall not extend beyond the flange cover.
- D. If the double nut method of plumb adjustment is used, the bottom nuts shall be set-in flush with the top of the footing with only enough blockout around each nut to allow it to spin upward. At completion of plumb adjustment a portion of the edge of flange shall touch the concrete. The space between the flange and the concrete shall be grouted.
- E. If the flange cover set screws do not bear against the flange because of excessive plumb adjustment, affix an extension piece to the underside of flange to give a solid bearing surface for the set screws.

END OF SECTION 16600

SECTION 16800 - UTILIZATION EQUIPMENT

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Scope Of Work

1. This Section covers service to and connection of all equipment furnished and installed under other Divisions or by the City.
2. Provide service and connections to all equipment shown on drawings or described herein including the NIC equipment which is to be furnished and installed by others. If NIC equipment shown or described is not installed prior to completion of construction, provide a pull box and cable pigtails as directed by the City for the future connection of the equipment.
3. The electrical components of equipment, such as motors, motor starters which are integral with the equipment, control or push-button stations, float or pressure switches, solenoid valves, and other devices functioning to control equipment, and control wiring and conduit (regardless of voltage), are part of the work of other Divisions, except as specifically noted otherwise. Refer to drawings and specifications of the other Divisions for definition of the extent of work not described by Division 16 drawings and specifications but which is a part of the work of Division 16.

B. Motor Protective Data Tabulation

1. Prepare a tabulation of motor data which shall include the following:
 - a. Motor designation as indicated on plans.
 - b. Motor data shown on the motor nameplate.
 - c. Setting of motor short circuit protection.
 - d. Motor starter size.
 - e. Overload element ratings.
2. Submit three copies of the tabulation for review and permanent record to be referred to in the event of failure of any motor either within or beyond expiration of the warranty period.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Provide the necessary power supply conduit and wiring to all equipment.

- B. Provide equipment disconnect switches as indicated on drawings and as required to conform to Code. Safety switches shall be horsepower rated when used with motors. Toggle type manual motor starters without overload protection may be used, within their ratings, in lieu of safety switches for motor disconnects.
- C. Verify ratings of fuses as indicated on drawings for conformance with the recommendations of the manufacturer of the equipment actually installed. Revise if necessary.
- D. Provide all rough-in work for equipment from approved shop drawings to suit the specific requirements of the equipment.
- E. Provide manual thermal protection for all motors for which a magnetic motor starter is not indicated and which are not integrally equipped with thermal protection.
- F. Provide 120V power to each control panel and time clock requiring a source of power to operate.

PART 3 - EXECUTION

3.01 GENERAL

- A. Execution shall conform to pertinent requirements of other sections of this Division.

3.02 INSTALLATION

- A. The locations of electrical service equipment and the equipment points of connection as indicated on drawings are approximate only. Rough-in installation shall be in accordance with approved rough-in and/or shop drawings prepared by the Sub-Contractor/Supplier of the equipment. The work of this Division shall include direct responsibility for the correct placing and connection of electrical work in relation to the work of other Divisions.
- B. Provide special receptacles and matching attachment caps where cord connections for equipment are required.

END OF SECTION 16800

SUPPLEMENTARY SPECIAL PROVISIONS
APPENDICES

APPENDIX A
MITIGATED NEGATIVE DECLARATION

APPENDIX B
FIRE HYDRANT METER PROGRAM

**U.S. DEPARTMENT OF HOUSING AND
URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM
AND
CITY OF SAN DIEGO, CALIFORNIA
LDR NO. 98-0150**

FINDING OF NO SIGNIFICANT IMPACT

Pursuant to: 42 U.S.C. 4332(2) (c), 23 U.S.C. 128(a), 24 CFR Part 58

MITIGATED NEGATIVE DECLARATION

Pursuant to: California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000 et seq.)

SUBJECT: APPROVAL OF COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) FUNDING of \$85,000 from Fiscal Year 1998, the 24th Entitlement Program Year park improvements for the proposed North Chollas Community Park to include paved park entry roads with gated access, park signage, security lighting, paved parking areas, pedestrian hardscape walkways and plaza areas, restrooms and snack bar facility, children's tot lot, turfed mutli-purpose fields including skinned infield areas, unimproved nature trail system, disabled access trail and exercise walk, turfed open play and picnic area, paved court areas, open lawn area for unleashed dog use (with surrounding fencing), overlook areas, enhanced riparian/creek areas and revegetation of disturbed native habitat areas. The 94-acre site is zoned OS-P and it is located on College Grove Drive between 54th Street and College Ave. in the Mid-City Community Planning Area within the City of San Diego. Applicant: The City of San Diego, Park and Recreation Department, Northern Division.

I. PROJECT DESCRIPTION:

See attached Environmental Assessment/Initial Study

II. ENVIRONMENTAL SETTING:

See attached Environmental assessment/Initial Study

III. FINDING:

In compliance with the National Environmental Policy Act (NEPA) and

HUD/CDBG Environmental Review Procedures, the California Environmental Quality Act (CEQA) and State CEQA Guidelines. The City of San Diego has conducted an Environmental Assessment (Initial Study pursuant to CEQA) and has determined that the proposed project will not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Report/Statement.

IV. DOCUMENTATION:

The attached Environmental Assessment, compiled in accordance with CEQA and NEPA, documents the reasons to support the above findings. An Environmental Record is available for review and is on file at the Land Development Review Division, Fifth Floor, City Operations Building, 1222 First Avenue, San Diego, CA 92101.

V. MITIGATING MEASURES:

1. All lighting for the proposed ballfields shall be directed away from the habitat area. Where necessary, adequate shielding of the light source from the ballfields will be used to protect the City's Multi-Habitat Planning Area (MHPA) and sensitive species from night lighting. This requirement should be clearly shown/noted on any improvement plans. In addition, all outdoor, night time recreational activities shall cease by 11:00 p.m. and light fixtures shall be equipped with automatic timing devices.
2. All proposed parking lots adjacent to the habitat areas must not drain directly into the Chollas Creek channel. All parking areas must prevent the release of toxins, chemicals, petroleum products, and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA. This will be accomplished by implementing a variety of methods including natural detention basins, grass swales or mechanical trapping devices. This requirement should be clearly shown/noted on any improvement plans. These systems should be maintained once a year, or as often as needed, to ensure proper functioning. Maintenance should include dredging out sediments if needed, and adding chemical neutralizing compounds (e.g. clay compounds) when necessary and appropriate.
3. Provision shall be made to inform the construction contractor(s), prior to the bidding process, about the biological constraints of this project. The contractor(s) shall be responsible for impacts to sensitive biological resources beyond those identified in this report which occur as a direct result of construction activities. All sensitive habitat areas to be avoided shall be clearly marked on project maps provided to the contractor. These areas shall be designated as "no construction" zones. Before a grading

permit is issued these areas shall be flagged by a qualified biologist prior to the onset of construction activities. In some cases, resources may need to be fenced or otherwise protected from direct or indirect impacts.

4. A contractor education program shall be implemented to ensure that contractors and all construction personnel are fully informed of the biological resources associated with this project. This program shall focus on a) the purpose for resource protection, b) contractor identification of sensitive resource areas in the field (e.g., areas delineated on maps and by flags or fencing), c) sensitive construction practices (see numbers 3 through 10, below), d) protocol to resolve conflicts that may arise at any time during the construction process, and e) ramifications of noncompliance. This program shall be conducted by a qualified biologist, and shall be a requirement for all construction personnel.
5. Prohibited activities within drainages or other wetland areas (other than in the construction zone) include staging areas, equipment access, and disposal or temporary placement of excess fill.
6. Vehicles shall use existing access roads to the degree feasible. Where or temporary access is required, all vehicles shall use the same route, even if this requires heavy equipment to back out of such areas. Before a grading permit is issued all access routes outside of existing roads or the construction corridor shall be clearly marked (i.e. flagged and/or staked). All access roads outside of existing roads or the construction corridor shall be delineated on the grading plans and reviewed by a qualified biologist.
7. If topsoil must be stockpiled, this shall be done in disturbed areas presently lacking native vegetation. Before a stockpile or grading permit is issued, stockpile areas shall be delineated on the grading plans and reviewed by a qualified biologist and by the City Engineer.
8. Staging areas shall be located in disturbed habitat, to the degree feasible. Staging areas are prohibited within sensitive habitat areas. Prior to issuance of a grading permit all staging areas shall be delineated on the grading plans and reviewed by a qualified biologist. If staging areas outside the construction footprint are used, they shall be surveyed for biological resources prior to their use.
9. Fueling of equipment shall take place within existing paved roads, and not within or adjacent to drainages or native habitats. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. "No-fueling zones" shall be designated on construction maps and shall be situated a minimum distance of 54 feet from all drainage. Specified vehicle fueling and maintenance procedures and hazardous materials storage

areas shall be designated to preclude the discharge of hazardous materials used during construction (e.g., fuels, lubricants, and solvents). Such designations shall include specific measures to preclude spills or contain hazardous materials, including proper handling and disposal techniques, and the use of temporary impervious liners and or/ barriers to prevent soil and water contamination. The described program to control and contain construction related hazardous materials shall be subject to review and approval by the Development Services Manager.

10. Construction in or adjacent to sensitive areas shall be appropriately scheduled to minimize potential impacts to biological resources; avoidance of the nesting season for the threatened California gnatcatchers shall be strictly avoided.
11. A grading plan that incorporates runoff and erosion control procedures to be utilized during all phases of project development shall be prepared. To the extent practical, the construction activities shall be sequenced to reduce the amount and duration of soil exposed to erosion by runoff. The erosion control plan shall include the use of hay bales, silt fences, siltation basins, or other devices necessary to stabilize the soil in denuded or graded areas during the construction and revegetation phases of the project.
12. A site restoration plan shall be prepared and implemented for all areas where vegetation shall be temporarily removed for construction. The plan shall include appropriate plant mixes and methods for reestablishing native vegetation consistent with pre-existing vegetation communities. Plan preparation shall be coordinated with a City biologist.
13. Appropriate fencing and signage shall be installed to restrict access and avoid potential impacts to the sensitive resources remaining in the undisturbed portions of the site.
14. Preserve biological features of interest or sensitivity in the park design and incorporate them into the design of the nature trail.
15. Before the issuance of a grading permit impacts to the Diegan coastal sage scrub would require mitigation at a replacement ratio of between 1:1 and 1.5:1 depending upon the location of the mitigation site inside or outside the MHPA (City of San Diego, 1997, revised). Mitigation for impacts to sage scrub could be fulfilled by either on-site creation of habitat, offsite creation of habitat or off-site acquisition of existing high quality habitat. On-site mitigation would typically require a replacement ratio of 1.5:1 (5.93 acres) because the park is outside of the MHPA. However, on-site mitigation at a ratio of 1:1 may be acceptable (3.95 acres) due to the connectivity with the on-site open space/mitigation areas

and the adjacent MHPA. The on-site mitigation could be accomplished by restoring the ruderal areas in the proposed open space to high quality sage scrub. Alternatively, since the impacts to sage scrub are small (e.g. less than five acres), a monetary contribution to the City's Habitat Acquisition Fund (Fund #10571) is another viable mitigation option (City of San Diego 1997, revised). Either of the above scenarios, or some combination of both, would mitigate impacts to sage scrub to below the level of significance.

16. Before the issuance of a grading permit impacts to the patch of riparian, disturbed mulefat scrub would require mitigation at a replacement ratio of 2:1 regardless of the location of the mitigation site (City of San Diego, 1997, revised). Mitigation for impacts to this community would best be accomplished through on-site creation of mulefat scrub as a component of the proposed project and the enhancement of the creek on-site. Since this creek is to be restored, a portion of the restoration could fulfill this mitigation requirement. The creation of riparian habitat along the enhanced creek on-site, of similar or higher quality (e.g. southern shallow scrub) to the mulefat scrub habitat impacted, would mitigate the impacts to this habitat to below the level of significance. There is the potential for using the excess creek restoration habitat as mitigation credit for compensation to impacts to riparian/wetland communities from other City of San Diego projects. Such use would require the approval of the appropriate federal and state resource agencies, as well as the preparation of a long-term mitigation and monitoring plan.
17. Before the issuance of a grading permit the applicant shall have to obtain a 404 Permit from the ACOE for impacts to the stream channel on-site. Impacts to the stream associated with the creek restoration program would require a Nationwide Permit (NWP) #27 "Wetland and Riparian Restoration and Creation Activities". In addition, there are two proposed road crossings of the stream channel. Both road crossings and associated riprap are 5,000 square feet each in area. Though these are the dimensions of these structures as illustrated on the North Chollas Community Park Site Plan, impacts to the "Waters of U.S." are anticipated to be much less as the stream channel is no more than ten feet wide at both crossings. Under a worse case scenario of 10,000 square feet (0.23-acre) of impacts, these amenities would require the issuance of a NWP=14 "Road Crossings" because the crossings are part of a single and complete project, and the impacts do not exceed 1/3 acre, or a total of 200 linear feet.
18. Before the issuance of a grading permit the applicant shall be required to obtain a 1601 Streambed Alteration Agreement with the CDFG, and a 401 Certification/Waiver with the California State Regional Water Quality

Control Board for any type of impacts to the creek.

19. Mitigation for impacts to the San Diego sunflower may be coupled with the mitigation requirements for Diegan coastal sage scrub. If on-site restoration of ruderal areas to sage scrub is the option chosen, then San Diego sunflower should be incorporated into the plant palette. A monetary contribution to the City's Habitat Acquisition fund would mitigate project impacts to this species as it is anticipated that habitat acquired by the City from this fund would include populations of the San Diego sunflower. Either option, or some combination of both, would reduce impacts to this species to below the level of significance.
20. Construction should occur during the non-breeding season (September 1 to March 5) for the California gnatcatchers, and for the most part other sensitive species. Impacts to occupied gnatcatchers habitat: 1.71 acres of intact Diegan coastal sage scrub and 2.24 acres of disturbed Diegan coastal sage scrub (a total of 3.95 acres) would be mitigated below a level of significance. Mitigation would be implemented by MHPA guidelines.
21. Mitigation for indirect impacts to wildlife corridors from urban edge effects include directing all outdoor lighting away from areas of open space, placement of signs or fencing along the nature trail to discourage human encroachment into the wildlife habitat, and the use of interpretive signs or exhibits along the trail to teach users of the park the biological value of the open space areas.
22. Cumulative impacts associated with development of the North Chollas Community Park project would be mitigated below a level of significance by directing mitigation for direct impacts toward the MHPA, or into areas adjacent to the MHPA. Since it is the goal of the City Park and Recreation Department to either mitigate on-site adjacent to the MHPA, or to contribute to the City's Habitat Acquisition Fund in order to strengthen the viability of core biological habitats, the both direct and cumulative impacts to the region would be mitigated. If payment into the fund is selected, cost per acre would be \$22,500.
23. Prior to the issuance of grading permits or recordation of final map, the applicant shall provide verification that a qualified archaeologist and/or archaeological monitor have been retained to implement the archaeological construction monitoring program. This verification shall be in the form of a letter from the applicant to the Environmental Review Manager of the Land Development Review Division. **ALL PERSONS INVOLVED IN THE ARCHAEOLOGICAL CONSTRUCTION MONITORING OF THIS PROJECT SHALL BE APPROVED BY LDR PRIOR TO THE START OF MONITORING.**

24. The qualified archaeologist shall attend preconstruction meetings to make comments and/or suggestions concerning the archaeological construction monitoring program and discuss plans with the engineer. The requirement for archaeological monitoring shall be noted on the grading plan.
25. The qualified archaeologist or archaeological monitor shall be present on site full-time during grading.
26. In the event that unanticipated cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground disturbance operation in the area of discovery to allow evaluation of potentially significant cultural resources. THE ARCHAEOLOGIST SHALL CONTACT LDR AT THE TIME OF DISCOVERY. The significance of the discovered resources shall be determined by the archaeologist, in consultation with LDR. LDR must concur with the evaluation before grading activities shall be allowed to resume. For significant cultural resources, a Research Design and Data Recovery Program shall be prepared and carried out to mitigate impacts before grading activities in the area of discovery shall be allowed to resume. Any human bones of Native American origin shall be turned over to the appropriate Native American group for reburial.
27. All cultural materials collected shall be cleaned, catalogued, and permanently curated with an appropriate institution. All artifacts shall be analyzed to identify function and chronology as they relate to the history of the area. Faunal material shall be identified as to species and specialty studies shall be completed, as appropriate.
28. A monitoring report and/or evaluation report, if appropriate, which describes the results, analysis, and conclusions of the archaeological monitoring program (with appropriate graphics) shall be submitted to and approved by the Environmental Review Manager of LDR prior to issuance of a certificate of occupancy. For significant cultural resources, a Research Design and Data Recovery Program shall be included as part of the evaluation report. A mitigation report for significant cultural resources, if required, shall be submitted to and approved by the Environmental Review Manager of LDR prior to issuance of a certificate of occupancy. THE APPLICANT SHALL NOTIFY LDR OF THE START AND END OF CONSTRUCTION.
29. Prior to the issuance of grading permits, the above mitigation, monitoring and reporting program shall require an additional deposit of \$3,200.00 ensure successful completion of the monitoring program.

VI. PUBLIC REVIEW DISTRIBUTION:

A draft copy of this Finding of No Significant Impact/Negative Declaration was published in the San Diego Union and Daily Transcript. Draft copies or Notice of this Finding of No Significant Impact/Negative Declaration were distributed to:

Government Agencies

- 16. U.S Army Corps of Engineers
- 23. USFWS
- 32. California Department of Fish and Game
- 35. Calif. Integrated Waste Mgmt. Board
- 37a. CAL EPA
- 44. Regional Water Quality Control Board
- 46. State Clearinghouse
- 75. County Hazardous Material Mgt. Division
- 76. County Site Assessment and Mitigation Division
- 100. City of La Mesa
- 101. City of Lemon Grove

City of San Diego

Council-member Stevens, District 4
Council-member McCarty, District 7
Community & Economic Development Department
Park and Recreation Department- Deborah Sharpe (MS 35)
Park and Recreation Department- Robin Shifflet (MS 35)
MSCP-Tom Story
Engr. & Capital Project- Patti Boekamp
Env. Services- Sylvia Castillo
LEA- Paul Manasjan (MS 501)
Streets Division-Chollas, J. Levy (MS 44)

Others

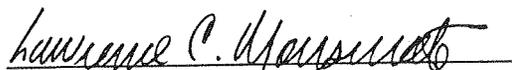
- 132. San Diego City Schools
- 184. Lakes Committee Chrm.
- 185. South Area Committee Co-Chrm.
- 187. Katerine Kharas
- 188. Facilities Committee
- 218. SD County Archaeological Soc.
- 286. Mid-City Development Corporation
- 287. City Heights Area Plng. Comm.
- 288. Rolando Coummnity Council
- 291. Normal Heights Comm. Plng. Grp.
- 292. Normal Heights Comm. Assoc.
- 293. Normal Heights Comm. Center
- 294. Bay Ridge Homeowners Assn.
- 295. Triangle Neighborhood Assn.

