HOLLISTER/KELLOGG PARK - CIP 9035
Goleta, California

Invitation for Bid (IFB) for Construction of Hollister/Kellogg Park Project

Bid Number: 01-18
Bid Opening: April 9, 2018

For use with 2015 Standard Specifications
For Public Works Construction, “Greenbook,” (including applicable amendments)

As of March 2018

City of Goleta
Department of Neighborhood Services & Public Safety
| SECTION A | Notice Inviting Sealed Bids | 5 |
| SECTION B | Bidding Instructions | 8 |
| SECTION C | Bid Proposal | 17 |
| SECTION D | Sample Contract | 41 |
| SECTION E | City General Provisions | 58 |
| SECTION F | Special Provisions | 73 |
| SECTION 201 | Concrete, Mortar, and Related Materials | 75 |
| SECTION 201.8 | Cement Concrete Finishes | 77 |
| SECTION 203 | Paving Asphalt | 96 |
| SECTION 203-15 | Porous Asphalt Concrete & Crushed Rock | 99 |
| SECTION 204 | Wood Fencing | 100 |
| SECTION 206 | Metal Gates Railing and Fence | 104 |
| SECTION 206-2 | Pre-Fabricated Vinyl Coated Chainlink Fence | 111 |
| SECTION 207 | Gravity Pipe | 116 |
| SECTION 209-1 | Pressure Pipe | 119 |
| SECTION 214 | Traffic Striping, Curb and Pavement Markings, and Pavement Markers | 128 |
| SECTION 300 | Earthwork | 132 |
| SECTION 400 | Installation of Stabilized Decomposed Granite Paths | 136 |
| SECTION 401 | Poured in Place Playground Safety Surface | 140 |
| SECTION 700 | Electrical | 143 |
| SECTION 800-4 | Engineered Wood Fiber Surface | 152 |
| SECTION 801 | Weed Removal | 158 |
| SECTION 801-1 | Plant Installation | 161 |
| SECTION 801-2 | Construction Materials and Methods for Irrigation System | 165 |
| SECTION 801-3 | Tree Removal on Bikeway | 176 |
| SECTION 900 | Biofiltration Trenches | 177 |
| SECTION 901 | Low Water Crossing | 185 |
| SECTION 902 | Pre-Fabricated Trellis | 186 |
| SECTION 903-1 | Pre-Fabricated Bathroom | 194 |
| SECTION 903-2 | Pre-Fabricated Trash Enclosure | 206 |
Subject: Invitation for Bid (IFB) for Construction of Hollister/Kellogg Park Project

To Whom It May Concern:

The City of Goleta, Neighborhood Services & Public Safety Department, invites you to submit a Bid Proposal to perform: construction of a new 3.46 AC neighborhood park, see attached plan. The Work to be performed under this Contract shall consist of furnishing all tools, equipment, materials supplies and manufactured articles and furnishing all labor, transportation, and services, including fuel, power, water and essential communications, and performing all work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The Work shall be complete, and all work materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the Work in good faith shall be provided by the Contractor as though originally so indicated, at no increased cost to the Owner.

The work to be performed under this Contract is located in the City of Goleta and involves the construction of the new Hollister Kellogg Park. The following summarizes the major project components of work:

1. Mobilization, demobilization, bonds & insurance.
2. Project safety & shoring.
3. Traffic control:
   - Contractor shall provide temporary traffic control for construction staging area and pedestrian barricades. Temporary traffic control for staging area shall comply with California MUTCD and the project plans.
4. Demolition
   - On-site demolition
   - Off-site demolition
5. Site preparation and utilities
   - Site preparation including excavation, clearing and grubbing, grading, compaction, erosion control and capping of existing well.
   - Water pollution and erosion control:
Contractor shall provide erosion and water pollution control measures identified on the project plans as well as daily street and sidewalk sweeping, properly maintain material stockpiles, and job site management.

- Site utilities including sanitary sewer, domestic water, landscape water, site electrical, stormwater drainage and water quality infiltration trenches.
- Site lighting.

6. Hardscape
- Off-site improvements including driveway, sidewalk and bike path.
- On-site improvements including pathways, play surfaces and parking lot.

7. Site Structures
- Skate plaza.
- Furnishing and installation of prefabricated bathroom, trellises and trash enclosure.

8. Site amenities
- Furnishing and installation of benches, picnic tables, bbqs, trash/recycle and ash receptacles, and bike parking.
- Installation of park signage provided by the city.

9. Recreational amenities
- Furnishing and installation of nature themed play equipment and exercise equipment.
- Furnishing and installation of play courts equipment and striping.
- Handball and bocce ball courts.
- Multi-use athletic natural turf field including gopher mesh protection.

10. Site walls and fencing

11. Irrigation
- Installation of irrigation system

12. Planting
- One year of site maintenance
- Installation of container planting and sport field sodded natural turf

SELECTION PROCESS

Bid proposals must be prepared on the approved bid forms in conformance with the “Proposal Instructions” contained in Section A. A contract may only be awarded to the lowest responsive and responsible bidder that holds a valid Class “A” Contractor’s license or appropriate specialty licensing in accordance with the provisions of the California Business and Professions Code.

PROPOSAL SUBMITTAL

1. One (1) copy of the proposal shall be submitted to CITY. Proposals must be received no later than 3:00 p.m., April 9, 2018 at the following address:

   City of Goleta
   130 Cremona Drive, Ste B
Goleta, CA 93117
Attention: JoAnne Plummer, Parks & Recreation Manager

2. **Late Submittal.** A proposal is late if received at any time after 3:00 p.m. (according to date stamp) Monday, April 9, 2018. Proposals received after 3:00 p.m., Monday, April 9, 2018 will not be considered and will be returned to the proposer unopened and marked "LATE PROPOSAL."

3. **Bid Proposal Property.** All bid proposals become the property of CITY upon submission. Although CITY intends to keep all proposals confidential (with the exception of the successful proposal which becomes public information upon acceptance by CITY), CITY will not be responsible for materials obtained by other parties without the consent of the proposer.

4. **Amendments to Request For Proposal (RFP).** CITY reserves the right to amend the RFP by addendum. If necessary the proposal submittal deadline will be extended to allow proposers additional time to respond to an RFP addendum.

5. **Non-Commitment of CITY.** This RFP does not commit CITY to award a Contract, to pay any costs incurred in the preparation of a bid proposal for this request, or to procure or contract for services. CITY reserves the right to accept or reject any or all bid proposals received as a result of this request, or to modify or cancel in part or in its entirety the RFP, if CITY determines it is in the best interests of the CITY to do so.

6. **Inquiries.** Inquiries concerning this IFB should be directed to:

   City of Goleta, Neighborhood Services & Public Safety Department
   JoAnne Plummer, Parks & Recreation Manager
   jplummer@cityofgoleta.org
   (805) 562-5505

Sincerely,

JoAnne Plummer, Parks & Recreation Manager
Neighborhood Services & Public Safety Department

Attachments:

**BIDDING DOCUMENTS:**
- SECTION A – Notice Inviting Sealed Bids
- SECTION B – Bidding Instructions
- SECTION C – Bid Proposal
- SECTION D – Sample Contract
- SECTION E – City General Provisions
- SECTION F – Special Provisions
- SECTION G – Hollister/Kellogg Park Project Plans
SECTION

A

NOTICE INVITING SEALED BIDS
SECTION A NOTICE INVITING SEALED BIDS

NOTICE INVITING SEALED BIDS
FOR THE
CONSTRUCTION OF HOLLISTER/KELLOGG PARK

130 Cremona Drive, Suite B, City of Goleta, CA

PUBLIC NOTICE IS HEREBY GIVEN that the City of Goleta ("City"), invites sealed bids for the above stated project and will receive such bids in the office of the City Clerk, 130 Cremona Drive, Suite B, Goleta, California 93117, up to the hour of 3:00 p.m. on Monday, April 9, 2018, and will be publicly opened and read aloud promptly thereafter. Faxes or any electronic format is not acceptable.


Each Bidder shall register by providing its street address, e-mail, phone and fax to City at the time of pick-up or request for Bidding Documents ("Registered Bidders); Addenda, if any, shall be issued via e-mail or CD (no hard copy) only to Registered Bidders. The City reserves the right to extend the Bid Deadline and Bid Opening by issuing an Addendum to Registered Bidders no later than 72 hours prior to the Bid Deadline.

The work includes all labor, material and equipment necessary for the construction of, but not limited to the following: driveway, sidewalk, bike path, parking lot, skate plaza, multi use courts, handball and bocce ball courts, multi-use athletic natural turf (sod) field including gopher mesh protection, installation of prefabricated facilities, recreational amenities, picnic tables, BBQ pits, irrigation, electrical, plumbing, and landscaping, etc, at 170 South Kellogg Avenue, Goleta CA. The contract period is 200 working days.

Any contract entered into pursuant to this notice will incorporate provisions of the California Labor Code. The Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations per California Labor Code Section 1771.4, including prevailing wage rates and apprenticeship employment standards. Affirmative action to ensure against discrimination in employment practices on the basis of race, color, national origin, ancestry, sex, or religion will also be required. The City hereby affirmatively ensures that all business enterprises will be
afforded full opportunity to submit bids in response to this notice and will not be
discriminated against on the basis of race, color, national origin, ancestry, sex, or
religion in any consideration leading to the award of contract.

Bids must be prepared on the approved bid forms in conformance with the “Bidding
Instructions” and the General Provisions and submitted in a sealed envelope plainly
marked on the outside, “SEALED BID FOR CONSTRUCTION OF
HOLLISTER/KELLOGG PARK.” DO NOT OPEN WITH REGULAR MAIL.” The bid
must be accompanied by certified cashier’s check, or bidder’s bond, made payable to
City. The bid security shall be an amount equal to ten percent (10%) of the total
maximum amount bid with their proposals as required by California law.

A contract may only be awarded to the lowest responsive and responsible bidder that
holds a valid Class “A” Contractor’s license or specialty licensing in accordance with the
provisions of the California Business and Professions Code.

Within such limits as may be prescribed by law, the City Council of the City of Goleta
reserves the right to reject any and all Bids, to accept, reject or waive any variances or
informalities in a Bid or in the bidding, or take bids under advisement. Failure to provide
proof of the contractor’s current registration pursuant to Section 1725.5 of the Labor
Code may result in rejection of the bid as non-responsive. Failure to comply with
enforcement provisions pursuant to Section 1771.4 of the Labor Code may result in a
determination that the bidder is not responsible.

The Contractor Company, including the Responsible Managing Officer (RMO) for the
Contractor Company, shall demonstrate a minimum of three (3) years' experience
successfully performing projects of substantially similar type, magnitude, and character
of the work bid.

Bids shall remain open and valid for a period of ninety (90) days after the Bid Deadline.

Pursuant to Public Contract Code section 22300, the successful bidder may substitute
certain securities for funds withheld by City to ensure performance under the Contract
or, in the alternative, request the City to make payment of retention to an escrow agent.

Any protest to an intended award of this contract shall be made in writing addressed to
the City Clerk prior to the award. Any protest may be considered and acted on by the
City Council at the time noticed for award of the contract. To request a copy of the
notice of agenda for award, please contact the City Clerk (805) 961-7505 or register on
the City’s website (www.cityofgoleta.org).

CITY OF GOLETA

Deborah S. Lopez, City Clerk
SECTION

B

BIDDING INSTRUCTIONS
BIDDING INSTRUCTIONS

1. DEFINITIONS. All definitions are as provided for in the 2015 Standard Specifications for Public Works Construction, “Greenbook,” unless provided otherwise. The definitions in the contract documents are applicable to all Bidding Documents.

1.1 “Addenda” means written or graphic instruments issued by the City before the Bid Deadline that modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections.

1.2 “Alternate” means a proposed change in the work, as described in the Bidding Documents which, if accepted, may result in a change to either the contract sum or the contract time, or both.

1.3 “Bid Deadline” means the date and time designated in the Notice Inviting Sealed Bids as the last date and time for receipt of Bids, as may be revised by Addenda.

1.4 “Bidder” means a person or firm that submits a Bid.

1.5 “Bidding Documents” means the construction documents prepared and issued for bidding purposes including all Addenda.

1.6 “Lump Sum Base Bid” means the sum stated in the Bid for which Bidder offers to perform the work described in the Bidding Documents, but not including unit price items or Alternates.

1.7 “Unit Price” means an amount stated in the Bid for which Bidder offers to perform the unit price work for a fixed price per unit of measurement.

1.8 “Inspector” means the person designated by the Engineer to ensure specification compliance.

2. BIDDER’S REPRESENTATIONS. By making its Bid, Bidder represents that:

2.1 Bidder read, understood, and made the Bid pursuant to the requirements in the Bidding Documents.

2.2 Bidder visited the Project site and is familiar with the conditions under which the Work will be performed and the local conditions as related to the Contract Documents.

2.3 The Bid is based upon the materials, equipment, and systems required by the Bidding Documents.
2.4 Bidder and all Subcontractors, regardless of tier, have the appropriate current licenses issued by the State of California Contractor’s State License Board for the Work to be performed. If Bidder is a joint venture, the Bidder will have a joint venture license appropriate for the performance of the work, and each member of the joint venture will likewise have the appropriate license. Business and Professions Code §§ 7000-7191 establish licensing requirements for contractors. If a Bidder, that is a specialty contractor, submits a Bid involving 3 or more specialized building trades, the work of which is more than incidental and supplemental to the performance of the Work for which Bidder holds a specialty contractor license, Bidder must also hold either (1) a specialty contractor “C” license in each such trade, (2) a General Engineering contractor “A” license, or (3) a General Building contractor “B” license. This requirement is applicable whether or not Bidder lists a Subcontractor for each such trade.

2.5 Bidder has the expertise and financial capacity to perform and complete all obligations under the Bidding Documents.

2.6 The person executing the Bid Form is duly authorized and empowered to execute the Bid Form on Bidder’s behalf.

2.7 Bidder is aware of and, if awarded the Contract, will comply with legal requirements in its performance of the Work.

2.8 The Bidder has paid any applicable City business license fee(s).

3. BIDDING DOCUMENTS.

3.1 Bidders may obtain complete sets of the Bidding Documents from the City’s Public Works Department for the sum stated in the Notice Inviting Sealed Bids.

3.2 Bidders will use a complete set of Bidding Documents in preparing Bids.

3.3 The City makes copies of the Bidding Documents available, on the above terms, for the sole purpose of obtaining Bids for the Work and does not confer a license or grant permission for any other use of the Bidding Documents.

3.4 Bidders will be evaluated for responsiveness and responsibility based on information provided in the bid documents under Designation of Subcontractors” and Bidder’s References.”

4. INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS.

4.1 Before submitting its Bid, Bidder will carefully study and compare the various documents comprising the Bidding Documents and compare them
with any other work being bid concurrently or presently under construction which relates to the work for which the Bid is submitted; will examine the project site, the conditions under which the work is to be performed, and the local conditions; and will at once report to the City’s representative errors, inconsistencies, or ambiguities discovered.

Requests for clarification or interpretation of the Bidding Documents will be addressed to the City’s representative. Please email your questions to jplummer@cityofgoleta.org

4.2 Clarifications, interpretations, corrections, and changes to the Bidding Documents will be made by Addenda. Clarifications, interpretations, corrections, and changes to the Bidding Documents made in any other manner will not be binding and Bidders will not rely upon them.

5. PRODUCT SUBSTITUTIONS.

5.1 No substitutions will be considered before award of Contract. Substitutions will only be considered after award of the Contract and as provided for in the Contract Documents.

6. SUBCONTRACTORS.

6.1 Each Bidder will list in the Designation of Subcontractor form all first-tier subcontractors that will perform work, labor or render such services in excess of one half percent (½ %) of work. The Designation of Subcontractor Form contains spaces for the following information when listings subcontractors: (1) Work activity; (2) name of subcontractor; (3) city of subcontractor’s business location. Failure to list any of these items on the form will result in the City treating the Bid as if no subcontractor was listed for the work and that Bidder represents to the City that it is fully qualified to perform that portion of the work and will so perform such work.

6.2 Subcontractors listed in the Designation of Subcontractor form will only be substituted after the Bid Deadline with the City’s written consent in accordance with California law.

7. ADDENDA.

7.1 Addenda will be in writing and issued only by the City. Addenda will be mailed or delivered to all who are known by the City to have received a complete set of Bidding Documents and who have provided a mailing address for receipt of Addenda.

7.2 Copies of Addenda will be made available for inspection at the City’s Public Works Department and posted at ebidboard.com
7.3 The City will issue Addenda so that they are received by prospective Bidders not later than three (3) business days before the Bid Deadline. Addenda that withdraws the request for Bids or postpones the Bid Deadline may be issued any time before the Bid Deadline.

7.4 Each Bidder is responsible for ensuring that it has received all issued Addenda before submitting a Bid.

8. FORM AND STYLE OF BIDS.

8.1 Bids will be submitted on the bid forms included with the Bidding Documents. Bids not submitted on the City’s bid form will be rejected. Bid forms shall not be removed from the contract documents or complete bid specification package.

8.2 All blanks on the bid forms will be filled in legibly in ink or typed.

8.3 Bidder’s failure to submit a price for any Alternate or unit price will result in the Bid being considered as non-responsive. If Alternates are called for and no change in the Lump Sum Base Bid is required, enter “No Change.”

8.4 Each Bidder must fill out the “Bidder’s Statement of Past Contract Disqualifications” form stating any and all instances of contract disqualifications due to a violation of a law or safety regulation. The Bidder must explain the circumstances of each disqualification. The City may reject the Bid based on such information.

8.5 Bidder will make no stipulations on the bid form nor qualify the Bid in any manner.

8.6 The Bids will be based upon full completion of all the work as shown on the plans and specifications. It is expressly understood that the plans are drawn with as much accuracy as is possible in advance, but should errors, omissions or discrepancies exist in the plans which show conditions that vary from those encountered in construction, the Bidder (if awarded the contract) specifically agrees to construct a completed work ready for the use and in the manner which is intended. In the event of increasing or decreasing of work, the total amount of work actually done or materials or equipment furnished must be paid for according to the unit or lump sum price established for such work under the Contract, wherever such unit or lump sum price has been established. In the event no prices are named in the contract to cover such changes or alterations, the cost of such changes must be covered as extra work.

8.7 The bid forms will be signed by a person or persons legally authorized to bind Bidder to a contract. Bidder’s representative will sign and date the
Declaration of Eligibility to Contract included in the bid forms. Failure to sign and date the Declaration will cause the Bid to be rejected.

9. BID SECURITY.

9.1 Each Bid will be accompanied by bid security, in the amount of 10% of the total bid as security for Bidder’s obligation to enter into a contract with the City on the terms stated in the bid forms and to furnish all items required by the Bidding Documents. Bid security will be a Bid Bond on the form provided by the City. When a Bid Bond is used for bid security, failure to use the City’s Bid Bond form will result in the rejection of the Bid.

9.2 If the apparent lowest responsible Bidder fails to sign the contract and furnish all items required by the Bidding Documents within the time limits specified in these Bidding Instructions, the City will disqualify such Bidder and select the next apparent lowest responsible Bidder until all Bids have been exhausted or the City may reject all Bids. In such an event, the disqualified Bidder will be liable for and forfeit to the City the amount of the difference, not to exceed the amount of the bid security, between the amount of the disqualified Bid and the larger amount for which the City procures the work.

9.3 If a Bid Bond is submitted and an attorney-in-fact executes the Bid Bond on behalf of the surety, a notarized and current copy of the power of attorney will be affixed to the Bid Bond. The surety issuing the Bid Bond will be listed in the latest published State of California, Department of Insurance list of, “Insurers Admitted to Transact Surety Insurance in This State.”

9.4 The City will retain the bid security until the occurrence of one of the following:

9.4.1 All items required by the Bidding Documents have been furnished and the contract has been signed by the successful Bidder and the City.

9.4.2 The specified time has elapsed during which Bids may be withdrawn.

9.4.3 All Bids have been rejected.

9.4.4 All Bids have been rejected.

10. BID DELIVERY.

10.1 The bid forms, bid security, and all other documents required to be submitted with the Bid will be enclosed in a sealed opaque envelope. The envelope will be addressed to the City Clerk. The envelope will be
identified with the project name, Bidder’s name and address, and, if applicable, the designated portion of the project for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope will be enclosed in a separate mailing envelope labeled as follows: “SEALED BID FOR HOLLISTER/KELLOGG PARK PROJECT FY 2018-2019. DO NOT OPEN WITH REGULAR MAIL.”

10.2 Bids will be deposited at the designated location on or before the Bid Deadline. A Bid received after the Bid Deadline will be returned to Bidder unopened.

10.3 Bidder will assume full responsibility for timely delivery at the location designated for receipt of Bids.

10.4 Oral, telephonic, facsimile, or telegraphic Bids are invalid and will not be accepted.

11. MODIFICATION OR WITHDRAWAL OF BID.

11.1 Before the Bid Deadline, a submitted Bid may be modified or withdrawn. Notice of such action will be given to the City in writing and signed by the Bidder’s authorized representative. A change so made will be so worded as not to reveal the amount of the original Bid.

11.2 A withdrawn Bid may be resubmitted up to the Bid Deadline, provided that it then fully complies with the Bidding Requirements.

11.3 Bid Security will be in an amount sufficient for the Bid as modified or resubmitted.

11.4 Bids may not be modified, withdrawn, or canceled within sixty (60) days after the Bid Deadline unless otherwise provided in any supplementary instructions to Bidders.

12. OPENING OF BIDS.

12.1 Bids submitted in the manner required by these instructions and are received on or before the Bid Deadline will be opened publicly.

13. REJECTION OF BIDS.

13.1 The City will have the right to reject all Bids.

13.2 The City will have the right to reject any Bid not accompanied by the required bid security or any other item required by the Bidding Documents, or a Bid which is in any other way materially incomplete or irregular.
14. AWARD.

14.1 The City may retain all Bids for a period of sixty (60) days for examination and comparison, and to delete any portion of the Work from the Contract.

14.2 The City will have the right to waive nonmaterial irregularities in a Bid and to accept the lowest responsive Bid as determined by the City.

14.3 The City will have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents.

14.4 The City will determine the low Bidder on the basis of the total bid price plus all unit prices multiplied by their respective estimated quantities as stated in the bid forms, if any.

14.5 The City will select the apparent lowest responsive and responsible Bidder and notify such Bidder within thirty (30) days (unless the number of days is modified in any supplementary Instructions to Bidders) after the Bid Deadline or reject all bids. Within ten (10) days after receiving the City’s notice that Bidder was selected as the apparent lowest responsible Bidder, Bidder will submit to the City all of the following items:

   14.5.1 Two originals of the Contract signed by Bidder.

   14.5.2 Two originals of the Payment Bond.

   14.5.3 Two originals of the Performance Bond.

   14.5.4 Certificates of Insurance on form provided by the City.

   14.5.5 Names of all Subcontractors, with their addresses, telephone number, facsimile number and trade on Bidders’ company stationery. Evidence, as required by the City, of the reliability and responsibility of the proposed Subcontractors such as statements of experience, statements of financial condition, and references.

14.6 Before award of the contract, the City will notify Bidder in writing, if the City objects to a subcontractor proposed by Bidder, in which case Bidder will propose a substitute acceptable to the City. Failure of the City to object to a propose subcontractor before award will not preclude the City from requiring replacement of any subcontractor based upon information received subsequent to award, information which cannot be properly evaluated before award due to time constraints, or information relating to a failure to comply with the requirements of the contract.
14.7 If Bidder submits the two original signed contracts and all other items within ten (10) days after receiving the City’s notification, and all such items comply with the requirements of the Bidding Documents, the City will award the Contract to Bidder by signing the Contract and returning a signed copy of the contract to Bidder.

14.8 If the City consents to the withdrawal of the Bid of the apparent lowest responsible Bidder, or the apparent lowest responsible Bidder fails or refuses to sign the Contract or submit to the City all of the items required by the Bidding Documents, within ten (10) days after receiving the City’s notification, or the City determines that the Bidder is not financially or otherwise qualified to perform the contract, the City may reject such Bidder’s Bid and select the next apparent lowest responsible Bidder, until all bids are exhausted, or City reject all Bids.
BID PROPOSAL
FOR
CONSTRUCTION OF HOLLISTER/KELLOGG
PARK PROJECT

TO THE CITY OF GOLETA (“City”):

In accordance with City’s Notice Inviting Sealed Bids, the undersigned Bidder hereby proposes to furnish all materials, equipment, tools, labor, and incidentals required for the above stated Project as set forth in the Plans, Specifications, and Contract Documents, and to perform all Work in the manner and time prescribed therein.

Bidder declares that this Bid is based upon careful examination of the Work site, Plans, Specifications, Bidding Instructions, and all other Contract Documents. If this Bid is accepted for award, Bidder agrees to enter into a contract with City at the unit and/or lump sum prices set forth in the following Bid Schedule. Bidder understands that failure to enter into a contract in the manner and time prescribed will result in forfeiture to City of the Bid Security accompanying this Bid.

Bidder understands that a Bid is required for the entire Work, that the estimated quantities set forth in the Bid Schedule are solely for the purpose of comparing Bids, and that final compensation under the Contract will be based upon the actual quantities of Work satisfactorily completed. THE CITY RESERVES THE RIGHT TO INCREASE OR DECREASE THE AMOUNT OF ANY QUANTITY SHOWN AND TO DELETE ANY ITEM FROM THE CONTRACT. It is agreed that the unit and/or lump sum prices bid include all appurtenant expenses, taxes, royalties, and fees. In the case of discrepancies in the amounts bid, unit prices shall govern over extended amount, and words shall govern over figures.

If awarded the Contract, the undersigned further agrees that in the event of the Bidder’s default in executing the Contract and filing the necessary bonds and insurance certificates WITHIN 200 WORKING DAYS, not including Saturdays, Sundays and legal holidays, after the City has mailed notice of the award of contract to the Bidder, the proceeds of the Bid Security accompanying this Bid shall become the property of the City and this Bid and the acceptance hereof may, at the City’s option, be considered null and void.
BID PROPOSAL
FOR
CONSTRUCTION
HOLLISTER/KELLOG PARK PROJECT

Bids will be received until April 9, 2018 at 3:00 p.m. at the City of Goleta, City Hall, 130 Cremona Drive, Suite B, Goleta, CA 93117.

For any questions regarding the Contract Documents, Specifications, Proposal or other Bidding Documents, please contact JoAnne Plummer at telephone number (805) 562-5505 or e-mail at jplummer@cityofgoleta.org.

The Project insurance requirements are as per the sample contract as contained herein this Specification.

Approximate Contract Period: May 1, 2018 – Feb 1, 2019 (200 working days).

BIDDER SHALL COMPLETE:
Bidder’s Name ____________________________________________
Street Address ____________________________________________
City ____________________________ State _________ Zip Code __________
Telephone Number ______________ Fax Number __________________
e-mail __________________

The following Addenda are acknowledged: Number Dated Initials
(Bidder must fill in number and date of each Addendum or may enter the word “none” if appropriate)

_______ _______ _______
_______ _______ _______
_______ _______ _______

__________________________________________
BIDDER’S NAME ________________________ DATE ________________________
HOLLISTER/KELLOG PARK PROJECT
BIDDING SHEET

The cost of all labor, material, and equipment necessary for the completion of the work itemized, even though not shown or specified, shall be included in the unit price for the various items shown herein. (See Section A2.07.)

The City reserves the right to increase or decrease the quantity of any item or omit items as may be deemed necessary, and the same shall in no way affect or make void the contract, except that appropriate additions or deductions from the contract total price will be made at the stipulated unit price.

The City further reserves the right to reject any or all bids, to waive any informality or irregularity in any bid or the bidding procedure, and to delete any items of work in the award of contract.

Bidders must bid on all items in the Bid Schedule. Item 11, Supplemental Work, has the amount filled in and will be included in the total for the bid. The basis of the bid will be the total of Schedule A. The Bid Alternative, if any, will not be included in the basis of the bid.

