Bids will be received until 2:00 PM on August 24th, 2017 at City of Rio Vista City Hall, One Main St., Rio Vista, California 94571, and then publicly opened.
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Document Name                                      Document Number

Notice Inviting Sealed Proposals (Bids) 001000
1)  Bid Form (includes Proposal and Non-Collusion Declaration) 004100
2)  Contract (includes Certificate of Contractor) 005200
3)  Bid Bond 006110
4)  Performance Bond 006111
5)  Payment Bond 006112
6)  Contractor’s Certificate Regarding Worker’s Compensation Insurance 006220
7)  Worker’s Compensation and Employers’ Liability Certificate of Insurance 006221
8)  Workers’ Compensation and Employers’ Liability Insurance Endorsement 006222
9)  Liability Insurance Certificate of Insurance 006223
10) Liability Insurance Endorsement 006224
12) General Conditions 007000
13) Special Provisions 008110
14) Technical Specifications Section A
15) Contract Drawings Section B
16) Record Drawings Section C
17) Shop Drawings Section D
SECTION 001000

NOTICE INVITING SEALED PROPOSALS (BIDS)

Description of Contract:

CITY OF RIO VISTA

CONTRACT NO. PW2017- Skate Park

NOTICE IS HEREBY GIVEN that the City Council of the City of Rio Vista (CITY) invites and will receive sealed proposals (bids) up to the hour of 2:00, August 24th, 2017, for the furnishing to said CITY of all transportation, labor, materials, tools, equipment, services, permits, utilities, and other items necessary to construct the below-described work. At said time, said proposals will be publicly opened and read aloud at the office of the CITY,

City of Rio Vista
One Main Street
Rio Vista, CA 94571

Bids shall conform to and be responsive to the Contract Documents for the work. Copies of the Contract Documents are on file and may be acquired at Stockton Builders Exchange www.besonline.com

The Contract Documents, Plans and Specifications are also available at:
https://www.dropbox.com/sh/5iepoq33160ea5n/AADyesxuzmdHRv8z4RBglCoa?dl=0

Description of Work:

The work includes all labor, materials, equipment and the performance of all operations necessary to install improvements for the proposed Skate park including but not limited to site demolition, grading, erosion control, storm drain pipe, all skate park concrete work, skate park amenities and features, landscape planting and irrigation, and all other related work at the designated locations in accordance with the Drawings and Specifications.

Each bid shall be submitted on a form furnished as part of the Contract Documents and must be accompanied by cash, a cashier’s check, a certified check, or a BIDDER’S bond executed by an admitted surety insurer, or substitute pursuant to Section 995.710 of the Code of Civil Procedure, in an amount not less than ten percent (10%) of the Grand Total amount of the bid, made payable to the order of or for the benefit of the CITY. The security of unsuccessful BIDDER’S will be returned by the CITY no later than sixty (60) days following the date of award. Each bid shall be sealed and delivered to the CITY at the location designated in this notice for the opening of proposals at or before the time provided in this notice. The check or bond or substitute shall be given as security that the BIDDER will enter into a contract with the CITY and furnish the required payment and performance bonds, or substitutes in lieu thereof, and certificates of insurance and endorsements if awarded the work, and will be declared forfeited if the BIDDER refuses to timely enter into said contract or furnish the required bonds or substitutes, or certificates of insurance and endorsements if his bid is accepted.

The successful bidder will be required to furnish both a performance bond and a payment bond in the amount of one-hundred percent (100%) of the contract amount.

The CITY has obtained from the Director of the California Department of Industrial Relations a determination of the general prevailing rate of per diem wages and the general prevailing rate for legal holiday and overtime work in the locality in which said work is to be performed for each craft, classification, or type of worker needed. Not less than the determined rates shall be paid to all workers employed in the performance of the contract. Such rates of wages can be found on the Department of Industrial Relations website located at http://www.dir.ca.gov/OPRL/, and at the office of the CITY. Pursuant to Public Contract Code Section 22300, equivalent securities may be substituted for monies withheld to ensure performance of the contract. The CITY reserves the right to solely determine the adequacy of the securities being proposed by the BIDDER and the value of those securities. The CITY
shall also be entitled to charge an administrative fee, as determined by the CITY in its sole discretion, for substituting equivalent securities for retention amounts. The CITY’S decisions with respect to the administration of the provisions of Section 22300 shall be final and shall include, but not be limited to, determinations of what securities are equivalent, the value of the securities, the negotiability of the securities, the costs of administration and the determination of whether or not the administration should be accomplished by an independent agency or by the CITY. The CITY shall be entitled, at any time, to request the deposit of additional securities of a value designated by CITY, in CITY’S sole discretion, to satisfy this requirement. If the CITY does not receive satisfactory securities within twelve (12) consecutive days of the date of the written request, CITY shall be entitled to withhold amounts due BIDDER until securities of satisfactory value to CITY have been received.

The CONTRACTOR’S license classification(s) required for this project is as follows:

California General Engineering CONTRACTOR’S License - Class “A”.

These classifications are provided for information purposes only. The CITY does not warrant that all classifications required for the project are listed.

It is the CITY’S intent that “Plans”, as used in Public Contract Code Section 3300, is defined as the construction contract documents, which include both the drawings and the Specifications.

The City Council of the CITY reserves the right to reject any and all bids, and to waive any and all irregularities in any bid.

Each BIDDER is required to complete the Bid Forms included in Section 004100. Instructions to BIDDERS can be found in Paragraph 2.0 – Bid Requirements and Conditions in Section 007000 – General Conditions.

Bidders are hereby notified that the Contract will be subject to the examination and audit of the State Auditor.

Be advised that all Contractors and Subcontractors must be registered with the Department of Industrial Relations in order to bid public works projects and abide by all the requirements set within SB854.

Contractors bidding the skate park structure shall have satisfactory completed the installation of two (2 minimum number) similar skate park projects in accordance with the project plans and written specifications. The qualification can be met by either the prime bidding contractor or a subcontractor bidding to the prime. Qualifying projects must include concrete skate park structures of comparable size, finishes, transition depths, coping types and features built within the last five (5) years. Qualifying projects by either the prime contractor or the skate park subcontractor must be listed in the bid proposal documents under the section CERTIFICATION OF BIDDER’S EXPERIENCE AND QUALIFICATIONS.

There will be a (mandatory) pre-bid meeting on August 15th, 2017 at 2:00 p.m. at Rio Vista City Hall, One Main Street, Rio Vista, CA 94571.

All bidder questions shall be submitted before August 18th, 2017, 5:00 PM to bnorbutas@siegfriedeng.com. Responses to bidder questions will be emailed to each pre-bid meeting attendee by August 21st, 5:00 PM.
TO THE GOVERNING BODY OF THE
CITY OF RIO VISTA

Pursuant to and in compliance with your Notice Inviting Sealed Proposals (Bids) and the other documents relating thereto, the undersigned bidder, being fully familiar with the terms of the Contract Documents, local conditions affecting the performance of the contract, the character, quality, quantities, and scope of the work, and the cost of the work at the place where the work is to be done, hereby proposes and agrees to perform within the time stipulated in the contract, including all of its component parts and everything required to be performed, and to furnish any and all of the labor, material, tools, equipment, transportation, services, permits, utilities, and all other items necessary to perform the contract and complete in a workmanlike manner, all of the work required in connection with the construction of said work all in strict conformity with the plans and specifications and other contract documents, including Addenda set forth for the prices hereinafter set forth as follows:

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<thead>
<tr>
<th>ADDENDA NO.</th>
<th>DATE ISSUED</th>
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</tbody>
</table>

The undersigned as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any person, firm, or corporation; and he proposes and agrees, if the proposal is accepted, that he will execute a contract with the CITY in the form set forth in the Contract Documents and that he will accept in full payment thereof the following prices, to wit:
## SCHEDULE OF WORK ITEMS

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity</th>
<th>Unit of Measure</th>
<th>Item</th>
<th>Unit Price (in figures)</th>
<th>Expansion Price (in figures)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td><strong>SITE PREPARATION AND GRADING</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>1</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>CONSTRUCTION STAKING/LAYOUT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>CONSTRUCTION AREA SIGNS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>EA</td>
<td>REMOVE TREE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>CLEARING AND GRUBBING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>16,551 SF</td>
<td>SF</td>
<td>SOD: SPRAY, SCRAPE, OFF-HAUL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>25</td>
<td>SF</td>
<td>REMOVE EXISTING CONCRETE PAVEMENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>MISCELLANEOUS SITE DEMOLITION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>EROSION CONTROL MEASURES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>16,551 SF</td>
<td>SF</td>
<td>GRADING, INCLUDING THE IMPORT OR EXPORT OF MATERIALS AS REQUIRED</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sub Total**
## Val de Flores Skate Park
Rio Vista, California

### Project No: 16141

### August 2017  Bid Form

### Bid Set  004100-3

### SITE UTILITIES (WET)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity</th>
<th>Unit of Measure</th>
<th>Item Description</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>191</td>
<td>LF</td>
<td>6-INCH STORM DRAIN PIPE</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>5</td>
<td>EA</td>
<td>AREA DRAIN</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>STORM DRAIN CONNECTION</td>
<td></td>
</tr>
</tbody>
</table>

Sub Total

### SITE PAVING AND SKATE PARK AMENITIES

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity</th>
<th>Unit of Measure</th>
<th>Item Description</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>38</td>
<td>SF</td>
<td>SITE CONCRETE PAVING INCLUDING AGGREGATE BASE AND SUBGRADE PREPARATION</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>7269</td>
<td>SF</td>
<td>SKATE PARK CONCRETE, INCLUDING AGGREGATE BASE AND SUBGRADE PREPARATION</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>6</td>
<td>EA</td>
<td>BOLLARDS: EMBEDDED</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>5</td>
<td>EA</td>
<td>BOLLARDS: REMOVABLE</td>
<td></td>
</tr>
</tbody>
</table>

Sub Total

### IRRIGATION

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity</th>
<th>Unit of Measure</th>
<th>Item Description</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>1</td>
<td>LS</td>
<td>IRRIGATION MODIFICATIONS</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>9,282</td>
<td>SF</td>
<td>SPRAY ROTATOR</td>
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</tr>
</tbody>
</table>

Sub Total

### PLANTING

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity</th>
<th>Unit of Measure</th>
<th>Item Description</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>9,282</td>
<td>SF</td>
<td>SOIL AMENDMENTS AND FINE GRADING</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>9,282</td>
<td>SF</td>
<td>HYDROSEEEDED LAWN</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>1</td>
<td>ALLOW</td>
<td>LANDSCAPE MAINTENANCE (30 DAY)</td>
<td></td>
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</tbody>
</table>

Sub Total

Note: The CITY shall determine the lowest bid on the basis of the prices bid for Schedule I without consideration of the prices bid on Schedule II. This method of selecting the lowest bid does not preclude the CITY from adding the any or all of the work items listed in Schedule II to the Contract after the lowest responsible bidder has been determined.

### Total Schedule I
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Estimated Quantity</th>
<th>Unit of Measure</th>
<th>Item</th>
<th>Unit Price</th>
<th>Expansion Price (in figures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA1</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>FLATBAR AND MANUAL PAD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AA2</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>CHINA BANK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AA3</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>CONCRETE STAINING AND SAWCUT WHALE TAIL OUTLINE</td>
<td></td>
<td></td>
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<tr>
<td>AA4</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>ROLLERS (3 TOTAL)</td>
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<tr>
<td>AA5</td>
<td>LUMP SUM</td>
<td>LS</td>
<td>CHINA BANK STAMP AND STAINING</td>
<td></td>
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<tr>
<td>AA6</td>
<td>6</td>
<td>EA</td>
<td>TREES</td>
<td></td>
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<tr>
<td>AA7</td>
<td>9,282 SF</td>
<td></td>
<td>NATURAL TURF - SOD</td>
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**Sub Total**

Note: The CITY shall determine the lowest bid on the basis of the prices bid for Schedule I without consideration of the prices bid on Schedule II. This method of selecting the lowest bid does not preclude the CITY from adding the any or all of the work items listed in Schedule II to the Contract after the lowest responsible bidder has been determined.

**Total Schedule II**

**Grand Total – Schedule I & II**

**Grand Total – Schedule I & II (in words):**
PROPOSAL TO  
CITY OF RIO VISTA  
FOR  

CONTRACT NO. PW2017- SKATE PARK  

SCHEDULE OF WORK ITEMS  
(Continued)  

It is understood that the foregoing quantities are approximate only and are solely for the purposes of facilitating the comparison of bids, and that the CONTRACTOR’S compensation will be computed upon the basis of the actual quantities in the completed work, whether they be more or less than those shown. The CITY may reject any or all bids. The prices listed above in the CONTRACTOR’S proposal shall include all applicable taxes for the State of California.

As required by Section 4100-4107 of the Public Contract Code, the CONTRACTOR bidding shall hereinafter list the subcontractor(s) who will be the subcontractor(s) on the job for each particular trade or subdivision of the work and will state the firm name and principal location of the mill, shop, or office of each subcontractor(s) with work in excess of one half percent (1/2%) of CONTRACTOR’S bid price:

<table>
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<tr>
<th>DIVISION OF WORK OR TRADE</th>
<th>NAME OF SUBCONTRACTOR</th>
<th>LOCATION OF MILL, SHOP, OR OFFICE</th>
<th>% OF TOTAL BID PRICE</th>
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ACCOMPANYING THIS PROPOSAL IS_________________________ (insert the words “bidder’s bond,” in an amount equal to at least 10% of the Grand Total amount of the bid, payable to the CITY OF RIO VISTA

The undersigned deposits the above-named security as a proposal guarantee and agrees that it shall be forfeited to the CITY in case this proposal is accepted by the CITY and the undersigned fails to execute a
contract with the CITY as specified in the Contract Documents or fails to furnish the required payment and performance bonds, or substitute, and insurance certificates and endorsements. Should the CITY be required to engage the services of an attorney in connection with the enforcement of this bid, bidder promises to pay CITY’s reasonable attorneys’ fees, incurred with or without suit.

The names of all persons interested in the foregoing proposals as principals are as follows: (NOTICE - If bidder or other interested person is a corporation, state legal name of corporation, and the president, secretary, treasurer, and manager thereof; if a general partnership, state true name of firm, and the names of all individual partners composing firm; if a limited partnership, the names of all general partners and limited partners; if bidder or other interested person is an individual, state first and last names in full; if the bidder is a joint venture, state the complete name of each venturer).

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

As required by Section 2.19 of the General Conditions, Bidder hereby submits the following list of contact names and phone numbers for three (3) or more agencies for whom the Bidder has constructed similar projects.

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
Bidder hereby confirms that it has all licenses and permits required by federal, state, and local statutes, regulations, and ordinances. The following are the CONTRACTOR’S applicable license numbers (add pages if needed):

<table>
<thead>
<tr>
<th>CONTRACTOR’s License No.</th>
<th>Expiration Date</th>
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Pursuant to the requirements of California Business and Professions Code Section 7028.15(e), a bid submitted to the CITY by a CONTRACTOR who is not licensed pursuant to Chapter 9 of Division 3 of the Business and Professions Code shall be considered nonresponsive and shall be rejected as provided for by law.

Signature of Bidder: ________________________________

Printed Name: ________________________________

Title: ________________________________

Company: ________________________________


NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above, together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation and the corporate seal; if bidder is a partnership, the true name of the firm shall be set forth above, together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership; if the bidder is an individual, his signature shall be placed above; if the bidder is a joint venture, the name of the joint venture shall be set forth above with the signature of an authorized representative of each venturer.

(SPACE LEFT BLANK INTENTIONALLY)
NON-COLLUSION DECLARATION

The undersigned declares:

I am the ________________________ of __________________________, the party making the foregoing bid.

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

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

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

________________________________________
[Signature of Bidder]
SECTION 005200

Description of Contract:

CITY OF RIO VISTA

CONTRACT NO. PW2017- SKATE PARK

THIS AGREEMENT, made and entered into by and between the

CITY OF RIO VISTA

Hereinafter referred to as “CITY” and

________________________________________________________________________            ,

a corporation under the laws of the state of ________________________________;

a partnership composed of ________________________________________________;

a joint venture composed of ______________________________________________;

an individual doing business as ____________________________________________;

hereinafter referred to as “CONTRACTOR.”

CITY and CONTRACTOR agree as follows:

(1) SCOPE OF WORK: CONTRACTOR will furnish all materials and will perform all of the
work for the ________________________________________________________________
________________________________________________________________________.

in accordance with the Plans and Specifications and other contract documents therefore.

(2) TIME FOR COMPLETION: The work shall be completed within the times set forth in
Section 008110. Time is of the essence and forfeiture due to delay will be assessed as
provided for in the General Provisions.

(3) CONTRACT SUM: CITY will pay CONTRACTOR in accordance with the prices shown in
the Bid Form.

(4) PAYMENTS: Monthly progress payments and the final payment will be made in
accordance with the General Provisions as modified by the Special Provisions. The filing
of the notice of completion by CITY shall be preceded by acceptance of the work made
only by an action of the Governing Body of CITY in session.

(5) COMPLIANCE WITH PUBLIC CONTRACTS LAW: CITY is a public agency in the State
of California and is subject to the provisions of law relating to public contracts. It is
agreed that all provisions of law applicable to public contracts are a part of this contract to
the same extent as though set forth herein and will be complied with by CONTRACTOR.
CONTRACT DOCUMENTS: The complete contract includes all the Contract Documents set forth herein, to wit: Notice Inviting Sealed Proposals (Bids); Bid Form, including Non-Collusion Declaration; Contract, including Certificate of Contractor; Bid Bond; Performance Bond; Payment Bond; Contractor’s Certificate Regarding Workers’ Compensation Insurance; Certificate of Insurance (Workers’ Compensation and Employers’ Liability); Insurance Endorsement (Workers’ Compensation and Employers’ Liability); Certificate of Insurance (Liability); Insurance Endorsement (Liability); General Conditions; Special Provisions, Coordination of Work and Permits, Measurement and Payment, Submittals, Construction Schedule, Inspection of the Work, Construction Facilities and Temporary Controls, Mobilization, Temporary Utilities and Services, Access, Parking and Traffic, Traffic Regulation, Delivery, Storage and Handling, Cleaning During Construction and Final Cleaning, Technical Specifications, Drawings, Plans, and also addenda thereto and supplemental agreements, including Change Orders.

In entering into this public works contract, the CONTRACTOR offers and agrees to assign to the CITY all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to this public works contract. This assignment shall be made and become effective at the time the CITY tenders final payment to the CONTRACTOR, without further acknowledgment by the parties.

This Contract is executed by the CITY pursuant to an action of its Governing Body in session on ______________, 2017, authorizing the same, and CONTRACTOR has caused this Contract to be duly executed.

Dated: __________, ________ 2017

Authorized Representative of CITY

Title: _____________________________

Dated: __________, ________ 2017

CONTRACTOR

By: _____________________________

Authorized Representative of CONTRACTOR

Title: _____________________________

(SEAL IF CORPORATION)

APPROVED:

Mona Ebrahimi, Attorney for City

1004797.3

August 2017
Bid Set
Contract
005200-2
CERTIFICATE OF CONTRACTOR

I, certify that I am a/the __________________________ [designate sole proprietor, partner in partnership, or specify corporate office, e.g., secretary] in the entity named as CONTRACTOR in the foregoing contract.

I hereby expressly certify that the name of the entity to which I am associated is __________________________; that this entity is in good standing and has complied with all applicable laws and regulations, and that I have been expressly authorized by the proper parties in this entity to execute this contract on behalf of the above-named entity.

__________________________________________

ATTEST:

By: __________________________

Name: __________________________

(Please Type)

Title: __________________________

State of California )

County of Solano )

On this __________________________ day of __________________________, 2017, before me personally appeared __________________________, who proved to me on the basis of satisfactory evidence, who being duly sworn, did depose and say: that (he/she) is an authorized representative of the CONTRACTOR and acknowledged to me that (he/she) executed the within instrument on behalf of said CONTRACTOR, __________________________.

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

In witness whereof, I have signed and affixed my official seal on the date in this certificate first above written.

________________________________________

NOTARY PUBLIC

(END OF SECTION)
SECTION 006110  BID BOND

Description of Contract: CITY OF RIO VISTA

CONTRACT NO. PW2017- SKATE PARK

We, __________________________________________ as Principal, and __________________________________________ as Surety, jointly and severally, bind ourselves, our heirs, representatives, successors and assigns, as set forth herein, to the CITY OF RIO VISTA

(herein called CITY) for payment of the penal sum of ___________________________ Dollars ($_________________________), lawful money of the United States. Principal has submitted the accompanying bid for

CONTRACT NO. PW2017- SKATE PARK

If the Principal is awarded the contract and enters into a written contract, in the form prescribed by the CITY, at the price designated by his bid, and files two bonds with the CITY, or substitute security in lieu thereof, one to guarantee payment for labor and materials and the other to guarantee faithful performance, in the time and manner specified by the CITY, and carries all insurance in type and amount which conforms to the Contract Documents and furnishes required certificates and endorsements thereof, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Forfeiture of this bond, or any deposit made in lieu thereof, shall not preclude the CITY from seeking all other remedies provided by law to cover losses sustained as a result of the Principal’s failure to do any of the foregoing.

Principal and Surety agree that if the CITY is required to engage the services of an attorney in connection with the enforcement of this bond, each shall pay CITY’S reasonable attorney’s fees incurred with or without suit.

Executed on ______________________, 2017

(PRINCIPAL)

(SEAL IF CORPORATION) By: ____________________________

Title: ____________________________

(Attach Acknowledgment of Authorized Representative of Principal)

1004803.3
August 2017 Bid Bond
Bid Set 006110-1
Val de Flores Skate Park
Rio Vista, California

Any claims under this bond may be addressed to:

________________________________________
(Name and address of Surety)

________________________________________

________________________________________
(name and address of Surety’s agent for service of process in California, if different from above)

________________________________________
(telephone number of Surety’s agent in California)

(SURETY)

By: ________________________________
(Attorney-in-Fact)

APPROVED:
(Mona Ebrahimi, Attorney for City)

(Attach Acknowledgment)

NOTICE:
No substitution or revision to this bond form will be accepted. Sureties must be authorized to do business in and have an agent for service of process in California. Certified copy of Power of Attorney must be attached.

(END OF SECTION)
The City of Rio Vista (hereinafter referred to as "CITY") awarded to ______________________________ (hereinafter referred to as the "Principal") the contract for the work described as follows:

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract which contract is incorporated herein by reference.

NOW, THEREFORE, we the undersigned Principal and Surety are held and firmly bound to the CITY in the sum of _____________________ Dollars ($__________) (this amount being not less than one hundred percent [100%] of the total amount payable by the CITY under the terms of the contract awarded by the CITY to the Principal), lawful money of the United States of America, for payment of which sum well and truly to be made, bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bonded Principal, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform all the undertakings, terms, covenants, conditions, and agreements in the said contract, and any alteration thereof, made as therein provided, including, but not limited to, the provisions regarding contract duration and liquidated damages, all within the time and in the manner therein designated in all respects according to their true intent and meaning, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the contract, the above obligation shall hold good for a period of __________ (___) year(s) after the acceptance of the work by the CITY, during which time if Principal shall fail to make full, complete, and satisfactory repair and replacements and totally protect the CITY from loss or damage made evident during the period of __________ (___) year(s) from the date of completion of the work, and resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof shall remain in full force and effect. The obligation of Surety hereunder shall continue so long as any obligation of Principal remains.

Whenever Principal shall be, and is declared by the CITY to be, in default under the contract, the CITY having performed the CITY’s obligations thereunder, the Surety shall promptly remedy the default, or shall promptly:

1. Complete the contract in accordance with its terms and conditions.

2. Obtain a bid or bids for completing the contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a contract between such bidder and the CITY, and make available as work progresses sufficient funds to pay the cost of completion less the balance of the contract price, but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth above. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Principal by the CITY under the contract and any modifications thereto, less the amount previously and properly paid by the CITY to the Principal.
Surety expressly agrees that the CITY may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal.

Surety shall not utilize Principal in completing the contract nor shall Surety accept a bid from Principal for completion of the work if the CITY, when declaring the Principal in default, notifies Surety of the CITY’s objection to Principal’s further participation in the completion of the work.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the CITY named herein or the successors or assigns of the CITY. Any suit under this bond must be instituted within the applicable statute of limitations period.

FURTHER, the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alternation or modification of the Project documents, or of the work to be performed thereunder, shall in any way affect its obligations on this bond; and it does hereby waive notice of any change, extension of time, alteration or modification of the Project documents or of work to be performed thereunder.

Principal and Surety agree that if the CITY is required to engage the services of an attorney in connection with the enforcement of this bond, each shall pay the CITY’s reasonable attorney’s fees incurred, with or without suit, in addition to the above amount.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of ______________, 2017

(SEAL) (PRINCIPAL)
By: ________________________________
Name: ________________________________
Title: ________________________________

(SEAL) (SURETY)
By: ________________________________
Name: ________________________________
Title: ________________________________
Mailing Address: ________________________________
Telephone No.: ________________________________

(Attach Notarial Acknowledgments of Authorized Representative of Principal and of Surety)

1004812.4
SECTION 006112

PAYMENT BOND

Description of Contract:

CITY OF RIO VISTA

CONTRACT NO. PW2017- SKATE PARK

We, ______________________ as Principal, and ______________________ as Surety, jointly and severally, bind ourselves, our heirs, representatives, successors and assigns, as set forth herein, to the

CITY OF RIO VISTA

(herin called CITY) for payment of the penal sum of ______________________ Dollars ($_____________________), lawful money of the United States. CITY has awarded Principal a contract for

CONTRACT NO. PW2017- SKATE PARK

If Principal or any of his subcontractors fails to pay any of the persons named in Section 9100 of the California Civil Code, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract or during the one-year guarantee period, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the contractor and his subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to such work and labor, then Surety will pay the same in an amount not exceeding the sum specified above, and also will pay, in case suit is brought upon this bond, such reasonable attorney’s fees as shall be fixed by the court.

This bond shall inure to the benefit of any of the persons named in Section 9100 of the California Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Surety agrees that no change, extension of time, alteration, or addition to the terms of the contract, or the work to be performed there under, or the Plans and Specifications shall in any way affect its obligation on this bond, and it does hereby waive notice thereof.

Principal and Surety agree that should CITY become a party to any action on this bond that, each will also pay CITY’S reasonable attorney’s fees incurred therein in addition to the sum above set forth.

Executed in four original counterparts on ______________________, 2017.

_________________________________________________________
(PRINCIPAL)

By: ________________________________

Title: ________________________________

(SEAL IF CORPORATION)

(Attach Acknowledgment of Authorized Representative of Principal)
Val de Flores Skate Park   Project No: 16141
Rio Vista, California

Any claims under this bond may be addressed to:

______________________________  (name and address of Surety)

______________________________

______________________________

______________________________

______________________________

______________________________  (name and address of Surety’s agent for service of process in California, if different from above)

______________________________

______________________________

______________________________

______________________________  (telephone number of Surety’s agent in California)

______________________________  (SURETY)

By: ___________________________  (Attorney-in-Fact)

APPROVED:

______________________________  (Mona Ebrahimi, Attorney for CITY)

(Attach Acknowledgment)

NOTICE:

No substitution or revision to this bond form will be accepted. Sureties must be authorized to do business in and have an agent for service of process in California. Certified copy of Power of Attorney must be attached.
SECTION 006220
CONTRACTOR’S CERTIFICATE REGARDING WORKERS’ COMPENSATION INSURANCE

Description of Contract: CITY OF RIO VISTA

CONTRACT NO. PW2017- SKATE PARK

Labor Code Section 3700 provides (in part):

   Every employer except the State shall secure the payment of compensation in one or more of the following ways:

   (a) By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.

   (b) By securing from the Director of Industrial Relations a certificate of consent to self-insure[, . . . which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees.

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers’ compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

Dated: ___________________________, 2017

__________________________________________
(CONTRACTOR)

By: _________________________________

Official Title: _________________________

(SEAL)

(Labor Code Section 1861 provides that the above certificate must be signed and filed by the CONTRACTOR with the CITY prior to performing any work under this contract.)

(END OF SECTION)
**SECTION 006221**

**DESCRiPTION OF CONTRACT:**

**CITY OF RIO VISTA**

**CONTRACT NO. PW2017- SKATE PARK**

**TYPE OF INSURANCE:** Workers’ Compensation and Employers’ Liability Insurance

THIS IS TO CERTIFY that the following policy has been issued by the below-stated company in conformance with the requirements of the General Conditions and is in force at this time, and is in a form approved by the Insurance Commissioner.

The Company will give at least ten (10) days’ written notice to the CITY prior to cancellation of said policy for nonpayment of premium and thirty (30) days’ written notice to the CITY prior to cancellation of said policy for any other reason.

<table>
<thead>
<tr>
<th>POLICY NUMBER</th>
<th>EXPIRATION DATE</th>
<th>LIMITS OF LIABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Workers’ Compensation:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Statutory Limits under the Laws of the State of California</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Employers’ Liability:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$________________________ Each Accident</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$________________________ Disease - Policy Limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$________________________ Disease - Each Employee</td>
</tr>
</tbody>
</table>

**Named Insured (CONTRACTOR):**

**Insurance Company:**

**Street Number:**

**City and State:**

**By:**

(Company Representative)
This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend, or alter the coverage afforded by the policy listed herein.

This is to certify that the policy has been issued to the named insured for the policy period indicated, notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policy described herein is subject to all the terms, exclusions, and conditions of such policy.
SECTION 006222  WORKERS’ COMPENSATION AND EMPLOYERS’ LIABILITY INSURANCE ENDORSEMENT

Description of Contract:  CITY OF RIO VISTA

CONTRACT NO. PW2017- SKATE PARK

Type of Insurance:  Workers’ Compensation and Employers’ Liability Insurance

This endorsement forms a part of Policy No. ____________________________.

ENDORSEMENT

It is agreed that with respect to such insurance as is afforded by the policy, the Company waives any right of subrogation it may acquire against the CITY, the ENGINEER, and their consultants, and each of their directors, officers, employees, and authorized volunteers by reason of any payment made on account of injury, including death resulting there from, sustained by any employee of the insured, arising out of the performance of the above-referenced contract.

The additional premium for this endorsement shall be _______%* of the California Workers’ Compensation premium otherwise due on such remuneration.

This endorsement does not increase the Company’s total limits of liability.

____________________________  ________________________________
Named Insured (CONTRACTOR)  Insurance Company

____________________________  ________________________________
Street Number  Street Number

____________________________  ________________________________
City and State  City and State

By: ______________________________
    (Company Representative)

*CONTRACTOR’S insurance company to fill in this percentage.

(END OF SECTION)
SECTION 006223

LIABILITY INSURANCE CERTIFICATE OF INSURANCE

Description of Contract: CITY OF RIO VISTA

CONTRACT NO. PW2017

Type of Insurance: Liability Insurance

THIS IS TO CERTIFY that the following policies have been issued by the below-stated company in conformance with the requirements of the General Conditions and are in force at this time:

<table>
<thead>
<tr>
<th>Type of Insurance</th>
<th>Policy Number</th>
<th>Effective Date</th>
<th>Expiration Date</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Liability</td>
<td></td>
<td></td>
<td></td>
<td>General Aggregate $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Products—Comp/Ops Agg. $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Personal &amp; Adv. Injury $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Each Occurrence $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fire Damage (Any one fire) $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Med. Expense (Any one person) $</td>
</tr>
<tr>
<td>Automobile Liability</td>
<td></td>
<td></td>
<td></td>
<td>Combined Single Limit $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bodily Injury (Per person) $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bodily Injury (Per Accident) $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Property Damage $</td>
</tr>
<tr>
<td>Excess Liability</td>
<td></td>
<td></td>
<td></td>
<td>Each Occurrence $</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aggregate $</td>
</tr>
</tbody>
</table>

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend, or alter the coverage afforded by the policies listed herein.

This is to certify that the policy has been issued to the named insured for the policy period indicated, notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions, and conditions of such policies.
The Company will give at least thirty (30) days written notice to the CITY prior to cancellation of said policy for any reason.

<table>
<thead>
<tr>
<th>Named Insured (CONTRACTOR)</th>
<th>Insurance Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Number</td>
<td>Street Number</td>
</tr>
<tr>
<td>City and State</td>
<td>City and State</td>
</tr>
</tbody>
</table>

By: ____________________________
(Company Representative)

Insurance Company Agent for Service of Process in California:

<table>
<thead>
<tr>
<th>Name</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Street Number</td>
</tr>
<tr>
<td></td>
<td>City and State</td>
</tr>
<tr>
<td></td>
<td>Telephone Number</td>
</tr>
</tbody>
</table>

NOTICE:

Insurers must be authorized to do business and have an agent for service of process in California and have at least a A- VII rating in accordance with the most current Best’s Rating Guide.
SECTION 006224

LIABILITY INSURANCE ENDORSEMENT

CITY OF RIO VISTA

CONTRACT NO. PW2017- SKATE PARK

Description of Contract:

Type of Insurance: Liability Insurance

This endorsement forms a part of Policy No. ____________________.

ENDORSEMENT

The CITY, the ENGINEER, and their consultants, and each of their directors, officers, employees, and authorized volunteers are included as additional insureds under said policy but only while acting in their capacity as such and only as respects operations of the named insured. The insurance afforded to these additional insureds is primary insurance. If the additional insureds have other insurance which might be applicable to any loss, the amount of this insurance shall not be reduced or prorated by the existence of such other insurance.

This endorsement does not increase the Company’s total limits of liability.

______________________________    ________________________________
Named Insured (CONTRACTOR)    Insurance Company

______________________________    ________________________________
Street Number                   Street Number

______________________________    ________________________________
City and State                  City and State

By:________________________    (Company Representative)

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1.0 CORRELATION AND INTENT OF DOCUMENTS

INTENT OF CONTRACT DOCUMENTS

The intent of the Contract documents is to prescribe the details for the construction and completion of the work which the Contractor undertakes to perform in accordance with the terms of the Contract documents and to require a complete and finished piece of work. Where the Plans and Specifications describe portions of the work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment and incidentals, and do all the work involved in executing the Contract in a satisfactory and competent manner.

The conditions set forth in the Contract documents are complementary, and what is called for in any one (1) shall be as binding as if called for in all.

2.0 BID REQUIREMENTS AND CONDITIONS

2.1 SECURING DOCUMENTS

See Section 001000 titled, "Notice Inviting Sealed Proposals for information."

2.2 BID INSTRUCTIONS

Bids, to receive consideration, shall be made in accordance with these instructions:

Bids shall be made only upon the forms provided in the Contract documents, with all items properly filled out. Non-erasable permanent ink shall be used; numbers shall be stated both in writing and in figures; signatures of all persons signing shall be in long-hand; and completed forms shall be without interlineations, alterations or erasures.

All Bids submitted shall include in the lump sum and/or unit prices bid, all sales or other taxes of city, county, state or federal government of every nature in effect at the time of bidding. If the product of a unit price and an estimated quantity does not equal the extended amount quoted, the unit price shall govern, and the correct product of the unit price and the estimated quantity shall be deemed to be the amount bid. If the sum of two or more items in a bidding schedule does not equal the total amounts quoted, the individual item amounts shall govern and the correct total shall be deemed to be the amount bid.

Bids by corporations must be signed in the corporate name by a corporate officer, and the corporate seal shall be fixed by the signature. The state of incorporation shall be below the corporate name. Bids by partnerships must be signed in the partnership name and signed by a partner with title shown.

Bids shall not contain any description of the work to be done. Alternate proposals will not be considered unless specifically required by the CITY. No oral, telephonic or telegraphic proposals or modifications will be considered. Bid forms shall have no blank spaces. A bid price shall be indicated for each bid item, or the word “None” entered.

Bids must be accompanied by a certified check, cashier’s check or Bidder’s bond, executed on the prescribed form and made payable to the CITY in an amount not less than ten percent (10%) of the Grand Total bid amount. Such check or bid bond shall be given as a guarantee that the Bidder will enter into a Contract if awarded the work. In case of refusal or failure to enter into the Contract, the check or bond will be retained by the CITY without any proof of actual loss.
Before submitting a Bid, each Bidder shall carefully examine and read the Plans and Specifications and other parts of the Contract documents, visit the site of the work, be fully informed as to all existing conditions and limitations, and shall include in the Bid a sum to cover the costs of all items included and necessary to perform fully the entire Contract.

Where the CITY, or the Engineer have made investigations of surface and subsurface conditions in areas where work is to be performed under the Contract, such investigations were made only for the purpose of study and design. Where such investigations have been made, Bidders or Contractor may, upon written request, inspect the records of the Engineer and the CITY as to such investigations subject to and upon the conditions hereinafter set forth. Such inspection of records may be made at the office of the CITY.

The records of such investigations, if any, are not a part of the Contract and are made available for inspection solely for the convenience of the Bidders and Contractor. It is expressly understood and agreed by Bidder and Contractor that neither the CITY nor the Engineer assume any responsibility whatsoever with respect to the sufficiency or accuracy of any investigations thus made, the records thereof, or of the interpretation set forth therein or made by the Engineer in their use thereof and there is no representation, warranty or guarantee, either express or implied, that the conditions indicated by such investigations or records thereof are correct or representative of those existing throughout such areas or any part thereof, or that unanticipated developments may not occur or that materials other than, or in proportions different from, those indicated may not be encountered.

It is the Bidder's responsibility to see that the Bid is received in proper form, time, and place. If any Bid is received after the scheduled closing time for receipt of Bids, it shall be returned to the Bidder unopened.

2.3 APPROXIMATE ESTIMATE

The quantities, if any, given in the Bid are approximate only, being given as a basis for the comparison of Bids, and the CITY does not expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase, decrease or omit the amount of any class or portion of the work, as may be deemed necessary or advisable by the Engineer.

2.4 INTERPRETATION OF PLANS AND DOCUMENTS

Any explanation desired by the Bidders regarding the meaning or interpretation of any of the Contract documents must be requested in writing, with sufficient allowance of time for receipt of reply before the time set for opening of Bids. Any such explanations or interpretations will be made in the form of Addenda to the documents and will be furnished to all Bidders who shall submit all Addenda with their Bids. Neither the Engineer nor any representative of the CITY is authorized to give oral explanations or interpretations of Contract documents, and a submission of a Bid constitutes agreement by the Bidder that he/she has placed no reliance on any such oral explanation or interpretation. However, the Engineer may, upon inquiry by Bidder, orally direct the Bidder's attention to specific provisions of the Contract documents that cover the subject of the inquiry.

2.5 ADDENDA

Any written Addenda issued before or during the time of bidding shall become a part of the Plans, Specifications and/or other Contract documents. Failure to sign the Bid form indicating receipt of Addenda may result in the Bid being determined to be nonresponsive.
2.6 OPENING BIDS

Bids will be publicly opened and read as set forth in the Invitation for Bids. In case only one Bid is received, such Bid may be properly opened and read publicly in the usual manner, and accepted at the option of the CITY. Bidders or their representatives and other interested persons may be present at the opening and reading of Bids.

2.7 REJECTION OF BIDS

The CITY reserves the right to waive any irregularity in any Bid and to reject any and all Bids.

2.8 WITHDRAWAL OF BIDS

Any Bid may be withdrawn any time prior to the time fixed for opening of Bids only by a written request filed with the CITY for the withdrawal of the Bid. The request shall be executed by the Bidder or his/her duly authorized representative. The withdrawal of the Bid does not prejudice the right of the Bidder to file a new Bid prior to time of opening. No Bids may be withdrawn after opening of Bids, except pursuant to Public Contract Code Section 5101 et seq.

2.9 DISQUALIFICATION OF BIDDERS

More than one Bid Proposal from an individual, a firm or partnership, a corporation or an association under the same or different names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one Bid Proposal for the work contemplated will cause the rejection of all Bid Proposals in which such Bidder is interested. If there is reason for believing that collusion exists among the Bidders, any and all Bids may be rejected.