- 297. Colina del Sol Senior Citizens
- 298. Oak Park Community Council
- 301. Webster Community Council
- 304. Marshall Community Council
- 305. Floyd Melson
- 306. Darnell Community Council
- 307. Eastern Area Planning Committee
- California Native Plant Society
- Env. Health Coalition
- Sierra Club
- North Chollas Task Force

VII. RESULTS OF PUBLIC REVIEW

- () No comments were received during public input period.
- () Comments were received, but did not address the finding of the draft Mitigated Negative Declaration/Finding of No Significant Impact or the accuracy or completeness of the Environmental Assessment. No response is necessary. The letters are attached.
- (X) Comments addressing the findings of the draft Mitigated Negative Declaration/Finding of No Significant Impact and/or accuracy or completeness of the Environmental Assessment were received. Responses to these comments and the letters of comment are attached.

Copies of the draft Negative Declaration/Findings of No Significant Impact, Environmental Assessment and Special Studies, are available for review or for purchase at the cost of reproduction in the office of the Land Development Review Division.


 LAWRENCE C. MONSERRATE
 Environmental Review Manager
 Development Services

October 2, 1998
 Date of Draft Report

December 15, 1998
 Date of Final Report

Analyst: Johnson

LDR16.SHL - (FONS/ND)
REVISED 9/30/98 - AVL

Oct. 31, 1998

Dear Mr. Johnson,

As a member of the North Chollas Task Force, I would like to make a few comments on the Environmental Assessment and Mitigated Negative Declaration we received a few weeks ago. Most of the comments refer to the writing of it (omissions and typos) and not to the actual findings of the report itself.

First off, the Mit. Neg. Dec. doesn't have page numbers (you might want to add some) so I'll refer to the paragraphs. Under the "subject" paragraph, the streets the park is to be located between are: 57th and College Ave. (58th St. is located to the northwest of the area and is not in the immediate vicinity). This correction is also needed twice on page 1 of the Env. Ass. section in the first two paragraphs.

- 1 Also in both sections, you have 2 sets of paragraphs numbered 19 & 20 (on page 14 of the Env. Ass. and pages 5 & 6 of the Mit. Neg. Dec.)
- 2 Under the list of "others" who received copies of this report, the North Chollas Task Force was omitted. We received 10 copies thru Solaine Harris our chairperson. (on page 2 of the Mit. Neg. Dec. the threatened species of lizard was omitted from the second paragraph,
- 3 and on page 9 the last "x" for endangered species
- 4
- 5

RESPONSE TO COMMENTS

- 1. Comment Noted.
- 2. Comment Noted.
- 3. Comment Noted.
- 4. This was only a brief description of what type of sensitive species exist on site.
- 5. Comment Noted.

RESPONSE TO COMMENTS

seems to be in the wrong column (should it be directly under letter "E"?)

6 On page 7 of Mit. Neg. Dec under police services, you list it as "no effect"; we request this park be policed often (meaning daily and more frequently on weekends) and hope that policing will keep our park different than surrounding ones that either have substations in (Colina) or stations nearby (Mid City). We suggest that there will be an effect on police services because of this park.

- 6. Comment Noted.
- 7. Map is used to identify the project site.
- 8. Comment Noted.

7 The map at the end of the report should be a current one, showing the Navy housing just built there recently and the Lutheran High School in place of Our Lady of Mercy, the operations yard to the south of the park is vacated and the drive in front further south is now Cox Communications.

8 Finally, as a member of Chollas Lake Little League, (whom I represent at the Chollas Lake Rec. Council and Eastern Area Plan. Com.) I want to thank you from everyone at the Little League for including the mitigations on the lighting of the ballfields. Some people still don't understand that "million dollar ballfields" should be used year round as much as possible and by including the lights in your report it helps us to realize our dream of lighted ballfields in North Dallas. Sincerely,
Pinnacle Leagues

City of San Diego
Development Services
LAND DEVELOPMENT REVIEW
City Operations Building
1222 First Avenue, Fifth Floor
San Diego, CA 92101
(619) 236-6460

ENVIRONMENTAL ASSESSMENT (NEPA/HUD)
INITIAL STUDY (CEQA)
LDR No. 98-0150

SUBJECT: **North Chollas Community Park APPROVAL (LDR No. 98-0150)** of park improvements for the proposed North Chollas Community Park to include paved park entry roads with gated access, park signage, security lighting, paved parking areas, pedestrian hardscape walkways and plaza areas, restrooms and snack bar facility, children's tot lot, turfed mutli-purpose fields including skinned infield areas, unimproved nature trail system, disabled access trail and exercise walk, turfed open play and picnic area, paved court areas, open lawn area for unleashed dog use (with surrounding fencing), overlook areas, enhanced riparian/creek areas and revegetation of disturbed native habitat areas. The 94-acre site is zoned OS-P and it is located on College Grove Drive between 54th Street and College Ave. in the Mid-City Community Planning Area within the City of San Diego. Applicant: The City of San Diego, Park and Recreation Department, Northern Division.

I. PURPOSE AND MAIN FEATURES:

Park improvements for the proposed North Chollas Community Park include paved park entry roads with gated access, park signage, security lighting, paved parking areas, pedestrian hardscape walkways and plaza areas, restrooms and snack bar facility, children's tot lot, turfed mutli-purpose fields including skinned infield areas, unimproved nature trail system, disabled access trail and exercise walk, turfed open play and picnic area, paved court areas, open lawn area for unleashed dog use (with surrounding fencing), overlook areas, enhanced riparian/creek areas and revegetation of disturbed native habitat areas. The \$85,000 maybe used for park design and any required engineering. The 94-acre site is zoned OS-P and it is located on College Grove Drive between 54th Street and College Ave. in the Mid-City Community Planning Area within the City of San Diego. The North Chollas Community Park will request the release of Community Block Grant Program funding totaling an estimated \$85,000 dollars from the 1998 the 24th Entitlement Year.

II. ENVIRONMENTAL SETTING:

The North Chollas Community Park Project area is located between the 5540 and 6000 blocks of College Grove Drive within the City of San Diego, California. It is located immediately west of Chollas Lake Park and Gloria's Mesa Park. Carver Elementary School is to the north, the residential community of Oak Park to the west, and industrial areas to the south (City of San Diego Operations Yard).

The site is located on a former landfill, the City of San Diego's North Chollas Landfill. All possible hazardous materials have been remediated pursuant to all applicable regulations and to below a level of significance as determined in Environmental Impact Report (LDR EIR No. 89-1426 SCH No. 90010075). The EIR determined that all hazardous materials have been remediated to below a level of significance. Therefore, the

project site does not contain any significant levels of hazardous materials that may pose health risk to park patrons.

The site is a disturbed, northeast trending canyon. Berms were constructed along the northern and northwestern site boundaries 1970's. Portions of the North Chollas Community Park site on the western and southern portions of the property have been disturbed by urban encroachment and past landfill facility, although native vegetation exists on the east and northeast areas of the project site and in scattered pockets throughout the project site. Unpaved access roads meander through the site. A tributary to Chollas Creek flows through the site, and is fed by runoff from the Chollas Reservoir to the east.

The project site supports several sensitive species such as, Coastal sage scrub, including California gnatcatchers (*Poliioptila californica californicus*), San Diego Black-tailed jackrabbit (*Lepus californicus bennettii*), San Diego Sunflower (*Viguiera laciniata*) and Ashy spike moss (*Selaginella cinerascens*). Eight vegetation types occur onsite: six-sub-associations of diegan coastal sage scrub, southern willow scurb, mulefat scrub, native grassland, eucalyptus woodland, ruderal habitat, disturbed habitat and exotic trees.

The Environmental Assessment Checklist is designed to identify the potential for significant environmental impacts which could be associated with a project. All determinations are explained in Section IV.

| <u>IMPACT CATEGORIES</u> | | <u>IMPACT LEVELS</u> | | | | | |
|--------------------------|---|----------------------|---|---|---|---|---|
| | | A | B | C | D | E | F |
| 1. | LAND DEVELOPMENT | | | | | | |
| | Conformance With Comprehensive Plans and Zoning | X | | | | | |
| | Compatibility and Urban Impact | X | | | | | |
| | Slope | X | | | | | |
| | Erosion | X | | | | | |
| | Soil Suitability | X | | | | | |
| | Hazards and Nuisances, Including Site Safetyilities | X | | | | | |
| | Energy Consumption | X | | | | | |

-
- A. No Impact Anticipated
 - B. Potentially Beneficial
 - C. Potentially Adverse - Requires Documentation Only
 - D. Potentially Adverse - Requires More Study
 - E. Needs Mitigation
 - F. Requires Project Modification

IMPACT CATEGORIES

IMPACT LEVELS

| | A | B | C | D | E | F |
|--|---|---|---|---|---|---|
| 2. NOISE | | | | | | |
| Effects of Ambient Noise on Project and Contribution to Community Noise Levels | X | | | | | |
| 3. AIR QUALITY | | | | | | |
| Effects of Ambient Air Quality on Project and Contribution to Community Pollution Levels | X | | | | | |
| 4. ENVIRONMENTAL DESIGN AND HISTORIC VALUES | | | | | | |
| Visual Quality - Coherence, Diversity, Compatible Use, and Scale | X | | | | | |
| Historic, Cultural and Archaeological Resources | | | | | | X |
| <hr/> | | | | | | |
| A. | No Impact Anticipated | | | | | |
| B. | Potentially Beneficial | | | | | |
| C. | Potentially Adverse - Requires Documentation Only | | | | | |
| D. | Potentially Adverse - Requires More Study | | | | | |
| E. | Needs Mitigation | | | | | |
| F. | Requires Project Modification | | | | | |

| <u>IMPACT CATEGORIES</u> | | <u>IMPACT LEVELS</u> | | | | | |
|--------------------------|--|----------------------|---|---|---|---|---|
| | | A | B | C | D | E | F |
| 5. | SOCIOECONOMIC | | | | | | |
| | Demographic Character Changes | X | | | | | |
| | Displacement | X | | | | | |
| | Employment and Income Patterns | X | | | | | |
| 6. | COMMUNITY FACILITIES AND SERVICES | | | | | | |
| | Educational Facilities | | X | | | | |
| | Commercial Facilities | X | | | | | |
| | Health Care | X | | | | | |
| | Social Services | X | | | | | |
| | Solid Waste | X | | | | | |
| | Storm Water | X | | | | | |
| | Waste Water | X | | | | | |
| | Water Supply | X | | | | | |
| | Public Safety | X | | | | | |
| | Police | X | | | | | |
| | Fire | X | | | | | |

- A. No Impact Anticipated
- B. Potentially Beneficial
- C. Potentially Adverse - Requires Documentation Only
- D. Potentially Adverse - Requires More study
- E. Needs Mitigation
- F. Requires Project Modification

| <u>IMPACT CATEGORIES</u> | <u>IMPACT LEVELS</u> | | | | | |
|--|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| COMMUNITY FACILITIES AND SERVICES (CONTINUED) | | | | | | |
| Emergency Medical | X | | | | | |
| Open Space and Recreation | | X | | | | |
| Open Space | | X | | | | |
| Recreation | | X | | | | |
| Cultural Facilities | X | | | | | |
| Transportation | X | | | | | |
| 7. NATURAL FEATURES | | | | | | |
| Water Resources | X | | | | | |
| Surface Water | X | | | | | |
| Floodplains | | | | | | X |
| Wetlands | | | | | | X |
| Coastal Zone | X | | | | | |
| Unique Natural Features and Agricultural Lands | X | | | | | |
| <hr/> | | | | | | |
| A. | No Impact Anticipated | | | | | |
| B. | Potentially Beneficial | | | | | |
| C. | Potentially Adverse - Requires Documentation Only | | | | | |
| D. | Potentially Adverse - Requires More Study | | | | | |
| E. | Needs Mitigation | | | | | |
| F. | Requires Project Modification | | | | | |

IV. ENVIRONMENTAL ASSESSMENT DISCUSSION:

1. LAND DEVELOPMENT

Conformance With Comprehensive Plans and Zoning - Impact Level A

The project is consistent with the land use designation in the Mid-City Community Plan.

Compatibility and Urban Impact - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.

Slope - Impact Level A

The project will have minimal amount of encroachment into slopes. Slopes are not a factor.

Erosion - Impact Level A

Soil suitability is not a factor.

Hazards and Nuisance, including Site Safety - Impact Level A

No hazards are within the project site, the Scope of Work does not include extensive excavation work. Landfill closure had ash removal. Also, the County Hazardous Materials Management Division Environmental Assessment, dated February 1, 1993, does not list the project site or any adjacent properties.

Energy Consumption - Impact Level A

The project consists of the creation of a community park with minor use for energy. No significant change in energy consumption.

2. NOISE

Effects of Ambient Noise on Project and Contribution to Community Noise - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.

3. AIR QUALITY

Effects of Ambient Air Quality on Project and Contribution to Community Pollution Levels - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No change in air quality.

4. ENVIRONMENTAL DESIGN AND HISTORIC VALUES

Visual Quality (Coherence Diversity, Compatible Use, and Scale) - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.

5. SOCIOECONOMIC

Demographic Character Changes - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.

Displacement - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No displacement will occur.

Employment and Income Patterns - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No changes in employment and income patterns.

6. COMMUNITY FACILITIES AND SERVICES

Educational Facilities - Impact Level B

The project consists of the development of a vacant site into a community park with interpretive educational signs. Possible beneficial. No effect on commercial facilities.

Commercial Facilities - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on commercial facilities.

Health Care - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on health care.

Social Services - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on social services.

Solid Waste - Impact Level A.

The project consists of the development of a vacant site into a community park. No significant impact. No effect on solid waste.

Storm Water - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.

Waste Water - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on waste water.

Water Supply - Impact Level A.

The project consists of the development of a vacant site into a community park. No significant impact. No effect on water supply.

Public Safety

Police - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on police services.

Fire - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on fire services.

Emergency Medical - impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on emergency medical services.

Open Space and Recreation

Open Space - Impact Level B

The project consists of the development of a vacant site into a community park. Possible beneficial impact on open space.

Recreation - Impact Level B

The project consists of the development of a vacant site into a community park. The project will have a beneficial effect on recreation.

Cultural Facilities - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on cultural facilities.

Transportation - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on transportation.

7. NATURAL FEATURES

Water Resources - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. No effect on water resources.

Surface Water - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.

Flood plains - Impact Level C

The project site is in "Zone B", according to FEMA Map No. 060295-161 B dated August 15, 1983.

Wetlands - Impact Level E

A tributary to Chollas Creek flow through the site.

Coastal Zone - Impact Level A

The project is not in the Coastal Zone.

Unique Natural Features and Agricultural Lands - Impact Level A

No effect on natural features or agricultural Lands.

V. STATUTORY REVIEW CHECKLIST:

The Statutory Review Checklist is designed to determine compliance with applicable laws and regulations. Applicable mitigation measures and references and necessary support documentation are included in Section VI.

| <u>STATUTORY BASED REGULATIONS</u> | <u>IMPACT LEVELS</u> | | | | |
|--|----------------------|---|---|---|---|
| | A | B | C | D | E |
| 1. HISTORIC PROPERTIES | X | | | | |
| 2. FLOODPLAIN MANAGEMENT | | X | | | |
| 3. WETLANDS PROTECTION | | | | | X |
| 4. NOISE | X | | | | |
| 5. AIR QUALITY | X | | | | |
| 6. MANMADE HAZARDS | X | | | | |
| Thermal/Explosive Hazards | | | | | |
| Airport Clear Zone | X | | | | |
| 7. WATER QUALITY | | | | | |
| Navigable Water | X | | | | |
| Aquifers | X | | | | |
| 8. SOLID WASTE DISPOSAL | X | | | | |
| 9. COASTAL AREAS | | | | | |
| Coastal Zone Management | X | | | | |
| Coastal Barrier Resources | X | | | | |
| 10. ENDANGERED SPECIES | | | | | X |
| <hr/> | | | | | |
| A. Not applicable - No Impact to Project or from Project | | | | | |
| B. Consultation Required and Completed | | | | | |
| C. Permit Required and Obtained | | | | | |
| D. Project Consistent with Applicable Plans/Standards | | | | | |
| E. Conditions/Safeguards/Mitigations Required | | | | | |

VI. STATUTORY REVIEW DISCUSSION:

1. HISTORIC PROPERTIES - Impact Level A

No historic structures on the project site.

2. FLOOD PLAIN MANAGEMENT - Impact Level C

The project site is in "Zone B", according to FEMA Map No. 060295-161 B dated August 15, 1983.

3. WETLANDS PROTECTION - Impact Level A

A tributary to Chollas Creek flow through the site.

4. NOISE - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.
Noise is not a factor.

5. AIR QUALITY - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.
Air quality is not a factor.

6. MANMADE HAZARDSThermal/Explosive hazards - Impact Level A

The project consists of the development of a vacant site into a community park. Landfill closure had ash removal. Also, the County Hazardous Materials Management Division Environmental Assessment, dated February 1, 1993, does not list the project site or any adjacent properties.

Airport Clear Zone - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact. Air quality is not a factor.

7. WATER QUALITYNavigable Water - Impact Level A

The project site is not in or adjacent to any navigable waters.

Aquifers - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.
No aquifers will be affected.

8. SOLID WASTE DISPOSAL - Impact Level A

The project consists of the development of a vacant site into a community park. No significant impact.
No effect on solid waste disposal.

9. COASTAL AREASCoastal Zone Management - Impact Level A

The project site is approximately ten miles from the coast.

Coastal Barrier Resources - Impact Level A

No coastal barrier resources in the area.

10. ENDANGERED SPECIES - Impact Level E
Mitigation will be required for endangered species.

VII. **PROJECT MODIFICATIONS AND ALTERNATIVES CONSIDERED:**

No project alternative

The majority of the Mid-City community was developed prior to the adoption of the current Park and Recreation Criteria as set forth in the City's General Plan and Progress Guide. Which shows that the majority of the Mid-City Community is deficient in parks. The project site has been vacant and blighted for several years. The current project will assist in creating a needed public amenity in this community. The Mid-city Community plan has zoned and designated that site for Open Space-Parks. If this site were not developed it would remain in it's current vacant blighted condition.

Alternative Sites

The Mid-City Community plan sets forth recommendations for community and neighborhood parks. Following is a brief listing: City Heights Neighborhood, Park De La Cruz, Rolando Park and Elementary School and Kensington neighborhood park, to name a few. All of these site were considered, but it was determined that the other sites did not have enough acreage for this development.