BID PROPOSAL FOR
CONSTRUCTION OF HOLLISTER/KELLOGG PARK

BASE BID SCHEDULE

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Demobilization, Bonds &amp; Insurance</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Project Safety &amp; Shoring</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Traffic Control</td>
<td>Days</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Demolition

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>On-Site Demolition (INCL. grubing and tree removal, fence removal, paving removal, demo/hauling)</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Off-Site Demolition (INCL. (E) power pole/overhead wires, sawcutting (E) paving/gutter paving demo/hauling, (E) sidewalk protection, and (E) irrigation)</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Site Preparation and Utilities

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Site Preparation (INCL. site)</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>------------------------------------------------------------------------------</td>
<td>----</td>
<td>----</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td><strong>Site Electrical</strong> (INCL. main feeder, pole lighting, power and lighting to restrooms, trash enclosure, trellises, and crosswalk lighting system)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td><strong>Sanitary Sewer</strong> (INCL. piping and patching)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td><strong>Domestic Water</strong> (INCL. 3&quot; backflow preventer, piping and patching (E) pavement)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td><strong>Fire Water</strong> (INCL. piping and patching (E) pavement)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td><strong>Water Quality Infiltration Trench</strong> (INCL. 8&quot; perf. pipe, 8&quot; solid pipe, 24&quot;x24&quot; inlet, area drains, class II gravel, geofabric, engineered soil, mulch)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Hardscape</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td><strong>Off-Site Improvements</strong> (INCL. concrete sidewalk/driveway/paving, AC paving, concrete curb, concrete gutter, ADA ramp, warning surface, signage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td><strong>6&quot; Integral Colored Concrete W/ Wood Plank Stamped Impression Paving Surface</strong> (INCL. #3 rebar, 4&quot; class II aggregate base)</td>
<td>SY</td>
<td>460</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td><strong>4&quot; Integral Colored Concrete W/ Sandcast Finish Paving Surface</strong> (INCL. #3 rebar, 4&quot; class II aggregate base)</td>
<td>SY</td>
<td>1,409</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td><strong>Parking Lot</strong> (INCL. permeable concrete pavers, 1&quot; #8 aggregate base, 8&quot; permeable aggregate base, 8&quot; flush concrete curb, 6&quot; concrete curb/12&quot; gutter, parking stall striping, wheel stops, entry gate)</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td><strong>Asphaltic Concrete Play Surface</strong></td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td><strong>Bid Alt 1 Poured-In-Place Recycled Rubber Play Surface</strong> (INCL. 0.5&quot; EDPM surface, 2.5&quot; shredded SBR, 4&quot; class II aggregate base and 6&quot; concrete header)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td><strong>Bid Alt 2 Engineered Wood Fiber Play Surface</strong> (INCL. 12&quot; compacted wood fiber surface and 6&quot; colored concrete curb)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td><strong>Engineered Wood Fiber</strong> (INCL. 6&quot; compacted wood fiber surface and 6&quot; colored concrete curb)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td><strong>Stabilized D.G. Pathway</strong> (INCL. 4&quot; DG paving, 4&quot; class II aggregate base, recycled plastic header, and 6&quot; colored concrete curb)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td><strong>Stabilized D.G. Bike Parking</strong> (INCL. 4&quot; DG paving, 4&quot; class II aggregate base, and recycled plastic header)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Site Structures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td><strong>Skate Plaza</strong> (INCL. concrete footing, 1&quot; #8 aggregate base, 8&quot; permeable aggregate base, 880mm concrete pavers, 8&quot;W x 18&quot;D colored concrete curb, skate metal elements and concrete flatwork)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td><strong>Prefabricated Restroom Building</strong> (INCL. furnishing, GreenScreen Trellis, and installation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td><strong>Prefabricated Trellis Structure @ Picnic Areas</strong> (INCL. concrete footing and installation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td><strong>Prefabricated Trash Enclosure</strong> (INCL. concrete footing and installation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Site Amenities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Quantity</td>
<td>Unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------</td>
<td>----------</td>
<td>------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Front Entry Signage (city provided, contractor installed)</td>
<td>EA 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Prefabricated Trash Receptacles (INCL. concrete footing, anti-graffiti coating, furnishing, and installation)</td>
<td>EA 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Prefabricated Recycled Plastic Picnic Table (INCL. concrete footing, anti-graffiti coating, furnishing and installation)</td>
<td>EA 18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Prefabricated Park Bench (INCL. concrete footing, anti-graffiti coating, furnishing, and installation)</td>
<td>EA 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Prefabricated Bike Parking (INCL. concrete footing, anti-graffiti coating, and installation)</td>
<td>EA 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Prefabricated Double-Posted BBQ (INCL. concrete footing, anti-graffiti coating, furnishing, and installation)</td>
<td>EA 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Prefabricated Single-Pedestal BBQ (INCL. concrete footing, anti-graffiti coating, furnishing, and installation)</td>
<td>EA 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Prefabricated Concrete Hot Ash Receptacles (INCL. concrete footing, anti-graffiti coating, furnishing, and installation)</td>
<td>EA 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recreation Amenities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Prefabricated Nature-Themed Play Equipment</td>
<td>LS 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Handball Court (INCL. CMU wall, #6 rebar, concrete footing, striping, weather-proofing treatment, anti-graffiti coating, and installation)</td>
<td>LS 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Bocce Ball Court (INCL. 4” DG paving, 6” class II aggregate base, and 8x8” concrete curb, installation)</td>
<td>LS 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Basketball Court (INCL. concrete)</td>
<td>EA 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item Code</td>
<td>Description</td>
<td>Quantity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37A</td>
<td><strong>Tennis Court</strong> <em>(INCL. concrete footing, removable posts, net, anti-graffiti coating, court striping, furnishing and installation)</em></td>
<td>LS 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37B</td>
<td><strong>Pickleball Court</strong> <em>(INCL. concrete footing, removable posts, net, anti-graffiti coating, court striping, furnishing and installation)</em></td>
<td>LS 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td><strong>Prefabricated Fitness Stations</strong> <em>(INCL. concrete footing, anti-graffiti coating, furnishing and installation)</em></td>
<td>LS 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td><strong>Prefabricated Concrete Ping Pong Table</strong> <em>(INCL. anti-graffiti coating, furnishing, installation, custom netting)</em></td>
<td>EA 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td><strong>Prefabricated Concrete Chess/Checkers Table</strong> <em>(INCL. anti-graffiti coating, furnishing and installation)</em></td>
<td>EA 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td><strong>Custom Piñata Pole</strong> <em>(INCL. concrete footing, all materials, hardware, construction, and installation)</em></td>
<td>EA 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td><strong>Prefabricated Bankshot Stations</strong> <em>(INCL. Triple Bank Down, Wraparound Left, Large Ricochet, and Double Glance Shot backboards, anti-graffiti coating, court striping, pole procurement, concrete footing, furnishing, and installation)</em></td>
<td>EA 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td><strong>6’ H Vinyl Coated Chainlink Perimeter Fence</strong> <em>(INCL. concrete footing, gate, vinyl coated chainlink fabric, and installation)</em></td>
<td>LF 232</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td><strong>6’ H x 20’ L Vinyl Coated Chainlink South Perimeter Gate</strong> <em>(INCL. posts, rails, fencing, concrete footing, and installation)</em></td>
<td>LS 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Unit</td>
<td>Quantity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14' H Vinyl Coated Chainlink Barrier Fence (INCL. footing, posts, vinyl coated chainlink fabric, and installation)</td>
<td>LF</td>
<td>183</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4' H Prefabricated Metal Fence and Custom Metal Pedestrian Entry Gate (INCL. posts, rails, fencing, gate hardware concrete footing, furnishing and installation)</td>
<td>LF</td>
<td>346</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4' H Custom Metal Skate Plaza Gate and Fence (INCL. posts, rails, fencing, concrete footing, and installation)</td>
<td>LF</td>
<td>262</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6' H Perimeter Wood Fence (INCL. posts, rails, fencing, gate hardware, sealer, concrete footing, and installation)</td>
<td>LF</td>
<td>477</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42&quot; H Wood Split Rail Fence W/ Interpretive Signage (INCL. posts, rails, fencing, sealer, concrete footing and sign installation)</td>
<td>LF</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18&quot;H Seat Wall W/ Cobble Stone Veneer (INCL. stone veneer, mortar, CMU W/ cells filled W/ grout, rebar, footing, and installation)</td>
<td>LF</td>
<td>265</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation (INCL. furnishing and installation, controller, main lines, lateral lines, sleeving, heads, and all other equipment)</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trees (24&quot; box) (INCL. furnishing and installation)</td>
<td>EA</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trees (15 gal.) (INCL. furnishing and installation)</td>
<td>EA</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shrubs, vines (5 gal.) (INCL. furnishing and installation)</td>
<td>EA</td>
<td>357</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shrubs, vines, perennials, grasses (1 gal.) (INCL. furnishing and installation)</td>
<td>EA</td>
<td>690</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grasses (4&quot; pots @ 8&quot; O.C.) (INCL. furnishing and installation)</td>
<td>SY</td>
<td>1019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Unit</td>
<td>Quantity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------</td>
<td>----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td><strong>Sport Field Turf Sod</strong> (INCL. 6” clean gravel base, filter fabric, SQ gopher mesh, metal header, furnishing and installation)</td>
<td>SY</td>
<td>5,477</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td><strong>3” thick Pre-composted Landscape Mulch</strong> (INCL. furnishing and installation)</td>
<td>SY</td>
<td>3,625</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td><strong>Landscape Maintenance (1 YEAR)</strong></td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Appendix**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td><strong>Bike Path – Based Bid</strong> (INCL. Construction area signs, job site management, prepare storm water pollution prevention plan, temporary water pollution control elements, temporary fence (type esa), remove tree, clearing and grubbing, roadway excavation, imported borrow, fiber rolls, hydroseed, class 2 aggregate base, asphalt concrete, boardwalk system, furnish single sheet aluminum (0.063” – unframed), roadside sign – one post, 4” thermoplastic traffic stripe, thermoplastic pavement marking, mobilization, 42” wood rail, type II barricade)</td>
</tr>
<tr>
<td>61</td>
<td><strong>Bike Path – Alternate Bid</strong> (INCL. Construction area signs, job site management, prepare storm water pollution prevention plan, temporary water pollution control elements, temporary fence (type esa), remove tree, clearing and grubbing, roadway excavation, imported borrow, fiber rolls, hydroseed, class 2 aggregate base, asphalt concrete, minor concrete (curb, gutter, sidewalk and driveway), remove concrete (curb, gutter and sidewalk), remove chain link fence, furnish single sheet aluminum (0.063” – unframed), roadside sign – one post, 4” thermoplastic traffic stripe, thermoplastic pavement marking,</td>
</tr>
<tr>
<td>mobilization, Low Water Crossing.</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>--</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

(Total Base Bid in Words)

__________________________

Company Name of Bidder

__________________________

Date
DESIGNATION OF SUBCONTRACTORS
Bidder proposes to subcontract certain portions of the Work which are in excess of one-half of one percent (0.5 %) of the total amount bid and to procure materials and equipment from suppliers and vendors. These Subcontractors are identified as follows:

<table>
<thead>
<tr>
<th>Work to be Performed</th>
<th>Subcontractor License Number</th>
<th>Percent of Total Bid</th>
<th>Subcontractor’s Name &amp; Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BIDDER’S REFERENCES

The following are the names, addresses, and phone numbers for three public agencies for which Bidder has performed similar work within the past two years:

1. Name of Agency: __________________________
   Agency Address and Telephone __________________________
   Contact Person: __________________________
   Type of Construction Project: __________________________
   Contract Amount: __________________________

2. Name of Agency: __________________________
   Agency Address and Telephone __________________________
   Contact Person: __________________________
   Type of Construction Project: __________________________
   Contract Amount: __________________________

3. Name of Agency: __________________________
   Agency Address and Telephone __________________________
   Contact Person: __________________________
   Type of Construction Project: __________________________
   Contract Amount: __________________________

The following are the names, addresses, and phone numbers for all brokers and sureties from whom Bidder intends to procure insurance bonds:
EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE

Bidder certifies that in all previous contracts or subcontracts, all reports which may have been due under the requirements of any local, State, or Federal equal employment opportunity orders have been satisfactorily filed, and that no such reports are currently outstanding.

CONTRACTOR'S LICENSE REQUIREMENT

Bidder certifies that Bidder is aware that the Contract cannot be awarded to Bidder unless, at the time of the award, Bidder is the holder of a valid California Contractor's License (Class "A") proper and adequate for the work required by the Contract, and that the failure to obtain proper and adequate licensing for an award of the Contract shall result in the forfeiture of the Bidder's Security.

ELIGIBILITY TO CONTRACT

The successful Bidder shall be prohibited from performing work on this Project with a Subcontractor who is ineligible to perform work on the Project pursuant to Section 1777.1 or 1777.7 of the Labor Code.

BIDDER'S INFORMATION

Bidder certifies that the following information is true and correct:

Bidder's Name ____________________________

Business Address ____________________________

__________________________________________

Telephone ________________________________

State Contractor’s License No. and Class ____________________________

Original Date Issued ____________________ Expiration Date __________________

The following are the names, titles, addresses, and phone numbers of all individuals, firm members, partners, joint venturers, and/or corporate officers having a principal interest in this Bid:

__________________________________________

__________________________________________

__________________________________________
The date of any voluntary or involuntary bankruptcy judgments against any principal having an interest in this Bid are as follows:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

All current and prior DBA’s, alias, and/or fictitious business names for any principal having an interest in this Bid are as follows:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

I declare under penalty of perjury under the laws of the State of California that the above representations are true and correct. Executed this _____ day of __________, 2018, at ___________________ California.

________________________________________________________________________

Signature and Title of Bidder
or Authorized Representative

(SEAL)
BIDDER’S STATEMENT OF PAST CONTRACT DISQUALIFICATIONS

Please state all instances of being disqualified, removed, or otherwise prevented from bidding on, or completing, a federal, state, or local government project due to a violation of a law or safety regulation.

1. Have you ever been disqualified from any government contract?

   Yes ☐  No ☐

2. If yes, explain the circumstances:

   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

Signature and Title of Bidder or Authorized Representative
BID BOND
FOR
THE HOLLISTER/KELLOG PARK PROJECT

KNOW ALL PERSONS BY THESE PRESENTS that Bidder___________________________
_____________________, as PRINCIPAL, and __________________________, a
corporation organized under the laws of the State of ________________ and licensed
by the State of California to execute bonds and undertakings as sole surety, as
SURETY, are held and firmly bound unto the City of Goleta, as CITY, in the penal sum
of ____________________Dollars ($______________), which is ten percent (10%) of the total amount bid by PRINCIPAL
to CITY for the above stated project, for the payment of which sum, PRINCIPAL and
SURETY agree to be bound, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that, whereas PRINCIPAL is
about to submit a bid to CITY for the above stated project, if such bid is rejected, or if
such bid is accepted and a contract is awarded and entered into by PRINCIPAL in the
manner and time specified, and PRINCIPAL provides the required payment and
performance bonds and insurance coverages to CITY in the manner and time specified,
then this obligation shall be null and void, otherwise it shall remain in full force and
effect in favor of CITY.

In case suit is brought upon this bond, SURETY further agrees to pay all reasonable
attorneys’ fees and costs incurred by CITY in an amount fixed by the court. Surety
hereby waives the provisions of California Civil Code Sections 2845 and 2849.

IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and
seals this _______day of ________________________, 2018.

PRINCIPAL: ________________________________
(Address) ________________________________

BY: ________________________________
(Signature and Title of Authorized Officer)

BY: ________________________________
(Signature and Title of Authorized Officer)

CITY OF
GOLETA
130 Cremona Drive, Suite B, Goleta, CA 93117  P 805.961.7500  F 805.685.2635  www.cityofgoleta.org
SURETY: ________________________________
(Address) ________________________________

BY: ______________________________________
(Signature and Title of Authorized Officer)

BY: ______________________________________
(Signature and Title of Authorized Officer)

Note: All signatures must be acknowledged before a notary public. Attach appropriate acknowledgment. Also, evidence of the authority of any person signing as attorney-in-fact must be attached.
NONCOLLUSION DECLARATION TO BE EXECUTED
BY
BIDDER AND SUBMITTED WITH BID

State of California  )
County of Santa Barbara ) SS

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

Signed ________________________________

______________________________
Title

CITY OF
GOLETA
130 Cremona Drive, Suite B, Goleta, CA 93117   P 805.961.7500   F 805.685.2635   www.cityofgoleta.org
Subscribed and sworn to before me this _____ day of ________________, 20____.

Signature __________________________________________
Notary Public

(Notary Seal)
STATEMENT ACKNOWLEDGING PENAL AND CIVIL PENALTIES
CONCERNING THE CONTRACTOR’S LICENSING LAWS
[Business & Professions Code § 7028.15; Public Contract Code § 20103.5]

The undersigned, a duly authorized representative of the Bidder, certify that I am aware of the following provisions of California law and that I, or the company/individual on whose behalf this Bid is being submitted, hold a currently valid California contractor’s license as set forth below:

Business & Professions Code § 7028.15:

a) It is a misdemeanor for any person to submit a bid to a public agency to engage in the business or act in the capacity of a contractor within the State of California without having a license therefor, except in any of the following cases:

(1) The person is particularly exempted from this chapter.
(2) The bid is submitted on a state project governed by Section 10164 of the Public Contract Code or on any local agency project governed by Section 20103.5 of the Public Contract Code.

b) If a person has been previously convicted of the offense described in this section, the court shall impose a fine of 20 percent of the total amount bid of the contract under which the unlicensed person performed contracting work, or four thousand five hundred dollars ($4,500), whichever is greater, or imprisonment in the county jail for not less than 10 days nor more than six months, or both.

In the event the person performing the contracting work has agreed to furnish materials and labor on an hourly basis, “the price of the contract” for the purposes of this subdivision means the aggregate sum of the cost of materials and labor furnished and the cost of completing the work to be performed.

c) This section shall not apply to a joint venture license, as required by Section 7029.1. However, at the time of making a bid as a joint venture, each person submitting the bid shall be subject to this section with respect to his or her individual licensure.

d) This section shall not affect the right or ability of a licensed architect, land surveyor, or registered professional engineer to form joint ventures with licensed contractors to render services within the scope of their respective practices.

e) Unless one of the foregoing exceptions applies, a bid submitted to a public agency by a bidder who is not licensed in accordance with this chapter shall be considered non-responsive and shall be rejected by the public agency.
Unless one of the foregoing exceptions applies, a local public agency shall, before awarding a contract or issuing a purchase order, verify that the contractor was properly licensed when the contractor submitted the bid.

Notwithstanding any other provision of law, unless one of the foregoing exceptions applies, the registrar may issue a citation to any public officer or employee of a public entity who knowingly awards a contract or issues a purchase order to a contractor who is not licensed pursuant to this chapter. The amount of civil penalties, appeal, and finality of such citations shall be subject to Sections 7028.7 to 7028.13, inclusive. Any contract awarded to, or any purchase order issued to, a contractor who is not licensed pursuant to this chapter is void.

f) Any compliance or noncompliance with subdivision (e) of this section, as added by Chapter 863 of the Statutes of 1989, shall not invalidate any contract or bid awarded by a public agency during which time that subdivision was in effect.

g) A public employee or officer shall not be subject to a citation pursuant to this section if the public employee, officer, agent or volunteer of the public agency made an inquiry to the board for the purposes of verifying the license status of any person or contractor and the board failed to respond to the inquiry within three business days. For purposes of this section, a telephone response by the board shall be deemed sufficient.

Public Contract Code § 20103.5:

In all contracts subject to this part where federal funds are involved, no bid submitted shall be invalidated by the failure of the bidder to be licensed in accordance with the laws of this state. However, at the time the contract is awarded, the contractor shall be properly licensed in accordance with the laws of this state. The first payment for work or material under any contract shall not be made unless and until the Registrar of Contractors verifies to the City that the records of the Contractors’ State License Board indicate that the contractor was properly licensed at the time the contract was awarded. Any bidder or contractor not so licensed shall be subject to all legal penalties imposed by law, including, but not limited to, any appropriate disciplinary action by the Contractors’ State License Board. The City shall include a statement to that effect in the standard form of prequalification questionnaire and financial statement.

Failure of the bidder to obtain proper and adequate licensing for an award of a contract shall constitute a failure to execute the contract and shall result in the forfeiture of the security of the bidder.

Bidder:

License No.:_________________________ Class _________ Expiration date: ________
Hollister Kellogg Park
Project CIP # 9035

Date ____________________________ Signature ____________________________

DECLARATION OF ELIGIBILITY TO CONTRACT
[Labor Code §§ 1777.1 and 1777.7; Public Contract Code § 6109]

The undersigned, a duly authorized representative of the Bidder, certifies and declares that:

1. The Bidder is aware of Sections 1771.1 and 1777.7 of the California Labor Code, which prohibit a contractor or subcontractor who has been found by the Labor Commissioner or the Director of Industrial Relations to be in violation of certain provisions of the Labor Code, from bidding on, being awarded, or performing work as a subcontractor on a Public Works project for specified periods of time.

2. The Bidder is not ineligible to bid on, be awarded or perform work as a subcontractor on a Public Works project by virtue of the foregoing provisions of Sections 1771.1 or 1777.7 of the California Labor Code or any other provision of law.

3. The Bidder is aware of California Public Contract Code Section 6109, which states:

"(a) A public entity, as defined in Section 1100 [of the Public Contract Code], may not permit a contractor or subcontractor who is ineligible to bid or work on, or be awarded, a Public Works project pursuant to Section 1771.1 or 1777.7 of the Labor Code to bid on, be awarded, or perform work as a subcontractor on a Public Works project. Every Public Works project shall contain a provision prohibiting a contractor from performing work on a Public Works project with a subcontractor who is ineligible to perform work on the Public Works project pursuant to Section 1771.1 or 1777.7 of the Labor Code.

(b) Any contract on a Public Works project entered into between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a Public Works contract, and any public money that may have been paid to a debarred subcontractor by a contractor on the project shall be returned to the awarding body. The contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project."

4. The Bidder has investigated the eligibility of each and every subcontractor the contractor intends to use on this Public Works project, and determined that none of them is ineligible to perform work as a subcontractor on a Public Works project by virtue of the foregoing provisions of the Public Contract Code, Sections 1771.1 and 1777.7 of the Labor Code, or any other provision of law.
I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed this _____ day of _____________, 2018, at ________________, California.

Signature: ________________________________

Name: ________________________________

Title: ________________________________

Name of Company: ________________________________

Note: Signature must be acknowledged before a notary public. Attach appropriate acknowledgment.
SECTION

D

SAMPLE CONTRACT
SAMPLE CONSTRUCTION CONTRACT
BETWEEN THE CITY OF GOLETA
AND
________________________

This Construction Contract (herein referred to as “Contract”) is made and entered into this _____ day of ____, 20__, by and between the CITY OF GOLETA, a municipal corporation (herein referred to as “CITY”), and CONTRACTOR (hereinafter referred to as “CONTRACTOR”).

RECITALS

A. Pursuant to the Invitation for Bids ___________bids were received, publicly opened, and declared on the date specified in the notice.

B. On ______________, Goleta’s City Council declared CONTRACTOR to be the lowest responsible bidder and accepted the bid of CONTRACTOR.

C. The City Council, on this _____ day of (month), 20____, approved this Contract and authorized the City Manager to execute the Contract with CONTRACTOR for furnishing labor, equipment and material for the ______________ Project in the City of Goleta.

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants herein contained, it is agreed:

1. GENERAL SCOPE OF WORK: CITY agrees to engage CONTRACTOR and CONTRACTOR agrees to furnish all necessary labor, tools, materials, appliances, and equipment for and do the work for the ______________ Project in the City of Goleta. The work shall be performed in accordance with the Plans and Specifications dated (and as generally described in the “Invitation for Bids,” attached as Exhibit A) and in accordance with bid prices set forth in CONTRACTOR’S Bid Proposal (attached as Exhibit B) and in accordance with the instructions of the City Engineer, or City’s Manager’s designee.

2. INCORPORATED DOCUMENTS TO BE CONSIDERED COMPLEMENTARY: The contract documents for the aforesaid project, a complete set of which is on file with the Goleta City Clerk’s Office, shall consist of the Invitation for Bids, Instructions to Bidders, Bid Proposal, Standard Specifications, Special Provisions, and all referenced specifications, details, standard drawings, and appendices; together with this Contract and all required bonds, insurance certificates, permits, notices and affidavits; and also, including any and all addenda or supplemental agreements clarifying, amending, or extending the work contemplated as may be required to insure its completion in an acceptable manner. All of the provisions of said contract documents are made a part hereof as though fully set forth herein. This contract is intended to require a complete
and finished piece of work and anything necessary to complete the work properly and in accordance with the law and lawful governmental regulations shall be performed by CONTRACTOR whether set out specifically in the contract or not. Should it be ascertained that any inconsistency exists between the aforesaid documents and this written agreement, the provisions of this Contract, and the Standard Specifications, in that order, shall control. Collectively, these contract documents constitute the complete agreement between CITY and CONTRACTOR and supersede any previous agreements or understandings.

3. **COMPENSATION**: CONTRACTOR agrees to receive and accept the prices set forth in its Bid Proposal as full compensation for furnishing all materials, performing all work, and fulfilling all obligations hereunder. Said compensation shall cover all expenses, losses, damages, and consequences arising out of the nature of the work during its progress or prior to its acceptance including those for well and faithfully completing the work and the whole thereof in the manner and time specified in the aforesaid contract documents; and also including those arising from actions of the elements, unforeseen difficulties or obstructions encountered in the prosecution of the work, suspension or discontinuance of the work, and all other unknowns or risks of any description connected with the work.

4. **TIME OF PERFORMANCE**: CONTRACTOR agrees to complete the work within 200 working days from the date of the notice to proceed. By signing this Contract, CONTRACTOR represents to CITY that the contract time is reasonable for completion of the work and that CONTRACTOR will complete such work within the contract time. In accordance with Government Code Section 53069.85, CONTRACTOR agrees to forfeit and pay CITY as liquidated damages, not as a penalty, the sum of $1000 per day for each and every day of unauthorized delay beyond the completion date, which amount shall be deducted from any payments due or to become due the CONTRACTOR.

5. **PREVAILING WAGES**: Pursuant to Labor Code Sections §§1720 et seq., including but not limited to sections 1771, 1774 and 1775, and as specified in Title 8, California Code of Regulations, Section 16000 et seq., CONTRACTOR must pay its workers prevailing wages. It is CONTRACTOR’s responsibility to interpret and implement any prevailing wage requirements and CONTRACTOR agrees to pay any penalty or civil damages resulting from a violation of the prevailing wage laws.

In accordance with Labor Code Section 1773.2, copies of the prevailing rate of per diem wages are available upon request from CITY’s Engineering Division or the website for State of California Prevailing wage determination at [http://www.dir.ca.gov/DLSR/PWD](http://www.dir.ca.gov/DLSR/PWD). CONTRACTOR must post a copy of the prevailing rate of per diem wages at the job site.

CITY directs CONTRACTOR’s attention to Labor Code Sections 1777.5, 1777.6 and 3098 concerning the employment of apprentices by CONTRACTOR or any
subcontractor.

Labor Code Section 1777.5 requires CONTRACTOR or subcontractor employing tradesmen in any apprenticeship occupation to apply to the joint apprenticeship committee nearest the site of the public works project and which administers the apprenticeship program in that trade for a certificate of approval. The certificate must also fix the ratio of apprentices to journeymen that will be used in the performance of the contract. The ratio of apprentices to journeymen in such cases will not be less than one to five except:

When employment in the area of coverage by the joint apprenticeship committee has exceeded an average of 15 percent in the 90 days before the request for certificate, or

When the number of apprentices in training in the area exceeds a ratio of one to five, or

When the trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis state-wide or locally, or

When assignment of an apprentice to any work performed under a public works contract would create a condition that would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large, or the specific task to which the apprentice is to be assigned is of a nature that training cannot be provided by a journeyman.

Pursuant to Labor Code § 1776, CONTRACTOR shall comply with all Department of Industrial Relations registration requirements.

CONTRACTOR is required to make contributions to funds established for the administration of apprenticeship programs if CONTRACTOR employs registered apprentices or journeymen in any apprenticeable trade on such contracts and if other contractors on the public works site are making such contributions.

CONTRACTOR and any subcontractor must comply with Labor Code Sections 1777.5 and 1777.6 in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules and other requirements may be obtained from the Director of Industrial Relations (DIR), ex-officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

CONTRACTOR and its subcontractors must keep an accurate certified payroll records showing the name, occupation, and the actual per diem wages paid to each worker employed in connection with this Contract. The record will be kept
open at all reasonable hours to the inspection of the body awarding the contract and to the Division of Labor Law Enforcement. If requested by CITY, CONTRACTOR must provide copies of the records at its cost.

6. **LEGAL HOURS OF WORK:** Eight (8) hours of labor shall constitute a legal day's work for all workmen employed in the execution of this contract, and CONTRACTOR and any subcontractor under it shall comply with and be governed by the laws of the State of California having to do with working hours set forth in Division 2, Part 7, Chapter 1, Article 3 of the Labor Code of the State of California as amended.

CONTRACTOR shall forfeit, as a penalty to CITY, twenty-five dollars ($25.00) for each laborer, workman or mechanic employed in the execution of the contract, by him or any subcontractor under it, upon any of the work hereinbefore mentioned, for each calendar day during which the laborer, worker or mechanic is required or permitted to labor more than eight (8) hours in violation of the Labor Code.

7. **TRAVEL AND SUBSISTENCE PAY:** CONTRACTOR agrees to pay travel and subsistence pay to each worker needed to execute the work required by this Contract as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with Labor Code Section 1773.8.

8. **CONTRACTOR'S LIABILITY:** The CITY and its officers, agents and employees ("Indemnitees") 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 of the materials or other things used or employed in performing the work; or for injury or damage to any person or persons, either workers or employees of CONTRACTOR, of its subcontractors or the public, or for damage to adjoining or other property from any cause whatsoever arising out of or in connection with the performance of the work. CONTRACTOR shall be responsible for any damage or injury to any person or property resulting from defects or obstructions or from any cause whatsoever.

CONTRACTOR will indemnify Indemnities against and will hold and save Indemnities harmless from any and all actions, claims, damages to persons or property, penalties, obligations or liabilities that may be asserted or claimed by any person, firm, entity, corporation, political subdivision, or other organization arising out of or in connection with the work, operation, or activities of CONTRACTOR, its agents, employees, subcontractors or invitees provided for herein, whether or not there is concurrent passive negligence on the part of CITY. In connection therewith:

a. CONTRACTOR will defend any action or actions filed in connection with any such claims, damages, penalties, obligations or liabilities and will
pay all costs and expenses, including attorneys’ fees, expert fees and costs incurred in connection therewith.

b. CONTRACTOR will promptly pay any judgment rendered against CONTRACTOR or Indemnitees covering such claims, damages, penalties, obligations and liabilities arising out of or in connection with such work, operations or activities of CONTRACTOR hereunder, and CONTRACTOR agrees to save and hold the Indemnitees harmless therefrom.

c. In the event Indemnitees are made a party to any action or proceeding filed or prosecuted against CONTRACTOR for damages or other claims arising out of or in connection with the work, operation or activities hereunder, CONTRACTOR agrees to pay to Indemnitees and any all costs and expenses incurred by Indemnitees in such action or proceeding together with reasonable attorneys' fees.