2.10 COMPETENCY OF BIDDERS

In accordance with the provisions of Chapter 9, Division 3 of the California Business and Professions Code and Section 3300 of the California Public Contract Code, Bidders must possess a State of California Contractor’s License for the classification(s) set forth in the Notice Inviting Sealed Bids, which must be valid at the time of Bid, award, and completion of the Contract.

2.11 MATERIAL WARRANTY

Before any Contract is awarded, the Bidder may be required to furnish a complete statement of the origin, composition and manufacture of any or all materials to be used in the construction of the work, together with samples. The samples may be subjected to the tests provided for in the Plans and Specifications to determine their quality and fitness for the work.

2.12 SUBCONTRACTORS

Each Subcontractor, as defined in Public Contract Code Section 4113, which will perform work, labor or fabricate a portion of the work or improvement in excess of one-half of one percent (½%) of the Contractor’s total Bid price must be listed in the place provided, with name, address and indication of what class and portion of the work and percentage of Contract price will be done by each Subcontractor. All parts of Section 4100 through Section 4107, inclusive, of the Public Contract Code must be adhered to, including substitution and work not listed. Penalties for failure to comply with the foregoing sections of the Public Contract Code are set forth in sections 4110 and 4111 of the Public Contract Code. The CITY specifically reserves the right to determine that any listed Subcontractor is not responsible and, if it so determines, to require substitution at no additional cost to the CITY.
2.13 MODIFICATION OF BIDS

A Bidder may modify his/her Bid by written communication provided such communication is received by the CITY prior to the closing time for receipt of Bids. The written communication should not reveal the Bid price but should state the addition or subtraction or other modification so that the final prices or terms will not be known by the CITY until the sealed Bid is opened.

2.14 DISCREPANCIES

In the case of discrepancy between unit prices and totals, unit prices will prevail. In case of discrepancy between words and figures, words will prevail.

2.15 SERVICING AND MAINTENANCE

Each Bidder must, if requested, furnish evidence that there is an efficient service organization which regularly carries a stock of repair parts for the proposed equipment to be furnished and installed in the work and that the organization is conveniently located for prompt service.

2.16 INTENTIONALLY OMITTED

2.17 INTENTIONALLY OMITTED

2.18 WORK PERFORMED OUTSIDE OF COUNTY

Unless specified otherwise in the Special Conditions, the Bidder shall include in the Bid, all expenses associated with work related to testing, sampling and inspection for any fabrication of materials, parts and equipment required in the scope of this Contract which occurs outside the County of Solano. Quality control for said work shall be performed by a certified laboratory or inspection firm which shall be pre-approved by the Engineer. Any onsite shop inspection required by the CITY shall be performed by the Engineer or his/her representative at the expense of the Contractor.

2.19 CONTRACTOR EXPERIENCE

The Bidder shall have been engaged in the business of the work specified herein for a period of at least ten (10) years. The Bidder shall submit a list with contact names and phone numbers of three (3) or more agencies for whom the Bidder has constructed similar projects. The list shall show the agencies' names and addresses, and an individual who may be contacted for reference for a project of similar scope. The individuals offered as references will be contacted. Failure to submit this list or unsatisfactory responses from the references shall, in the Engineer's sole judgment, be grounds for a non-responsive Bid.

3.0 AWARD AND EXECUTION OF CONTRACT

3.1 AWARD OF CONTRACT

The CITY reserves the right to reject any and all Bid Proposals. If a Contract is awarded, it will be to the lowest responsible responsive Bidder whose proposal complies with all the requirements prescribed and will be made within sixty (60) calendar days after the public opening of Bids. All Bids will be compared on the basis of the Engineer’s estimate of the quantities of work to be done.

The CITY reserves the right to accept or reject any and all Bids for a period of sixty (60) days after the date of opening, and to waive any irregularity in any Bid. No Bid can be withdrawn during that period, except pursuant to Public Contract Code Section 5101 et seq.
3.2 RETURN OF BID GUARANTEES

All other Bid Bonds will be held until the Contract has been finally executed, after which they will be returned to the respective Bidders. The Bid Security will be forfeited to the CITY as liquidated damages without proof of loss if the Bid Proposal is accepted, a Contract based on that Bid Proposal awarded, and that Bidder fails to enter into the Contract in the form prescribed and submit the Performance and Payment Bonds, Insurance Certificates, and policies or endorsements required by the Contract documents within fourteen (14) days after such award is made by the CITY.

3.3 CONTRACT BONDS

The successful Bidder must furnish two (2) good and sufficient bonds on forms included in these documents: the Faithful Performance Bond shall be executed in the amount of one hundred percent (100%) of the Contract price and shall guarantee faithful performance of the Contract by the Contractor; the Payment Bond shall be executed in the amount of 100 percent (100%) of the Contract price and shall guarantee payment of labor, materials and all bills and obligations arising from the performance of the Contract. These bonds shall remain in full force and effect for a period of one (1) year from the date of Notice of Completion.

The Attorney-in-Fact (resident agent) who executes the Performance Bond and Payment Bond on behalf of the surety company must attach a copy of his/her Power of Attorney as evidence of his/her authority. A notary shall acknowledge the Power of Attorney as of the date of the execution of the Surety Bond which it covers.

Any and all alterations, extensions of time, extra and additional work, and other changes authorized by these Plans and Specifications may be made without securing consent of the surety or sureties on the Contract bonds and each bond shall so specify.

Whenever any surety or sureties on any such bonds required by law for the protection of the claims of laborers and material persons become insufficient, or the CITY has cause to believe that such surety or sureties have become insufficient, a demand in writing may be made of the Contractor for such further bond or bonds or additional surety, not exceeding that originally required, as is considered necessary, considering the extent of the work remaining to be done. Thereafter, no payment shall be made upon such Contract to the Contractor until such further bonds or additional surety has been furnished.

3.4 EXECUTION OF CONTRACT

The Contract shall be signed by the successful Bidder and returned, together with the Faithful Performance and Payment Bonds and insurance forms, in accordance with the time requirements set forth in paragraph H of Section 008110 titled, “Special Provisions.”

No Bid Proposal shall be considered binding upon the CITY until the execution of the Contract by the CITY.

3.5 FAILURE TO EXECUTE CONTRACT

Failure to execute the Contract in accordance with the time requirements set forth in paragraph H of Section 008110 titled, “Special Provisions” after the Bidder has received notice of Contract award, shall be just cause for the annulment of the award at the sole election of the CITY. If the successful Bidder refuses or fails to execute the Contract and deliver the required bonds and certificates of insurance in proper form within the fourteen (14) days, the CITY may award the Contract to another Bidder. If the successful Bidder returns the required bonds and certificates of insurance in proper form after the fourteen (14) days, and the CITY elects to award the Contract to the successful Bidder, the CITY will deduct from the Contract completion period, the number of calendar days in excess of fourteen (14) that
the successful Bidder took to submit the bonds and certificates of insurance in proper form. If a Bidder to whom an award is made fails or refuses for any reason to execute the Contract or fails to furnish any or all of the required insurance or Contract bonds in proper form, within the time stated, it is agreed and stipulated between CITY and the Bidder to whom any award is made that damage has been and will be sustained by the CITY. It is further agreed by the CITY and any and all Bidders that it will be impractical and extremely difficult to fully ascertain and determine the actual damage that the CITY will sustain by such delay. Therefore, the CITY and all parties who submit a Bid under this Notice of Invitation to Bid shall be deemed to have jointly studied and attempted to estimate the damages suffered by the CITY by such delay under these circumstances and agree that the amount of the Bidder’s bond or check is agreed to as the liquidated damages payable by such Bidder(s). This Bidder’s bond or check will be collected and held by the CITY as the sole property of the CITY for full compensation for the damages suffered by the CITY as a result of the Bidder’s failure to execute the Contract and furnish the bonds and insurance as required.

3.6 NOTICE TO PROCEED

The CITY intends to issue a Notice to Proceed within thirty (30) days of receipt of the executed Contract, proof of full compliance with all insurance requirements, Faithful Performance Bond, and the Payment Bond from the Contractor.

4.0 CONTROL OF THE WORK

4.1 AUTHORITY OF ENGINEER

The Engineer is defined as the person or firm authorized by the CITY to represent it during the performance of the work by the Contractor. The Engineer shall include persons, designated by the Engineer in writing to the Contractor, expressly authorized to act for the Engineer when the Engineer is not available to make decisions or take action required of the Engineer under the Contract documents. The Engineer has the authority to decide all questions which may arise as to the quality or acceptability of materials furnished and work performed; and as to the manner of performance and rate of progress of the work; all questions which arise as to the interpretation of these Contract documents; all questions as to the acceptable fulfillment of the Contract on the part of the Contractor; and all questions as to compensation. The Engineer’s decision shall be final and not subject to appeal to CITY staff or City Council. The Engineer shall further have the authority to implement decisions by direction to the Contractor which Contractor shall carry out promptly.

4.2 USE OF MATERIALS FOUND ON THE PROJECT SITE

The CITY does not warrant the suitability of any native material on the Project site for use in the Project. The Contractor, with the approval of the Engineer, may use in the proposed construction such stone, gravel, sand or other material as may be found on the Project site and deemed suitable in the opinion of the Engineer. The Contractor shall replace at his/her own expense all of that portion of the material so removed and used with other suitable material. No charge for native materials so used will be made against the Contractor. The Contractor shall not excavate or remove any material from any roadway location that is not within the excavation, as indicated by the slope and grade lines shown on the Contract Drawings, without written authorization from the Engineer.

4.3 CONFORMITY WITH PLANS AND ALLOWABLE DEVIATIONS

Pipes, canals, structures, earthwork, and finished surfaces in all cases shall conform to the lines, grades, cross-sections and dimensions shown on the Plans. Deviations from the Contract Drawings as may be required by the exigencies of the construction will be in all cases determined by the Engineer and authorized in writing only.
4.4 COORDINATION OF GENERAL CONDITIONS, SPECIAL PROVISIONS, PLANS AND DRAWINGS

These General Conditions, Special Provisions, Technical Provisions, Plans, Drawings, contract change orders, and all supplementary documents are essential parts of the Contract, and a requirement occurring in one (1) is as binding as though occurring in all. All parts are intended to be cooperative and to describe and provide for a complete work. In the event of conflict between Sections, the most stringent requirements shall apply.

4.5 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS

Should it appear that the work to be done, or any matter, is not sufficiently detailed or explained in the Contract documents, the Contractor shall apply to the Engineer for such further explanations as may be necessary and shall conform to them as part of the Contract, so far as may be consistent with the CITY’S original intent. Any reference made in these Specifications or on the Drawings to any specification, standard, method, or publication shall be understood to refer to the latest revision of the reference. In the event of any discrepancy between any drawing and the figures written thereon, the figures shall be taken as correct.

4.6 SUPERINTENDENCE

Before starting work, the Contractor shall designate in writing an authorized representative who shall have complete authority to represent and act for the Contractor. An authorized representative of the Contractor shall be present at the Project site at all times while work is in progress. Whenever the Contractor is not present on any part of the work where his/her presence may be desired to give direction, orders may be given by the Engineer in writing, and shall be received and obeyed by the superintendent or foreperson in charge of the particular work in reference to which orders are given. The Engineer shall have the authority to remove from the Project any employee of Contractor or any subcontractor, including, without limitation, any superintendent, foreman or other authorized representative, who refuses to obey an order or otherwise delays or disrupts the Project.

The Contractor shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the work in accordance with the Contract documents. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but the Contractor shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence, or procedure of construction where indicated in and required by the Contract documents.

The Contractor shall be responsible to see that the completed work complies with the Contract documents.

4.7 INSPECTION

One (1) or more inspectors may be assigned to observe the work and to act in matters of construction under this Contract. Such inspectors shall have the power to issue instructions and make decisions within the limitations of the authority of the Engineer. Such inspection shall not relieve the Contractor of the obligations to conduct comprehensive inspections of the work, to furnish materials, to perform acceptable work, and to provide adequate safety precautions in conformance with the intent of the Contract. Neither the inspection by the CITY through the Engineer, the CITY Inspector or any CITY employees, nor any order by the CITY for payment of money, nor any payment for, or acceptance of, the whole or any part of the work by the CITY, nor any extension of time, nor any possession taken by the CITY or its employees, shall operate as a waiver of any provision of this Contract, or any power herein reserved to the CITY or any right to damages herein provided, nor shall any waiver of any breach in this Contract be held to be waiver of any other or subsequent breach.
4.8 FINAL INSPECTION

When the Contract work has been completed, the Contractor shall file notification in writing with the Engineer, and the Engineer will make a final inspection.

4.9 REMOVAL OF DEFECTIVE OR UNAUTHORIZED WORK

All work which has been rejected shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation will be allowed for such removal or replacement. Any work done beyond the lines and grades shown on the Contract Drawings or established by the Engineer, or any extra work done without written authority will be considered as unauthorized and will not be paid for. Work so done may be ordered removed at the Contractor’s expense. Upon failure on the part of the Contractor to comply promptly with any order of the Engineer made under the provisions of this article, the Engineer shall have the authority to cause defective work to be remedied or removed and replaced, and unauthorized work to be removed, and to deduct the costs from any monies due or which become due the Contractor.

4.10 EQUIPMENT

The Contractor shall provide adequate and suitable equipment to produce the quality and quantity of work required, and, when ordered by the Engineer, shall remove unsuitable equipment from the site. All vehicles used to haul materials over existing highways shall be equipped with pneumatic tires.

4.11 RIGHT OF CITY TO TERMINATE CONTRACT

4.11.1 Termination for Convenience - The CITY may terminate this Contract in whole or in part at any time by written notice to the Contractor, if the CITY determines that termination is in its interest or the public interest. If the Contract is so terminated Contractor shall be entitled to payment for all work performed acceptably and to payment for all acceptable goods or services ordered by and delivered to Contractor before receipt of the written notice of termination, and to all reasonable costs of closing out the Contract, provided that Contractor provides a final itemized invoice for the above amounts within thirty (30) days after receiving the termination notice. Contractor shall not be entitled to its as-bid profit for the Project or any work not performed. Profit on work performed shall be paid at the contract rates for time-and-materials extra work, provided that no profit shall be paid for mobilization, Record Drawings, or O&M Manual line items, as applicable.

4.11.2 Termination for Cause - If the work to be done under this Contract shall be abandoned by the Contractor, or if this Contract shall be assigned by Contractor otherwise than as herein provided, or if a general assignment of assets be made for the benefit of creditors, or if a receiver should be appointed for the Contractor or any of Contractor’s property, or if at any time the Engineer finds that the performance of the work under this Contract is being unnecessarily delayed or that the Contractor is violating any of the conditions or covenants of this Contract, or executing the same in bad faith or otherwise not in accordance with the terms of said Contract, or if the work be not substantially completed within the time named for its completion or within the time to which such completion date may be extended, then the CITY may serve written notice upon the Contractor and his/her Surety of said CITY’S intention to terminate this Contract and, unless within five (5) days after the serving of such notice upon the Contractor, a satisfactory arrangement is made for the continuance thereof, this Contract shall cease and terminate. In the event of such termination, the CITY will immediately serve notice thereof upon the Surety and the Contractor, and the Surety shall have the right to take over and complete the work; provided, however, that if the Surety does not commence performance within fifteen (15) days from the date of said notice of termination, the CITY may take over the work and prosecute same to completion, by Contract or otherwise, for the account and at the expense of the Contractor, and the Contractor and its Surety shall be liable to the CITY for any and all excess costs sustained by the CITY by reason of such prosecution and completion, including, without limitation, all costs incurred by reason of termination and
all damages, including liquidated damages, from late completion. In such event the CITY may take possession of, and utilize in completing the work all such plant materials, equipment, and tools as may be on the work site and necessary therefore.

4.12 CONTRACTOR'S RIGHT TO TERMINATE CONTRACT

If the work shall be stopped in its entirety under an order of any court or other public authority for a period of three (3) months through no act or fault of the Contractor or of anyone employed by him/her, then the Contractor may on seven (7) days' written notice to the CITY, stop work or terminate this Contract and recover from the CITY payment for all work executed, any losses sustained on any material, and a ten percent (10%) profit on work performed.

4.13 SUSPENSION OF WORK

The CITY reserves the right to suspend and reinstate execution of the whole or any part of the work contracted without invalidating the provisions of the Contract in any way.

Orders for suspension or reinstatement of work will be issued by the CITY to the Contractor in writing. The time for completion of the work so suspended shall be extended for a period equal to the time lost by reason of the suspension.

Extra direct costs and expenses not including lost profit and/or overhead costs which, in the opinion of the Engineer, are caused by work suspensions so ordered by the CITY will be paid by the CITY to the Contractor.

4.14 EROSION AND SEDIMENT CONTROL

All actions and costs for erosion and sedimentation control shall be the responsibility of the Contractor.

The Contractor shall provide all reasonable erosion and sedimentation control measures that may be required by the state, county, and/or local jurisdictions and to protect disturbed ground from erosion and watercourses from sedimentation. Areas of clearing, grading and/or other disturbance shall be confined within the limits shown on the Plans, or as marked by the Engineer, to prevent undue damage by construction.

Precautions shall be taken by the Contractor to ensure that vehicles and equipment do not track and/or spill earth and/or materials onto public and/or private streets, roads, or rights-of-way. Any spillage and/or tracking shall be immediately removed should erosion and/or sediment discharge occur, even on a temporary basis, control measures shall immediately be taken by the Contractor to avoid further problems.

Proper erosion control measures and practices shall be followed during construction. An Erosion and Sediment Control Plan shall be submitted to the CITY for its records not later than ten (10) days before implementing any erosion control measures or practices included in the plan.

4.15 SURFACE RESTORATION

Surface restoration shall be defined as that work necessary to restore the excavated area above backfill and the scarred surrounding work areas to a condition equivalent to or better than existed prior to the construction. This may include pavement replacement, seeding, shrub and plant replacement, and restoration of ditches and drainage areas.
The replacement of grass and/or wild flowers shall be accomplished by seeding. The kind and type of seed is to be determined by the Engineer. Replacement of plants and shrubs shall be required where the easement travels through a developed parcel. In this case the CITY or Developer and Contractor shall agree before proceeding as to which plants and shrubs shall be saved or replaced.

The restoration of trench surfaces shall include measures to prevent surface erosion of the trench. This shall include seeding, cutoff walls, surface header boards, water bars, interceptor dikes, gravel filter dikes, or rip rap energy dissipaters. These measures shall be used as required to prevent surface erosion.

4.16 POLLUTION CONTROL

Water - Oily or greasy substances, or other materials harmful to fish life, originating from the Contractor’s operation shall not be allowed to enter or be placed where they may later enter any river, creek, canal, stream, or other water way. The Contractor shall not increase the turbidity of any watercourse flowing past the construction site unless precautions are taken downstream of the work to limit the increase in turbidity to a maximum of 25 Jackson Turbidity Units. Contractor shall be responsible for preparing a Pollution Control Plan and complying with such plan during the construction Project. Groundwater may be present at shallow depths. All spills must be reported to the CITY immediately.

Noise - It shall be the Contractor’s responsibility to keep noise pollution due to construction activities as low as possible. In no case shall noise levels produced by the Contractor exceed any of these maximums or the applicable Noise Ordinance whichever are more stringent:

A. No individual piece of equipment shall produce a noise level exceeding 55 dBA at a distance of twenty-five feet (25’). Equipment in excess of this level shall be mitigated with the use of sound barrier walls.

B. The noise level at any point outside the right-of-way or temporary construction area shall not exceed the limit allowed by the applicable Noise Ordinance during non-working hours. No equipment violating these standards shall be allowed to operate. Operations in excess of this level shall be mitigated with the use of sound barrier walls.

Air - The Contractor shall comply with all state and local pollution control regulations. No burning shall be allowed on the Project. Idling of internal combustion engines shall be held to an absolute minimum. All work shall conform to the Yolo-Solano Air Quality Management District and the California Air Resources Board (CARB). Contractor shall be responsible for preparing a Dust Control Plan and obtaining permits, if necessary, and shall be responsible for all associated costs.

4.17 SITE SECURITY

The Contractor shall provide in advance of starting construction, a list of all employees and vehicles that need access to the site. The Contractor shall provide periodic updates to this list. The Contractor shall provide a list of all scheduled deliveries to the Project site. This list shall include the items to be delivered, the name of the delivery company and the time the delivery is to be made.

All access gates to the Project site are to remain closed and locked at all times that traffic is not using the gates. The Contractor will be assigned a specific access point at the Project site. The Contractor may provide security personnel for access control during Project work hours. It is the Contractor’s sole responsibility to secure all equipment, material, tools and other items used during the execution of the Contract.
4.18 HAZARDOUS WASTES AND UNFORESEEN CONDITIONS

In accordance with Section 7104 of the California Public Contract Code, if the work contemplated hereunder involves digging trenches or other excavations that extend deeper than four feet (4') below the surface, the Contractor shall promptly, and before the following conditions are disturbed, notify the CITY, in writing, of any: (I) material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the California Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law; (II) subsurface or latent physical conditions at the site differing from those indicated by information about the site made available to bidders prior to the deadline for submitting bids; or (III) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The CITY will promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work shall issue a change order under the procedures described in this Contract. In the event that a dispute arises between the CITY and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

4.19 EXISTING UTILITIES

The Contractor shall be responsible for the safeguarding of all utilities. The Contractor shall contact the following parties to ascertain and verify the existence and location of utility lines and facilities and shall coordinate all work in accordance with the information obtained from such inquiries in order to prevent damage to such lines and facilities.

Underground Service Alert (USA) (1-800-642-2444)

Prior to conducting any excavation, the Contractor shall contact the appropriate regional notification center as required by Government Code Section 4216 et seq. In accordance with Government Code Section 4215, the Contractor shall be compensated for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, and removing or relocating existing main or trunkline utility facilities not indicated in the Contract Plans and Specifications with reasonable accuracy, and for the equipment on the Project necessarily idled during such work; provided that the Contractor shall first notify the CITY before commencing work on locating, repairing damage to, removing or relocating such utilities.

The Contractor shall immediately notify the CITY and the utility owner if it disturbs, disconnects or damages any utility.

Any sewer crossings shall conform to the State Health Department regulations for water/sewer separation and materials. Cost for special pipeline materials to meet Health Department regulations, and repair of services damaged shall be included in the cost of the bid items to which the work is appurtenant. No separate payment will be made.

The Engineer or his/her representative has endeavored to determine the existence of utilities at the work site from the records of the CITY’s of known utilities in the vicinity of the work. The positions of these utilities, as derived from such records, are shown on the Plans. The service connections to these utilities may not be shown on the Plans.
Val de Flores Skate Park
Rio Vista, California

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The Contractor shall make his/her own investigations, including exploratory excavations, to determine the locations and type of existing service laterals or appurtenances when their presence can be inferred from the presence of other visible facilities, such as buildings, meters and junction boxes, on or adjacent to the work site.

4.20 [INTENTIONALLY OMITTED]

4.21 CULTURAL RESOURCES

The limits of construction activities do not pass through any known archaeological sites. However, it is conceivable that unrecorded sites could be discovered during construction. In the event that artifacts, human remains, or other cultural resources are discovered during construction activities. The Contractor shall notify the CITY immediately and comply with all applicable laws.

4.22 SUBCONTRACTS

The attention of the Contractor is directed to the provisions of Public Contract Code Sections 4100-4114, regarding subcontracting and said provisions are by this reference incorporated herein and made a part hereof.

Each Subcontract shall contain a suitable provision for the suspense or termination thereof should the work be suspended or terminated or should the subcontractor neglect or fail to conform to every provision of the Contract documents insofar as such provisions are relevant. No subcontractor or supplier will be recognized as such, and all persons engaged in work will be considered as employees of the Contractor, and the Contractor will be held responsible for their work, which shall be subject to the provisions of the Contract documents. The Contractor shall be fully responsible to the CITY for the acts or omissions of his/her subcontractors and the persons either directly or indirectly employed by him/her. Nothing contained in the Contract documents shall create any contractual rights for a subcontractor against the CITY. If a legal action, including arbitration and litigation, against the CITY is initiated by a subcontractor or Supplier, the Contractor shall reimburse the CITY for the amount of legal, engineering and all other expenses incurred by the CITY in defending itself in said action.

The CITY and the Engineer reserve the right to approve all subcontractors.

5.0 CONTROL OF MATERIALS

5.1 STORAGE OF MATERIALS

Materials shall be stored to ensure the preservation of their quality and fitness for the work. When considered necessary by the Engineer, they shall be placed on wooden platforms or other hard, clean surfaces and not on the ground. They shall be placed under cover when so directed. Stored materials shall be located to facilitate prompt inspection. Materials shall not be located or stored where detrimental to traffic and pedestrians. All material paid for as “Materials on Hand” shall be securely stored and shall be covered by the Contractor’s fire and theft insurance.

5.2 DELIVERY OF MATERIALS

The Contractor shall furnish the Engineer with a duplicate delivery ticket for all materials to be used in the work. The delivery tickets shall show the quantity and type of materials to be used in the work.
5.3 MATERIALS AND EQUIPMENT

Unless specifically provided otherwise in each case, all materials and equipment furnished for permanent installation in the work shall be new, unused and undamaged when installed or otherwise incorporated in the work.

5.4 MATERIALS SPECIFIED

Whenever any material, 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 the materials, process, or articles desired and shall be deemed to be followed by the words “or (approved) equal,” and the Contractor may offer any material, process, or article which shall be substantially equal or better in every respect to that so indicated or specified; provided, however, that if the material, process, or article offered by the Contractor is not, in the opinion of the Engineer, equal or better in every respect to that specified, then the Contractor must furnish the material, process, or article specified or one that in the opinion of Engineer is the substantial equal or better in every respect. In the event that the Contractor furnishes material, process, or article more expensive than that specified, the difference in cost of such material, process, or article so furnished shall be borne by the Contractor.

All materials, equipment, and supplies provided shall, without additional charge to CITY, fully conform to all applicable state and federal safety laws, rules, regulations, and orders, and it shall be Contractor’s responsibility to provide only such materials, equipment, and supplies notwithstanding any omission in the Contract documents therefore or that a particular material, equipment, or supply was specified.

In accordance with Section 3400 of the Public Contract Code, the Contractor shall submit data substantiating requests for substitution of “equal” items within thirty-five (35) days after award of the Contract.

5.5 REMOVAL OF DEFECTIVE OR UNAUTHORIZED MATERIALS

The Contractor, upon written notice from the CITY, shall remove from the premises all materials condemned or rejected by the CITY, as defective, unsound, or improper, or in any way failing to conform to the requirements of the Contract documents. The Contractor shall at his/her sole expense, make good all work destroyed or damaged by such removal, and promptly replace materials damaged or improperly worked by him/her and re-execute his/her own work in accordance with the Contract without expense to the CITY. This includes re-executing or replacing the work of any other contractor that is in any way affected by the removal of such defective work of the Contractor. The obligations of the Contractor under this section shall not extend to defective materials or equipment supplied by the CITY for incorporation into the work performed under this Contract. If the Contractor does not respond within ten (10) days after written notice, the CITY may remove and replace such materials at the expense of the Contractor.

5.6 SUBMITTALS

Submittals will be required for all materials, equipment, fabricated articles and purchased items. No portion of the work requiring a shop drawing submittal shall be commenced until the submittal has been reviewed by the Engineer and returned to the Contractor with a notation indicating that resubmittal is not required. Submittals required by the Specifications shall be in accordance with this section and the Technical Specifications unless otherwise specified. Submittals not in accordance with the section requiring the submittal will be returned to the Contractor as unsatisfactory. Prior to transmission to the Engineer, the Contractor shall carefully review each submittal to confirm that it is complete and to verify whether or not the proposed items of work conform to Contract requirements. Each submittal shall be dated, signed, and certified by the Contractor as being correct and in conformance with the Drawings and the Specifications.
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The Engineer will not review any items which have not been certified by the Contractor. All non-certified submittals will be returned to the Contractor without action taken by the Engineer, and any delays caused thereby shall be the responsibility of the Contractor. Items that are not in accordance with the Contract requirements shall be conspicuously noted as such. The Contractor shall identify each proposed deviation on the corresponding letter of transmittal and include a written explanation of the necessity for each deviation with the letter of transmittal. Deviations that are not conspicuously marked on both the letter of transmittal and the corresponding drawing or data will be deemed to have been disapproved by the Engineer or not reviewed by the Engineer.

Only those products that have been approved at the time of opening bids will be acceptable for use in the work; except, products may be approved after the bid opening date when there is sufficient time within the Contract period to permit testing and qualification.

Criteria pertaining to the qualification of products may be obtained from the Engineer. No extension of time will be granted for the purpose of testing and qualifying proposed products. If the Contractor believes that any shop drawing or communication relative thereto calls for changes in the work for which the Contract amount or time for completion should be changed, he/she shall not proceed with the changes in the work so called for and shall promptly notify the Engineer in writing of his/her estimate of the changes in the Contract amount and time for completion he/she believes to be appropriate.

The Contractor shall refer to the Technical Specifications for Project specific submittal requirements.

5.7 MANUALS AND RECORD DRAWINGS

Service and Parts Manuals - The Contractor shall furnish the CITY four (4) copies of all installation, operation, and service manuals, with a parts list for each piece of equipment furnished. The service and parts manuals shall be labeled, indexed, and organized in three (3)-ring binders.

Record Drawings - On the job, the Contractor shall maintain an up-to-date marked set of the as-built Contract Drawings, showing the location and details of any changes made during construction. The Contractor shall give the CITY a clean, marked set of the as-built Contract Drawings showing construction changes before final payment and acceptance of the work. These shall be received and approved by the Engineer prior to final acceptance of electrical work.

5.8 PLACING WORK IN SERVICE

If desired by the CITY, portions of the work may be placed in service when completed, and the Contractor shall provide proper access to the work for this purpose. Nothing in this article shall be construed as relieving the Contractor of the full responsibility for completing the work in its entirety, for making good all defective work and materials, for protecting the work from damage, and for being responsible for damage and for the work as set forth in the General Provisions and other Contract documents, nor shall such action by the CITY be deemed completion and acceptance, and such action shall not relieve the Contractor, his/her sureties, or insurers of the provisions of the section on CONTRACTOR’S INSURANCE, and the article on INDEMNIFICATION.

6.0 WARRANTIES AND REPAIRS

6.1 WARRANTIES AND REPAIRS

Guarantee And Warranty Requirements - The Contractor shall warrant and guarantee that the entire work constructed under the Contract fully meets all requirements of the Contract. The Contractor shall further warrant and guarantee that all work, including materials, articles, and equipment furnished by the Contractor under the Contract, shall be free of deficiencies and defects for a period of one (1) year after the date of Notice of Completion of the work unless specified otherwise.
The Contractor shall further warrant and guarantee to make or have made at Contractor’s expense repairs, adjustments, replacements, or other corrective work necessary to restore or bring into full compliance with the requirements of the Specifications any part of the work which during the guarantee period is found to be deficient with respect to any provision of the Specifications.

The Contractor shall be fully responsible for all direct and indirect damages and expenses to the CITY proximately caused by such defects in materials or workmanship including defects in materials or workmanship supplied to the Contractor by any subcontractor or manufacturer of equipment. As to any equipment which bears a guarantee or warranty in writing or by law for a period longer than one (1) year, Contractor hereby stipulates and agrees that such guarantee shall inure to the benefit of the CITY for such longer period. The effective date for the start of the guarantee or warranty period shall be the date of recordation of the Notice of Completion. The Contractor also agrees to hold the CITY harmless from liability of any kind arising from damage due to said defects.

If a defect or deficiency is of a kind which in the opinion of the Engineer requires immediate correction to avoid injury to the CITY, the Engineer may make or have made such repairs, adjustments, replacements, or other corrective work and the Contractor agrees to promptly pay the CITY invoice for the corrective work.

If a defect or deficiency is of a kind which in the opinion of the Engineer requires immediate correction but the Contractor has failed to undertake corrective work within three (3) working days of receipt of written notice from the Engineer, the Engineer may make or have made such repairs, adjustments, replacements, or other corrective work and the Contractor agrees to promptly pay the CITY invoice for the corrective work.

The CITY will have the right to use deficient material and equipment until it can be taken out of service without injury to the CITY. The guarantees and agreements set forth herein shall be secured by the “Faithful Performance Bond” furnished by the Contractor to the CITY at the time of execution of the Contract, which bond shall be deemed to continue in effect during the period of guarantee.

This guarantee is not the exclusive remedy for the CITY in the event of any breach of this Contract.

7.0 LEGAL RELATIONS AND RESPONSIBILITY

7.1 LAWS TO BE OBSERVED

The Contractor shall keep fully compliant with all local, county, state and federal laws and ordinances and regulations which in any manner affect those engaged or employed in the work, or the manufacture of materials used in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of those having any jurisdiction or authority over the same.

The Contractor shall give all notices required by law and comply with all laws, ordinances, rules and regulations pertaining to the conduct of work. The Contractor shall be liable for all violations of the law in connection with work furnished by the Contractor. If the Contractor observes that the Drawings or Specifications are at variance with any law or ordinance, rule or regulation, he/she shall promptly notify the CITY and Engineer in writing and any necessary changes shall be made by written instruction or change order. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules or regulations and without giving notice to the CITY and Engineer, the Contractor shall bear all costs arising therefrom.

7.1.1 Hours of Labor - The Contractor shall forfeit, as penalty to the CITY, twenty-five dollars ($25.00) for each worker employed in the execution of the Contract by the Contractor or by any subcontractor of any tier under the Contractor, for each calendar day during which such worker is permitted or required to labor more than eight (8) hours in any one day or forty (40) hours per one (1)
calendar week, unless compensated at not less than time and a half per provisions of the Labor Code, Section 1810 to Section 1815 thereof, inclusive.

7.1.2 Exception - If the prevailing wage determination requires a higher rate of pay for overtime work than is required under Labor Code Section 1815, then that higher overtime rate shall be paid as specified in subsection 16200(a)(3)(F) of the Title 8, California Code of Regulations.

7.1.3 Labor Discrimination - A contractor shall not discriminate in the employment of persons upon public works on any basis listed in Subdivision (a) of Section 12940 of the Government Code, as those bases are defined in Sections 12926 and 12926.1 of the Government Code, except as otherwise provided in Section 12940 of the Government Code. Every contractor for public works who violates this Section is subject to all the penalties imposed for a violation of this Chapter.

7.1.4 Prevailing Wage - The minimum rates of wages applicable to the work to be done have been determined in accordance with the provisions of Sections 1770 et seq. of the California Labor Code. Copies of the current schedules for prevailing wages are on file in the CITY’S office, and the contents of those schedules are included herein as if set forth in full. The Contractor shall post at each job site in a place readily available to all workers the current prevailing wage rate for each craft, group, and worker working on the job.

In addition, each employee at the time of hiring must be supplied with a notice that specifies the rates and basis (hourly, salary, commission or otherwise) of the employee’s wages. The Contractor must notify the employee in writing of any changes to the information in the notice within seven (7) calendar days of the changes unless the changes are reflected on a timely wage statement or other writing. No notice is required if the employee is covered by a collective bargaining agreement containing such information.

The Contractor shall forfeit, as penalty to the CITY, two hundred dollars ($200.00) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates for any work done under the Contract by him/her or by any subcontractor under him/her, in violation of the provisions of the Labor Code and in particular, Sections 1770 to 1780 thereof, inclusive. In addition to this penalty, the difference between such prevailing wage rate and the amount actually paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by the Contractor.

The CITY will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the prevailing wage rate adopted by the CITY. The possibility of wage increases is one of the elements to be considered by the Contractor in determining bid prices, and will not under any circumstances be considered as the basis of a claim against the CITY.

7.1.5 Payroll Records - Attention is directed to Section 1776 of the Labor Code of the State of California. Regulations complementing said Section 1776 are located in Sections 16000 and Sections 16400 through 16404 of Title 8, California Code of Regulations. The Contractor is required to comply with the provisions of Section 1776 of said Labor Code. The Contractor shall also be responsible for compliance by his/her subcontractors.

7.1.6 Reporting Requirements and Sanctions - Failure to provide specific information, records, reports, certifications, or any other documents required for compliance with these Specifications shall be considered noncompliance. The minimum documents required include:

List of Subcontractors - Due seven (7) calendar days after date of Preconstruction Conference;
Certified Payroll Reports - An original and three (3) legible copies are due within seven (7) calendar days, upon the request of the Engineer;
Fringe Benefit Statement - Due with first payroll report and any time thereafter that fringe benefits change; and

Apprenticeship Certifications - Due with the first payroll report on which the apprentice appears. Other documentation may be required depending on the source of funding for the Project.

7.1.7 Apprentices - In accordance with the provisions of Section 1777.5 of the Labor Code, and in accordance with the regulations of the Department of Industrial Relations, Division of Apprenticeship Standards, the appropriate number of properly indentured apprentices are to be employed in the prosecution of the work. Information relative to number of apprentices, identification, wages, hours of employment and standards of working conditions shall be obtained from the Department of Industrial Relations, Division of Apprenticeship Standards.

7.1.8 Fair Labor Standards Act - Bidders note the fact that Contractors are required to meet the provisions of the Fair Labor Standards Act of 1938, and as amended (29 U.S.C. Chapter 8).

7.1.9 Registration of Contractors - In accordance with the provisions of Chapter 9, Division 3 of the Business and Professions Code and Section 3300 of the Public Contract Code, Bidders must possess a State of California Contractor’s License for the proper classification which must be valid at the time of bid, award, and until completion of the Contract.

CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND REGULATED BY THE CONTRACTORS’ STATE LICENSE BOARD.
ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REferred TO THE REGISTRAR, CONTRACTORS’ STATE LICENSE BOARD, 9835 GOETHE ROAD, SACRAMENTO, CALIFORNIA.
MAILING ADDRESS: P.O. BOX 26000, SACRAMENTO, CALIFORNIA 95826.

7.1.10 Permits and Licenses - The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. The costs for permits and inspections shall be included in the price entered in the Proposal under line item number one (1), “Mobilization and Demobilization”. When the terms of permits obtained by either the Contractor or the CITY require inspections by agencies or authorities other than the CITY, the Contractor shall schedule the inspections and notify the Engineer a minimum of twenty-four (24) hours prior to the inspection being performed.

All work performed within road rights-of-way shall be done in accordance with the requirements of the Solano County Department of Public Works and/or City of Rio Vista Department of Public Works encroachment permit(s) which are hereby made a part of the Specifications. It shall be the responsibility of the Contractor to determine all requirements of said entities and to comply with all requirements. The Contractor shall be responsible for ascertaining the need for and obtaining any additional permits required. If there are conflicts among the requirements of said entities and CITY’S requirements, the most restrictive requirements shall be used.

7.1.11 Codes - The codes and regulations, together with local amendments when applicable adopted by the state and other governmental authorities having jurisdiction, shall establish minimum requirements for this Project. Wherever references are made in the Contract to the respective standards or codes in accordance with work are to be performed or tested, it is to be understood that the revision of the standards in effect on the date of the Bidder’s proposal shall apply unless otherwise expressly set forth in the Contract.

7.1.12 Standard Specifications - Where the state standard specifications or the words “Standard Specifications” are referred to, the reference shall be to the Standard Specifications, State of California,
7.1.13 Fire Hazard - Flammable, volatile solvents in coating system components constitute a major hazard with regard to fire and explosions wherever flame or spark exposure is possible. All flames, smoking, and unapproved welding, etc., are strictly prohibited in work or storage areas. Fire abatement devices shall be readily available and in operating condition. Necessary precautions shall be taken to keep fire hazard to a minimum; all oily rags, waste, and other combustibles not in covered containers shall be removed from the area daily. All coatings, solvents, thinners and related products shall be stored in conformance with applicable state, county and/or local fire codes pertaining to flammable materials.

7.1.14 Public Contracts Code Section 7103.5 - In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

7.1.15 Compliance with State Requirements for use of subcontractors - The Contractor’s attention is directed to Section 6109 of the Public Contract Code, which prohibits a contractor or a subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to Section 1777.1 or 1777.7 of the Labor Code to bid on, be awarded or perform work as a subcontractor on a public works project. This section also prohibits a contractor from performing work on this Contract with a subcontractor who is ineligible to perform work on this Contract pursuant to the above Labor Code sections. The Contractor shall comply with all of the provisions of Section 6109 of the Labor Code.