VIII. **MITIGATION MEASURES NEEDED:**

1. All lighting for the proposed ballfields shall be directed away from the habitat area. Where necessary, adequate shielding of the light source from the ballfields will be used to protect the City's Multi-Habitat Planning Area (MHPA) and sensitive species from night lighting. This requirement should be clearly shown/noted on any improvement plans. In addition, all outdoor, night time recreational activities shall cease by 11:00 p.m. and light fixtures shall be equipped with automatic timing devices.
2. All proposed parking lots adjacent to the habitat areas must not drain directly into the Chollas Creek channel. All parking areas must prevent the release of toxins, chemicals, petroleum products, and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA. This will be accomplished by implementing a variety of methods including natural detention basins, grass swales or mechanical trapping devices. This requirement should be clearly shown/noted on any improvement plans. These systems should be maintained once a year, or as often as needed, to ensure proper functioning. Maintenance should include dredging out sediments if needed, and adding chemical neutralizing compounds (e.g. clay compounds) when necessary and appropriate.
3. Provision shall be made to inform the construction contractor(s), prior to the bidding process, about the biological constraints of this project. The contractor(s) shall be responsible for impacts to sensitive biological resources beyond those identified in this report which occur as a direct result of construction activities. All sensitive habitat areas to be avoided shall be clearly marked on project maps provided to the contractor. These areas shall be designated as "no construction" zones. Before a grading permit is issued

these areas shall be flagged by a qualified biologist prior to the onset of construction activities. In some cases, resources may need to be fenced or otherwise protected from direct or indirect impacts.

4. A contractor education program shall be implemented to ensure that contractors and all construction personnel are fully informed of the biological resources associated with this project. This program shall focus on a) the purpose for resource protection, b) contractor identification of sensitive resource areas in the field (e.g., areas delineated on maps and by flags or fencing), c) sensitive construction practices (see numbers 3 through 10, below), d) protocol to resolve conflicts that may arise at any time during the construction process, and e) ramifications of noncompliance. This program shall be conducted by a qualified biologist, and shall be a requirement for all construction personnel.
5. Prohibited activities within drainages or other wetland areas (other than in the construction zone) include staging areas, equipment access, and disposal or temporary placement of excess fill.
6. Vehicles shall use existing access roads to the degree feasible. Where or temporary access is required, all vehicles shall use the same route, even if this requires heavy equipment to back out of such areas. Before a grading permit is issued all access routes outside of existing roads or the construction corridor shall be clearly marked (i.e. flagged and/or staked). All access roads outside of existing roads or the construction corridor shall be delineated on the grading plans and reviewed by a qualified biologist.
7. If topsoil must be stockpiled, this shall be done in disturbed areas presently lacking native vegetation. Before a stockpile or grading permit is issued, stockpile areas shall be delineated on the grading plans and reviewed by a qualified biologist and by the City Engineer.
8. Staging areas shall be located in disturbed habitat, to the degree feasible. Staging areas are prohibited within sensitive habitat areas. Prior to issuance of a grading permit all staging areas shall be delineated on the grading plans and reviewed by a qualified biologist. If staging areas outside the construction footprint are used, they shall be surveyed for biological resources prior to their use.
9. Fueling of equipment shall take place within existing paved roads, and not within or adjacent to drainages or native habitats. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. "No-fueling zones" shall be designated on construction maps and shall be situated a minimum distance of 54 feet from all drainage. Specified vehicle fueling and maintenance procedures and hazardous materials storage areas shall be designated to preclude the discharge of hazardous materials used during construction (e.g., fuels, lubricants, and solvents). Such designations shall include specific measures to preclude spills or contain hazardous materials, including proper handling and disposal techniques, and the use of temporary impervious liners and or/ barriers to prevent soil and water contamination. The described program to control and contain construction related hazardous materials shall be subject to review and approval by the Development services Manager.

10. Construction in or adjacent to sensitive areas shall be appropriately scheduled to minimize potential impacts to biological resources; avoidance of the nesting season for the threatened California Gnatcatchers shall be strictly abhorred.
11. A grading plan that incorporates runoff and erosion control procedures to be utilized during all phases of project development shall be prepared. To the extent practical, the construction activities shall be sequenced to reduce the amount and duration of soil exposed to erosion by runoff. The erosion control plan shall include the use of hay bales, silt fences, siltation basins, or other devices necessary to stabilize the soil in denuded or graded areas during the construction and revegetation phases of the project.
12. A site restoration plan shall be prepared and implemented for all areas where vegetation shall be temporarily removed for construction. The plan shall include appropriate plant mixes and methods for reestablishing native vegetation consistent with pre-existing vegetation communities. Plan preparation shall be coordinated with a City biologist.
13. Appropriate fencing and signage shall be installed to restrict access and avoid potential impacts to the sensitive resources remaining in the undisturbed portions of the site.
14. Preserve biological features of interest or sensitivity in the park design and incorporate them into the design of the nature trail.
15. Before the issuance of a grading permit Impacts to the Diegan coastal sage scrub would require mitigation at a replacement ratio of between 1:1 and 1.5:1 depending upon the location of the mitigation site inside or outside the MHPA (City of San Diego, 1997b). Mitigation for impacts to sage scrub could be fulfilled by either on-site creation of habitat, offsite creation of habitat or off-site acquisition of existing high quality habitat. On-site mitigation would typically require a replacement ratio of 1.5:1 (5.93 acres) because the park is outside of the MHPA. However, on-site mitigation at a ratio of 1:1 may be acceptable (3.95 acres) due to the connectivity with the on-site open space/mitigation areas and the adjacent MHPA. The on-site mitigation could be accomplished by restoring the ruderal areas in the proposed open space to high quality sage scrub. Alternatively, since the impacts to sage scrub are small (e.g. less than five acres), a monetary contribution to the City's Habitat Acquisition Fund (Fund #10571) is another viable mitigation option (City of San Diego 1997b). Either of the above scenarios, or some combination of both, would mitigate impacts to sage scrub to below the level of significance.
16. Before the issuance of a grading permit impacts to the patch of riparian, disturbed mulefat scrub would require mitigation at a replacement ratio of 2:1 regardless of the location of the mitigation site (City of San Diego, 1997b). Mitigation for impacts to this community would best be accomplished through on-site creation of mulefat scrub as a component of the proposed project and the enhancement of the creek on-site. Since this creek is to be restored, a portion of the restoration could fulfill this mitigation requirement. The creation of riparian habitat along the enhanced creek on-site, of similar or higher quality (e.g. southern shallow scrub) to the mulefat scrub habitat impacted, would mitigate the impacts to this habitat to below the level of significance. There is the potential for using the excess creek restoration habitat as mitigation credit for compensation to impacts to riparian/wetland communities

from other City of San Diego projects. Such use would require the approval of the appropriate federal and state resource agencies, as well as the preparation of a long-term mitigation and monitoring plan.

17. Before the issuance of a grading permit the applicant shall have to obtain a 404 Permit from the ACOE for impacts to the stream channel on-site. Impacts to the stream associated with the creek restoration program would require a Nationwide Permit (NWP) #27 "Wetland and Riparian Restoration and Creation Activities". In addition, there are two proposed road crossings of the stream channel. Both road crossings and associated riprap are 5,000 square feet each in area. Though these are the dimensions of these structures as illustrated on the North Chollas Community Park Site Plan, impacts to the "Waters of U.S." are anticipated to be much less as the stream channel is no more than ten feet wide at both crossings. Under a worse case scenario of 10,000 square feet (0.23-acre) of impacts, these amenities would require the issuance of a NWP=14 "Road Crossings" because the crossings are part of a single and complete project, and the impacts do not exceed 1/3 acre, or a total of 200 linear feet.
18. Before the issuance of a grading permit the applicant shall be required to obtain a 1601 Streambed Alteration Agreement with the CDFG, and a 401 Certification/Waiver with California State Regional Water Quality Control Board for any type of impacts to the creek.
19. Mitigation for impacts to the San Diego sunflower may be coupled with the mitigation requirements for Diegan coastal sage scrub. If on-site restoration of ruderal areas to sage scrub is the option chosen, then San Diego sunflower should be incorporated into the plant palette. A monetary contribution to the City's Habitat Acquisition fund would mitigate project impacts to this species as it is anticipated that habitat acquired by the City from this fund would include populations of the San Diego sunflower. Either option, or some combination of both, would reduce impacts to this species to below the level of significance.
20. Construction should occur during the non-breeding season (September 1 to March 5) for the California gnatcatchers, and for the most part other sensitive species. Impacts to occupied gnatcatchers habitat: 1.71 acres of intact Diegan coastal sage scrub and 2.24 acres of disturbed Diegan coastal sage scrub (a total of 3.95 acres) would be mitigated below a level of significance. Mitigation would be implemented by MHPA guidelines. According to the MSCP Subarea Plan, mitigation for impacts to the California gnatcatchers are habitat-based, therefore, the above described mitigation for impacts to Diegan coastal sage scrub and construction scheduling would be sufficient as mitigation for impacts to the coastal California gnatcatchers.
19. Mitigation for indirect impacts to wildlife corridors from urban edge effects include directing all outdoor lighting away from areas of open space, placement of signs or fencing along the nature trail to discourage human encroachment into the wildlife habitat, and the use of interpretive signs or exhibits along the trail to teach users of the park the biological value of the open space areas.
20. Cumulative impacts associated with development of the North Chollas Community Park project would be mitigated below a level of significance by directing mitigation for direct impacts toward the MHPA, or into areas

adjacent to the MHPA. Since it is the goal of the City Park and Recreation Department to either mitigate on-site adjacent to the MHPA, or to contribute to the City's Habitat Acquisition Fund in order to strengthen the viability of core biological habitats, the cumulative impacts to the region would be mitigated.

21. Prior to the issuance of grading permits or recordation of final map, the applicant shall provide verification that a qualified archaeologist and/or archaeological monitor have been retained to implement the archaeological construction monitoring program. This verification shall be in the form of a letter from the applicant to the Environmental Review Manager of the Land Development Review Division. **ALL PERSONS INVOLVED IN THE ARCHAEOLOGICAL CONSTRUCTION MONITORING OF THIS PROJECT SHALL BE APPROVED BY LDR PRIOR TO THE START OF MONITORING.**
22. The qualified archaeologist shall attend preconstruction meetings to make comments and/or suggestions concerning the archaeological construction monitoring program and discuss plans with the engineer. The requirement for archaeological monitoring shall be noted on the grading plan.
23. The qualified archaeologist or archaeological monitor shall be present on site full-time during grading.
24. In the event that unanticipated cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground disturbance operation in the area of discovery to allow evaluation of potentially significant cultural resources. **THE ARCHAEOLOGIST SHALL CONTACT LDR AT THE TIME OF DISCOVERY.** The significance of the discovered resources shall be determined by the archaeologist, in consultation with LDR. LDR must concur with the evaluation before grading activities shall be allowed to resume. For significant cultural resources, a Research Design and Data Recovery Program shall be prepared and carried out to mitigate impacts before grading activities in the area of discovery shall be allowed to resume. Any human bones of Native American origin shall be turned over to the appropriate Native American group for reburial.
25. All cultural materials collected shall be cleaned, catalogued, and permanently curated with an appropriate institution. All artifacts shall be analyzed to identify function and chronology as they relate to the history of the area. Faunal material shall be identified as to species and specialty studies shall be completed, as appropriate.
26. A monitoring report and/or evaluation report, if appropriate, which describes the results, analysis, and conclusions of the archaeological monitoring program (with appropriate graphics) shall be submitted to and approved by the Environmental Review Manager of LDR prior to issuance of a certificate of occupancy. For significant cultural resources, a Research Design and Data Recovery Program shall be included as part of the evaluation report. A mitigation report for significant cultural resources, if required, shall be submitted to and approved by the Environmental Review Manager of LDR prior to issuance of a certificate of occupancy. **THE APPLICANT SHALL NOTIFY LDR OF THE START AND END OF CONSTRUCTION.**

27. Prior to the issuance of grading permits, the above mitigation, monitoring and reporting program shall require an additional deposit of \$3,200.00 to ensure successful completion of the monitoring program.

IX. DETERMINATIONS:

On the basis of this initial evaluation:

- The project is not in compliance with applicable laws and regulations.
- The proposed project shall not significantly affect the quality of the human or natural environment, and a FINDING OF NO SIGNIFICANT IMPACT (FONSI) and NEGATIVE DECLARATION should be prepared.
- Although the proposed project could significantly affect the quality of the human or natural environment, there shall not be a significant effect in this case because the mitigation measures described in Section VIII above have been added to the project. A FINDING OF NO SIGNIFICANT IMPACT (FONSI) and MITIGATED NEGATIVE DECLARATION should be prepared.
- The proposed project MAY significantly affect the quality of the human or natural environment, and an ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT should be required.

X. BASIC REASONS SUPPORTING DECISION:

The Mid-City Community Plan points to the need for expanded park and recreational facilities. The project would enhance the immediate neighborhood by increasing recreational opportunities without causing any significant environmental impacts.

PROJECT ANALYST: JOHNSON

Attachment: Location Map
Site Plan

C:\MyFiles\NEPA-FONSI FOR NORTH CHOLLAS COMMUNITY PARK.wpd

- 27. Prior to the issuance of grading permits, the above mitigation, monitoring and reporting program shall require an additional deposit of \$454.00 to ensure successful completion of the monitoring program.

IX. DETERMINATIONS:

On the basis of this initial evaluation:

- The project is not in compliance with applicable laws and regulations.
- The proposed project shall not significantly affect the quality of the human or natural environment, and a FINDING OF NO SIGNIFICANT IMPACT (FONSI) and NEGATIVE DECLARATION should be prepared.
- Although the proposed project could significantly affect the quality of the human or natural environment, there shall not be a significant effect in this case because the mitigation measures described in Section VIII above have been added to the project. A FINDING OF NO SIGNIFICANT IMPACT (FONSI) and MITIGATED NEGATIVE DECLARATION should be prepared.
- The proposed project MAY significantly affect the quality of the human or natural environment, and an ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT should be required.

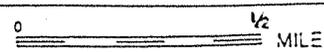
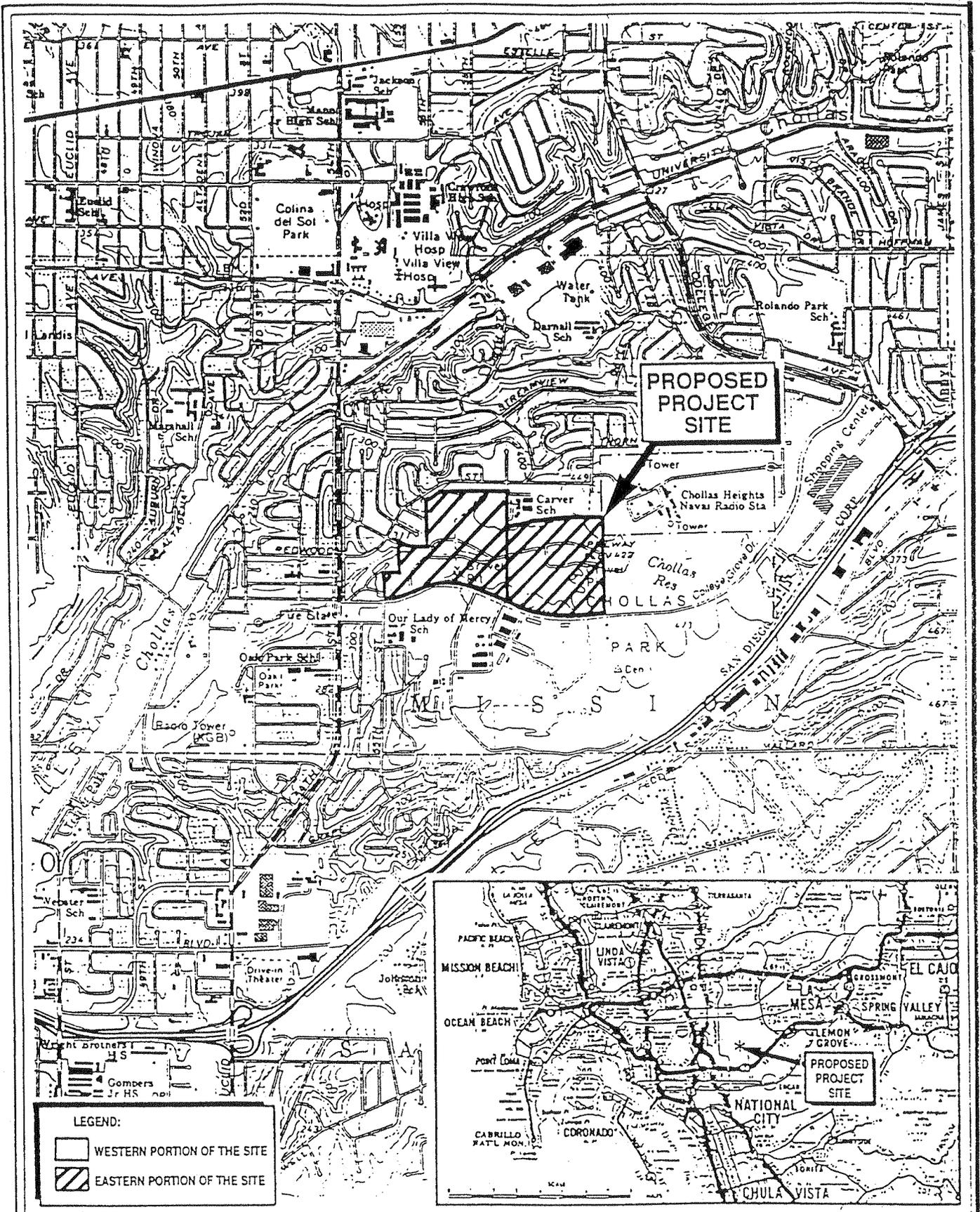
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The Mid-City Community Plan points to the need for expanded park and recreational facilities. The project would enhance the immediate neighborhood by increasing recreational opportunities without causing any significant environmental impacts.

PROJECT ANALYST: JOHNSON

Attachment: Location Map
Site Plan

C:\MyFiles\NEPA-FONSI FOR NORTH CHOLLAS COMMUNITY PARK.wpd



PROJECT VICINITY MAP



THE CITY OF SAN DIEGO

RECEIVED
OCT 01 1998

September 25, 1998

PARK & RECREATION
NORTHERN DIVISION

Deborah Sharpe
City of San Diego
Park & Recreation Department, Northern Division
202 C Street
(MS 35)
San Diego, Ca. 92101

SUBJECT: APPLICANT AGREEMENT TO MITIGATION MEASURES FOR NORTH CHOLLAS COMMUNITY PARK-(LDR #98-0150)

Dear Deborah,

The Environmental Analysis Section of the Land Development Review Division has completed the initial study for the above project and has determined that the site contains significant environmental resources. However, since all of these impacts can be mitigated to below a level of significance, it has been determined that a National Environmental Policy Act/Finding Of No Significance (NEPA/FONSI) shall be prepared.

The applicant shall be required to provide mitigation for impacts resulting from drainage, lighting, cultural resources and biological resources which will be a condition of the NEPA/FONSI. In order to ensure that site development would avoid adverse impacts to significant environmental resources a mitigation monitoring and reporting program will be require as a condition of project approval. Compliance with the mitigation measures would be the responsibility of the applicant.