CONTRACTOR’S obligations under this section apply regardless of whether or not such claim, charge, damage, demand, action, proceeding, loss, stop notice, cost, expense, judgment, civil fine or penalty, or liability was caused in part or contributed to by an Indemnitee. However, without affecting the rights of CITY under any provision of this agreement, Contractor shall not be required to indemnify and hold harmless CITY for liability attributable to the active negligence of CITY, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction. In instances where CITY is shown to have been actively negligent and where CITY active negligence accounts for only a percentage of the liability involved, the obligation of Contractor will be for that entire portion or percentage of liability not attributable to the active negligence of City.

So much of the money due to CONTRACTOR under and by virtue of the contract as shall be considered necessary by CITY may be retained by CITY until disposition has been made of such actions or claims for damages as aforesaid.

It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California. This indemnity provision shall survive the termination of the Contract and is in addition to any other rights or remedies which Indemnitees may have under the law.

This indemnity is effective without reference to the existence or applicability of any insurance coverage which may have been required under this Contract or any additional insured endorsements which may extend to Indemnitees. CONTRACTOR, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against the Indemnitees,
while acting within the scope of their duties, from all claims, losses and liabilities arising out of or incident to activities or operations performed by or on behalf of the CONTRACTOR regardless of any prior, concurrent, or subsequent passive negligence by the Indemnitees.

9. **THIRD PARTY CLAIMS:** In accordance with Public Contracts Code Section 9201, CITY will promptly inform CONTRACTOR regarding third-party claims against CONTRACTOR, but in no event later than ten (10) business days after CITY receives such claims. Such notification will be in writing and forwarded in accordance with the “Notice” section of this Contract. As more specifically detailed in the contract documents, CONTRACTOR agrees to indemnify and defend the City against any third-party claim.

10. **WORKERS COMPENSATION:** In accordance with California Labor Code Sections 1860 and 3700, CONTRACTOR and each of its subcontractors will be required to secure the payment of compensation to its employees. In accordance with the provisions of California Labor Code Section 1861, CONTRACTOR, by signing this contract, certifies as follows: “I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker’s compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.”

11. **INSURANCE:** With respect to performance of work under this Contract, CONTRACTOR shall maintain and shall require all of its subcontractors to maintain insurance as required in the Standard Specifications.

12. **ASSIGNMENT:** This Contract is not assignable nor the performance of either party's duties delegable without the prior written consent of the other party. Any attempted or purported assignment or delegation of any of the rights or obligations of either party without the prior written consent of the other shall be void and of no force and effect.

13. **INDEPENDENT CONTRACTOR:** CONTRACTOR is and shall at all times remain as to the CITY, a wholly independent contractor. Neither the CITY nor any of its agents shall have control of the conduct of CONTRACTOR or any of CONTRACTOR'S employees, except as herein set forth. CONTRACTOR shall not at any time or in any manner represent that it or any of its agents or employees are in any manner agents or employees of CITY.

14. **TAXES:** CONTRACTOR is responsible for paying all retail sales and use, transportation, export, import, special or other taxes and duties applicable to, and assessable against any work, materials, equipment, services, processes and operations incidental to or involved in this contract. CONTRACTOR is responsible for ascertaining and arranging to pay them. The prices established in
the contract shall include compensation for any taxes CONTRACTOR is required to pay by laws and regulations in effect at the bid opening date.

15. **LICENSES:** CONTRACTOR represents and warrants to CITY that it has all licenses, permits, qualifications, insurance, and approvals of whatsoever nature which are legally required of CONTRACTOR to practice its profession. CONTRACTOR represents and warrants to CITY that CONTRACTOR shall, at its sole cost and expense, keep in effect or obtain at all times during the term of this Contract any licenses, permits, insurance, and approvals which are legally required of CONTRACTOR to practice its profession. CONTRACTOR shall maintain a City of Goleta business license, if required under CITY ordinance.

16. **RECORDS:** CONTRACTOR shall maintain accounts and records, including personnel, property, and financial records, adequate to identify and account for all costs pertaining to this Contract and such other records as may be deemed necessary by CITY or any authorized representative, and will be retained for three years after the expiration of this Contract. All such records shall be made available for inspection or audit by CITY at any time during regular business hours.

17. **SEVERABILITY:** If any portion of these contract documents are declared by a court of competent jurisdiction to be invalid or unenforceable, then such portion will be deemed modified to the extent necessary in the opinion of the court to render such portion enforceable and, as so modified, such portion and the balance of this Contract will continue in full force and effect provided that it does not frustrate the mutual intent of the parties herein.

18. **WHOLE CONTRACT:** This Contract supersedes any and all other agreements either oral or written, between the parties and contains all of the covenants and agreements between the parties pertaining to the work of improvements described herein. Each party to this contract acknowledges that no representations, inducements, promises or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which are not embodied herein, and that any other agreement, statements or promise not contained in this contract shall not be valid or binding. Any modifications of this contract will be effective only if signed by the party to be charged.

19. **AUTHORITY:** CONTRACTOR affirms that the signatures, titles, and seals set forth hereinafter in execution of this Contract represent all individuals, firm members, partners, joint ventures, and/or corporate officers having a principal interest herein. Each party warrants that the individuals who have signed this Contract have the legal power, right, and authority to make this Contract and to bind each respective party. This Contract may be modified by written amendment. CITY’s City Manager may execute any such amendment on CITY’s behalf.
20. **NOTICES:** All notices permitted or required under this Contract shall be in writing, and shall be deemed made when delivered to the applicable party’s representative as provided in this Contract. Additionally, such notices may be given to the respective parties at the following addresses, or at such other addresses as the parties may provide in writing for this purpose.

Such notices shall be deemed made when personally delivered or when mailed forty-eight (48) hours after deposit in the U.S. mail, first-class postage prepaid, and addressed to the party at its applicable address. Courtesy copies of notices may be sent via electronic mail, provided that the original notice is deposited in the U.S. mail or personally delivered as specified in this Section.

CITY OF GOLETA  
130 Cremona Drive, Suite B  
Goleta, CA 93117  
Attn: City Manager

CONTRACTOR


21. **DISPUTES:** Disputes arising from this contract will be determined in accordance with the contract documents.

22. **NON-DISCRIMINATION:** No discrimination shall be made in the employment of persons in the work contemplated by this Contract because of race, religion, color, medical condition, sex, sexual orientation, national origin, political affiliation or opinion, or pregnancy or pregnancy-related condition. A violation of this section exposes CONTRACTOR to the penalties provided for in Labor Code Section 1735.

23. **NO THIRD PARTY BENEFICIARY:** This Contract and every provision herein is for the exclusive benefit of CONTRACTOR and CITY and not for the benefit of any other party. There will be no incidental or other beneficiaries of any of the CONTRACTOR’s or the CITY’s obligations under this Contract.

24. **TIME IS OF ESSENCE.** Time is of the essence for each and every provision of the Contract Documents.

25. **ACCEPTANCE OF FACSIMILE OR ELECTRONIC SIGNATURES:** The Parties agree that this Contract, agreements ancillary to this Contract, and related documents to be entered into in connection with this Contract will be
considered signed when the signature of a party is delivered by facsimile transmission or scanned and delivered via electronic mail. Such facsimile or electronic mail copies will be treated in all respects as having the same effect as an original signature.

26. GOVERNING LAW: This Contract shall be governed by the laws of the State of California, and exclusive venue for any action involving this Contract will be in Santa Barbara County.

IN WITNESS WHEREOF, the parties hereto have executed this Contract with all the formalities required by law on the respective dates set forth opposite their signatures. [Signatures on the following page.]

This Contract is executed on this ___ day of __________, 2017, at Goleta, California, and effective as of ____________, 2017.

[Signatures on the following page.]
CITY OF GOLETA:

Michelle Greene, City Manager

ATTEST:

Deborah Lopez, City Clerk
(seal)

APPROVED AS TO FORM:

Michael Jenkins, Interim City Attorney

CONTRACTOR:

Name, Title

State of California License No.

Business Phone No.

CONTRACTOR’S Emergency Phone No. at which contractor can be reached at any time
PERFORMANCE BOND
FOR
THE HOLLISTER/KELLOG PARK PROJECT

_________________ ("PRINCIPAL"), and _________________, a corporation organized under the laws of the State of ___________ and licensed by the State of California to execute bonds and undertakings as sole surety ("SURETY"), are held and firmly bound unto the CITY OF GOLETA ("CITY") in the sum of ___________________ ($_______________) dollars, lawful money of the United States, which may be increased or decreased by a rider hereto executed in the same manner as this bond, for the payment of which sum PRINCIPAL and SURETY bind themselves, their successors, and assigns, jointly and severally, by this instrument.

PRINCIPAL or SURETY will apply this bond for the faithful performance of any and all of the conditions and stipulations set forth in this bond, and the Public Works contract ("Contract") executed by CITY and PRINCIPAL. In the case of any default in the performance of the conditions and stipulations of this undertaking, it is agreed that PRINCIPAL or SURETY will apply the bond or any portion thereof, to the satisfaction or any damages, assessments, penalties, or deficiencies arising by reason of such default.

BOND CONDITIONS

1. PRINCIPAL will construct the public improvements ("Project") identified in the Contract. Such performance will be in accordance with the Contract Documents identified in the Contract, which are hereby incorporated and made a part of this bond. City has estimated the required amount of the bond as shown above.

2. PRINCIPAL’s work on the Project will be done in accordance with the Contract Documents. Should PRINCIPAL fail to complete all required work within the time allowed, CITY may, at its sole discretion, cause all required work to be done and the parties executing the bond will be firmly bound for the payment of all necessary costs therefor.

3. PRINCIPAL will guarantee its work against any defective work, labor or materials on the Project for a period of one (1) year following the Project’s completion and acceptance by CITY.

4. This bond is conditioned upon and guarantees due compliance with all applicable law including, without limitation, the Goleta Municipal Code ("GMC").

5. SURETY, for value received, agrees that no changes, extensions of time, alteration or modification of the Contract or of the obligations to be performed
thereunder will in any way affect its obligation on this bond, and waives notice of any such change, extension of time, alteration or modification of the Contract or of the obligations to be performed. Furthermore, SURETY expressly waives the provisions of California Civil Code Sections 2845 and 2849.

6. This bond consists of this instrument; the Contract and Contract Documents referenced above; and the following two (2) attached exhibits all of which are incorporated herein by reference:

A. A certified copy of the appointment, power of attorney, bylaws or other instrument entitling or authorizing the persons executing this bond to do so; and

B. A certificate issued by the county clerk for the county in which SURETY’s representative is located conforming with California Code of Civil Procedure § 995.640 and stating that SURETY’s certificate of authority has not been surrendered, revoked, cancelled, annulled, or suspended, or in the event that it has, that renewed authority has been granted.

7. Should PRINCIPAL perform its obligations within the time allowed, PRINCIPAL’s obligation will be void upon the acceptance of the performance by CITY; otherwise this obligation will remain in full force and effect.

[Signatures on the following page.]
SIGNED AND SEALED this _____ day of _____________________, 2018

PRINCIPAL:

SURETY:

PRINCIPAL’s MAILING ADDRESS: 

SURETY’s MAILING ADDRESS:

(Signature of authorized officer)

(Signature of authorized officer)

(Name and Title)

(Name and Title)

(Signature of authorized officer)

(Signature of authorized officer)

(Name and Title)

(Name and Title)

NOTE: ALL signatures must be acknowledged by a notary public. Attach appropriate acknowledgement form. Also, attach evidence of the authority of any person signing as attorney-in-fact.
PAYMENT BOND
FOR
THE HOLLISTER/KELLOG PARK PROJECT

The City of Goleta ("CITY") has awarded to _______________________________ as Contractor (hereafter as "PRINCIPAL"), a contract ("Contract") for the above stated project. PRINCIPAL is required to furnish a bond in connection with such Contract, to secure the payment of claims of laborers, mechanics, material persons, and other persons as provided by law.

PRINCIPAL and _____________________________, a corporation incorporated under the laws of the State of _______________ and licensed by the State of California to execute bonds and undertakings as sole surety ("SURETY"), are held and firmly bound unto the CITY in the sum of

_______________________________________________________________

______ ($_____________) dollars, lawful money of the United States, which may be increased or decreased by a rider hereto executed in the same manner as this bond, for the payment of which sum PRINCIPAL and SURETY bind themselves, their successors, and assigns, jointly and severally, by this instrument.

BOND CONDITIONS

1. PRINCIPAL will construct the public improvements ("Project") identified in the Contract. Such performance will be in accordance with the Contract Documents identified in the Contract, which are hereby incorporated and made a part of this bond. City has estimated the required amount of the bond as shown above.

2. If PRINCIPAL, its heirs, executors, administrators, successors, assigns or subcontractors, shall fail to pay any of the persons named in Section 3181 of the California Civil Code, or any amounts due under the California Unemployment Insurance Code with respect to work or labor performed under the Contract, or any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Contractor and its subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to work or labor performed under the Contract, SURETY will pay for the same in an amount not exceeding the penal sum specified in this bond.

3. This bond shall inure to the benefit to any of the persons named in Civil Code Section 3181 so as to give a right of action to such persons or their assigns in any suit brought upon this bond. In case suit is successfully brought upon this bond, SURETY further agrees to pay all reasonable attorneys’ fees and costs in an amount fixed by the court.
4. This bond is conditioned upon and guarantees due compliance with all applicable law including, without limitation, the Goleta Municipal Code ("GMC").

5. SURETY, for value received, agrees that no changes, extensions of time, alteration or modification of the Contract or of the obligations to be performed thereunder will in any way affect its obligation on this bond, and waives notice of any such change, extension of time, alteration or modification of the Contract or of the obligations to be performed. Furthermore, SURETY expressly waives the provisions of California Civil Code Sections 2845 and 2849.

6. This bond consists of this instrument; the Contract and Contract Documents referenced above; and the following two (2) attached exhibits all of which are incorporated herein by reference:

A. A certified copy of the appointment, power of attorney, bylaws or other instrument entitling or authorizing the persons executing this bond to do so; and

B. A certificate issued by the county clerk for the county in which SURETY’s representative is located conforming with California Code of Civil Procedure § 995.640 and stating that SURETY’s certificate of authority has not been surrendered, revoked, cancelled, annulled, or suspended, or in the event that it has, that renewed authority has been granted.

7. Should PRINCIPAL perform its obligations within the time allowed, PRINCIPAL’s obligation will be void upon the acceptance of the performance by CITY; otherwise this obligation will remain in full force and effect.

[Signatures on the following page.]
SIGNED AND SEALED this _____ day of ____________________, 2018.

PRINCIPAL: 

PRINCIPAL’s MAILING ADDRESS: 

________________________________________ 

________________________________________ 

________________________________________ 

________________________________________ 

(Signature of authorized officer) 

(Name and Title) 

(Signature of authorized officer) 

(Name and Title) 

SURETY: 

SURETY’s MAILING ADDRESS: 

________________________________________ 

________________________________________ 

________________________________________ 

________________________________________ 

(Signature of authorized officer) 

(Name and Title) 

(Signature of authorized officer) 

(Name and Title) 

NOTE: ALL signatures must be acknowledged by a notary public. Attach appropriate acknowledgement form. Also, attach evidence of the authority of any person signing as attorney-in-fact.
SECTION E

GENERAL PROVISIONS
GENERAL PROVISIONS

Standard Specifications


Modifications to Standard Specifications

Section 1 – No changes.

Section 2 – Scope and Control of the Work

Add the following:

Paragraph 2-5.2.1 Conflict in Plans

As the figured dimensions shown on the drawings and in the specifications of the contract may not in every case agree with scale dimensions, the figured dimensions shall be followed in preference to the scaled dimensions, and drawings to a large scale shall be followed in preference to the drawings to a small scale. Should it appear that the work to be done, or any of the matter relative thereto 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 thereto as part of the contract so far as may be consistent with the terms thereof.

Paragraph 2-6.1 Suggestions to Contractor

Any plan or method of work suggested by the Owner or the Engineer to the Contractor but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Owner and the Engineer shall assume no responsibility therefore and in no way be held liable for any defects in the work which may result from or be caused by use of such plan or method of work.

Section 3 – Changes in Work

Replace Section 3-2.2.1 Contract Unit Prices as follows:

If a change is ordered in an item of work covered by a Contract Unit Price, and such change does not involve a substantial change in character of the work from that shown on the Plans or included in the Specifications, then an adjustment in payment will be
made. This adjustment will be based upon the increase or decrease in quantity and the Contract Unit Price.

In the case of such an increase or decrease in a Major Bid item (defined as a single Contract item constituting 10 percent or more of the original Contract Price), the use of this basis for adjustment of payment will be limited to that portion of the change, which together with all previous changes to that item, is not in excess of 25 percent of the total cost of such item based on the original quantity and unit price.

If a change is ordered in an item of work covered by a Contract Unit Price, and such change does involve a substantial change in the character of the work from that shown on the Plans or included in the Specifications, an adjustment in payment will be made in accordance with Paragraph 3-2.2.3 (herein).

Should any Contract item be deleted in its entirety, payment will be made only for actual costs incurred for that item prior to notification of such deletion.

Replace Paragraph 3-3.2.3 Markup with the following:

Work by Contractor. The following percentages shall be the maximum allowed to be added to the Contractor’s costs and shall constitute the maximum markup for all overhead and profits:

1) Labor 15%
2) Materials 10%
3) Equipment Rental 10%
4) Other Items and Expenditures 10%

To the sum of the costs and markups provided for in this subsection, 1 percent shall be added as compensation for bonding.

Work by Subcontractor. When all or any part of the extra work is performed by a Subcontractor, the markup established in 3-3.2.3(a) shall be applied to the Subcontractor’s actual cost of such work. A markup of 10 percent on the first $5,000 of the subcontracted portion of the extra work and a markup of 5 percent on work added in excess of $5,000 of the subcontracted portion of the extra work may be added for the Contractor’s costs and supervision.

Replace Paragraph 3-5 Disputed Work with the following:

If the Contractor and the Agency are unable to reach agreement on disputed work, the Agency may direct the Contractor to proceed with the work. Payment shall be later determined by mediation, if the Agency and Contractor agree thereto, or as fixed in a court of law.

Although not to be construed as proceeding under extra work provisions, the Contractor shall keep and furnish records of disputed work in accordance with 3-3.

Section 4 – Control of Materials
Add the following:
Paragraph 4-1.1.1 Retention of Defective Work

If, in the opinion of the Engineer, the defective work is not of sufficient magnitude or importance to make the work dangerous or undesirable, or if, in the opinion of the Engineer, the removal of such work is impractical or will create conditions which are dangerous or undesirable, the Owner shall have the right and authority to retain such work instead of requiring it to be removed and reconstructed, but will make such deductions therefore in the payments due or to become due to the Contractor as the Owner may deem just and reasonable.

Paragraph 4-1.6.1 Substantiation of Equivalency

Unless otherwise authorized by the Engineer, the substantiation of offers of equivalency must be submitted within 35 days after award of Contract.

Section 5 – Utilities

Add the following:

Paragraph 5-1.1 Mandatory Notification Prior to Excavation

The Contractor's attention is directed to Section 4215.5 through 4217 of the Government Code of the State of California. This requires that two (2) working days prior to commencing any excavation "Underground Service Alert of Southern California" be notified by telephone, toll free 1-800-422-4133 or 811, for the assignment of an Inquiry Identification Number.

No excavation shall commence unless the Contractor has obtained the Inquiry Identification Number and so notified City's Engineer.

As part of the performance required, the Contractor shall assist the City to, and provide the City with, any and all compliance required of City as an operator under the provisions of California Government Code Sections 4216-4216.5.

Paragraph 5-1.2 Accuracy of Utilities Information

The locations of existing major utilities, whether above ground or underground, are indicated on the drawings. The Owner does not guarantee the accuracy or completeness of this information and it is to be understood that other above-ground and underground facilities not shown on the drawings may be encountered during the course of the work. In any case, existing minor lines are not indicated.

Section 6 – Prosecution, Progress and Acceptance of the Work

Add the following:

Paragraph 6-1.1 Notice to Proceed

Within ten (10) days after the execution of the contract, written notice to proceed will be given by the Owner to the Contractor. Notwithstanding any other provision of the contract, the Owner shall not be obligated to accept or to pay for any work furnished by
Paragraph 6-6.1.1 Notice of Delays

Whenever the Contractor foresees any delay in the prosecution of the work, and in any event immediately upon the occurrence of any delay which the Contractor regards as unavoidable, the Contractor shall notify the Engineer in writing of the probability of the occurrence of such delay and its cause in order that the Engineer may take immediate steps to prevent, if possible, the occurrence or continuance of the delay, or, if this cannot be done, may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the work are to be delayed thereby. It will be assumed that any and all delays which have occurred in the prosecution and completion of the work have been avoidable delays, except such delays as shall have been called to the attention of the Engineer at the time of their occurrence and found by the Engineer to have been unavoidable.

The Contractor shall make no claims that any delay not called to the attention of the Engineer at the time of its occurrence has been an unavoidable delay.

Paragraph 6-6.1.2 Avoidable Delays

Avoidable delays in the prosecution or completion of the work shall include all delays which in the opinion of the Engineer would have been avoided by the exercise of care, prudence, foresight and diligence on the part of the Contractor or the subcontractors. The following shall be considered avoidable delays within the meaning of the contract:

1) Delay in the prosecution of parts of the work which may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the work nor the completion of the whole work within the time herein specified; 2) Reasonable loss of time resulting from the necessity of submitted samples of materials and drawings to the Engineer for approval and from making of tests of materials, measurements and inspections; 3) Reasonable interference of other contractors employed by the Owner which do not necessarily prevent the completion of the whole work within the time agreed upon.

Paragraph 6-6.1.3 Extension of Time

In case the work is not completed in the time specified, including such extensions of time as may have been granted for unavoidable delays, the Contractor will be assessed damages for delay in accordance with Paragraph 6-9.1. The Owner, however, shall have the right to grant an extension of time for avoidable delay if it is deemed in the Owner's best interest to do so. During such extension of time, the Contractor will be charged for engineering and inspection services and other costs as provided in Paragraph 6-6.2.1 but will not be assessed damages pursuant to Paragraph 6-9.

Paragraph 6-6.2.1 Compensation to Owner for Extension of Time
Compensation for extension of time for avoidable delay granted pursuant to Paragraph 6-6.1.3 shall be the actual cost to the Owner of engineering, inspection, general supervision, and overhead expenses which are directly chargeable to the work and which accrue during the period of such extension, except that the cost of final inspection and preparation of the final estimate shall not be included.

Paragraph 6-7.1.1 Contract Period
The Contractor shall prosecute the work so that all portions of the project shall be complete and ready for use within Thirty (30) working days from the effective date of Notice to Proceed.

Paragraph 6-7.2.1 Working Hours
Regular working hours shall be within the hours of 7:30 a.m. and 5:00 p.m., unless otherwise authorized by the Engineer. Overtime and shift work may be established as a regular procedure by the Contractor only with the written permission of the Engineer. Such permission may be revoked at any time. No work shall be permitted on Saturdays, Sundays or legal holidays, except such work as is necessary for the proper care and protection of the work already performed or in case of an emergency.

It is unlawful to construct, demolish, excavate, alter or repair any building or structure between the hours of 8:00 p.m. and 7:00 a.m. without the written approval of the Director of Public Works. The following required information shall be provided to the Engineer in writing a minimum of fourteen (14) calendar days in advance of the commencement of the proposed work:

1. Specific date, hours and location of work
2. Complete description of work to be done
3. Number and type of equipment to be used
4. Noise mitigation measures to be employed
5. Distance of the nearest resident to the work
6. Inspection required

All costs for overtime inspection, except those occurring as a result of overtime and shift work established as a regular procedure, shall be paid by the Contractor. Overtime inspection shall include inspection required during holidays observed by the AGC and Trade Unions, Saturdays, Sundays, and any weekday between the hours of 5:00 p.m. and 7:00 a.m. Such costs will include but will not necessarily be limited to engineering, inspection, general supervision and other overhead expenses which are directly chargeable to the overtime work. All such charges shall be deducted by the owner from payments due the Contractor.

Paragraph 6-8 Completion and Acceptance
A job walk will be performed at such time as the Contractor indicates that all items have been completed. A list of the remaining minor tasks (a punch list) will be prepared by the Engineer and given to the Contractor.
All punch list items shall be completed during the contract period. Failure to do so will not be considered an occasion of unavoidable delay. When all items have been completed to the satisfaction of the City Engineer, the project will be submitted to the City Council, which may accept the completed work.

The Engineer will, in reporting completion to the City Council, give the date when the work was completed. This will be the date when the Contractor is relieved from responsibility to protect the work, except for portions of the work for which the Contractor may have previously been relieved of such responsibility in accordance with Section 6-10.

Paragraph 6-9.1 Liquidated Damages for Avoidable Delay

For each and every day that any portion of the work remains unfinished after the time fixed for completion in the contract documents as modified by any extension of time granted pursuant to Paragraph 6-6.1.3, damage will be sustained by the Owner. Because of the difficulty in computing the actual material loss and disadvantage to the Owner, it is determined in advance and agreed to by the parties hereto that the Contractor will pay the Owner the amount of damages set forth herein as representing a reasonable forecast of the actual damages which the Owner will suffer by the failure of the Contractor to complete the work within the stipulated time. The execution of the agreement shall constitute acknowledgment by the Contractor that he or she has ascertained and agrees that the Owner will actually suffer damages in the amount herein fixed for each and every day during which the completion of the work is avoidably delayed beyond the stipulated completion date.

Unless otherwise provided in the contract documents, the Contractor shall have no claim or right of action against the Owner for damages, costs, expenses, loss of profits, or otherwise because or by reason of any delay in the fulfillment of the contract within the time limited therefore occasioned by any cause or event within or without the Contractor's control, and whether or not such delay may have resulted from anything done or not done by the Owner of the contract.

Damages for avoidable delays shall be in the amount of $1,000.00 for each consecutive calendar day in excess of the time specified for completion of the work.

Paragraph 6-9.1.1 Interim Liquidated Damages for Avoidable Delay

From the date of removal of the existing concrete curb, gutter, sidewalks or access ramps the Contractor shall have five (5) working days to complete the placement of the new concrete improvements. The contractor shall have seven (7) working days to remove and replace residential driveway aprons. These seven (7) days shall include a minimum of three days for concrete cure time prior to placement and compaction of AC slot trench. No residential driveway apron shall be closed to public use in excess of seven (7) working days.

If a construction zone or site remains unfinished after the above stated durations, said Contractor shall be charged interim liquidated damages at a rate of $100/day/site for each consecutive calendar day until site improvements are complete.
Paragraph 6-11  Request for Payment

Progress payments will be made monthly by the City after receipt of a properly completed request from the Contractor. The Contractor shall submit all such requests for monthly progress payments, and shall include the following forms as applicable:

Form CC1:  Progress Payment Request

This form is to be completed and signed by the Contractor and attached as a cover sheet to the request for payment. This form will be mandatory on all contract payment requests.

Form CC2:  Progress Payment Request - Detail

This form may be used by the Contractor to provide the detail required to verify the payment quantities. (City will accept the Contractor's standard form if it provides the required information.)

Form CC3:  Quantity Change Verification Form

This form is required before any payment can be made based on actual quantities exceeding bid quantities. At the conclusion of the contract, the City will issue a "Balancing Change Order" incorporating all quantity increases and decreases in the contract items of work.

Form CC4:  Final Release Form

This form must accompany all requests for final payment.

The City will withhold ten (10) percent of all monthly progress payments as retention to assure completion and payment of labor and materials. Retention will be released to the Contractor sixty (60) days after acceptance of the work by the City Council and the filing of a Notice of Completion.
# CITY OF GOLETA, CA
Public Works Department

Construction Contract

**Progress Payment Request**

<table>
<thead>
<tr>
<th>From: Contractor</th>
<th>Date: _____________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Payment Request No.: ________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To: CITY OF GOLETA</th>
<th>Project Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Works Department</td>
<td>Hollister/Kellog Park Project</td>
</tr>
<tr>
<td>130 Cremona Drive, Suite B</td>
<td>Goleta, California 93117</td>
</tr>
</tbody>
</table>

| Original Contract Amount: | $ |
| Approved Change Orders through #:_______ | $ |
| Quantity Changes: (Requires Project Engineer verification) | $ |
| Total Contract Amount to Date: | $ |

| Value of Work Completed to Date: | $ |
| Less Retention: | $ |
| Subtotal: | $ |
| Less Previous Payments Approved: | $ |
| Progress Payment Requested: | $ |

The undersigned Contractor or Contractor's Authorized Representative certifies that to the best of his or her knowledge, information and belief, the work covered in this application for payment has been completed in accordance with the contract documents and the costs shown are true and correct.

__________________________________________
Signature

__________________________________________
Print Name

__________________________
Title

__________________________
Date
## Construction Contract

### Progress Payment Request - Detail

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>BID QUANTITY</th>
<th>UNIT/ FIRM PRICE</th>
<th>IN PLACE THIS PERIOD</th>
<th>IN PLACE TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>QTY. OR % EXTN.</td>
<td>QTY. OR % EXTN.</td>
</tr>
</tbody>
</table>

**Date:**

**Payment Request No:**

**Contract No.:**

**Contractor:**

**Project Name:** Hollister/Kellog Park

**Contractor Signature**

**Date**

**Inspector Signature**

**Date**
# Quantity Change Verification Form

**CITY OF GOLETA, CA**
**Public Works Department**

**Hollister Kellogg Park Project CIP # 9035**

**Contractor:**

**Project Name:** Hollister/Kellog Park Project

---

**INSTRUCTIONS**

This form is to accompany progress payments where there are quantity changes (variations in quantities authorized as part of the progress or final payment).