7.2 EQUAL OPPORTUNITY

During the performance of this Contract, the Contractor agrees as follows:

7.2.1 The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this Equal Opportunity clause.

7.2.2 The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

7.2.3 The Contractor will send to each labor union or representative of workers, with which he/she has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers’ representative of the Contractor’s commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
7.2.4 The Contractor will comply with all provisions of federal and state law, and of the rules, regulations, and relevant orders of the Secretary of Labor, Director of the California Department of Fair Employment and Housing and/or the California Labor Commissioner.

7.2.5 The Contractor will furnish all information and reports required by federal or state law, and by the rules, regulations, and orders of the Secretary of Labor, Director of the California Department of Fair Employment and Housing, California Labor Commissioner, or pursuant thereto, and will permit access to his/her books, records, and accounts by the administering agency and the Secretary of Labor, Director of the California Department of Fair Employment and Housing or California Labor Commissioner for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

In the event of the Contractor’s noncompliance with the Equal Opportunity clause of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended, in whole or in part, and the Contractor may be declared ineligible for further CITY contracts, and such other sanctions may be imposed and remedies invoked by rule, regulation, or order of the Secretary of Labor, Director of the California Department of Fair Employment and Housing or California Labor Commissioner.

The Contractor will include this Equal Opportunity clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor, Director of the California Department of Fair Employment and Housing or California Labor Commissioner, so that such provisions will be binding upon each subcontractor or vendor, the Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the administering agency to enter into such litigation to protect the interests of the administering agency.

The CITY further agrees that it will be bound by the above Equal Opportunity clause with respect to its own employment practices when it participates in assisted construction work.

The CITY agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor, Director of the California Department of Fair Employment and Housing in obtaining the compliance of Contractors and subcontractors with the Equal Opportunity clause and the rules, regulations and relevant orders of the Secretary of Labor, Director of the California Department of Fair Employment and Housing, that it will furnish the administering agency and the Secretary of Labor, Director of the California Department of Fair Employment and Housing such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the CITY’S primary responsibility for securing compliance.

7.3 PATENTS

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices or processes used on or incorporated in the work, and agrees to indemnify and save harmless the CITY, the Council Members, the City Manager, the Engineer, their employees and duly authorized representatives from all suits at law, or actions of every nature for, or on account of the use of any patented materials, equipment, devices or processes.
7.4 SANITARY PROVISIONS

The Contractor shall provide sanitary facilities at all work locations.

7.5 PRESERVATION OF PROPERTY

Due care shall be exercised to avoid injury to street improvements or facilities, utilities’ facilities, adjacent property per Civil Code 832, and roadside trees and shrubbery that are not to be removed. If ordered by the Engineer, the Contractor shall provide and install suitable safeguards, approved by the Engineer, to protect such objects from injury or damage. If such objects are injured or damaged by reason of the Contractor’s operations, they shall be replaced or restored, at the Contractor’s expense, to a condition as good as when the Contractor began work.

Full compensation for furnishing all labor, materials, tools and equipment and doing all work involved in protecting property as above specified, shall be considered as included in the prices paid for the various Contract items of work, and no additional compensation will be made.

7.6 RESPONSIBILITY FOR DAMAGE

The Council Members, the City Manager, the Project Manager, the Engineer, volunteers and employees of the CITY shall not be answerable or accountable in any manner for any loss or damage that may happen to the work or any part thereof, or for any material or equipment used in performing the work, or for injury or damage to any person or persons, either workers or the public, or for damage to an adjoining property from any cause whatsoever during the progress of the work or at any time before final acceptance.

7.7 DISPOSAL OF MATERIALS

Unless otherwise specified in the Special Provisions, the Contractor shall make arrangements for disposing of materials. Excess excavated material not required for backfill shall be disposed of legally by the Contractor.

When any materials, including excess or unsuitable excavated earth or other roadway materials, are to be disposed of outside the right-of-way, the Contractor shall first obtain a written permit from the property owner on whose property the disposal is to be made and shall file said permit or certified copy, together with a written release from the property owner, absolving the CITY from any and all responsibility in connection with the disposal of material on said property. Before any material is disposed of on said property, the Contractor shall obtain permission from the Engineer to dispose of the material at the location designated in said permit.

Unless otherwise provided in the Special Provisions, full compensation for all costs involved in disposing of materials, including all costs of overhaul shall be considered as included in the prices paid for the various Contract items of work and no additional allowance will be made.

7.8 CONTRACTOR’S RESPONSIBILITY FOR WORK

Until the formal acceptance of the work by the CITY, the Contractor shall have the charge and care and shall bear the risk of injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or non-execution of the work.

The Contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense, except such injuries or damages occasioned by the acts of the federal government or acts of war.

In case of suspension of work from any cause whatsoever, the Contractor shall be responsible for the
work as previously specified and shall also be responsible for all materials delivered to the worksite. Where necessary to protect the work from damage, the Contractor shall, at his/her own expense, provide suitable drainage of the worksite and erect such temporary structures as are necessary to protect the work from damage during any period of suspension of work.

The Contractor shall provide twenty-four (24) hour emergency service for all maintenance and operations of the work specified and shall supply the CITY with the name and phone number of the responsible person. Emergency service shall be within thirty (30) minutes from the time of notification. If the Contractor fails to provide this service the CITY shall perform such emergency service and the cost thereof shall be deducted from the next Progress Pay Estimate due the Contractor.

7.9 ACCEPTANCE OF CONTRACT

When the Engineer has made the final inspection and determines that the Contract has been completed in general conformance with these Plans and Specifications, the Engineer shall submit to the City Council the recommendation that the CITY formally accept the Contract.

7.10 PROPERTY RIGHTS FOR MATERIALS

Nothing in the Contract shall be construed as vesting to the Contractor any right to property or materials used after they have been attached or affixed to the work or the soil, or after payment has been made for ninety percent (95%) of the value of materials delivered by the Contractor to the Project site, or other location approved in writing by the Engineer.

7.11 PERSONAL LIABILITY

In carrying out any of the provisions hereof, or in exercising any authority granted by the Contract, there will be no personal liability upon any City Council Members or employees of the CITY, the Engineer, their employees or volunteers.

8.0 INDEMNIFICATION AND INSURANCE

8.1 INDEMNIFICATION

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless and defend CITY, the Engineer and their consultants, and each of their directors, officers, employees, or authorized volunteers (Indemnities) and each of them from and against:

A. Any and all claims, demands, causes of action, damages, costs, expenses, losses or liabilities, in law or in equity, of every kind or nature whatsoever for, but not limited to, injury to or death of any person including Indemnites and/or Contractor, or any directors, officers, employees, or authorized volunteers of Indemnites or Contractor, and damages to or destruction of property of any person, including but not limited to, Indemnites and/or Contractor or their directors, officers, employees or authorized volunteers, arising out of or in any manner directly or indirectly connected with the work to be performed under this agreement, however caused, regardless of any negligence of Indemnites or their directors, officers, employees or authorized volunteers, except the sole negligence or willful misconduct or active negligence of an Indemnitee or its directors, officers, employees, or authorized volunteers;

B. Any and all actions, proceedings, damages, costs, expenses, penalties or liabilities, in law or equity, of every kind or nature whatsoever, arising out of, resulting from or on account of the violation of any governmental law, ordinance or regulation, compliance with which is the responsibility of Contractor;
C. Any and all losses, expenses, damages (including damages to the work itself), attorneys’ fees and other costs, including all costs of defense, which any of them may incur with respect to the failure, neglect, or refusal of Contractor to faithfully perform the work and all of the Contractor’s obligations under the Contract documents. Such costs, expenses and damages shall include all costs, including attorneys’ fees, incurred by the indemnified parties in any lawsuit to which they are a party.

Contractor shall defend, at Contractor’s own cost, expense and risk, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against an Indemnitee or its directors, officers, employees or authorized volunteers.

Contractor shall pay and satisfy any judgment, award or decree that may be rendered against an Indemnitee or its directors, officers, employees or authorized volunteers, in any and all such suits, actions or other legal proceedings.

Contractor’s obligation to indemnify shall not be restricted to insurance proceeds, if any, received by an Indemnitee or its directors, officers, employees or authorized volunteers.

8.2 INSURANCE

8.2.1 Commercial General Liability and Automobile Liability Insurance - The Contractor and all subcontractors shall provide and maintain the following commercial general liability and automobile liability insurance:

8.2.1.1 Coverage - Coverage for commercial general liability and automobile liability insurance shall be at least as broad as the following:

1. Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 0001)
2. Insurance Services Office (ISO) Business Auto Coverage (Form CA 0001), covering Symbol 1 (any auto)

8.2.1.2 Limits - The Contractor and all subcontractors shall maintain limits no less than the following:

1. **General Liability** - Five million dollars ($5,000,000) per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to the work/location (with the ISO CG 2503, or ISO CG 2504 or insurer’s equivalent endorsement provided to the CITY) or the general aggregate limit and products-completed operations aggregate limit shall be twice the required occurrence limit.

2. **Automobile Liability** - Five million dollars ($5,000,000) for bodily injury and property damage each accident limit.
3. **Builder’s Risk or Installation Floater “All-Risk” Insurance** - Before commencement of the work, the Contractor shall submit written evidence that it has obtained for the period of the Contract, Builder's Risk “All-Risk” Completed Value Insurance and/or Inland Marine “All-Risk” Installation Floater Insurance, as may be applicable, upon the entire project which is the subject of the Contract, including completed work and work in progress. The policy or policies of insurance shall name the Contractor and the CITY as insureds as their respective interests may appear, and shall include an insurer’s waiver of subrogation rights in favor of each. Such insurance may have a deductible clause, but the amount of the deductible shall be subject to the approval of the CITY, except that the deductible on earthquake coverage may be in accordance with the underwriter's requirements.

8.2.1.3 **Required Provisions** - The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. CITY, the Engineer and their consultants, and each of their directors, officers, employees and authorized volunteers are to be given insured status (via Liability Insurance Endorsement [Section 006224] or insurer’s equivalent for general liability coverage) as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; and automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the CITY, the Engineer and their consultants, and each of their directors, officers, employees or authorized volunteers.

2. For any claims related to the work, the Contractor's insurance shall be primary insurance as respects the CITY the Engineer and their consultants, and each of their directors, officers, employees or authorized volunteers. Any insurance, self-insurance or other coverage maintained by the CITY, the Engineer or their consultants, and each of their directors, officers, employees or authorized volunteers shall not contribute to it.

3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the CITY, the Engineer and their consultants, and each of their directors, officers, employees or authorized volunteers.

4. The Contractor's 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.

5. Such liability insurance shall indemnify the Contractor and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Contractor or his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations and products liability.

6. The general liability policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations liability, explosion, collapse, underground excavation and removal of lateral support.

7. The automobile liability policy shall cover all owned, non-owned and hired automobiles.
8.2.2 Workers' Compensation and Employer's Liability Insurance - The Contractor and all sub-contractors shall insure (or be a qualified self-insured) under the applicable laws relating to workers' compensation insurance, all of their employees working on or about the construction site, in accordance with the Workers' Compensation and Insurance Act, Division IV of the Labor Code of the State of California and any Acts amendatory thereof. The Contractor shall provide employer's liability insurance with limits of no less than $1,000,000 each accident, $1,000,000 disease policy limit and $1,000,000 disease each employee.

8.2.3 Evidences of Insurance – Within the time specified in these General Conditions and the Special Conditions, the Contractor shall file with the CITY a certificate of insurance (Acord Form 25-S or equivalent) signed by the insurer's representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer's representative.

The Contractor shall, upon demand of the CITY, deliver to the CITY such policy or policies of insurance and the receipts for payment of premiums thereon.

8.2.4 Continuation of Coverage - If any of the required coverages expire during the term of the Contract, the Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement at least ten (10) days prior to the expiration date. If the CITY is damaged by the failure of the Contractor to maintain all required insurance, the Contractor shall bear all reasonable costs attributable to that failure.

8.2.5 Deductibles and Self-Insured Retentions - Any deductible or self-insured retention must be declared to and approved by the CITY. At the option of the CITY, the insurer shall either reduce or eliminate such deductibles or self-insured retentions.

8.2.6 Acceptability of Policy Forms and Insurers - Insurance is to be placed with insurers having a current A.M. Best rating of no less than A-:VII or equivalent or as otherwise approved by the CITY. All of the insurance shall be provided on policy forms and through companies satisfactory to the CITY.

8.2.7 Notice of Cancellation - Each insurance policy required by the Contract documents shall state, or be endorsed to state, that coverage shall not be canceled by the insurance carrier or the Contractor, except after thirty (30) days (10 days for non-payment of premium) prior written notice by U.S. mail has been given to the CITY.

8.2.8 Sub-Contractors - In the event that subcontractors and sub-subcontractors are employed to perform any part of the work, it shall be the Contractor's responsibility to require and confirm that each subcontractor meets the minimum general liability and automobile liability insurance requirements specified above.

9.0 PROSECUTION AND PROGRESS

9.1 SUBCONTRACTING

The Contractor shall give personal attention to the fulfillment of the Contract and shall keep the work under his/her control. The Contractor shall perform with his/her own organization and with the assistance of workers under his/her immediate superintendence, work of a value of not less than fifty percent (50%) of the value of all work embraced in the Contract. The value of the work subcontracted shall be determined by summing all of the percentages identified for listed subcontractors on the Proposal Form. If the sum of such percentages exceeds fifty percent (50%), the CITY may treat the bid as nonresponsive and reject it on that basis. When a portion of the work which has been subcontracted by the Contractor is not being prosecuted in a manner satisfactory to the CITY, the subcontractor shall be removed immediately on the request of the Engineer and shall not again be employed on the work. No changes will be allowed from the approved subcontractor list without approval of the Engineer.
The Contractor agrees to be as fully responsible to the CITY for the acts and omissions of his/her subcontractors at all levels and for persons either directly or indirectly employed by them, as for the acts and omissions of persons directly employed by him/her. Nothing contained in the Contract Documents shall create any contractual rights for any subcontractor against the CITY. The Contractor shall cause every subcontractor to be bound by the terms of the Contract documents.

9.2 ASSIGNMENT

The performance of the Contract may not be assigned directly or indirectly except upon the written consent of the CITY. Consent will not be given to any proposed assignment which would relieve the original Contractor or his/her Surety of their responsibilities under the Contract, nor will the CITY consent to any assignment of a part of the work under the Contract.

The Contract may assign monies due or to become due to the Contractor under the Contract and such assignment will be recognized by the CITY, if given proper notice thereof, to the extent permitted by law, but any assignment of monies shall be subject to all proper off-sets in favor of the CITY and to all deductions provided for in the Contract and particularly all money withheld, whether assigned or not, shall be subject to being used by the CITY for the completion of the work in the event that the Contractor should be in default.

9.3 MEETINGS

9.3.1 Preconstruction Meeting – A meeting will be held at a time and place selected by the Engineer to discuss the work, construction schedule, mobilization for the start of work, and details of administrative procedures to be used during the progress of the work. Attending the meeting will be the Engineer and key members of the jobsite staff, representatives of the Facility operations staff, the Contractor’s authorized representative and key members of the Contractor’s staff, and key subcontractors as selected and requested by the Contractor. At the meeting, the Engineer will discuss details of procedures for access to the site, operational necessities at the facilities, procedures for payment estimates, safety, security, schedule of Project meetings, and other subjects as determined by the Engineer or requested by the Contractor.

9.3.2 Project Meetings – To enable orderly review of progress during construction and to provide for systematic discussion of problems, the Engineer will conduct Project meetings throughout the construction period. Project meetings will be held at least every week at the jobsite, or other designated location in accordance with a mutually acceptable schedule. More frequent meetings may be called after due notice to the Contractor. The purpose of the Project meetings is to analyze and resolve problems that might arise relative to execution of the work, to discuss potential impact the Contractor’s operations may have on Facility operations, and to review the Contractor’s look-ahead schedule. To the maximum extent practicable, the Contractor shall advise the Engineer at least twenty-four (24) hours in advance of the Project meeting regarding items the Contractor wishes to have added to the agenda. Persons designated by the Contractor to attend and participate in Project meetings shall have the authority to commit the Contractor to the resolution of problems as agreed upon in the Project meetings. Subcontractors, materials suppliers, and others may be invited to attend Project meetings when their aspects of the work are involved, but the Contractor shall remain wholly responsible for its obligations under Contract.

9.3.3 Schedule Review Meetings – A meeting will be held every month to review, evaluate, and discuss each construction schedule submittal. The Contractor shall designate persons to attend these schedule meetings who are familiar with the schedule and with current construction problems and activities and with the logic of the work sequences used in preparing the schedule and the updates. At the CITY’S discretion, these meetings may be combined with Project meetings.

9.3.4 Other meetings – From time to time as dictated by the construction progress concerns, the Engineer may call separate meetings for discussions of specific topics. The Contractor’s authorized representative is required to attend these meetings as requested by the Engineer.
9.4 DELAYS AND TIME EXTENSION

If the Contractor is delayed in the progress of the work by any act or neglect of the CITY or the Engineer, or by any separate contractor employed by the CITY, or by strikes, lockouts, fire, acts of God, unusual weather conditions, or unavoidable casualties, the Contractor shall, within twenty-four (24) hours of the start of the occurrence, give written notice to the CITY of the cause of the potential delay and an estimate of the possible time extension involved. Within seven (7) days after the cause of delay has been remedied, the Contractor shall give notice to the CITY of any actual time extension requested as a result of the aforementioned occurrence.

For purposes of this Contract, the Contractor shall be entitled to a time extension for weather delays only when the Contractor’s critical path activity, as shown on its most recent schedule update, is delayed by unusual weather for over four (4) hours in a given work day. Unusual weather shall be deemed to include only days of rainfall in excess of 0.10 inches.

Rainfall shall be as measured at Rio Vista, California and reported by the Western Regional Climate Center website, [www.wrcc.dri.edu](http://www.wrcc.dri.edu). No extra payment to the Contractor will be made for delays caused by unusual weather conditions.

Delays in delivery of equipment or material purchased by the Contractor or his/her subcontractors shall not be considered as a just cause for delay. The Contractor shall be fully responsible for the timely ordering, scheduling, expediting, delivery, and installation of all equipment and materials. The CITY does not warrant the availability of “sole source” items or the timely performance of sole source suppliers and subcontractors and the Contractor’s remedies for delay or other breach by such entities shall solely be against them and not against the CITY.

Other time extension claims by the Contractor must be within ten calendar days after occurrence of the event giving rise to such claim or within ten calendar days after the claimant first recognizes the condition giving rise to the claim, whichever is later. Claims for time extension must be made by written notice. An additional claim made after the initial claim has been implemented by contract change order will not be considered.

9.5 TEMPORARY SUSPENSION OF WORK

The Engineer shall have the authority to suspend the work wholly, or in part, for such period deemed necessary due to conditions considered unfavorable for the suitable prosecution of the work, or for such time deemed necessary due to the failure on the part of the Contractor to carry out orders given or to perform the work in accordance with these Plans and Specifications. The Contractor shall immediately comply with the written order of the Engineer to suspend the work wholly or in part. The work shall be resumed when conditions are favorable and/or methods are corrected, as ordered or approved in writing by the Engineer. The period of suspension will be included in determining the time for completion of work. In the event of a suspension of work under any of the conditions previously set forth, such suspension of work shall not relieve the Contractor of his/her responsibilities as set forth under the sub-section titled “Legal Relations and Responsibility” in these General Provisions.

9.6 PROGRESS SCHEDULE AND ORDER OF COMPLETION

To ensure completion of the work within the time limit specified, and to assist the CITY in the scheduling of other work, Contractor shall submit to the CITY within ten (10) calendar days after he/she receives the Notice to Proceed a detailed schedule showing the proposed dates of beginning and completion of all significant items of work under the Contract. If the actual progress of the work varies materially from the proposed program, or if the Contractor proposes to change the program for any reason, he/she shall submit to the CITY the revised construction program which he/she proposes to follow. The proposed original and revised program shall be adequate, in the opinion of the CITY, to meet the requirements for
completion of the work as herein set forth. If, in the opinion of the CITY, the Contractor's proposed
program or the actual progress of the work is insufficient to meet the specified requirements, the
Contractor shall take such steps as are necessary to accomplish the required progress and completion.

When in the judgment of the CITY it is necessary to accelerate any part of the work ahead of schedule,
the Contractor shall, when directed, concentrate his/her efforts on such part of the work.

9.7 FAILURE TO COMPLETE THE WORK IN THE TIME AGREED UPON - LIQUIDATED
DAMAGES

The Contractor agrees to provide all materials, labor and equipment for the project stated in Section A -
Technical Specifications. It is further stipulated and agreed that if the work contracted for is not
completed within the time provided, the CITY will be actually and seriously damaged in the conduct of its
affairs, and that from the nature of the circumstances, it would be impractical and extremely difficult to fix
or compute the actual damage which may be sustained by the CITY in such event, and it is therefore
stipulated and agreed that upon the failure of the Contractor to complete the work contracted for within
the time provided, the Contractor shall pay the CITY the sum specified in Section 008110 for each and
every day after the number of specified days from and after the issuance of the Notice to Proceed until
the completion of said work and the acceptance thereof by the CITY, and that all sums due and payable
by the Contractor to the CITY shall be deemed to be liquidated damages for such period and not a
penalty, and may be offset by the CITY against any monies due the Contractor hereunder.

The work contracted for shall be deemed to be completed within the meaning of this Contract when same
has been actually completed in accordance with the Plans and Specifications thereto and to the
satisfaction of the CITY. Nothing in this section shall prohibit the CITY from granting to the Contractor an
extension of time beyond the fixed date of completion and waiving of the damages specified in Section
008110.

9.8 PROJECT QUALITY CONTROL

9.8.1 Test Reports and Certifications - Where certifications or mill-test reports are required, the
Contractor shall submit three (3) complete, certified copies. Certifications shall show chemical
composition, mechanical properties, or other characteristics of the materials to be used in the work.
Material specified by a referenced standard shall be certifiable by the mill or manufacturer under that
standard. The testing, analysis, and certification shall be the responsibility of the Contractor.

9.8.2 Notices of Fabrication - The Contractor shall submit a separate notice of fabrication for
each fabricated article and material. For articles and materials fabricated outside Solano County, the
Contractor shall submit the notice fourteen (14) days before starting fabrication. The Contractor shall
provide a certified third party inspection firm for all work performed outside Solano County. For articles
and materials fabricated within Solano County, the Contractor shall submit the notice five (5) days before
starting fabrication.

9.8.3 Responsibilities - The Contractor shall be responsible for full compliance with every
requirement of the Contract documents and shall ensure that the work is in full accordance with these
requirements. At all times, the Contractor’s work will be subject to rigid inspection by the Engineer.
Whether discovered by the Contractor or the Engineer, nonconforming work shall be corrected or
replaced by the Contractor. For convenience, materials or equipment to be incorporated in the work may
be designated in the Specifications by a trade name or the name of a manufacturer and the
manufacturer's catalog item number information. Materials, articles, or equipment, even if supplied by a
manufacturer designated in the Specifications, shall be accepted only if the items meet all other
specification requirements.
The Contractor shall furnish all tools, equipment, materials, supplies, and manufactured articles necessary or required for the performance and completion of the work included in the Contract, except for materials and equipment specified to be furnished by the CITY. The materials, articles, and equipment provided for permanent installation in the work shall be new and shall be in accordance with these Specifications.

The Contractor shall perform quality control on suppliers, manufacturers, products, services, site conditions, and workmanship to ensure that work conforms to the Contract documents. The Contractor shall be prepared to document its quality control activities. The Contractor shall require and ensure conformance with specified standards as a minimum quality for the work. When more stringent tolerances, codes, or specified requirements are required by a particular manufacturer or a particular item of work, the higher standards or more precise workmanship shall be provided.

The Engineer’s inspections and tests are for the sole benefit of the CITY and shall not:

A. Relieve the Contractor of responsibility for providing adequate quality control measures.
B. Relieve the Contractor of responsibility for damage to or loss of the material before acceptance.
C. Constitute or imply acceptance.
D. Affect the continuing rights of the CITY after acceptance of the completed work.

The Contractor shall be responsible for adjustments, corrections, or repairs found necessary after the delivery or installation of materials and articles. Unidentified materials shall not be used in the work, including work at fabrication plants.

Sequencing and Scheduling of Inspections and Tests - The Contractor shall furnish and prepare the required samples and test specimens ready for testing in time for the necessary tests and analysis. Where the Specifications require work to be tested or approved, it shall be tested only in the presence of the Engineer.

The Engineer shall be given timely notice of the Contractor’s readiness for inspection and test. The length of advance notice shall be appropriate for the complexity of the inspection or test, the availability of the Engineer’s staff, and the location of the inspection or test, but in no case shall less than twenty-four (24) hours’ advance notice be given.

9.8.4 Testing - Materials and articles that are to be included in the works shall be subject to testing for conformance with the Specifications and Drawings. When not otherwise specified, sampling and testing shall be in accordance with the methods prescribed in the current standards of ASTM applicable to the class and nature of the articles or materials considered. However, the Engineer will have the right to use any generally accepted method of testing that will ensure that the quality of materials, articles, or work is in full accord with the Specifications and Drawings. The Engineer will have the right to select, test, and analyze, at the expense of the CITY, additional test specimens of the materials to be used. Results of these tests and analyses will be considered with the results of other tests or analyses, whether performed by the Engineer or the Contractor, to determine compliance with the applicable Specifications for the materials.

9.8.5 Inspection By the Engineer - Materials and articles that are to be included in the work shall be subject to rigid inspection by the Engineer for conformance with the Specifications and Drawings. The Contractor shall plan for the inspections to be continuous, repetitive, and detailed. Orders for materials, articles, and equipment shall note that the articles, materials, and equipment are subject to inspection and acceptance by the CITY, both during manufacture or fabrication and after delivery to the site.
When practicable and convenient for the Engineer, inspection will be made during the manufacture of the articles and equipment. The location, alignment, grade, plumb, and other physical characteristics of formwork for concrete, items to be embedded in concrete, and permanent improvements shall be subject to rigid survey verification. Materials or articles shall not be incorporated in the work until they have been inspected by the Engineer. After testing, work shall be covered or backfilled only with the approval of the Engineer.

The duties of the Engineer in conducting review of the Contractor’s performance is not intended to include review of the adequacy of the Contractor’s work methods, equipment, bracing, scaffolding or safety measures in, on, or near the construction site.

9.8.6 Facilities for Inspection and Testing - The Contractor shall furnish the facilities, utilities, and assistance necessary for the safe and convenient performance of inspections and tests required by the Specifications or by the Engineer. The Contractor shall provide adequate lighting, access, and ventilation for a safe working environment for inspections and tests. The Contractor shall cooperate with the Engineer’s staff in the performance of their respective duties and shall provide qualified personnel to assist with the performance of tests and inspections by them. When the Specifications require tests or inspections to be performed by the Contractor, the Contractor shall provide qualified, licensed, personnel to perform them.

9.8.7 Rejection of Work - The Engineer will have the right, at all times and in all places, to reject articles or materials to be furnished for the Project that fail to meet the requirements of these Specifications. This shall be regardless of whether the defects in these articles or materials are detected at the point of manufacture or after completion of the work at the site. The Engineer will be the sole judge as to the acceptable quality of materials, articles, and work. However, where the Engineer, through an oversight or otherwise, accepts material, articles, or work that is defective or that is contrary to the Specifications, the material, article, or work, no matter in what stage or condition of manufacture, delivery, or erection, may be rejected by the Engineer.

Promptly after notification of rejection by the Engineer, the Contractor shall remove rejected portions or items of materials, articles, or work to a satisfactory distance from the vicinity of accepted items and shall replace the rejected materials, etc., with items acceptable to the Engineer.

9.8.8 Final Inspections and Acceptance - Final inspections for acceptance of materials, articles, equipment, and work will be made at the completion of all Contract work. A minimum of ten (10) working days prior to the estimated completion of the work, the Contractor shall notify the Engineer in writing of the pending completion of the entire work or an agreed portion thereof. The Contractor shall include with the notice a complete list of work items remaining to be completed. On or about the Contractor’s estimated completion date, the Engineer will make a thorough inspection of the entire work. Defects or deficiencies noted during this inspection will be reported to the Contractor in writing. The Contractor shall notify the Engineer in writing when all items on the list are corrected. Shortly thereafter, the Engineer will make a thorough final inspection of the entire work.

If the Engineer determines the work to be complete, it will be accepted. If defects or deficiencies are noted during this inspection, they will be reported in writing to the Contractor. When the Contractor notifies the Engineer of the correction of these items, another final inspection will be scheduled.

9.9 SAFETY

The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours and/or days. The Contractor shall have in full force and effect an Injury and Illness Prevention Program (IIPP) covering all work of the Contractor and subcontractor employees at the site.
Safety provisions shall conform to all applicable federal, state, county, and local laws, ordinances, and to other rules of law applicable to the work. Where any of these are in conflict, the more stringent requirement shall be followed.

The Contractor shall maintain at the job office and/or other well-known place on the job site, all articles necessary for giving first-aid to the injured, and shall establish the procedure for the immediate removal, to the hospital or a doctor’s care, of persons who may be injured on the job site.

The right of the Engineer and/or CITY to conduct construction review of the Contractor’s performance is not intended to and will not include a review of the adequacy of the Contractor’s safety measures in, on, or near the construction site.

Attention is directed to Section 832 of the Civil Code of the State of California relating to lateral and subjacent support, and the Contractor shall comply with this law.

9.9.1 [Intentionally Omitted]

9.9.2 Ventilation - Ventilation and control of oxygen-deficient atmospheres, dusts, fumes, mists, vapors, and gases shall be in accordance with the CSO and all other applicable laws, ordinances and regulations.

9.9.3 Trench Safety - In accordance with Section 6705 of the State Labor Code, the Contractor shall submit to the CITY specific Plans to show details of provisions for worker protection from caving ground. This trench safety plan shall be submitted to and approved by the CITY prior to starting excavation for any trench or trenches five (5) feet or more in depth. The trench safety plan working Drawings shall be detailed Plans showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such plan varies from the shoring system standards established by the Construction Safety Orders of the California Division of Industrial Safety or the Federal Safety Standards of the Department of Health, Education and Welfare, the plan shall be prepared by a registered civil or structural engineer. As a part of the plan, a note shall be included stating that the registered civil or structural engineer certifies that the plan complies with the CAL-OSHA Construction Safety Orders, or that the registered civil or structural engineer certifies that the plan is not less effective than the shoring, bracing, sloping, or other provisions of the Safety Orders. In no event shall the Contractor use a shoring, sloping, or protective system less effective than that required by said Construction Safety Orders, or less effective than that required by said Federal Safety Standards. Submission of this plan in no way relieves the Contractor from the requirement to maintain safety in all areas. If excavation or trench work requiring a CAL-OSHA permit are to be undertaken, the Contractor shall submit a copy of his/her permit with the excavation/trench work safety plan to the CITY before work begins.

The CITY or the Engineer may have made investigations of subsurface conditions in areas where the work is to be performed. If so, these investigations are identified in the Special Provisions, and the records of such investigations are available for inspection at the engineering office. The detailed plan showing the design of shoring, which the Contractor is required to submit to the CITY for acceptance prior to excavation, shall not be accepted by the CITY if the plan is based on subsurface conditions which are more favorable than those revealed by the investigations made by the CITY or their consultants; nor will the plan be accepted if it is based on soils-related design criteria which is less restrictive than the criteria set forth in the report on the aforesaid investigations of subsurface conditions.

The detailed plan showing the design of shoring shall include surcharge loads for nearby embankments and structures, for spoil banks, and for construction equipment and other construction loadings. The plan shall indicate for all trench conditions the minimum horizontal distances from the side of the trench at its top to the near side of the surcharge loads. Nothing contained herein shall be construed as relieving the Contractor of the full responsibility for providing shoring, bracing, sloping, or other provisions which are adequate for worker protection.
Inspection or testing by the CITY or any agent of the CITY is not intended to include review of the adequacy of the Contractor’s work methods, equipment, bracing or scaffolding or safety measures, in, on, or near the construction site, and shall not be construed as supervision of the actual construction, nor make the CITY responsible for providing a safe place for the performance of work by the Contractor, subcontractors, or suppliers; or for access, visits, use, work, travel or occupancy by any person.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone to the CITY. In addition, the Contractor must promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.

If any claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.

Whenever abrasive blasting is to be performed for the removal of painted coating systems, the blast media shall be certified by CARB for unconfined blasting pursuant to CCR Title 17.

9.9.4 Facility Startup - The Contractor shall commission all systems and equipment to verify performance, function, and correct operation by performing procedures to activate, startup, adjust, test, and demonstrate that the work is in operating order in accordance with these general requirements of this section and the detailed requirements of the technical sections under the system or equipment specified.

To ensure that the work is ready for full-time operation, the procedures shall include verification, balancing, calibration, witness testing, documentation, inspection by equipment manufacturers and operator training where specified. The Contractor shall notify the Engineer five (5) days prior to starting each system or piece of equipment. During the startup period, the Contractor shall coordinate the operation of the facilities with Engineer, subcontractors, CITY’S operators, and manufacturer’s representatives.

The Contractor shall furnish test equipment, measuring devices and supplies required to conduct tests. The Contractor shall maintain the equipment until acceptance, provide all lubricants, chemicals, and electricity necessary until acceptance, furnish all expendable supplies, gas, water, etc., required for startup, demonstration and testing, and dispose of all waste or used supplies, water, etc.

9.10 CONTRACT CLOSEOUT

9.10.1 Final Cleanup - Prior to final inspection, clean the entire construction area and all other areas affected by the performance of work under this Contract. Clean up work area using personnel specializing in and skilled in cleaning and maintenance work. The Contractor shall repair work using personnel skilled in executing the type of work being repaired. All work shall be executed to the highest trade standards applicable to that type of work.

The Contractor shall perform the following work prior to final inspection:

A. The Contractor shall remove all temporary construction, signs, tools, equipment, excess material and debris.
B. Remove all lumps, splatters, spots and stains caused by paint, adhesive, asphalt, concrete, mortar, sealant or other foreign material from exposed or finished surfaces. Remove all temporary labels.
C. Repair, patch or replace new or existing work including pavement, sidewalks, curbs, gutters, catch basins, gratings, manholes, covers, landscaping, plant materials and other items that have been damaged, broken, cracked or chipped as a result of performing this work.
D. Sweep clean and wash down all exterior pavement.
E. Remove all hazardous material and material that may cause sediment in drainage systems prior to wash down.
F. Remove all grease and oil stains on pavement caused by Contractor's equipment.

9.10.2 Contractor's Action List of Items to Be Corrected and/or Completed - During construction, the Contractor shall maintain an action list of items to be corrected and/or completed. The Contractor shall regularly add items and update the list as information becomes available or as requested by the Engineer. The Contractor shall deliver a current copy of the list to the Engineer at each progress meeting.

9.10.3 Semifinal Inspection/Substantial Completion - When the Contractor considers the work nearly complete, the Contractor shall review the Contract documents, inspect the work, and use the Contractor's action list to prepare a Contractor's punch list of all deficient or uncompleted items. The Contractor shall complete or correct items on the punch list. When the work is substantially complete, the Contractor shall notify the Engineer in writing that the Contractor has reviewed the Contract documents, inspected the work and believes that the work is substantially complete and ready for semifinal inspection.

On receipt of the Contractor's punch list and notice that the work is ready for semifinal inspection; the Engineer will inspect the work. The Engineer may add additional items to the Contractor's punch list; may find that the work is not ready for inspection; is ready for inspection but not substantially complete; or that the work is substantially complete. When the Engineer finds the work is substantially complete, it will prepare a final punch list and a Notice of Substantial Completion which will state the date of Substantial Completion and the time agreed to by the CITY and the Contractor (not to exceed thirty [30] days) in which the work shall be fully complete and ready for final inspection.

9.10.4 Final inspection, final completion and final payment - When the Contractor has completed or corrected all the items on the Engineer's final punch list, the Contractor shall give the Engineer written notice that the work is ready for final inspection. When the Engineer finds the work acceptable and fully complete in accordance with the Contract documents, and upon receipt of a final Application for Payment and all final submittals, the Engineer will recommend that the CITY issue a Notice of Completion, make final payment and accept the work stating that to the best of the Engineer's knowledge, information and belief, and on the basis of the Engineer's observations and inspection, the work has been fully completed in accordance with the terms and conditions of the Contract documents.

9.10.5 Final Submittals include:

A. Operation and Maintenance Manuals and Parts Lists
B. Record Drawings
C. Extra Materials
D. Special Guarantees
E. Insurance Certificate showing required continuation of coverage beyond Final Payment
F. Release of Liens
G. Waiver of claims by Contractor
H. And any other submittals required by the Contract documents and not previously received

The CITY will record the Notice of Completion at the County Recorder’s Office. The CITY will make final payment to the Contractor, subject to any statutory and contractual rights to withhold or deduct, not later than sixty (60) days after completion of the work as defined in Public Contract Code section 7107.

9.10.6 Record Drawings - The Contractor shall maintain on the jobsite, a complete set of Contract documents and a complete file of all addenda, Contract modifications and favorably reviewed submittals. The Contractor shall prepare a set of Record Drawings concurrently with the construction of the work and in accordance with the following:
Val de Flores Skate Park

Rio Vista, California

August 2017

General Conditions

Bid Set 007000-37

A. Show the invert elevation of all gravity piping and the top of pipe, top of conduit or top of protective concrete encasement for other utilities. Elevations shall be related to a permanent visible elevation bench mark set at the site by the Contractor.

B. Show the horizontal location of underground utilities measured from permanent visible physical features such as face of building, face of tank, or centerline of manhole.

C. Comply with detailed requirements in technical specification sections describing the type of information required on Record Drawings. The Contractor's copy of Contract documents, Contract modifications and Record Drawings shall be available to the Engineer for weekly verification that the records are being currently updated.

D. The Contractor shall submit Record Drawings and obtain acceptance prior to completion.

9.10.7 Extra Materials - Deliver specified extra materials and parts to CITY. Itemize all items on a transmittal letter in duplicate and obtain signature of receiving party. Submit copies of signed transmittals for all specified extra materials and parts prior to completion.

9.10.8 Twelve-Month Inspection – Unless specified otherwise in the Technical Specifications, approximately thirty (30) days prior to the expiration of the one (1)-year guarantee period, the Contractor shall tour the Project with the Engineer and/or the CITY to prepare a list of corrective work required under the twelve (12)-month guarantee. The Contractor shall correct all items found to be defective within twenty (20) days of receipt of the list of items to be corrected.

10.0 MEASUREMENT AND PAYMENT

10.1 MEASUREMENT OF QUANTITIES

Where the Contract provides for payment on a lump sum price basis, no measurement of quantity will be made. Where the Contract provides for payment on a unit price basis, the quantities of work performed will be computed by the Engineer on the basis of measurements taken by the Engineer, and these measurements shall be final and binding.

All quantities of work computed under the Contract shall be based upon measurements by the Engineer according to United States Measurements and Weights.

10.2 SCOPE OF PAYMENT

The Contractor shall accept the compensation as provided in full payment for furnishing all materials, labor, tools, and equipment necessary to the completed work; for performing all work contemplated and embraced under the Contract; for loss or damage arising from the nature of the work, or from the action of the elements, except as before provided, or from any unforeseen difficulties which may be encountered during the prosecution of the work until final acceptance by the CITY, and for all risks of every description connected with the prosecution of the work; and for completing the work according to these Plans and Specifications. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.

No allowance will be made, other than as indicated in this Contract, for loss of anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as provided in such agreements.