Please review the mitigation measures as outlined below. If you are in agreement, please sign where indicated, and return the letter at your earliest convenience. If you are not in agreement, please contact me immediately. The proposed mitigation measures must be agreed to prior to the distribution of the NEPA/FONSI for public review. The mitigation measures are as follows:

1. All lighting for the proposed ballfields shall be directed away from the habitat area. Where necessary, adequate shielding of the light source from the ballfields will be used to protect the MHPA and sensitive species from night lighting. This requirement should be clearly shown/noted on any improvement plans In addition, all outdoor, night time recreational activities shall cease by 11:00 p.m. and light fixtures shall be equipped with automatic timing devices.
2. All proposed parking lots adjacent to the habitat areas must not drain directly into the Chollas Creek channel. All parking areas must prevent the release of



Development Services

toxins, chemicals, petroleum products, and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA. This will be accomplished by implementing a variety of methods including natural detention basins, grass swales or mechanical trapping devices. This requirement should be clearly shown/noted on any improvement plans. These systems should be maintained once a year, or as often as needed, to ensure proper functioning. Maintenance should include dredging out sediments if needed, and adding chemical neutralizing compounds (e.g. clay compounds) when necessary and appropriate.

3. Provision will be made to inform the construction contractor(s), prior to the bidding process, about the biological constraints of this project. The contractor(s) will be responsible for impacts to sensitive biological resources beyond those identified in this report which occur as a direct result of construction activities. All sensitive habitat areas to be avoided shall be clearly marked on project maps provided to the contractor. These areas will be designated as "no construction" zones. Before a grading permit is issued these areas will be flagged by a qualified biologist prior to the onset of construction activities. In some cases, resources may need to be fenced or otherwise protected from direct or indirect impacts.
4. A contractor education program will be implemented to ensure that contractors and all construction personnel are fully informed of the biological resources associated with this project. This program will focus on a) the purpose for resource protection, b) contractor identification of sensitive resource areas in the field (e.g., areas delineated on maps and by flags or fencing), c) sensitive construction practices (see numbers 3 through 10, below), d) protocol to resolve conflicts that may arise at any time during the construction process, and e) ramifications of noncompliance. This program will be conducted by a qualified biologist, and will be a requirement for all construction personnel.
5. Prohibited activities within drainages or other wetland areas (other than in the construction zone) include staging areas, equipment access, and disposal or temporary placement of excess fill.
6. Vehicles will use existing access roads to the degree feasible. Where or temporary access is required, all vehicles will use the same route, even if this requires heavy equipment to back out of such areas. Before a grading permit is issued all access routes outside of existing roads or the construction corridor will be clearly marked (i.e. flagged and/or staked). All access roads outside of existing roads or the construction corridor will be delineated on the grading plans and reviewed by a qualified biologist.
7. If topsoil must be stockpiled, this will be done in disturbed areas presently lacking native vegetation. Before a stockpile or grading permit is issued, stockpile areas will be delineated on the grading plans and reviewed by a qualified biologist and by the City Engineer.
8. Staging areas will be located in disturbed habitat, to the degree feasible. Staging areas are prohibited within sensitive habitat areas. Prior to issuance of a grading permit all staging areas will be delineated on the grading plans and reviewed by a qualified biologist. If staging areas outside the construction footprint are used, they will be surveyed for biological resources prior to their use.

9. Fueling of equipment will take place within existing paved roads, and not within or adjacent to drainages or native habitats. Contractor equipment will be checked for leaks prior to operation and repaired as necessary. "No-fueling zones" will be designated on construction maps and will be situated a minimum distance of 50 feet from all drainage. Specified vehicle fueling and maintenance procedures and hazardous materials storage areas shall be designated to preclude the discharge of hazardous materials used during construction (e.g., fuels, lubricants, and solvents). Such designations shall include specific measures to preclude spills or contain hazardous materials, including proper handling and disposal techniques, and the use of temporary impervious liners and or/ barriers to prevent soil and water contamination. The described program to control and contain construction related hazardous materials shall be subject to review and approval by the Development services Manager.
10. Construction in or adjacent to sensitive areas will be appropriately scheduled to minimize potential impacts to biological resources.
11. A grading plan that incorporates runoff and erosion control procedures to be utilized during all phases of project development shall be prepared. To the extent practical, the construction activities shall be sequenced to reduce the amount and duration of soil exposed to erosion by runoff. The erosion control plan will include the use of hay bales, silt fences, siltation basins, or other devices necessary to stabilize the soil in denuded or graded areas during the construction and revegetation phases of the project.
12. A site restoration plan will be prepared and implemented for all areas where vegetation will be temporarily removed for construction. The plan will include appropriate plant mixes and methods for reestablishing native vegetation consistent with pre-existing vegetation communities. Plan preparation will be coordinated with a City biologist.
13. Appropriate fencing and signage will be installed to restrict access and avoid potential impacts to the sensitive resources remaining in the undisturbed portions of the site.
14. Preserve biological features of interest or sensitivity in the park design and incorporate them into the design of the nature trail.
15. Before the issuance of a grading permit Impacts to the Diegan coastal sage scrub would require mitigation at a replacement ratio of between 1:1 and 1.5:1 depending upon the location of the mitigation site (City of San Diego, 1997b). Mitigation for impacts to sage scrub could be fulfilled by either on-site creation of habitat, offsite creation of habitat or off-site acquisition of existing high quality habitat. On-site mitigation would typically require a replacement ratio of 1.5:1 (5.93 acres) because the park is outside of the MHPA. However, on-site mitigation at a ratio of 1:1 may be acceptable (3.95 acres) due to the connectivity with the on-site open space/mitigation areas and the adjacent MHPA. The on-site mitigation could be accomplished by restoring the ruderal areas in the proposed open space to high quality sage scrub. Alternatively, since the impacts to sage scrub are small (e.g. less than five acres), a monetary contribution to the City's Habitat Acquisition Fund (Fund #10571) is another option available to the Park and Recreation Department (City of San Diego

1997b). Either of the above scenarios, or some combination of both, would mitigate impacts to sage scrub to below the level of significance.

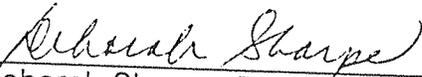
14. Before the issuance of a grading permit impacts to the patch of non-riparian, disturbed mulefat scrub would require mitigation at a replacement ratio of 2:1 regardless of the location of the mitigation site (City of San Diego, 1997b). Mitigation for impacts to this community would best be accomplished through on-site creation of mulefat scrub as a component of the proposed project and the enhancement of the creek on-site. Since this creek is to be restored, a portion of the restoration could fulfill this mitigation requirement. The creation of riparian habitat along the enhanced creek on-site, of similar or higher quality (e.g. southern willow scrub) to the mulefat scrub habitat impacted, would mitigate the impacts to this habitat to below the level of significance. There is the potential for using the excess creek restoration habitat as mitigation credit for compensation to impacts to riparian/wetland communities from other City of San Diego projects. Such use would require the approval of the appropriate federal and state resource agencies, as well as the preparation of a long-term mitigation and monitoring plan.
15. Before the issuance of a grading permit the applicant will have to obtain a 404 Permit from the ACOE for impacts to the stream channel on-site. Impacts to the stream associated with the creek restoration program would require a Nationwide Permit (NWP) #27 "Wetland and Riparian Restoration and Creation Activities". In addition, there are two proposed road crossings of the stream channel. Both road crossings and associated riprap are 5,000 square feet each in area. Though these are the dimensions of these structures as illustrated on the North Chollas Community Park Site Plan, impacts to the "Waters of U.S." are anticipated to be much less as the stream channel is no more than ten feet wide at both crossings. Under a worse case scenario of 10,000 square feet (0.23-acre) of impacts, these amenities would require the issuance of a NWP=14 "Road Crossings" because the crossings are part of a single and complete project, and the impacts do not exceed 1/3 acre, or a total of 200 linear feet.
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therefore, the above described mitigation for impacts to Diegan coastal sage scrub and construction scheduling would be sufficient as mitigation for impacts to the coastal California gnatcatchers.

19. Mitigation for indirect impacts to wildlife corridors from urban edge effects include directing all outdoor lighting away from areas of open space, placement of signs or fencing along the nature trail to discourage human encroachment into the wildlife habitat, and the use of interpretive signs or exhibits along the trail to teach users of the park the biological value of the open space areas.
20. Cumulative impacts associated with development of the North Chollas Community Park project would be mitigated below a level of significance by directing mitigation for direct impacts toward the MHPA, or into areas adjacent to the MHPA. Since it is the goal of the City Park and Recreation Department to either mitigate on-site adjacent to the MHPA, or to contribute to the City's Habitat Acquisition Fund in order to strengthen the viability of core biological habitats, the cumulative impacts to the region would be mitigated.
21. Prior to the issuance of grading permits or recordation of final map, the applicant shall provide verification that a qualified archaeologist and/or archaeological monitor have been retained to implement the archaeological construction monitoring program. This verification shall be in the form of a letter from the applicant to the Environmental Review Manager of the Land Development Review Division. **ALL PERSONS INVOLVED IN THE ARCHAEOLOGICAL CONSTRUCTION MONITORING OF THIS PROJECT SHALL BE APPROVED BY LDR PRIOR TO THE START OF MONITORING.**
22. The qualified archaeologist shall attend preconstruction meetings to make comments and/or suggestions concerning the archaeological construction monitoring program and discuss plans with the engineer. The requirement for archaeological monitoring shall be noted on the grading plan.
23. The qualified archaeologist or archaeological monitor shall be present on site full-time during grading.
24. In the event that unanticipated cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground disturbance operation in the area of discovery to allow evaluation of potentially significant cultural resources. **THE ARCHAEOLOGIST SHALL CONTACT LDR AT THE TIME OF DISCOVERY.** The significance of the discovered resources shall be determined by the archaeologist, in consultation with LDR. LDR must concur with the evaluation before grading activities will be allowed to resume. For significant cultural resources, a Research Design and Data Recovery Program shall be prepared and carried out to mitigate impacts before grading activities in the area of discovery will be allowed to resume. Any human bones of Native American origin shall be turned over to the appropriate Native American group for reburial.
25. All cultural materials collected shall be cleaned, catalogued, and permanently curated with an appropriate institution. All artifacts shall be analyzed to identify function and chronology as they relate to the history of the area. Faunal material shall be identified as to species and specialty studies shall be completed, as appropriate.

26. A monitoring report and/or evaluation report, if appropriate, which describes the results, analysis, and conclusions of the archaeological monitoring program (with appropriate graphics) shall be submitted to and approved by the Environmental Review Manager of LDR prior to issuance of a certificate of occupancy. For significant cultural resources, a Research Design and Data Recovery Program shall be included as part of the evaluation report. A mitigation report for significant cultural resources, if required, shall be submitted to and approved by the Environmental Review Manager of LDR prior to issuance of a certificate of occupancy. THE APPLICANT SHALL NOTIFY LDR OF THE START AND END OF CONSTRUCTION.
27. Prior to the issuance of grading permits, the above mitigation, monitoring and reporting program will require an additional deposit of \$450.00 to ensure successful completion of the monitoring program.

As applicant for the Chollas North Community Park (NEPA/FONSI), I agree to the above mitigation measures.


Deborah Sharpe, Project Officer II

The City appreciates your prompt response to this matter. The original letter should be forwarded to me. If you have any questions or comments, I may be reached at 236-6222.

Respectfully,

DERRICK JOHNSON
Associate Planner

cc: John Kovac, Senior Planner

TO: Recorder/County Clerk
P.O. Box 1750, MS A33
1600 Pacific Hwy, Room 260
San Diego, CA 92101-2422

FROM: City of San Diego
Planning and Development Review Department
1222 First Avenue, MS 501
San Diego, CA 92101

Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

FILED
Gregory J. Smith, Recorder/County Clerk

NOV 30 2000
VC

LDR Number: 98-0150

State Clearinghouse Number: N/A VC
DEPUTY

Permit Number: N/A

Project Title: North Chollas Community Park

Project Location: College Grove Drive between 54th Street and College Grove Drive

Project Description: Park improvements to a 94-acre park which would include paved park entry roads with gated access, park signage, security lighting, paved parking areas, pedestrian hardscape walkways and plaza areas, restrooms and snack bar facilities, children's tot lot, turfed multipurpose fields including infield areas, unimproved nature trail system, disabled access trail and exercise walk, turfed open play and picnic area, paved court areas, open lawn areas for unleashed dog play, overlook areas, enhanced riparian/creek areas and revegetation of disturbed native habitat areas.

This is to advise that the City of San Diego City Council on 11-27-00 approved the above described project and made the following determinations:

1. The project in its approved form will, X will not, have a significant effect on the environment.
2. An Environmental Impact Report was prepared for this project and certified pursuant to the provisions of CEQA.
X A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
R-294297
 An addendum to was prepared for this project pursuant to the provisions of CEQA.

Record of project approval may be examined at the address above.

3. Mitigation measures X were, were not, made a condition of the approval of the project.

It is hereby certified that the final environmental report, including comments and responses, is available to the general public at the office of the Land Development Review Division, Fifth Floor, City Operations Building, 1222 First Avenue, San Diego, CA 92101.

Analyst: Teasley

Telephone: (619) 446-5390

Filed by:

Ramone Lewis
Signature

Ramone Lewis, Deputy City Clerk
Title

re: California Public Resources Code, Sections 21108 and 21152.

FILED IN THE OFFICE OF THE COUNTY CLERK
 SAN DIEGO COUNTY ON NOV 30 2000
 POSTED NOV 30 2000 REMOVED JAN 03 2001
 RETURNED TO AGENCY ON JAN 03 2001
 DEPUTY VC

APPENDIX B
FIRE HYDRANT METER PROGRAM

| | | |
|---|--------------------------------|---|
| CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS | NUMBER DI 55.27 | DEPARTMENT Water Department |
| SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM) | PAGE 1 OF 10 | EFFECTIVE DATE October 15, 2002 |
| | SUPERSEDES DI 55.27 | DATED April 21, 2000 |

1. **PURPOSE**

1.1 To establish a Departmental policy and procedure for issuance, proper usage and charges for fire hydrant meters.

2. **AUTHORITY**

2.1 All authorities and references shall be current versions and revisions.

2.2 San Diego Municipal Code (NC) Chapter VI, Article 7, Sections 67.14 and 67.15

2.3 Code of Federal Regulations, Safe Drinking Water Act of 1986

2.4 California Code of Regulations, Titles 17 and 22

2.5 California State Penal Code, Section 498B.0

2.6 State of California Water Code, Section 110, 500-6, and 520-23

2.7 Water Department Director

Reference

2.8 State of California Guidance Manual for Cross Connection Programs

2.9 American Water Works Association Manual M-14, Recommended Practice for Backflow Prevention

2.10 American Water Works Association Standards for Water Meters

2.11 U.S.C. Foundation for Cross Connection Control and Hydraulic Research Manual

3. **DEFINITIONS**

3.1 **Fire Hydrant Meter:** A portable water meter which is connected to a fire hydrant for the purpose of temporary use. (These meters are sometimes referred to as Construction Meters.)

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| CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS | NUMBER DI 55.27 | DEPARTMENT Water Department |
| SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM) | PAGE 2 OF 10 | EFFECTIVE DATE October 15, 2002 |
| | SUPERSEDES DI 55.27 | DATED April 21, 2000 |

- 3.2 **Temporary Water Use:** Water provided to the customer for no longer than twelve (12) months.
- 3.3 **Backflow Preventor:** A Reduced Pressure Principal Assembly connected to the outlet side of a Fire Hydrant Meter.

4. **POLICY**

- 4.1 The Water Department shall collect a deposit from every customer requiring a fire hydrant meter and appurtenances prior to providing the meter and appurtenances (see Section 7.1 regarding the Fees and Deposit Schedule). The deposit is refundable upon the termination of use and return of equipment and appurtenances in good working condition.
- 4.2 Fire hydrant meters will have a 2 ½" swivel connection between the meter and fire hydrant. The meter shall not be connected to the 4" port on the hydrant. All Fire Hydrant Meters issued shall have a Reduced Pressure Principle Assembly (RP) as part of the installation. Spanner wrenches are the only tool allowed to turn on water at the fire hydrant.
- 4.3 The use of private hydrant meters on City hydrants is prohibited, with exceptions as noted below. All private fire hydrant meters are to be phased out of the City of San Diego. All customers who wish to continue to use their own fire hydrant meters must adhere to the following conditions:
 - a. Meters shall meet all City specifications and American Water Works Association (AWWA) standards.
 - b. Customers currently using private fire hydrant meters in the City of San Diego water system will be allowed to continue using the meter under the following conditions:
 - 1. The customer must submit a current certificate of accuracy and calibration results for private meters and private backflows annually to the City of San Diego, Water Department, Meter Shop.

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| CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS | NUMBER DI 55.27 | DEPARTMENT Water Department |
| SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM) | PAGE 3 OF 10 | EFFECTIVE DATE October 15, 2002 |
| | SUPERSEDES DI 55.27 | DATED April 21, 2000 |

2. The meter must be properly identifiable with a clearly labeled serial number on the body of the fire hydrant meter. The serial number shall be plainly stamped on the register lid and the main casing. Serial numbers shall be visible from the top of the meter casing and the numbers shall be stamped on the top of the inlet casing flange.
3. All meters shall be locked to the fire hydrant by the Water Department, Meter Section (see Section 4.7).
4. All meters shall be read by the Water Department, Meter Section (see Section 4.7).
5. All meters shall be relocated by the Water Department, Meter Section (see Section 4.7).
6. These meters shall be tested on the anniversary of the original test date and proof of testing will be submitted to the Water Department, Meter Shop, on a yearly basis. If not tested, the meter will not be allowed for use in the City of San Diego.
7. All private fire hydrant meters shall have backflow devices attached when installed.
8. The customer must maintain and repair their own private meters and private backflows.
9. The customer must provide current test and calibration results to the Water Department, Meter Shop after any repairs.
10. When private meters are damaged beyond repair, these private meters will be replaced by City owned fire hydrant meters.

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| CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS | NUMBER DI 55.27 | DEPARTMENT Water Department |
| SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM) | PAGE 4 OF 10 | EFFECTIVE DATE October 15, 2002 |
| | SUPERSEDES DI 55.27 | DATED April 21, 2000 |

11. When a private meter malfunctions, the customer will be notified and the meter will be removed by the City and returned to the customer for repairs. Testing and calibration results shall be given to the City prior to any re-installation.
 12. The register shall be hermetically sealed straight reading and shall be readable from the inlet side. Registration shall be in hundred cubic feet.
 13. The outlet shall have a 2 ½ “National Standards Tested (NST) fire hydrant male coupling.
 14. Private fire hydrant meters shall not be transferable from one contracting company to another (i.e. if a company goes out of business or is bought out by another company).
- 4.4 All fire hydrant meters and appurtenances shall be installed, relocated and removed by the City of San Diego, Water Department. All City owned fire hydrant meters and appurtenances shall be maintained by the City of San Diego, Water Department, Meter Services.
- 4.5 If any fire hydrant meter is used in violation of this Department Instruction, the violation will be reported to the Code Compliance Section for investigation and appropriate action. Any customer using a fire hydrant meter in violation of the requirements set forth above is subject to fines or penalties pursuant to the Municipal Code, Section 67.15 and Section 67.37.
- 4.6 **Conditions and Processes for Issuance of a Fire Hydrant Meter**
- Process for Issuance
- a. Fire hydrant meters shall only be used for the following purposes:
 1. Temporary irrigation purposes not to exceed one year.