The quantity changes in amount of $________________________ accompanying Progress Payment #__________________ have been reviewed and actual quantities verified.

---

**Project Engineer Signature**

**Date**

---

<table>
<thead>
<tr>
<th>Bid Item #</th>
<th>Item Description</th>
<th>Variance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ATTACH ADDITIONAL SHEETS IF NECESSARY**

---

**Contractor Signature**

**Date**

---

**Inspector Signature**

**Date**
**CITY OF GOLETA, CA**  
**Public Works Department**  

**Construction Contract**  
**Final Release Payment**

<table>
<thead>
<tr>
<th>From:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contractor</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contract No.</th>
<th>Payment Request No.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Address</th>
<th>Project Name: Hollister/Kellog Park Project</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>To:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CITY OF GOLETA, CA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Public Works Department</strong></td>
<td></td>
</tr>
<tr>
<td><strong>130 Cremona Drive, Suite B</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Goleta, California  93117</strong></td>
<td></td>
</tr>
</tbody>
</table>

Upon settlement of final quantities and approval of a Notice of Completion for the project by the Goleta City Council, including any approved changes, this document shall be effective to release any and all further rights of the Contractor to security for payment, including any worker’s, mechanic’s or material supplier’s lien, stop notice claim or right to bond that the undersigned may have for the work furnished for the project. This document is offered as evidence for settlement of final payment and to induce the City Council to approve such final payment for Contractor in connection with the project named.

This release covers the final payment to the undersigned for all labor, services, equipment and material furnished on the job, including the work of all subcontractors and all materials furnished for all suppliers, and other agents acting on behalf of the undersigned on this work. There are no disputed claims for additional work.

<table>
<thead>
<tr>
<th>Contractor Signature:</th>
<th>Print Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTICE: A signed final release is required with submittal of request for payment.
Paragraph 6-12 Guaranty
The Contractor shall warrant and guarantee the entire work and all parts thereof, including that performed and constructed by Subcontractors, Sub-subcontractors, and others employed directly or indirectly on the work, against faulty or defective materials, equipment or workmanship for the maximum period provided by law. In addition thereto, for a period of one year commencing on the date of acceptance of the work, the Contractor shall, upon the receipt of notice in writing from the Owner, promptly make all repairs arising out of defective materials, workmanship or equipment and bear the cost thereof. The Owner is hereby authorized to make such repairs and the Contractor and Surety shall bear the cost thereof if, ten (10) days after the giving of such notice to the Contractor, the Contractor has failed to make or undertake with due diligence the repairs, provided, however, that, in the case of an emergency where, in the opinion of the Owner, delay could cause serious loss or damage, repairs may be made without notice being sent to the Contractor or Surety, and all expense in connection therewith shall be charged to the Contractor and Surety.

For the purpose of this article, "acceptance of the work" shall mean the acceptance of the work by the Owner in accordance with Paragraph 6-8 but not for the purpose of extinguishing any covenant or agreement on the part of the Contractor to be performed or fulfilled under this contract which has not in fact been performed or fulfilled at the time of such acceptance all of which covenants and agreements shall continue to be binding on the Contractor until they have been fulfilled.

The effective date of acceptance of the work for purposes of determining commencement of the warranty period shall be the date of recordation of the Notice of Completion by the County Recorder.

Section 7 – Responsibility of the Contractor
Add the following:

Paragraph 7-3.2 Hold Harmless
Contractor shall, to the extent permitted by law, investigate, defend, indemnify and hold harmless the City, its officers, agents and employees from and against any and all loss, damage, liability, claims, demands, detriments, costs, charges and expenses (including reasonable attorney's fees) and causes of action of whatsoever character which City may incur, sustain or be subjected to on account of loss or damage to property or loss of use thereof, or for bodily injury to or death of any persons (including but not limited to property, employees, subcontractors, agents and invitees of each party hereto) arising out of or in any way connected with the work to be performed under this Agreement.

Paragraph 7-8.5 Water for Construction
Attention is directed to the various sections of the Standard Specifications and these Special Provisions which require the use of water for the construction of this project.

Attention is also directed to the provisions of Section 7, "Responsibilities of the Contractor", of the Standard Specifications, with regard to the Contractor's
responsibilities for public convenience, public safety, preservation of property, and responsibility for damage. Nothing in Section 7 shall be construed as relieving the Contractor from furnishing an adequate supply of water required for the proper construction of this project in accordance with the Standard Specifications or these Special Provisions, or as relieving the Contractor from the legal responsibilities defined in said Section 7.

Water for construction purposes as required by these Specifications will be provided by the Goleta Water District at the Contractor's expense. The City encourages the Contractor to use reclaimed water when a fill station is located nearby.

Water required for controlling dust, caused by the Contractor's operations and the passage of traffic through the construction site shall be applied as necessary, at the Contractor's expense. The Contractor shall, whenever possible and not in conflict with these specifications, minimize the use of water during construction of the project. Watering equipment shall be kept in good working order and water leaks shall be repaired promptly.

Full compensation for providing water for the project shall be considered as included in the contract prices paid for the various items of work and no separate payment shall be made therefore.

**Section 8** – No changes

**Section 9** – Measurement and Payment

Add the following:

**Paragraph 9-3.2**

Retained Percentage (supersedes Paragraph 9-3.2) The Engineer will, after award of contract, establish a closure date for the purpose of making monthly progress payments. The Contractor may request in writing that such monthly closure date be changed. The Engineer may approve such request when it is compatible with the Agency's payment procedure.

Each month, the Engineer will make an approximate measurement of the work performed to the closure date and, as basis for making monthly payments, estimate its value based on Contract Unit Prices or as provided for in 9-2. When the work has been satisfactorily completed, the Engineer will determine the quantity of work performed and prepare the final estimate.

The Owner will retain ten (10) percent of any progress payment as a fund for assurance of the performance of the contract, and for the protection and payment of any person or persons, mechanics, subcontractor, or workers who shall perform any labor upon the contract or work thereunder or who shall supply such person or persons or subcontractors with components, materials and/or supplies for carrying on such work.

In accordance with Public Contract Code Section 22300, securities shall be permitted in substitution of money withheld by the Owner to ensure performance under this contract.
At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the Owner, or with a state or federally charged bank in this state as the escrow agent, who shall then pay such moneys to the Contractor. Upon satisfactory completion of the contract, the securities shall be returned to the Contractor.

Alternatively, the contractor may request and the owner shall make payment of retentions earned directly to the escrow agent at the expense of the contractor. At the expense of the contractor, the contractor may direct the investment of the payments into securities and the contractor shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by the contractor. Upon satisfactory completion of the contract, the contractor shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the owner, pursuant to the terms of this section.

Securities eligible for investment under this paragraph shall include those listed in Government Code Section 16430, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contract and the Owner. The Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

If an escrow agreement is used as security, it shall be null, void and unenforceable unless it is substantially similar to the form stated in Public Contract Code Section 22300.

In addition, the owner will retain 15 percent of the unit price for pipe installation and lateral reconnection until surface restoration is completed. The Engineer will withhold payment on any section of pipe that has visible leaks or has failed the air pressure test until such defects have been corrected and the pipeline has passed the air pressure test.

No progress payment made to the Contractor or its sureties will constitute a waiver of the liquidated damages under 6-9.
SECTION

F

SPECIAL PROVISIONS
CITY OF GOLETA SPECIAL PROVISIONS
HOLLISTER/KELLOGG PARK PROJECT

The various portions of the Contract Documents have been prepared under the direction of the following licensed Civil Engineer, in accordance with California Business and Professions Code §6735, and the following licensed Electrical Engineer, in accordance with California Business and Professions Code §6735.3.

Civil Design

MIGUEL CABANAS 3-12-18
Registered Civil Engineer Date

Civil Design for Bike Path Portion of Project

[Signature] 3/12/18
Registered Civil Engineer Date

Electrical Design

[Signature] 3-12-18
Registered Electrical Engineer Date

Vyto Adomaitis 3-14-18
Director of Neighborhood Services & Public Safety, City of Goleta

Robert Woodward, PE 3/14/2020
Interim Public Works Director, City of Goleta
SPECIAL PROVISIONS
REVISED STANDARD SPECIFICATIONS

SECTION 201 – CONCRETE, MORTAR, AND RELATED MATERIALS

201-1 GENERAL

A. Section Includes:
   1. Driveways.
   2. Roadways.
   3. Parking lots.
   4. Curbs and gutters.
   5. Walks.

B. Greenbook Related Sections:
   Section 201 – Concrete, Mortar, and Related Materials
   Section 303 – Concrete and Masonry Construction

C. Action Submittals:
   1. Product Data: For each type of product indicated.
   2. Samples: For each enhanced color and texture paving specified by the landscape architect.
   3. Other Action Submittals:
      a. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

D. Quality Assurance:
   1. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
   3. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixes.
201-2 MEASUREMENT AND PAYMENT

A. The quantity of concrete paving will be paid for at a unit price per square yard specified on the bid schedule for item 14, “4-inch integral Colored Concrete W/ Sandcast Finish Paving Surface” and shall include a 4-inch layer of class II aggregate base.

B. The quantity of curb and gutter will be paid for at a lump sum price specified on the bid schedule for item 15, “Parking Lot” (including permeable concrete pavers, permeable aggregate base, 8” flush concrete curb, 6” concrete curb/12” gutter, parking stall striping, wheel stops, entry gate.) Please refer to additional specifications for more information regarding the pavers, striping, wheel stops, and gates.

C. The quantity of offsite concrete will be paid for at a lump sum price specified on the bid schedule for item 12, “Offsite Improvements” (including concrete sidewalk/driveway/paving, AC paving, concrete curb, concrete gutter, ADA ramp, warning surface, signage). Please refer to additional specifications for more information regarding the AC paving, warning surface, signage.

201-3 MATERIALS

A. Refer to the latest edition of the Greenbook for material specifications in section 201.

201-4 EXECUTION

A. Refer to the latest edition of the Greenbook for construction specifications in section 303.
SECTION 201.8–CEMENT CONCRETE FINISHES

201.8-1 GENERAL

A. Section includes:
   1. Construction of Portland cement concrete improvements in or relating to paved pedestrian areas and concrete flatwork excluding skate plaza
   2. Sandcast finishing of site flatwork
   3. Stamped concrete finish
   4. Broom finish of pathways
   5. Integral color pathways

B. Greenbook Related Sections:
   Section 201 – Concrete Mortar and Related Materials
   Section 211 – Soils and Aggregate Tests
   Section 300 – Earthwork
   Section 301–Treated Soil, Subgrade Preparation and Placement of Base Material
   Section 303 – Concrete and Masonry Construction

C. References
   1. Section D – City General Provisions
   3. The specifications and recommended practices of the American Concrete Institute (ACI) and American Society for Testing and Materials (ASTM). The latest revision of each recommended practice or specification shall apply.
   4. Manufacturer’s specifications and written recommendations.

D. Qualifications
   1. Installer Qualifications: An experienced installer who has completed decorative concrete work similar in material, design, and extent to that indicated for this project and whose work has resulted in construction with a record of successful in-service performance. The concrete contractor shall make several prior installations available for the Owner to view to evaluate the level of quality and expertise.
   2. Manufacturer Qualifications: A Manufacturer of ready mixed concrete products complying with ASTM C94 requirements for production facilities and equipment. Manufacturer must be certified according to the National Ready Mix Concrete Association’s Plant Certification Program.

E. General Requirements

1. Contractor shall be solely responsible for vehicular and pedestrian traffic control and safety and shall furnish, install, and maintain such fencing, signs, lights, trench plates, barricades, and/or other protection as is necessary for said control and safety.

2. Contractor shall be responsible for coordinating work and interfacing improvements with work by other Contractors at this job site and with improvements required by plans by others.

3. Contractor agrees that, in accordance with generally accepted construction practices, Contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of this project including safety of all persons and property, that this requirement shall be made to apply continuously and not be limited to normal working hours, and Contractor further agrees to defend, indemnify and hold design professionals harmless from all liability and claims, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professionals.

4. Contractor agrees to assume sole and complete responsibility for protection of public and private property in the vicinity of the job site and further agrees to, at Contractor's expense, repair or replace to original condition all existing improvements within or in the vicinity of the job site which are not designated for removal and which are damaged or removed as a result of Contractor's operations.

5. Contractor is responsible for preservation and/or perpetuation of all existing monuments which control subdivisions, tracts, boundaries, easements, streets, highways or other rights-of-way, or which provide survey control which will be disturbed or removed due to Contractor's work. Prior to disturbance or removal of existing monuments, Contractor shall contract with licensed land surveyor to reset monuments or provide permanent witness monuments and file the required documentation with the County surveyor pursuant to Business and Professions Code Section 8771.

6. All unsuitable construction materials and rubbish and debris shall be removed from the job site, be transported to a suitable recycling location to the maximum extent economically feasible. All unusable, non-recyclable material shall be removed from the job site, be transported and disposed of in a proper and legal manner.

7. Contractor shall make independent deductions and conclusions as to how existing surface and sub-surface conditions will affect or be affected by
construction operations, including the nature of materials to be excavated, the degree of difficulty associated with making and maintaining the required excavations, and the degree of difficulty which may arise from subsurface conditions including groundwater, and shall accept full responsibility therefore.

201.8-2 SUBMITTALS

A. Product Data: Manufacturer’s literature describing products.

B. Mix Design: For each concrete pavement mix, include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

C. Laboratory and Cement Test Reports
   1. Submit copies of laboratory test reports for concrete materials and a certificate with each concrete mixer truck, stating: mix design, cement quantity, water, fine and coarse aggregate and color additives.

D. Provide signed material certificate certifying that each of the following materials complies with requirements:
   a. cementitious materials
   b. steel reinforcement and reinforcement accessories
   c. fiber reinforcement
   d. admixtures
   e. curing compounds
   f. applied finish materials
   g. bonding agent or adhesive
   h. joint filler

E. On Site Mock-Ups
   1. Furnish an area of a minimum size of 5-feet x 5-feet x depth specified on plans of each type of concrete finish and color specified in this Section and on the Drawings. Samples are to contain all proposed jointing. Locate the samples in a safe and convenient location. Approved samples shall be standards for finishes in later concrete work.
   2. Blasted finish mock-up: Based upon the submitted and approved sample and in the presence of the Public Works Inspector, begin blasting operations over the pre-selected and approved area. Make successive passes until the Public Works Inspector approves finish. Approved mock-up shall become the standard for blast finishes and may be incorporated into the work.
   3. Any mock-up that does not comply with specifications shall be completely removed from the site and disposed of in an approved landfill at no cost to the Owner.
4. Notify the Project Manager a minimum of 96 hours before blasting operations are to begin.

5. Furnish samples of typical sandblast finished surface showing a range of textures. Identify grit or grits of proposed sand. Identify proposed and most inconspicuous area for site mock-up.

6. Product data for sealant.

F. Installation Instructions: Manufacturer’s published installation instruction

G. Record Drawings:
   1. These drawings shall also serve as work progress sheets and shall be the basis for measurement and payment for work completed. Make neat and legible annotations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for inspection.
   2. Provide field verification and written certification by licensed surveyor (provided by the Contractor) that paving and appurtenant concrete curb, gutter, sidewalk and drainage structure improvements conform to lines and grades indicated on the Drawings.
   3. Upon completion of the project, Contractor shall deliver this record of all construction changes to the Project Manager along with a letter which declares that other than these noted changes "the project was constructed in conformance with the approved plans and specifications".
   4. Accurately record location of pipelines, conduits and structures which are abandoned in place, including depth below finish grade, for Record Documents.
   5. Accurately record changes in construction from that called for on the Drawings and Specifications, including unexpected physical conditions and unmarked or inaccurately marked existing pipelines, conduits and structures, for Record Documents.

H. The quantity of concrete pavement and flatwork constructed shall be the square feet of concrete pavement and flatwork. The final area shall be the bid quantity unless changes in lines, grades and/or elevations are made by the Project Manager during the course of construction. Construction of the pavement and flatwork includes excavation to subgrade, hauling of excess materials from the site, placement of subgrade backfill, placement of concrete paving and flatwork.

201.8-3 PAYMENT

A. Payment for pavement and flatwork installation will be made at the contract unit price per square foot under Bid Items 12 - 14 and shall include: (1) excavating, grading, loading, hauling, disposing of excess material, depositing, spreading concrete material complete in place, and subgrade preparation as indicated on
the plans; (2) all grading, hauling, depositing, spreading and compacting of subgrade backfill, complete and in place, as indicated on the plans; and (3) poured in place concrete, reinforcing, finishes and other materials; and clean up; complete and in place, as indicated on the plans.

B. Said payments for all the above items of work shall be considered full compensation for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the items. No payment will be made separately or directly for haul on any part of the work. All hauling will be considered a necessary and incidental part of the work, and its cost shall be considered by the Contractor and included in the contract unit price of the pay items of work involved.

201.8-4 MATERIALS

A. PRODUCT HANDLING:

1. Store materials in a dry and protected location. Protect from rusting, deformation, staining and moisture damage.

2. Any cement delivered to job shall be packed in strong paper or jute bags with brand name and manufacturer's name stamped thereon. Cement shall be stored under cover and should it become wet or show any signs of caking or deterioration of any kind, it shall be immediately removed from the site. Concrete materials shall be protected from contamination.

3. Brand of cement or source of aggregate shall not be changed during course of work without prior written permission of the City’s Authorized Representative.

B. PORTLAND CEMENT CONCRETE (CONCRETE)

1. Portland Cement shall be Type II conforming to ASTM C150. Use one brand and source of cement throughout the entire length of the project.

2. Reinforcement steel shall be deformed billet-steel for concrete reinforcement conforming to ASTM A-615 for Grade 60. All reinforcement steel shall be clean and free of any rust, dirt, grease or oils.

C. SAND: Sand shall be clean, hard, durable and conform to ASTM C33. All sand shall be from single source and shall be like in visual appearance.

D. FINE AGGREGATE: Fine aggregate shall conform to ASTM C33. Fine aggregate shall be from a single source and shall be uniformly graded and be like in visual appearance.

E. COARSE AGGREGATE: Coarse aggregate shall be San Gabriel or equal aggregate and conform to ASTM C33. Size range shall be from 3/8-inch to 1-
inch. Coarse aggregate shall be from a single source and shall be like in visual appearance.

F. WATER: Water shall conform to ASTM C94 and be free from deleterious materials such as oils, acids, and organic matter.

G. ADMIXTURES:
1. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water soluble chloride ions by mass of cement and to be compatible with other admixtures.
2. Air Entrainments:
   a. Air entraining admixtures shall conform to ASTM C260.
3. Chemical Admixtures:
   a. Chemical admixtures shall conform to ASTM C494 and ASTM C1017.
4. Water Reducing Admixtures:
   a. Shall conform to ASTM C494, Type A and not contain more than 0.1% chloride ions.

H. READY MIXED CONCRETE: Shall be batched, mixed and transported in accordance with ASTM C94 - "Specifications for Ready Mixed Concrete".

I. INTEGRALLY MIXED COLOR: Meets quality standards per manufacturer's testing.

J. SURFACE RETARDER
1. Retarder shall be water based, top-surface retarder that does not require covering with plastic for protection such as Top-Cast® Manufacturer by Dayton Superior Corporation, Tel. 1.888.977.9600 or approved equal. Retarder sprayed on concrete surface during installation creates a sand finish concrete with very consistent exposure. Acid washing or sandblasting of the concrete surface to expose the sands of the concrete are not acceptable alternates.

K. FORM MATERIAL
1. Shall be free from warp, with smooth and straight upper edges. Wooden forms for straight work shall have a net thickness of at least 1-1/2 inches. Plywood for such work shall be of a thickness that will provide equivalent rigidity and strength and shall be so supported as to adequately resist springing or deflection from placing and tamping the concrete. All material shall be clean at the time that it is used.
2. Form-release agent shall be commercially formulated that will not bond with, stain, or adversely affect concrete substances and will not impair subsequent treatments of concrete surfaces.
3. Stamping Mats: submit (3) samples to the City’s Authorized Representative for approval

L. REINFORCING:

1. Reinforcing Steel
   a. Shall conform to ASTM A615 and be clean and free of any rust, dirt, grease or oils.

2. Welded Wire Mesh
   a. Shall be welded plain cold-drawn steel wire fabric conforming to ASTM A185 and be free of any rust, dirt, grease or oils.

3. Tie Wire
   a. gauge plain cold-drawn steel conforming to ASTM A82 and free of any rust, dirt, grease or oils.

4. Supports for Reinforcement
   a. Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire mesh in place.
   b. For slabs on grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
   c. For concrete surfaces exposed to view where legs of supports are in contact with forms, provided supports with legs that are plastic protected or stainless steel protected.

M. CURING MATERIALS:

1. Curing materials shall conform to the following specifications:
   Type Specification
   - Burlap cloth made from jute or kenaf AASHTO M182
   - White Liquid membrane-forming AASHTO M184, ASTM C309
   - Compounds for curing concrete CGSB 90-GP-1a
   - Sheeting materials for curing concrete AASHTO M171, ASTM C171

2. When applying liquid membrane, moisture loss should not exceed more than 0.055 grams/ square cm (when applied at the rate of 200 square feet/ gallon.

N. CONCRETE SLIP DOWELS:

1. Dowels shall be #5 rebar x 18 inches long and free of dirt, grease and oils. 50% of each dowel shall be encased in a plastic sleeve to allow parallel lateral movement of the dowel. Plastic sleeve to be "Speed Dowel" distributed by Aztec Concrete Accessories, (909) 829-2765, or equivalent as approved by the Project Manager.
O. JOINT MATERIALS:
1. Poured sealer for weakened plane joints shall conform to the requirements of AASHTO M173 or ASTM D1190. Sealer shall be a hot applied elastomeric, Crafco Super seal 444 sealant or equal.
2. Preformed fillers for joints shall conform to the requirements of AASHTO, M33 or ASTM D 994 conforming to the dimensions of Section 302-6.45.3, and shall be punched to admit dowels where called for in the plans. The filler for each joint shall be furnished in a single piece for the full depth and width required for the joint unless otherwise authorized for a joint, the abutting ends shall be fastened securely and held accurately to shape by stapling or other positive fastening satisfactory to the Engineer. Sealant color shall match the adjacent concrete color.

P. EPOXY ADHESIVES:
1. Two-part component material suitable for use on dry or damp surfaces conforming to ASTM C881.
a. Approved Products:
i. Sikadur Hi-Mod - Sika Chemical Corporation.
ii. Patch and Bond Epoxy - The Burke Company.

Q. CONCRETE SURFACE SEALER:
1. Refer to the latest edition of the Greenbook for material specifications in section 201.

201.8-5 EXECUTION

A. GENERAL REQUIREMENTS:
1. Perform grading operations as necessary to achieve subgrade elevations based on the Finish grades shown on the Drawings.
2. Construct concrete improvements in accordance with the drawings and Drawing Details.
3. Contractor shall refer to Civil and Landscape Architectural plans for layout dimensioning of hardscape, and other site dimensioning information.
4. Contractor shall refer to Civil Landscape Architectural plans and specifications for site development construction details and dimensioning including those for walkways.
5. Compaction of fill, subgrade and base courses as well as trench bedding and backfill shall be tested for compliance with ASTM Standard D-1557-91.
6. All existing and proposed valve and utility box covers, manhole and cleanout frames and covers, and catch basin frames and grates shall be adjusted to finish grade in paved areas.

7. Prior to finishing operations, mask, cover, and protect surrounding areas and dissimilar finishes with abrasive resistant materials.

B. TESTING, INSPECTION AND OBSERVATION:

1. A minimum of one set of 4 compression test cylinders shall be taken by the Contractor for each 100 cubic yards of concrete poured or for each day’s pour if less than 100 cubic yards.

2. After construction of concrete pavement, but before seal coating and painting striping and markings, a flood test shall be conducted to review surface drainage, as follows:
   a. Water shall be supplied and discharged in sufficient quantity to completely wet and cover all pavement and concrete gutter areas; the outline limits of residual standing/ponded water shall then be marked.
   b. Pavement and concrete gutter improvements shall be removed and replaced, at no additional cost to the Owner, as necessary to provide positive surface drainage and to prevent ponding of water on pavement surfaces and in gutters.
   c. Additional flood testing shall be conducted to confirm success of corrective measures.

C. WASTE MANAGEMENT:

1. Separate and recycle offcuts and waste materials in accordance with the Waste Management practices established onsite by the General Contractor and to the maximum extent economically feasible.

2. Place materials defined as hazardous or toxic waste in designated containers.

3. Return solvent and oil soaked rags for contaminant recovery and laundering or for proper disposal.

4. Use trigger operated spray nozzles for water hoses.

5. Set aside and protect the following surplus and uncontaminated waste materials: cementitious concrete, asphaltic concrete. General Contractor to deliver to or arrange collection for recycling of the same waste materials.

6. General Contractor to provide designated locations for the following materials:
   a. Recyclable trash (included but not limited to glass, plastics, cardboard, and paper products): all materials acceptable for recycling, sorted and separated from other trash, delivered to recycling center (or collected by recycling agency) as necessary to maintain site in an organized and clean condition.
7. All trades shall use the least toxic sealants, adhesives, sealers, and finishes necessary to comply with the requirements of this section.


E. FORMING

1. The design and engineering of the formwork as well as its construction shall be the responsibility of the Contractor and shall conform to recommended practice for concrete form work (ACI 347), latest edition.

2. Forms shall be used, whenever necessary, to confine the concrete and shape it to the required dimensions and shall be constructed accurately to dimensions, plumb and true to line and grade. Forms shall be of such cross-section and strength and so secured as to resist the pressure of the concrete when placed and the impact and vibration of any equipment they support, without springing or settlement. Forms shall be substantial, mortar right and braced and tied so as to maintain position and shape during placing or reinforcing and concrete. The method of connection between sections shall be such that the joints shall not move in any direction. The maximum deviation of the top surface shall not exceed 1/8 inch in 10 feet or the inside face or more than 1/4 inch in 10 feet from a straight line. Flexible or curved forms of proper radius shall be used for curves of 100 feet radius or less. Wavy surfaces and bulged walls or slab surfaces resulting from settlement or springing of form work will not be accepted.

3. The subgrade under the forms shall be compacted and cut to grade so that when the form is set, it will be uniformly supported for its entire length at the specified elevation. All forms shall be cleaned and oiled each time they are used. Forms used for concrete which is exposed to view shall be smooth and unsplintered so as to produce a first class finish. Rough concrete shall be ground, filled, and sacked and otherwise finished to the satisfaction of the City’s Authorized Representative.

4. The Contractor shall check and correct alignment and grade elevations of the forms immediately before placing the concrete. When any form has been disturbed or any grade has become unstable, the form shall be reset and rechecked. Reference Sections above.

5. Earth forms may be used for footings only where soil is firm and stable and concrete will not be exposed. Excavations shall be cut neat and accurate to size, and all exposed concrete shall be formed with the form extending at least 6 inches below finish grade.

6. The Contractor shall carefully examine Drawings and provide all recesses and all openings of proper sizes or shapes required or as may be directed by Landscape Architect for installation of all work requiring openings.
7. Forms shall be constructed and assembled in such a manner that construction joints shall occur at approved locations, forms may be thoroughly cleaned out before concrete is placed and forms may be removed without damage to concrete.

8. After forms have been placed and approved, the Contractor shall see that all other trades have been properly notified and are given sufficient time to complete installation of their work. Placing of reinforcing steel shall proceed progressively with work of other trades and each shall arrange its working schedules so as to avoid disturbing or moving of work already installed by one trade to admit the work of another. Each trade shall be entirely responsible for proper installation and securing of the work and each shall keep its work under observation during placing of concrete.

9. Forms shall remain in place long enough to allow concrete to set properly and the Contractor shall assume all responsibility for removing same. In no case shall supporting forms or shoring be removed until concrete has sufficient strength to carry its own weight and the load upon it with safety.

F. EMBEDDED ITEMS AND ROUGH HARDWARE

1. Every workman of other trades who is required to fasten his work to concrete work or is required to insert therein any pipe, box, bolt, anchor or other rough hardware shall be afforded every facility for accurately setting such items. No pipe shall be embedded in concrete unless specifically detailed.

2. The Contractor shall request information for accurate location of all other embedded items from other trades.

G. WETTING AND OILING FORMS

1. Inside surfaces of wood board forms shall be soaked with clean water and be kept continuously wet for 12 hours before any concrete is placed. If the forms have been erected for sometime and have become dry so that joints have opened, forms shall be thoroughly soaked at least twice a day for at least 3 days prior to placing concrete.

2. Plywood forms shall be treated with approved form oil. Excess oil shall be wiped off with rags to leave surface of forms just oily to touch. Material used shall not have an effect on bond of any paint that may be applied to finished concrete surfaces.

H. REINFORCEMENT

1. Steel reinforcement shall be transported to the site, handled, and stored in such a manner as to prevent damage and accumulation of moisture, dirt, grease, or other material that might impair the bond to concrete. Identification of reinforcement pieces shall be maintained after breaking bundles.
2. Place all reinforcement as indicated on the Drawings. Place accurately and securely fasten and support reinforcement to prevent displacement before or during pouring. Hang footing bars from forms. Support wire mesh with suitable metal cradles.