10.3 PAYMENT FOR EXTRA WORK

Extra work, when ordered and accepted, shall be specified in a written contract change order and shall be executed in accordance with the terms therein provided. Payment for extra work will be made at the unit or lump sum price bid, when applicable, or as otherwise agreed upon in the contract change order.
Extra work which has not been agreed to in price prior to the work occurring shall be considered force account work. Where payment is to be made on a force account basis, the Contractor shall receive the actual cost of all material, equipment rental and operation and labor furnished by him/her plus an added markup of fifteen percent (15%); provided, however, that the CITY reserves the right to furnish such materials required as it deems advisable, and the Contractor shall have no claim for profit on the cost of such materials.

The Contractor shall provide a copy of the Daily Extra Work Report (DEWR) for each day of extra work. The DEWR is to be signed by the Contractor’s authorized representative and the CITY’S on site representative on the day the work is performed. THE DEWR is to include the name and hours for each person, equipment designation and hours and designation and quantities of all materials. Items not included on the DEWR will not be paid for. Work on DEWR not signed by the CITY’S on site representative will not be paid for.

A copy of each DEWR with the labor rates, equipment rates, cost of materials, extended amounts, markups and total. Computer generated sheets can be submitted if the information on the computer sheets can be readily cross referenced with the signed DEWR.

To the total of the direct costs and markups referred to above shall be added an amount for actual additional Contractor bond and insurance costs (other than worker’s compensation) incurred as a direct result of the force account work, not to exceed two and one-half percent (2.5%) of the direct costs with markup. The actual additional bond and insurance costs shall be substantiated by documentation submitted by Contractor to the Engineer. No additional markup on bond or insurance costs shall be allowed hereunder.

When extra work to be paid for on a force account basis is performed by a subcontractor, approved in accordance with the provisions in Section 9.1 titled “Subcontracting,” an additional markup of five percent (5%) will be added to the total cost of said extra work including all markups specified in Section 10.3, titled “Payment for Extra Work.” Said additional five percent (5%) markup shall reimburse the Contractor for additional administrative costs, and no other additional payment will be made by reason of performance of the extra work by a subcontractor.

When both additional and deleted work are involved in any one change, the markup allowances of this section shall be applied to the net extra cost of the work, if any, after subtraction of the costs for the omitted work from the extra work. For change order work which results in a net decrease in cost a minimum of five percent (5%) markup shall be added to the sum of the direct labor, materials and equipment as a deduction for profit, indirect and overhead costs and reduction in bond and insurance. The Contractor shall neither be entitled to nor claim anticipated profits on work that may be omitted.

The added fixed fees shall be considered to be full compensation, covering the cost of general supervision, overhead, profit, small tools, incidentals and any other general expenses. The above fixed fees represent the maximum limits which will be allowed, and they include, but are not limited to, the Contractor’s and all subcontractor’s indirect field and home office expenses and all other costs for cost proposal preparation, schedule analysis and preparation, operation and maintenance manual documentation, and record documents and change order administration.

10.3.1 Direct Labor Cost - Charges for all of the labor furnished and used by the Contractor shall be made for manual classifications up to and including general foreman, when authorized by the Engineer for the workers used in the actual and direct performance of the work. It will not include charges for assistant superintendents, superintendents, office personnel, timekeepers and maintenance mechanics. The time charged to extra work shall be subject to the daily approval of the Engineer and evidence of such daily approval shall be submitted with the billing. Labor rates used to calculate the costs shall be those basic wages including current employer contributions for fringe benefits and including applicable subsistence and travel allowances, all as actually paid to workers under collective bargaining agreements or as regular workers under collective bargaining agreements or as a regular practice of the employer.
No time or charges will be allowed except when the workers are actually engaged in the proper, efficient and diligent performance or completion of the extra work as authorized. The Contractor shall submit with the billing, copies of certified payrolls for labor associated with extra work. Overtime shall not be worked without prior approval of the Engineer.

10.3.2 Equipment Cost - Charges for the rental and operation of the equipment furnished and used by the Contractor shall be made for all prime construction and automotive equipment. It shall not include charges for listed equipment or major tools with a new cost of five-hundred dollars ($500.00) or less. Equipment time charges shall be subject to the daily approval of the Engineer and evidence of such daily approval submitted with the billing. The Contractor will be paid for the use of equipment at the rental rates listed for such equipment in the California Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is in effect on the date upon which the work is accomplished and which is a part of the Contract, regardless of ownership and any rental or other agreement, if such may exist, for the use of such equipment entered into by the Contractor, except that for those pieces of equipment with a rental rate of ten dollars ($10.00) per hour or less as listed in the Labor Surcharge And Equipment Rental Rates publication and which are rented from a local equipment agency, other than Contractor owned, the Contractor will be paid at the hourly rate shown on the rental agency invoice or agreement for the time used on force account work. If a minimum equipment rental amount is required by the local equipment rental agency, the actual amount charged will be paid to the Contractor.

If it is deemed necessary by the Engineer to use equipment not listed in said publication, a suitable rental rate for such equipment will be established by the Engineer. The Contractor may furnish any cost data which might assist the Engineer in the establishment of such rental rate. If the rental rate established by the Engineer is ten dollars ($10.00) per hour or less, the provisions above concerning rental of equipment from a local equipment agency shall apply.

10.3.3 The rental rates paid as above provided shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.

10.3.4 Operators of rented equipment will be paid for as provided in Section 10.3.1, titled "Direct Labor Cost."

10.3.5 All equipment shall, in the opinion of the Engineer, be in good working condition and suitable for the purpose for which the equipment is to be used.

10.3.6 Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer. Rental time will not be allowed while equipment is inoperative due to breakdowns.

10.3.7 The time to be paid for equipment on the work shall be the time the equipment is in operation on the extra work being performed, and in addition, shall include the time required to move the equipment to the location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used at the site of the extra work on other than such extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made if the equipment is used at the site of the extra work on other than such extra work. The following shall be used in computing the rental time of equipment on the work:

A. When hourly rates are listed, less than thirty (30) minutes of operation shall be considered to be two (2) hours of operation.
B. When daily rates are listed, less than four (4) hours of operation shall be considered to be two (2) days of operation.

10.3.8 When owner-operated equipment is used to perform extra work to be paid for on a force account basis, the Contractor will be paid for the equipment and operator, as follows:

Payment for the equipment will be made in accordance with the provisions in Section 10.3.2, titled “Equipment Cost.”

Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the Contractor to other workers operating similar equipment already on the Project or, in the absence of such other workers, at the rates for such labor established by collective bargaining agreements for the type of workman and location of the work, whether or not the owner-operator is actually covered by such an agreement.

To the direct cost of equipment rental and labor, computed as provided herein, will be added the markups for equipment rental and labor as provided in Section 10.3, titled “Payment for Extra Work.”

All force account work shall be adjusted daily upon Daily Extra Work Report sheets, furnished to the Contractor by the Engineer and signed by both parties, which daily reports shall thereafter be considered the true record of force account work done.

10.3.9 Material Costs - Charges for the cost of materials furnished by the Contractor shall be made provided such furnishing was specifically authorized in the extra work order and the actual use verified by the Engineer. Charges shall be net cost to the Contractor delivered at the job, including all applicable sales taxes and vendor's invoice must accompany the billing along with verification of use of such materials by the Engineer.

10.4 PROGRESS PAYMENTS

On or before the tenth (10th) of each month the Contractor shall submit to the CITY a Request for Payment on forms to be provided by the CITY. The Request for Payment shall follow the form of the Schedule of Values required by the Engineer.

Upon receipt of a Request for Payment, the CITY shall review it as soon as practicable to determine if it is proper. Any Request for Payment determined not to be a proper request suitable for payment shall be returned to the Contractor as soon as practicable, but not less than seven (7) days after receipt. Any Request for Payment returned to the Contractor shall be accompanied by a document setting forth in writing the reasons why the request is not proper.

Upon receipt of an undisputed and properly submitted Request for Payment the CITY shall prepare a written Progress Pay Estimate which shall include the total amount of work done including contract change orders and/or force account and allowances for materials on hand. The Progress Pay Estimate shall be submitted to the City Council for approval.

In accordance with the provisions of Section 20104.50 of the Public Contract Code, the CITY shall pay interest at the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure on any Request for Payment submitted by the Contractor if the CITY fails to make the progress payment within thirty (30) days after receipt of an undisputed and properly submitted Request for Payment. The number of days available to the CITY to make a progress payment without incurring interest pursuant to Section 20104.50 of the Public Contract Code shall be reduced by the number of days by which the CITY exceeds the seven (7) day requirement set forth above for the return of an improper Request for Payment.
Pipelines, whether paid on a lump sum or unit price basis shall be considered 75% complete when laid and backfilled with compaction tests passed; 85% complete when hydrostatic and bacteria tests have passed, and pipe has been tied-in to the CITY’S system; and 100% complete when the paving is accepted.

To be acceptable for partial payment, materials on hand must be clean, undamaged, and properly stored as directed by the Engineer. The quantity of materials on hand shall not include materials used in any partially completed items of work. The Request for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the CITY has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (“Liens”) and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect CITY’S interest therein, all of which will be satisfactory to CITY. The amount of retainage with respect to progress payments will be as stipulated in the Contract.

Each Progress Pay Estimate shall include an accounting of the Contract time, including any allowances or revisions due to weather and/or contract change orders.

The CITY will pay ninety-five percent (95%) of the amount of each Progress Pay Estimate less any withholds under this or the following sections, within thirty (30) days of approval of the Progress Pay Estimate by the Contractor and the Engineer. Five percent (5%) will be withheld as retention until completion of the Project. No payments, except the final payment, shall constitute an acceptance of any portion of the work.

Prior to issuance of a check from the CITY, the CITY may require the Contractor to furnish the following information: a current list of subcontractors, current fringe benefit statements, apprenticeship certifications, and certified payrolls.

If the Contractor fails to correct a prevailing wage deficiency within fifteen (15) days after notification, a deduction shall be made. In such cases, the deduction shall be ten percent (10%) of the estimated value of the work done during the month, except that the deduction shall not exceed ten-thousand dollars ($10,000), nor be less than one-thousand dollars ($1,000), and shall be deducted from the progress payment.

Deductions for noncompliance shall be in addition to all other deductions provided for in these Specifications, and shall apply irrespective of the number of instances of noncompliance. Deductions shall be made separately and additively for each estimate period in which a new deficiency appears. When all deficiencies for a period have been corrected, the deduction covering that period shall be released on the next progress payment. Otherwise, the deduction shall be retained.

The Contractor may elect to receive one-hundred percent (100%) of payments due under the Contract from time to time, without retention of any portion of the payment by the CITY, by depositing securities of equivalent value with the CITY in accordance with the provisions of Section 22300 of the Public Contract Code. Such securities, if deposited by the Contractor, shall be valued by the CITY, whose decision on valuation of the securities is final.

10.5 RIGHT TO WITHHOLD PAYMENTS

When, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the Contract or good construction practice, or when in the Engineer’s judgment the total amount of work done since the last estimate amounts to less than five thousand dollars ($5,000.00), the CITY may elect to not prepare a Progress Pay Estimate and make no Progress Payment.
In addition to all other rights and remedies of the CITY hereunder and by virtue of law, the CITY may withhold or nullify the whole or any part of any progress payment or up to one-hundred and fifty percent (150%) of the disputed amount from the final payment (see California Public Contract Code Section 7107) to such extent as may reasonably be necessary to protect the CITY from loss on account of:

A. Defective work not remedied, irrespective of when any such work be found to be defective;
B. Claims or liens filed or other reasonable evidence indicating probable filing of claims or liens including, but not limited to, claims under California Labor Code Sections 1775, 1776, or 1777.7;
C. Failure of the Contractor to make payments properly for labor, materials, equipment, or other facilities, or to subcontractors and/or suppliers;
D. A reasonable doubt that the work can be completed for the balance then unearned;
E. A reasonable doubt that the Contractor will complete the work within the agreed time limits;
F. Costs to the CITY, including without limitation, liquidated damages, resulting from failure of the Contractor to complete the work within the proper time;
G. Failure to comply with environmental and other regulatory requirements;
H. Cost of insurance arranged by the CITY due to cancellation or reduction of the Contractor’s insurance;
I. Payments due the CITY from the Contractor, including but not limited to the monthly service charge, and consumption charge for water used by Contractor;
J. Penalties under Labor Code Section 1775, 1776, 1777.5, 1810 through 1815, or any of them;
K. Failure to adequately supervise the work competently and efficiently and pursue completion of the Project with an adequate work force in compliance with established construction schedule;
L. Failure to maintain as-constructed information and Drawings current for the Project;
M. Provisions of law that enable or require the CITY to withhold such payments in whole or in part; or
N. Damage to another contractor or third party, work or property.

Whenever the CITY shall, in accordance herewith, withhold any monies otherwise due the Contractor, written notice of the amount withheld and the reasons therefore will be given the Contractor. After the Contractor has corrected the enumerated deficiencies, the CITY will promptly pay to the Contractor the amount so withheld. When monies are withheld to protect the CITY against claims or liens of mechanics, suppliers, subcontractors, etc., the CITY may at its discretion permit the Contractor to deliver a surety bond in terms and amount satisfactory to the CITY, indemnifying the CITY against any loss or expense, and upon acceptance thereof by the CITY, the CITY shall release to the Contractor monies so withheld.

10.6 CLAIMS FOR EXTRA WORK/FOR EXTENSIONS OF TIME

The Contractor shall not be entitled to the payment of any additional compensation or any extensions of time for any cause, including any act, or failure to act by the Engineer, or happening of any event, thing or occurrence, unless the Contractor shall have given the Engineer due written notice of potential claims as hereinafter specified. It is the intention of this Section that the differences between the parties, arising under and by virtue of the Contract be brought to the attention of the Engineer at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken. It is also the intention of this Section to implement the provisions of Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3 of the Public Contract Code of California. The Contractor hereby agrees that he or she shall have no right to additional compensation or an extension of time for any claim that may be based on any act, failure to act, event, thing or occurrence for which no written notice of potential claim as herein required was filed.
All claims shall be filed in writing on or before the times prescribed herein, but in no event later than thirty (30) days after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty (60) days after such occurrence (unless Engineer allows an additional period of time to ascertain more accurate data in support of the claim). All claims shall set forth clearly and in detail, for each item of additional compensation or extension of time claimed, the reasons for the claim, references to applicable provisions of the Specifications, the nature and the amount of the cost involved, the computations used in determining such costs, and all pertinent factual data necessary to substantiate the claim. No claim for an adjustment in the Contract price will be valid if not submitted in accordance with this provision.

The Contractor shall proceed with the work in accordance with the Plans and Specifications and determinations and instructions of the Engineer during the resolution of any claims disputes. The Engineer shall have authority to issue Field Directives and Field Orders, which Contractor shall properly carry out. If Contractor believes that any such Field Directive or Field Order entails work beyond the scope of the Contract, Contractor shall provide notice in accord with this Section 10.6.

10.6.1 Claims of Less Than Fifty-Thousand Dollars ($50,000) – The CITY will respond in writing to claims for less than fifty-thousand dollars ($50,000) within forty-five (45) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the CITY may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to this subsection upon mutual agreement of the CITY and the Contractor. The CITY’S written response to the claim, as further documented, will be submitted to the Contractor within fifteen (15) days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

10.6.2 Claims Over Fifty-Thousand Dollars ($50,000) But Not Over Three-Hundred and Seventy-Five Thousand Dollars ($375,000) – The CITY will respond in writing to claims over fifty-thousand dollars ($50,000) but not over three-hundred and seventy-five thousand dollars ($375,000) within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the CITY may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to this subsection, upon mutual agreement of the CITY and the Contractor. The CITY’S written response to the claim, as further documented, shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.

10.6.3 All Claims of Three-Hundred and Seventy-Five Thousand Dollars ($375,000) or Less - If the Contractor disputes the CITY’S written response or the CITY fails to respond within the times prescribed for claims of three-hundred and seventy-five thousand dollars ($375,000) or less, the Contractor may so notify the CITY, in writing, either within fifteen (15) days of receipt of the CITY’S response or within fifteen (15) days of the CITY’S failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon such a demand, the CITY will schedule a meet and confer conference within thirty (30) days for settlement of the dispute. If following the meet and confer conference the claim or any portion remains in dispute, the Contractor may file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of these provisions, the running of the period of time in which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to this section until the time the claim is denied, including any period of time utilized by the meet and confer conference. The procedures governing all civil actions filed by the Contractor to resolve claims of three-hundred and
seventy-five thousand dollars ($375,000) or less shall be those set forth in Public Contract Code Section 20104.4 which provides for mediation and judicial arbitration. In any suit filed under Section 20104.4, the CITY shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law. The CITY will pay any portion of a claim that is undisputed in accordance with the payment provisions of the Contract.

10.6.4 Claims of Three-Hundred and Seventy-Five Thousand Dollars ($375,000) or More - All claims of $375,000 or more are subject to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. Jurisdiction over such claims shall rest with the Superior Court of the State of California.

10.6.5 Final Payment - Whenever the Contractor shall deem all work under this Contract to have been completed in accordance therewith, he/she shall so notify the Engineer in writing, and the Engineer shall promptly ascertain whether the work has been satisfactorily completed and, if not, shall advise the Contractor in detail and in writing of any additional work required. Completion of work will include submittal and approval of 'as-built' Record Drawings and final O&M manuals. When all the provisions of the Contract have been fully complied with to the satisfaction of the Engineer, he/she shall proceed with all reasonable diligence to determine accurately the total value of all work performed by the Contractor at the prices set forth in the Contract or fixed by change orders, and the total value of all extra work, all in accordance with the Contract. The Engineer will then certify to said final estimate and to the completion of the work, and will file copies thereof with the CITY and the Contractor. The date of completion shall be the date upon which the CITY makes its formal acceptance of the work.

Within ten (10) days after the date of completion, the CITY will file in the Office of the County Recorder, a Notice of Completion of the work herein agreed to be done by the Contractor. Within sixty (60) days after completion of the work, as defined in Public Contract Code section 7107, the CITY will make final payment of the difference between said final estimate and all payments theretofore made to the Contractor, subject to any requirements concerning the furnishing of a maintenance bond, and excepting only such sums or sums as may be withheld or deducted in accordance with CITY’s rights under said statute or this Contract. All prior certifications, upon which partial payments may have been made, being merely estimates, shall be subject to correction in the final certificate.

It is mutually agreed between the parties to the Contract that no certificate given or payments made under the Contract, except the final certificate or final payment, shall be conclusive evidence of the performance of the Contract, either wholly or in part, against any claim of the CITY, and no payment shall be construed to be an acceptance of any defective work or improper materials.

The Contractor further agrees that the payment of the final amount due under the Contract, and the adjustment and payment for any work done in accordance with any alteration of the same, shall release the CITY, the Council Members, the City Manager, the Project Manager, the Engineer, employees and volunteers, from any and all claims or liability on account of work performed under the Contract or any alteration thereof.
11.0 DEFINITIONS AND TERMS

11.1 DEFINITIONS

Whenever the following terms occur in the Contract documents, the meaning shall be interpreted as follows:

ACCEPTANCE, FINAL ACCEPTANCE - The formal action by the City Council accepting the work as being complete.

ACCEPTED BID - The bid (proposal) accepted by the CITY.

ADDENDA - A document issued by the CITY during the bidding period which modifies, supersedes, or supplements the original Contract documents.

ALLOWANCE - “Allowance” shall mean an amount of money set aside under the Contract for a special purpose identified in the Contract documents.

ASBESTOS - Any material that contains more than one percent (1%) asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

BIDDER - Any individual, partnership, corporation, joint venture, or other combination thereof submitting a proposal for the work contemplated, acting directly or through an authorized representative.

CHANGE OR DEVIATION - The use of an alternative item of material or equipment that may not necessarily conform to the letter of the Contract requirements.

CHANGE ORDER - A document signed by the Contractor and the CITY and authorized by the CITY regarding an addition, deletion, or revision in the work, or an adjustment in the Contract price or the Contract time, issued on or after the effective date of the Contract.

CITY INSPECTOR - The person or firm authorized by the CITY to conduct construction review or observation.

CITY – The City of Rio Vista or its authorized representative.

CLAIM - A separate demand by the Contractor for (a) a time extension, (b) payment of money or damages arising from work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provide for or the Contractor is not otherwise entitled to, or (c) an amount the payment of which is disputed by the CITY.

CLARIFICATION - A document issued by the CITY to the Contractor that interprets the requirement(s) and/or design intent of the Contract documents, may not represent an addition, deletion, or revision in the work or an adjustment in the Contract price or the Contract times.

CONSULTANTS - Any individual, partnership, corporation, joint venture, or other combination thereof, performing work or services, directly or indirectly, for the CITY.

CONSULTING ENGINEER - The term “Consulting Engineer” means the Consulting Engineer or his/her authorized representative.

CONTRACT - The written agreement executed between the CITY and the Contractor covering the performance of the work.
CONTRACT TIME - The number of calendar days allowed for the completion of the work included in the Contract.

CONTRACTOR - The individual, partnership, corporation, joint venture, or other combination thereof who has entered into the Contract with the CITY for the performance of the work. The term “Contractor” means the Contractor or his/her authorized representative.

DAYS - Unless otherwise specified, days shall mean calendar days.

DEFECTIVE WORK - Work that is unsatisfactory, faulty, or deficient; or that does not conform to the Contract documents; or that does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract documents.

ENGINEER - The person, agent, consultant, or employee designated by the CITY as Engineer authorized by the CITY, as set forth in the Contract documents, to represent the CITY, for the purposes of administering this Contract. Assistants, if designated by the Engineer to act on behalf of the Engineer, may do so provided they are authorized by the Engineer.

FIELD DIRECTIVE - Written documentation of the actions of the CITY or Engineer in directing the Contractor. Field Directives may be in the form of supplemental Drawings or instructions which may be issued as necessary to clarify or define the intent of the Contract Drawings or Specifications. There may be a change in Contract sum or Contract time involved with the work shown in a Field Directive. Also referred to as a Directive.

FIELD ORDER - A written order given to the Contractor authorizing work that is a change to the scope of the work carried out on a time and materials basis.

FINAL COMPLETION - The date when the work is one-hundred percent (100%) complete, including completion and acceptance of all punch list corrections, as certified by the CITY.

FURNISH - The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

HAZARDOUS WASTE - The term hazardous waste shall have the meaning provided in the Solid Waste Disposal Act (42 U.S.C. Section 6903).

HOLIDAYS - Legal holidays shall include the following holidays designated by the CITY: New Year’s Day, Martin Luther King Day, President’s Day, Memorial Day, Independence Day, Labor Day, Veteran’s Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day.

INSTALL - The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

MAY - “May,” wherever or in whatever manner used, refers to permissive actions.

MILESTONE - A principal event specified in the Contract documents relating to an intermediate completion date of a separately identifiable part of the work or a period of time within which the separately identifiable part of the work should be performed prior to Substantial Completion of all the work.

NOTICE OF AWARD - The written notice by the CITY to the apparent successful Bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein within the time specified, the CITY will enter into an Agreement.
NOTICE OF COMPLETION - A form signed by the Engineer recommending to the CITY that the work is 100% complete, including completion and acceptance of all punch list corrections and fixing the date of final completion. After acceptance of the work by the CITY’s City Council, the form is signed by the CITY and filed with the County Recorder.

OWNER – The CITY of Rio Vista or its authorized representative.

OR EQUAL - Whenever material or equipment is indicated in these Specifications by stating names of proprietary items or of particular suppliers, the naming of the item is intended to establish the type, function, and quality required. The Contractor may select any of these named items for use on the Project. When the name is followed by the words “or-equal,” it indicates that a substitution may be submitted for approval. An “or-equal” item serves the same function; has the same dimensions, appearance, quality, terms of warranty, durability, reliability, cost in service and maintenance; and complies with the same codes and standards as the named item. Further, its substitution will have no effect on Project details, cost, and program.

PLANS, DRAWINGS - The Plans (Drawings), or reproductions thereof, which show the location, character, dimensions, and details of the work to be done.

PROJECT - The total construction of which the work to be provided under the Contract documents, may be the whole, or a part thereof as indicated elsewhere in the Contract.

PROVIDE - The words “provide” or “perform,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

PUNCH LIST - List of incomplete items of work and of items of work which are not in conformance with the Contract. The list will be prepared by the Engineer in writing when the Contractor notifies the Engineer in writing that the work has been completed in accordance with the Contract documents and is ready for the CITY’S acceptance.

REQUEST FOR INFORMATION (RFI) - A written request prepared by the Contractor requesting additional information necessary to clarify or amplify an item in the Contract documents that the Contractor believes is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract documents, or to address problems which have arisen under field conditions. An RFI is not to be used for request for materials/equipment substitutions or value engineering/cost reduction incentive proposals.

REQUEST FOR QUOTATION (RFQ) - A request for a proposed cost made to the Contractor by the CITY to add, delete or change the work. RFQ’s shall not be deemed to be directions to proceed with any addition, deletion or change to the work.

SALVAGE - All items specified to be salvaged shall be carefully removed so as not to damage the item, and neatly stockpiled at the construction site by the Contractor. The exact location to stockpile items shall be determined by the Engineer. The Engineer shall then make a determination as to which items are to be retained by the CITY. All other items shall be properly disposed of at no additional cost to the CITY.

SHOP DRAWINGS (SUBMITTALS) - Shop Drawings (submittals) are Drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data which are prepared by the Contractor or any subcontractor, manufacturer, supplier, or distributor and which illustrate some portion of the work.

STANDARD DRAWINGS, STANDARD PLANS - That portion of the Plans identified or referenced as such.

STOP NOTICE - A legal remedy for subcontractors and suppliers who contribute to public works, but who are not paid for their work which secures payment from construction funds possessed by the CITY. For public property, the Stop Notice remedy is designed to substitute for mechanic’s lien rights.

SUBCONTRACTOR - An individual, partnership, corporation, joint venture, or other combination thereof who has a contract with the Contractor to perform any of the work. Subcontractor also means an individual, partnership, corporation, joint venture, or other combination thereof who has a contract with another subcontractor to perform any of the work.

SUBSTANTIAL COMPLETION - See Section 9.10.3, “Semifinal Inspection/Substantial Completion” for definition of Substantial Completion.

SUBSTITUTION - The use of an >or equal= item of material or equipment that meets the Contract requirements, but is not a listed manufacturer or equipment.

TECHNICAL SPECIFICATIONS - The Contract documents identified or referenced as such.

TERMS - Wherever the terms “required,” “permitted,” “ordered,” “designated,” “directed,” “prescribed,” or terms of like import are used, it shall be understood that the requirements, permission, order, designation, direction or prescription of the Engineer is intended. Similarly, the terms “acceptable,” “satisfactory,” “or equal,” or terms of like import shall mean acceptable to or satisfactory to the Engineer, unless otherwise expressly stated. The word “provide” shall be understood to mean furnish and install.

UTILITY - Public or private fixed works for the transportation of fluids, gasses, power, signals, or communications.

WORK - Any and all obligations, duties, and responsibilities necessary to complete the construction assigned to, or undertaken by, the Contractor pursuant to the Contract documents including all labor necessary to produce such construction and all materials, equipment, and supplies incorporated or to be incorporated in the construction. Also, the completed construction or parts thereof required to be provided under the Contract documents.

WORKING DAYS - A working day is defined as any day, except Saturdays, Sundays and CITY Legal holidays. Any work scheduled by the Contractor on non-working days (Saturdays, Sundays, and CITY Legal holidays) shall be verified with the CITY at least seventy-two (72) hours in advance. The CITY shall be compensated for inspection work, at an hourly rate, for any work on non-working days and for overtime.

(END OF SECTION)
SECTION 008110  SPECIAL PROVISIONS
Description of Contract

CITY OF RIO VISTA

CONTRACT NO. PW2017- SKATE PARK

A. Definitions
Whenever the following terms occur in the contract documents, their meaning is as follows:

<table>
<thead>
<tr>
<th>CITY</th>
<th>City of Rio Vista</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One Main Street</td>
</tr>
<tr>
<td></td>
<td>Rio Vista, California 94571</td>
</tr>
<tr>
<td>GOVERNING BODY</td>
<td>City Council</td>
</tr>
<tr>
<td>PROJECT MANAGER</td>
<td>Name: David Melilli</td>
</tr>
<tr>
<td></td>
<td>Title: Director of Public Works</td>
</tr>
<tr>
<td></td>
<td>Agency: City of Rio Vista</td>
</tr>
<tr>
<td></td>
<td>Phone:</td>
</tr>
<tr>
<td>ENGINEER/LANDSCAPE ARCHITECT</td>
<td>Name: Robert Norbutas</td>
</tr>
<tr>
<td></td>
<td>Title: Landscape Architect</td>
</tr>
<tr>
<td></td>
<td>Agency: Siegfried Engineering</td>
</tr>
<tr>
<td></td>
<td>Phone: 209-943-2021 x102</td>
</tr>
<tr>
<td>CONSTRUCTION ADMINISTRATION</td>
<td>Name:</td>
</tr>
<tr>
<td></td>
<td>Title:</td>
</tr>
<tr>
<td></td>
<td>Agency:</td>
</tr>
<tr>
<td></td>
<td>Phone:</td>
</tr>
</tbody>
</table>

B. Terms
Command type sentences used in the contract documents refer to and are directed to the CONTRACTOR.

C. Authority for the Work
The Notice Inviting Sealed Proposals (Bids) was approved and adopted by the Governing Body of the CITY on ____________.

D. Marking and Addressing Bid Envelope
Seal the bid in an envelope addressed to the Owner and marked:

BID FORM

CONTRACT NO. PW2017- SKATE PARK
E. **Reference Material**

Record drawings for the ____________________________________________
are provided in Section C of these Contract Specifications as a reference for the CONTRACTOR. Pertinent Shop Drawings for the Project are included as Section D of these Contract Specifications as a reference for the CONTRACTOR. Additional documentation on the project is available upon request.

F. **Award of Contract or Rejection of Bids**

Within a period of 60 calendar days after the opening of bids, the Owner will award the contract or reject all bids.

G. **Time for Completion and Forfeiture Due to Delay**

Project work will be substantially completed within 120 Calendar days from and after the date of the Notice to Proceed.

Pursuant to Government Code 53069.85, forfeiture for each day completion is delayed beyond the time allowed will be at the rate of $1,000.00 per Calendar day.

H. **Time to Furnish Bonds, Insurance and Contract**

Any bidder awarded the contract shall deliver to the Owner the Contract (Section 005200), the Payment Bond (Section 006112) and Performance Bond (Section 006111), and the insurance certificates and endorsements (Sections 006220, 006221, 006222, 006223, 006224), with all said documents properly executed, filled-in and notarized where required, within FOURTEEN (14) DAYS from and after the date of Award of the Contract, or within such additional time as allowed by CITY.

(END OF SECTION)
SECTION A – TECHNICAL SPECIFICATIONS

1.0 MATERIALS

2.0 CONSTRUCTION DETAILS

END OF SECTION
# TABLE OF CONTENTS

## Division 01 – General Requirements

01 57 23  Temporary Storm Water Pollution Control

## Division 02 – Existing Conditions

02 41 13  Selective Site Demolition

## Division 03 – Concrete

03 37 00  Shotcrete

## Division 05 – Metals

05 50 00  Metal Fabrication

## Division 12 – Furnishings

12 93 00  Site Furnishings

## Division 31 – Earthwork

31 10 00  Clearing and Grubbing  
31 20 00  Earthwork  
31 22 16  Finish Grading  
31 23 33  Trenching and Backfilling

## Division 32 – Exterior Improvements

32 11 23  Aggregate Base Courses  
32 12 12  Skate Park Structure Concrete Paving  
32 13 13  Cast-in-Place Concrete  
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SECTION 01 57 23 – TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included: The work included in this Section includes all labor, materials, and equipment necessary to place temporary and permanent erosion and sediment control measures as specified herein.

B. Related work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1 and 2 of these Specifications, and:
   1. Section 02 41 13 Selective Site Demolition
   2. Section 31 10 00 Clearing and Grubbing
   3. Section 31 20 00 Earthwork
   4. Section 31 22 16 Finish Grading
   5. Section 31 23 33 Trenching and Backfilling

1.02 QUALITY ASSURANCE AND CONTROL

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 ENVIRONMENTAL REQUIREMENTS

A. Protect adjacent properties and water resources from erosion and sediment damage throughout life of contract.

1.04 SUBMITTALS

A. Comply with City of Rio Vista General Conditions.

B. Product Data: Submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Specifications and other data needed to prove compliance with the specified requirements.

PART 2 - PRODUCTS

2.01 FOR EROSION AND SEDIMENT CONTROL

A. The primary erosion and sediment control measures implemented during the Grading/Site Preparation phase of the project shall be inspected, maintained, and repaired in accordance with ABAG and Storm Water Pollution Prevention CASQA guidelines. Secondary measures such as Inlet Protection, dust control, erosion control blanket, temporary and permanent seeding shall be installed/applied as necessary.

B. Staked Hay Bales or straw wattle installed per Storm Water Pollution Prevention CASQA and ABAG guidelines.

C. Bale stakes for each bale shall be a minimum of 4-feet in length and shall be either two #2 rebars, two steel pickets, or two 2-inch X 2-inch hardwood stakes driven 1’6” into the ground..
D. Rip-Rap outlet protection and drainage structure inlet protection installed per Storm Water Pollution Prevention CASQA and ABAG guidelines.

E. Temporary Sediment Riser Outlet Structure installed per Storm Water Pollution Prevention CASQA and ABAG guidelines.

F. Inlet Protection installed per Storm Water Pollution Prevention CASQA and ABAG guidelines.

PART 3 – EXECUTION

3.01 Preparation

A. Contractor shall review the site in its entirety and photograph for reference.

B. Deficiencies or changes on Site Improvement Plans as it is applied to current conditions shall be brought to the attention of the City’s Representative.

3.02 Erosion Control and Storm Water Pollution Prevention Implementation

A. Place erosion control and storm water pollution prevention measures in accordance with Storm Water Pollution Prevention CASQA and ABAG guidelines, as construction proceeds and the appropriate phase is in progress for each measure.

B. Permanent erosion control measures shall be incorporated into the Project at the earliest practical time to minimize the need for temporary controls.

3.03 Permanent and Temporary Seeding Measures

A. Permanently seed and mulch cut slopes as excavation proceeds to extent considered desirable and practical.

B. Slopes that erode easily or that will not be graded for a period of fourteen (14) days or more shall be temporarily seeded as work progresses with temporary seeding.

3.04 Removal of Erosion and Sediment Control Measures

A. When site is ninety-five percent (95%) re-vegetated and stabilized with grasses, remove temporary sediment risers. Remove accumulated sediment and regrade area to original contours. Seed and protect with permanent grass seed mixture.

B. Remove drainage structure inlet protection.

C. Remove silt fence and temporary check dams. Seed and protect any disturbed areas with permanent grass seed mixture.

END OF SECTION
SECTION 02 41 13 SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.01 SCOPE OF WORK
   A. Remove paved asphalt concrete areas, concrete sidewalks, concrete ramps, utility pipes, utility appurtenances, light poles, light fixtures, bike racks, trees, and gate control arm equipment, as noted on the Drawings.

1.02 REQUIREMENTS
   A. Prior to starting demolition, comply with requirements listed in the City of Rio Vista General Conditions. Comply with Environmental Protection Agency (EPA) regulations and disposal regulations.

1.03 RELATED WORK
   A. Section 01 57 23: Temporary Storm Water Pollution Control
   B. Section 31 10 00: Clearing and Grubbing
   C. Section 31 20 00: Earthwork
   D. Section 31 22 16: Finish Grading

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 UTILITIES
   A. Coordinate with utility companies as required.
   B. Locate, identify, disconnect, and cap off utility services to be demolished.
   C. Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated.
   D. Maintain and protect existing utilities to remain in service before proceeding with demolition, providing bypass connections to other parts of the building.
   E. Notify the City of Rio Vista Representative not less than two (2) days in advance if there are any proposed utility interruptions
   F. Do not proceed with utility interruptions without the City of Rio Vista Representative’s written permission
   G. Where equipment or devices have been removed, and where the active side of the pipe remains, Contractor shall cap or plug all abandoned piping using either threaded or soldered fittings. Do not rely on the existing valves for a positive shutoff.

3.02 DEMOLITION
   A. Conduct demolition without disrupting use of adjacent property or nearby buildings.
   B. Conduct demolition operations and remove debris to prevent injury to people and damage to adjacent buildings and site improvements.
   C. Perform Work in such a manner as to prevent damage to existing facilities to remain or to be salvaged. Hazardous Work shall not be left standing or hanging, but shall be knocked or pulled down to avoid damage or injury to employees or the public.
D. Conduct demolition operations in such a manner as to prevent damage to existing trees and plants that are to remain.

3.03 CUTTING AND PATCHING
A. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.

3.04 SAW CUTTING
All saw cutting shall be made in a neat, clean line perpendicular to the face of the paved surface such that no damage shall take place on the paving to remain. Refer to plans for locations.

3.05 SALVAGE
A. Items indicated to be removed and salvaged remain the City’s property. Remove, clean, and deliver to the City’s designated storage area or as directed by the City’s Representative.

3.06 DISPOSAL
A. Unless otherwise indicated, demolished materials become Contractor’s property.
B. Promptly remove demolished materials from City’s property and legally dispose of them. Do not burn demolished materials.

3.07 HAZARDOUS MATERIALS
A. Except as otherwise specified, in the event Contractor encounters on the Project site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), lead, or other hazardous substances that have not been rendered harmless, Contractor shall immediately stop work in the area affected and report the condition to the City of Rio Vista’s representative in writing. The work in the affected area shall not thereafter be resumed except by written agreement of the City and Contractor if in fact the material is asbestos, PCB, lead, or other hazardous substances and has not been rendered harmless. The work in the affected area shall be resumed in the absence of asbestos, PCB, lead, or other hazardous substances, or when such materials have been rendered harmless.
B. Disclose any hazardous substance or condition exposed during the work to the City’s Representative for decision or remedy.

END OF SECTION
SECTION 03 37 00 - SHOTCRETE

PART 1 – GENERAL

1.01 SUMMARY

A. Work included: Provide sprayed-on concrete (concrete conveyed into place by air pressure through a flexible tube or gun with controlled nozzle) referred to herein as shotcrete, complete as shown and as specified for skate park radius and banked transition work only.

B. Related Work: Concrete Paving for Skate Park Structure Section 32 12 12

1.02 QUALITY ASSURANCE

A. Standards: Comply with the requirements of the current edition of the following codes and standards, except as herein modified:
1. Current ICC.
2. American Concrete Institute (ACI): 506, Chapter 13, Wet Method; Chapter 5, Shotcrete Crew.
3. American Concrete Institute (ACI) “Manual of Standard Practice” Concrete Reinforcing.
   a. Concrete Testing:
      1). Prepare test specimens by each application crew using the equipment materials and mix proportions proposed for the Project. Owner's Representative shall observe preparation of test panels noting placement of shotcrete by applications crew.
   b. Maintain and protect sample transition during construction and test for compliance with Specifications.
   c. Test strength of the shotcrete as work progresses as follows:
      1). Provide test panels and test in accordance with ASTM42. Test panels shall be taken not less than once each shift or less than one for each 50-cubic yards of shotcrete placed through the nozzle.
   d. Shotcrete core grade-2 required.

B. The skate park structure improvements including finish grading, rebar work, fabricated metal work, concrete pool coping, concrete work, and shotcrete work require qualification as described herein.

1. Contractors bidding the skate park structure shall have satisfactory completed the installation of two (2 minimum number) similar skate park projects in accordance with the project plans and written specifications. The qualification can be met by either the prime bidding contractor or a subcontractor bidding to the prime. Qualifying projects must include concrete skate park structures of comparable size, finishes, transition depths, coping types and features built within the last five (5) years. Qualifying projects by either the prime contractor or the skate park subcontractor must be listed in the bid proposal documents under the section CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS.

2. If Contractor intends to use an ACI certified Nozzleman for Shotcrete installation other than the Nozzleman who performed work for the required qualifying projects, the Contractor must submit three (3) qualifying projects that the ACI Certified Nozzleman has performed. Qualifying project shall be of the same requirement as described herein.
3. Only the Nozzleman referenced with the bid shall be permitted to perform shotcrete work for the said project. Should the Contractor want to substitute the qualifying Nozzleman of record with another Nozzleman, the Contractor shall make an application to the Owner providing all qualifying records of the proposed substitute Nozzleman at least five (4) days in advance of said work. The Owner shall reserve the right to reject any substitute Nozzleman not meeting the qualifying requirements.