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2. Construction and maintenance related activities (see Tab 2).
 - b. No customer inside or outside the boundaries of the City of San Diego Water Department shall resell any portion of the water delivered through a fire hydrant by the City of San Diego Water Department.
 - c. The City of San Diego allows for the issuance of a temporary fire hydrant meter for a period not to exceed 12 months (365 days). An extension can only be granted in writing from the Water Department Director for up to 90 additional days. A written request for an extension by the consumer must be submitted at least 30 days prior to the 12 month period ending. No extension shall be granted to any customer with a delinquent account with the Water Department. No further extensions shall be granted.
 - d. Any customer requesting the issuance of a fire hydrant meter shall file an application with the Meter Section. The customer must complete a "Fire Hydrant Meter Application" (Tab 1) which includes the name of the company, the party responsible for payment, Social Security number and/or California ID, requested location of the meter (a detailed map signifying an exact location), local contact person, local phone number, a contractor's license (or a business license), description of specific water use, duration of use at the site and full name and address of the person responsible for payment.
 - e. At the time of the application the customer will pay their fees according to the schedule set forth in the Rate Book of Fees and Charges, located in the City Clerk's Office. All fees must be paid by check, money order or cashiers check, made payable to the City Treasurer. Cash will not be accepted.
 - f. No fire hydrant meters shall be furnished or relocated for any customer with a delinquent account with the Water Department.
 - g. After the fees have been paid and an account has been created, the

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meter shall be installed within 48 hours (by the second business day). For an additional fee, at overtime rates, meters can be installed within 24 hours (within one business day).

4.7 Relocation of Existing Fire Hydrant Meters

- a. The customer shall call the Fire Hydrant Meter Hotline (herein referred to as “Hotline”), a minimum of 24 hours in advance, to request the relocation of a meter. A fee will be charged to the existing account, which must be current before a work order is generated for the meter’s relocation.
- b. The customer will supply in writing the address where the meter is to be relocated (map page, cross street, etc). The customer must update the original Fire Hydrant Meter Application with any changes as it applies to the new location.
- c. Fire hydrant meters shall be read on a monthly basis. While fire hydrant meters and backflow devices are in service, commodity, base fee and damage charges, if applicable, will be billed to the customer on a monthly basis. If the account becomes delinquent, the meter will be removed.

4.8 Disconnection of Fire Hydrant Meter

- a. After ten (10) months a “Notice of Discontinuation of Service” (Tab 3) will be issued to the site and the address of record to notify the customer of the date of discontinuance of service. An extension can only be granted in writing from the Water Department Director for up to 90 additional days (as stated in Section 4.6C) and a copy of the extension shall be forwarded to the Meter Shop Supervisor. If an extension has not been approved, the meter will be removed after twelve (12) months of use.
- b. Upon completion of the project the customer will notify the Meter Services office via the Hotline to request the removal of the fire hydrant meter and appurtenances. A work order will be generated

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for removal of the meter.

- c. Meter Section staff will remove the meter and backflow prevention assembly and return it to the Meter Shop. Once returned to the Meter Shop the meter and backflow will be tested for accuracy and functionality.
- d. Meter Section Staff will contact and notify Customer Services of the final read and any charges resulting from damages to the meter and backflow or its appurtenance. These charges will be added on the customer's final bill and will be sent to the address of record. Any customer who has an outstanding balance will not receive additional meters.
- e. Outstanding balances due may be deducted from deposits and any balances refunded to the customer. Any outstanding balances will be turned over to the City Treasurer for collection. Outstanding balances may also be transferred to any other existing accounts.

5. **EXCEPTIONS**

- 5.1 Any request for exceptions to this policy shall be presented, in writing, to the Customer Support Deputy Director, or his/her designee for consideration.

6. **MOBILE METER**

- 6.1 Mobile meters will be allowed on a case by case basis. All mobile meters will be protected by an approved backflow assembly and the minimum requirement will be a Reduced Pressure Principal Assembly. The two types of Mobile Meters are vehicle mounted and floating meters. Each style of meters has separate guidelines that shall be followed for the customer to retain service and are described below:

- a) **Vehicle Mounted Meters:** Customer applies for and receives a City owned Fire Hydrant Meter from the Meter Shop. The customer mounts the meter on the vehicle and brings it to the Meter Shop for

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inspection. After installation is approved by the Meter Shop the vehicle and meter shall be brought to the Meter Shop on a monthly basis for meter reading and on a quarterly basis for testing of the backflow assembly. Meters mounted at the owner's expense shall have the one year contract expiration waived and shall have meter or backflow changed if either fails.

b) **Floating Meters:** Floating Meters are meters that are not mounted to a vehicle. **(Note: All floating meters shall have an approved backflow assembly attached.)** The customer shall submit an application and a letter explaining the need for a floating meter to the Meter Shop. The Fire Hydrant Meter Administrator, after a thorough review of the needs of the customer, (i.e. number of jobsites per day, City contract work, lack of mounting area on work vehicle, etc.), may issue a floating meter. At the time of issue, it will be necessary for the customer to complete and sign the "Floating Fire Hydrant Meter Agreement" which states the following:

- 1) The meter will be brought to the Meter Shop at 2797 Caminito Chollas, San Diego on the third week of each month for the monthly read by Meter Shop personnel.
- 2) Every other month the meter will be read and the backflow will be tested. This date will be determined by the start date of the agreement.

If any of the conditions stated above are not met the Meter Shop has the right to cancel the contract for floating meter use and close the account associated with the meter. The Meter Shop will also exercise the right to refuse the issuance of another floating meter to the company in question.

Any Fire Hydrant Meter using reclaimed water shall not be allowed use again with any potable water supply. The customer shall incur the cost of replacing the meter and backflow device in this instance.

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7. **FEE AND DEPOSIT SCHEDULES**

7.1 **Fees and Deposit Schedules:** The fees and deposits, as listed in the Rate Book of Fees and Charges, on file with the Office of the City Clerk, are based on actual reimbursement of costs of services performed, equipment and materials. These deposits and fees will be amended, as needed, based on actual costs. Deposits, will be refunded at the end of the use of the fire hydrant meter, upon return of equipment in good working condition and all outstanding balances on account are paid. Deposits can also be used to cover outstanding balances.

All fees for equipment, installation, testing, relocation and other costs related to this program are subject to change without prior notification. The Mayor and Council will be notified of any future changes.

8. **UNAUTHORIZED USE OF WATER FROM A HYDRANT**

8.1 Use of water from any fire hydrant without a properly issued and installed fire hydrant meter is theft of City property. Customers who use water for unauthorized purposes or without a City of San Diego issued meter will be prosecuted.

8.2 If any unauthorized connection, disconnection or relocation of a fire hydrant meter, or other connection device is made by anyone other than authorized Water Department personnel, the person making the connection will be prosecuted for a violation of San Diego Municipal Code, Section 67.15. In the case of a second offense, the customer's fire hydrant meter shall be confiscated and/or the deposit will be forfeited.

8.3 Unauthorized water use shall be billed to the responsible party. Water use charges shall be based on meter readings, or estimates when meter readings are not available.

8.4 In case of unauthorized water use, the customer shall be billed for all applicable charges as if proper authorization for the water use had been obtained, including but not limited to bi-monthly service charges, installation charges and removal charges.

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- 8.5 If damage occurs to Water Department property (i.e. fire hydrant meter, backflow, various appurtenances), the cost of repairs or replacements will be charged to the customer of record (applicant).

Water Department Director

- Tabs: 1. Fire Hydrant Meter Application
2. Construction & Maintenance Related Activities With No Return To Sewer
3. Notice of Discontinuation of Service

APPENDIX

Administering Division: Customer Support Division

Subject Index: Construction Meters
Fire Hydrant
Fire Hydrant Meter Program
Meters, Floating or Vehicle Mounted
Mobile Meter
Program, Fire Hydrant Meter

Distribution: DI Manual Holders



Application for Fire Hydrant Meter (EXHIBIT A)

(For Office Use Only)

| | |
|--------|------|
| NS REQ | FAC# |
| DATE | BY |

METER SHOP (619) 527-7449

Meter Information

| | |
|------------------|-------------------------|
| Application Date | Requested Install Date: |
|------------------|-------------------------|

| | | |
|--|------|------------------------------|
| Fire Hydrant Location: (Attach Detailed Map//Thomas Bros. Map Location or Construction drawing.) Zip: | T.B. | G.B. (CITY USE) |
| Specific Use of Water: | | |
| Any Return to Sewer or Storm Drain, if so, explain: | | |
| Estimated Duration of Meter Use: | | Check Box if Reclaimed Water |

Company Information

| | | | |
|--|--------|----------------------|------------|
| Company Name: | | | |
| Mailing Address: | | | |
| City: | State: | Zip: | Phone: () |
| *Business license# | | *Contractor license# | |
| A Copy of the Contractor's license OR Business License is required at the time of meter issuance. | | | |
| Name and Title of Billing Agent: <small>(PERSON IN ACCOUNTS PAYABLE)</small> | | | Phone: () |
| Site Contact Name and Title: | | | Phone: () |
| Responsible Party Name: | | | Title: |
| Cal ID# | | | Phone: () |
| Signature: | | Date: | |
| <small>Guarantees Payment of all Charges Resulting from the use of this Meter. Insures that employees of this Organization understand the proper use of Fire Hydrant Meter</small> | | | |

| | |
|---|-------------------------|
| Fire Hydrant Meter Removal Request | Requested Removal Date: |
| Provide Current Meter Location if Different from Above: | |
| Signature: | Title: Date: |
| Phone: () | Pager: () |

| | |
|-------------------------------------|---|
| <input type="checkbox"/> City Meter | <input type="checkbox"/> Private Meter |
| Contract Acct #: | Deposit Amount: \$ 936.00 Fees Amount: \$ 62.00 |
| Meter Serial # | Meter Size: 05 Meter Make and Style: 6-7 |
| Backflow # | Backflow Size: Backflow Make and Style: |
| Name: | Signature: Date: |

WATER USES WITHOUT ANTICIPATED CHARGES FOR RETURN TO SEWER

Auto Detailing
Backfilling
Combination Cleaners (Vactors)
Compaction
Concrete Cutters
Construction Trailers
Cross Connection Testing
Dust Control
Flushing Water Mains
Hydro Blasting
Hydro Seeing
Irrigation (for establishing irrigation only; not continuing irrigation)
Mixing Concrete
Mobile Car Washing
Special Events
Street Sweeping
Water Tanks
Water Trucks
Window Washing

Note:

1. If there is any return to sewer or storm drain, then sewer and/or storm drain fees will be charges.

Date

Name of Responsible Party
Company Name and Address
Account Number: _____

Subject: Discontinuation of Fire Hydrant Meter Service

Dear Water Department Customer:

The authorization for use of Fire Hydrant Meter # _____, located at *(Meter Location Address)* ends in 60 days and will be removed on or after *(Date Authorization Expires)*. Extension requests for an additional 90 days must be submitted in writing for consideration 30 days prior to the discontinuation date. If you require an extension, please contact the Water Department, or mail your request for an extension to:

City of San Diego
Water Department
Attention: Meter Services
2797 Caminito Chollas
San Diego, CA 92105-5097

Should you have any questions regarding this matter, please call the Fire Hydrant Hotline at (619) _____ - _____.

Sincerely,

Water Department

APPENDIX C

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Waterstops (Special Condition)
10. Epoxy coated bar reinforcement
11. Plain and reinforcing steel
12. Structural steel
13. Structural timber and lumber
14. Treated timber and lumber
15. Lumber and timber
16. Aluminum pipe and aluminum pipe arch
17. Corrugated steel pipe and corrugated steel pipe arch
18. Structural metal plate pipe arches and pipe arches
19. Perforated steel pipe
20. Aluminum underdrain pipe
21. Aluminum or steel entrance tapers, pipe downdrains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

APPENDIX D

SAMPLE CITY INVOICE WITH SPEND CURVE

APPENDIX E
LOCATION MAP

APPENDIX F
ADJACENT PROJECTS MAP

APPENDIX G
POTENTIAL SOIL CONTAMINATION LIMIT MAP

APPENDIX H
HAZARDOUS LABEL / FORMS

APPENDIX I
LONG-TERM MAINTENANCE AND MONITORING AGREEMENT

LONG-TERM MAINTENANCE AND MONITORING AGREEMENT

This **25-Month Long-Term Maintenance and Monitoring Agreement (LTMMA)** is made and entered into by and between the City of San Diego (City), a municipal corporation, and **Marcon Engineering, Inc.**, who may be individually or collectively referred to herein as a "Party" or the "Parties."

RECITALS

- A.** Concurrent with execution of this LTMMA, the Parties entered into a general contract (Construction Contract) for the construction of **Chollas Community Park Comfort Station Project, WBS number S-16058, Bid No. K-19-1785-DBB-3.**
- B.** In accordance with the Construction Contract, the Contractor shall enter into this LTMMA with the City for the purpose of implementing and fulfilling long-term maintenance requirements in accordance with the City of San Diego Municipal Code and the Contract Documents for the specified elopement(s) of **Chollas Community Park Comfort Station** (Maintenance Requirements).
- C.** The Contractor is ready and willing to fulfill its maintenance requirements in accordance with the terms of this LTMMA.

NOW, THEREFORE, in consideration of the above recitals and the mutual covenants and conditions set forth herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby set forth their mutual covenants and understandings as follows:

INTRODUCTORY PROVISIONS

- A. Recitals Incorporated.** The above referenced Recitals are true and correct and are incorporated into this LTMMA by this reference.
- B. Exhibits Incorporated.** All Exhibits and Attachments referenced in this LTMMA are incorporated into this LTMMA by this reference.
- C. Contract Term.** This LTMMA shall be effective upon completion of the Plant Establishment Period (PEP) as described in **Section 6-1.1** of Attachment E and Whitebook **Section 802** a part of the Construction Contract and it shall be effective until the completion of the Work as described below.
- D. Terms and Conditions.** This LTMMA is subject to the terms and conditions of the Construction Contract included in the GREENBOOK, WHITEBOOK, and Special Provisions (**Part 1, Part 8, and Part 10**) except as otherwise stated in this LTMMA.

E. Partial Release of Payment Bond and Performance Bond.

- 1. Performance of Contract in Two Phases.** There are two separate phases of Work to be performed by the Contractor under this Contract. The first phase covers the Work involved in the original agreement as described in this agreement (“Phase 1 Work”). The second phase covers the work involved in the long-term maintenance of the Re-vegetation Area after Phase 1 Work has been completed (“Phase 2 Work”).
- 2. Bond Handling for Contract Phases.** The Payment Bond and the Performance Bond covering Phase 1 Work on this Contract shall remain in full force and effort until completion of that phase is certified. The original Payment Bond and the original Performance Bond covering Phase 1 Work on this Contract shall continue in full force and effort for Phase 2 Work, however the value of each bond may be reduced as follows:

 - 2.1** Completion by the Contractor of all Phase 1 Work shall be evidenced solely by the City Engineer affirming in writing that to the best of their knowledge that all Phase 1 Work has been completed by the Contractor in strict conformity with all City-approved plans and revisions, and that the Phase 1 Work completed by the Contractor meets all applicable standards (“Notice of Completion”).
 - 2.2** Upon issuance by the City Engineer of the Notice of Completion for Phase 1 Work, the Payment Bond for this Project, and the Performance Bond for this Project, may be partially released, and thereby reduced for the Work performed under Phase 1. The remaining payment and performance bond will cover the full cost of Phase 2 Work on this Project, which will be the amount specified in Section 4.1 of this LTMMA.
- 3. No Partial Release Upon Default.** No Partial Performance Bond Release and Reduction shall be given to the Contractor if the Performance Bond and/or this Agreement is in default on Phase 1 Work.

SECTION 1 - MAINTENANCE CONTRACT SUMMARY

- 1.1. General.** The Contractor shall fulfill the Project's Maintenance Requirements (Work) as identified in the scope of work attached as **Exhibit A** in a manner satisfactory to the City.

The Contractor shall provide all equipment, labor, and materials necessary to perform the **Work** as described in **Exhibit A**, at the direction of the City.

- 1.2. Schedule of Work.** The Contractor shall follow the Schedule of Work (Schedule) for the maintenance and monitoring period provided scope of work attached as Exhibit A.

After receiving notification from the City, the Contractor shall create a comprehensive Schedule of Work (Schedule) for performance of this LTMMA for the City's approval. The Schedule shall include routine work, inspection, and infrequent operations such as repairs.

The City will approve the Schedule prior to the commencement of the Work. The City may require the Contractor to revise the Schedule. The Contractor shall not revise the Schedule unless the revisions have received the prior written approval of the City.

- 1.3. Commencement of Work & Maintenance Period.** This LTMMA shall commence when the City approves of the Work of the Plant Establishment Period and sends notice of the approval to the Contractor in accordance with **Part 8, Section 802** of the Construction Contract and shall continue for **25** months. A copy of the approval form is attached as **Exhibit B**.

- 1.4. License.** The Contractor shall hold the following licenses in good standing:

1.4.1. C-27 State Contractor's License.

1.4.1.1. Alternatively, the Contractor shall retain the services of a Subcontractor with a **C-27 State Contractor's License**.

1.4.2. Pest Control Advisor's License.

1.4.2.1. Alternatively, the Contractor shall retain the services of a licensed Pest Control Advisor.

1.4.3. Registration with the County Agriculture Commission.

1.4.4. Qualified Applicator's Certificate for Category B. This shall apply to any person supervising the use of pesticides, herbicides, or rodenticides.

1.4.5. City of San Diego Business License.

Prior to performing the Work, the Contractor shall complete and submit to the City the License Data Sheet. **See Exhibit C.**

- 1.5. Hours of Performance.** The Contractor shall perform the Work between the hours of 6:00 a.m. and 6:00 p.m., Monday through Friday (Working Hours). The City may, in its sole discretion, grant permission to the Contractor to perform Work during non-Working Hours. Maintenance functions that generate excess noise (operations of power equipment which would cause annoyance to area residents for example) shall not begin before 7:00 a.m.