3. Clean, bend and place reinforcement in accordance with current requirements of the ACI Manual of Concrete Practice.

4. Reinforcement Splices
   a. Welded wire fabric - one mesh minimum
      Reinforcing bars:  
      #3 through # 7 = 30 bar diameter  
      #8 through # 9 = 40 bar diameter  
      #10 through #11 = 54 bar diameter
   b. Spacers, chairs, ties and all items as required shall be provided for supporting, assembling and spacing reinforcement.
   c. Minimum concrete protective covering for reinforcement except in extremely corrosive atmosphere and other severe exposure shall be as follows:
      i. Formed surfaces exposed to weather or in contact with the ground: 2 inches for reinforcing bars #6 or larger; 1-1/2 inches for reinforcing bars less than #6.
   d. All reinforcement at the time concrete is placed shall be free of mud, oil or other materials that may adversely affect or reduce the bond.
   e. All reinforcement shall be supported and fastened together to prevent displacement by the placement of concrete.
   f. Additional bars shall be supplied where needed to fasten other reinforcement securely in place. 16-gauge wire shall be used to secure all intersecting bars at the required spacing and position. Tie wire ends shall be bent away from the form surface.
   g. The Landscape Architect shall be notified at the completion of reinforcement and a minimum of 24 hours before placement of concrete.
   h. All defective or damaged reinforcement shall be replaced or repaired as directed by the Landscape Architect at no cost to the Owner.

5. Install reinforcing steel continuous through construction joints with a minimum 18-inch lap.

6. Interrupt reinforcing steel at expansion joints and construct dowels across joints.

7. Adjust the perimeter edge of valve box, utility vault, and manhole frames and covers to conform to finish pavement surface.

I. DESIGN OF MIXES AND PROPORTIONING
   1. Proportioning and mixing of cement, aggregate, admixture and water to attain required plasticity and strength shall be in accordance with the current edition of the ACI Manual of concrete Practice and the PCA "Design and Control of Concrete Mixtures".
2. Proportions of concrete materials and water content for various grades of concrete shall be established by concrete mix designs made at expense of Owner by an approved testing laboratory to conform to concrete strengths specified herein. At least 5 days prior to beginning placing concrete, City’s Authorized Representative shall be furnished with 2 copies of predetermined concrete mixes. No substitutes shall be made in materials used on work without approval of Testing Laboratory and City’s Authorized Representative.

3. Maximum slump for concrete shall be 3 inches, with 1/2 slump differential for successive batches.

4. Minimum PSI rating of concrete paving shall be 3,500 PSI in 28 days for vehicular areas; 2,500 PSI in 28 days for pedestrian areas.

J. PLACING CONCRETE

1. The Landscape Architect shall be notified at least 24 hours prior to placement of any concrete in order that forms, reinforcements and inserts may be observed and approved.

2. Before beginning a run of concrete, any hardened concrete or foreign materials shall be removed from inner surface of mixing and conveying equipment. All conveyances, buggies or barrows shall be kept clean during placing of concrete.

3. Moisten sub base to provide a uniform dampened condition at the time concrete is placed.

4. The concrete shall be deposited in such manner as to require as little rehandling as possible. Placing shall be continuous between transverse joints without the use of intermediate bulkheads. Concrete shall not be spouted nor delivered by spout or trough from hoists nor be dumped into carts with a free fall from mixer of more than 6 feet. Suitable precautions shall be taken to prevent separation or loss of ingredients while transporting. Necessary hand spreading shall be done with shovels, not rakes. Workmen shall not be allowed to walk in the freshly mixed concrete with boots or shoes coated with earth or foreign substances.

5. Do not add water to concrete during delivery, at project site, or during placement.

6. No concrete shall be placed before forms and reinforcing steel have been thoroughly cleaned, checked and approved by the Landscape Architect and before hangers, conduit, sleeves and other inserts have been checked and approved by workmen of other trades concerned. Concrete on grade shall be placed only on sound, undisturbed, damp, natural soil free of standing water.

7. Concrete shall be thoroughly consolidated against and along the faces of all forms and along the full length and on both sides of all joint assemblies. Vibrators shall not be permitted to come in contact with a joint assembly, the
grade, or a side form. The vibrator shall never be operated longer than 15 seconds in any one location. Eliminate air, rock pockets or other causes of honeycombing or pitting.

8. Concrete shall be deposited as near to expansion and contraction joints as possible without disturbing them but shall not be dumped onto a joint assembly.

K. REMOVAL OF FORMS

1. Forms shall be removed on standard reinforced concrete work only when concrete has developed sufficient strength to safely sustain its own weight.

L. STRIKEOFF, CONSOLIDATION, AND FINISHING

1. The sequence of operations shall be the Strike-off and consolidation, floating if necessary, straight edging, and final surface finish. The pavement shall be struck off and consolidated with a mechanical finishing machine, vibrating screed, or by hand-finishing methods when approved by the Engineer. A slip form paver may be used.

2. Adding water to the surface of the concrete to assisting finishing operations shall not be permitted.

3. After the pavement has been struck off and consolidated, it shall be scraped with a straightedge 10 ft long equipped with a handle to permit operation from the edge of the pavement. Any excess water and laitance shall be removed from the surface of the pavement. The straightedge shall be operated parallel to the centerline of the pavement and shall be moved forward one-half its length after each pass. Irregularities shall be corrected by adding or removing concrete. All disturbed places shall again be straight edged. The use of long-handled wood floats shall be confined to a minimum; they may be used only in emergencies and in areas not accessible to finishing equipment.

4. Before final finishing is completed and before the concrete has taken its initial set, the edges of the slab and curb shall be carefully finished with an edge of the radius shown in the plans.

M. CURING

1. Concrete shall be cured by protecting it against loss of moisture, rapid temperature change, and mechanical injury for at least 5 days after placement. Moist curing, waterproof paper, white polyethylene sheeting, white liquid membrane compound, or a combination thereof may be used. After finishing operations have been completed, the entire surface of the newly placed concrete shall be covered by whatever curing medium is applicable to local conditions and accepted by the Landscape Architect. The edges of concrete slabs exposed by the removal of forms shall be protected immediately to provide these surfaces with continuous curing treatment equal to the method selected for curing the slab and curb surface.
2. The Contractor shall have at hand and ready to install before actual placement begins the equipment needed for adequate curing.

3. Moist Curing. Moist curing shall be accomplished by a covering of burlap or other approved fabric mat used singly or in combination. Curing mats shall be thoroughly wet when applied and kept continuously wet and in intimate contact with the pavement surface of the duration of the moist-curing period. Burlap or fabric mats shall be long enough to cover the entire width and edges of the pavement lane and lapped at joints to prevent drying between adjacent sheets.

4. Waterproof Paper or White Polyethylene. Waterproof paper or white polyethylene sheets shall be in pieces large enough to cover the entire width and edges of the slab and shall be lapped not less than 18 inches. The paper or polyethylene shall be adequately weighted to prevent displacement or billowing due to wind, and material folded down over the side of the pavement edges shall be secured by a continuous bank of earth. Tears or holes appearing in the paper or polyethylene during the curing period shall be immediately repaired.

5. Membrane. The membrane method of curing shall be applied behind the final finishing operation after all free water has disappeared from the surface. Complete and uniform coverage at the required rate of 150 sq. ft. per gallon shall be required. The compound shall be kept agitated to prevent the pigment from settling, and it shall be applied to the pavement edges immediately after the forms have been removed. Membrane curing will not be permitted in frost-affected areas on paving that will be exposed to deicing chemicals within 30 days after completion of the curing period.

N. STOPPAGES AND PROTECTION
1. Do not place fresh concrete over cured concrete before any laitance thereon is removed and before clean, course aggregate is exposed by wire brush and water under pressure shortly after placing or by chipping and washing with water after it has hardened or by sandblasting. No concrete shall be placed in forms or against hardened concrete that has not been kept wet 24 hours prior to placing. Concrete surfaces on which masonry work starts shall be prepared in same manner as a concrete construction joint.

O. INSPECTION
1. Finished paving surfaces shall not vary more than 1/4 inch measured with a 10-foot metal straightedge, except at grade changes. No pooling water or other surface irregularities will be permitted. Correct irregularities to the satisfaction of City’s Authorized Representative.

2. A qualified testing laboratory will take samples for testing during the course of the work as considered necessary. Cooperate in making these tests as well as be responsible for notifying the designated laboratory in sufficient time to allow taking of concrete samples at the time of pouring.
3. Should tests show that concrete is below specified strength, Contractor shall remove all such concrete, as directed by City's Authorized Representative. Full cost of removal of low strength concrete, its replacement with concrete of proper specified strength and testing shall be borne by the Contractor.

4. All construction shall conform to current CBC and all other local building and safety codes.

P. JOINTS

1. Joints (General)

2. Contraction joints, expansion joints, and all longitudinal joints shall be placed as required by the Landscape Architect and at 10-foot maximum spacing, each way. Joints shall also be constructed in adjacent curb, gutter and sidewalk to align with those in concrete pavement. All products used for construction of joints shall be installed as recommended by the manufacturer. If a conflict exists between these specifications and the manufacturers product information it shall be brought to the attention of the Landscape Architect and the Landscape Architect's determination shall be final. Transverse construction joints shall be used as required (as called for in other sections of these specifications). Transverse joints shall extend continuously through the pavement and curb.

3. Should uncontrolled cracking occur, at any time prior to acceptance, the Owner may, at its option, require the removal and replacement of affected areas of pavement, at Contractor's expense. The area of pavement to be removed will be such as is determined by the Landscape Architect to be necessary in order to provide proper function and integrity to the pavement system.

4. Saw-Cut Control Joints: Control joints shall consist of planes of weakness created by forming or cutting grooves in the surface of the pavement. They shall be equal to at least one-fourth the depth of the slab.

5. Isolation Joints
   a. Transverse expansion joints shall consist of a vertical expansion joint filler placed in a butt-type joint with or without dowel bars as shown in the plans. The expansion joint filler shall be continuous from form to form, shaped to the subgrade, curb section, and to the keyway along the form. Preformed joint filler shall be furnished in lengths equal to the pavement width or equal to the width of one lane. Damaged or repaired joint filler shall not be used.
   b. The expansion joint filler shall be held in a vertical position. An approved installing bar or other device shall be used if necessary to ensure proper grade and alignment during placing and alignment during placing and finishing of the concrete. Finished joints shall not deviate in horizontal alignment more than 1/4 inch from a straight line. If joint fillers are assembled in sections, there shall be no offsets between adjacent units. No plugs of concrete shall be permitted anywhere within the expansion space.
6. **Saw-cut Construction Joints**  
   a. Transverse expansion joints shall consist of a vertical expansion joint filler placed in a butt-type joint with or without dowel bars as shown in the plans. The expansion joint filler shall be continuous from form to form, shaped to the subgrade, curb section, and to the keyway along the form. Preformed joint filler shall be furnished in lengths equal to the pavement width or equal to the width of one lane. Damaged or repaired joint filler shall not be used.
   
   b. The expansion joint filler shall be held in a vertical position. An approved installing bar or other device shall be used if necessary to ensure proper grade and alignment during placing and alignment during placing and finishing of the concrete. Finished joints shall not deviate in horizontal alignment more than 1/4 inch from a straight line. If joint fillers are assembled in sections, there shall be no offsets between adjacent units. No plugs of concrete shall be permitted anywhere within the expansion space.
   
   c. saw-cut control joint shall be installed in the same location as the joint filler as shown on plans.

Q. **FINISHES**

1. **General:**
   a. Wetting of concrete surfaces during screening, initial floating, or finishing operations is prohibited.

2. **Broom Finish**
   a. After surface water disappears and floated surface is sufficiently hardened, produce a light transverse scored texture perpendicular to the direction of traffic by drawing a broom across the surface. A stiff bristled broom shall be drawn from the center to the edge of the pavement with adjacent strokes slightly over lapping to produce surface corrugations of uniform appearance and about 1/16 inch in depth.
   
   b. A medium broom finish shall be used on all Portland cement concrete paving less than 6% slope and a heavy broom finish on all surfaces greater than 6% slope.

3. **Sand Cast Finish:**
   a. After placing concrete, apply Surface Retarder at the proper time to achieve the required finish, prior to installing control and expansion joints per the drawing.
   
   b. After seven days, clean the concrete with hot water to remove the surface of any laitance; dispose of wastewater in compliance with all governing regulations.
   
   c. Seal the concrete after cleaning and curing.

4. **Stamped Concrete**
   a. Press stamping mats in accordance with manufacturer's instructions into concrete that has reached plastic stage desirable for imprinting.
b. Use stamping mats to create patterns in concrete as indicated on the Drawings

R. CLEANING AND PATCHING

1. All projecting fins, bolts, wire and nails not necessary for the work shall be removed or cut back 1 inch from the surface and patched in an inconspicuous manner.

2. All defects in concrete work not meeting the approval of the City’s Authorized Representative shall be removed and replaced.

3. All repairs of defects shall be in accordance with ACI 301, latest edition.

4. Metal form ties extending from the face of permanently exposed concrete shall be cut off at least 1 inch deep in the concrete immediately after removal of forms. Fill holes with a 1:3 cement to sand mortar as dry as possible and finish to match the adjacent concrete surface.

5. Traces of blasting operations shall be removed from the site at conclusion of blasting.

6. Upon completion of the work under this Section, the Contractor shall remove all rubbish, waste, and debris resulting from his operations offsite or as directed by the City's Authorized Representative. Remove all equipment and implements of service, and leave the entire work area in a neat and clean condition as accepted by the City’s Authorized Representative.

S. TRAFFIC LOADING

1. Concrete pavement shall not be opened to traffic or traffic loads until the concrete has attained a compressive strength of 3,500 psi. If such tests are not conducted, the pavement shall not be opened to traffic until 14 days after the concrete was placed. Before opening to traffic, the pavement shall be cleaned.

2. Early strength concrete shall be used at intersections and any other locations that due to scheduling require traffic loading of pavement prior to 14 days of cure time. The accelerated loading time shall be determined by the Engineer based on actual compression test results of the mix supplied by the Contractor, but in no case less than three days. If compression test results are not available to the Engineer, traffic loading shall not be prior to 7 days of curing.

T. REPAIR WORK

1. Repair concrete work that is not formed as indicated, or is not true to intended alignment, or is not plumb or level where so intended, or is not true to intended grades and levels, or has void or rock pockets that have not been filled (unless under direction of City’s Authorized Representative), or has any sawdust, wood or debris embedded in it, or does not fully conform to specifications.
2. Any concrete finish that is not true to line and plane, or is not thoroughly troweled and surfaces as specified, or varies more than 3/32 inch from the specified finish grade (except slabs having drains), or does not connect properly to adjoining work, will be deemed to be defective, and if directed by the City’s Authorized Representative shall be removed and replaced with cement finish complying with specifications.

3. Where concrete repairing is required because of changes, errors or damage, it shall be performed in such a manner as to obtain surfaces true to line and level with existing work so that when new surfaces are finished they will not be lower than adjoining work.

4. Where reinforcing steel has been cut back to make repairs or changes, it shall be cleaned of all incrustations and be reinstalled, using splicing bars and obtaining laps on both sides of cut or at least 24 bar diameters.

5. Edges and other surfaces or hardened concrete against which new concrete will be placed shall be vertical and be thoroughly wetted and wire brushed with heavy, neat, cement paste just prior to placing concrete. Feather patching will not be permitted. In general, edges shall be saw cut.
SECTION 203 – PAVING ASPHALT

203-1 GENERAL

A. Section Includes:
   a. Cold milling of existing asphalt pavement.
   b. Hot-mix asphalt patching.
   c. Hot-mix asphalt paving.
   d. Hot-mix asphalt overlay.
   e. Asphalt curbs.

B. Greenbook Related Sections:
   a. Section 203 – Bituminous Materials
   b. Section 301 – Subgrade Preparation, Treated Materials, and Placement of Base Materials
   c. Section 302 – Roadway Surfacing

C. References:

D. Action Submittals:
   1. Product Data: For each type of product.

E. Informational Submittals
   1. Material Certificates: For each paving material.

F. Quality Assurance:
   1. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located.

203-2 MEASUREMENT AND PAYMENT

A. The quantity of paving asphalt will be paid for at a lump sum price specified on the bid schedule for item 15, “Parking Lot” (including permeable concrete pavers, permeable aggregate base, 8” flush concrete curb, 6” concrete curb/12” gutter, parking stall striping, wheel stops, entry gate.) Please refer to additional
specifications for more information regarding the pavers, curbs, striping, wheel stops, and gates.

B. The quantity of paving offsite asphalt will be paid for at a lump sum price specified on the bid schedule for item 12, “Offsite Improvements” (including concrete sidewalk/driveway/paving, AC paving, concrete curb, concrete gutter, ADA ramp, warning surface, signage) Please refer to additional specifications for more information regarding the concrete sidewalk/driveway/paving, concrete curb, concrete gutter, ADA ramp, warning surface, signage.

**203-3 MATERIALS**

A. Aggregates:
4. Asphalt for surface/wearing courses shall have a maximum 1/2-inch aggregate, with a maximum of 3 percent retained on the 1/2-inch sieve.
5. Minimum of 90 percent passing the 3/8-inch sieve.
6. Limit natural sand content to a maximum of 20 percent by weight of the total aggregate mass.

B. Asphalt Materials:

C. Mixes:
1. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction and complying with the following requirements:

D. Aggregate Base
   1. Dense graded mixture of natural or crushed gravel or stone, and natural or crushed sand, ASTM 2940 conforming to the requirements of the Standard Specifications for Public Works Construction “Greenbook”, latest edition.
   2. Retain “Base Course” and “Surface Course” subparagraphs below to identify state or local DOT specifications for each course. Insert binder course in list if required.

203-4 EXECUTION

A. Refer to the latest edition of the Greenbook for the roadway surfacing specifications in section 302.
SECTION 203-15 – POROUS ASPHALT CONCRETE

203-15.1 GENERAL

A. Section includes:
   1. Construction of porous asphalt concrete as shown on the plans.
   2. Material, aggregate, gradation and mixing specifications per Greenbook.
   3. All other requirements per Greenbook.
   4. As approved by the Engineer

B. Greenbook Related Sections:
   Section 203 – Bituminous Materials
   Section 203-15 Porous Asphalt Concrete
   Section 211 – Material Testing
   Section 300 – Earthwork
   Section 301–Treated Soil, Subgrade Preparation and Placement of Base

SECTION 203-16 – CRUSHED ROCK

203-16 GENERAL

A. Section includes:
   1. Construction of Crushed Rock as shown on the plans.
   2. Material, screenings and gradation specifications per Greenbook.
   3. All other requirements per Greenbook.
   4. As approved by the Engineer.