4. The Skate Park Contractor (either prime or subcontractor) shall provide reference for three (3) qualifying reference projects and proposed Nozzleman including location of qualifying projects, size, owner, and owner’s contact information in the CERTIFICATION OF BIDDER’S EXPERIENCE AND QUALIFICATIONS."

C. Do not install concrete work over wet, saturated, muddy or frozen subgrade.

D. No trucks shall be allowed within the areas that have been graded.

E. Acceptance: Final acceptance of the shotcrete will be based upon the results obtained from testing.

F. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment.

G. Shotcrete Application shall be done by certified nozzle operator.

1.03 SUBMITTALS

A. Manufacturer’s Data: Current printed specifications with application and installation instruction for proprietary materials including concrete admixtures such as finishing agents/hardener, paint, and Stain.

B. Shop Drawings: shop drawings for all fabricated steel edging and steel accessories.

C. Mix Design: Submit to Owner’s Representative; concrete mix design and letters from material suppliers certifying that materials comply with the standards referenced herein.

D. Pour Schedule: Contractor to indicate on plans locations to be shot within a day’s work and sequence of pours for review by Owner’s Representative.

PART 2 – PRODUCTS

2.01 CONCRETE MATERIALS

A. Portland Cement: ASTM C150, Types I or II, one brand only.
   Fly Ash: ASTM C618

B. Normal Weight Aggregates: ASTM C33 and herein specified. Aggregate shall comply with gradation No. 2 as shown in ACI 506R Table 2.1 if the contractor can show satisfactory performance of an alternate grading under similar conditions of use, the engineer may waive the requirement for gradation No. 2.

1. Combined gradation of coarse and fine aggregate as follows:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Standard Square Mesh</td>
<td>Passing Individual Sieves</td>
</tr>
<tr>
<td>3/8 in</td>
<td>90-100</td>
</tr>
<tr>
<td>No. 4</td>
<td>70-85</td>
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<tr>
<td>No. 8</td>
<td>50-70</td>
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<td>35-55</td>
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<td>No. 30</td>
<td>20-35</td>
</tr>
<tr>
<td>No. 50</td>
<td>8-20</td>
</tr>
</tbody>
</table>
2. Batch fine coarse aggregates separately to avoid segregation.
3. Aggregates shall be free from clay, mud, loam, or other deleterious substances.
4. Dune sand, bank run sand, and manufactured sand are not acceptable for fine aggregate. Use one source of sand only for entire project.
5. Coarse aggregate shall be clean, un-coated, heavy media processed aggregate of crushed stone or river washed aggregate.

2.02 ACCESSORIES

A. Water: Fresh, clean, potable, and free of deleterious acids, mixing, and curing water, as available from Owner's Representative. Transport as required. Water shall not be used to finish, see admixtures.

B. Admixtures: Use only accepted admixtures meeting the following requirements:
   2. Evaporation Retardant and Finishing Aid: Burke Film Concentrate – Available from Whitecap Inc. Burk Film Concentrate shall be used in accordance with the manufacture recommendations. All finishing of concrete surfaces must be completed with this product, finishing with water is not allowed.
   3. Air-entraining Admixtures: ASTM C1141. Air entraining prior to shooting shall be 1.5-percent to 3.0-percent with a plus-or-minus 1-percent tolerance.
   4. Contractor shall submit cut sheets for all proposed admixtures with the concrete mix design.

2.03 PROPORTIONING AND DESIGN OF CONCRETE MIXES

A. Mix: Prepare design mix to achieve an in-place 28 day compressive strength of 4,000-pounds per square inch and an air content of 4-percent at 28-days. Maximum aggregate size shall not exceed 3/8-inch. Unit weight of in-place shotcrete shall be 494-pounds per cubic yard. Owner will test the proposed mix designs at his/her expense.

B. Test Data: Submit for acceptance proportioning and test data from prior experience if available. If data from prior experience are not available or accepted, make and have tested specimens from three or more different mix proportions in accordance with pre-construction testing requirements of this Specification.

C. Strength: Selected mix proportions on the basis of compressive strength tests of specimens shall be cut from the shotcreted sample transition not earlier than 5-days after shotcreting. For mix acceptance purposed, average core strengths shall be at least equal to f'c for cores with L/D of 2.0. For cores with L/D between 1.0 and 2.0, use correction factors given in ASTM C42.

D. Review: Mix design shall be reviewed for acceptance by Owner's Representative.

2.04 CONCRETE APPLICATION EQUIPMENT

A. For Wet Mix Shotcrete:
   1. Mixing Equipment: capable of thoroughly mixing aggregate, cement and water in sufficient quantity to maintain continuous placement.
   2. Air Supply: Clean air adequate for maintaining sufficient nozzle velocity for parts of work, and for simultaneous operation of blow pipe for cleaning away rebound.
   3. Delivery Equipment: capable of discharging aggregate-cement-water mixture accurately, uniformly, and continuously through delivery hose.

2.05 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
   1. Use flexible or curved forms for horizontal curves of a radius 100-feet or less.
B. Form-Release Agent: Commercially formulated form-release agent with a maximum of 350 mg/L volatile organic compounds (VOCS) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

C. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24-hours after concrete placement. Forms shall provide a continuous straight, smooth surface. Forms shall be of sufficient thickness to withstand pressure of newly placed concrete without bowing or deflecting.

D. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.

E. Check completed formwork and screeds for grade and alignment to the following Tolerances:
   1. Top of Forms: Not more than 1/8-inch in ten feet.
   2. Vertical Face on Longitudinal Axis: Not more than 1/8-inch in 10-feet.

F. Moisten wood forms immediately prior to placing concrete.

2.06 STEEL REINFORCEMENT MATERIALS

A. Reinforcement Bars shall be Number 4, Grade 40, deformed as per the plan details.


C. Clean reinforcement of loose rust, oil and mill scale, earth, ice, or other bond-reducing materials.

D. Deformed steel bars shall be located at 12-inches on center, both directions, continuous throughout the entire structure and as indicated on the plan details. Steel rebars shall extend out from the features for 24-inches, 2-inches above base rock. (Rebars for the flat work shall tie onto the rebars extending for 24-inches from the features.) Lap rebars 24-inches and tie. Stagger joints. Do not heat to bend.

E. Provide adobe supports for rebars at 36-inches on center. Supports must keep the rebars at 2-inches above base rock and 2-inches below finish surfaces of concrete. Rebars shall be 2-inches away from outside surfaces of concrete in all locations. Rebars shall be free of rust, oil and other deleterious conditions.

2.07 REQUIRED CURING AND FINISHING MATERIALS

A. Non-permeable Burleen™ curing blankets or approved equal; ASTM C 171. The concrete should be hard enough to prevent surface damage when covering with concrete blankets.

B. Water: Potable.

C. Evaporation Retardant and Finishing Aid: Burke Film Concentrate – Available from WhiteCap Inc. Burk Film Concentrate shall be used in accordance with the manufacture recommendations. All finishing of concrete surfaces must be completed with this product, finishing with water is not allowed.

PART 3 – EXECUTION

3.01 INSPECTION

A. Examination: Skate Park designer shall examine concrete formwork and verify that it is true to line and dimension, adequately braced against vibration, and constructed to permit escape of air and rebound but to prevent leakage during shotcreting.
B. Inspection: Skate Park designer shall inspect reinforcement steel and items to be embedded in concrete. Correct any deviations from the accepted shop drawings.

C. Notification: Notify other trades involved in ample time to permit the proper installation of their work.

D. Existing Surfaces: Examine existing concrete surfaces for unsound material. Correct deficiencies.

3.02 STEEL REINFORCEMENT

A. General: Comply with CRSI’s "Manual of Standard Practice" for fabricating reinforcement.

B. Clean reinforcement of loose rust, oil and mill scale, earth, ice, or other bond-reducing materials.

C. Deformed steel bars shall be located at 12-inches on center, both directions, continuous throughout the entire structure and as indicted on the plans. Steel rebar shall extend out from the features for 24-inches, 2-inches above base rock. (Rebar for the flat work shall tie onto the rebar extending for 24-inches from the features.) Lap rebar 24-inches and tie. Stagger joints. Do not heat to bend.

D. Provide adobe supports for rebar at 36-inches on center. Supports must keep the rebar at 2-inches above base rock and 2-inches below finish surfaces of concrete. Rebar shall be 2-inches away from outside surfaces of concrete in all locations. Rebar shall be free of rust, oil and other deleterious conditions.

3.03 PREPARATION FOR INSTALLATION OF CONCRETE

A. Forms: Use a form-release agent on removable forms to prevent absorption of moisture and to prevent bond with shotcrete.

3.04 CONCRETE BATCHING AND MIXING

A. Proportions: Mix proportions shall be controlled by weight batching. Owner’s Testing Laboratory shall maintain quality control records during shotcrete production.

3.05 CONCRETE PLACEMENT

A. Placement: Use suitable delivery equipment and procedures that will result in shotcrete in place meeting the requirement of the Specification. Determine operation procedures for placement in extended distances, and around any obstructions where placement velocities and mix consistency must be adjusted.

B. Placement Techniques: Do not place shotcrete if drying or stiffening of the mix takes place at any time prior to delivery to the nozzle.

1. Control thickness, method of support, air pressure, and/or water content of shotcrete to preclude sagging or sloughing off. Discontinue shotcreting or provide suitable means to screen the nozzle stream if wind or air currents cause separation of the nozzle stream during placement.

2. Hold nozzle as perpendicular to surface as work will permit, to secure maximum compaction with minimum rebound.

3. In shotcreting walls, begin application at bottom. Ensure work does not sag.

4. Layering:
   a. Build up layers by making several passes of nozzle over work area.
   b. Broom or scarify the surface of freshly placed shotcrete to which, after hardening additional layers of shotcrete are to be bonded. Dampen surface just prior to application of succeeding layers.
c. Allow each layer of shotcrete to take initial set before applying succeeding layers.
d. Use templates fabricated to the specified finish surfaces to insure exact radii from flat bottom of Skate Park to face of coping. Template shall be fabricated from steel or ¾-inch Plywood. Check every horizontal foot when applying shotcrete for conformance of intended wall radii. Brace template and place levels at arc to tangent connections to insure no kinks will be formed. Kinks at the bottom of bowls will not be acceptable. Slumping of the shotcrete causing coping setback will not be acceptable.

5. Placement Around Reinforcement:
   a. Hold the nozzle at such distance and angle to place materials behind reinforcement before any material is allowed to accumulate on its face.
   b. Test to ascertain if any void or sand pockets have developed around or behind reinforcement by probing with an awl or other pointed tool after the shotcrete has achieved its initial set, buy removal of randomly selected bars, or coring of other suitable standards.

C. Finishing: Shotcrete installation crews must have appropriate scaffolding and radial ladders or equal to ensure access for application and finishing of shotcrete.

3.06 REMOVAL OF SURFACE DEFECTS IN CONCRETE
A. General: Remove and replace shotcrete that lacks uniformity, exhibits segregation honeycombing, or lamination. Or which contains any dry patches, slugs, voids, or pockets. Remove defective areas.
B. Sounding: Sound work with hammer for voids. Remove and replace damaged in-place shotcrete.

3.07 CONCRETE FINISH
A. Finish-General: Smooth hard trowel finish that is uniform and free of kinks and irregularities.
B. Transitions: Floated finish on radial face of wall shall consist of a smooth, hard, uniform surface of smooth trowel. Level the transition to a tolerance of ¼-inch in 10-feet when vertical with a radial template using the appropriate radii. If horizontal, use a straight edge. Grinding the surfaces will not be an acceptable means of achieving the intended radii.
C. All horizontal and vertical edges of concrete shall have ½-inch radii.
D. All connections between pours must be absolutely flush and smooth.
E. Grinding finished concrete to achieve the specified finishes will not be accepted.

3.08 CONCRETE JOINTS
A. Cold Joints: Construct true to line with faces perpendicular to surface planes of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.
B. Sawcut Joints: Form weakened-plane contraction joints, sectioning concrete into areas of approximately 100-square feet. See Construction Plan for locations. Construct Sawcut joints to a depth of 1-1/2-inches and as follows:
   1. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades within 48-hours of any said pour. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
C. Expansion Joints:
   1. Fill all expansion joints flush with polyurethane elastomeric sealant Sikaflex-2C or approved equal. See Expansion Joint detail in plans.

3.09 CONCRETE PROTECTION AND CURING
A. General: Protect freshly placed shotcrete from premature drying and excessive cold or hot temperatures.
B. Evaporation Retarder: Apply evaporation retarder according to manufacturer's written instructions after placing, screeding, and bull floating or darbying shotcrete, but before float finishing.
C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.
D. Apply curing blankets 2-hours after finishing concrete. Overlap blankets 2-feet all sides. The concrete should be hard enough to prevent surface damage when covering with concrete blankets.
E. Maintain ongoing moisture of concrete by drip irrigation lines located under curing blankets. Provide ongoing moisture for a minimum of 14-days per finished area of concrete.
F. Concrete shall be protected from any traffic for 30-days.
G. The Contractor shall take necessary actions to protect the concrete from any vandalism or damage that may occur as a result of trespassing.
H. Remove and replace concrete pavement that is broken, under strength, spalling, damaged, or defective, or does not meet requirements in this Section.
I. Drill test cores where directed by Testing Agency when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to pavement with epoxy adhesive.
J. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material.
K. The Contractor shall remove the curing blankets and the temporary drip irrigation system, as well as hose and sweep concrete pavement not more than 2-days before date scheduled for Substantial Completion inspections.
L. Grinding concrete to achieve specified finishes will not be allowed.

3.10 PAVEMENT TOLERANCES
Comply with tolerances of ACI 117 and as follows:
2. Thickness: minus 1/4-inch.
3. Surface: Gap below 10-foot-long, unleveled straightedge not to exceed 1/4-inch.
4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1-inch.
5. Vertical Alignment of Tie Bars and Dowels: 1/4-inch.
6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2-inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge.
8. Length of dowel 1/4-inch per 12-inches.
11. Plan Dimension 1-inch.
12. Vertical Radii: 1/4-inch over length of transition as checked with true template.

3.11 FIELD QUALITY CONTROL

A. Independent Testing Agency: The Owner's Independent Testing Agency shall sample materials, perform tests, and submit test reports during concrete placement according to requirements specified.

B. Testing Services: Testing will be performed according to the following requirements:

1. Sampling Fresh Concrete: Representative samples of fresh concrete shall be obtained according to ASTM C172, except modified for slump to comply with ASTM C94.
2. Slump: AASHTO T119; one test at point of placement for each compressive-strength test, but not less than one test for each day’s pour of each type of concrete. Additional tests will be required when concrete consistency changes.
3. Air Content: ASTM C173 or AASHTO T152, pressure method; one test for each compressive-strength test, but not less than one test for each day’s pour of each type of air-entrained concrete.
4. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40-degrees Fahrenheit and below and when 80-degrees Fahrenheit and above, and one test for each set of compressive-strength specimens.
5. Compression Test Specimens: ASTM C31; 1 set of 4-standard cylinders for each compressive-strength test, unless otherwise indicated. Cylinders shall be molded and stored for laboratory-cured test specimens unless field-cured test specimens are required.
6. Compressive-Strength Tests: ASTM C39; one set for each day's pour of each concrete class exceeding 5-cubic yards, but less than 25-cubic yards, plus 1-set for each additional 50-cubic yard. 1-specimen shall be tested at 7-days and 2-specimens at 28-days; one specimen shall be retained in reserve for later testing if required.

C. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by the Owner's Representative, but will not be used as the sole basis for approval or rejection.

D. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Owner's Representative. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with AASHTO 501.24(b), or by other methods as directed.

END OF SECTION
SECTION 05 5 00 - METAL FABRICATION

PART 1 – GENERAL

1.01 SCOPE
A. Provide labor, material and equipment for the installation of the Site Metal Work as shown on the drawings and as specified.

1.02 RELATED SECTIONS
A. Section 32 12 12 - Skate Park Structure Concrete Paving
B. Section 03 37 00 - Shotcrete

1.03 QUALITY ASSURANCE
A. Qualification of Fabricators: Experienced in fabrication of miscellaneous metals.
B. Qualifications of Welders: Welding shall be done only by certified welding operators currently qualified, according to AWS D1.1.
C. Qualifications of Workmen: Provide at least one person who shall be present at all times during execution of this portion of the Work, and who shall be thoroughly familiar with the type of materials being installed, the referenced standards, the requirements of the Work, and who shall direct all work performed under this Section. Welds indicated may be made in shop or field with approval.
D. Reference Standards:

1.04 SUBMITTALS
A. Shop Drawings:
   1. Submit shop drawings for all custom fabricated items under this section. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners and accessories. Indicate welded connections using standard AWS welding symbols.
   2. Verification: Verify all measurements at the job. Show dimension, sizes, thickness, gauges, finishes, joining, attachments, and relationship of work to adjoining construction. Where items must fit and coordinate with finished surfaces and/or constructed spaces, take measurements at site and not from drawings.
   3. Coordination: Coordinate with work of Cast-In-Place Concrete Section.

1.05 DELIVERY, STORAGE AND HANDLING
A. Coordination: Coordinate with work of Cast-In-Place Concrete Section.
B. Storage of Materials: Materials which are stored at the project site shall be above ground on platforms, skids, or other supports. Protect steel from corrosion. Store other material in a weather-tight and dry place until ready for use.
C. Protection:
   1. Use all means necessary to protect miscellaneous metal before, during and after installation and to protect the installed work and materials of all other trades.
   2. Protect any adjacent materials or areas below form damage due to weld splatter of sparks during field welding.
D. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner's Representative and at no additional cost to the Owner.

1.06 JOB CONDITIONS
A. Examine existing conditions in which the work is to be installed. Notify Owner's Representative if conditions are unacceptable to begin work.
B. Do not proceed with the work until unsatisfactory conditions have been corrected.

1.07 COORDINATION
A. Templates and Built-ins: Furnish all anchors, fastenings, sleeves, setting templates and layouts affecting or installed in the work of other trades.
B. Delivery: Where items must be incorporated or built into adjacent work, deliver to trade responsible for such work in sufficient time that progress of work is not delayed. Be responsible for proper location of such items.
C. Approved sample(s) shall be used as the standard of workmanship and shall remain on site until work has been completed and approved by the Owner's Representative.

PART 2 - PRODUCTS

2.01 MATERIALS
A. See plan details.
B. WELDING RODS: E-70 series low hydrogen unless otherwise noted on drawings.

2.02 GROUT
A. Non-shrinking Master Builder's "Embedco", Conrad Sovig's "metel-Mxs Grout", Sonneborn's "Ferrolih G Redi-Mixed Grout" or approved equal.

2.03 OTHER MATERIALS
A. All other materials, not specifically described but required for a complete and proper installation for miscellaneous metals, shall be new, first quality of their respective kinds and subject to the approval of the Owner's Representative.

PART 3 - EXECUTION

3.01 EXISTING CONDITIONS
A. Inspection: Prior to all 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.
B. Discrepancies: In the event of discrepancy, immediately notify the Owner's Representative.

3.02 COORDINATION
A. General: Install metal fabrications in strict accordance with the Drawings, the approved Shop Drawings, and all pertinent codes, regulations and standards.
B. Delivery: Insure timely delivery of all metal fabrications that must be installed in other work so as not to delay that work.

3.03 INSTALLATION
A. General:
1. Install metal fabrications in strict accordance with the drawings, the approved Shop Drawings, and all pertinent codes, regulations and standards.
2. Obtain Owner's Representative review prior to site cutting or making adjustments which are not part of scheduled work.
3. Install items square and level, accurately fitted and free from distortion or defects.
4. Align all metal fabrications as shown on the Drawings, and where vertical or horizontal members are shown, align them straight, plumb and level within a tolerance of 1 in 500.
5. Make provisions for erection stresses by temporary bracing. Keep work in alignment.
6. Replace items damaged in course of installation.
7. Perform field welding in accordance with AWS D1.1
8. After installation, grind and touch-up field welds.

3.04 WORKMANSHIP
A. Layout: Set all work plumb, true, rigid, and neatly trimmed out. Miter corners and angles of exposed molding and frames unless otherwise noted.
B. Fitting: Fit exposed connections accurately together to form tight hairline joints.
C. Labor: Employ only workmen specifically skilled in such work.

3.05 FABRICATION
A. Shop assemble in largest practicable dimensions, making members true to length so assembling may be done without fillers.
B. Provide all surfaces free of file marks, dents, hammer marks, wire edges or any unsightly surface defects.
C. STEEL PIPE COPING: Roll pipe to conform to top radius curve of each bowl and ledge as shown on drawings. Refer to drawings for relational tolerance to concrete surface and other steel.

3.06 ATTACHMENTS AND REINFORCEMENTS
A. Do all cutting, shearing, drilling, punching, threading, tapping, etc., required for site metalwork or for attachment of adjacent work. If applicable, drill or punch holes; do not use cutting torch.

3.07 OTHER CONNECTORS
A. Make all permanent connections in ferrous metal surfaces using welds where at all possible; do not use bolts or screws.

3.08 WELDING
A. Preparation: Remove all rust, paint, scale and other foreign matter. Wire-brush all flame-cut edges. Clamp members as required and alternate welds, all as necessary to prevent warping or misalignment.
B. Exposed Welds: Uniformly grind smooth (no tolerance) all welds normally exposed to view and feel in the finished work.
C. Faulty and Defective Welding: Chip out and replace all welding showing cracks, slag inclusion, lack of fusion, bad undercut or other defects ascertained by visual or other means of inspection. Replace and re-weld at no cost to Owner.
D. Field Welding:
   1. Procedure: Comply with AWS code of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work. Cold Spray Galvanize when complete.
   2. Protection: Protect all adjacent surfaces from damage due to weld sparks, spatter, or tramp metal.
3.09 SURFACE TREATMENT AND PROTECTIVE COATINGS

A. Cleaning:
1. Thoroughly clean all mill scale, rust, dirt, grease and other foreign matter from ferrous metal prior to any galvanizing, or painting.
2. Conditions that are too severe to be removed by hand cleaning, shall be cleaned using appropriate methods for solvent cleaning, power tool cleaning and brush-off blast cleaning.

B. Exterior Ferrous Metal:
1. Grind smooth all welds, burrs, and rough surfaces. Clean all coping from grease.
2. Shop coat iron metal items; using anti-rust primer (red color).
3. All welds to be painted with primer after appropriate connections and grinding has taken place. Touch-up all scratched primer prior to shotcrete application.

3.10 CLEAN-UP

A. Keep all areas of work clean, neat and orderly at all times. Keep paved areas clean during installation.

B. Clean up and remove all debris from the entire work area prior to Final Acceptance to satisfaction of Owner's Representative.

END OF SECTION
PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.

B. The requirements set forth in the Supplemental Conditions shall be in addition to the standards provided herein.

1.02 DESCRIPTION

A. Unless otherwise noted, furnish all labor, materials and equipment for the complete installation of all site furniture, including play equipment and play surfacing, as shown on the Plans and as specified herein.

1.03 REFERENCES

A. Nothing in the Plans or Specifications is to be construed to permit work not conforming to regulating codes and standards. The Contractor shall furnish without extra charge any material and labor, when required, by the compliance with these rules and regulations, even though the work was not mentioned in these particular Specifications or shown on the Plans.

B. The product manufacturer shall supply complete Specifications for the installation of all site furnishings, including play equipment and play surfacing.

1.04 SUBMITTALS

A. Submittals for specified items are required. Conform to City of Rio Vista General Conditions. The Contractor shall submit a materials summary sheet indicating which items will be installed as specified and which items are proposed for substitutions. The Contractor shall submit proof of order within ten (10) working days of the Notice to Proceed, indicating all specified materials have been ordered, noting “as specified” or “substitution proposed”.

B. On the date of the Notice to Proceed, the Contractor shall immediately place the order to purchase all site furnishings as specified on the Plans and as outlined herein. Proof of all orders shall be submitted to the Project Manager within ten (10) working days of the Notice to Proceed.

1.05 RECORD DRAWINGS

A. The Contractor shall keep an accurate record of the as-built conditions of the miscellaneous site amenities. These records shall be updated daily and kept at the construction site. At any time, the Inspector may examine the conditions of the “as-builds” to ensure compliance of the above.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Bollards shall be shown on the Plans and as specified herein, as manufactured by DuMor Site Furnishings or approved equal. www.dumor.com.
1. Steel Bollard, model #400-36/S-1SL, removeable and embedded models, color to be black powder coated, or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Contractor to provide experienced workers or subcontractors to install all site furnishings. The workers or subcontractor must demonstrate that at least five (5) similar projects and two (2) furnishings similar to each type of those specified for this project have been installed in the last five (5) years.

B. All site furnishings shall be installed per manufacturer’s instructions.

C. Heights of benches shall be as follows, unless otherwise required by Federal Accessibility Guidelines; California Title 24 or other code requirements:

<table>
<thead>
<tr>
<th>Description</th>
<th>Height Above Finish Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bench Surface Height</td>
<td>16” Minimum, 18” Maximum</td>
</tr>
</tbody>
</table>

D. Carefully install all furnishings and equipment without disturbance to adjacent finishes. Contractor shall be responsible for the damage and subsequent repairs of damaged finished product.

3.02 CLEANING

A. Thoroughly clean all areas where work has occurred. Remove from the site excess material, debris and rubbish.

B. Take all precautions to protect completed work. Immediately repair or replace all damaged areas due to tire ruts, erosion, compaction failure, etc. Keep all erosion control measures intact.

3.03 WARRANTY

A. Contractor shall also provide a written warranty covering all materials, equipment and workmanship furnished by him to be free of all defects after installation is accepted, including all defective parts that may have been found.

B. Submit written warranty on company letterhead addressed to the City when providing as-built drawings.

C. Attach cut sheets of installed items to the warranty.

END OF SECTION
SECTION 31 10 00 – CLEARING AND GRUBBING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included:
Clear and grub the site to remove and dispose of all trash, debris, and natural growth which will interfere with new construction as shown on the Drawings and specified herein except such objects as are designated to remain or are to be removed in accordance with other sections of these specifications within designated limits of the project area. This work shall also include the preservation from injury or defacement of all vegetation and objects designated to remain.

Strip topsoil from areas that are to be incorporated into the limit of project and storage of topsoil where it will not interfere with other work.

B. Related work:
1. Section 01 57 23: Temporary Storm Water Pollution Control
2. Section 02 41 13 Selective Site Demolition

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 ENVIRONMENTAL REQUIREMENTS

A. Provide temporary erosion and sedimentation control measures as necessary per Section 01 57 23 and CASQA or ABAG storm water pollution prevention guidelines to prevent soil erosion and discharge of sediment laden water runoff or airborne dust to adjacent properties and water resources.

B. Sitework Sub-Contractor shall be totally responsible to conduct inspections, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

C. Sitework Contractor will be responsible to remove temporary erosion and sedimentation controls when site is re-stabilized and re-vegetated. Any areas disturbed during removal of temporary measures will be restored and stabilized within fourteen (14) calendar days.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Provide materials, not specifically described but required for proper completion of the work of this Section, as selected by the contractor subject to the approval of the City of Rio Vista Representative.

B. MATERIAL OWNERSHIP

Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.
PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Notify the City of Rio Vista Representative of conditions which may be detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 PROTECTION

A. Protect existing utilities indicated or made known.
B. No vegetation shall be cut outside the limits of construction as determined by the grading requirements shown on the Drawings, unless approved by the City of Rio Vista Representative.
C. Protection of persons and property:
   1. Barricade open depressions and holes occurring as part of this Work, and post warning lights on property adjacent to or with public access.
   2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
   3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by operations under this Section.
D. Use means necessary to prevent dust from becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.
E. Maintain access to the site at all times.
F. Protect and maintain benchmarks and survey control points from disturbance during construction. If monuments need to be removed they shall be referenced by a Land Surveyor Licensed in the State of California. Same applies to property corners that are disturbed by site clearing operations.
G. Locate and clearly flag trees and vegetation to remain or to be relocated.

3.03 CLEARING

A. All stumps and root mat shall be thoroughly removed regardless of their depth and regardless of the proposed fill height. The area within the construction lines shall be cleared of all surface objects and all trees, stumps, roots and other objectionable obstructions resting on or protruding through the surface of the original ground not designated to be retained, unless otherwise noted.

3.04 CONSERVATION OF TOPSOIL

A. After the area has been cleared of vegetation, strip the existing topsoil to the depth necessary to remove all organic material and reveal firm subsoil at the direction of the City’s Representative.
B. Topsoil to be respread shall consist of organic surficial soil reasonably free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, weeds, roots, and other objectionable material.
C. Stockpile topsoil in areas where directed by the City’s Representative. Construct storage piles to freely drain surface water. Cover storage piles as required to prevent windblown
dust. Install erosion control silt fence around perimeter of topsoil stockpile if there are no other measures between the stockpile and water resources.

3.05 DISPOSAL

A. General:
   1. Disposal of structures, trash and debris resulting from clearing operations shall be off site. The Contractor shall submit, prior to beginning work, a plan for the satisfactory disposal of material and debris from the clearing and grubbing operations for approval of the City of Rio Vista Representative. Said plan shall provide for the satisfactory disposal of perishable materials and rubbish within thirty (30) days after accumulation, unless a longer period is authorized in writing by the City of Rio Vista Representative, to prevent infestation of pests.

3.06 UTILITIES

A. Coordinate with utility companies and agencies as required.

B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed. Arrange with utility companies to shut off indicated utilities.

C. Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

D. Notify the City’s Representative not less than two (2) days in advance if there are any proposed utility interruptions.

E. Do not proceed with utility interruptions without the City Representative’s written permission.

END OF SECTION
SECTION 31 20 00 EARTHWORK

PART 1 - GENERAL

1.01 SUMMARY
A. Section Includes:
   1. Rough Grading of site, excavating, backfilling and grading, as required to obtain contours and elevations indicated on the Drawings.
   2. Subgrade preparation for pavement areas.
B. Related Sections:
   1. Section 01 57 23 Temporary Storm Water Pollution Prevention
   2. Section 02 41 13 Selective Site Demolition
   3. Section 31 22 16 Finish Grading
   4. Section 31 23 33 Trenching and Backfilling

1.02 REFERENCES
A. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; American Association of State Highway and Transportation Officials; 1997.
B. ASTM D 698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2000a.
D. ASTM D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN·m/m³)); 2000.
G. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 1996.
H. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 1996.

1.03 DEFINITIONS
A. Excavation: Earth excavation includes excavation of pavement and other obstructions visible on the ground surface; underground structures, utilities and other items to be demolished and removed; together with earth and other materials encountered that are not classified as rock or unauthorized excavation.
B. Subgrade: Previously undisturbed material prepared, and compacted to required density and elevation to support a structure, or pavement system.
C. Subbase: Compacted layer of approved material used between the subgrade and the pavement.
D. Earth Excavation: Materials not otherwise defined as rock excavation including removal and disposal of pavements, visible on grade obstructions, underground structures, utilities and other items indicated to be removed.
Val de Flores Skate Park

E. Unauthorized Excavation: Includes removal and disposal of material beyond subgrade elevations, and dimensions indicated without prior approval of the City’s Representative.

F. Standard Specifications: Refers to the Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation (Caltrans), latest edition. In case of conflict between the Standard Specifications and these Specifications, the strictest Specifications shall govern. Provisions for measurement and payment specified within the Standard Specifications shall be disregarded and the provisions of this Agreement shall govern.

G. Relative Compaction: Ratio, expressed as a percentage of field dry density as compacted to a maximum dry density of representative sample of the same material determined by ASTM D1557.

1.04 SUBMITTALS

A. Conform to the requirements in Section 5.6 of the City of Rio Vista General Conditions.

B. Product Data: Provide data and test results for products and materials specified or proposed to be used.

C. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.

D. Manufacturer’s Certificate: Certify that products meet or exceed specified requirements.

E. Project Record Documents: Record actual locations of pipe mains, valves, connections, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

F. Deliver samples of imported materials to City’s Representative in quantities sufficient for additional testing. Deliver at least 15 days prior to use.

G. Submit a Confined Space Emergency Plan prior to any personnel entering trenches or excavations greater than 5 feet in depth.

1.05 QUALITY ASSURANCE

A. Test reports: provide testing reports, including laboratory analysis and other information as required to demonstrate suitability of all materials used.

B. Testing and Inspection Service: engage soil testing and inspection service, for quality assurance testing during earthwork operations. Contractor shall provide compaction testing as directed by the City’s Representative, which at a minimum, shall include:
   1. Contractor shall notify the City’s Representative of testing reports immediately upon completion, and shall provide certified results from the soils engineer within one week thereafter.
   2. Testing shall be performed for each area of fill as defined by the City’s Representative.

1.06 DELIVERY, STORAGE AND HANDLING

A. Stockpile satisfactory excavated materials in approved location, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
   1. Do not store soil within drip line of trees indicated to remain.

1.07 PROJECT CONDITIONS

A. Subsurface Conditions: the Contractor is responsible to determine the exact nature and extent of subgrade conditions.
   1. Subgrade and geotechnical information provided by the City shall not relieve the Contractor of responsibility for being familiar with the character and extent of subsurface conditions that may be encountered during performance of the Work.

B. Do not use explosives.
C. The Contractor shall assess and evaluate all site conditions and layout the work before any earthwork shall begin.

1.08 MAINTENANCE

A. Repair settlement at excavated areas for a period of one year following final acceptance at no additional cost to City. Remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment; restore appearance, quality, and condition of surface and finish to match adjacent work, and eliminate evidence of restoration.

1.09 WARRANTY

A. The Contractor shall warrant the Work against settlement for a period of one year after the date of final acceptance, and shall repair damage caused by settlement within that time. For the purpose of this Specification, settlement will be deemed to have occurred if on paved surfaces, depressions greater than one half inch occur relative to paved surfaces outside the excavation area.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Fill Materials: Use only suitable fill except where sand is required. Do not use water saturated soil material or contaminated material.
   1. On-site soils are considered suitable for use in engineered fill material, provided that they are at a workable moisture content and free of significant concentrations of organic materials, rubble or debris. The on-site clay soils located at an approximate depth of ten feet below existing site grades are not considered suitable for use in fill construction beneath at-grade structures, exterior slab-on-grade concrete or pavements.
   2. If imported material is required for fill and backfill, the imported material must be granular soil, free of organic matter, which does not exhibit excessive shrinkage or swelling behavior when subjected to changes in water content. Imported fill shall contain no environmental contaminants or construction debris.
      a. Have 100 percent pass through a 3 inch sieve, 95 to 100 percent pass through a 1 inch sieve.
      b. Be thoroughly compacted without excessive voids.
      c. Have a maximum Plasticity Index of 15.
      d. Have an Expansion Index less than 20.

B. Topsoil: Refer to Section 32 90 00 for requirements.

PART 3 - EXECUTION

3.01 PREPARATION

A. Excavate by hand within drip-line of trees to remain. Do not damage trees or roots, prevent dehydration of exposed roots.

B. Surfaces to receive fill and soils to be compacted shall be free of standing water, and shall not be saturated with water.

C. In asphalt concrete paved areas, neatly saw cut pavement 12 inches beyond the limits of excavations. If edge of pavement is located within 30 inches of limit of excavation, remove pavement to existing edge.

D. Remove existing utility lines that traverse the site as indicated on Drawings.

3.02 SITE CLEARING

A. Complete clearing and grubbing, including stripping of topsoil, as indicated on Drawings and in Section 31 10 00.
B. Scarify and compact the upper 12 inches of the exposed subgrade-to-receive-fill to 90 percent relative compaction.

3.03 EXCAVATION

A. Additional Excavation: When excavation has reached required subgrade elevation shown on Drawings, notify City’s Representative who will inspect conditions. When unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and place excavated material as directed by the City’s Representative. Road base and smaller stones, rocks, etc. shall generally be used on site under paved areas and as required for engineered fill, as described in this section. Unsuitable materials are generally described as follows:
1. Areas to be planted:
   a. Stones, rocks, or other deleterious materials not suitable for plant growth that are over 2” in diameter.
   b. Existing Asphalt, Concrete, or road base.
   c. Road base, gravel, or other material co-mingled with soil but comprising 50% or greater of the overall volume.
2. Areas to be Paved:
   a. Stones, rocks, or other materials 4” or larger, or as otherwise defined in the project geotechnical report.

B. Stability of Excavations: Comply with OSHA regulations for slope requirements. Provide shoring and bracing where required slope cannot be maintained.

C. Excavation for Pavements: Cut surface under pavements to comply with pavement section shown on Contract Documents.

D. Coordinate excavation, preparation and backfill with Work of related Sections for Project Site utilities, drainage and irrigation systems.

E. Replace the excavated material or any approved supplementary import material in lifts not to exceed 8 inches in compacted thickness, moisture condition to at least two percent above the optimum moisture content, and compact each lift to a minimum 90 percent relative compaction.

F. For areas within building pads and concrete flatwork areas, after stripping and any overexcavation, scarify exposed subgrade to a depth of at least 12”. Moisture condition to not less than the optimum moisture content, then compact to no less than 90 percent relative compaction. The upper 12-inches of fill shall be compacted to 90% relative compaction per the project geotechnical report.

G. Perform footing excavations after fill placement is complete.

3.04 COMPACTION

A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification as indicated below.

B. Percentage of Maximum Density Requirements: Compact soil to no less than the following percentages of maximum density in accordance with ASTM D 1557.
   1. Building Slabs: Compact top 12 inches of subgrade and each layer of backfill or fill material at 90 percent relative compaction.
   2. Lawn or Unpaved Areas: Compact top 12 inches of subgrade and each layer of backfill or fill material at 90 percent relative compaction.
   3. Vehicular pavements: Compact top 12 inches of subgrade and each layer of backfill or fill material at 90 percent relative compaction. The upper 6 inches of pavement subgrade soils shall be compacted to at least 95 percent relative compaction.

C. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material,
to prevent free water appearing on surface during or subsequent to compaction operations.

1. Remove and replace or scarify and air dry soil material that is too wet to permit compaction to specified density.
2. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

3.05 BACKFILL AND FILL

A. Place approved soil material in layers to required subgrade elevations, for each area classification listed below. Do not use water saturated soil material or contaminated material.

1. In excavations, use approved excavated or borrow material.
2. At planted areas, use any stockpiled topsoil, and in addition, place 6” approved imported topsoil. Roto-till into on-site topsoil or subgrade to a depth of 8”. Compact to 85% relative density.
3. Under walks and pavements, use base material, approved excavated or borrow material, or combination of both to achieve required subgrade.
4. Under steps, use approved subbase material.
5. Under building slabs, use approved drainage fill material.

B. Backfill excavation as promptly as work permits, but not until completion of the following:

1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
2. Inspection, testing, approval, and recording locations of underground utilities.
4. Backfilling of voids with satisfactory materials.
5. Removal of trash and debris from excavation.
6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

C. Place backfill and fill materials in uniform lifts not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 6 inches loose depth for material compacted by hand-operated tampers. Prevent wedging action of backfill against structures and displacement of piping and conduit.

3.06 GRADING

A. Provide smooth finished surfaces within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated on Drawings, or between such points and existing grades.

B. Grade areas outside of building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes, within the following tolerances above or below required finish grade.

1. Lawn and Unpaved Areas to Receive Topsoil: 0.10 foot
2. Pavements and Walks: Line, grade and cross-section, 0.10 foot
3. Structures: 0.10 foot.

C. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

D. Grade fill under building slabs smooth and even, free of voids, to required elevation. Provide final grades with a tolerance of plus or minus 1/4 inch in 10 feet.

3.07 FIELD QUALITY CONTROL

A. See the Section 1.5 and the General Conditions for requirements related to field inspection, quality control, and testing.

B. Perform compaction density testing on compacted fill in accordance with ASTM D6938.
C. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D1557 ("modified Proctor"), or AASHTO T 180.

D. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no additional cost to the City.

3.08 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Comply with the applicable provisions of the General Conditions.

B. Except for stripped topsoil or other material indicated to remain City property, cleared materials shall become the Contractor’s property and shall be removed from the Project site.

3.09 PROTECTION

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

B. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F.

C. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

D. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

END OF SECTION
PART 1 - GENERAL

1.01 SCOPE OF WORK
A. Provide all labor, materials, services and equipment indicated on Drawings and/or herein specified to complete all Landscape Grading Work.
B. Finish grading shall consist of scarifying and establishing finish grade to conform to the contours, grades, line and shapes as indicated on the Drawings, and insuring that all landscape areas are uniformly graded to an outlet.

1.02 DEFINITIONS
A. Subgrade: Surfaces upon which additional specified materials are to be placed, prepared or constructed.
B. Rough grade: The establishment of grades to one-tenth (1/10) foot plus or minus tolerance of grades required to accomplish the Work described in other documents and drawings.
C. Finish grade: The establishment of grades to a plus or minus tolerance of final grades as indicated on Drawings. Tolerances are specified in applicable documents of the specifications (i.e. Planting, Pedestrian Concrete, Decomposed Granite, etc.)
D. Grading intent: Spot elevations (grades) and contours are indicated based on the best available data. Drawings are referenced to provide additional site grading data. The intent is to maintain constant slopes between spot elevations. If a spot elevation is determined to be in error, or the difference in elevation between points change, contact the City's Representative immediately for field adjustments of spot elevations.

1.03 EXISTING UTILITIES
A. Contractor is responsible to contact Underground Service Alert (USA North) at 811 and mark the location of all existing utilities before commencing Work.
B. Refer to the Drawings for information on proposed site utilities and their locations.
C. Retain and protect in operating condition all active utilities traversing the site designated to remain.
D. Where existing utilities not indicated on the Drawings are encountered, support, shore up, protect same and immediately contact the City's Representative for continuance and/or relocation of such services.

1.04 PROTECTION OF EXISTING CONDITIONS AND ADJACENT PROPERTIES
A. Use all means necessary to protect existing conditions designated to remain, newly constructed conditions and adjacent properties. Avoid any encroachment on adjacent properties.
B. Prevent damage to existing benchmarks, pavement and utility lines. In the event of damage or loss, immediately make all repairs and replacements required to the satisfaction of the City's Representative and at no additional cost to the City.

1.05 EXISTING TREES
A. The Contractor shall protect the tops, trunks and roots of all existing trees on/or near the project site that are designated to remain.
B. Do not permit the parking of vehicles, or storage of materials or equipment under the dripline of existing trees.

1.06 QUALITY ASSURANCE
A. Finish grades shall conform to contours, grades, lines and shapes, as indicated on Drawings, with uniform slopes between finish grades or between finish grades and existing grades.

B. Establish finish landscape grades in a continuous, uniform line, resulting in a uniform surface with positive drainage and without ridges or water pockets.

C. Finish landscape grade tolerance shall be .04 feet plus or minus of final grades indicated on Drawings.

1.07 SUBMITTALS
A. Not Used.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL
A. Contractor shall be responsible for bringing rough grades in to conformity with finish grades as indicated on the plans. Comply with tolerances specified in this document and as specified in applicable documents of the specifications (i.e. concrete, asphalt, planting, etc.).

B. Conduct work in an orderly manner. Dirt shall not be permitted to accumulate on streets or sidewalks or washed into storm drains.

C. Use all means required to prevent the erosion of freshly graded areas during construction and until such time as proposed hard surfaces and landscaping have been constructed.

3.02 LAYOUT
A. Maintain all bench marks, control monuments and stakes. Protect from damage and dislocation.

B. If any discrepancies are found by the surveyor between the Drawings and actual site conditions, the City’s Representative reserves the right to make minor adjustment in Work Specified as necessary to accomplish the intent of the Contract Documents without increased cost to the City.

3.03 FINISH LANDSCAPE GRADING
A. Scarify or rototill to a 6" depth all planting areas prior to finish grade operations and work until uniform and free from large clods larger than one (1) inch in greatest dimension.

B. Finish grade shall conform, after compaction, to shapes, spot elevations and contours as indicated on Drawings, with uniform levels or slopes between finish elevations or between finish elevations and existing elevations.

C. Soil amendment and preparation shall comply with Section 32 90 00

D. Spread excess soil material excavated from plant pits to establish subgrades in surrounding planting areas.

E. Top six (6) inches of all areas to be planted shall be free of stones, stumps or other deleterious matter one (1) inch in greatest dimension.

F. Compact soil in planting areas to 85% relative compaction in accordance with ASTM D1557-78.

G. Fine grade all planting areas to a smooth, loose and uniform surface. Eliminate uneven areas, ridges and depressions.
H. Shrub/ground cover planting areas shall be graded two and one-half (3-1/2) inches below adjacent paved areas, sidewalks, valve boxes, mow bands, drains, etc. in order to receive three (3) inch depth of mulch, establishing final grade one-half (1/2) inches below these surfaces.

I. Turf areas shall be graded 1/2 inch in hydroseed, and 1/2 inch in sod, below adjacent paved area, sidewalks, valve boxes, mow bands, drains, top of seat walls etc. in order to receive turf, establishing final grade flush with these surfaces.

J. Minor excess soil may be incorporated into planting areas to form minor berms not exceeding slopes of 12:1 without prior approval. Dispose of any unacceptable materials or excess soil legally at an offsite location at no additional expense to the owner.

3.04 OBSERVATION SCHEDULE
A. Normal progress observations shall be requested by the Contractor from the City’s Representative as per observations listed in Sections: 32 84 00 Landscape Irrigation, and 32 90 00 Planting.

3.05 CLEAN UP
A. Remove all trash, excess soil, or rubbish from the property. All scars, ruts or other marks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site.

B. The Contractor shall leave the site area broom-clean and shall wash down all paved areas within the Contract area, leaving the premises in a clean condition acceptable to the City's Representative.

END OF SECTION
SECTION 31 23 33 – TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included: Trench, backfill, and compact as specified herein and as needed for installation of underground utilities associated with the Work.

B. Related work:
   1. Section 01 57 23: Temporary Erosion and Sediment Control
   2. Section 02 41 13: Selective Site Demolition
   3. Section 31 10 00: Earthwork
   4. Section 31 22 16: Finish Grading
   5. Section 33 41 00: Storm Utility Drainage Piping

C. References:
   1. California Department of Transportation Standard Specifications, current Edition

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use equipment adequate in size, capacity, and numbers to accomplish the work of this Section in accordance with the established schedule.

C. Comply with requirements of governmental agencies having jurisdiction.

1.03 PRODUCT HANDLING

A. Comply with City of Rio Vista General Conditions.

1.04 QUALITY ASSURANCE

A. Per Section 31 20 00

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

A. Backfill materials:
   1. Provide soil materials free from organic matter and deleterious substances, containing no rocks or lumps over 3 inches in greatest dimension, and with not more than 15% of the rocks or lumps larger than 3 inches in their greatest dimension.
   2. Fill material is subject to the approval of the City’s Representative, and is that material removed from excavations or imported from off-site borrow areas, predominantly non-expansive soil free from organics and other deleterious matter.
   3. Do not permit materials having a dimension greater than 1 inch in the first 12 inches of fill.
   4. Cohesionless material used for backfill: Provide sand free from organic material and other foreign matter, and as approved by the City’s Representative. Cohesionless material is used for backfill, it must be
separated from surrounding subgrade by a non-woven geotextile fabric equivalent to Mirafi 140N.

5. Where aggregate backfill is called for provide aggregate complying with requirements in Section 19-3 of the California Department of Transportation Standard Specification, current Edition.

2.02 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Subcontractor subject to the approval of the City’s Representative.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

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

3.02 FINISH ELEVATIONS AND LINES

A. Comply with City of Rio Vista General Conditions.

3.03 PROCEDURES

A. Utilities:
1. Unless shown to be removed, protect active utility lines shown on the drawings or otherwise made known to the Subcontractor prior to trenching. If damaged, repair or replace at no additional cost to the City.
2. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Subcontractor, promptly take necessary steps to assure that service is not interrupted.
3. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the City.
4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the City’s Representative and proceed as instructed.
5. Do not proceed with permanent relocation of utilities until written instructions are received from the City’s Representative.
6. Notify the City’s Representative not less than two days in advance if there are any proposed utility interruptions.
7. Do not proceed with utility interruptions without the City Representative’s written permission.

B. Protection of persons and property:
1. Barricade and maintain protection in open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.
2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

C. Dewatering:
1. Remove all water, including rain water, encountered during trench and substructure work to an approved location by pumps, drains, and other approved methods.

2. Keep trenches and site construction area free from water.

D. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

E. Maintain access to adjacent areas at all times.

3.04 TRENCHING

A. Provide sheeting and shoring necessary for protection of the Work and for the safety of personnel.

1. Prior to backfilling, remove all sheeting.

2. Do not permit sheeting to remain in the trenches except when, in the opinion of the City’s Representative, field conditions or the type of sheeting or methods of construction such as use of concrete bedding are such as to make removal of sheeting impracticable. In such cases, the City’s Representative may permit portions of sheeting to be cut off and remain in the trench.

B. Open cut:

1. Excavate for utilities by open cut.

2. If conditions at the site prevent such open cut, and if approved by the City’s Representative, tunneling may be used.

3. Short sections of a trench may be tunnelled if, in the opinion of the City’s Representative, the conductor can be installed safely and backfill can be compacted properly into such tunnel.

3. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, backfill the voids remaining after removal of the objects as directed by the City’s Representative.

4. When the void is below the subgrade for the utility bedding, use suitable earth materials and compact to the relative density as directed by the City’s Representative.

5. When the void is in the side of the utility trench or open cut, use suitable earth or sand compacted or consolidated as directed by the City’s Representative.

6. Remove boulders and other interfering objects, and backfill voids left by such removals, at no additional cost to the City’s Representative.

7. Excavating for appurtenances:

a. Excavate for maintenance holes and similar structures to a distance sufficient to leave at least 12 inches clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.

b. Over-depth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete as directed by the City’s Representative, and at no additional cost to the City.

C. Trench to the minimum width necessary for proper installation of the utility, with sides as nearly vertical as possible. Accurately grade the bottom to provide uniform bearing for the utility.

D. Where trenching occurs in existing lawns, remove turf in sections and keep damp. Replace turf upon completion of the backfilling.

E. Cover:
1. Provide minimum trench depth indicated below to maintain a minimum cover over the top of the installed item below the finish grade:
   a. Areas subject to vehicular traffic:
      1. Sanitary sewers: 36";
      2. Storm drains: 24".
   b. Areas not subject to vehicular traffic:
      1. Sanitary sewers: 30";
      2. Storm drains: 24", unless noted otherwise.
   c. All areas:
      1. Water lines: 30";
      2. Natural gas lines: 30";
      3. Electrical cables: 42";
      4. Electrical ducts: 36".
   d. Concrete encased:
      1. Pipe sleeves for water and gas lines: 24";
      2. Sanitary sewers and storm drains: 12";
      3. Electrical ducts: 24".

2. Where utilities are under a concrete structure slab or pavement, the minimum depth need only be sufficient to completely encase the conduit or pipe sleeve, and electrical long-radius rigid metal conduit riser, provided it will not interfere with the structural integrity of the slab or pavement.

3. Where the minimum cover is not provided, encase the pipes in concrete to 6 inches from outside diameter. Fill void between outside wall of utility and concrete with fine sand or other material approved by the City’s Representative. Provide concrete with a minimum twenty-eight (28) day compressive strength of 3500 psi. Place warning tape on top of concrete cap longitudinally with the buried utility.

3.05 BEDDING

A. Provide bedding as indicated on the Drawings.

3.06 BACKFILLING

A. General:
   1. Do not completely backfill trenches until required pressure and leakage tests have been performed, and until the utilities systems as installed conform to the requirements specified in the pertinent Sections of these Specifications.
   2. Except as otherwise specified or directed for special conditions, backfill trenches to the ground surface with selected material approved by the City’s Representative.
   3. Reopen trenches which have been improperly backfilled, to a depth as required for proper compaction. Refill and compact as specified, or otherwise correct to the approval of the City’s Representative.
   4. Do not allow or cause any of the Work performed or installed to be covered up or enclosed by work of this Section prior to required inspections, tests, and approvals.
   5. Should any of the Work be so enclosed or covered up before it has been approved, uncover all such Work and, after approvals have been made, refill and compact as specified, all at no additional cost to the City of Rio Vista.

B. Lower portion of trench:
   1. Deposit approved backfill and bedding material in layers of 6 inch maximum thickness, and compact with suitable tampers to the density specified in Sections 31 20 00, to achieve suitable bedding (shading) of pipe.
2. Take special care in backfilling and bedding operations to not damage pipe.

C. Remainder of trench:
1. Except for special materials for pavements, backfill the remainder of the trench with material free from stones larger than 3 inches or 1/2 the layered thickness, whichever is smaller, in any dimension.
2. Deposit backfill material in layers not exceeding the thickness specified in Section 31 20 00.

3.07 COMPACtion
A. Compact each 6 inch layer of backfill material as specified in Section 31 20 00.
B. Adjacent to buildings: Mechanically compact backfill within ten feet of buildings.
C. Consolidation of backfill by jetting with water may be permitted, when specifically approved by the City’s Representative, in areas other than building and pavement areas.

3.08 TEST FOR DISPLACEMENT OF STORM AND SANITARY SEWERS
A. Check sewers and storm drains to determine whether displacement has occurred after the trench has been backfilled to above the pipe and has been compacted as specified.
B. Flash a light between maintenance holes or, if the maintenance holes have not yet been constructed, between the locations of the maintenance holes, by means of a flashlight or by reflecting sunlight with a mirror.
C. If the illuminated interior of the pipe line shows poor alignment, displaced pipes, or any other defects, correct the defects to the specified conditions and at no additional cost to the City.

3.09 FIELD QUALITY CONTROL
A. The City’s Representative will inspect and approve open cuts and trenches before installation of utilities, and will make the following tests:
   1. Assure that trenches are not backfilled until all tests have been completed.
   2. Check backfilling for proper layer thickness and compaction.
   3. Verify that compaction test results conform to the specified requirements, and that at each compacted initial and final backfill layer, at least one (1) test for each 200 feet or less of trench length, but no fewer than two (2) tests are performed.
   4. Assure that defective work is removed and properly replaced.
B. The City’s Representative will inspect all storm and sanitary sewers for displacement after completion of grading work in the immediate area.

END OF SECTION
SECTION 32 11 23 - AGGREGATE BASE COURSES

PART 1 - GENERAL
1.01 SUMMARY
A. Section includes:
   1. Aggregate base courses.

1.02 RELATED SECTIONS:
A. Section 32 13 13 Cast-In-Place Concrete

1.03 REFERENCES
A. American Association of State Highway and Transportation Officials:
B. ASTM International:
   1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
   2. ASTM D1556 - Standard Test Method for Density of Soil in Place by the Sand-Cone Method.
   3. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft³ (2,700 kN-m/m³)).
   4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
   5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
C. Caltrans Standard Specifications:

1.04 QUALITY ASSURANCE
A. Provide source and gradation from current testing (less than four months from date submitted).
B. Furnish each aggregate material from single source throughout the Work.

PART 2 - PRODUCTS
2.01 MATERIALS
A. Coarse Aggregate Fill Type Class II: per Caltrans Standard Specifications.

PART 3 - EXECUTION
3.01 EXAMINATION
A. Verify existing conditions before starting work.
B. Verify substrate is dry and has been inspected and verify gradients and elevations are correct.

3.02 PREPARATION
A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
B. Do not place aggregate on soft, muddy, or frozen surfaces.

3.03 AGGREGATE PLACEMENT
A. Spread aggregate over prepared substrate to the total compacted thickness as shown on the plans.

END OF SECTION
SECTION 32 12 12 - SKATE PARK STRUCTURE CONCRETE PAVING

PART 1 - GENERAL

1.01 SUMMARY
   A. This Section includes exterior concrete pavement for the following:
      1. Slabs on grade.
      2. Vertical walls and footings.
      3. Flatwork

1.02 DEFINITIONS
   A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.03 SUBMITTALS
   A. Submit to Owner's Representative; concrete mix design and letters from material suppliers certifying that materials comply with the standards referenced herein.
   B. Submit to Owner's Representative; shop drawings for all fabricated steel edging and steel accessories.
   C. Submit to Owner's Representative: Cut sheets for Evaporation Retardant and Finishing Aid, and Stain.

1.04 QUALITY ASSURANCE
   A. Comply with provisions of the following standards, except where more stringent requirements are indicated.
      1. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice".
      2. American Concrete Institute (ACI) "Manual of Standard Practice".
   B. Installer Qualifications: The Contractor or an experienced installer who has completed pavement work similar in material, design, and extent to that indicated for this Contract.
   C. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
   D. Concrete Testing: The Owner's Independent Testing Agency shall perform material evaluation tests.
   E. The skate park structure improvements including finish grading, rebar work, fabricated metal work, concrete pool coping, concrete work, and shotcrete work require qualification as described herein.

1. Contractors bidding the skate park structure shall have satisfactory completed the installation of two (2 minimum number) similar skate park projects in accordance with the project plans and written specifications. The qualification can be met by either the prime bidding contractor or a subcontractor bidding to the prime. Qualifying projects must include concrete skate park structures of comparable size, finishes, transition depths, coping types and features built within the last five (5) years. Qualifying projects by either the prime contractor or the skate park subcontractor must be listed in the bid proposal documents under the section CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS.
2. If Contractor intends to use an ACI certified Nozzleman for Shotcrete installation other than the Nozzleman who performed work for the required qualifying projects, the Contractor must submit three (3) qualifying projects that the ACI Certified Nozzleman has performed. Qualifying project shall be of the same requirement as described herein.

3. Only the Nozzleman referenced with the bid shall be permitted to perform shotcrete work for the said project. Should the Contractor want to substitute the qualifying Nozzleman of record with another Nozzleman, the Contractor shall make an application to the Owner providing all qualifying records of the proposed substitute Nozzleman at least five (4) days in advance of said work. The Owner shall reserve the right to reject any substitute Nozzleman not meeting the qualifying requirements.

4. The Skate Park Contractor (either prime or subcontractor) shall provide reference for two (2) qualifying reference projects and proposed Nozzleman including location of qualifying projects, size, owner, and owner’s contact information in the CERTIFICATION OF BIDDER’S EXPERIENCE AND QUALIFICATIONS.

1.05 PROJECT CONDITIONS
A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Do not install concrete work over saturated, muddy or frozen subgrade.

1.06 QUALITY INSURANCE
A. Perform all work in accordance with all rules and standards as required by the Owner’s Representative.

PART 2 - PRODUCTS
2.01 EDGE FORMS AND SCREED CONSTRUCTION
A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces. 
   1. Use flexible or curved forms for horizontal curves of a radius 100-feet or less.

B. Form-Release Agent: Commercially formulated form-release agent with a maximum of 350 mg/L volatile organic compounds (VOCS) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

C. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24-hours after concrete placement. Forms shall provide a continuous straight, smooth surface. Forms shall be of sufficient thickness to withstand pressure of newly placed concrete without bowing or deflecting.

D. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.

E. Check completed formwork and screeds for grade and alignment to the following Tolerances:
   1. Top of Forms: Not more than 1/8-inch in ten feet.
   2. Vertical Face on Longitudinal Axis: Not more than 1/8-inch in 10-feet.

F. Moisten wood forms immediately prior to placing concrete.
2.02 STEEL REINFORCEMENT MATERIALS

A. Reinforcement Bars shall be Grade 40, deformed, as per the plan details.
C. Clean reinforcement of loose rust, oil and mill scale, earth, ice, or other bond-reducing materials.
D. Deformed steel bars shall be located in both directions, continuous throughout the entire structure and as indicated on the plan details. Steel rebars shall extend out from the features for 24-inches, 2-inches about base rock. (Rebars for the flat work shall tie onto the rebars extending for 24-inches from the features.) Lap rebars 24-inches and tie. Stagger joints. Do not heat to bend.
E. Provide adobe supports for rebars at 36-inches on center. Supports must keep the rebars at 2-inches above base rock and 2-inches below finish surfaces of concrete. Rebars shall be 2-inches away from outside surfaces of concrete in all locations. Rebars shall be free of rust, oil and other deleterious conditions.

2.03 FABRICATED STEEL EDGING AND COPING

A. All edging and coping shall be per the plan details with all connections welded and ground smooth. Cold galvanize all areas where grinding and welding occur.

2.04 CONCRETE MATERIALS

A. Portland Type II Cement.
   Fly Ash: ASTM C 618, Class F or C.
B. Aggregate: ASTM C 33, Class 4, from a single source, with coarse aggregate as follows: Aggregate Size: ¾-inch min.; 1-1/2-inches max. nominal. Do not use fine of coarse aggregates containing substances that cause spalling.
C. Water: Fresh, clean, potable water free of foreign materials.

2.05 REQUIRED CURING AND FINISHING MATERIALS

A. Non-permeable Burlene ™ curing blankets or approved equal; ASTM C 171. The concrete should be hard enough to prevent surface damage when covering with concrete blankets.
B. Water: Potable.
C. Evaporation Retardant and Finishing Aid: Burke Film Concentrate – Available from WhiteCap Inc. Burk Film Concentrate shall be used in accordance with the manufacture recommendations. All finishing of concrete surfaces must be completed with this product, finishing with water is not allowed.

2.06 CONCRETE MIXES

A. Prepare design mixes, proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
B. Proportion mixes to provide concrete with the following properties:
   1. Compressive Strength (28-Days): 4000-psi (6.5 sac min.)
   2. Slump Limit: no less than 2-inch and no more than 4-inch.
C. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having air content as follows within a tolerance of plus or minus 1.5-4.0 percent.
D. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94 and ASTM C 1116.

E. When air temperature is between 85-degrees Fahrenheit and 90-degrees Fahrenheit, reduce mixing and delivery time from 1-1/2-hours to 75-minutes; when air temperature is above 90-degrees Fahrenheit, reduce mixing and delivery time to 60-minutes. Do not use concrete that has been in transport or pump hoses for more then 90-minutes from time of initial mix.

F. Concrete mix design shall be submitted to Owner's Representative for review and approval.

PART 3 - EXECUTION

3.01 PREPARATION

A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. (Crushed rock base shall be ¾-inch: Class II Aggregate Base placed at a minimum depth of 6-inches in all locations to receive concrete or as noted otherwise. Proceed with pavement only after nonconforming conditions have been corrected and subgrade is ready to receive pavement and sample pour has been approved.

B. Remove loose material from compacted subbase surface immediately before placing concrete.

C. The Contractor shall keep the project area as clean as possible during construction. The Contractor shall be responsible to clean up and remove all spillage, overpour, discarded forming material, rejected work or material and all refuse or debris resulting from the installation work.

3.02 JOINTS

A. Cold Joints: Construct true to line with faces perpendicular to surface planes of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Sawcut Joints: Form weakened-plane contraction joints, sectioning concrete into areas of approximately 200-square feet. See Sawcut Plan for locations. Construct Sawcut joints to a depth of 1-1/2-inches and as follows:
   1. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades within 48-hours of any said pour. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

3.03 CONCRETE PLACEMENT

A. Inspection: Before placing any transitional concrete, the Owner's Representative will inspect the completed formwork installation, screed forms, templates, reinforcement steel, and any other items to be embedded or cast in place.

B. Remove snow, ice, frost or standing water from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.

D. Deposit and spread concrete in a continuous operation between transverse joints
   1. When concrete placing is interrupted more than two hours, place a cold joint.
E. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.

F. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels and joint devices.

G. Screed pavement surfaces with a straightedge and strike off. Commence initial floating using bull floats or darbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations.

H. Concrete paving shall be a minimum of five 5-inches thick in all locations or as indicated per the plan details.

3.04 CONCRETE FINISHING

A. General: Wetting of concrete surfaces during screeding, initial floating, or finishing operations is prohibited.

B. Finish: The finished surface of all concrete shall be a hard troweled, smooth finish.

C. All horizontal and vertical edges of concrete shall have 1/2-inch radii.

D. All connections between pours must be absolutely flush and smooth.

E. Grinding finished concrete to achieve the specified finishes will not be accepted.

3.05 CONCRETE PROTECTION AND CURING

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

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.

D. Apply curing blankets 2-hours after finishing concrete. Overlap blankets two 2-feet all sides. Do not use fine of coarse aggregates containing substances that cause spalling.

E. Maintain ongoing moisture of concrete by drip irrigation lines located under curing blankets. Provide ongoing moisture for a minimum of 14-days per finished area of concrete.

F. Concrete shall be protected from any traffic for 30-days.

G. The Contractor shall take necessary actions to protect the concrete from any vandalism or damage that may occur as a result of trespassing.

3.06 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:
   2. Thickness: minus 1/4-inch.
   3. Surface: Gap below 10-foot-long, unleveled straightedge not to exceed 1/4-inch.
   4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1-inch.
   5. Vertical Alignment of Tie Bars and Dowels: 1/4-inch.
6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2-inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge.
8. Length of dowel 1/4-inch per 12-inches.
10. Contraction Joint Depth: Plus 1/4-inch, no minus.
13. Vertical Radii: 1/4-inch over length of transition as checked with true template.

3.07 FIELD QUALITY CONTROL

A. Independent Testing Agency: The Owner's Independent Testing Agency shall sample materials, perform tests, and submit test reports during concrete placement according to requirements specified.

B. Testing Services: Testing will be performed according to the following requirements:
1. Sampling Fresh Concrete: Representative samples of fresh concrete shall be obtained according to ASTM C172, except modified for slump to comply with ASTM C94.
2. Slump: AASHTO T119; one test at point of placement for each compressive-strength test, but not less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.
3. Air Content: ASTM C173 or AASHTO T152, pressure method; one test for each compressive-strength test, but not less than one test for each day's pour of each type of air-entrained concrete.
4. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40-degrees Fahrenheit and below and when 80-degrees Fahrenheit and above, and one test for each set of compressive-strength specimens.
5. Compression Test Specimens: ASTM C31; 1 set of 4-standard cylinders for each compressive-strength test, unless otherwise indicated. Cylinders shall be molded and stored for laboratory-cured test specimens unless field-cured test specimens are required.
6. Compressive-Strength Tests: ASTM C39; one set for each day's pour of each concrete class exceeding 5-cubic yards, but less than 25-cubic yards, plus 1-set for each additional 50-cubic yard. 1-specimen shall be tested at 7-days and 2-specimens at 28-days; one specimen shall be retained in reserve for later testing if required.

C. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by the Owner's Representative, but will not be used as the sole basis for approval or rejection.

D. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Owner's Representative. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with AASHTO 501.24(b), or by other methods as directed.

3.08 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, under strength, spalling, damaged, or defective, or does not meet requirements in this Section.

B. Drill test cores where directed by Testing Agency when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland concrete bonded to pavement with epoxy adhesive.
C. Protect concrete from damage. Exclude traffic from pavement for at least 14-days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material.

E. The Contractor shall remove the curing blankets and the temporary drip irrigation system, as well as hose and sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

F. Grinding concrete to achieve specified finishes will not be allowed.

END OF SECTION
SECTION 32 13 13 CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes site concrete, including but not limited to pavements, walls, footings and sub slabs.

B. Provide all labor, materials, equipment, and services to complete the work as indicated on the drawings, and in accordance with these specifications. Work includes but is not limited to the following:
   1. Concrete formwork
   2. Concrete reinforcement
   3. Cast-in-place concrete items:
   4. Concrete paving, sidewalks, ramps, pads, curbs, mow bands, etc.
   5. Miscellaneous concrete.
   6. All imbeds including anchor bolts, tiedowns, hold downs with bolts, straps, and sleeves.

C. Related Sections
   1. Section 12 93 00 Site Furnishings
   2. Section 32 84 00 Landscape Irrigation
   3. Section 03 37 00 Shotcrete
   4. Section 32 12 12 Skate Park Structure Concrete Paving

1.02 REFERENCES


B. ASTM - American Society for Testing and Materials

C. ACI - American Concrete Institute, Manual of Concrete Practice.

D. CBC – California Building Code

1.03 DEFINITIONS

A. Percent Compaction: ASTM D1557, percentage as shown on the Drawings of the maximum in-place dry density of the same material.

1.04 SUBMITTALS

A. Conform to the requirements Section 5.6 of the General Conditions.

B. Shop Drawings for Reinforcement: Submit shop drawings for fabrication, bending and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars and arrangement of concrete reinforcement. Include special reinforcement required at openings through concrete structures.

C. Concrete Design Mixes:
   1. The preparation of design mixes will be the responsibility of the Contractor. Mix designs may be prepared by the supplier and shall be certified by a Civil Engineer registered in California. Mix designs will be designed by the supplier and approved by the City’s Representative.

   2. Written reports will be submitted to the City’s Representative of each proposed mix for review. Do not begin concrete production until mixes have been reviewed by the City’s Representative.

   3. Adjustment of Concrete Mixes: Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results and other circumstances warrant; at no additional cost to the City and as accept-
ed by the City’s Representative. Provide submittals as in A above. Submit adjustment designs a minimum of 48 hours ahead of schedule for concrete production.

D. **Product Data:** Manufacturers’ current catalog cuts and specifications for the following:
   1. Expansion joint filler, sealant, backer rod and bond breaker, including manufacturer’s standard color chart for sealant
   2. Air-entrainment.
   3. Curing Compound.
   4. Fly Ash or Slag
   5. MDO plywood made for forming

E. **Samples:**
   1. MDO plywood made for forming, one 6"x 6" piece

F. **Certificates:**
   1. Reinforcing Steel: Certificate of compliance
   2. Concrete Mix Design: Ticket for each batch delivered showing the following: Mix identification, weight of cement, aggregate, water, and admixtures, aggregate sizes/proportion, and air entrainment.

1.05 **QUALITY ASSURANCE**


B. Comply with all pertinent recommendations contained in ACI, "Recommended Practice of Concrete Formwork, ACI-347", and Section 2606, 1997 California Building Code (CBC).

C. Construct forms to sizes, shapes, lines and dimensions indicated on Drawings, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in Work. Use selected materials to obtain required finish. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.

D. Provide complete forms of such strength and construction as to prevent any spread, shifting, or settling when concrete is deposited, and tight enough to avoid any leakage or washing out of cement mortar.

E. Provide at least one person who shall be present at all times during execution of this portion of the Work and who shall be thoroughly trained and experienced in placing the types of concrete specified and who shall direct all Work performed under this Section. For finishing of exposed surfaces of the concrete, use only thoroughly trained and experienced journeymen concrete finishers.

F. Conform to Section 90 of the Caltrans Standard Specifications.

G. The Contractor shall contact City’s Representative of any discrepancies between field conditions and plans prior to proceeding with Work. The written dimension on Drawings shall supersede the graphic presentation. Dimensions are from back of curb, center line, base lines or as noted on the plans. All field adjustments must be approved by City’s Representative prior to installation.

H. All walks and curbs shall be established in the field for review and approval prior to concrete pours. The Contractor shall layout the area or form work for review by City’s Representative. If approval is not obtained, the Contractor is responsible for removal of any unauthorized field adjustments.

I. Transitions of curves to other curves, and curves to straight line tangents, shall be smooth and continuous.
J. Place expansion joint and score joints as shown on plan. Adjustments in the field shall be made only with the approval of City's Representative.

K. Where new concrete paving is placed adjacent to curbs or existing concrete paving, a construction joint (cold joint) shall be provided between the new concrete paving and curbs or existing concrete paving.

L. Sleeving shall be coordinated with concrete work. Refer to plans for sleeving locations.

M. The Contractor shall be responsible for repairing, at no additional cost to City, any disturbed existing landscape designated to remain which resulted from construction of this project.

N. Some materials may require a several week order lead time. Contractor is responsible for determining any and all ordering lead times, and providing required materials at the project site in a timely manner. No unapproved substitutions will be allowed. Contact City's Representative immediately if a specified material is not available.

O. Mock-ups:
   1. One 4 foot square mock up for all poured in place finishes, including concrete paving and vertical walls, as shown on the drawings. Mock-ups shall also include finish, jointing, thickness, and edging.
   2. Mock-ups shall be reviewed and approved by the City's Representative prior to commencing full work. Approved mock-up shall serve as a standard of quality for judging the acceptance of paving on the Project and if approved, may remain as part of the finished work.

P. Lines and Levels: To be established by a licensed Surveyor or registered Civil Engineer.

Q. Mix Standards: Conform to the ACI Manual and the Portland Cement Association's "Design and Control of Concrete Mixes".

R. Design of Concrete Mix: Employ approved commercial testing laboratory to design concrete mixes as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Minimum Cement Content</th>
<th>28-Day Minimum Strength</th>
<th>Maximum Slump</th>
<th>Aggregate Size</th>
<th>Maximum Water / Cement Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curbs and Footings</td>
<td>517 lb/cu. yd</td>
<td>3,000 PSI</td>
<td>4 in.</td>
<td>¾ in</td>
<td>0.55</td>
</tr>
<tr>
<td>Exterior Walkways</td>
<td>517 lb/cu. yd</td>
<td>3,000 PSI</td>
<td>4 in.</td>
<td>¾ in</td>
<td>0.45</td>
</tr>
<tr>
<td>Walls and Paving</td>
<td>564 lb/cu. yd</td>
<td>4,000 PSI</td>
<td>4 in.</td>
<td>¾ in</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Refer to Sections 03 37 00 Shotcrete and 32 12 12 Skate Park Structures Concrete for additional mix design requirements.

S. Fly Ash:
   1. Source Control: The following sources of ash are not to be used:
      a. Ash from a peaking plant instead of a base loaded plant.
      b. Ash from plants burning different coals or blends of coal.
      c. Ash from plants burning other fuels (wood chips, tires, trash) blended with coal.
      d. Ash from plants using oil as a supplementary fuel.
      e. Ash from plants using precipitator additives, such as ammonia.
      f. Ash from start-up or shut-down phases of operation.
      g. Ash from plants not operating at a "steady state."
      h. Ash that is handled and stored using a wet system.
   2. Fly ash used in concrete should be as consistent and uniform as possible. Fly ash to be used in concrete should be monitored by a quality assurance/quality
control (QA/QC) program that complies with the recommended procedures in ASTM C311. These procedures establish standards for methods of sampling and frequency of performing tests for fineness, loss on ignition (LOI), specific gravity, and pozzolanic activity such that the consistency of a fly ash source can be certified.

1.06 QUALIFICATION OF INSTALLER

A. Installer shall be thoroughly trained and experienced in the skills required, and shall be completely familiar with the products and their installation as specified on the Drawings and in this Section. Installer shall be present at all times during progress of Work of this Section and shall direct all Work performed.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Delivered Mixes: Coordinate delivery so that mixes may be immediately poured upon arrival at site.

B. Components and Accessories:
   1. Fittings and Reinforcements: Protect from rust, soil and oil contamination at all times. Store on pallets above ground.
   2. Templates: Protect from damage. Test accuracy prior to each use.

1.08 SEQUENCING AND SCHEDULING

A. Coordination: Coordinate all items of other trades to be furnished and set in place. Coordinate proper installation of all accessories embedded in the concrete and for the provision of holes, openings, etc., necessary to the execution of the work of the trades in ample time that progress of the work is not delayed.

1.09 JOB CONDITIONS

A. Cold-Weather Placement: comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

   1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
   2. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators.

B. When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.

   1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg F (32 deg C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor’s option.
   2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
   3. Fog spray form, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles or dry areas.

1.10 COORDINATION
A. Secure all pipe sleeves, anchors and bolts, including those for angle frames, inserts, ties and other materials in connection with concrete construction, in position before concrete is placed.

B. Obtain information and instructions from other Trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete so provisions for their work can be made without delaying the project.

1.11 FORM CONSTRUCTION TOLERANCES

A. Set form to required grades and lines, rigidly braced and secured. Install sufficient quantity of forms to allow continuous progress of Work so that forms can remain in place for twenty-four hours after concrete placement.

B. Check completed formwork for grade and alignment to following tolerances:

C. Top of forms not more than one-eighth inch in ten feet vertical elevation.

D. Vertical face on longitudinal axis not more than one-fourth inch in ten feet horizontal width.

E. Circular or curved formwork shall be continuous, complete radii as indicated on Drawings. No straight segments in circular/curved formwork shall be accepted.

1.12 TESTS AND OBSERVATIONS

A. The following tests shall be made by a testing laboratory or by a certified Special Inspector as approved by the City. Costs for testing shall be borne by the Contractor. Special inspections for Concrete Construction shall be in accordance with Section 1704.4 and Table 1704.4 of the 2010 CBC and as noted below:

1. Compaction testing of aggregate base, one test for each area of work, or as determined by the City’s Inspector.

2. Periodic Inspection of reinforcing steel and placement.

3. Cement: Mill analysis and test reports by supplier certifying cement conforms to Specifications is acceptable in lieu of tests at the discretion of City’s Representative.

4. Provide free access to Work and cooperate with testing laboratory.

5. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.

6. Concrete Inspections:
   Continuous Placement Inspection: Inspect for proper installation procedures.
   Periodic Curing Inspection: Inspect for specified curing temperature and procedures.

7. Strength Test Samples:
   Sampling Procedures: ASTM C172.
   Cylinder Molding and Curing Procedures: ASTM C31, cylinder specimens.

8. Concrete cylinders: Make and cure in accordance with ASTM C31. Record shall be made of the time cylinders were made and of locations of concrete from which the cylinders were taken. Three identical cylinders shall be taken from each pour of 25 cubic yards or part thereof, being placed each day. When volume of concrete for any class of concrete would provide less than 5 sets of cylinders, take samples from five randomly selected batches, or from every batch when less than 5 batches are used. Make one additional cylinder during cold weather concreting, and field cure.

9. Field Testing:
   Slump Test Method: ASTM C143.
   Air Content Test Method: ASTM C173.
   Temperature Test Method: ASTM C1064.
   Measure slump and temperature for each compressive strength concrete sample.
Measure air content in air entrained concrete for each compressive strength concrete sample.

10. Cylinder Compressive Strength Testing:
    Test Acceptance: In accordance with ACI 318.
    Test one cylinder at 7 days.
    Test two cylinders at 28 days.

11. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

12. Should tests show that concrete is below specified strength; the Contractor shall remove all such concrete. Full cost of removal of inferior concrete, its replacement with concrete of proper specified strength and testing shall be borne by the Contractor.

1.13 CODES AND STANDARDS

A. ACI 301 “Structural Concrete for Building”
B. ACE 305 “Recommended Practice for Hot Weather Concreting”
C. ACI 306 “Recommended Practice for Cold Weather Concreting”.
D. ACI 308 “Curing Concrete”
E. ACI 309 “Recommended Practice for Consolidation of Concrete”
F. ACI 318 “Building Code Requirements for Reinforced Concrete”.
G. ACI 347 “Recommended Practice for Concrete Formwork”.
H. ACI 605 “Recommended Practice for Hot Weather Concreting”.
I. ACI 614 “Recommended Practice for Measuring, Mixing, and Placing Concrete”.
J. ASTM C31 “Practices for Making and Curing Concrete Test Specimens in the Field”.
K. ASTM C33-86 “Specifications for Concrete Aggregate”.
L. ASTM C347-89 “Specifications for Ready Mixed Concrete”.
M. ASTM C143 “Test Method for Slump Portland Cement Concrete”.
N. ASTM C150 “Portland Cement”.
O. ASTM C309 “Specifications for Liquid Membrane-forming Compounds for Curing Concrete”.
P. Western Concrete Reinforce Steel Institute (WCRSI) “Manual of Standard Practice”.
R. Section 90 of the Caltrans Standard Specifications.
S. Where provisions of pertinent codes and standards conflict with this Specification, the more stringent provisions shall govern.

PART 2 - PRODUCTS

2.01 CONCRETE REINFORCEMENT

A. Reinforcing Bars: Deformed Billet Steel Bars, ASTM A-615, Grade 40 or 60, containing a minimum of 70% total recycled content, clean and free from rust, scale, or coating that will reduce bond.