SECTION 2 - ADMINISTRATION

- 2.1. Contract Administrator. PUBLIC WORKS CONTRACTING (PWC)** is the Contract Administrator for the LTMMA. The Contractor shall perform the Work under the direction of a designated representative of the Public Works Department. The City will communicate with the Contractor on all matters related to the administration of this LTMMA and the Contractor's performance of the Work rendered hereunder. When this LTMMA refers to communications to or with the City, those communications shall be with the City, unless the City or this LTMMA specifies otherwise. Further, when this LTMMA requires an act or approval by City, that act or approval will be performed by the City.
- 2.2. Local Office.** The Contractor shall maintain a local office with a company representative who is authorized to discuss matters pertaining to this LTMMA with the City and shall promptly respond and be available during Normal Working Hours. A local office is one located in San Diego County that can be reached by telephone and facsimile. An answering service in conjunction with a company email address for the designated company representative may fulfill this requirement. A mobile telephone shall not fulfill the requirement for a local office. All calls to the Contractor from the City shall be returned within a 1-hour period.
- 2.3. Emergency Calls.** The Contractor shall have the capability to receive and to respond immediately to calls of an emergency nature. The City shall refer emergency calls to the Contractor for immediate disposition. The Contractor shall provide the City with a 24 hour emergency telephone number for this purpose.
- 2.4. Staffing.** The Contractor shall furnish supervisory and working personnel capable of promptly accomplishing all Work required under this LTMMA on schedule and to the satisfaction of the City.
- 2.5. Contractor Inspections.** The Contractor shall perform inspections of the Work site and shall prepare and submit to the City a Punchlist and dates of correction. The Punchlist shall include a comprehensive report of Work performed at the Work site to ensure 100% cover.

SETION 3: WORK SITE MAINTENANCE

- 3.1. Use of Chemicals.** The Contractor shall submit to the City for approval sample labels and MSDS for all chemical herbicides, rodenticides, and pesticides proposed for use under this LTRMC. Materials included shall be limited to chemicals approved by the State of California Department of Agriculture.

The use of any chemical shall be based on the recommendations of a licensed pest control advisor. Annual PCA Pesticide Recommendations are required for each pesticide proposed to be used for the Work site covered by this LTRMC. The use of chemicals shall conform to the current San Diego County Department of Agriculture regulations.

No chemical herbicide, rodenticide, or pesticide shall be applied until its use is approved, in writing, by City as appropriate for the purpose and area proposed.

The Contractor shall submit a monthly pesticide use report to the City along with the Contractor's invoices for payment. This report shall include a statement of all applications of herbicides, rodenticides, and pesticides, detailing the chemical used, undiluted quantity, rate of application, applicator's name, and the date and purpose of the application. For months in which no pesticides are applied, state "No Pesticide Used" on the report.

- 3.2. Irrigation Water.** The Contractor shall diligently practice water conservation, including minimizing run-off or other waste. The Contractor shall turn off irrigation systems, if any, during periods of rainfall and at such other times when suspension of irrigation is desirable to conserve water and to remain within the guidelines of good horticultural landscape maintenance practices in accordance with the instructions from the Project Biologist. The Contractor's failure to properly manage and conserve water may result in deductions from the monthly payment to be made to the Contractor or other penalties under this LTMMA.

If the Contractor causes excessive use or waste of irrigation water, the estimated cost of that water shall be deducted from the monthly payment. Further, any monetary fines or other damages assessed to City for the Contractor's failure to follow water conservation regulations imposed by the City, the Public Utilities Department of the City of San Diego, and, where appropriate, the State of California, the County Water Authority, or other legal entities shall be solely the responsibility of the Contractor and may be deducted from the monthly payment to be made to the Contractor under this LTMMA.

- 3.3. Payment for Water.** The Contractor shall pay for the water used in the maintenance of the Revegetation Area and this cost is included in the price of this LTMMA.
- 3.4. Satisfactory Progression.** If the Revegetation/Restoration Area is not progressing towards the required performance criteria, as defined in the Scope of Work, in accordance with the Work Schedule, and as determined by City, the City may accordingly adjust monthly payments to the Contractor.

SECTION 4: COMPENSATION

- 4.1. Maximum Compensation.** The compensation for this LTMMA shall not exceed **\$21,870.00**.
- 4.2. Prevailing Wage Requirements.** The Prevailing Wages requirements in accordance with **Attachment D** of this Construction Contract are hereby incorporated by this reference.
- 4.3. Method of Payment and Reports.** The payments will be made monthly in direct proportion that each month bears to the total value of the Contract Price. As conditions precedent to payment, the Contractor shall submit a detailed invoice and report of maintenance Work performed every month. The Contractor's failure to submit the required reports or certified payrolls as described in the Construction Contract shall constitute a basis for withholding payment by the City.
- 4.4. Final Payment.** The Contractor shall not receive final payment until the following conditions have been completed to the City's satisfaction:

- 4.4.1. The item(s) of the Work subject to this maintenance coverage as specified in **Exhibit A** (Maintenance Items) have been determined to be in compliance with the Construction Contract and this LTMMA.
- 4.4.2. The Contractor has provided to the City a signed and notarized Affidavit of Disposal, a copy of which is attached to the Construction Contract, stating that all brush, trash, debris, and surplus materials resulting from the Work have been disposed of in a legal manner.
- 4.4.3. The Contractor has provided a final work summary report to the City.
- 4.4.4. The Contractor has performed comprehensive and successful testing and checks of the Maintenance Items.

SECTION 5: BONDS AND INSURANCE

- 5.1. **Contract Bonds.** Prior to the commencement of Work, the Contractor, at its sole cost and expense, shall provide the following bonds issued by a surety authorized to issue bonds in California satisfactory to the City:
 - 5.1.1. A Payment Bond (Material and Labor Bond) in an amount not less than the Contract Price for this Bid item, to satisfy claims of material suppliers and mechanics and laborers employed by it on the Work. The Payment Bond shall be maintained by the Contractor in full force and effect until the Work is accepted by City and until all claims for materials and labor are paid, and shall otherwise comply with the California Civil Code.
 - 5.1.2. A Performance Bond in an amount not less than the Contract Price for this bid item to guarantee the faithful performance of all Work within the time prescribed in a manner satisfactory to the City and to guarantee all materials and workmanship will be free from original or developed defects. The Performance Bond shall remain in full force and effect until performance of the Work is completed as set forth in this LTMMA.
- 5.2. **Insurance.** The Contractor shall maintain insurance coverage as specified in **Section 7-3, "INSURANCE"** of the Construction Contract at all times during the term of this LTMMA.

The Contractor shall not begin the Work under this LTMMA until they have complied with the following:

- 5.2.1. Obtain insurance certificates reflecting evidence of insurance:
 - 1. Commercial General Liability
 - 2. Commercial Automobile Liability
 - 3. Worker's Compensation
- 5.2.2. Confirm that all policies contain the specific provisions required in Section 7-3, "INSURANCE."

The Contractor shall submit copies of any policy upon request by the City.
The Contractor shall not modify any policy or endorsement thereto which increases the City's exposure to loss for the duration of this LTMMA.

SECTION 6: MISCELLANEOUS

- 6.1. Illness and Injury Prevention Program.** The Contractor shall comply with all the mandates of Senate Bill 198 and shall specifically have a written Injury Prevention Program on file with the City in accordance with all applicable standards, orders, or requirements of California Labor Code, Section 6401.7. This Program shall be on file prior to the performance of any Work.
- 6.2. City Standard Provisions.** This LTMMA is subject to the same standard provisions and Contractor Certification requirements as the Construction Contract.
- 6.3. Taxpayer Identification Number.** I.R.S. regulations require the City to have the correct name, address, and Taxpayer Identification Number (TIN) or Social Security Number (SSN) on file for businesses or persons who provide services or products to the City. This information is necessary to complete Form 1099 at the end of each tax year. As such, the Contractor shall provide the City with a Form W-9 upon execution of this LTMMA.
- 6.4. Assignment.** The Contractor shall not assign the obligations under this LTMMA, whether by express assignment or by sale of the company, nor any monies due or to become due, without the City's prior written approval. Any assignment in violation of this section shall constitute a Default and is grounds for immediate termination of this LTMMA, at the sole discretion of City. In no event shall any putative assignment create a contractual relationship between the City and any putative assignee.
- 6.5. Independent Contractors.** The Contractor and any Subcontractors employed by Contractor shall be independent contractors and not agents of the City. Any provisions of this LTMMA that may appear to give the City any right to direct the Contractor concerning the details of performing the Work, or to exercise any control over such performance, shall mean only that the Contractor shall follow the direction of the City concerning the end results of the performance.
- 6.6. Covenants and Conditions.** All provisions of this LTMMA expressed as either covenants or conditions on the part of the City or the Contractor shall be deemed to be both covenants and conditions.
- 6.7. Jurisdiction and Venue.** The jurisdiction and venue for any suit or proceeding arising out of or concerning this LTMMA, the interpretation or application of any of its terms, or any related disputes shall be the County of San Diego, State of California.
- 6.8. Successors in Interest.** This LTMMA and all rights and obligations created by it shall be in force and effect whether or not any Parties to this LTMMA have been succeeded by another entity and all rights and obligations created by this LTMMA shall be vested and binding on any Party's successor in interest.

- 6.9. Integration.** This LTMMA and the exhibits, attachments, and references incorporated into this LTMMA fully express all understandings of the Parties concerning the matters covered in this LTMMA. No change, alteration, or modification of the terms or conditions of this LTMMA, and no verbal understanding of the Parties, their officers, agents, or employees shall be valid unless made in the form of a written change agreed to in writing by both Parties or by an amendment to this LTMMA agreed to by both Parties. All prior negotiations and agreements shall be merged into this LTMMA.
- 6.10. Counterparts.** This LTMMA may be executed in counterparts, which when taken together shall constitute a single signed original as though all Parties had executed the same page.
- 6.11. No Waiver.** Any failure of either the City or the Contractor to insist upon the strict performance by the other of any covenant, term, or condition of this LTMMA, nor any failure to exercise any right or remedy consequent upon a breach of any covenant, term, or condition of this LTMMA, shall constitute a waiver of any such breach or of such covenant, term, or condition. No waiver of any breach shall affect or alter this LTMMA, and each and every covenant, condition, and term hereof shall continue in full force and effect to any existing or subsequent breach.
- 6.12. Severability.** The unenforceability, invalidity, or illegality of any provision of this LTMMA shall not render any other provision of this LTMMA unenforceable, invalid, or illegal.

6.13. Signing Authority. The representative for each Party signing on behalf of a corporation, partnership, joint venture or governmental entity hereby declares that authority has been obtained to sign on behalf of the corporation, partnership, joint venture, or entity and agrees to hold the other Party or Parties hereto harmless if it is later determined that such authority does not exist.

IN WITNESS WHEREOF, this Contract is executed by the City of San Diego, acting by and through its Public Works Department Director in accordance with Municipal Code 522.3102 and by Contractor.

Dated this 25th day of January, 2019.

THE CITY OF SAN DIEGO

By: 

Stephen Samara
Principal Contract Specialist
Public Works Department

I HEREBY CERTIFY I can legally bind **Marcon Engineering, Inc.** and that I have read this entire contract, this 17th day of December, 2018.

By: 

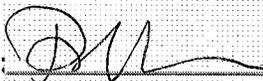
Printed Name: Maryory Contreras

Title: President

I HEREBY APPROVE the form of the foregoing Contract this

30th day of Jan of 2019.

Mara W. Elliott, City Attorney

By: 

Printed Name: Bonny Hsu
Deputy City Attorney

EXHIBIT A

SCOPE OF WORK

- I. **Location of Work.** The location of the Work to be performed (Revegetation Area) is shown on Drawing numbered **35257-15-D**, which are incorporated into this Contract by this reference as though fully set forth herein.
- II. **Description of Work.** The Contractor shall maintain and monitor the Revegetation Area during the Monitoring Program in accordance with this Contract. The Revegetation Area shall meet the success criteria **specified below in Section M** at each of the milestones listed in the Schedule for the maintenance and monitoring period specified below in Section L. The Work includes complete landscape maintenance consisting of irrigation, maintenance of plant health; weed control; control of all plant diseases and pests; maintenance of erosion control BMP's and all other maintenance listed in this Contract and as required to maintain the Revegetation Area in a useable condition and to maintain the plant material in a healthy and viable state.
- III. **Method of Performing Work.**
 - A. **Irrigation.** Irrigation shall be applied to Revegetation Area as necessary to provide for the healthy establishment of plants. Irrigation delivery techniques and schedules will vary depending on the availability of a sprinkler irrigation system and weather patterns. Failure of an existing irrigation system to provide full and proper irrigation shall not relieve Contractor of the responsibility to provide adequate irrigation with full and proper coverage of all areas subject to this LTMMMA.
 1. In areas where an automatic sprinkler system is installed, Contractor shall periodically inspect the operation of the system for any malfunction. The maximum interval between inspections shall not exceed 7 Days. The Contractor shall maintain all sprinkler systems in such a way as to guarantee proper coverage and full working capability, and shall make whatever adjustments may be necessary to prevent excessive run-off into streets, rights-of-way, or other areas not meant to be irrigated. The cost of wasted water may be charged to Contractor.
 2. All areas not adequately covered by a sprinkler system shall be irrigated by a portable irrigation method in accordance with instructions from the Project Biologist. The Contractor shall furnish all hoses, nozzles, sprinklers, etc. necessary to accomplish this supplementary irrigation. The Contractor shall exercise due diligence to prevent water waste, erosion, and detrimental seepage into existing underground improvements and to existing structures.
 3. Irrigation shall be accomplished as follows:
 - a) Landscaped improved banks and slopes (if any) shall be irrigated Monday through Friday as required to maintain acceptable growth, viability and health, and to encourage deep rooting.

- b) Planted and seeded areas shall be irrigated as required to maintain acceptable growth, viability and health, and to encourage deep rooting. Planted and seeded areas shall be irrigated at a rate which keeps surface runoff to a minimum. The irrigation rate shall be adjusted to the needs of plant types, seasons and weather conditions.

4. **Maintenance of Irrigation System.** The Contractor shall keep controller and valve boxes (if any) clear of soil and debris and shall maintain the irrigation system at no additional cost to City, including replacement, repair, adjustment, raising or lowering, straightening and any other operation required for the continued proper operation of the system from the "cold" side of the water meter throughout the Revegetation/Restoration Area. The Contractor shall also be responsible for maintaining the painted surfaces of irrigation and lighting controller cabinets as well as the corresponding automatic irrigation battery numbers on the lids of the automatic control valve boxes (if any). The Contractor shall be responsible for light bulb replacements in controller cabinets as necessary.

- a) Repair or replacement includes: sprinkler system laterals (piping), sprinkler mains (pressure lines), vacuum breakers, sprinkler control valves, sprinkler controllers, sprinkler heads, sprinkler caps, sprinkler head risers, valve covers, boxes and lids (including electrical pull boxes and lids), valve sleeves and lids, quick coupler valves and hose bibs. Any replacement shall conform to the type and kind of existing system. Any deviation shall be approved in writing by City.
- b) The Contractor shall repair irrigation systems which are damaged or altered in any way, including by acts of God, vandalism, vehicular damage, or theft.

5. **Operation of Automatic Irrigation Controllers.** Where the operation of automatic irrigation controllers is required as part of this LTRMC, the Contractor shall:

- a) Not duplicate any coded City key furnished by City for access and operation of the controller;
- b) Surrender all keys furnished by City, promptly at the end of the term of this LTRMC, or at any time deemed necessary by City to prevent serious loss to City;
- c) protect the security of City's property by keeping controller cabinet and building doors locked at all times; and
- d) refrain from using premises behind locked doors for storage of materials, supplies, or tools except as approved by City.

B. Pruning Shrubs and Ground Cover Plants. The Contractor shall prune all shrubs and ground cover plants growing in the Revegetation Area as required to:

- 1. Maintain plant growth viability and health, and to encourage deep rooting, in accordance with instructions from the Project Biologist.

2. Prevent encroachment of passage ways, walks, streets, or view of signs; and
3. Prevent encroachment in any manner deemed objectionable by the City.

C. Tree Maintenance. The Contractor shall maintain all trees and container plants in the revegetation area in accordance with instructions from the Project Biologist. The Contractor shall perform pruning in accordance with instructions from the Project Biologist, when necessary. The Contractor shall not top trees.

1. **Potential Hazards.** The Contractor shall notify the City within 24 hours of any tree that shows signs of root heaving or leaning, or is in any manner a potential safety hazard. The Contractor shall immediately reestablish trees and shrubs that are uprooted due to storms, if possible. If trees or shrubs cannot be reestablished, Contractor shall remove them immediately (including roots) and fill the holes until replacement planting is complete.
2. **Replacement.** The Contractor shall completely remove and replace trees lost due to Contractor's faulty maintenance or negligence, as determined by the City. The Contractor shall replace trees in kind and size as determined by the City. If there is a difference in value between the tree lost and the replacement tree, the City will deduct the difference from payment to be made under this LTMMA. The City shall determine the value of the tree lost using the latest International Society of Arboriculture (I.S.A.) guidelines for value determination.
3. **Staking.** The Contractor shall securely stake any newly planted trees and other trees needing support with two "lodge pole" type stakes placed on opposite sides of the tree outside the root ball and secured to the tree with at least two flexible rubber tree ties. The Contractor shall regularly inspect tree ties and stakes and reposition them as necessary to ensure against girdling and abrasion.

D. Fertilization. The Contractor shall fertilize the Revegetation Area as necessary in accordance with instructions from the Project Biologist. Contractor shall submit to City Material Safety Data Sheets and a schedule of application showing the site, date, and approximate time of fertilizer application (Fertilizer Schedule). The Fertilization Schedule, regardless of its intensity, timing, or the number of sites covered daily or weekly, shall not excuse Contractor from performing any other Work regularly required under this LTMMA. All fertilization shall first be approved by the Project Biologist.

1. The Contractor shall notify the City at least 48 hours before beginning any fertilization. Fertilizer shall be delivered to the site only in the original unopened containers bearing the manufacturer's guaranteed analysis. Damaged packages shall not be accepted. The Contractor shall furnish to the City with duplicate signed, legible copies of all certificates and invoices for all fertilizer to be used for this LTMMA. The invoices shall state the grade, amount and quantity received. Both the copy to be retained by the City and the Contractor's copy shall be signed by the City, on site, before any fertilizer may be used.

2. Fertilizers, if necessary, shall be applied at the direction of the Project Biologist and according to manufacturer's product specifications.
3. If deemed necessary by the City to achieve required results, the Contractor shall apply other materials as directed by the City, including:
 - a) iron chelate;
 - b) soil sulfur;
 - c) gypsum; or
 - d) surfactant enzymes such as Sarvon or Naiad.
4. The Contractor shall adequately irrigate the fertilized area(s) immediately following the application of fertilizers and/or amendments to force fertilizer material to rest directly on the soil surface. Drip irrigated areas shall be adequately hand watered using quick coupler valves and hoses to dissolve fertilizer.