B. Greenbook Related Sections:
   Section 200 – Rock Materials
   Section 200 -1.2 Crushed Rock and Rock Dust
   Section 211 – Material Testing
   Section 300 – Earthwork
   Section 301–Treated Soil, Subgrade Preparation and Placement of Base
   Material

~~~~~~~~~~~~~~~~~~~~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~~
SECTION 204 – WOOD FENCING

204-1 GENERAL

A. includes:
   1. Construction of 72"H pressure tressed Wood fence and 42"H Wood Rail fence.
   2. Provide all labor, all materials (i.e., pickets, rails, posts, and hardware) required for installation of the wood fencing specified herein and as indicated on the Drawings.
   3. Concrete footing.

B. REFERENCES

   1. Greenbook Related Sections:
      Section 201 – Concrete Mortar and Related Materials
      Section 206 – Miscellaneous Metal Items
      Section 204 – Lumber and Treatment with Preservatives

   2. SFPA/SPC Form #400 – Permanent Wood Foundation Guide to Design and Construction; Southern Forest Products Association/Southern Pine Council; 1998

   3. AWPA C2–96 – Lumber, Timbers, Bridge Ties, Mine Ties—Preservative Treatment by Pressure Processes; American Wood Preservers’ Association; 1996

   4. ACQ-94 – Preserve Quality Control Standard for all products treated with ACQ; 1994

C. QUALITY ASSURANCE

   1. Qualifications: Provide laborers and supervisors who are thoroughly familiar with the type of construction involved and the materials and techniques specified.

D. SUBMITALS

   1. Shop Drawings showing general fabrication of Wood Rail fencing.

E. DELIVERY, STORAGE AND HANDLING

   1. Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling.

   2. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.
204-2 MEASUREMENT

A. Measurement for installation of wood fencing shall be based on linear foot as shown on the Drawings, according to these Specifications, and as approved by the Project Manager.

204-3 PAYMENT

A. Payment for metal gates railing and fence shall be on a lump sum under Bid Item No. 48, 49 and 60 shall include all materials and labor required for construction and installation.
204-1 – PIÑATA POLE

204-1.1 GENERAL

B. includes:
   2. Provide all labor, all materials (i.e. rails, posts, and hardware), and concrete footings as required for installation of the piñata pole specified herein and as indicated on the Drawings.

C. REFERENCES
   1. Greenbook Related Sections:
      Section 201 – Concrete Mortar and Related Materials
      Section 204 – Lumber and Treatment with Preservatives
   2. SFPA/SPC Form #400 – Permanent Wood Foundation Guide to Design and Construction; Southern Forest Products Association/Southern Pine Council; 1998
   3. AWPA C2–96 – Lumber, Timbers, Bridge Ties, Mine Ties---Preservative Treatment by Pressure Processes; American Wood Preservers’ Association; 1996
   4. ACQ-94 – Preserve Quality Control Standard for all products treated with ACQ; 1994

D. QUALITY ASSURANCE
   1. Qualifications: Provide laborers and supervisors who are thoroughly familiar with the type of construction involved and the materials and techniques specified.

E. SUBMITALS
   1. Shop Drawings showing general fabrication of Wood Rail fencing.

F. DELIVERY, STORAGE AND HANDLING
   1. Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling.
   2. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft

204-2 MEASUREMENT
G. Measurement for installation of wood fencing shall be based on linear foot as shown on the Drawings, according to these Specifications, and as approved by the Project Manager.

204-3 PAYMENT

H. Payment for metal gates railing and fence shall be on a lump sum under Bid Item No. 41 shall include all materials and labor required for construction and installation.
SECTION 206 – METAL GATES RAILING AND FENCE

206-1 GENERAL

A. Section Includes: Access gates & Steel Fencing.

B. The contractor shall supply a total industrial ornamental steel welded swing gate system, and steel fence system. The system shall include all components (i.e., pickets, rails, posts, gates, fittings and hardware) required.

C. Provide all labor, materials and appurtenances necessary for installation of the fencing systems specified herein and as indicated on the Drawings.

206-2 SUBMITTALS

A. Shop Drawings:
   1. Shop Drawings showing general fabrication, details and layout of Custom Fence, Pre-fabricated fence and Access pedestrian and vehicular gates.
   2. Product Data: Manufacturer’s literature describing products specified in this Section.

B. Qualifications: Provide laborers and supervisors who are thoroughly familiar with the type of construction involved and the materials and techniques specified.

C. Product data: Manufacturer’s catalog cuts indicating material compliance and specified options.

206-3 MEASUREMENT

A. Measurement for installation of access gates shall be based on two pedestrian gates and one vehicular pole gate shown on the Drawings.

B. Measurement for installation of custom fence shall be based on linear foot as shown on the Drawings, according to these Specifications, and as approved by the Project Manager.

C. Measurement for installation of pre-fabricated fencing shall be based on linear foot as shown on the Drawings, according to these Specifications, and as approved by the Project Manager.

206-4 PAYMENT
D. Payment for metal gates railing and fence shall be on a lump sum under Bid Item No. 15, 46, 47 and shall include all materials and labor required for construction and installation.

206-5 EXECUTION

A. COMPONENTS AND MATERIALS

1. Steel material for gate framework (i.e., tubular pickets, end and intermediate uprights, rails, and posts) and gate posts, shall conform to the requirements of ASTM A 500Gr.B. The exterior shall be hot-dip galvanized with a 0.45 ounces per feet$^2$ minimum zinc weight. The interior surface shall be coated with a minimum 81 percent nominal zinc pigmented coating, 0.3 mils minimum thickness.

2. Steel material for railing framework (i.e., tubular pickets, end and intermediate uprights, and rails), shall conform to the requirements of ASTM A 500Gr.B. The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 ounces per feet$^2$, Coating Designation G-90.

3. The manufactured galvanized framework, gates, gate posts and railing shall be subjected to the PermaCoat® thermal stratification coating process (high-temperature, in-line, multi-stage, multi-layer) including, as a minimum, a six-stage pretreatment/wash (with zinc phosphate), an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The base coat shall be a zinc-rich thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils. The topcoat shall be a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 2 mils. The color shall be brown. The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table 1.

Table 1 – Coating Performance Requirements

<table>
<thead>
<tr>
<th>Quality Characteristics</th>
<th>ASTM Test Method</th>
<th>Performance Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion</td>
<td>D3359 – Method B</td>
<td>Adhesion (Retention of Coating) over 90 percent of test area (Tape and knife test).</td>
</tr>
<tr>
<td>Corrosion Resistance</td>
<td>B117 &amp; D1654</td>
<td>Corrosion Resistance over 3,500 hours (Scribed per D1654; failure mode is accumulation of 1/8 inch coating loss from scribe or medium #8 blisters).</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>D2794</td>
<td>Impact Resistance over 60 inch lb. (Forward impact using 0.625 inch ball).</td>
</tr>
</tbody>
</table>
4. Gates framework, posts and railing shall be in accordance with sizes specified on applicable construction plans.

E. METALS

1. Provide steel metal free from pitting, seam marks, roller marks, discolorations and other imperfections where exposed to view on finished units.

2. Grade and type to be selected by manufacturer to conform to uses and forms required.

3. All accessories shall be cast or formed metal of same type and finish.

F. WELDING FENCING MATERIAL, GATES AND ACCESSORIES

1. Welding Electrodes and Filler Material: Provide type and alloy of filler material and electrodes as recommended by Producer of metal to be welded and as required for strength and compatibility in fabricated items.

2. Fasteners for anchoring gates and other fencing to post construction: Select fasteners of type, grade and class required to produce connections suitable for anchoring such items indicated and capable of withstanding design loads.

3. Fasteners for pickets and rails: Use fasteners fabricated from the same basic iron metal as fastened metal, unless otherwise indicated. Do not use metals that are corrosive or incompatible with materials joined.

G. FABRICATION

1. General: Fabricate gates and fencing to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

2. Assemble posts, pickets and rails in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural integrity of joined pieces.

3. Completed sections of fencing shall be capable of supporting a minimum of 200 lb lateral load applied at midspan without permanent deformation.

4. Assembled sections shall support a 600 lb vertical load at the midpoint of any horizontal rail.

5. Welded Connections: Fabricate posts, pickets and rails for connecting members by welding. Components at perpendicular and skew connections to
provide close fit, or use fittings designed for this purpose. Weld connections continuously to comply with the following:

a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
b. Obtain fusion without undercut or overlap.
c. Remove flux immediately.
d. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

6. Non-welded Connections: Fabricate posts, pickets and rails by connecting members with concealed mechanical fasteners and fittings, unless otherwise indicated. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

7. Provide inserts and other anchorage devices for connecting fence posts to concrete. Fabricate anchorage devices capable of withstanding loads imposed. Coordinate anchorage devices with supporting structure.

8. For fence posts set in concrete, provide preset sleeves of steel not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post and steel plate forming bottom closure.

9. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.

10. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing the work.

11. Cut, reinforce, drill, and tap components, as indicated, to receive any finish hardware, screws, and similar items.

12. Fabricate joints that will be exposed to weather in a watertight manner.


H. FINISHES, GENERAL

1. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

3. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
4. Provide exposed fasteners with finish matching appearance, including color and texture, of posts, pickets and rails.

I. FINISHES
   1. Remove or blend tool and die marks and stretch lines into finish.
   2. Grind and polish surfaces to produce uniform, directionally textured polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.
   3. 180-Grit Polished Finish: Oil-ground, uniform, textured finish.
   4. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
   5. Apply shop primer to prepared surfaces of fencing and fencing components, unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1," for shop painting. Primer need not be applied to surfaces to be embedded in concrete.

J. GENERAL INSTALLATION
   1. All gate installation shall conform to all gate standards and any restrictive building codes requirements.
   2. All new installation shall be laid out by the CONTRACTOR as indicated on the Drawings.
      a. CONTRACTOR must verify that areas to receive fencing are completed to final grades and elevations.
      b. CONTRACTOR must ensure that property lines and any legal boundaries are clearly established and understood.
      c. CONTRACTOR to verify that locations are clearly marked for Installer.
   3. Perform cutting, drilling, and fitting required to install gates
   4. Do not weld, cut, or abrade surfaces of handrail and railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
   5. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
   6. Align posts so variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
   7. Set posts and gates accurately in location, alignment and elevation, measured from established lines and levels and free from rack.
   8. Gate posts shall be spaced so that the inside-to inside spacing equals the sum of the manufacturer’s standard as-built end-to-end leaf width(s), plus the clearances required for the specified latching and hinging hardware.
9. Install fencing systems and accessories as indicated by the Manufacturer.

10. Fit exposed connections together to form tight, hairline joints.

K. FENCE CONNECTIONS

1. Non-welded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of handrails and railings.

2. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections whether welding is performed in the shop or in the field.

L. ADJUSTING

1. Adjust gates before anchoring to ensure matching alignment at abutting joints. Space at interval indicated, but not less than that required by structural loads.
   a. Ensure that all gates swing smoothly and uninterrupted by surfaces below them.
   b. Appropriate gate kits must be used with sufficient panel material to fit gate opening.

2. Repair and replace any and all damaged surfaces or gate members.

3. The CONTRACTOR shall clean the jobsite of excess materials.
   a. Post hole excavations shall be scattered uniformly away from posts.

M. CLEANING

1. Clean all fencing by washing thoroughly with clean water and soap and rinsing with clean water.

2. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material.

3. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

N. PROTECTION

1. Protect finishes of gates from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at the time of Substantial Completion.

2. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units for approval.
206-6  INSPECTION AND ACCEPTANCE

A. Within 5 days after the installation of the access gates, and fence the Project Manager shall inspect these items. If, after inspection, the Project Manager is satisfied, the Contractor shall be notified in writing of acceptance.

B. If, after inspection, the Project Manager is dissatisfied with the access gates, and fence to date and their conformance to the Drawings and Specifications, the Project Manager will prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SECTION 206-2 – PRE-FABRICATED VINYL COATED CHAINLINK FENCE

206-2.1 GENERAL

A. INCLUDES:
   1. Vinyl coated steel chain-link fabric.
   2. Vinyl coated steel framework
   3. Vinyl coated slide gate
   4. Provide all labor, all materials (i.e., chain-link fabric, rails, posts, wires, wheel and hardware) required for installation of the chain-link fencing and chain-link gate specified herein and as indicated on the Drawings.
   5. Concrete footings.

B. Greenbook Related Sections:
   Section 201 – Concrete Mortar and Related Materials
   Section 206 – Miscellaneous Metal Items

C. SPECIAL WARRANTY
   1. Provide Manufacturer’s standard limited warranty that its Polyolefin Coated Chain Link Fence is free from color coating flaking and peeling and other defects in material or workmanship for a period of 15 years from the date of purchase. See Manufacturers Warranty for full details.

206-2.3 SUBMITTALS

A. Shop drawings: Layout of fences and gates with dimensions, details, and finishes of components, accessories, and post foundations.

B. Product data: Manufacturer’s catalog cuts indicating material compliance and specified options.

C. Samples: Color selection for polyolefin finishes, samples of materials (e.g., fabric, wires, and accessories).

206-2.4 MEASUREMENT

A. Measurement for installation of Vinyl fencing and gate shall be based on linear foot as shown on the Drawings, according to these Specifications, and as approved by the Project Manager.
1. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

206-2.5 PAYMENT

A. Payment for metal gates railing and fence shall be on a lump sum under Bid Item No. 43, and 44 shall include all materials and labor required for construction and installation.

206-2.6 MATERIALS

A. MANUFACTURER
   1. Products from qualified manufacturers having a minimum of five years experience manufacturing thermally fused chain link fencing will be acceptable by the architect as equal, if approved in writing, ten days prior to bidding, and if they meet the following specifications for design, size gauge of metal parts and fabrication.
   2. Obtain chain link fences and gates, including accessories, fittings, and fastenings, from a single source.

B. CHAIN LINK FENCE FABRIC
   1. Polyolefin elastomer coating, 6 mil to 10 mil thickness, thermally fused to zinc-coated steel core wire: Per ASTM F668 Class 2b. Minimum Core wire tensile strength of 75,000 psi.
   2. Mesh, wire, size and color as indicated on drawings.

C. STEEL FENCE FRAMING
   1. Steel pipe - Type I: ASTM F 1083, standard weight schedule 40; minimum yield strength of 30,000 psi; sizes as indicated. Hot-dipped galvanized with minimum average 1.8 oz/ft² of coated surface area.
   2. Steel pipe - Type II: Cold formed and welded steel pipe complying with ASTM F 1043, Group IC, with minimum yield strength of 50,000 psi, sizes as indicated. Protective coating per ASTM F 1043, external coating Type B, zinc with organic overcoat, 0.9 oz/ft² minimum zinc coating with chromate conversion coating and verifiable polymer film. Internal coating Type B, minimum 0.9 oz/ft zinc or Type D, zinc pigmented, 81% nominal coating, minimum 3 mils thick.
   3. Formed steel (“C”) sections: Roll formed steel shapes complying with ASTM F 1043, Group II, 45,000 psi minimum yield strength steel; sizes as indicated.
External coating per ASTM F 1043, Type A, minimum average 2.0 oz/ft² of zinc per ASTM A 123, or 4.0 oz/ft² per ASTM A 525.

4. Polyolefin Coated finish: In accordance with ASTM F1043, apply supplemental color coating of minimum 10 mils of thermally fused polyolefin color to match fabric.

D. POLYOLEFIN COATED ACCESSORIES

1. Chain link fence accessories: [ASTM F 626] Provide items required to complete fence system. Galvanize each ferrous metal item and finish to match framing. Fittings should match Master Halco specifications.

2. Post caps: Formed steel, cast malleable iron, or weather tight closure cap for tubular posts. Provide one cap for each post. Cap to have provision for barbed wire when necessary. “C” shaped line post without top rail or barbed wire supporting arms do not require post caps. (Where top rail is used, provide tops to permit passage of top rail.)

3. Top rail and rail ends: Pressed steel per ASTM F626, for connection of rail and brace to terminal posts.

4. Top rail sleeves: 7” expansion sleeve with a minimum.137” wire diameter and 1.80” length spring, allowing for expansion and contraction of top rail.

5. Wire ties: 9 gauge [0.148” galvanized steel wire for attachment of fabric to line posts. Double wrap 13 gauge 0.092” for rails and braces. Hog ring ties of 12-1/2 gauge for attachment of fabric to tension wire.

6. Brace and tension (stretcher bar) bands: Pressed steel, minimum 300 degree profile curvature for secure fence post attachment. At square post provide tension bar clips.

7. Tension (stretcher) bars: One piece lengths equal to 2 inches less than full height of fabric with a minimum cross-section of 3/16” x 3/4”. Provide tension (stretcher) bars where chain link fabric meets terminal posts.

8. Tension wire: Thermally fused polyolefin applied to zinc coated steel wire: Per ASTM F 1664 Class 2 b, 6 gauge, 0.192” diameter core wire with tensile strength of 75,000 psi.

9. Truss rods & tightener: Steel rods with minimum diameter of 5/16”. Capable of withstanding a tension of minimum 2,000 lbs.

10. Barbed wire: Thermally fused polyolefin coated per ASTM F 1665 Class 2b steel wire double-strand, 13-3/4 gauge, 0.083” twisted line wire with galvanized steel, 4 point barbs (without polyolefin finish) spaced approximately 3” on center.

12. Provide 45° 3 strands, single arm and 6 strands double “V” arms.
13. Provide intermediate arms with hole for passage of top rail.
14. Nuts and bolts are galvanized but not polyolefin coated. Cans of touch up paint are available to color coat nuts and bolts if desired.

E. SETTING MATERIALS
1. Concrete: Minimum 28 day compressive strength of 3,000 psi.
2. Drive Anchors: Galvanized angles, ASTM A 36 steel 1” x 1” x 30” galvanized shoe clamps to secure angles to posts.

206-2.7 EXECUTION

A. EXAMINATION
1. Verify areas to receive fencing are completed to final grades and elevations.
2. Ensure property lines and legal boundaries of work are clearly established.

B. CHAIN LINK FENCE FRAMING INSTALLATION
1. Install chain link fence in accordance with ASTM F 567 and manufacturer’s instructions.
2. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.
3. Space line posts uniformly on center.
4. Concrete set terminal posts: Drill holes in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than outside dimension of post, and depths approximately 6” deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36” below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post. Slope to direct water away from posts.
5. Drive Anchor posts: With protective cap, drive post 36” into ground. Slightly below ground level install drive anchor shoe fitting. Install 2 diagonal drive anchors and tighten in the shoe.
6. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.
7. Bracing: Install horizontal pipe brace at mid-height for fences 6’ and over, on each side of terminal posts. Firmly attach with fittings. Install diagonal truss rods at these points Adjust truss rod, ensuring posts remain plumb.
8. **Tension wire**: Provide tension wire at bottom of fabric. Install tension wire before stretching fabric and attach to each post with ties. Secure tension wire to fabric with 12-1/2 gauge hog rings 24” OC

9. **Top rail**: Install lengths, 21’. Connect joints with sleeves for rigid connections for expansion/contraction.

10. **Center Rails (for fabric height 12’ and over)**. Install mid rails between posts with fittings and accessories.

11. **Bottom Rails**: Install bottom rails between posts with fittings and accessories.

C. **CHAIN LINK FABRIC INSTALLATION**

1. **Fabric**: Install fabric on security side and attach so that fabric remains in tension after pulling force is released. Leave approximately 2” between finish grade and bottom selvage. Attach fabric with wire ties to line posts at 15” on center and to rails, braces, and tension wire at 24” on center.

2. **Tension (stretcher) bars**: Pull fabric taut; thread tension bar through fabric and attach to terminal posts with bands or clips spaced maximum of 15” (381 mm) on center.

D. **ACCESSORIES**

1. **Tie wires**: Bend ends of wire to minimize hazard to persons and clothing.

2. **Fasteners**: Install nuts on side of fence opposite fabric side for added security.

3. **Barbed wire**: Uniformly space parallel rows of barbed wire on security side of fence. Pull wire taut and attach in clips or slots of each extension.

4. **Slats**: Install slats in accordance with manufacturer’s instructions.

E. **CLEANING**

1. Clean up debris and unused material, and remove from the site
SECTION 207 – GRAVITY PIPE

207-1 GENERAL

A. Scope:

1. The Contractor shall provide all labor and equipment necessary and required to install all of the storm drainage facilities in accordance with the Contract Documents. Work shall include, but not be limited to:
   a. Installation of drainage system(s) consisting of manholes, drain inlets, catch basins, pipe, end sections, outlet control structure(s), and all necessary and required accessory items and operations, including connection(s) to existing drainage facilities.
   b. Installation of building leader drains at building downspouts, where indicated on plans or as described herein, consisting of all pipe, fittings and required accessory items and operations, including connections to the proposed and/or existing drainage system. All downspouts at the front of building and associated canopy elements shall have leader drain connection to the storm piping.
   c. Where shown, installation of under-drains consisting of all pipe, fittings and required accessory items and operations, including connections to the proposed and/or existing drainage system.

2. The contractor shall provide all labor and equipment necessary and required to install all of the sanitary sewer facilities in accordance with the contract documents. Work shall include, but not be limited to:
   a. Installation of sewer connections and piping to connect from the public sewer main to the proposed restroom facility on the site.

B. Greenbook Related Sections:
   Section 207- Gravity Pipe
   Section 208 – Pipe Joint Types and Materials
   Section 303 – Concrete and Masonry Construction
   1. Section 306 – Open Trench Conduit Construction

C. References:
   1. County of Santa Barbara Public Works and Engineering Standards and Details
   3. Goleta Water District Standards and Details
D. Quality Assurance:

1. Certificate of Compliance attesting that tests set forth in the references publications have been performed, and the performance requirements have been satisfied.

2. Regulatory Requirements:
   a. Comply with requirements of the serving utility, pertaining to water service.
   b. Comply with requirements of fire authority having jurisdiction, pertaining to materials, hose threads, and installation details.
   c. Comply with requirements of NFPA 24 for materials and installation.

E. Reference Standards:

1. The publication listed below form part of this specification referring to PVC pipe. Reference shall be made to the latest edition of said standards unless otherwise called for.
   Uni-Bell — Handbook of PVC Pipe Design and Construction

207-2 MEASUREMENT AND PAYMENT

A. The quantity of sanitary sewer pipe and appurtenances will be measured and paid for at a lump sum price specified on the bid schedule for item 8, “Sanitary Sewer” and shall include piping and patching.

B. The quantity of storm drain piping and appurtenances will be measured and paid for at a lump sum price specified on the bid schedule for item 11, “Water quality infiltration trench” which includes 8” perforated pipe, 8” solid pipe, 24” x 24” inlet, area drains, class II gravel, geofabric, engineered soil, and mulch. Please refer to section 900 – Biofiltration trenches for more information regarding item 11.

**All pricing shall include the cost for trenching, excavation, and backfill of the associated piping and appurtenances.

207-3 STORM DRAINAGE UTILITIES

207-3.1 - CONSTRUCTION DETAILS

A. GENERAL

1. The Contractor shall install all drainage structures and pipe in the locations shown on the Drawings. Pipe shall be of the type and sizes specified and shall be laid accurately to line and grade. Structures shall be accurately located and properly oriented.
2. The installation of all drainage structures and pipe shall conform to the requirements of all Authorities having jurisdiction:

B. TRENCH EXCAVATION AND BACKFILL
   1. The provisions of the Geotechnical Engineering Report that has been prepared for this project by Earth Systems Southern California, dated October 27, 2013 and updated March 8, 2018, and its specific recommendations to “Compaction” shall govern all work under this Article.

207-3.2 MATERIALS
A. Refer to the latest edition of the Greenbook for material specification in section 207 and 208.

207-3.3 EXECUTION
A. Earthwork:
   1. Excavating, trenching, and backfilling are specified in Section 300 "Earthwork"

B. Refer to the latest edition of the Greenbook for construction specifications in sections 303 and 306.

207-4 SANITARY SEWER UTILITIES

207-4.1 MATERIALS
A. Refer to the latest edition of the Greenbook for material specification in section 207 and 208.

207-4.2 EXECUTION
A. Earthwork:
   1. Excavating, trenching, and backfilling are specified in Section 300 "Earthwork"

B. Refer to the latest edition of the Greenbook for construction specifications in sections 303 and 306.
SECTION 209– PRESSURE PIPE

209-1 GENERAL

A. Scope:

1. The Contractor shall provide all labor and equipment necessary and required to install all of the water line facilities in accordance with the Contract Documents. Work shall include, but not be limited to:
   a. Installation of water distribution systems (both domestic & fire services) consisting of all pipe, fittings, valves, valve boxes, hydrants, anchor and/or thrust blocks, and all necessary and required appurtenances, accessory items and operations including connection(s) to the existing on site water main lateral(s).
   b. Installation of building water service line(s), consisting of all pipe, fittings, valves and valve boxes, anchor and/or thrust blocks, and all necessary and required accessory items and operations, including connection(s) to the water distribution system.
   c. Testing and disinfection.

B. Greenbook Related Sections:

Section 209 – Pressure Pipe
Section 208 – Pipe Joint Types and Materials
Section 306 – Open Trench Conduit Construction

C. References:

1. County of Santa Barbara Public Works and Engineering Standards and Details
3. Goleta Water District Standards and Details

D. Quality Assurance:

1. Certificate of Compliance attesting that tests set forth in the references publications have been performed, and the performance requirements have been satisfied.

2. Regulatory Requirements:
   a. Comply with requirements of the serving utility, pertaining to water service.
   b. Comply with requirements of fire authority having jurisdiction, pertaining to materials, hose threads, and installation details.
   c. Comply with requirements of NFPA 24 for materials and installation.
E. Reference Standards:

1. The publication listed below form part of this specification referring to PVC pipe. Reference shall be made to the latest edition of said standards unless otherwise called for.

   AWWA C900 — PVC Pressure Pipe, 100mm (4”) Through 300mm (12”) for water Distribution

   AWWA C905 — PVC Water Transmission Pipe, 350mm (14”) Through 1200mm (48”) AWWA M23 — PVC Pipe-Design and Installation

   Uni-Bell — Handbook of PVC Pipe Design and Construction

209-2 MEASUREMENT AND PAYMENT

A. The quantity of domestic water piping and appurtenances will be measured and paid for at a lump sum price specified on the bid schedule for item 9, “Domestic Water” which includes a 3” backflow preventer, piping, and patching (E) pavement.

B. The quantity of fire water piping and appurtenances will be measured and paid for at a lump sum price specified on the bid schedule for item 10, “Fire Water” which include piping and patching (E) pavement.

**All pricing shall include the cost for trenching, excavation, and backfill of the associated piping and appurtenances.

209-3 MATERIALS

A. Refer to the latest edition of the Greenbook for material specifications in sections 208 and 209.

209-4 EXECUTION

A. Refer to the latest edition of the Greenbook for construction specification in section 306.

209-5 SUBMITTALS – SUBSTITUTIONS

A. Bids shall be based on Drawings and Specifications and references exactly as shown except as substitutions are permitted under terms of the Instructions to Bidders. Acceptance by the Owner's Representative of a variation or alternate shall not of itself waive other requirements of the Drawings and Specifications.

B. Before a substitute is used, it shall be equal in quality and utility to the material or make of equipment specified, and furthermore, shall be suitable for the
particular application. The decision of the Owner's Representative as to the quality and utility of the substitute offered shall be final.

C. When submitting a substitute to a specified item, provide complete data for both the specified item and the substitute. Complete data includes:

1. Catalog cuts with complete dimensions, characteristics, electrical properties, Underwriter's Laboratory listing, harmonics, light output, mounting and support requirements.
2. Calculations, photometric results, system load data, energy effect on system, etc.

D. If the substitute is not deemed equal in both utility and quality to the specified item, the specified item will be approved and it shall be provided by the Contractor.

E. Submit in one package complete systematized lists of equipment and Drawings, catalog cuts, brochures, capacity tables and curves, descriptive information, performance data and guarantees and warranties referenced either to applicable Specification paragraphs or to item numbers as shown on the Drawings, or both. Submit six (6) copies.

F. Do not order or install equipment until submittals have been reviewed and approved.

G. Where accepted materials or equipment other than is specified or shown on the Drawings require redesign of structural, architectural, electrical or mechanical features or layouts, such changes shall be made by, or at the expense of the Contractor - all subject to complete review by the Owner's Representative.

H. Because of the contingencies involved, review and general acceptance of proposed substitutes shall not relieve the Contractor's responsibility under this Work for ensuring in all respects the suitability of such materials and equipment for the particular Project requirements.

209-6 MEASUREMENT AND PAYMENT

A. Measurement and payment for the installation of the electrical system shall be on a lump sum basis for all materials, testing, and labor to install outdoor site lighting, electrical outlets. The amount of payment shall be based on percentage of system installed.

209-7 PRODUCTS AND EXECUTION

A. GROUNDING
1. Grounding shall be executed in accordance with applicable codes and regulations of the State of California, California Electrical Code and local authorities having jurisdiction as well as any additional provisions specified or shown on Drawings.

2. Grounding bushings shall be used wherever conduits are grounded. Feeder conduits to panels and air conditioners shall have grounding bushings.

3. Grounding conductors should be located to permit, the shortest and most direct path to ground. Connections shall be readily accessible for inspection and connections shall not be permanently concealed in floors or walls.

4. Non-current carrying metallic parts of electrical equipment and raceways shall be securely grounded to the common system ground. In all locations, ground conductors shall be run through conduits and shall be securely bonded to the conduit at the entrance and exit. The conduit for the grounding conductors shall be continuous from the point of attachment to cabinets or equipment to the grounding electrode, and shall be securely fastened to the ground clamp fittings.

5. Ground connections to equipment shall be made with an approved type of exothermic weld or shall be bolted or clamped to equipment or conduit. Sheet metal strap types of ground clamps shall not be used. Contact surfaces shall be thoroughly cleaned and bright before connection is made so as to ensure a good metal to metal contact.

6. Where nonmetallic conduit is used, ground shall be achieved through use of a separate, green-insulated, copper, code-size, ground conductor included in the conduit.

7. Bonding of cold water piping system shall be achieved at the service entrance. A copper saddle shall be installed over the copper pipe at the location of the clamp to avoid damage to the pipe.

B. CONDUIT

1. Rigid Steel Conduit:
   a. Rigid steel conduit shall have zinc coated exterior, zinc or enamel interior, standard weight, zinc coated couplings, locknuts and bushings and shall bear the U.L. label. Rigid conduit shall not be installed underground.
   b. Use rigid conduit only for exposed exterior conduit runs, wherever subject to physical damage, or where specifically called for on the Drawings or required by a serving utility.
   c. Intermediate metallic conduit (I.M.C.) may be used in lieu of rigid steel conduit.

2. Electrical Metallic Tubing:
   a. Electrical metallic tubing (E.M.T.) shall bear the U.L. label and shall be zinc coated thinwall conduit with zinc-coated couplings and connections. "Indent" type fittings shall not be used.
b. E.M.T. may be used where rigid, flexible or non-metallic conduit is not required.

c. E.M.T. shall be used for interior dry locations. EMT shall be used where no specified conduit type is called for on the Drawings.

3. Flexible Metallic Conduit:
   a. Flexible metallic conduit shall be galvanized steel and bear the U.L. label. Fittings for flexible conduit shall be squeeze type. Screw-in connectors and other connectors that decrease the interior diameter of the conduit shall not be used unless specifically approved by the Owner's Representative.
   b. Liquid-tight flexible conduit shall bear the U.L. label and be plastic jacketed moisture and oil resistant with oil and vapor tight connectors.
   c. Use flexible conduit for final connection to equipment where vibration may injure direct conduit connection. It may be used for indoor dry locations, for fixture whips not to exceed 36 inches and in other locations where structural conditions will not permit the use of EMT not to exceed six feet, only if approved by the Owner's Representative.
   d. Use liquid-tight flexible conduit in lieu of flexible conduit for wet, damp, or outdoor areas or where weatherproof flexible conduit is called for on the Drawings or by code.

4. Plastic Conduit:
   a. Plastic conduit shall be rigid polyvinyl chloride (PVC) Underwriter's approval, Schedule 40. Connections and fittings shall be "outside" type assembled in accordance with the recommended methods of the manufacturer.
   b. Underground PVC conduit shall be buried a minimum of 24 inches below grade. Where more than two conduits are installed adjacently underground, use factory made conduit spacers.
   c. PVC conduit shall be used for underground conduit runs in lieu of wrapped rigid conduit except as noted otherwise on the Drawings or required by the serving utility.
   d. Provide a code size ground conductor in each conduit.
   e. Only braided polyethylene or similar pull rope shall be used.

5. Installation of Conduit:
   a. Underground conduit.
      i. Keep interior of conduit clean and clear. Clean underground conduits by pulling a mandrel through conduit run followed with a swab before pulling wire.
      ii. Reroute conduit from locations shown on the Drawings where it is necessary to clear obstructions.
      iii. Provide junction or pull boxes where required for pulling conductors due to excessive number of bends or length of conduit runs.
      iv. Bury underground conduit, except those under buildings, a minimum of 24 inches below finished grade. Conduits under roadways shall be
a minimum of 36 inches below finished grade. Conduit runs 3/4 inch and smaller in slabs shall be located above vapor barriers. Bury conduit runs larger than 3/4 inch to a minimum depth of 12 inches below floor slabs.

v. Standard factory ells shall not be used in underground service conduits or other long underground runs. Field bends shall not be flattened or kinked and shall not materially reduce the internal diameter of the conduit. Bends in long underground runs shall be made in long sweeping bends. Do not bend at couplings. Approved conduit bending methods shall be used.

vi. All conduit runs shall have a code size insulated grounding conductor.

vii. Properly separate two or more conduits installed underground in a common concrete envelope with approved factory made conduit spacers.

viii. Locate conduit stub-outs dimensionally from building or curb lines on Record Drawings.

ix. Pull wires shall be installed in empty conduits including communications conduits and stub-outs. 1/8-inch polyethylene rope shall be used.

b. Exposed/Concealed Conduit:

i. Provide secure mounting facilities for conduits. Wire or plumbers tape shall not be used for hanging conduit. Strap shall be factory made of the one hole malleable iron or two hole galvanized clamp type.

ii. Provide expansion couplings wherever conduits cross expansion joints.

iii. Run conduit at right angles or parallel to structural members, walls, floors and ceilings. Where several conduits are run together or suspended, they shall be hung on Unistrut trapezes with minimum 3/8-inch rod hangers.

iv. Cut ends of conduit square and ream to remove burrs or sharp edges. Terminate conduits properly with bushings, locknuts, etc. Terminate one (1) inch and larger conduits with insulated bushings.

v. Render conduits projecting through the roofing watertight by proper flashings. Securely fasten a sheet metal cap and tighten bank or storm collar to the conduits. Extend flashing a minimum of six (6) inches in all directions. Coordinate and install roof flashing for conduits to the satisfaction of the Owner's Representative.

vi. All conduit runs shall have a code size insulated grounding conductor.

vii. Pull wires shall be installed in empty conduits including communications conduits and stub-outs. 1/8-inch polyethylene rope shall be used.

viii. Flexible conduit connections shall comply with NEC Section 350-22.
C. OUTLET, JUNCTION AND PULL BOXES

1. Outlet boxes and junction boxes shall be galvanized one-piece pressed steel, knockout type. The size of each box shall be determined by the number of wires or conduits or size of conduits entering the box, but shall not be less than 4" square and 1-1/2" deep unless otherwise noted. All boxes shall be UL listed.

2. Locknuts shall be used on both sides of conduit connections to box or panel, in addition to bushing. Where a larger size opening occurs than size of conduit, use reducing washers.

3. Exposed boxes shall be weatherproof, threaded or hub condulet with gasketed condulet cover suitable for device installed or with blank cover plate when condulet is used as a junction box. Condulet wire fill capacity shall not be exceeded.

4. Recessed weatherproof outlets or junction boxes shall be equipped with neoprene gasketed covers.

5. Large size junction or pull boxes shall be fabricated from code gauge sheet steel. Where located indoors, finish shall be gray enamel and covers shall be secured with screws. Where exposed to weather, they shall be weatherproof, NEMA 3R, and rain-tight and hot-dip galvanized after fabrication; also, they shall have weatherproof gaskets, flat covers and galvanized iron screws. Provide knockouts and/or threaded hubs as required for the conduit used. Boxes in finished areas shall be prime painted.

6. Any unused, removed knockouts shall be filled with a K.O. cover.

7. Provide bonding or grounding from metal conduit terminating in J.B.S. with concentric KO's.

D. RECEPTACLES

1. Weatherproof duplex convenience outlets shall be specification grade three wire, NEMA #5-15R, self-grounding type, 15 ampere, 125 volt parallel slots, polarized, in white.

2. Receptacles indicated weatherproof shall have lift cover plates that are weatherproof "while in use" Taymac Corp. or equal.

3. Ground fault current interrupter outlets shall be Hubbell #GF-5262I, Arrow Hart #GF5242I, or equal.

E. WIRE AND CABLE

1. Installation:
   a. Conductors shall be continuous between outlets or junction boxes and no splices shall be made except in outlet boxes, pull boxes, panelboard gutters or handholes.
   b. Joints, splices and taps No. 10 or smaller (including fixture pigtails) shall be connected with "floating spring" type connectors. No. 8 and larger shall be
connected with solderless connectors of 100% electrolytic copper. Split-bolt connectors are not acceptable.

- Tighten pressure type lugs on panels and equipment, and then retighten 24 hours or more later after energizing. Provide written report of torque values on lugs.
- Oil or grease shall not be used when pulling conductors. Use U.L. approved cable lubrication only.
- Lace or train conductors neatly in panels, cabinets and equipment. Use plastic wire ties to route conductors at edge of enclosure away from overcurrent devices.
- Branch circuits shall be color coded in compliance with Section 210-5 of the California Electrical Code. Colored tape is not acceptable.
- All wiring, both line and low voltage, shall be installed in conduit unless otherwise noted.

2. **Tag:**
   - Branch circuits shall be left tagged with circuit numbers in gutters and junction boxes where unused circuits terminate.
   - Feeder conductors shall be tagged as phase "A" or "B" or "C".
   - The method of tagging shall be with adhesive preprinted tape numbered or lettered wrap around tags. Colored tape is not acceptable.
   - Tagging shall be applied after wire is installed in conduit.
   - Feeders in panel or equipment shall be tagged by phase letter in each panel or equipment.
   - Where it is impractical to use printed markers on certain wires or cables, use blank tape with identification marked thereon with indelible pencil.

3. **Color Coding for Phase Identification:** Color code secondary service, feeder, and branch circuit conductors with factory applied color as follows:

<table>
<thead>
<tr>
<th>208y/120Volts</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>A</td>
</tr>
<tr>
<td>Red</td>
<td>B</td>
</tr>
<tr>
<td>Blue</td>
<td>C</td>
</tr>
<tr>
<td>White</td>
<td>Neutral</td>
</tr>
<tr>
<td>Green</td>
<td>Ground</td>
</tr>
</tbody>
</table>

**F. DISCONNECT SWITCHES**

1. Non-fusible or fusible as shown on the Drawings, heavy duty, 250 or 600 volts as required, NEMA Type 1 enclosure, except where WP is indicated or required by code, use NEMA Type 3R enclosure.

**G. LIGHTING FIXTURES**

1. Lighting fixtures shall be of manufacture and type as specified in the Fixture Schedule, and shall have all parts and fittings necessary to completely and properly install the fixture. Fixtures of the same type shall be of one manufacturer and of identical finish and material.
2. Lighting fixtures shall bear Underwriter's Laboratories labels.

3. Fixtures shall be furnished and installed as indicated on the Drawings, including hangers, glassware, auxiliary equipment, sockets, lamps, connectors for continuous installation, etc.

4. Each fixture shall be wired with conductors suitable for the voltage, current and temperature to which the conductors will be subjected.

5. If excessive ballast hum develops within 12 months after installation, the condition shall be corrected at no charge to the Owner. Flickering of the lamps or blacking of the lamp ends within 12 months shall also be corrected at no charge to the Owner.

6. Proper lamps of type, size, color temperature and wattage indicated shall be furnished and installed in each fixture and shall be manufactured by General Electric, Phillips, Sylvania, or Venture. The Contractor shall replace lamps which have been burned out prior to final completion. Clean dust, dirt, fingerprints and grease from fixtures before final completion.

7. Install trims, reflectors and parabolic blades or diffusers with care. Wear surgical gloves when installing these to avoid leaving fingerprints.

8. Provide certified ballasts identified in fixture schedule.

9. Fixtures shall be installed in conformance with manufacturers’ instructions.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SECTION 214 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS

214-1 GENERAL

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

B. Section Includes:
   1. Traffic paint on pavement surfaces, in traffic lanes, parking bays, areas restricted to handicapped persons, crosswalks, and other detail pavement markings.

C. Greenbook Related Sections:
   1. Section 214 – Traffic Striping, Curb and Pavement Markings, and Pavement Markers
   2. Section 314 – Traffic Striping, Curb and Pavement Markings, and Pavement Markers

D. Quality Assurance:
   1. Use only materials, which are manufactured, exclusively for the purpose of pavement marking and painting.
   2. Details not shown shall be in conformance with the State Standards for Traffic Control Devices for Streets and Highways, and similar requirements established by the U.S. Department of Transportation, Federal Highway Administration.

E. Regulatory Requirements:
   1. All products shall comply with the applicable requirements of the California Green Building Standards Code (CALGreen), South Coast Air Quality Management District (SCAQMD) Air Pollution Control Agency and other Authorities Having Jurisdiction.

F. Conformance Submittals:
   1. Conformance Submittals will be allowed for products described in this section, and will not require Architect’s approval before incorporating the material into the work.
      a. Substitute Products: Where products are proposed for use, but are not as specified, approval of a substitute product is required.
         i. Product Data: Manufacturer’s literature, data sheets, and installation instructions.
ii. Material Certificates: From manufacturer, certifying that the following materials conform to the requirements specified.

G. Closeout Submittals:
1. Maintenance Data.

H. References:
1. American Association of State Highway and Transportation Officials (AASHTO)
   a. AASHTO M 248-91: Specification for Ready-Mixed White, Blue, and Yellow Traffic Paints
2. Federal Specifications:
   a. TT-P-110C: Paint, Traffic, Black (Non-reflectorized)
   b. TT-P-115F: Paint, Traffic, Highway, White, Blue, and Yellow

214-2 MEASUREMENT AND PAYMENT
A. The quantity of striping will be measured and paid for at a lump sum price specified on the bid schedule for item 15, “Parking Lot” (including permeable concrete pavers, permeable aggregate base, 8” flush concrete curb, 6” concrete curb/12” gutter, parking stall striping, wheel stops, entry gate.) Please refer to additional specifications for more information regarding the pavers, curbs, wheel stops, and gates.

214-3 MATERIALS
A. Refer to the latest edition of the Greenbook for material specifications in section 214.

B. Equipment:
1. Apply all markings using approved mechanical equipment (with provisions for constant agitation of paint), capable of applying the marking widths as shown.
2. Use pneumatic spray guns for hand application of paint.
3. All painting equipment and operations shall be under the control of experienced technicians thoroughly familiar with equipment and materials and marking layouts.

214-4 EXECUTION
A. Surface Preparation:
1. Clean all surfaces thoroughly before painting.
a. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water or using a combination of these methods as required.

b. Remove existing paint, rubber deposits, curing and/or sealer membrane, and other materials adhered to the pavement by using high temperature pressure washer, scrapers, wire brushings, sandblasting, approved chemicals, or mechanical abrasion.

c. Allow pavement surface to thorough dry and be free of moisture to ensure proper bonding of paint to pavement surface.

d. If previously applied paint markings remain after cleaning described above, cover with black paint suitable for vehicle traffic surfaces. Apply as many coats as needed to completely cover the existing markings.

2. Where oil or grease are present on old pavements to be marked, scrub affected areas with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly after each application. After cleaning, seal oil-soaked areas with cut shellac to prevent bleeding through the new paint.

3. Contractor shall establish control points for marking and provide templates to control paint application by type and color, at necessary intervals. It shall be the Contractor's responsibility to preserve, and apply marking in conformance with, the control points so established.

B. Application:

1. Apply markings to the color, length and widths indicated on Drawings or as needed to match and recover the existing applications.
   a. Produce true, sharp edges and ends. The length and width of lines shall conform within a tolerance of plus or minus three inches and plus or minus 1/8-inch, respectively, in the case of skip markings, the length of intervals shall not exceed the line length tolerance.
   b. Temperature of the surface to be painted and the atmosphere shall be above 50 degrees F (10 deg C) and less than 95 degrees F (35 deg C).
   c. Apply two coats of paint at a wet film thickness of 15 mils each coat, with proper curing time between each coat.

2. The maximum drying time requirements of the paint specifications will be strictly enforced, to prevent undue softening of asphalt, and pick-up, displacement or discoloration by tires of traffic.
   a. If marking paint is applied to a newly paved surface less than 30 days after completion of paving installation, then the following shall apply:
      i. The first coat of paint shall be applied at 50 percent of the specified 15 mils wet film thickness, or approximately 7.5 mils.
      ii. The second coat of paint shall be applied no sooner than 30 days following completion of paving.
1) The thickness of the second coat of paint shall be increased from the specified 15 mils to 22.5 mils wet film thickness, to account for the reduced first coat.

iii. The minimum total wet film thickness of the two coats of marking paint shall be 30 mils.

b. If there is a deficiency in drying of the marking, paint operations shall be discontinued until cause of the slow drying is determined and corrected.

3. Marking applied at less than minimum material rates; deviating from true alignment; exceeding stipulated length and width tolerances; and showing light spots, smears, or other deficiencies or irregularities shall be removed and replaced.

a. Removal methods shall be by carefully controlled sand blasting, approved grinding equipment or other approved method in such a manner that the surface to which the marking was applied will not be damaged.

C. Protection:

1. Conduct operations in such a manner that newly painted markings are protected.

2. Place warning signs at entrances to alert approaching traffic.

a. For the benefit of the Contractor small flags or other similarly effective small objects may be placed near freshly applied markings at frequent intervals to reduce crossing by traffic.

3. Damaged portions of markings shall be effaced and replaced by the Contractor at no additional cost to the Owner.

D. Detail Pavement Marking:

1. Detail Pavement Markings shall be that marking, exclusive of actual traffic lane marking, at exit and entrance islands and turnouts, on curbs, at crosswalks, at parking bays and at such other locations as shown.

a. Handicapped parking spaces shall be marked by the International Handicapped Symbol at indicated parking spaces.

b. Use a suitable template that will provide a pavement marking with true, sharp edges and ends.

E. Final Clean-Up:

1. Remove all debris, rubbish and excess material from the site.
SECTION 300 – EARTHWORK

300-1 GENERAL

A. Section includes:
   1. Requirements of the Conditions of the Contract and of Division 1 of these Specifications apply to all work of this section.

B. 2015 Greenbook Related Sections:
   Section 300 – Earthwork
   Section 300-1 – Demolition
   Section 217 – Bedding and Backfill Materials

C. References:

D. Extent of Work:
   1. The extent of the Earthwork is indicated on the drawings. The work includes requirements for excavating, filling and grading required and includes but is not limited to:
      a. Placement, stabilization and compaction of earth at the site
      b. Addition and disposal of earth
      c. Vermin and vegetation control
      d. Rock and concrete removal

E. Quality Assurance:
   1. Provide at least one (1) person who shall be present at all times during execution of this portion of the work, be thoroughly familiar with the type of work being performed and the best methods for its execution and who shall direct all work performed under this section.

   2. The Contractor shall comply with the applicable provisions of all pertinent codes and regulations.

F. Project Site Information:
   1. A Geotechnical Engineering Report has been prepared for this Project by Earth Systems Southern California dated October 27, 2013, and updated March 8, 2018. All excavation, filling and grading, and soils preparation shall conform to the recommendations within the Geotechnical Engineering Report.
      a. Make additional test borings and conduct other exploratory operations as necessary.
G. Inspection by Geotechnical Engineer:
   1. The Owner will employ a Geotechnical Engineer to perform all required tests of fill and of soil compaction, and for observation of the earthwork.
   2. Materials shall not be placed until receipt of written approval by Geotechnical Engineer of samples. All materials used shall be the same as those in the samples submitted.
   3. The Geotechnical Engineer shall be considered the Owner/Architect/Engineer's Representative on the job during earthwork operations. Fill material, which, in his opinion, does not meet the specification requirements, shall be removed or otherwise corrected as he directs.

H. Approval by Geotechnical Engineer:
   1. As requested by Owner, the Geotechnical Engineer will inspect the work and submit a written report to the Owner representative stating whether or not the site and building pad work has been performed in accordance with the Contract Documents and is approved by the Geotechnical Engineer.

300-2 MEASUREMENT AND PAYMENT
A. The quantity of local borrow will be measured and paid as specified for unclassified excavation. The quantity will be paid for at a lump sum price specified on the bid schedule for item 6, “Site preparation” and shall include site clearing, rough grading, compaction, excavation, cut/fill, erosion control, and capping of (E) well.

300-3 MATERIALS
B. Fill Material General:
   1. All fill material shall be subject to approval of the Geotechnical Engineer, and in conformance with the recommendations of the Geotechnical Engineering Report.
   2. For approval of imported fill material, notify the Geotechnical Engineer at least five (5) working days in advance of intention to import material, designate the proposed borrow areas, and permit the Geotechnical Engineer to sample as necessary from the borrow area for the purpose of performing tests.
   3. Fill shall be placed in loose lifts not more than 6 inches in thickness unless otherwise noted in the Geotechnical Engineering Report.
   4. Fill materials shall be moisture conditioned to within 3 percent of optimum moisture content and sufficiently blended prior to placement as controlled fill.
   5. Materials larger than 6 inches in maximum dimension shall not be used in fill.
6. Prepared Subgrade shall be compacted to at least 90 percent of the maximum laboratory density using test method ASTM D 1557-07 or equivalent.

7. The upper 12” of pavement and structures subgrades shall be compacted to at least 95 percent of the maximum laboratory density per the Geotechnical Engineering Report.

8. Fill beneath all structures shall be reinforced with geogrid per the Geotechnical Engineering Report.

C. On-Site Fill Material:

1. If on-site fill material shall be used as allowed by the Geotechnical Engineer. All material shall be free from debris, organic matter and other deleterious substance.

D. Imported Fill Material:

1. All imported fill material shall meet the requirements of the Geotechnical Report. Imported materials should contain sufficient fines so as to result in a stable sub-grade when compacted.

2. Clay soils will not be acceptable.

3. Any imported materials shall consist of relatively non-expansive soils with an expansion index of less than 50.

4. Imported materials should be free from chemical or organic substances which could affect the proposed development.

5. The water soluble sulfate content of the import materials should be less than 0.1% percentage by weight.

E. Other Materials:

1. All other materials not specifically described but required for proper completion of the work of this Section, shall be as selected by the Contractor subject to the approval of the Geotechnical Engineer.

300-4 EXECUTION

A. General Requirements:

1. Prior to all work of this Section, Contractor shall become thoroughly familiar with the site, site conditions, and all portions of the work falling within this Section.

2. 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 all inspections, tests, and approvals.

3. Should any of the work be so enclosed or covered up before it has been approved, Contractor shall uncover all such work at no additional cost to the Owner, if so directed by the Owner.
4. Keep active utilities intact and in continuous operation, street drains and sewers open for free drainage at all times.

5. Carefully maintain benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed by the Owner’s representative at no additional cost to the Owner.

6. Protect persons and property from damage and discomfort caused by dust. Water as necessary to quell dust.

7. Protect streets and adjacent property throughout the operations. Enclose all open excavation with a four (4) foot high temporary fence.

8. All underground installation of pipes, cables, etc. in the area to be asphalt paved shall be completed prior to placement of the asphalt paving.

9. Allow no debris to accumulate in structures or on the site. Haul excess material and debris away from site and dispose of legally and as required by applicable Federal and State regulations and by authorities having jurisdiction at no additional cost to the Owner. Dispose of excess earth material on the site as directed by the Owner’s representative at no additional cost to the Owner.

B. Finished Elevations and Lines:

1. For setting and establishing finish elevations and lines, secure the services of a licensed land surveyor acceptable to the Owner’s representative. Carefully preserve all data and all monuments set by the surveyor and, if displaced or lost, immediately replace to the approval of the Owner’s representative and at no additional cost to the Owner.

2. Finished elevation grade stakes and any other surveying necessary for the layout of the work is the responsibility of the Contractor. The Contractor shall conduct his operations in such a manner that survey stakes will be protected as long as their need exists. Finished grade stakes, if damaged or stolen, shall be replaced by the surveyor at the General Contractors expense.

C. Grading:

1. Uniformly grade areas to a smooth surface, free from irregular surface and grade/slope changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
SECTION 400 – INSTALLATION OF STABILIZED DECOMPOSED GRANITE PATHS

400-1 GENERAL

A. Contractor to provide materials, equipment, tools and transportation and perform labor as required to complete the grading and construction of paths as shown on the Drawings, specified herein and/or implied or required to meet the intent thereof.

1. Greenbook Related Sections:
   - Section 200 – Rock Materials
   - Section 201 – Concrete Mortar and Related Materials
   - Section 211 – Soils and Aggregate Tests
   - Section 300 – Earthwork
   - Section 301 – Treated Soil, Subgrade Preparation and Placement of Base Material

400-2 SUBMITTALS

A. Contractor to supply sample of decomposed granite to the Project Manager for approval prior to installation.

B. Contractor to supply samples of header and timber steps to the Project Manager for approval prior to installation.

401-3 MEASUREMENT

A. The quantity of path constructed shall be the square feet of path. The final area shall be the bid quantity unless changes in lines, grades and/or elevations are made by the Project Manager during the course of construction. Construction of the path includes excavation to subgrade, hauling of excess materials from the site, placement of subgrade backfill, placement of headers, and placement of decomposed granite path as shown on drawings.

400-4 PAYMENT

B. Payment for path installation will be made at the contract unit price per square foot under Bid Item No. 19 and 20 shall include: (1) excavating, grading, loading, hauling, disposing of excess material, depositing, spreading and compacting the material complete in place, and subgrade preparation as indicated on the plans; (2) all grading, hauling, depositing, spreading and compacting of subgrade backfill, complete and in place, as indicated on the plans; and (3) decomposed granite, colored concrete curb, headers, and other
materials; placement; compaction; and clean up; complete and in place, as indicated on the plans.

A. Said payments for all the above items of work shall be considered full compensation for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the items. No payment will be made separately or directly for haul on any part of the work. All hauling will be considered a necessary and incidental part of the work, and its cost shall be considered by the Contractor and included in the contract unit price of the pay items of work involved.

400-5 MATERIALS

A. FILL MATERIAL
   1. Onsite soil may be used as fill subject to prior review and approval by the Project Manager.
   2. Variation in organic content, expansion potential, and other characteristics of onsite soils within the expected depths of grading should be anticipated.

B. DECOMPOSED GRANITE
   1. Decomposed granite (1/4 inch minus to fines) with stabilizer (non toxic, organic binder) available at Gail Materials or equal (909) 279-1095 with a “California Gold” color or equivalent to be approved by the Project Manager, designed to match natural soil color at the project site.

C. HEADERS
   1. 1 X 6 inch TrexTM (or equivalent) headers at bike parking.

D. CONCRETE CURB
   1. 6” colored concrete curb at pathways

400-6 EXECUTION

E. The exact placement of the path will require field design and approval by the Project Manager because of limited survey information.

F. TESTING, INSPECTION AND OBSERVATION
   1. Material quality and compaction testing procedures shall be in accordance with standards of the American Society for Testing and Materials (hereinafter referred to as "ASTM"), latest editions. The compaction standard shall be ASTM Test Method D-1557-91.
2. Compaction tests shall be conducted as determined by the Project Manager and at not less than one (1) compaction test for each 2,000 square feet of fill placed for subgrade within pathways. A minimum of two (2) compaction tests shall be conducted for each and every layer of fill placed.

3. Decomposed granite shall not be placed until backfill or area fills are tested and accepted.

G. SITE LAYOUT

1. A Licensed Surveyor shall be retained at the Contractor's expense to lay out the pedestrian paths and, set grade stakes, and verify and record finish grades on the Record Drawings.

2. Layout work and set grade stakes as necessary to control earthwork operations such that all grading conforms to the lines and grades called for on the Drawings and as specified herein. Contractor shall refer to Drawings for site layout dimensioning.

H. GRADING

1. Construct all rough and finish grading as necessary to bring the paths, ramps, and decks to the lines and grades called for on the Drawings and as specified herein.

2. If not dimensioned, location of finish grade elevations and features such as swales, ridge lines, etc. shall be determined by scale from known points shown on the plans. Uniform gradients or vertical curves, as appropriate, shall be assumed between control elevations shown on the plans.

3. Surface drainage gradient for the subgrade shall not be at less than 2% (¼" per foot).

4. Undocumented fill and/or unstable soils encountered during grading shall be excavated to firm native soils under the observation and testing of the Project Manager.

5. Over wet and/or pumping areas encountered during grading shall be reviewed for corrective measures by the Project Manager.

6. All unsuitable soil materials and rubbish and debris resulting from grading operations shall be removed from the job site, be transported to a suitable location, and be disposed of in a proper and legal manner. Excess excavated material that is generated from the path construction shall be removed from the project site and disposed of in a proper and legal manner.

7. After the subgrade has been substantially completed, the full width shall be conditioned by removing any soft or other unstable material which will not compact properly. The resulting areas and all other low areas, holes or depressions shall be brought to grade with suitable select material. Scarifying,
blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans.

8. Grading of the subgrade shall be performed so that it will drain readily. The Contractor shall take all precautions necessary to protect the subgrade from damage. He/she shall limit hauling over the finished subgrade to that which is essential for construction purposes.

9. All ruts or rough places that develop in a completed subgrade shall be smoothed and recompacted.

10. In the areas under paths, the subgrade shall be scarified and compacted to a depth of 9 inches and to a density of not less than 90 percent of the maximum density as determined by ASTM D1557 as shown on the Drawings.

11. Stones or rock fragments larger than 3 inches in their greatest dimension will not be permitted in the top 6 inches of the subgrade. Any removal, manipulation, aeration, replacement and recompaction of suitable materials necessary to obtain the required density shall be considered as incidental to the excavation and embankment operations, and shall be performed by the Contractor at no additional cost to the project.

12. The material in the layer shall be within ±2 percent of optimum moisture content before rolling to obtain the prescribed compaction. In order to achieve a uniform moisture content throughout the layer, wetting or drying of the material and manipulation shall be required when necessary. Should the material be too wet to permit proper compaction or rolling, work shall be delayed until the material has dried to the required moisture content.

13. Contractor shall perform fine grading for the path subgrade such that finished surfaces are never above established grade or approved cross-section and are never more than 0.05 feet below. Any deviation in excess of these amounts shall be corrected by loosening, adding or removing materials, reshaping, and recompacting by sprinkling and rolling at the Contractor's expense.

14. Contractor shall provide finish surface areas outside of the paths that are not more than 0.10 feet above or below established grade or accepted cross-section. Perform fine grading for the path subgrade such that finished surfaces are never above established grade or approved cross-section and are never more than 0.10 feet below.

I. EXPORT OF EXCESS FILL

1. Coordinate with the Project Manager for location for disposal of any excess fill generated from excavation.
SECTION 401 – Poured In Place Playground Safety Surface

401-1 GENERAL

A. Poured Playground safety surface shall be a seamless synthetic rubber installed over specific base.

B. GREENBOOK RELATED SECTIONS

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

2. Coordinate related work specified in others parts of the Project Manual, including but not limited to following:
   a. Section 300 – Earthwork
   b. Section 301 – Treated Soil, Subgrade Preparation and Placement of Base Material
   c. Section 800 – Landscape and Irrigation Materials

401-2 QUALITY ASSURANCE SUBMITTALS

A. Manufacturer’s Catalogue, color chart, 5.08cm x 5.08cm (2” x 2”) sample, MSD sheets. Reference list’s site name, contact and phone number of at least 10 projects completed within the last five years.

B. Synthetic surfaces will comply with the following standards and be submitted on independent testing laboratory letterhead:

C. Impact attenuation ASTM 1292 200G max and 1000 HIC (head injury criteria) as determined by the play equipment fall height as referenced in specification for playground equipment for playground equipment for public use ASTM F1487.

D. Wheel Chair Mobility: Must be tested as per ASTM F1951 on a 2% slope.

E. Water Permeability Water perc rated no less than 163 L/m2/min (43g/ft2/min) and lateral flow no less than 6.6 L/m3/min (1.73g/ft2/min) slope 2%.

F. Flammability
   a. ASTM 108-93 rated Class A
   b. ASTM E648-91 CRF rated Class 1
   c. ASTM D2859 (Fed. Std. 16 CFR Part 1630)
   d. 8 samples passing
G. Coefficient of Friction: ASTM D2047-93 of greater than 1.0 wet or dry. No exceptions will be made in an effort to provide ample slip resistance.

H. Inhalation Toxicity/ Latex Sensitivity
   a. NYSUFP Article 15 Part 1120 Performance test shall ensure thermal stability.
      i. Material decomposition produces limited inhalation or digestion hazards.
      ii. Mfg. shall include test certifying surface components are not considered to promote skin sensitizing to Latex.

401-3 SUBSTITUTIONS

A. Requests for substitution shall be submitted to the Project Manager for approval a minimum of 7 days prior to bid opening.

401-4 MEASUREMENT

A. The quantity of play surface constructed shall be the square feet of surface. The final area shall be the bid quantity unless changes in lines, grades and/or elevations are made by the Project Manager during the course of construction. Construction of the play surface includes excavation to subgrade, hauling of excess materials from the site, placement of subgrade backfill, placement of poured in place recycled play surface on site.

401-5 PAYMENT

A. Payment for path installation will be made at the contract unit price per square foot under Bid Item No. 17 and shall include: (1) excavating, grading, loading, hauling, disposing of excess material, depositing, spreading and compacting the material complete in place, and subgrade preparation as indicated on the plans; (2) all grading, hauling, depositing, spreading and compacting of subgrade backfill, complete and in place, as indicated on the plans; and (3) decomposed granite, headers, and other materials; placement; compaction; and clean up; complete and in place, as indicated on the plans.

B. Said payments for all the above items of work shall be considered full compensation for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the items. No payment will be made separately or directly for haul on any part of the work. All hauling will be considered a necessary and incidental part of the work, and its cost shall be considered by the Contractor and included in the contract unit price of the pay items of work involved.
401-6 MATERIALS
A. The surface shall be Spectra Tut 555 South Promenade Avenue #103, Corona, CA. 92879; Tel. (951) 736-3579 or approved equal.

401-7 EXECUTION
A. Field mix material and install in two lifts consisting of a base and top course.

B. BASE COURSE: Shall be a mix of resilient rubber and binder as supplied by manufacturer.

C. STANDARD TOP COURSE: Shall be an EPDM rubber granule of 1 to 3 mm in color and design as shown on plans mixed with binder.

D. No binders utilizing latex or emulsion types shall be used.

E. INSTALLATION:
   1. Manufacturer of the play surface shall perform installation.
      a. Aggregate: Install filter fabric over crush stone base if required by manufacturer or as per plan.
         i. Concrete: Prime at rate of 27.9m2/3.79L (300ft./s) a minimum of three feet in from fall zone perimeter.
      b. Asphalt: Saw cut 1/4” x 1/4” channel at fall zone perimeter and prime.
   2. Base Course install to a minimum thickness of 38.1 mm (1.5”) adjusting thickness to comply with play equipment per ASTM F1487.
   3. Top Course screed to a minimum thickness of .96cm (.38”) and trowel color design per plan.
   4. Edges shall be flush with curb of taper for safe transition per plan in accordance with current ADA ramp slope ratio 1:12.
   5. Site protection provided by owner.
   6. All surplus materials and containers to be removed upon execution of work.

F. WARRANTY: Provide a three year warranty against failures resulting from workmanship and/or material breakdown.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SECTION 700 – ELECTRICAL

700-1 GENERAL

A. SUMMARY:

1. Work in general includes, but is not limited to, the following:
   a. Underground Service - 120 volt, three phase, four wire.
   b. Grounding of equipment, service, etc.
   c. Complete lighting and power system as shown on Drawings and specified herein, including conduit, wiring, panelboards, circuit breakers, relays, switches, receptacles, and other items necessary for complete and operable systems.
   d. Electrical connection of equipment furnished by others as shown on the Drawings.
   e. Control wiring and installation and connections of control devices as specified herein.
   f. Trenching and backfill as required for electrical Work.
   g. Concrete Work as specified herein.

B. SITE VISITS, COORDINATION OF CONTRACT DOCUMENTS, VERIFICATION OF DIMENSIONS

1. Examine existing conditions as applicable. Become acquainted with Specifications and Drawings for all portions of the Project. Inform the Project Manager of apparent discrepancies and of inconsistency between the Specifications and the existing conditions. Secure and follow Project Manager’s instructions. The Drawings serve as working drawings only, indicating diagrammatically the general layout of the systems and their various components and equipment.

2. Scaled and figured dimensions are approximate and are given for estimate purposes only. Carefully check and verify dimensions and sizes in order to determine if equipment and materials will fit together and if the dimensions of the assembly are compatible with the space provided. Where equipment is furnished by others, verify that dimensions and requirements for assembly are compatible with the space provided before proceeding with the roughing-in connections. Field verifications of locations shown on Drawings are necessary since actual locations, distances, mounting heights, etc., may be affected by field conditions. The right is reserved to make reasonable changes in locations of equipment or other features shown on Drawings prior to rough-in without additional cost to the Owner.

3. Where apparatus and equipment have been indicated on the Drawings, dimensions have been taken from typical equipment of the class indicated. Carefully check the Drawings to see that the contemplated equipment will fit...
into the spaces provided, regardless of whether or not it may have been approved for quality and utility as an equal.

4. Rough in all equipment, fixtures, etc., as designated on the Drawings and as specified herein. The Drawings indicate only the approximate location of rough-ins. The exact rough-in locations must be determined from large-scale certified Drawings. The Contractor shall obtain all certified rough-in information before progressing with any Work for rough-in connections.

5. Be responsible for providing outlets and services of proper size at the required locations.

6. Coordinate requirements of equipment furnished by others, prior to ordering and installation.

7. No allowance will be made for extra expense due to failure or neglect to follow foregoing directives.

C. RULES AND REGULATIONS

1. Materials and installation shall be in accordance with current rules and requirements of California Code of Regulations and local codes and ordinances including, but not necessarily limited to, the following:
   a. The California Electrical Code.
   b. Title 8, Chapter 4, California Code of Regulations (Low Voltage Electrical Safety Orders).
   c. Local Building Codes.
   d. California State Fire Marshal.
   e. Certified Ballast Manufacturers' Association (CBM).
   g. NEMA (National Electrical Manufacturers Assoc.).
   h. IEEE (Institute of Electrical and Electronic Engineers).
   i. IPCEA (Insulated Power Cable Engineers Association).
   j. ANSI (American National Standards Institute).