B. Smooth Dowels for Joints: ASTM A615, Grade 40 smooth, billet-steel bars, shop painted with iron-oxide zinc-chromate primer.

2.02 CONCRETE

A. Concrete Mix:
1. Ready-mixed concrete in accordance with ASTM C-94 and with aggregates comply with ASTM C-33 and Portland Cement ASTM C-150, Type II.
2. All mixes shall conform to applicable building code requirements listed herein or on the Drawings. All mix designs shall be submitted to the City’s Representative for approval before being used. Mix design shall show proportions of cement, fine and coarse aggregate, and water and graduation of combined aggregates. Calcium chloride shall not be added at any mix.
3. Concrete shall be Class B per Caltrans Standards.
4. Cement: All cement shall be Portland cement Type II, and shall be the product of one manufacturer. The temperature of cement delivered to the plant shall not exceed 150 degrees Fahrenheit.
5. Aggregates
Coarse aggregate shall have a minimum cleanliness value of 75.
Fine aggregate shall have a minimum of sand equivalent of 75.
Any suitable individual grading of coarse aggregates may be used.
6. Water: All water shall be clean and free from deleterious matter.
7. Admixture: No admixture of any type shall be used without prior approval of the City’s Representative.
8. Concrete shall be as specified: Class B
28-Day Minimum Strength: Refer to Table in Paragraph 1.5(R) above
Concrete slump: Refer to Table in Paragraph 1.5(R) above
Air Content: No air entrainment

B. Fly Ash: Pozzolanic admixtures, conforming to ASTM C618, Class C, with weight loss of ignition limited to not exceed 3 percent shall be used in mix designs to replace Portland Cement up to 15% by weight, unless noted otherwise on drawings.
1. Reference: ACI 211.4R-93.

C. Aggregate base for on-grade slabs:
1. As specified in the Standard Specifications of the State of California, Department of Transportation, Section 26, for “Class 2”

D. Water: Clean, potable (domestic) free from injurious amounts of salts, oils, acids, alkalis, organic materials or other deleterious matter. Available from source determined by City’s Representative.


F. Admixtures: Admixtures containing chlorides are not permitted. All admixtures shall be mixed in accordance with manufacturer’s written recommendations.

2.03 ACCESSORIES

A. Tie Wires: Black annealed, ASTM A-82, minimum 16 gauge.

B. Chains, Bolsters, Bar supports, Spacers: Sized and shaped for strength and support of reinforcement during installation and placement of concrete.

C. Stirrup Steel: ASTM A-82.

D. Snap Ties: Snap-off metal of fixed length capable of leaving no metal within one and one-half (1 1/2) inches of surface nor causing fractures, spall or other defects larger than one (1) inch in diameter.

E. Expansion Joint Materials:
1. Premolded Joint Filler: ASTM D1751, non-extruding and bituminous type resilient filler, compatible with sealant, and having a “guide strip” removable depth gauge.
Val de Flores Skate Park
Rio Vista, California

Cast-in-Place Concrete
Bid Set
32 13 13-8

Color shall be selected by the City’s Representative from the manufacturer’s full color selection.

3. Bond Breaker: Pressure-sensitive tape as recommended by sealant manufacturer to suit application.

F. Forms:
   1. Steel or wood of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal.
   2. Use forms that are straight and free of distortions and defects.
   3. Use flexible spring forms or laminated boards to form radius bends as required.

G. Form Release Agent: Colorless non-staining, free from oils. Chemical agent shall not impair bonding of paint or other proposed coatings.

H. Form-Facing Materials:
   1. All Surfaces: of sufficient strength to hold concrete properly in place and prevent leakage of water from forms.
   2. Exposed Surfaces: Matte finish, coated, medium density overlay plywood made for forming. No wood-textured finish will be permitted on exposed concrete unless specified as such.

I. Wood Headers:
   1. Wood: Construction Heart grade rough Redwood header and stake or pressure-treated rough Douglas Fir stake.

J. Curing Compound: ASTM C309, Type I-D, Class A. (omit where surface retardants are specified)

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Verify that subgrade preparation for concrete paving has been completed prior to commencement of work.

B. Surface Drainage:
   1. Report in writing conflicts discovered on the site or prior work, which would prevent positive drainage. Correct prior to performing concrete work.
   2. Do not permit finished paving surfaces to vary more than 1/4 in. measured with a 10 ft. metal straightedge, except at grade changes. No “birdbaths” or other surface irregularities will be permitted. Properly correct irregularities.

3.02 PREPARATION

A. Templates: Use templates for all anchor plates, bolts, inserts and other items embedded in concrete. Accurately secure so that they will not be displaced during placing of concrete.

B. Piping and Conduit: Do not embed piping, other than electrical conduit, in structural concrete. Locate conduit to maintain strength of structures at maximum. Verify size, length and location of electrical conduit.

C. Aggregate Base Course: Compact base course to thicknesses and relative compaction shown on Drawings.

3.03 CONCRETE REINFORCEMENT PLACEMENT

A. Fabricate reinforcement in accordance with ACI-315, providing a minimum concrete cover of three inches or as specified in UBC, latest edition.

B. Place all reinforcement in the exact position shown on the Drawings and secure in position during the placing and compacting of concrete. Wire bars together with No.16 gauge...
wire with ties at all intersections except where spacing is less than twelve inches in each
direction, in which case tie alternate intersections.

C. Place all sleeves, inserts, anchors and embedded items required for adjoining work or for
its support prior to concreting. Fill voids in embedded items temporarily with readily re-
movable material to prevent entry of concrete.

D. Give all contractors and subcontractors whose work is related to concrete or supported
by it, ample notice and opportunity to introduce and/or furnish embedded items before
concrete placement.

E. Verify that concrete reinforcement may be installed in strict accordance with all pertinent
codes and regulations, the Shop Drawings and the original design.

F. Verify score joints in sidewalk slabs are constructed at 5-foot maximum intervals.

G. Bending:
   1. Fabricate all reinforcement in strict accordance with the reviewed Shop Draw-
      ings.
   2. Do not use bars with kinks or bends not indicated on the Drawings or on the re-
      viewed Shop Drawings.
   3. Do not bend or straighten steel in a manner that will injure the material.
   4. Bend all bars cold.
   5. Make all bends for other bars, including hooks, around a pin having diameter not
      less than six times the minimum thickness of the bar for number 8 and smaller
      and eight times the thickness for number 9 and larger.

H. Before the start of concrete placement, accurately place all concrete reinforcement, posi-
tively securing and supporting by concrete blocks, metal chairs or spacer, or by metal
hangers.

I. Clearance:
   1. Preserve clear space between bars of not less than one time the normal diame-
      ter of round bars.
   2. In no case let the clear distance be less than 1 inch or less than 1-1/3 times the
      maximum size of aggregate.
   3. Provide the following minimum concrete covering of reinforcement:
   4. Concrete below ground deposited against forms:  3 inches.
   5. Concrete deposited against earth:  3 inches.
   6. Concrete elsewhere:  as indicated on Drawings.

J. Splicing:
   1. Horizontal bars:
   2. Place bars in horizontal members with minimum laps at splices sufficient to de-
      velop the strength of the bars. Splice 40 bar diameters minimum.
   3. Bars may be wired together at laps.
   4. Wherever possible, stagger the splices of adjacent bars.
   6. Other splices: Make only those other splices that are indicated on the approved
      Shop Drawings or specifically approved by City’s Representative.

K. Dowels/Anchor Bolts: Place all required steel dowels/anchor bolts and securely anchor
them into position before the concrete is placed. Bending the dowels after placement of
concrete will not be permitted.

L. Obstruction: In the event conduits, piping, inserts, sleeves, or any other items interfere
with placing reinforcement as indicated on the Drawings, or as otherwise required, imme-
diately consult City’s Representative and obtain review of new procedure before placing
concrete.

3.04 CONCRETE FORMWORK CONSTRUCTION
A. Construct support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete.

B. Contractor assumes full responsibility in the removal of forms. The length of time forms must remain in place depends on the rate of time required for concrete to obtain a proper strength. Remove forms after the concrete is sufficiently hard to prevent damage to concrete.

C. Circular or curved formwork shall be continuous, complete radii as indicated on Drawings. No straight segments in circular/curved formwork shall be accepted.

D. Reuse of Forms:
   1. Do not reuse forms if there is any evidence of surface wear or defect which would impair quality of surface.
   2. Thoroughly clean and properly coat forms before reuse.

3.05 INSTALLATION

A. Notification: Notify the City’s Representative at least 48 hours before placing concrete.

B. Placing Concrete:
   1. Unless otherwise indicated or required by the Drawings, concrete paving shall be placed on compacted subgrade to thicknesses indicated on the Drawings to 95 percent compaction.
   2. Place concrete in accordance with ACI-304 and Section 2605 of the California Building Code. Immediately after depositing, compact concrete thoroughly by mechanical vibration. No vibrating of form is allowed. Mixing shall be continuous, with no interruptions from the time the truck is filled until the time it is emptied. Concrete shall be placed within one and a half hours from the time water is first added.
   3. Insure anchors, seats, plates, and other items to be cast into concrete are placed, held securely and will not cause hardship in placing concrete.
   4. Insure reinforcement, inserts, embedded parts, etc. are not disturbed during concrete placement.
   5. Pour concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur, unless otherwise indicated on the Drawings.
   6. Lines and Grades: Elevations requiring accurate placement shall be set by a competent instrument man, using a professional type instrument.
   7. For all concrete placed on soil, the subgrade shall be wet and compacted prior to placing.
   8. Before placing concrete mixing, conveying and finishing equipment, forms and reinforcing shall be well-cleaned. Wet form before placing concrete, unless oiled forms are used.

3.06 CURING AND PROTECTION

A. Beginning immediately after placement, protect concrete from premature drying, from excessively hot or cold temperatures, and from mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for a period necessary for hydration of cement and hardening of concrete. In hot, dry and windy weather protect concrete from rapid moisture loss before and during finishing operations with an evaporation control material. Apply according to manufacturer’s instruction.

B. As soon as building flat work has hardened sufficiently to prevent injury to finish, apply an approved concrete curing agent in accordance with the manufacturer’s recommendation.

C. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Keep continuously moist for not less than seven (7) days.

D. Excessive cracking as determined by the City’s Representative which is aesthetically unacceptable or which will result in premature disintegration of paving shall result in replacement of concrete.
E. Removal of Forms: Remove no sooner than at seven days after each pour.

F. Conform to all applicable requirements for curing and protection of concrete, Sections 90-7 and 90-8 of the Caltrans Standard Specifications.

G. Spraying: Spray concrete during the curing period as frequently as drying conditions may require.

H. Curing: Cure concrete in accordance with the ACI Manual of Concrete Practice. During curing period, maintain concrete above 70 degrees F. for at least 3 days or above 50 degrees F. for at least 5 days.

I. Damage and Defacement: Protect all concrete work against damage and defacement during subsequent construction operations until final acceptance.

3.07 CLEANING AND PATCHING

A. Removal: Remove all projecting fins, bolts, wire, nails, etc., not necessary for the work, or cut them back 1 in. from the surface and patch in an inconspicuous manner.

B. Snap Ties: Immediately after removal of forms, cut off snap ties extending from the face of concrete to at least 1 in. deep in the concrete. Fill or plug as detailed in Drawings.

C. Voids: Fill holes with a 1:3 cement/sand mortar with the same color as the adjoining concrete. Mix and place the mortar as dry as possible and finish flush with the adjacent surface.

D. Corrective Patching: Correct all defects in concrete work. Chip all voids to a depth of at least 1 in. with the edges perpendicular to the surface and parallel to form markings. Fill all voids, surface irregularities, or honeycombing by patching or rubbing. Ensure that all concrete surfaces so repaired duplicate the appearance of the unpatched work.

E. Finishing: Work finish surface texture as specified below.

3.08 FINISHES

A. Light Broom Finish:
   1. Floating: Float surface once it has sufficiently stiffened. Check planeness of surface with a 10 ft. straightedge in all directions. Cut down high spots and fill lows. Immediately refloat to a uniform non-directional sandy texture.
   2. Obtain by drawing a stiff bristled broom across a floated finish.
   3. Direction of brooming to be perpendicular to direction of paving.

3.09 JOINTS

A. Construction Joints:
   1. Locate and install joints as indicated on the Drawings so they do not impair strength or appearance of slab.
   2. All joints and other edges shall be formed in the fresh concrete using an edging tool to provide a smooth uniform impression.

B. Score Joints:
   1. Locate and install joints as indicated on the Drawings so they do not impair strength or appearance of slab.
   2. Score joints shall be formed in the fresh concrete using a jointer to cut the groove so that a smooth uniform impression is obtained. All joints shall be struck before and after sandblast.
   3. Locate and form joints with 1/4 inch radius edges and 1 inch to 1-1/4 inch deep score at the location as shown on the Drawings.
   4. All joints and other edges shall be formed in the fresh concrete using an edging tool to provide a smooth uniform impression.

C. Expansion Joints:
   1. Locate and install joints as indicated on the Drawings so they do not impair strength or appearance of slab.
2. Expansion joints shall be provided at the location and 40-foot maximum intervals as shown on the plans, and at all locations where concrete paving abuts buildings, curbs or other proposed or existing structures. Install as per detail on the Drawings.

3. All joints and other edges shall be formed in the fresh concrete using an edging tool to provide a smooth uniform impression.

4. Install backer-rod and joint sealant as indicated on the Drawings.

5. Sealing of Expansion Joints: After the curing period, strip out all depth gauge strips and carefully clean expansion joints. Fill with joint compound as shown on Drawings. Avoid spilling compound on paved surfaces or overflowing from joint.

6. Protect expansion joints from damage until placement of filler or caulk.

3.10 FIELD QUALITY CONTROL

A. Samples: Contractor shall coordinate with the City to select a qualified testing laboratory to take samples for testing during the course of the work as described in the General Conditions.

B. Field inspection and testing will be performed by a qualified testing laboratory in accordance with ACI 318 and shall conform to the General Conditions.

C. Cost of Testing: Contractor shall be responsible for costs associated with testing.

D. Rejected Materials: Remove off the site all concrete below specified strength.

E. Cost of Removal and Retesting: Contractor shall be responsible for costs associated with removal and costs associated with retesting.

F. Defective Work: Remove in its entirety and replace all defective concrete work which after corrective patching, rubbing, etc., fails to duplicate the appearance of unpatched work and/or conform to the standards set forth in these Specifications.

G. Observe formwork continuously while concrete is being placed to see that there are no deviations from desired elevation, alignment, plumbness or camber.

H. If during construction any weakness develops and falsework shows undue settlement or discoloration, stop work, remove affected construction if permanently damaged, and strengthen falsework.

END OF SECTION
PART 1 - GENERAL

1.01 SUMMARY

A. Scope of Work: Provide complete irrigation system to provide supplemental water necessary to sustain planting in healthy condition.

B. Related Sections:
   1. Section 31 22 13: Site Grading
   2. Section 31 22 16: Finish Grading
   3. Section 32 90 00 Planting
   4. Section 32 91 13 Hydroseeding and Soil Preparation
   5. Section 32 98 00: Landscape Maintenance

1.02 SUBMITTALS

A. Material List
   1. Manufacturer’s product technical data for every product installed shall be submitted prior to performing the work. Product information shall include the manufacturer, model number, and options (if any) for all equipment proposed.

B. As-built Drawings
   1. As-built Drawings showing location of constructed work (if different from locations shown on plan) shall be submitted to the City’s Representative for review prior to project turnover. Drawings shall include dimensions from two permanent points of reference (i.e., built objects and not including plant material). Items to be located include:
      a. Mainline (maximum dimension interval of 100’ along straight runs, dimension all changes in direction)
      b. Valves (all types)
      c. Point of connection
      d. Control wiring (if different from mainline)
      e. Other equipment as directed by City’s Representative

C. Controller Charts
   1. Charts indicating the area(s) irrigated by each zone, including existing zones, shall be prepared. Multiple sheets may be required to clearly identify all areas.
      a. Charts shall be separated by controller.
      b. The chart shall be prepared on a black line reduction of the plans.
      c. Zones shall be identified by number and by varying colors. Colors shall not be duplicated on any one sheet.
      d. Charts shall be laminated, 10 mils both sides.
      e. Charts shall be prepared and available in the controller enclosure or otherwise turned over during the final inspection of the irrigation system, but in any case, prior to project acceptance or turnover.

D. Operation and Maintenance Manual
   1. Prepare an Operation and Maintenance manual including the following:
      a. Table of Contents
      b. Contact information including
         1). Contractor’s and sub contractors’ name, address, email, and telephone number.
         2). Guarantee statement.
         3). Manufacturer’s product representative and contact information, if consulted or otherwise contacted in conjunction with construction.
      c. Copy of the irrigation controller schedule provided in the construction drawings.
d. The irrigation controller schedule as programmed (if different from above).
e. Product information, parts sheets, installation instructions, and operation manual for all material and equipment installed (as applicable).

E. Equipment to be furnished:
   1. Provide the following to the City’s representative prior to acceptance:
      a. Two sets of any special tools or keys required to access or operate any equipment installed.
      b. One quick coupler key and hose swivel for every 10 (or fraction thereof) quick couplers installed.

1.03 QUALITY ASSURANCE

A. Manufacturer’s directions and instructions and drawings shall be followed in all cases where information is not provided on the drawings or these specifications.

B. Explanation of Drawings:
   1. For design clarity, drawings are generally diagrammatic and not indicative of exact placement or quantities as may be required to complete the work. Any question as to the placement of equipment and line shall be resolved prior to installation.
   2. For design clarity, drawings do not indicate all outlets, fittings, sleeves, or other material as may be required to complete the work. Contractor shall review the plans and investigate existing conditions, and shall provide all material required to meet existing conditions and install a complete and functional system.

C. Prior to commencing work, Contractor shall:
   1. Review the site and resolve all obstructions, conflicts, or discrepancies that may be present.
   2. Verify the point of connection and available pressure and flow as indicated on the drawings.
   3. Verify the electrical point of connection and coordinate work.
   4. Verify sleeves (if indicated as existing).

D. Contractor shall furnish a Guarantee on company letterhead bearing the signature of an authorized representative of the company, including the following information:
LANDSCAPE IRRIGATION SYSTEM GUARANTEE

Project Name: ____________________________________________________________

Project Location: __________________________________________________________

We hereby guarantee the above-referenced landscape irrigation system we furnished and installed is free from defects in materials and workmanship, and that the work has been completed in substantial conformance with the contract documents. We agree to replace or repair any defects which may develop during the period of one year from the date of acceptance and also to repair or replace any damage resulting from the repair or replacement of the irrigation system at no additional cost to the owner, excepting ordinary wear and tear, unusual abuse, or neglect. We shall make such repairs or replacements within 10 days of written notification by the owner. In the event of our failure to make such repairs or replacements within the time specified, we authorize the owner to proceed to have repairs or replacements made at our expense and will reimburse reasonable costs and charges therefore upon demand.

Signed: ____________________________ Date: __________________________

Title: ____________________________

Company name: ____________________________

Company address: ____________________________

Contact phone: ____________________________

Contact email: ____________________________

1.04 COORDINATION AND SCHEDULING

A. The Contractor shall be responsible for promptly scheduling and progressing the work so as not to delay the project, including:

1. Coordination with other trades as required.
2. Timing of work and coordinating power, water, and other services or requirements.
3. Notifying the City’s Representative of the following observations, with the advance time indicated:
   a. Mainline, control wire, and valve installation and testing – 48 hours
   b. Lateral line and sprinkler installation – 48 hours
   c. Coverage test – 48 hours
   d. Final Inspection – 7 days

PART 2 - PRODUCTS

2.01 PIPING MATERIALS
A. Polyvinyl Chloride (PVC) Pipe shall be made from National Sanitation Foundation (NSF) approved Type I, Grade I virgin PVC compound conforming to ASTM resin specification D1785. All PVC pipe shall bear the following marked continuously: Manufacturer’s name, nominal pipe size, schedule or class, pressure rating in pounds per square inch (PSI), NSF approval, and date of extrusion.

1. Mainline (constantly pressurized) Pipe and Fittings
   a. Mainline and sub-mains up to 2.5” in size shall be PVC schedule 40. Fittings and outlets shall be PVC schedule 40 solvent weld, NSF approved, conforming to ASTM D2466. Offsets shall be 3” minimum. No mainlines shall be smaller than 1” or use 1-1/4” pipe or fittings.
   b. Mainline and sub-mains 3” through 8” shall be bell and gasket PVC Class 200, conforming to ASTM D2241. Fittings, joint restraints and saddle taps for outlets shall be Class 350 ductile iron conforming to AWWA C153. Offsets shall be 8” minimum.

2. Lateral Line Pipe and Fittings
   a. Lateral lines shall be PVC Schedule 40 for sizes 3/4” to 2-1/2”, and Class 200 conforming to ASTM D2241 for sizes 3” and above. Fittings shall be PVC schedule 40 solvent weld, NSF approved through 3” and Class 350 ductile iron with joint restraints, conforming to AWWA C153, for sizes 4” and above.

B. Thrust Restraints:
   1. Ductile iron joint restraints shall be used for all piping 4” and larger in diameter, including lateral lines.
   2. Concrete thrust blocking shall be used for all mainlines 3” in diameter. Wrap all thrust-blocked pipes with 1 mil. or heavier plastic sheet prior to placing concrete.

C. Brass Pipe and Fittings shall be 85 percent red brass, seamless, conforming to ASTM B43. Fittings shall be schedule 40 threaded pipe.

D. Copper pipe shall be type ‘K’, hard tempered seamless conforming to ASTM B88. Soldered joints shall comply with ASME B16.22. Flux shall conform to ASTM B 813, and solder shall conform to B 32. Cast fittings joints shall comply with ASME B16.18.

E. Galvanized Pipe and Fittings shall be schedule 40, threaded and hot dipped galvanized, complying with ASTM A53. Male end of threaded fittings shall be wrapped with three layers of PTFE tape. All Galvanized pipe and fittings installed below grade shall be wrapped with two layers of minimum 10 mil. pipe wrap.

F. Sleeves shall be PVC schedule 40.

G. Conduit shall be rigid non-metallic PVC schedule 40 bell-end, conforming to ANSI/UL 651 and NEMA TC-2.
   1. Elbows shall be long-sweep schedule 40 bell-end, conforming to ANSI/UL 651 and NEMA TC-3
   2. Couplings, adapters, and fittings shall conform to UL 514B and NEMA TC-3.

2.02 BACKFLOW ASSEMBLIES
A. Are existing.

2.03 VALVES
A. Isolation (mainline) Valves
   1. Valves shall be the same size as the pipe they are installed on. An isolation valve shall be installed downstream of the backflow device, or if none, at the point of connection, whether shown on the plans or not.
   2. Valves 3” or smaller shall be gate-type bronze with threaded ends, a minimum working pressure of 200 psi, non-rising stem with a cross handle.
B. Valves installed immediately upstream of Remote Control Valves shall be Schedule 80 PVC with integrated union for sizes 2” and smaller. Shutoff valves upstream of 3” RCV’s shall be gate-type bronze as listed above.

C. Quick Coupling Valves (QC) shall be as specified on the drawings. Valves shall have a brass two-piece body with a minimum working pressure of 125 psi and be operable with a standard quick coupler key.

D. Remote Control Valves (RCV) shall be as specified on the drawings. Valves have a manual flow adjustment, fully potted solenoid, and pressure regulation.

2.04 VALVE BOXES

A. Boxes for isolation valves and quick couplers shall be a 10” x 10-1/4” round box with bolt-down lid. Extension sleeve shall be PVC with a minimum diameter of 6”.

B. Boxes for RCV’s shall be 9-1/2” x 16” x 11” rectangular box with bolt-down lid, and extensions as required. Use a separate valve box or jumbo valve box for drip control assemblies if required to allow disassembly and servicing of filter in box.

C. Boxes for drip flush valves and air relief valves shall be 7” or 6” round boxes with push-on lids.

D. Color: Valve boxes and lids shall be green for turf areas, brown for mulched areas, and purple where required for reclaimed water designation.

E. Identification: Remote Control Valve box lids shall be heat-branded with the controller and valve number (e.g.: A13). Quick Coupling Valves shall be branded “QC.” Master Valves shall be branded “MV.” Isolation Valves shall be branded “IV.”

2.05 STRAINERS AND FILTERS

A. Mainline: as indicated in the drawings.

B. Drip irrigation: provide an in-line wye-type filter with a minimum filtration of 200 mesh (75 micron) downstream of the remote control valve, upstream of in-line pressure regulator.

2.06 MASTER VALVE AND FLOW SENSOR

A. As indicated in the drawings

2.07 CONTROL WIRING

A. Traditionally wired systems: direct burial solid copper wire, sized according to the length of the run, but minimum 14 gauge for control wires and 12 gauge for common wires. Wire jacket color shall be white for common wire, red for control wires, and yellow for spare wires. Install a minimum of 2 spare wires from the controller to furthest extent(s) of the mainline – see drawings for additional requirements.

B. Two-wire path systems: wiring shall conform to the controller manufacturer’s requirements.

C. Communication wiring between sensor(s) and controller shall conform to the manufacturer’s requirements and shall be installed in electrical conduit, 3/4” diameter for runs of 50 feet or less, and 1” minimum diameter for longer runs. Junction boxes shall be installed at intervals not exceeding 100 feet.

D. Connectors shall be direct bury splice kits pre-filled with insulating gel designed to encapsulate a Yellow or Red twist on wire connector, with a temperature range of 32 to 120 degrees F. Wire splice kits shall be UL-listed for wires carrying greater than 24 volts.

2.08 AUTOMATIC CONTROLLER
2.09 OVERHEAD EMITTER ASSEMBLIES
A. As indicated on the drawings.
B. All nozzles shall include radius adjustment features, excepting bubblers.
C. Rising-stem bodies shall include a molded wiper seal with UV resistant material, internal pressure regulation.
D. Bodies with optional factory-installed check valves shall be installed as required to prevent low-head drainage.
E. All bodies shall be installed on swing arms with 360 degree adjustment in three planes, sized to the inlet of the body.
F. Swing arms for spray bodies shall be pre-fabricated, constructed of high-density polyethylene (HDPE) street-ells and polyethylene (PE) pipe, and have a minimum 70psi rating.
G. Bubblers, except “multi-stream,” shall include watering basins or percolation tubes.
H. Multi-Stream, Multi-Trajectory Rotating (MSMTR) Nozzles shall include arc adjustment and radius adjustment to a minimum of -25% of catalog throw. As radius and arc are decreased, the volume of water shall proportionally decrease to achieve matched precipitation rates throughout the range of adjustment.

2.10 ROTOR ASSEMBLIES
A. As indicated on the drawings.
B. Swing arms for single-stream rotors shall be site-fabricated as indicated on the drawings or prefabricated of Schedule 80 PVC with EPDM O-ring seals with a minimum 150 psi rating.

2.11 JUNCTION BOXES
A. Shall be precast concrete, N09 with bolt down lid.

PART 3 - EXECUTION
3.01 PREPARATION
A. Contractor shall review the site and confirm that all preceding work has been completed to allow installation of the irrigation system.
B. Verify water and electrical points of connection (services) and ensure they are adequate to serve the work.
C. Beginning work shall constitute acceptance of the site and suitability of services.

3.02 INSTALLATION
A. Trenching: Provide the following depths for all lines:
   1. Mainline and control wiring: 18 inches
   2. Lateral lines: 12 inches
   3. All lines under vehicular pavement: 24 inches
4. All lines under pedestrian pavement: 18 inches
5. In-line subsurface drip lines: 4 inches

B. Backfilling:
1. Backfilling shall not occur prior to all required observations and tests. Any lines covered prior to these shall be exposed at the contractor’s expense.
2. Initial backfill shall be a fine granular material in a layer 6” deep, or covering the pipe to at least 2” in depth, whichever is greater. Native soil may be used for initial backfill, excepting that rocks, clods, and deleterious material 1/2” in diameter or greater shall be screened out.
3. Backfill shall be compacted to a density at least equal to undisturbed soil in planting areas. Settlement of trenches shall be deemed evidence of insufficient compaction and shall be corrected at the contractor’s expense, including adjustment of lines, heads, grades, and replacement of plant material.

C. Backfilling Under Paving:
1. Backfill shall consist of 6” of sand, then screened native material in 6” maximum lifts, compacted to 95% relative compaction. All trenches shall be left flush with the adjoining grade. As a part of irrigation work, contractor shall set in place and cap all sleeving under paving prior to paving work. If piping requires joints under paving, all piping shall be laid, capped, and pressure tested prior to paving work.
2. Piping under existing walks shall be done by jacking or boring. Hydraulic driving shall be permitted only under pedestrian paving not exceeding four feet in length. Where cutting and patching is required, concrete shall be removed to the nearest control joint. New concrete shall match existing finish and color.

3.03 PIPING
A. Piping:
1. Initially fill mainline slowly (maximum velocity 1 foot per second). Vent air from the mainline while filling. Thoroughly flush mainline prior to installing valves.
2. Pipe Clearance: all pipes 4” or greater shall have a minimum clearance of 6” from each other. All pipes 3” or less shall have a minimum clearance of 3” from each other.
3. Flushing: all lines shall be flushed prior to installation of emitter assemblies.
4. Deflection for PVC pipe: Do not exceed a longitudinal bending radius of 300 times the pipe outside diameter or the manufacturer's rated deflection, whichever is less, for either solvent welded or gasketed pipe.
5. Mainline shall in all cases be looped or terminated in a thrust-restrained cap with a minimum of 12” offset to upstream fitting(s).

B. Thrust Restraints:
1. Install thrust restraints on all changes in direction, outlets, and ends, and as otherwise required or recommended by the piping manufacturer.
2. Thrust Blocking: wrap all thrust-blocked pipes with 1 mil. or heavier plastic sheet prior to placing concrete.
3. Joint Restraints: install per manufacturer’s information.

C. Pipe Assemblies:
2. Threaded joints: Do not use male inlet pipe thread (MIPT) adapters. All threaded PVC fittings shall be female end with schedule 80 nipples. Wrap nipple with 2 layers of Teflon thread tape prior to assembly. On PVC to metal connections, work metal connections first.
3. Use fittings to change pipe direction without exceeding deflection limits. For elevation changes, multiple 45 or 22.5 degree elbows shall be used. Do not use 90 degree elbows to change elevation.
4. Use minimum number of fittings required. Do not use multiple shorter lengths of pipe in lieu of one continuous piece.

3.04 CONTROL WIRING
A. Wiring shall be installed in the same trench as and adjacent to but not on top of the mainline. Wire shall be bundled together and secured with electrical tape at 10 feet intervals.

B. Wiring shall be laid loosely in the trench and snaked from side to side to allow sufficient length for thermal expansion and contraction. Do not pull, stress, or stretch wires.

C. Provide an expansion curl (pigtail) within 3 feet of each wire connection, the greater of 18” or sufficient length to allow the valve to be raised 12” above the finished surface.

D. Field splices between the controller and the remote control valve shall not be permitted without prior approval of the City’s Representative.

E. All splices shall be made with dry electrical connectors within valve boxes. The only allowable exception is for anti-siphon valves on residential systems.

F. Label all wires in the controller enclosure within 18” of the terminal strip with permanent tags wrapped around the wire, indicating the controller (if multiple controllers are used) and valve number.

3.05 VALVES
A. Remote Control Valve Assemblies, Quick Couplers, and Isolation Valves
   1. Install in approximate locations shown on drawings, but in planter areas instead of turf areas wherever possible, and as shown in the details. Valve boxes shall be perpendicular to adjacent walls, walks, or headers, and shall be parallel to each other.
   2. Each valve shall be identified with a minimum 2” x 2-3/4” yellow (or purple, for non-potable applications) polyurethane I.D. tag attached to the control wire of the valve.

3.06 OVERHEAD EMITTERS/SPRINKLER ASSEMBLIES
A. Install as detailed in the drawings. Where adjacent to headers or hard surfaces, locate such that edging equipment can pass between the adjacent edge and emitter without damage to either.

B. In no case shall spacing exceed the manufacturer’s listed throw. Single-stream rotors shall be installed at a spacing of 80% or less of the manufacturer’s listed throw.

3.07 FIELD QUALITY CONTROL
A. The mainline and all piping under paving shall be simultaneously pressure and leak tested. Contractor shall furnish force pump and all necessary equipment. Sufficiently brace piping to prevent movement while testing. If concrete thrust blocking is used, allow blocking to sufficiently cure. Restrain ends of mainlines. Ensure all air is removed from mainline prior to testing.
   1. Test with a hydrostatic pressure of 120 psi, or 150% of the operating pressure (sustained mainline pressure), whichever is greater.
   2. Observe pressure using a minimum of two gauges, at opposite ends of the mainline. Pressure shall not vary by more than 5 psi during the test.
   3. Pressure shall be sustained for a minimum of two hours. If leaks are visible or pressure drops by more than 5 pounds, replace joints and retest.

B. Irrigation system shall be operated in its entirety and shall be adjusted for complete coverage, proper operation, and to reduce or eliminate overspray and water hammer. Adjustments may include:
1. Pressure regulating devices, whether stand-alone or integrated with remote control valves
2. Manual flow adjustment of each remote control valve
3. Arc and radius adjustment of each nozzle.
4. Substitution of variable arc nozzles or reduced radius nozzles if required.

C. The irrigation system, including controller, shall be operable prior to planting.

3.08 CLEAN UP

A. All materials and debris accumulated in conjunction with completing this Work, including trash, excess soil, and empty plant containers, shall be legally recycled or disposed of by Contractor off site.

B. All scars, ruts or other marks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site.

C. The Contractor shall leave the site area broom-clean and shall wash down all walkways and other paved areas, leaving the premises in an excessively neat, clean, and safe condition.

D. Promptly remove soil, debris, or marks created by work from paved areas, buildings, site furnishings, and other appurtenances.

E. Clean vehicle tires before leaving site to avoid tracking soils onto paved areas.

END OF SECTION
SECTION 32 90 00 PLANTING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide trees, plants, and groundcovers as shown on the Drawings and as specified. The work includes:
   2. Trees, plants, and groundcovers.
   3. Planting mixes.
   4. Mulch and planting accessories.
   5. Maintenance.
   6. Tree transplanting and maintenance.

1.02 RELATED SECTION

A. Section 02 41 13 – Selective Site Demolition.
B. Section 32 84 00 – Landscape Irrigation.
C. Section 32 98 00 – Landscape Maintenance.

1.03 QUALITY ASSURANCE

A. Contractor shall be required to demonstrate experience with a comparable project with a similar scope. Subcontractor’s supervision of work must be by a Certified Nurseryman.

B. Plant names indicated, comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. Names of varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.

C. Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock". A plant shall be dimensioned as it stands in its natural position.

D. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of two (2) years.

E. Stock furnished shall be at least the minimum size indicated. Larger stock is acceptable, at no additional cost, and providing that the larger plants will not be cut back to size indicated. Provide plants indicated by two measurements so that only a maximum of 25% are of the minimum size indicated and 75% are of the maximum size indicated.

F. Provide "specimen" plants with a special height, shape, or character of growth. Tag specimen trees or shrubs at the source of supply. The Landscape Architect will inspect specimen selections at the source of supply for suitability and adaptability to selected location. When specimen plants cannot be purchased locally, provide sufficient photographs of the proposed specimen plants for approval.

G. Plants may be inspected and approved at the place of growth, for compliance with specified requirements for quality, size, and variety.
   1. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the work.

H. Provide and pay for material testing. Testing agency shall be acceptable to the Landscape Architect. Provide the following data:
   1. Test representative material samples proposed for use.
   2. Topsoil:
      a. pH factor.
      b. Mechanical analysis.
3. Peat Moss:
   a. Loss of weight by ignition.
   b. Moisture absorption capacity.

1.04 SUBMITTALS

A. Submittals shall be in accordance with the Standard and Special Provisions.

B. Submit the following material samples:
   1. Mulch.

C. Submit the following materials certification:
   1. Topsoil source and pH value.
   2. Peat moss.
   3. Plant fertilizer.

D. Provide plant material Record Drawings:
   1. Legibly mark Drawings to record actual construction.
   2. Indicate horizontal and vertical locations, referenced to permanent surface improvements.
   3. Identify field changes of dimension and detail and changes made by Change Order.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver fertilizer materials in original, unopened, and undamaged containers showing weight, analysis, and name of manufacturer. Store in manner to prevent wetting and deterioration.

B. Take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected. Spray deciduous plants in foliage with an approved "Anti-Desiccant" immediately after digging to prevent dehydration. Dig, pack, transport, and handle plants with care to ensure protection against injury. Inspection certificates required by law shall accompany each shipment invoice or order to stock and on arrival, the certificate shall be filed with the Landscape Architect. Protect all plants from drying out. If plants cannot be planted immediately upon delivery, properly protect them with soil, wet peat moss, or in a manner acceptable to the Landscape Architect. Water heeled-in plantings daily. No plant shall be bound with rope or wire in a manner that could damage or break the branches.

C. Cover plants transported on open vehicles with a protective covering to prevent wind burn.

D. Provide dry, loose topsoil for planting bed mixes. Frozen or muddy topsoil is not acceptable.

1.06 PROJECT CONDITIONS

A. Work notification: Notify Landscape Architect at least seven (7) working days prior to installation of plant material.

B. Protect existing utilities, paving, and other facilities from damage caused by landscaping operations.

C. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the Drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the Drawings shall govern.
D. The irrigation system will be installed prior to planting. Locate, protect, and maintain the irrigation system during planting operations. Repair irrigation system components, damaged during planting operations, at Contractor expense.

1.07 GUARANTY AND REPLACEMENT

A. Guaranty and replacement requirements are specified in Section 32 98 00.

1.08 MEASUREMENT AND PAYMENT

A. Work shall be considered incidental and compensation shall be included in the Contract prices paid for the various items of work and no additional time or compensation be allowed therefor.

B. Refer to Article 20.01 Schedule of Bid Items.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Plants: Provide plants typical of their species or variety; with normal, densely-developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sun scald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation. All plants shall have a fully developed form without voids and open spaces. Plants held in storage will be rejected if they show signs of growth during storage.

1. Dig balled and burlapped plants with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls are not acceptable.

2. Container-grown stock: Grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.
   a. No plants shall be loose in the container.
   b. Container stock shall not be pot bound.

3. Provide tree species that mature at heights over 25 feet with a single main trunk. Trees that have the main trunk forming a "Y" shape are not acceptable.

4. Plants planted in rows shall be matched in form.

5. Plants larger than those specified in the plant list may be used when acceptable to the Landscape Architect.
   a. If the use of larger plants is acceptable, increase the spread of roots or root ball in proportion to the size of the plant.

6. The height of the trees, measured from the crown of the roots to the top of the top branch, shall not be less than the minimum size designated in the plant list.

7. No pruning wounds shall be present with a diameter of more than 1 inch and such wounds must show vigorous bark on all edges.

8. Evergreen trees shall be branched to the ground.

9. Shrubs and small plants shall meet the requirements for spread and height indicated in the plant list.
   a. The measurements for height shall be taken from the ground level to the height of the top of the plant and not the longest branch.
   b. Single stemmed or thin plants will not be accepted.
   c. Side branches shall be generous, well-twiggled, and the plant as a whole well-bushed to the ground.
   d. Plants shall be in a moist, vigorous condition, free from dead wood, bruises, or other root or branch injuries.
2.02 ACCESSORIES

A. Topsoil for Planting Beds: Fertile, friable, natural topsoil of loamy character, without admixture of subsoil material, obtained from a well-drained arable site, reasonably free from clay, lumps, coarse sands, stones, plants, roots, sticks, and other foreign materials, with acidity range of between pH 6.0 and 6.8 and a minimum organic matter content of 5%.
   1. Topsoil that has been stripped and stockpiled on site shall be the topsoil to be utilized on this project. Provide additional topsoil if necessary.
   2. Provide topsoil free of substances harmful to the plants that will be grown in the soil.