E. Weed Removal. The Contractor shall completely remove weeds from the Revegetation Area, as shown on the Work Schedule included in Section L. For the purposes of this Section, "Weed" means any undesirable or misplaced plant. The Contractor shall control Weeds by manual, mechanical, or chemical methods. The City may restrict the use of chemical weed control in certain areas. Weeds shall be removed prior to setting seed and to prevent the overcrowding of revegetation plants in accordance with **Section 802-3.4.3 of the Whitebook.**

F. Disease and Pest Control. The Contractor shall regularly inspect the Revegetation Area for the presence of disease and insect or rodent infestation. The Contractor shall notify the City within 4 Days if disease or insect or rodent infestation is discovered. In its notice to the City, the Contractor shall identify the disease, insect, or rodent and specify the control measures to be taken. Upon approval of the City, the Contractor shall implement the approved control measures, exercising extreme caution in the application of all sprays, dusts, or other materials utilized. The Contractor shall continue the approved control measures until the disease, insect, or rodent is controlled to the satisfaction of the City.

1. All individuals who supervise the mixing and application of herbicides, pesticides, and rodenticides on behalf of the Contractor shall possess valid Qualified Applicators Certificate for Category B issued to them by the State Department of Food and Agriculture.
2. The Contractor shall utilize all safeguards necessary during disease, insect or rodent control operations to ensure safety of the public and the employees of the Contractor, in accordance with current standard practices accepted by the State of California Department of Food and Agriculture. If the Contractor is unable to control the pest or disease, a pest control company will be hired and the cost shall be deducted from Contractor's monthly payment.

- G. Plant Replacement.** Except as provided in **Section H** below, the Contractor shall notify the City within 4 Calendar Days of the loss of plant material due to any cause.
1. The Contractor shall, at no cost to the City, replace any tree, shrub, ground cover, or other plant which is damaged or lost as a result of Contractor's faulty maintenance or negligence. The size and species of replacement plant materials shall be as directed by the City.
 2. If so directed by the City, the Contractor shall replace any plant damaged or lost that is not a result of the Contractor's faulty maintenance or negligence. The size and species of replacement plant materials shall be as directed by City. The City will pay for materials and labor outside of warranty.
 3. The City may determine that certain plants should be replaced in order to ensure maximum ecological health and overall aesthetic appearance of planting in the Revegetation Area. When the City determines such replacement should occur, Contractor shall replace the plants as directed by the City. The City will pay for materials and labor outside of warranty.
- H. Damage Reports.** The Contractor shall notify the City within 24 hours of any damage to the Work Area caused by accident, vandalism, or theft.
- I. Litter.** The Contractor shall promptly dispose of all trash and debris at an appropriate City disposal site. The Contractor shall pay any and all fees associated with the disposal of debris or trash accumulated under the terms of this LTMMA. The Contractor understands that disposal of refuse at City landfills is subject to a fee and that the Refuse Disposal Division can be contacted at (619) 573-1418 for fee information.
1. **Contractor Generated Litter.** The Contractor shall promptly remove all debris generated by the Contractor's pruning, trimming, weeding, edging and other Work required by this LTMMA. Immediately after working in streets, park walks, gutters, driveways, and paved areas, the Contractor shall clean them in accordance with all applicable laws.
 2. **Third Party Generated Litter.** Upon discovery, the Contractor shall remove all litter, including bottles, glass, cans, paper, cardboard, fecal matter, leaves, branches, metallic items, and other debris, from the Work site.
- J. Monitoring.** The Resident Engineer will oversee all maintenance operations and of the Revegetation Area according to the schedule and methods described in this plan.
- K. Final Site Cleanup.** Prior to completion of the LTMMA, all temporary irrigation materials, BMP's, and signs shall be removed from the site and properly disposed of.
- L. Maintenance Schedule.** The contractor shall perform maintenance activities including but not limited to weed removal, inspection of plant health, treatment of any disease, and maintenance of BMP's at least on a monthly basis for year one and a minimum of every other month during year two of the 25 month maintenance period.

If the following performance standards are not met at the intervals below, the Contractor shall implement necessary measures to achieve the performance standards included below. Any replacement of container plants or reseeding required due to deficient performance of the revegetation area will be at the contractor's cost.

| <u>Performance interval</u> | <u>Performance Standard</u> |
|-----------------------------|---|
| 6 Months | 100% Survival of Container Plants <20% weed cover |
| 12 Month | 90% Survival of Container Plants Native Plant Cover > 50% <15% Weed Cover |
| 18 Months | 85% Survival of Container Plants Native Plant Cover > 70% <10% Weed Cover |
| 24 Months | 80% Survival of Container Plants Native Plant Cover > 75% <5% Weed Cover |

M. Long Term Maintenance Completion. The Revegetation will be accepted as completed after 25 months if the performance standards above in Section L have been met.

If the performance standards have not been met, the LTMMA shall remain in effect until the performance standards have been achieved.

EXHIBIT B

**INSERT A COPY OF THE ENGINEER'S FIELD NOTIFICATION WHICH ESTABLISHES THE
COMMENCEMENT DATE OF THE MONITORING PROGRAM, SEE THE 2015 WHITEBOOK, SECTION
802**

EXHIBIT C

LICENSE DATA SHEET

State Contractor License Classification and Number: A,B, C-8 631811

Name of License Holder: Marcon Engineering, Inc

Expiration Date: In process- 11/30/2020 expected date

City of San Diego Business License Number: B2013060627

Expiration Date: 10/31/2019

APPENDIX J
SAMPLE OF PUBLIC NOTICE

APPENDIX K

ADVANCED METERING INFRASTRUCTURE (AMI) DEVICE PROTECTION

ATTACHMENT F
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ATTACHMENT G
CONTRACT AGREEMENT

CONTRACT AGREEMENT

CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and **Marcon Engineering, Inc.**, herein called "Contractor" for construction of **Chollas Community Park Comfort Station**; Bid No. **K-19-1785-DBB-3**; in the amount **Two Million Two Hundred Sixty Seven Thousand Eight Hundred Three Dollars and Zero Cents (\$2,267,803.00)**, which is comprised of the Base Bid.

IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

1. The following are incorporated into this contract as though fully set forth herein:
 - (a) The attached Faithful Performance and Payment Bonds.
 - (b) The attached Proposal included in the Bid documents by the Contractor.
 - (c) Reference Standards listed in the Instruction to Bidders and the Supplementary Special Provisions (SSP).
 - (d) Long-Term Maintenance and Monitoring Agreement.
 - (e) That certain documents entitled **Chollas Community Park Comfort Station**, on file in the office of the Public Works Department as Document No. **S-16058**, as well as all matters referenced therein.
2. The Contractor shall perform and be bound by all the terms and conditions of this contract and in strict conformity therewith shall perform and complete in a good and workmanlike manner **Chollas Community Park Comfort Station**, Bid Number **K-19-1785-DBB-3**, San Diego, California.
3. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and the Contractor shall accept such payment in full satisfaction of all claims incident to such performances.
4. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
5. This contract is effective as of the date that the Mayor or designee signs the agreement.

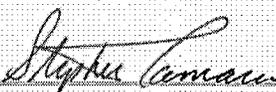
CONTRACT AGREEMENT (continued)

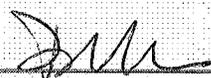
IN WITNESS WHEREOF, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code **522.3102** authorizing such execution.

THE CITY OF SAN DIEGO

APPROVED AS TO FORM

Mara W. Elliott, City Attorney

By 

By 

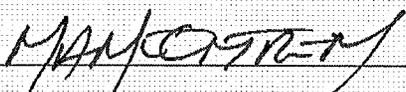
Print Name: _____
Stephen Samara
Principal Contract Specialist
Public Works Department

Print Name: Bonny Hsu
Deputy City Attorney

Date: 1/25/2019

Date: Jan 30, 19

CONTRACTOR

By 

Print Name: Maryory Contreras

Title: President

Date: December 17, 2018

City of San Diego License No.: B2013060627

State Contractor's License No.: 631811

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: 1000029618

CERTIFICATIONS AND FORMS

The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certifications, forms and affidavits submitted as part of this bid are true and correctt.

BIDDER'S GENERAL INFORMATION

To the City of San Diego:

Pursuant to "Notice Inviting Bids", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

The undersigned bidder(s) further warrants that bidder(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Bidding Documents therefore, and that by submitting said Bidding Documents as its bid proposal, bidder(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Bidding Documents.

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID
UNDER 23 UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106**

State of California

County of San Diego

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

CONTRACTOR CERTIFICATION

DRUG-FREE WORKPLACE

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in the WHITEBOOK, Section 7-13.3, "Drug-Free Workplace", of the project specifications, and that;

This company has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.

CONTRACTOR CERTIFICATION

AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the Americans with Disabilities Act (ADA) outlined in the WHITEBOOK, Section 7-13.2, "American With Disabilities Act", of the project specifications, and that:

This company has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

CONTRACTOR CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

I declare under penalty of perjury that I am authorized to make this certification on behalf of the company submitting this bid/proposal, that as Contractor, I am familiar with the requirements of City of San Diego Municipal Code § 22.3004 regarding Contractor Standards as outlined in the WHITEBOOK, Section 7-13.4, ("Contractor Standards"), of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3004.

CONTRACTOR CERTIFICATION

EQUAL BENEFITS ORDINANCE CERTIFICATION

I declare under penalty of perjury that I am familiar with the requirements of and in compliance with the City of San Diego Municipal Code § 22.4300 regarding Equal Benefits Ordinance.

CONTRACTOR CERTIFICATION

EQUAL PAY ORDINANCE CERTIFICATION

Contractor shall comply with the Equal Pay Ordinance (EPO) codified in the San Diego Municipal Code (SDMC) at section 22.4801 through 22.4809, unless compliance is not required based on an exception listed in SDMC section 22.4804.

Contractor shall require all of its subcontractors to certify compliance with the EPO in their written subcontracts.

Contractor must post a notice informing its employees of their rights under the EPO in the workplace or job site.

By signing this Contract with the City of San Diego, Contractor acknowledges the EPO requirements and pledges ongoing compliance with the requirements of SDMC Division 48, section 22.4801 et seq., throughout the duration of this Contract.

AFFIDAVIT OF DISPOSAL

(To be submitted upon completion of Construction pursuant to the contracts Certificate of Completion)

WHEREAS, on the _____ DAY OF _____, 2____ the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

Chollas Community Park Comfort Station

(Project Title)

as particularly described in said contract and identified as Bid No. **K-19-1785-DBB-3**; SAP No. (WBS/IO/CC) **S-16058**; and **WHEREAS**, the specification of said contract requires the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

NOW, THEREFORE, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

and that they have been disposed of according to all applicable laws and regulations.

Dated this _____ DAY OF _____, _____.

By: _____
Contractor

ATTEST:

State of _____ County of _____

On this _____ DAY OF _____, 2____, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared _____ known to me to be the _____ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State

LIST OF SUBCONTRACTORS

***** PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY *** TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY *** SEE INSTRUCTIONS TO BIDDERS FOR FURTHER INFORMATION**

In accordance with the requirements of the "Subletting and Subcontracting Fair Practices Act", Section 4100, of the California Public Contract Code (PCC), the Bidder is to list below the name, address and license number of each Subcontractor who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement, in an amount of or in excess of 0.5% of the Contractor's total Bid. Failure to comply with this requirement may result in the Bid being rejected as non-responsive. The Contractor is to list only one Subcontractor for each portion of the Work. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

| NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR | CONSTRUCTOR OR DESIGNER | DIR Registration Number | SUBCONTRACTOR LICENSE NUMBER | TYPE OF WORK | DOLLAR VALUE OF SUBCONTRACT | MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB [ⓐ] | WHERE CERTIFIED [ⓑ] | CHECK IF JOINT VENTURE PARTNERSHIP |
|--|-------------------------|-------------------------|------------------------------|--------------|-----------------------------|--|------------------------------|------------------------------------|
| Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____ | | | | | | | | |
| Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____ | | | | | | | | |

- ⓐ As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

| | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ⓑ As appropriate, Bidder shall indicate if Subcontractor is certified by:

| | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | | |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

NAMED EQUIPMENT/MATERIAL SUPPLIER LIST

***** PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY *** TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY *** SEE INSTRUCTIONS TO BIDDERS FOR FURTHER INFORMATION**

| NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER | MATERIALS OR SUPPLIES | DIR Registration Number | DOLLAR VALUE OF MATERIAL OR SUPPLIES | SUPPLIER (Yes/No) | MANUFACTURER (Yes/No) | MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB ^① | WHERE CERTIFIED ^② |
|--|-----------------------|-------------------------|--------------------------------------|-------------------|-----------------------|--|------------------------------|
| Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____ | | | | | | | |
| Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____ | | | | | | | |

- ① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE,SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ② As appropriate, Bidder shall indicate if Vendor/Supplier is certified by:
- | | | | |
|--|--------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | | |
| State of California's Department of General Services | CADoGS | City of Los Angeles | LA |
| State of California | CA | U.S. Small Business Administration | SBA |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

ELECTRONICALLY SUBMITTED FORMS

THE FOLLOWING FORMS MUST BE SUBMITTED IN PDF FORMAT WITH BID SUBMISSION

The following forms are to be completed by the bidder and submitted (uploaded) electronically with the bid in PlanetBids.

- A. BID BOND – See Instructions to Bidders, Bidders Guarantee of Good Faith (Bid Security) for further instructions**
- B. CONTRACTOR’S CERTIFICATION OF PENDING ACTIONS**
- C. MANDATORY DISCLOSURE OF BUSINESS INTERESTS FORM**
- D. SUBCONTRACTOR LISTING (OTHER THAN FIRST TIER)**

Bids will not be accepted until ALL the above-named forms are submitted as part of the bid submittal

BID BOND

**See Instructions to Bidders, Bidder Guarantee of Good Faith
(Bid Security)**

KNOW ALL MEN BY THESE PRESENTS,

That MarCon Engineering, Inc. as Principal,
and Arch Insurance Company as Surety, are held
and firmly bound unto The City of San Diego hereinafter called "OWNER," in the sum
of **10% OF THE TOTAL BID AMOUNT** for the payment of which sum, well and truly to be made, we
bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally,
firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under
the bidding schedule(s) of the OWNER's Contract Documents entitled

CHOLLAS COMMUNITY PARK COMFORT STATION

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in
the manner required in the "Notice Inviting Bids" enters into a written Agreement on the form of
agreement bound with said Contract Documents, furnishes the required certificates of insurance, and
furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and
void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by
said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit,
including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this 20th day of November, 2018

MarCon Engineering, Inc. (SEAL)
(Principal)

Arch Insurance Company (SEAL)
(Surety)

By: 
(Signature)

By: 
(Signature)
Lawrence F. McMahon, Attorney-in-Fact

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT Civil Code § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy or validity of that document.

STATE OF CALIFORNIA

County of San Diego

On NOV 20 2018 before me, Janice R. Martin, Notary Public,
Date Insert Name of Notary exactly as it appears on the official seal

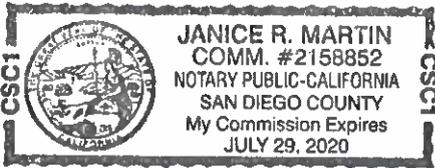
personally appeared Lawrence F. McMahon
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(~~s~~) whose name(~~s~~) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature [Handwritten Signature]
Signature of Notary Public Janice R. Martin



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer is Representing: _____

Surety Company

Signer's Name: _____

- Individual
- Corporate Officer — Title(s): _____
- Partner Limited General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: _____



Signer is Representing: _____

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON BLUE BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Note, Loan, Letter of Credit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:

That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the "Company") does hereby appoint:

Lawrence F. McMahon and Sarah Myers of San Diego, CA (EACH)

its true and lawful Attorney(s)in-Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed:

Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding Ninety Million Dollars (\$90,000,000.00).

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on September 15, 2011, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect:

"VOTED, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on September 15, 2011:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointees designated in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on September 15, 2011, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company.

In Testimony Whereof, the Company has caused this instrument to be signed and its corporate seal to be affixed by their authorized officers, this 11th day of June, 2018.

Attested and Certified

Arch Insurance Company

Patrick K. Nails
Patrick K. Nails, Secretary

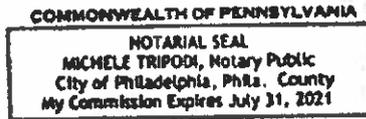


David M. Finkelstein
David M. Finkelstein, Executive Vice President

STATE OF PENNSYLVANIA SS

COUNTY OF PHILADELPHIA SS

I, Michele Tripodi, a Notary Public, do hereby certify that Patrick K. Nails and David M. Finkelstein personally known to me to be the same persons whose names are respectively as Secretary and Executive Vice President of the Arch Insurance Company, a Corporation organized and existing under the laws of the State of Missouri, subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that they being thereunto duly authorized signed, sealed with the corporate seal and delivered the said instrument as the free and voluntary act of said corporation and as their own free and voluntary acts for the uses and purposes therein set forth.



Michele Tripodi
Michele Tripodi, Notary Public
My commission expires 07/31/2021

CERTIFICATION

I, Patrick K. Nails, Secretary of the Arch Insurance Company, do hereby certify that the attached Power of Attorney dated June 11, 2018 on behalf of the person(s) as listed above is a true and correct copy and that the same has been in full force and effect since the date thereof and is in full force and effect on the date of this certificate; and I do further certify that the said David M. Finkelstein, who executed the Power of Attorney as Executive Vice President, was on the date of execution of the attached Power of Attorney the duly elected Executive Vice President of the Arch Insurance Company.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the Arch Insurance Company on this 11 day of NOV 20 2018.

Patrick K. Nails
Patrick K. Nails, Secretary

This Power of Attorney limits the acts of those named therein to the bonds and undertakings specifically named therein and they have no authority to bind the Company except in the manner and to the extent herein stated.

PLEASE SEND ALL CLAIM INQUIRIES RELATING TO THIS BOND TO THE FOLLOWING ADDRESS:

Arch Insurance – Surety Division
3 Parkway, Suite 1500
Philadelphia, PA 19102



- Acid Free
- Laminated
- Security Features Box
- Erasure Protection
- Anti-Copy/Carbon Rub
- Antifacial Watermark
- Color Match
- Hidden Penigraphy
- Security Paper
- Kan't Copy - KI

00ML0013 00 03 03

CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

- The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.

- The undersigned certifies that within the past 10 years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

| DATE OF CLAIM | LOCATION | DESCRIPTION OF CLAIM | LITIGATION (Y/N) | STATUS | RESOLUTION/REMEDIAL ACTION TAKEN |
|---------------|----------|----------------------|------------------|--------|----------------------------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Contractor Name: Marcon Engineering Inc.

Certified By Maryory Contreras Title President/CEO

Name


Signature

Date 11/27/2018

USE ADDITIONAL FORMS AS NECESSARY

Mandatory Disclosure of Business Interests Form

BIDDER/PROPOSER INFORMATION

| | | | |
|---|-------------------------|-----------------------|--------------|
| Legal Name Marcon Engineering Inc, | DBA | | |
| Street Address 876 N Broadway | City Escondido | State CA | Zip 92025 |
| Contact Person, Title Maryory Contreras, President/CEO | Phone (760) 871-0477 | Fax (760) 737-8461 | |

Provide the name, identity, and precise nature of the interest* of all persons who are directly or indirectly involved** in this proposed transaction (SDMC § 21.0103).