B. Peat Moss: Brown to black in color, weed and seed free granulated raw peat or baled peat, containing not more than 9% mineral on a dry basis.
   1. Provide ASTM D2607 sphagnum peat moss with a pH below 6.0 for ericaceous plants.

C. Fertilizer:
   1. Plant Fertilizer Type "A": Commercial type approved by the Landscape Architect, containing 5% nitrogen, 10% phosphoric acid, and 5% potash by weight. 1/4 of nitrogen in the form of nitrates, 1/4 in form of ammonia salt, and 1/2 in form of organic nitrogen.

D. Anti-Desiccant: Protective film emulsion providing a protective film over plant surfaces; permeable to permit transpiration. Mixed and applied in accordance with manufacturer's instructions.

E. Water: Free of substances harmful to plant growth. Hoses or other methods of transportation furnished by the Contractor.

F. Stakes for Staking: Hardwood, 2" x 2" x 8'-0" long.

G. Staking Hose: Two-ply, reinforced garden hose not less than 1/2" inside diameter.

H. Twine: Two-ply jute material.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected.

3.02 PREPARATION

A. Time of planting:
   1. Evergreen material: Plant evergreen materials between September 1 and November 1 or in spring before new growth begins. If project requirements require planting at other times, plants shall be sprayed with anti-desiccant prior to planting operations.
   2. Deciduous material: Plant deciduous materials in a dormant condition. If deciduous trees are planted in-leaf, they shall be sprayed with an anti-desiccant prior to planting operation.
   3. Planting times other than those indicated shall be acceptable to the Landscape Architect.

B. Planting shall be performed only by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.
C. Locate plants as indicated or as approved in the field after staking by the Contractor. If obstructions are encountered that are not shown on the Drawings, do not proceed with planting operations until alternate plant locations have been selected.

D. Excavate circular plant pits with vertical sides, except for plants specifically indicated to be planted in beds. Provide pits at least twice the diameter of the root system for trees and shrubs. Depth of pit shall accommodate the root system. Provide undisturbed subgrade to hold root ball at nursery grade as shown on the Drawings. Remove excavated materials from the site if unacceptable for backfill material.

E. Provide pre-mixed planting mixture for use around the balls and roots of the plants consisting of planting topsoil and 1/2 lb. plant fertilizer Type "A" for each cubic yard of mixture.

3.03 INSTALLATION

A. Set plant material in the planting pit to proper grade and alignment. Set plants upright, plumb, and faced to give the best appearance or relationship to each other or adjacent structure. Set plant material 2 to 3 inches above the finish grade. No filling will be permitted around trunks or stems. Backfill the pit with planting mixture. Do not use frozen or muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water.

B. After balled and burlapped plants are set, muddle planting soil mixture around bases of balls and fill all voids.
   1. Remove all burlap, ropes, and wires from the top 2/3 of balls.

C. Space groundcover plants in accordance with indicated dimensions. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants. Plant to within 24 inches of the trunks of trees and shrubs within planting bed and to within 6 inches of edge of bed.

D. Mulching:
   1. Mulch tree and shrub planting pits and shrub beds with required mulching material 4 inches deep immediately after planting. Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface.
   2. Mulch groundcover beds with peat moss 2 inches deep immediately after planting.

E. Staking:
   1. Inspect trees for injury to trunks, evidence of insect infestation, and improper pruning before wrapping.
   2. Staking:
      a. Stake all trees immediately after lawn seeding or sodding operations and prior to acceptance. When high winds or other conditions, which may effect tree survival or appearance, occur, the Landscape Architect may require immediate staking/guying.
      b. Stake deciduous trees under 3 inch caliper. Stake evergreen trees under 8'-0" tall.
   3. All work shall be acceptable to the Landscape Architect.

F. Pruning:
   1. Prune branches of deciduous stock, after planting, to balance the loss of roots and preserve the natural character appropriate to the particular plant requirements. In general, remove 1/4 to 1/3 of the leaf bearing buds; proportion shall in all cases be acceptable to the Landscape Architect. Remove or cut back broken, damaged, and unsymmetrical growth of new wood.
   2. Multiple leader plants: Preserve the leader which will best promote the symmetry of the plant. Cut branches flush with the trunk or main branch, at a point beyond...
a lateral shoot or bud a distance of not less than 1/2 the diameter of the supporting branch. Make cut on an angle.

3. Prune evergreens only to remove broken or damaged branches.

3.04 MAINTENANCE

A. Maintain plantings until completion and acceptance of the entire project per Section 32 98 00.

B. Maintenance shall include pruning, cultivating, weeding, watering, and application of appropriate insecticides and fungicides necessary to maintain plants free of insects and disease.

1. Re-set settled plants to proper grade and position. Restore planting saucer and adjacent material and remove dead material.
2. Tighten and repair guy wires and stakes as required.
3. Correct defective work as soon as possible after deficiencies become apparent and weather and season permit.
4. Water trees and plants within the first 24 hours of initial planting, and not less than twice per week until final acceptance.

3.05 TREE TRANSPLANTING AND MAINTENANCE

A. Transplanting Site Conditions:

1. The Contractor shall identify three possible planting sites for each tree designating to be transplanted. Each site shall meet the transplanting site conditions specified herein. Based on the site investigations and test results provided by the Contractor as well as other site considerations, the Landscape Architect shall select the preferred site for each tree to be transplanted.
2. Slopes of the transplanting sites shall not exceed 10 percent. If a tree is currently located on a slight slope, it shall be transplanted at a location with the same or flatter slope.
3. The site soil at the transplanting sites shall be at least 3 feet deep. Sites that are rocky or have shallow soils shall not be used.
4. Transplanting sites shall have adequate clearance for equipment to be used for transplanting. The Contractor shall determine access requirements and schedule pruning of surrounding vegetation and or transplant candidates.
5. The conditions at transplanting sites shall be conducive to the species that are being transplanted. Soil tests shall be performed by the Contractor to assess site conditions. A plant requiring acidic soils shall not be transplanted in an alkaline, calcareous soil. A plant requiring good drainage is not appropriate to transplant into a poorly drained clay soil, or at the toe of a slope or swale in a frequently irrigated planting. A tree grown in a sheltered, partially shaded location shall not be placed in an exposed, windy, reflected heat area.
6. The transplanting sites shall allow for the transplanted root ball plus room to grow. If the new planting site is on a slope, a level area at least the diameter of the root ball shall be created on the slope.

B. Pre-planting:

1. The Contractor shall move trees using a tree spade. Trees shall not be stored between digging and planting.
2. Trees shall not be transplanted when maximum daily temperatures are 100° F or greater.
3. Prior to beginning work, the Contractor shall meet with the Landscape Architect at the site to review work procedures and tree protection measures.
4. Trees shall be transplanted from November through February, if possible. Oak trees can be transplanted year round but shall not be transplanted during spring bud break or during the heat of the summer.
5. The Landscape Architect shall designate each tree to be transplanted with a tree tag number.
6. The Contractor shall verify the location of all underground utilities and overhead utilities prior to removing any impediments or excavating for the trees.
7. The Contractor shall mark the north side of the tree to allow for proper orientation when planting.
8. The Contractor shall not compact soils within the proposed planting area during the preparation and planting process.

C. Transplanting:
1. Prior to planting the trees, the Contractor shall dig test pits in the planting area and perform percolation tests to confirm adequate soil drainage. If natural drainage is insufficient as determined by the Landscape Architect, drain tubes connecting to existing drain lines shall be required to remove excess irrigation.
2. The Contractor shall prepare the planting site by digging a hole twice as wide as the root ball and 2-inches shallower to allow for settling of the root ball. Rough up sides of hole with a shovel to disrupt glazing, if necessary. Protect surrounding soil from compaction by placing plywood or 6-inches deep wood chip mulch beneath the wheels of the equipment.
3. The Contractor shall position the marked, north side of the trunk so the tree remains in the same direction as its original location. Place tree in new planting hole. Backfill with site soil, tamping to eliminate air pockets. After each 12-inch lift of soil, water in well. Do not place site soil over the top of the root ball. Do not apply vitamin B1 or other “transplant shock” material.
4. Following installation, apply and maintain a 4-inch deep layer of wood chip mulch within the planting area (gorilla hair mulch is not acceptable). Keep the mulch 12-inches away from the trunk. Maintain the mulched area in a weed free condition. Irrigate thoroughly.

D. Maintenance and Mitigation:
1. The Contractor shall monitor the condition of transplanted trees for two (2) years following planting. The Contractor shall inspect the trees monthly for the first 12 months and once every two months for the following 12 months for changes in health, structure and pests.
2. The Contractor shall monitor soil moisture regularly for the first 12 months following planting to know when to irrigate. Soil moisture monitoring shall be based on climatic conditions, with monitoring occurring every 2-3 days during hot weather (above 90° F) to once a week during cool periods. A soil probe shall be used to measure soil moisture.
3. The Contractor shall irrigate the trees based on soil moisture monitoring for the first 12 months following planting. Plants shall be irrigated before the root ball becomes dry, but not so frequently that it remains wet. Irrigation frequencies may range from every few days in hot, dry weather to every few weeks in cool weather.
4. The Contractor shall prune to improve tree structure if necessary. All pruning shall be completed by a Certified Arborist or Tree Worker in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the latest edition of the American National Standard for Tree Care Operations (Z133) and Pruning (A300).
5. If bark has been damaged, the Contractor shall cut off any torn bark or wood with a sharp knife. Do not shape the wound or apply wound paint.
6. The Contractor shall fertilize the tree in the fall or late winter only if soil tests reveal deficiencies.
7. The Contractor shall monitor for sunscald, pests and diseases. Transplanted trees are under stress until new roots are established in the landscape, and they are more susceptible to water stress (leading to sunscald), and attack by insects and diseases. Borers and canker disease are the most common problems.
Inspect transplants monthly to assess any developing problems and determine appropriate treatments.

3.06 ACCEPTANCE

A. Inspection to determine acceptance of planted areas will be made by the Landscape Architect, upon Contractor’s request. Provide notification at least ten (10) working days before requested inspection date.

B. Planted areas will be accepted provided all requirements, including maintenance, have been complied with and plant materials are alive and in a healthy, vigorous condition

3.07 CLEANING

A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, soils, debris, and equipment. Repair damage resulting from planting operations.

END OF SECTION
SECTION 32 91 13 HYDROSEEDING AND SOIL PREPARATION

PART 1 - GENERAL

1.01 SUMMARY
A. Furnish all labor, material, equipment and services necessary to provide all landscape work, complete and in place, as indicated on Drawings and specified herein.
B. Work specified in this Section, but is not limited to the following:
   1. Soil preparation
   2. Weed Control
   3. Hydroseeding
   4. Clean-up

1.02 RELATED SECTIONS
A. Section 31 20 00 – Earthwork.
B. Section 32 84 00 – Landscape Irrigation.
C. Section 32 98 00 – Landscape Maintenance.

1.03 QUALITY ASSURANCE
A. Source Quality Control:
   1. Hydroseeded grasses shall exhibit a uniform growth, in good health, free of noxious or invasive weeds, with viable seed production (season permitting), competitiveness against non-native species at the time of final acceptance, and demonstrating at least 75% coverage (as measured by canopy coverage within a randomly selected one yard by one yard plot per 8,000 square feet of hydroseeded area). Hydroseeded grasses shall demonstrate at least 50% coverage at the end of the guaranty period.

B. Acceptance of seed:
   1. Seed shall be tested according to the Association of Official Seed Analysts, International Seed Testing Association, and the Federal Seed Act standards. Tested seed shall be accompanied by a certificate of analysis furnished by a certified testing laboratory. All seed shall be subject to inspection and concurrence by the Contractor and the Landscape Architect before work is authorized to proceed with the seeding operation.
   2. Certify as tested the following individual seed types:
      a. Purity and Germination: Before seed is used, retest for germination all seed stored over six months from the date of the original acceptance test, and resubmit the results for inspection.
      b. Prohibited Noxious Weed Seed: Seed shall contain no federal- or state-listed prohibited noxious weed seed (an amount within the tolerance of zero percent) as determined by a standard purity test.
      c. Restricted Noxious Weed Seed: Seed shall contain no more than 40 seeds per pound of any. Single species or 150 seeds per pound of all species combined, of restricted noxious weed seed. Restricted noxious weed seed is considered to be component of other crop and weed seed with limitations specified.
      d. Weed Seed: Seed shall contain no more than 1 percent by weight, of weed seed of other crops and plant species as determined by standard purity tests.
   3. Information regarding the seed mixture shall be provided by the Contractor on each standard sealed container label. The labels shall include the following information:
      a. Seed mixture name
      b. Lot number
c. Total net weight and pure live seed (PLS) weight of each seed type
d. Percentages of purity and germination
e. Seed coverage, in acres, on a PLS basis
f. Percentage of maximum weed seed content clearly marked for each seed type.

C. The Landscape Architect shall be the sole judge as to the condition of material. Material to be replaced within the guaranty period shall be replaced by the Contractor within fifteen (15) days of written notification.

1.04 SUBMITTALS
A. Submittals shall be in accordance with the Standard and Special Provisions.
B. Contractor shall submit the proposed source and demonstrate availability of the proposed seed.
C. Contractor shall submit a complete list of equipment, materials, or processes specified or proposed. Include product information sheets.
D. Contractor shall submit a sample of all supplied materials accompanied by analytical data from an approved laboratory source illustrating compliance with these Specifications and bearing the manufacturer's guaranteed analysis.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING
A. The Contractor, shall provide receipts, delivery tickets, load tickets, etc. of all items delivered to the job site to verify products and total quantities.
B. The fertilizer shall be delivered to the project site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name trademark, and conformance to State Law.

1.06 JOB CONDITIONS
A. Install grasses after irrigation system is operable and has been accepted by the Landscape Architect.
B. Protect work and materials from damage due to construction operations by other contractors and trades and by vandalism. Maintain protection during installation and maintenance period.
C. Hydroseeding operations shall not take place if any of the following conditions are predicted in the next 24 hours:
   1. Temperatures above 95°F.
   2. Temperatures below 55°F.
   3. Wind speeds at or above 20 mph.
   4. Rainfall greater than one tenth of an inch.

1.07 SAMPLES AND TESTS
A. The Landscape Architect reserves the right to take and analyze samples of materials for conformity to these Specifications. The Contractor shall furnish samples upon request by the Landscape Architect. Rejected materials shall be removed from the site at Contractor's expense. Cost of testing of materials not meeting Specifications shall be paid by Contractor.
B. Agronomic Soils Testing
   1. To ensure a suitable growing medium for plants, employ services of a certified agronomic soils testing laboratory to perform soil testing at selective locations only on-grade. There shall be a minimum of four test locations. The Contractor is to provide documented locations for review by the Landscape Architect for approval before testing can proceed. Contractor is responsible for agronomic soil testing costs.
2. Perform soil sampling and testing of stockpiled topsoil once fine grading, weed control, soil amendments have been completed, and prior to planting.
3. Soil test recommendations may take precedence over soil amendment procedures specified in this Section with approval of the Landscape Architect.
4. Take Samples of site soil at following depths and quantity:
   a. Tree: twelve inches, 2 locations
   b. Grass areas: six inches, 2 locations.
5. Provide the following at each soil test location:
   a. Chemical analysis report of each soil sample location to include the following:
      b. Percentage of organic matter
      c. Salinity
      d. PH
      e. Mineral nutrients, including concentrations of nitrogen, phosphorus, potassium, calcium, and magnesium
      f. Potential hazards of impediments to plant growth from salinity; sodium, boron, impaired soil structure or drainage
6. Testing for fertility and suitability analysis with written recommendations for soil amendment application rates.
7. Soil percolation rates.

1.08 GUARANTY AND REPLACEMENT
A. Guaranty and replacement requirements are specified in Section 32 98 00.

1.09 MEASUREMENT AND PAYMENT
A. Work shall be considered incidental and compensation shall be included in the Contract prices paid for the various items of work and no additional time or compensation be allowed therefor.

PART 2- PRODUCTS

2.01 GENERAL
A. Any commercially processed or packaged material shall be delivered to the site in the original unopened container bearing the manufacturer’s guaranteed analysis.

2.02 MATERIALS
A. Soil Conditioner
   1. Gro-Power Plus or equal: Humus (bacteria included) based fertilizer and soil conditioner with soil penetrant shall consist of the following percent by weight:
      a. 5% nitrogen
      b. 3% phosphoric acid
      c. 1% potash
      d. 50% humus
      e. 15% humic acids
B. Soil Amendment
   1. Nitrogen Stabilized Shavings: 0.56 to 0.84% N based on dry weight for redwood sawdust treated with relative form of nitrogen (N H 3).
      a. Particle Size:
         1). 95% - 100% passing 6.35 mm standard sieve.
         2). 80% - 100% passing 2.33 mm standard sieve.
         3). 10% - 20% passing 0.50 mm standard sieve.
      b. Salinity: The saturation extract conductivity shall not exceed 3.5 millimhos/centimeter at 25 degrees (25°) centigrade as determined by saturation extract method.
      c. Iron Content: Minimum 0.08% dilute acid soluble Fe on dry weight basis.
d. Ash: 0 - 25% (dry weight)
e. pH Range: 5.5 - 7.5
f. Actual organic matter content: minimum 280 pounds per cubic yard.

C. Soil Fertilizer
1. Organic, non-petroleum based NPK fertilizer which contains the following percentages by weight, or equivalent:
   a. 6% nitrogen
   b. 6% phosphoric acid
   c. 6% potash

D. Hydroslurry Fertilizer
1. Organic, non-petroleum based NPK fertilizer which contains the following percentages by weight, or equivalent:
   a. 7% nitrogen
   b. 2% phosphoric acid
   c. 3% potash

E. Wood Cellulose Fiber Mulch (Hydromulching)
1. Mulch shall be specially prepared wood cellulose fibers with no growth or germination inhibiting factors, and dyed green to facilitate visual metering during application. Wood cellulose fiber shall have additional characteristics of dispersing rapidly in water to form homogeneous slurry and remain in such state when agitated in the hydraulic mulching unit.
2. Wood cellulose fiber mulch shall be supplied, compressed in packages containing 50 pounds of material having an equilibrium air dry moisture content at time of manufacture of 12%, plus or minus 2.

F. Binders
1. Organic, natural polysaccharide derived from Guar gum.

G. Fungicide: "Subdue" (Ciba-Geigy) or equal.

H. Weed Control: as allowable under state law (order does not indicate preference)
1. Enide (Upjohn),
2. Dymid (Elanco Products Co.),
3. Treflan,
4. Eptan,
5. Surflan
6. or equal.

I. Mycorrhizal Inoculant
1. Granular formulation of endomycorrhizal species suitable for incorporation with hydroslurry mix, minimum of 25,000 spores per pound.
   a. MycoApply "Endo"
   b. Bio Organics "Micronized Endomyorrhizal Inoculant (BEIM)"
   c. or equal

2.03 PLANTS

A. Hydroseed mix shall be as follows:
1. Titanium Tall Fescue – 130 lbs/acre
2. Avenger Tall Fescue – 130 lbs/acre
3. Firecracker SLS Tall Fescue – 130 lbs/acre
4. Waterworks Tall Fescue – 45 lbs/acre

B. Seed shall be weed free, fresh, re-cleaned, Grade A, new crop consisting of the percentages of mix as specified. Seed shall be labeled in accordance with the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act presently in effect.

C. Seed shall be provided from and mixed by a certified dealer, Pacific Coast Seed Company or equal. Seed mixture shall be labeled with manufacturer's guaranteed analysis, germination rate and purity rate.
2.04 EQUIPMENT
A. Hydro-Seeder
   1. Equipment used for application of slurry shall be a commercial-type Hydro-Seeder and have a built-in agitation system with an operation capacity sufficient to agitate, suspend and homogeneously mix slurry.
   2. Tank capacity shall be a minimum of 1,500 gallons and shall be mounted on a truck to allow access to the site.
   3. Distribution Lines: Large enough to prevent stoppage and allow for even distribution of slurry over the site.
   4. The pump shall be able to generate 150 psi at the nozzle.

PART 3 - EXECUTION

3.01 OBSERVATION
A. Contractor to review the conditions of site for planting. Verify that all preceding and ancillary work, including final grades, have been established prior to beginning planting operations. Contractor is responsible to inform the Landscape Architect of conditions of the site that are not suitable for planting.

3.02 PREPARATION
A. Soil Preparation of Native Grass Planting Areas
   1. Clear and remove existing weeds by mowing and grubbing to at least 1/4 inch below the soil surface. Bag, collect, and legally dispose of all weeds off-site.
   2. Thoroughly cross-rip over-excavated subgrade to a minimum depth of 12 inches. Avoid all utility lines and irrigation lines, if irrigation system has already been installed.
   3. Evenly spread stockpiled topsoil in 6 inch maximum lifts.
   4. Remove stones or other deleterious matter. The top 3 inches of all areas to be planted shall be free of stones, stumps, or other deleterious matter 1 inch in diameter or larger, and shall be free from all wire plaster, or similar objects that would be a hindrance to planting and maintenance.
   5. Condition and amend each lift as follows: Soil conditioner shall be uniformly spread and cultivated thoroughly by means of mechanical tiller, in a minimum of two passes in opposing directions, into the top 6 inches of soil. Existing planting areas shall be cultivated by hand tools. The following rates shall be used for bidding purposes, and the specific application rates shall be based on the soils fertility analysis performed by the Contractor.
   6. Application Rates (prior to soils fertility testing):
      a. One hundred twenty (120) pounds of soil conditioner per 1,000 square feet.
      b. Three (3) cubic yards soil amendment per 1,000 square feet.
      c. Fifteen (15) pounds of soil amendment fertilizer per 1,000 square feet.
   7. All soil areas shall be compacted and settled by application of heavy irrigation to a minimum depth of twelve inches.
   8. Perform pre-plant weed control, below.
   9. Finish grading: Conform to Section 31 22 16 and grades and notes on the Drawings. Areas shall be smooth and continuous with firm planes that insure proper surface drainage. All rocks, soil lumps and deleterious materials larger than 1 inch shall be removed and the areas raked or harrowed to break up surface and provide irregular seeding bed for maximum soil contact. Establish final grades below adjacent paved areas, sidewalks, valve boxes, headers, clean outs, drains, manholes, etc. as follows:
      a. Hydroseeded areas: 1 inch
   10. Remove and legally dispose of excess or unacceptable materials from the site, including all weeds that exhibit flowers, seed heads, or are longer or taller than 4 inches.
3.03 INSTALLATION
   A. Hydroseed:
      1. If Psyllium-based tackifier is used, pre-moisten the application area.
      2. Apply Hydromulch in two applications as follows:
         a. Apply all seed, fertilizer, mycorrhizobial inoculum, and 25% of hydrostraw fiber.
         b. Apply 75% of hydrostraw fiber and 100% of hydromulch tackifier.
      3. Maintain optimum moisture to sustain germination and plant growth, tapering water off to emulate natural conditions as soon as possible.
      4. Re-apply hydroseed to all dead or unhealthy strands of grass with equal material as directed by the Landscape Architect at the following times:
         a. Final landscape inspection prior to the maintenance period
         b. End of the maintenance period
         c. End of the guaranty period

3.04 MAINTENANCE
   A. See Section 32 98 00, Landscape Maintenance.

END OF SECTION 32 91 13
SECTION 32 98 00 LANDSCAPE MAINTENANCE

PART 1 - GENERAL

1.01 SUMMARY

A. Maintain all plants in a vigorous growing condition throughout the maintenance period. Furnish all labor, materials, equipment, and services required. Provide selective pruning as required to promote desired structure, form, and long-term health. Apply supplemental materials, including fertilizers as needed. Apply herbicides and pesticides only as required to remedy significant problems that cannot be otherwise controlled through integrated pest management approaches. At all times, protect the health of users. Include trash, debris, and weed removal from the entire site, including sidewalks and gutters.

1.02 QUALITY ASSURANCE

A. Contractor shall be experienced in horticulture and landscape maintenance practice, and shall provide sufficient workers and equipment under supervision of qualified foreman at all times.

B. All equipment shall be maintained in optimal condition, including freshly sharpened blades.

C. Sterilize all cutting tools prior to starting work at each site, and between cuts if disease is present or suspected.

1.03 MAINTENANCE PERIOD

A. Maintain the entire project throughout the course of work and during the 90 calendar day maintenance period or until project acceptance.

B. Maintenance period shall not begin until all construction activity, including punchlist items, have been completed, including initial grow-in of turf areas. At a minimum, turf areas shall show an healthy even stand of grass, and shall have been mown at least twice.

C. Maintenance period will begin upon written notice of completion by the City’s Representative.

1.04 PROTECTION

A. Protect planting areas and plants against damage until final acceptance. Maintenance includes temporary barriers, fences, and signs as required.

1.05 GUARANTEE AND REPLACEMENT

A. Replace all missing, damaged, or otherwise non-performing materials, including plants, with new materials as specified in the contract documents at no additional cost to the Owner.

B. All materials shall be replaced within seven calendar days of notification.

C. The City’s Representative shall be the sole judge as to the condition of materials.

1.06 FINAL ACCEPTANCE

A. Final acceptance shall occur only after the maintenance period has been completed and following observation by and approval of the City’s Representative. The maintenance period shall end only upon written notice of final acceptance.

PART 2 - PRODUCTS

2.01 GENERAL

A. Provide a monthly record of all chemicals (if any) used on the site.
2.02 FERTILIZER
   A. As specified in
      1. Section 32 90 00 Planting
      2. Section 32 91 13 Hydroseeding and Soil Preparation

2.03 MULCH
   A. As specified in
      1. Section 32 90 00 Planting
      2. Section 32 91 13 Hydroseeding and Soil Preparation

PART 3- EXECUTION

3.01 GENERAL
   A. All frequencies of work listed in this section shall be considered minimum. Frequency
      shall be increased as required to ensure a neat and orderly appearance at all times.
   B. Nursery stakes and tags shall be removed within the first 15 days of maintenance.
      Ensure all installed support stakes and ties are securely fastened, but allow moderate
      movement.

3.02 WEEDING
   A. All planted areas shall be weeded on a weekly basis. Weeds 3" and larger in any
      dimension shall be completely removed.
   B. Herbicides and pesticides shall only be applied by appropriately licensed operators.
      Selective herbicide may be used in turf areas to control invasive or noxious weeds.
      Broad-spectrum herbicides shall only be used in spot applications. No herbicides shall
      be applied during windy conditions or in a manner that results in overspray or runoff.

3.03 MOWING/EDGING
   A. Weekly, all turf areas shall be mown to an even height of 2.5"-3.5." Mulching mowers
      shall be used to return grass clippings to the soil. If excess or unsightly clippings are
      generated, clippings shall be bagged and removed. All debris, including clippings, shall
      be removed from hardscape areas after mowing and edging.
   B. Edging shall be performed with every mowing. Turf areas shall be vertically edged.
      Where mowing is not possible due to obstructions (sign posts, etc.), an edger may be
      used to trim the turf, but not lower than the mowed height. Any material damaged by
      improper edging shall be replaced at no additional cost to the owner.
   C. As needed, turf areas shall be hand-weeded or spot-sprayed with a selective herbicide to
      eradicate weeds. Resulting or any other bare areas shall be re-seeded by broadcast or
      hand seeding with a seed mix conforming to the originally installed material.

3.04 FERTILIZATION
   A. A general purpose fertilizer (16-16-16 or similar formulation) shall be applied to all shrub
      and groundcover beds at a rate of 5 lbs per 1,000 square feet, in intervals not less than
      30 days and not more than 45 days, including applications at the beginning of the
      maintenance period and just prior to final acceptance.
   B. Turf starter fertilizer (6-20-20 or similar formulation) shall be applied to all turf areas at
      intervals not less than 30 days and not more than 45 days, including just prior to final
      acceptance.
   C. Apply fertilizer evenly to the entire root zone

3.05 PRUNING
A. Trees and shrubs shall in all cases be pruned according to ANSI 300 (Part 1)

B. Trees and shrubs shall be pruned to promote sound structure and planting intent, as follows.
   1. In no case shall shrubs be balled, boxed, or cut into geometric forms.
   2. Shrubs groups (more than one of the same species planted adjacent to each other) shall be allowed to grow together.
   3. At maturity, plants shall fully and completely fill planting areas unless clearly shown otherwise on the drawings.
   4. Except as noted below, shrubs shall not be sheared. Instead, branches shall be “headed back” prior to the ultimate desired length by removing the terminal bud and adjacent leaf groups if necessary for shape and to promote lateral branching.
      a. Straight rows of small-leaved evergreen shrubs shall be pruned as hedges, forming a solid and dense mass as either a border or background.
      b. Groundcover shall be edged by shearing as required to maintain walkway clearance and keep a neat appearance.
   5. Dead or declining leaves of strap-leafed plants shall be removed in their entirety, but in all cases, the overall shape of the plant shall be maintained as a hemisphere rather than a vase, allowing leaves to arch toward the ground. Tip-prune leaves with sharp pruners only if needed for appearance.
   6. Pollarding or heading back of trees shall not be allowed.

C. All crossing or rubbing branches shall be removed, in favor of the stronger or best placed branch.

D. Palms shall be pruned to remove all dead fronds, including those that have dropped noticeably below adjacent fronds or the bud, initiating at a 45 degree angle or less from horizontal. Palm peeling (shaving) should remove only dead frond bases at the point they contact the trunk without damaging living trunk tissue.

E. Tree pruning to maintain required clearances shall be performed as required to maintain:
   1. Pedestrian passage: seven feet of overhead clearance
   2. Vehicular passage: fourteen feet of overhead clearance from the travelway.

F. Pruning to frame views or for other aesthetic purposes shall be done only as directed by the City’s Representative.

3.06 MULCH

A. Mulch shall be reapplied to shrub and groundcover areas throughout the maintenance period as required to maintain the original depths specified.

B. Mulch shall be topped off just prior to final acceptance.

3.07 DEBRIS

A. All clippings, pruning, and other herbaceous or woody material shall be collected and transported to a green waste recycling center at no additional cost to the owner.

B. All trash shall be bagged, removed, and legally disposed of off-site.

3.08 IRRIGATION

A. Contractor shall operate, visually inspect, and adjust the system weekly for proper operation and to minimize or eliminate overspray and runoff.

B. Adjust programming as required for optimal plant health, providing deep irrigation without water loss below the root zone, and avoiding overwatering and runoff.

C. Hand watering, if required, shall use a diffuser and minimize soil disturbance.

D. Repairs, if necessary, shall be accomplished within twenty four hours, and at no additional expense to the owner.
SECTION 33 05 13 MAINTENANCE HOLES AND STRUCTURES

PART 1 - GENERAL

1.01 SECTION INCLUDES
   A. Modular precast concrete maintenance hole sections with tongue-and-groove joints, covers, and accessories for sanitary sewer and storm drain systems.

1.02 RELATED SECTIONS
   A. Section 33 41 00 Storm Utility Drainage Piping.

1.03 REFERENCES
   D. The term “State Standard Specifications” is understood to refer to the Standard Specifications, State of California, Business, Transportation and Housing Agency, Department of Transportation (CALTRANS), May 2006 edition. In cases of conflict between the State Standard Specifications and these specifications, these specifications shall govern.
      1. Any provisions for measurement and payment specified within the State Standard Specifications shall be disregarded and the provisions of this contract shall govern.

1.04 SUBMITTALS
   A. Conform to the requirements of Item 5.6 of the General Conditions.
   B. Product Data: Provide data for Products specified.
   C. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
   D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
   E. Project Record Documents: Record actual locations of pipe mains, valves, connections, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

PART 2 - PRODUCTS

2.01 MAINTENANCE HOLES
   A. Provide precast reinforced maintenance holes as indicated on Drawings and per City Standards.
   B. Maintenance Hole Sections: Reinforced precast concrete in accordance with ASTM C 478, with resilient connectors complying with ASTM C 923.
   C. Concrete: State Standard Specifications, Section 90-10, Minor Concrete.

2.02 MAINTENANCE HOLE COMPONENTS
   A. Provide Lid and Frame as indicated on Drawings.
2.03 MAINTENANCE HOLE CONFIGURATION

A. Shaft Construction: Concentric with eccentric cone top section; lipped male/female joints, as indicated on Drawings.
B. Shape: Cylindrical.
C. Clear Inside Dimensions: As indicated on Drawings.
D. Design Depth: As indicated on Drawings.
E. Clear Lid Opening: As indicated on Drawings.
F. Pipe Entry: Provide openings as indicated on Drawings.

PART 3 - EXECUTION

3.01 MAINTENANCE HOLES

A. Place concrete base pad, trowel top surface level.
B. Place maintenance hole sections plumb and level, trim to correct elevations, anchor to base pad.
C. Place maintenance hole cylinder plumb and level, to correct dimensions and elevations.
D. Cut and fit for pipe.
E. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour as required.
F. Set cover frames and covers level without tipping, to correct elevations.

END OF SECTION
SECTION 33 41 00 STORM UTILITY DRAINAGE PIPING

PART 1 - GENERAL

1.01 SECTION INCLUDES
   A. Storm drainage piping, fittings, basins, and accessories (gravity systems only).
   B. Connection of drainage system to existing drainage system.
   C. Inlets and Cleanouts.

1.02 RELATED SECTIONS
   A. Section 01 57 23 Temporary Storm Water Pollution Control
   B. Section 31 23 33 Trenching and Backfilling
   C. Section 33 05 13 Maintenance Holes and Structures

1.03 REFERENCES

1.04 DEFINITIONS
   A. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.

1.05 SUBMITTALS
   A. Product Data: Provide data acknowledging that products meet requirements of standards referenced.
   B. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
   C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
   D. Project Record Documents:
      1. Record location of pipe runs, connections, inlets, cleanouts, manholes and invert elevations.
      2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

PART 2 - PRODUCTS

2.01 DRAINAGE PIPE MATERIALS
   A. Plastic Pipe: ASTM D 3034, Type PSM, SDR 35, Poly Vinyl Chloride (PVC) material; inside nominal diameter as indicated on Drawings.
   C. Ductile Iron Pipe: A 746; inside nominal diameter as indicated on Drawings.

E. Corrugated High Density Polyethylene Pipe (CPEP): Pipe shall have a smooth interior and annular exterior corrugations. Pipe and fitting material shall be high density polyethylene meeting ASTM D3350 minimum cell classification 324420C for 4-10 inches diameters or 335420C for 12-60 inches diameters. Pipes 4-10 inches in diameter shall meet American Association of State Transportation Officials (AASHTO) M252, Type S, and 12-48 inches diameter shall meet AASHTO M294, Type S. Pipe material shall be a slow crack resistance material evaluated using the single point notched constant tensile load (SP-NCTL) test. Average SP-NCTL test specimens must exceed 24 hours with no test result less than 17 hours.

F. Corrugated High Density Polyethylene Pipe (CPEP) Joint Device: Bell-and-spigot meeting AASHTO M252, AASHTO M294 or MP7. Joints shall be silt-tight and non-rated watertight. Gaskets shall be made of polyisoprene meeting the requirements of ASTM F477 with the addition that the gaskets shall not have any visible cracking when tested according to ASTM D1149 after 72-hour exposure in 50 PPHM ozone at 104 degrees F.

G. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

2.02 PIPE ACCESSORIES

A. Line Marker: Provide line markers in accordance with Section 33 05 26 Utility Line Signs, Markers, and Flags

2.03 DRAIN INLETS (DROP INLETS)

A. Size and type as indicated on the Drawings. Precast Design load: H-20. Acceptable precast manufacturers:
1. Jensen Precast
2. Oldcastle
3. Approved equal.

2.04 BEDDING AND COVER MATERIALS

A. Pipe Bedding Material: As specified in Section 31 23 33 Trenching and Backfilling.
B. Pipe Cover Material: As specified in Section 31 23 33 Trenching and Backfilling.

PART 3 - EXECUTION

3.01 TRENCHING

A. See Section 31 23 33 Trenching and Backfilling for additional requirements.

B. Hand trim excavation for accurate placement of pipe to elevations indicated.

C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.02 PIPE INSTALLATION

A. Lay piping beginning at low point of system, true to grades and alignment indicated on Drawings, with unbroken continuity of invert.

B. Install pipe, fittings, and accessories in accordance with manufacturer’s instructions. Seal watertight.
1. Plastic Pipe: Also comply with ASTM D 2321.

C. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet.

D. Install continuous line marker 18 inches above top of pipe; coordinate with Section 31 23 33 Trenching and Backfilling.
3.03 DRAIN INLET INSTALLATION
   A. As recommended by manufacturer.

3.04 PIPE PENETRATIONS
   A. For pipe penetrations through existing manholes, core through, provide gasket around
      pipe, grout penetration on both sides and provide a minimum of 6 inches around collar
      outside of the maintenance hole or inlet structure penetration.

3.05 TAP CONNECTIONS
   A. Make connections to existing piping and underground structures so that finished Work
      will conform as nearly as practicable to requirements specified for new Work.
   B. Into underground structures or pipes 24 inches and larger: Cut opening into unit
      sufficiently large to allow 3 inches of concrete to be packed around entering connection.
      Cut ends of connection passing through pipe or structure wall to conform to shape of and
      be flush with inside wall. On outside of pipe or structure wall, encase entering connection
      in 6 inches of concrete for minimum length of 12 inches to provide additional support of
      collar from connection to undisturbed ground. Provide 3000 pounds per square inch
      concrete. Use epoxy bonding compound as interface between new and existing concrete
      and piping materials.
   C. Take care while making tap connections to prevent concrete or debris from entering
      existing pipe or structure. Remove debris, concrete, or other extraneous material, which
      may accumulate.

3.06 CLEANING
   A. Piping greater than 8 inches: clean pipe to be tested by propelling a snug fitting inflated
      rubber ball through the pipe with water to remove any debris.
   B. Piping 8 inches and smaller: flush piping applying full size pipe flushing.

3.07 LEAK TESTING
   A. Testing of all portions of the system including maintenance holes is required.
   B. For either exfiltration or infiltration test, the maximum leakage shall not exceed 250
      gallons per inch of pipe diameter per mile per 24 hours as measured over a period of 30
      minutes minimum. Should the leakage exceed the maximum allowable rate, the
      contractor shall repair, overhaul, or rebuild the defective portion of the sewer line. After
      repairs have been completed by the Contractor, the line shall be retested as specified
      above.
   C. Maintenance holes shall be filled with water to the rim of the frame casting and shall lose
      no more than 2 inches over a period of 30 minutes.
   D. The final test shall be performed after the line has been laid and all backfill placed and
      compacted. The Contractor, at Contractor’s option, may test the line at any time during
      construction. However, the final test for acceptance shall be made only after all backfill is
      in place and compacted. In the event that the exfiltration test prescribed above is
      impractical due to wet trench conditions, these portions of the sewer line where such
      conditions are encountered will be tested for infiltration. The City’s Representative shall
      determine whether the exfiltration or infiltration test will be used.
   E. Even though the test for leakage is within the prescribed limits, the Contractor shall repair
      any obvious leaks.
   F. Low pressure air testing may be used in lieu of water testing at the option of the
      Contractor. Water testing may be required by the City’s Representative. The following
      procedure shall be used for air testing:
      1. Plug all pipe outlets with suitable test plugs. Brace each plug securely.
2. If the pipe to be tested is submerged in ground water, insert a pipe probe, by boring or jetting, into the backfill material adjacent to the center of the pipe, and determine the pressure in the probe when air passes slowly through it. This is the back pressure due to ground water submergence over the end of the probe. All gauge pressures in the test should be increased by this amount.

3. Add air slowly to the portion of the pipe installation under test until the internal pressure is raised to 5.0 psig.

4. Check exposed pipe and plugs for abnormal leakage by coating with a soap solution. If any leakage is observed, bleed off air and make necessary repairs.

5. After an internal pressure of 5.0 psig is obtained, allow at least two minutes for air temperature to stabilize, adding only the amount of air required to maintain pressure.

6. After the two minute period, disconnect the air supply and start stopwatch. The pressure of 5.0 psig shall be maintained for 5 minutes.

7. As an alternate, the contractor may request the air testing procedure as presented in Section 306-1.4.4 of the 1997 edition of the “Greenbook” Standard Specifications.

END OF SECTION