* The precise nature of the interest includes:

- the percentage ownership interest in a party to the transaction,
- the percentage ownership interest in any firm, corporation, or partnership that will receive funds from the transaction,
- the value of any financial interest in the transaction,
- any contingent interest in the transaction and the value of such interest should the contingency be satisfied, and
- any philanthropic, scientific, artistic, or property interest in the transaction.

** Directly or indirectly involved means pursuing the transaction by:

- communicating or negotiating with City officers or employees,
- submitting or preparing applications, bids, proposals or other documents for purposes of contracting with the City, or
- directing or supervising the actions of persons engaged in the above activity.

| | |
|-------------------|-----------------|
| Maryory Contreras | President / CEO |
| Name | Title/Position |

| | |
|------------------------------------|--|
| Escondido | Employer (if different than Bidder/Proposer) |
| City and State of Residence 100 | |

Interest in the transaction

| | |
|------|----------------|
| Name | Title/Position |
|------|----------------|

| | |
|-----------------------------|--|
| City and State of Residence | Employer (if different than Bidder/Proposer) |
|-----------------------------|--|

Interest in the transaction

* Use Additional Pages if Necessary *

Under penalty of perjury under the laws of the State of California, I certify that I am responsible for the completeness and accuracy of the responses contained herein, and that all information provided is true, full and complete to the best of my knowledge and belief. I agree to provide written notice to the Mayor or Designee within five (5) business days if, at any time, I learn that any portion of this Mandatory Disclosure of Business Interests Form requires an updated response. Failure to timely provide the Purchasing Agent with written notice is grounds for Contract termination.

| | | |
|----------------------------------|-----------|------------|
| Maryory Contreras, President/CEO | | 11/27/2018 |
| Print Name, Title | Signature | Date |

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed Mandatory Disclosure of Business Interests Form is submitted.

SUBCONTRACTOR LISTING

(OTHER THAN FIRST TIER)

Pursuant to California Senate Bill 96 and in accordance with the requirements of Labor Code sections 1771.1 and 1725.5, by submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the California Department of Industrial Relations (DIR). **The Bidder is to list below the name, address, license number, DIR registration number of any (known tiered subcontractor) - who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement pursuant to the contract. If none are known at this time, mark the table below with non-applicable (N/A).**

| NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR | CONSTRUCTOR OR DESIGNER | DIR REGISTRATION NUMBER | SUBCONTRACTOR LICENSE NUMBER | TYPE OF WORK |
|--|-------------------------|-------------------------|------------------------------|--------------|
| Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____ | N/A | N/A | N/A | N/A |
| Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____ | N/A | N/A | N/A | N/A |
| Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____ | N/A | N/A | N/A | N/A |
| Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____ | N/A | N/A | N/A | N/A |

**** USE ADDITIONAL FORMS AS NECESSARY ****

City of San Diego

CITY CONTACT: Angelica Gil, Contract Specialist, Email: AngelicaG@sandiego.gov
Phone No. (619) 533-3622

ADDENDUM A



FOR

CHOLLAS COMMUNITY PARK COMFORT STATION

| | |
|----------------------|------------------------|
| BID NO.: | <u>K-19-1785-DBB-3</u> |
| SAP NO. (WBS/IO/CC): | <u>S-16058</u> |
| CLIENT DEPARTMENT: | <u>1714</u> |
| COUNCIL DISTRICT: | <u>8</u> |
| PROJECT TYPE: | <u>BT, GF</u> |

BID DUE DATE:

**2:00 PM
NOVEMBER 27, 2018**

CITY OF SAN DIEGO'S ELECTRONIC BIDDING SITE, PLANETBIDS

<http://www.sandiego.gov/cip/bidopps/index.shtml>

ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer and Landscape Architect:

Vicki Estrada

1) Landscape Architect

10/31/2018

Date

Seal:



Sam M

2) For City Engineer

11/2/18

Date

Seal:

C 73711

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

B. BIDDER'S QUESTIONS

Q1. The solicitation states that the contractor shall prepare and implement a "Soil Management Plan".

Is this the same as a Hazardous substances Management Plan per the Whitebook Section 7-22.7 or something different?

A1. The Bid Items have been revised per this Addendum A to be consistent with the payment references in the Whitebook Section 7-22.20. The new Bid item for the "Preparation of Hazardous Waste Management Plan and Reporting" is the same as the Hazardous Substances Management Plan described in the Whitebook Section 7-22.7. Additional Bid Items have also been added to the contract to further break down cost items for implementation of the Hazardous Waste Management Plan

C. NOTICE INVITING BIDS

1. To Item 3, Estimated Construction Cost, page 4, **DELETE** it is entirety and **SUBSTITUTE** with the following:

3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$2,540,000.**

D. SUPPLEMENTARY SPECIAL PROVISIONS

1. To Section 7 – Responsibilities of the Contractor, page 48, Sub-section 7-22.1 General, **DELETE** it is entirety and **SUBSTITUTE** with the following:

7-22.1 General. To the "WHITEBOOK", ADD the following:

12. The contractor shall prepare and submit for approval a Hazardous Substance Management Plan (HSMP) and Community Health and Safety Plan (CHSP). The plans shall be submitted to the City of San Diego Local Enforcement

Agency (LEA) and Environmental Services Department (ESD) for review and approval prior to starting construction. Copies of the CHSP and HSMP are to be provided to the onsite personnel for review, kept on-site and followed for the duration of the project. The Contractor shall provide notice to the LEA 48 hours prior to starting work on the project.

E. ADDITIONAL CHANGES

1. The following are additional changes to the Line Items in the PlanetBids Tab:

For clarity where applicable, **ADDITIONS**, if any, have been **Underlined** and **DELETIONS**, if any, have been **~~Stricken out.~~**

| Section | Item Code | Description | UoM | Quantity | Payment Reference |
|-----------------|-------------------|---|---------------|------------|--------------------|
| Main Bid | 562910 | Preparation and Implementation of Community Health and Safety Plan <u>Preparation of Soil Management and Community Health and Safety Plan</u> | LS | 1 | 7-22.20 |
| Main Bid | 562910 | Implementation of Soil Management and Community Health and Safety Plan | LS | 4 | 7-22.20 |
| <u>Main Bid</u> | <u>238990</u> | <u>Preparation of Hazardous Waste Management Plan and Reporting</u> | <u>LS</u> | <u>1</u> | <u>7-22.20</u> |
| <u>Main Bid</u> | <u>541690</u> | <u>Monitoring of Contaminated Soil</u> | <u>HR</u> | <u>80</u> | <u>7-22.20</u> |
| <u>Main Bid</u> | <u>238990</u> | <u>Testing, Sampling, Site Storage and Handling of Soils Containing RCRA Hazardous Waste</u> | <u>TON</u> | <u>300</u> | <u>7-22.20</u> |

| Section | Item Code | Description | UoM | Quantity | Payment Reference |
|-----------------|------------------|--|------------|-----------------|--------------------------|
| <u>Main Bid</u> | <u>238990</u> | <u>Loading, Transportation, and Disposal of soils containing RCRA Hazardous Waste</u> | <u>TON</u> | <u>300</u> | <u>7-22.20</u> |
| <u>Main Bid</u> | <u>238990</u> | <u>Testing, Sampling, Site Storage and Handling of Soils Containing non-RCRA Hazardous Waste</u> | <u>TON</u> | <u>500</u> | <u>7-22.20</u> |
| <u>Main Bid</u> | <u>238990</u> | <u>Loading, Transportation, and Disposal of soils containing non-RCRA Hazardous Waste</u> | <u>TON</u> | <u>500</u> | <u>7-22.20</u> |

James Nagelvoort, Director
Public Works Department

Dated: *November 5, 2018*
San Diego, California

JN/RWB/Lad

Bid Results

Bidder Details

Vendor Name Marcon Engineering, Inc.
Address 876 N Broadway
 Escondido, CA 92025
 United States

Respondee Carson Allen
Respondee Title Estimator
Phone 760-871-0477 Ext. 31
Email carson.allen@marconeng.com

Vendor Type LAT,FEM,PQUAL,MBE,CADIR,WOSB,Local
License # 631811
CADIR 1000029618

Bid Detail

Bid Format Electronic
Submitted November 27, 2018 1:42:08 PM (Pacific)
Delivery Method
Bid Responsive Yes
Bid Status Submitted
Confirmation # 160115
Ranking 0

Respondee Comment

Buyer Comment

Attachments

| File Title | File Name | File Type |
|------------|--------------------------|--|
| c | contractor_s cert.pdf | Contractor's Certification of Pending Actions |
| m | mandatory disclosure.pdf | Mandatory Disclosure of Business Interest Form |
| s | Subcontractor list.pdf | Subcontractor Listing (Other Than First Tier) |
| b | bidbond.pdf | Bid Bond |

Line Items

| Type | Item Code | UOM | Qty | Unit Price | Line Total | Comment |
|-----------------|---|-----|-----|-------------|-------------|---------|
| Main Bid | | | | | | |
| 1 | Bonds (Payment and Performance) | | | | | |
| | 524126 | LS | 1 | \$22,909.00 | \$22,909.00 | |
| 2 | Mobilization | | | | | |
| | 238990 | LS | 1 | \$81,649.00 | \$81,649.00 | |
| 3 | Inspection Paid For By the Contractor (EOC Type I) | | | | | |
| | 562910 | AL | 1 | \$10,000.00 | \$10,000.00 | |
| 4 | Archaeological and Native American Monitoring Program | | | | | |
| | 541690 | LS | 1 | \$6,998.00 | \$6,998.00 | |

Bid Results

| Type | Item Code | UOM | Qty | Unit Price | Line Total | Comment |
|------|---|-----|-----|--------------|--------------|---------|
| 5 | Building Permits (EOC Type I) | | | | | |
| | 236220 | AL | 1 | \$25,000.00 | \$25,000.00 | |
| 6 | SDG&E Fee Allowance (EOC Type I) | | | | | |
| | 237310 | AL | 1 | \$40,000.00 | \$40,000.00 | |
| 7 | WPCP Development | | | | | |
| | 541330 | LS | 1 | \$933.00 | \$933.00 | |
| 8 | WPCP Implementation | | | | | |
| | 238990 | LS | 1 | \$4,666.00 | \$4,666.00 | |
| 9 | Traffic Control Design (Working Drawings) | | | | | |
| | 541330 | LS | 1 | \$2,333.00 | \$2,333.00 | |
| 10 | Preparation and Implementation of Community Health and Safety Plan | | | | | |
| | 562910 | LS | 1 | \$5,249.00 | \$5,249.00 | |
| 11 | Preparation of Hazardous Waste Management Plan and Reporting | | | | | |
| | 238990 | LS | 1 | \$5,249.00 | \$5,249.00 | |
| 12 | Monitoring of Contaminated Soil | | | | | |
| | 541690 | HR | 80 | \$175.00 | \$14,000.00 | |
| 13 | Testing, Sampling, Site Storage and Handling of Soils Containing RCRA Hazardous Waste | | | | | |
| | 238990 | TON | 300 | \$41.00 | \$12,300.00 | |
| 14 | Loading, Transportation, and Disposal of soils containing RCRA Hazardous Waste | | | | | |
| | 238990 | TON | 300 | \$274.00 | \$82,200.00 | |
| 15 | Testing, Sampling, Site Storage and Handling of Soils Containing non-RCRA Hazardous Waste | | | | | |
| | 238990 | TON | 500 | \$41.00 | \$20,500.00 | |
| 16 | Loading, Transportation, and Disposal of soils containing non- RCRA Hazardous Waste | | | | | |
| | 238990 | TON | 500 | \$157.00 | \$78,500.00 | |
| 17 | Field Orders (EOC Type II) | | | | | |
| | | AL | 1 | \$200,000.00 | \$200,000.00 | |
| 18 | Clearing and Grubbing | | | | | |
| | 238910 | LS | 1 | \$3,499.00 | \$3,499.00 | |
| 19 | Tree Removal | | | | | |
| | 238910 | EA | 9 | \$350.00 | \$3,150.00 | |
| 20 | Hydro Seed | | | | | |
| | 561730 | LS | 1 | \$2,983.00 | \$2,983.00 | |

Bid Results

| Type | Item Code | UOM | Qty | Unit Price | Line Total | Comment |
|-----------------|--|-----|-----|--------------|-----------------------|---------|
| 21 | Shrub (1 Gallon) | | | | | |
| | 561730 | EA | 88 | \$17.00 | \$1,496.00 | |
| 22 | Box Tree (24 Inch) | | | | | |
| | 561730 | EA | 3 | \$1,388.00 | \$4,164.00 | |
| 23 | Irrigation | | | | | |
| | 561730 | LS | 1 | \$67,978.00 | \$67,978.00 | |
| 24 | Construction of Comfort Station | | | | | |
| | 238990 | LS | 1 | \$954,176.00 | \$954,176.00 | |
| 25 | Construction of Park Improvements | | | | | |
| | 238990 | LS | 1 | \$596,001.00 | \$596,001.00 | |
| 26 | 25-Month Revegetation Maintenance and Monitoring Program | | | | | |
| | 541330 | LS | 1 | \$21,870.00 | \$21,870.00 | |
| Subtotal | | | | | \$2,267,803.00 | |
| Total | | | | | \$2,267,803.00 | |

Subcontractors

| Name & Address | Description | License Num | CADIR | Amount | Type |
|--|---|-------------|------------|--------------|--------------------------------|
| Western Gardens Landscaping, Inc. 4616 Pannonia Rd. Carlsbad, CA 92008 United States | Landscape & Irrigation | 662550 | 1000004289 | \$110,390.00 | CADIR,ELBE |
| Scott Michael Inc P.O. Box 127 San Marcos, CA 92079 United States | Plumbing | 668809 | 1000033231 | \$95,460.00 | ELBE |
| Richardson Steel, Inc. 9102 Harness Street Spring Valley, CA 91977 United States | Structural Steel | 756989 | 1000000243 | \$45,840.00 | CAU,MALE,CADIR |
| Montgomery Construction Services, Inc. 123 Worthington Street Suite 205 Spring Valley, CA 91977 United States | Concrete | 928118 | 1000010543 | \$74,083.00 | PQUAL |
| Johnston Tractor Inc 1824 Highlands View Road Alpine, CA 91901 United States | Earthwork,clear & Grub,Site Demo | 833490 | 1000002192 | \$49,000.00 | CAU,MALE,SLBE,CADIR |
| Modern Masonry 1168 Greenfield Drive El Cajon, CA 92021 United States | Masonry, stone veneer | 605172 | 1000000843 | \$160,700.00 | CAU,MALE |
| Soclaris Contracting 7437 Lowell Ct. La Mesa, CA 91942 United States | Loading,transporting, and disposal of RCRA soils,monitoring,testing | 793838 | 1000011964 | \$187,000.00 | CADIR,CAU,DVBE,MALE,SDVSB,SLBE |
| Quality Rebar PO Box 501877 San Diego, CA 92150 United States | rebar | 818593 | 1000000745 | \$14,870.00 | |
| ARCHIBALD SHEET METAL, INC. 12424 LAKESHORE DRIVE LAKESIDE, CA 92040 United States | Sheet metal,roofing | 967283 | 1000007015 | \$57,250.00 | |

Bid Results

| Name & Address | Description | License Num | CADIR | Amount | Type |
|--|--------------------|--------------------|--------------|---------------|------------------------------|
| Davis Framing, Inc. 8103 Commercial Street La Mesa, CA 91942 United States | Rough Carpentry | 815865 | 1000007960 | \$103,520.00 | CADIR |
| Bali Construction, Inc. 9852 E Joe Vargas Way South El Monte, CA 91733 United States | Site Utilities | 524540 | 100002713 | \$156,128.00 | LAT,MALE,PQUAL,M BE,CADIR |

| Item Num | Section | Item Code | Description | Reference | Unit of Measure | Quantity | Marcon Engineering, Inc. - Unit Price | Marcon Engineering, Inc. - Line Total |
|----------|----------|-----------|--|-----------|-----------------|----------|---------------------------------------|---------------------------------------|
| 1 | Main Bid | 524126 | Bonds (Payment and Performance) | 2-4.1 | LS | 1 | \$22,909.00 | \$22,909.00 |
| 2 | Main Bid | 238990 | Mobilization | 9-3.4.1 | LS | 1 | \$81,649.00 | \$81,649.00 |
| 3 | Main Bid | 562910 | Inspection Paid For By the Contractor (EOC Type I) | 4-1.3.4.1 | AL | 1 | \$10,000.00 | \$10,000.00 |
| 4 | Main Bid | 541690 | Archaeological and Native American Monitoring Program | 6-3.2.2.1 | LS | 1 | \$6,998.00 | \$6,998.00 |
| 5 | Main Bid | 236220 | Building Permits (EOC Type I) | 7-5.3 | AL | 1 | \$25,000.00 | \$25,000.00 |
| 6 | Main Bid | 237310 | SDG&E Fee Allowance (EOC Type I) | 700-10.1 | AL | 1 | \$40,000.00 | \$40,000.00 |
| 7 | Main Bid | 541330 | WPCP Development | 7-8.6.4.2 | LS | 1 | \$933.00 | \$933.00 |
| 8 | Main Bid | 238990 | WPCP Implementation | 7-8.6.4.2 | LS | 1 | \$4,666.00 | \$4,666.00 |
| 9 | Main Bid | 541330 | Traffic Control Design (Working Drawings) | 601-6 | LS | 1 | \$2,333.00 | \$2,333.00 |
| 10 | Main Bid | 562910 | Preparation and Implementation of Community Health and Safety Plan | 7-22.20 | LS | 1 | \$5,249.00 | \$5,249.00 |

| | | | | | | | | |
|----|----------|--------|---|---------|-----|-----|------------|-------------|
| 11 | Main Bid | 238990 | Preparation of Hazardous Waste Management Plan and Reporting | 7-22.20 | LS | 1 | \$5,249.00 | \$5,249.00 |
| 12 | Main Bid | 541690 | Monitoring of Contaminated Soil | 7-22.20 | HR | 80 | \$175.00 | \$14,000.00 |
| 13 | Main Bid | 238990 | Testing, Sampling, Site Storage and Handling of Soils Containing RCRA Hazardous Waste | 7-22.20 | TON | 300 | \$41.00 | \$12,300.00 |
| 14 | Main Bid | 238990 | Loading, Transportation, and Disposal of soils containing RCRA Hazardous Waste | 7-22.20 | TON | 300 | \$274.00 | \$82,200.00 |
| 15 | Main Bid | 238990 | Testing, Sampling, Site Storage and Handling of Soils Containing non-RCRA Hazardous Waste | 7-22.20 | TON | 500 | \$41.00 | \$20,500.00 |
| 16 | Main Bid | 238990 | Loading, Transportation, and Disposal of soils containing non- RCRA Hazardous Waste | 7-22.20 | TON | 500 | \$157.00 | \$78,500.00 |