   k. ASTM (American Society for Testing and Materials).
   l. UL (Underwriters Laboratories).
   m. OSHA (Occupational Safety & Health Act) Federal.
   n. Title 24, CCR.
   o. NFPA (National Fire Protection Association).

2. Where these Specifications call for a higher standard than the above-mentioned rules, the Specifications shall govern.

3. Should there be any direct conflict between the above mentioned rules and these Specifications, the rules shall govern.

4. Nothing in the Drawings or Specifications is to be construed to permit Work not conforming to the rules, codes, and regulations.
5. All materials utilized shall be new and the best of their respective grades or kinds.

D. DEFINITIONS

1. Article 100 of the California Electrical Code shall serve as a guide for definitions.

2. Industry standard definitions.

3. Specific Definitions:
   a. Concealed: Hidden from sight, as in trenches, chases, hollow construction, above furred spaces, suspended ceilings (acoustical or plastic type), or exposed to view only in tunnels, attics, shafts, crawl spaces, unfinished spaces, or other areas solely for maintenance and repair.
   b. Exposed: Not concealed.
   c. Unfinished Space: A room or space that is ordinarily accessible only to building maintenance personnel, a room noted on the "Finish Schedule" with exposed and unpainted construction for walls, floor or ceilings, or specifically mentioned as "unfinished".
   d. Finished Spaces: Any space ordinarily visible to the visiting public, including exterior areas.

E. RULES OF LOCAL UTILITY COMPANIES

1. Comply with rules and regulations of the serving utility companies, and before submitting bid, check and include applicable service costs for the Project.

F. RECOGNIZED TEST LAB

1. All equipment specified or installed under this project shall be listed by a recognized test lab and bear that label of approval.

G. PERMITS AND FEES

1. Procure licenses and permits necessary for the completion of the Work, and inspection and other applicable fees. Before final payment, deliver to the Owner certificates and permits, approved and signed by the authorities having jurisdiction.

H. RECORD DRAWINGS

1. Include under this Work complete and accurate record information both during construction and before final acceptance by the Owner, and costs associated therewith shall be included under this Work.

2. Obtain from the Project Manager, at cost, a complete set of applicable prints. On these prints, systematically and accurately keep an up-to-date and legible dimensional record of Work installed differently from the location or manner...
indicated by the Drawings, as well as exact locations of stub-outs and hidden or underground features. Have these Drawings readily available for reference and review. When job status permits, submit them to the Project Manager and amend or correct and re-submit if requested.

3. When the above information is complete and acceptable, deliver Record Drawings to the Project Manager.

I. COMPLETION DATA

1. Submit completion data to the Project Manager in acceptable quantity and form before requesting a final inspection. Such submittal shall be corrected, amended, or completed before final acceptance of the Work.

2. Include Record Drawings, maintenance manuals, and data; test results; control and wiring diagrams.

J. CUTTING, PATCHING, AND REPAIRING

1. Do minor miscellaneous cutting, drilling, and patching necessary and normally required at the time of actually installing this Work. Patching shall be of the same materials, workmanship, and finish as the original or surrounding Work to the complete satisfaction of the Project Manager. Comply with Division-1 CUTTING AND PATCHING Section.

2. Adequately inform other trades of openings and framing requirements for this Work and provide suitable instructions for establishing locations and sizes of openings or sleeves so that these may be provided in the proper location at the proper time. Concrete shall not be cut, except where approved by the Project Manager.

K. SIMILARITY OF MATERIALS

1. Unless specified otherwise, fixtures, fittings, and respective type features and equipment, of a similar type or having similar operative or functional features, shall be of the same manufacturer throughout the Project.

L. MANUFACTURERS' DIRECTIONS

1. Follow manufacturers' directions and recommendations in all cases where the manufacturers' equipment or articles are used for this Work. Compliance with the manufacturer's direction is a requirement for that product's listing with a recognized test lab.

M. VERIFICATION OF DIMENSIONS

1. Scaled and figured dimensions are approximate only. Before proceeding with Work, carefully check and verify dimensions, etc., on Drawings, and be responsible for properly fitting equipment and materials together and to the structure in spaces provided.
2. Drawings are essentially diagrammatic, and many offsets, bends, pull boxes, special fittings, and exact locations are not indicated. Carefully study Drawings and premises in order to determine best methods, exact locations, routes, building obstructions, etc., and install apparatus and equipment in available locations. Install apparatus and equipment in manner and locations to avoid obstructions, preserve headroom, and keep openings and passageways clear.

N. IDENTIFICATION OF EQUIPMENT
1. All electrical equipment shall be labeled, tagged, stamped, or otherwise identified in accordance with the following schedule:
   a. Branch Circuit Panelboards:
      i. Panel identification shall be stenciled with 2" high white paint letters on inside face of door. In addition to panel designation, panels on emergency power shall also be stenciled to indicate the branch of the emergency system to which they are connected.
      ii. Circuit directory shall be a two-column, typewritten card under a plastic cover inside the door. Each odd numbered circuit shall be in sequence in the left column and the even numbered circuit in the right column (e.g., 1, 3, 5..., 2, 4, 6...). Each circuit shall be identified as to the use and room name(s) or area(s). Confirm room names and/or room numbers with the Architect prior to project completion. Circuit breaker identification shall be by permanently installed metal numbers or plastic numbers under acrylic plastic. "Paste-on" numbers will not be accepted. Refer to "Panelboards" section for additional requirements.
   b. Distribution Panelboards: Identification shall be with 1" x 4" laminated, white on black, micarta nameplates on each major component, each with name and/or number of unit and other pertinent data as required. Emergency power distribution panels shall be identified with white on red micarta nameplates. Letters shall be no less than 3/8" high.
   c. Circuit breakers and safety switches shall be identified by number and name with 3/4" x 1-1/2" laminated micarta nameplates with 3/16" high letters mounted adjacent to circuit breaker or switch.
   d. Miscellaneous equipment (electrical), such as individually mounted starters, step-down transformers, pull boxes, junction boxes, etc., shall be identified as required by the use of such equipment with plates as for distribution panelboards.
   e. In general, the installed nameplates, as herein called for shall also clearly indicate its use, area served, circuit identification, voltage and any other useful data.

O. CLOSING IN OF UNREVIEWED WORK
1. Do not allow or cause any of this Work to be covered up or enclosed until it has been reviewed by the Owner's Representative. Should any of this Work be enclosed or covered up before such review, uncover the Work and make repairs with such materials as may be necessary to restore the Work and that of
the other trades to its original and proper condition at no additional cost to the Owner.

P. SAFETY PRECAUTIONS

1. It is intended that within the scope of this Work during construction and until final acceptance, strict attention be given to matters pertaining to public safety and to safety of the construction workers and complementing personnel; and to other health and building safety requirements as specified and indicated including, but not limited to: Protection of openings in fire-rated construction; clearances from and/or protection of combustibles; proper securement for fixtures, equipment materials; method of performing the Work, operational and safety check of electrical devices, etc.; erection and maintenance of suitable barriers, protective devices, lights and warning signs and adequate provisions for storage and protection of Work, materials and equipment.

2. It is understood that the responsibility for the proper attention to the above stipulations is included under this Work.

Q. WIRING OF EQUIPMENT FURNISHED UNDER OTHER SECTIONS

1. All electrical wiring including power wiring and control wiring, including raceways, wiring, outlet and junction boxes, and labor for installation of the wiring and equipment shall be included in this section of the Specifications.

2. Coordinate requirements with Division 15 sections prior to ordering and installation.

3. Comply with requirements of Article 430 of the California Electrical Code.

R. EXCAVATION AND BACKFILL

1. Do excavation, trenching, and backfilling required for this Work. Do shoring, pumping, or draining that is necessary to keep the excavations and trenches safe and free from water. Where possible and practical, avoid planted or paved areas, walkways, floors, and other finished surfaces. See CONDUITS Sections for depth of conduits. Remove all excess excavated materials from the site, unless otherwise directed by the Owner's Representative.

2. Where required, do cutting and drilling of walls, pavements, walkways, etc., by means of cutting and drilling (coring) machines unless specifically approved otherwise.

3. Excavation, trenching, and backfill methods and procedures shall be in strict accordance with industry standards and local requirements.

4. Backfilling shall be done in one-foot layers, with each layer tamped before another layer is added. No stones or coarse lumps shall be laid directly on conduits.

S. CONCRETE
1. Where used for structures to be provided under the contract such as bases, etc., concrete work and associated reinforcing shall be as specified under that Division.

2. See other sections for additional requirements for underground vaults, cable ducts, etc.

T. PROTECTION OF EXISTING LINES

1. Exercise special care to avoid damaging and to maintain in operation, all existing utility runs during the construction period. Also avoid damaging existing piping, conduits, or equipment that is to remain, whether or not specifically indicated on the Drawings. Existing utilities, piping, conduits, and equipment may or may not be shown on the Drawings. The Drawings only reflect information intended to suggest the probable extent and possible location of indicated runs and equipment. There may be other runs. There may be other locations. Neither the Owner nor the Owner's Representative represents that either has any precise knowledge as to either the full extent or exact location of equipment and runs that may fall within the building or Project Site.

2. Execute excavation and demolition on the Site and in the building with extreme care (by hand or small tools wherever appropriate) and at the sole risk of the Contractor and the workers involved.

3. Locate all known existing installations before proceeding with construction operations which may cause damage to such installations. The existing installations shall be kept in service where possible and damage to them shall be repaired at no increases in Contract Sum.

4. If other structures or utilities are encountered, request the Project Manager to provide direction on how to proceed with the work.

U. MOUNTING

1. Provide materials and accessories necessary to properly mount and secure equipment furnished and/or installed under the electrical work. This includes but is not limited to such items as conduit, outlets, junction boxes, switches, relays, disconnect switches, lighting fixtures, and transformers.

2. Inserts and Anchors shall be:
   a. Furnished and installed for support of Work under this Division.
   b. Adjustable concrete hanger inserts installed in new concrete work as manufactured by Grinnell or as approved.
   c. Installed in locations as approved by the Project Manager.
   d. Expandable lead type anchors installed in existing concrete with minimum surface damage, as manufactured by Ackerman-Johnson, Pierce, Diamond or Hilti.
   e. Toggle bolts, or "molly anchors", where installed in concrete block walls.
f. Complete with 3/16” or heavier steel backup plate where used to support heavy items. Through-bolts or backup plate shall be concealed from view, except as otherwise indicated.

V. Furnish and install sleeves for the installation of work under all sections of this Division. Sleeves through floors, roof and walls shall be as described in conduit section.

W. ACCESSIBILITY
   1. Install all control devices or other specialties requiring reading, adjustment, inspection, repairs, removal or replacement conveniently and accessibly throughout the project.

X. TESTS
   1. Perform electrical tests as required or directed. Provide materials, labor, and equipment necessary for performances of these tests, and at completion of the work perform a complete "in-service" operation of the entire electrical and power system to show compliance with the Drawings and Specifications. Replace work showing faults under tests without additional cost to the Owner. Test system voltage at switchboards at completion of work and provide a written report to the Project Manager.

Y. CLEANING
   1. During construction on a daily basis, and upon completion of the Work, remove from the site all debris and excess materials, tools, and removed items, resulting from this Work. Clean equipment, including lighting fixtures, free of dust, dirt, grease, paint, etc.

Z. SALVAGE
   1. Deliver salvaged equipment and material deemed salvageable by the Project Manager to location designated by The Project Manager. Remove other removed material and equipment from site.

AA. GUARANTEE
   1. Leave the entire installation in complete working order, free from defects in materials, workmanship or finish. Guarantee to repair or replace parts that may develop defects due to faulty materials, equipment, or workmanship within a period of one year after the Work is accepted by the Owner. Also guarantee to repair or replace with like materials, other existing Work in the building damaged from or during the repair of any such defective equipment, materials, or workmanship.
BB. COMMISSIONING

1. Provide complete commissioning of all control systems specified on the drawings, including, but not limited to the following:
   a. Lighting control system
   b. Main switchboard
   c. Panelboards and load centers

2. Before energizing these systems, make sure they are properly terminated, braced and secured. Make sure continuity is achieved on all conductors.

3. Perform a functional test of all switches, overcurrent devices included in these systems.

4. Completely test these systems to insure reliability and function.
   a. Lugs shall be torqued to manufacturers’ recommended tightness.
   b. Ancillary devices integrating to these systems shall be checked for proper operation:
      i. Motion sensors
      ii. Photocells

5. Provide a complete commissioning report attesting to systems’ conformance. The report shall be:
   a. Typewritten
   b. Signed
   c. Complete

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SECTION 800-4 – ENGINEERED WOOD FIBER SURFACE

800-4.1 GENERAL

A. SECTION INCLUDES

1. Work includes but is not limited to following:
   a. Installation of fibar® 312 Engineered Wood Fiber System.
   b. Furnish all labor, material, equipment and services necessary to furnish and install the Engineered Wood Fiber System as shown on the Drawings and described herein.

B. GREENBOOK RELATED SECTIONS

1. Drawings and general provisions of the Contract, including the General and Supplementary Conditions Specification Section D, apply to this Section.
2. Coordinate related work specified in others parts of the Project Manual, including but not limited to following:
   a. Section 300 – Earthwork
   b. Section 301 – Treated Soil, Subgrade Preparation and Placement of Base Material
   c. Section 800 – Landscape and Irrigation Materials

C. REFERENCES

1. Comply with the requirements of ASMT and the Consumer Product Safety Commission (CPSC)
   a. ASTM F1292
      ii. Test results must be for Engineered Wood Fiber and Mats.
      iii. Test performed on new material.
      iv. Test performed on 12-year-old Engineered Wood Fiber.
      v. Test results for Engineered Wood Fiber must show G-max values of less than 155G for an 8” thick system or 120G for a 12” system with a 12’ drop height, and HIC values less than 1,000 for both new and 12-year-old materials.
      vi. Test results for Engineered Wood Fiber must show G-max values of less than 200G for a 12” system with a 14’ drop height, and HIC values less than 1,000 for both new and 12-year-old materials.
      vii. Test results for mats must show G-max values of less than 200G and HIC values of less than 1,000 for a 3’ drop height.
   b. ASTM F1951
      ii. Must meet the intent of the Americans with Disabilities Act (ADA).
c. ASTM F2075
   i. Standard Specification for Engineered Wood Fiber for Use as a
      Playground Safety Surface Under and Around Playground
      Equipment.
   ii. Material must undergo the test method described in Section 9.0 to
determine the presence of tramp metal particles. Metal particles
embedded or mixed in Engineered Wood Fiber may cause injury if a
child were to fall on/or come in contact with them. The limit for tramp
metal was set to reduce the potential of injury.
   iii. Standard wood chips, bark mulch or materials from recycled pallets
      will not be acceptable.

D. QUALITY ASSURANCE
   1. Installation to be performed by skilled workers with a satisfactory record of
      performance in the installation of engineered fiber on projects of comparable
      type, size and quality.

E. DELIVERY, STORAGE, AND HANDLING
   1. Protect Engineered Fiber with waterproof covering to prevent exposure to
      rainfall, removal by wind, or contamination from any source. Secure the
      covering in place.

800-4.2 SUBMITTALS

A. Product Data: manufacturer’s product data and installation instructions.

B. Material List:
   1. Furnish the articles, equipment, materials, and processes specified in the
      Drawings and Specifications. No substitutions will be allowed without written
      request and approval.
   2. Submit complete materials list prior to performing work. Include the
      manufacturer, model number, and description of all materials and equipment to
      be used.

800-4.3 SUBSTITUTIONS

A. Requests for substitution shall be submitted to the Project Manager for approval
   a minimum of 7 days prior to bid opening.
800-4.4 **MEASUREMENT**

A. The quantity of engineered wood fiber constructed shall be the square yard. The final area shall be the bid quantity unless changes in lines, grades and/or elevations are made by the Project Manager during the course of construction. Construction of the play surface includes excavation to subgrade, hauling of excess materials from the site, placement of subgrade backfill, placement of engineered wood fiber on site.

800-4.5 **PAYMENT**

A. Payment for path installation will be made at the contract unit price per square yard under Bid Item No. 18 and shall include: (1) excavating, grading, loading, hauling, disposing of excess material, depositing, spreading and compacting the material complete in place, and subgrade preparation as indicated on the plans; (2) all grading, hauling, depositing, spreading and compacting of subgrade backfill, complete and in place, as indicated on the plans; and (3) 6” colored concrete curbs, and other materials; placement; compaction; and clean up; complete and in place, as indicated on the plans.

B. Said payments for all the above items of work shall be considered full compensation for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the items. No payment will be made separately or directly for haul on any part of the work. All hauling will be considered a necessary and incidental part of the work, and its cost shall be considered by the Contractor and included in the contract unit price of the pay items of work involved.

800-4.6 **MATERIALS**

A. PRODUCTS

1. Engineered Wood Fiber
   a. Shredded wood fiber consisting of randomly sized pieces.
   b. Recycled wood from used pallets are not acceptable.
   c. The amount of Fibar Engineered Wood Fiber necessary to provide the approximate depth after compaction is as follows:
      i. 8” – 38 cubic yards per 1,000 sq. ft. of playground area
      ii. 12” – 50 cubic yards per 1,000 sq. ft. of playground area

2. Drainage System
   a. FibarDrain
      i. Drainage matrix that channels water away from playground.
      ii. Minimum flow rate of 10 gpm/ft.
iii. Needle-punched 100% non-woven geotextile sleeve encasing a monofilament nylon mesh.
iv. Laid out on 6'-0 centers in the direction of the grade.
v. Prevents deterioration of Fibar Engineered Wood Fiber.

b. FibarFelt
i. Needle-punched 100% non-woven geotextile fabric that separates the Engineered Wood Fiber from soil below.
ii. Material allows water to flow through, and prevents rock and soil contamination of the Engineered Wood Fiber.
iii. Designed to cover the sub-grade and drainage matrix to ensure proper drainage.
iv. Seams should be overlapped 3”.

800-4.7 EXECUTION

A. EXAMINATION
1. Installer must thoroughly examine the site and specifications, carefully checking the dimensions before starting work. All instructions are subject to equipment manufacturers’ installation specifications and in accordance with the licensing requirements of The Fibar Group, LLC, these specifications, and conformance with the dimensions, notes and details shown on the plans.

B. PREPARATION
1. In-Ground Installation
   a. Excavate area to proper depth, based on Critical Fall Height.
   b. Minimum 1% downward grade to ensure proper drainage to FibarDrain Strip.
   c. On grades of greater than 10% - use of FibarSystems is not recommended.
   d. Remove all roots, stones, and vegetation.
   e. Accurately grade and firmly compact entire area, especially where fill materials have been utilized.
   f. Excavate trench 2” wide x 6” deep, perpendicular to grade at lowest point of playground area.

C. INSTALLATION
1. In-Ground Installation
   a. Install FibarDrain and connect low end of strip to storm drain or similar device to remove collected water.
   b. Install retaining border or curb.
   c. Install FibarDrain strips at 6’ centers in direction of grade.
   d. Cover sub-grade and drainage trench with FibarFelt.
   e. Allowing 3” overlap at all seams.
f. Overlap all slits with either next piece of FibarFelt or scrap piece, to ensure complete coverage.

g. Install FibarMat wear mats either on FibarFelt, in middle of Fibar Engineered Wood Fiber® or on top of system.

h. Spread Fibar® Engineered Wood Fiber using a Bobcat, small front-end loader or our Express Blower Trucks.

i. Care should be taken when driving over FibarDrain.

j. Do not make sharp turns on FibarFelt or FibarDrain.

k. Install all materials delivered.

l. Additional materials are supplied to account for natural compaction.

m. Material may be several inches high, until it compacts.

n. Feather edges to make smooth transition to grade or border.

o. Hand spread and rake for smooth, finished surface.

p. After two weeks of active use, surface should be raked again.

D. REPAIR, CLEANING, AND PROTECTION AFTER INSTALLATION

1. Maintenance

   a. Visual Inspection. To begin your playground maintenance, look for debris—especially stones, broken glass, or other foreign objects and remove them. Check to make sure that the level of depth of the Fibar® surface doesn't fall below the Fibar System design depth. The legs of the equipment should have been marked with a bold horizontal mark showing the System depth when originally installed. If they are not, take the time to mark the legs with an indelible marker at the System design depth, measuring from the bottom of the Fibar surface. This will allow you to readily see when the Fibar needs to be redistributed or topped off to maintain proper System design depth. If the equipment was not marked, or you choose not to mark it, the surface must be checked at a number of points using a long handled screwdriver marked in inches, to determine the actual depth. If the actual depth is below the System design depth, redistribution and/or top-off is needed. See Paragraph 3, Raking, and top off if the depth of the Fibar is below the System design depth. Inspect the surface daily for proper playground maintenance.

   b. Top-Off. Playground maintenance experience has shown us that installations typically require top-offs after three (3) years of use (on some playgrounds, maybe sooner). Top offs can sometimes be scheduled with other deliveries to minimize the freight cost. See Paragraph 1, Visual Inspection, for guidelines on how to know when you need a surface top-off.

   c. Raking. Wear areas (See Paragraph 7, Incorrect Installation or Playground Maintenance) should be raked level and maintained at the proper System design depth of inches as measured from the bottom of the Fibar surfacing enclosure to the top of the Fibar surface. See Paragraph 2, Top-Off, if more Fibar is needed to maintain the System design depth. See Paragraph 1, Visual Inspection, regarding the use of the
marks on the legs of the equipment to readily determine the relationship between the actual depth and the System design depth. When a Fibar System installation is close enough to a sandpit that sand gets tracked into the Fibar surface, this could adversely change the impact attenuation characteristics of the Fibar System. The surface should be very vigorously raked to attempt to mitigate this.

d. Accessibility. Depending on weather and usage, a Fibar surface will compact to provide access for wheelchairs, crutches, walkers, and wheeled vehicles within two to six weeks of installation.

e. Weeds. Conditions could occur that might cause weed growth. You can remedy this situation by use of an environmentally approved weed killer (call your local Cooperative Extension office for recommendation) or pull out the weeds by hand.

f. Incorrect installation or maintenance, failure to install all the material delivered, failure to maintain the depth of the Fibar System at the System design depth, failure to use FibarMatwear mats at excessive wear areas, other wear areas (a wear area is any area in the playground where the surface depth falls below the System design depth for the playground surface), use of the Fibar System and/or materials with others not provided by The Fibar Group LLC, abnormal use, lack of proper maintenance, or vandalism can result in serious injury or death. Be aware that no playground surface can prevent all accidents or injuries.

g. Reread the Installation and Maintenance Instructions periodically. If at any time you are concerned about the surface and its performance, please contact us at 1-800-342-2721 or (914) 273-8770.

E. WARRANTY & INSURANCE

1. Manufacturer’s Limited Warranty
   a. The Fibar Group, LLC provides a written 25-year warranty against loss of resiliency for the FibarSystem 300.
   b. The Fibar Group, LLC provides a written lifetime warranty on the FibarFelt geotextile fabric material.
   c. The Fibar Group, LLC provides a written lifetime warranty on the FibarDrain drainage matrix.
   d. Product Liability Insurance Certificate with project owner named as certificate holder.
SECTION 801 – WEED REMOVAL

801-1 GENERAL

A. The work required under this Section shall include but is not limited to all labor, tools, materials, equipment, and incidentals required to remove weeds from the project site prior to Plant Installation. Weed Removal shall occur as shown on the Drawings, contained in these Specifications, and directed by the Project Manager.

B. Weed removal shall be implemented upon completion of the hardscape work by the General Contractor, working under a separate contract, and prior to Plant Installation.

C. The Contractor must have prior experience in identifying native and non-native plants and applying herbicides in a precise and environmentally sensitive manner, so as not to affect adjacent native species, apply excessive amounts of herbicide that can be transported to surface water, or to cause accidental spills or releases. Contractor must be able to distinguish between native and non-native plants at the project site.

D. Herbicides are not to be used for weed removal without approval by the Project Manager.

801-2 SUBMITTALS

A. In the event that herbicide use is approved by the Project Manager and allowed under the emergency provisions of the City’s Integrated Pest Management Plan, the Contractor shall provide a description of the herbicide to be used at the project site for the weed removal including dilution and application rates; manufacturer’s name; application equipment and methods; measures to protect the public, including signs, barriers, notifications, etc; measures to avoid spraying protected plants; measures to avoid discharge into creek water; evidence that the applicator is licensed to apply the herbicide; statement that the herbicide is approved by state and federal agencies for work in the type of environment at the project site.

801-3 MEASUREMENT

A. Measurement for the first Weed Removal event shall be the limit of work area shown on the Drawings, according to these Specifications, and as approved by the Project Manager.
B. Measurement for the second Weed Removal event shall be the limit of work area shown on the Drawings, according to these Specifications, and as approved by the Project Manager.

C. Measurement for the third Weed Removal event shall be the limit of work area shown on the Drawings, according to these Specifications, and as approved by the Project Manager.

801-4 PAYMENT

A. Payment for first Weed Removal shall be on a lump sum under Bid Item 6 and shall include all materials and labor required for Weed Removal.

B. Payment for second Weed Removal shall be on a lump sum under Bid Item 6 and shall include all materials and labor required for Weed Removal.

C. Payment for third Weed Removal shall be on a lump sum under Bid Item 6 and shall include all materials and labor required for Weed Removal.

801-5 HERBICIDE

A. Rodeo™ shall be used in the event that herbicide use is approved by the Project Manager and allowed under the emergency provisions of the City’s Integrated Pest Management Plan. Herbicides shall be applied in accordance with the City’s IPM Plan by a state licensed applicator.

801-6 EXECUTION

A. Weed Removal shall occur at the discretion of the Project Manager, but no sooner than 10 days after the General Contractor has completed his work at the project site, unless otherwise directed by the Project Manager.

B. Weed removal shall occur when weeds have germinated on the graded areas, and they exhibit sufficient growth and foliage to ensure effective treatment. The period of time from the hand-watering to the weed removal shall not be less than 10 days.

C. Non-targeted plants shall not be treated with herbicide. Contractor shall exercise great caution in applying the herbicide to the targeted plants only, and to avoid spillage.

D. Herbicide shall not be applied if there has been a rain within 24 hours and foliage is still wet, or if rain is forecasted to occur within 72 hours or if winds
exceed 10 miles per hour. Contractor shall postpone or curtail weed removal until these conditions are not present.

E. Crews shall spray individual plants using backpack units with a narrow spray to minimize drift and accidental spraying of nearby native species. Non-targeted plants shall not be sprayed, nor shall not receive drift from nearby spraying. Contractor shall exercise great caution in applying the herbicide to the targeted plants only. No herbicide shall be sprayed on open water or in the creek bed. A dye shall be included in the spray to assist in tracking coverage. Plastic shields shall be used, as necessary, to avoid overspray. No herbicide application may occur within 25 feet of the creek top of bank.

F. For all weeding events, dead weed material shall be removed.

801-7 INSPECTION AND ACCEPTANCE

A. Within 24 hours after the completion of each Weed Removal event, the Project Manager shall inspect the site. If, after inspection, the Project Manager is satisfied with weed removal, the Contractor shall be notified in writing of stage acceptance.

B. If, after inspection, the Project Manager is dissatisfied with the work and its conformance to the Drawings and Specifications, the Project Manager shall prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.
SECTION 801-1 – PLANT INSTALLATION

801-1.1 GENERAL

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

B. Furnish all labor, materials and equipment necessary to provide and install all trees, shrubs, vines, groundcovers and seed mix as shown on the Drawings. The Contractor's work shall include:
   1. Take representative soil samples.
   2. Prepare soil for planting and furnish all soil amendments.
   4. Install all plant materials and seed mix per the planting plan.
   5. Dispose of trash, debris and surplus materials.
   6. Maintain the planting in a vigorous, healthy condition until final project acceptance.
   7. Guarantee all 24" box size and larger trees for a period of 90 days following the date of final project completion

801-1.2 SUBMITTALS

A. Contractor shall be responsible for all material listed on the plant list. All substitutions due to unavailability must be requested in writing prior to confirmation of ordering. All materials shall be subject to inspection by the Project Manager at any time after confirmation of ordering.

B. The Contractor shall furnish the Project Manager with copies of receipts for all soil amendments specified in soil report.

C. Certified copies of soils analysis results.

D. Contractor shall submit sample of mulch to be used for approval by Project Manager.

E. Contractor shall submit sample of mycorrhizal funghi inoculum and application rate to be used for approval by Project Manager.

801-1.3 MATERIALS

A. Mulch = medium size, 1-inch diameter
B. AM 120 mycorrhizal fungi inoculum – from S&S Seeds at 1-800-423-8112 or equivalent (apply per manufacturer in each planting hole)

801-1.4 MEASUREMENT

A. Measurement for planting container plants shall be on a unit basis for all container plants, per the quantities and size shown on the Drawings, and shall include mycorrhizal fungi inoculum.

B. Measurement for planting trees shall be on a unit basis for all trees, per the quantities and size shown on the Drawings, and shall include mycorrhizal fungi inoculum.

C. Measurement for mulch shall be on square footage of surface as shown on drawings.

801-1.5 PAYMENT

A. The unit prices shown on the Bid items No. 52-59 shall include full compensation to complete and maintain the landscape and irrigation work shown on the plans or in the specifications.

801-1.6 CONTAINER PLANTS

A. The Contractor shall make arrangements for delivery of the plants to the project site. Contractor shall unload plants at the project site.

B. The Contractor shall inspect the container plants prior to planting and provide the Project Manager with a written acceptance of the plant material. Any plant material observed by the Contractor as damaged or in a condition that would limit long-term viability shall be identified in writing to the Project Manager. If the Contractor installs any plant material of questionable health without the Project Manager’s approval, the Contractor shall replace the unacceptable material before the Final Acceptance at the Contractor’s expense.

C. After acceptance by the Contractor of the plant material at the project site, the Contractor shall have full responsibility for the health of the container plants. These plants shall be maintained in good health and protected from animal damage, drought, rain damage, pests, wind, flood, and any other adverse conditions.
801-1.7  PLANTING

D. At the beginning of the first day of Planting, the Project Manager shall meet with the Contractor to review planting procedures. The Project Manager shall place pin flags to mark the locations where the Contractor shall install individual container plants or salvaged oak trees.

E. The planting layout will be subject to field design by the Project Manager. The Project Manager reserves the right to make minor adjustments in plant layout to accomplish the intent of the Drawings.

F. Planting pits shall be excavated to a minimum of twice the width of the container and the same depth as the container. Mycorrhizal fungi inoculum shall be placed in each hole per manufacturer’s recommendation.

G. Container plants shall be placed by removing the entire plant from the container with the root ball intact. The rootball shall be placed without damaging the roots. The plant shall be set plumb and braced in position until the backfill has been tamped solidly around the rootball.

H. The planting hole shall be filled with native soil so that the plant is level with adjacent ground. Mulch shall be placed around each plant at a depth of 2 inches, but not in contact with the plant stem. Plants shall be watered immediately after planting. Contractor must check each plant after watering to correct any soil settling during and after Planting.

801-1.8  PRUNING

A. At no time shall trees or plant materials be pruned, trimmed or topped prior to delivery. Any alteration of their shape shall be conducted only with the approval of the Landscape Architect.

801-1.9  MULCH

A. Mulch shall be applied to a depth of 3 inches throughout the landscaped area, except in areas with Erosion Control Mats.

801-1.10  WATERING

B. Must be potable, and/or containing no substances harmful to plant life

C. Contractor shall be responsible for watering during the planting event in a frequency and amount to keep the plants in a healthy and vigorous manner. The Contractor shall make daily inspections of all installed plants to determine
the need for supplemental water. If more than 10 percent of the plants appear to be stressed from any cause, the Contractor shall immediately contact the Project Manager.

801-1.11  CLEAN UP

A. The Contractor shall clean up the project site at the end of every day. All plant containers and unneeded equipment shall be removed from the site.

801-1.12  RECORD DRAWINGS

A. The Contractor shall prepare Record Drawings after planting. The Record Drawings shall include information on the location and size of the plantings indicated by species. A legend listing all materials shall be included on the Record Drawings.

801-1.13  GUARANTEE

A. Plants installed under this contract shall be guaranteed for one year, from the date of planting, against mortality resulting from defects in Planting.

B. Plant materials that are dead or otherwise unhealthy due to poor installation practices and that are therefore not in conformance with these Specifications, shall be replaced at the Project Manager’s direction and at the Contractor’s expense.

801-1.14  INSPECTION AND ACCEPTANCE

A. Within 5 days after the completion of Plant Installation, the Project Manager shall inspect the plantings. If, after inspection, the Project Manager is satisfied with Plant Installation, the Contractor shall be notified in writing of stage acceptance.

B. If, after inspection, the Project Manager is dissatisfied with the plantings to date and its conformance to the Drawings and Specifications, the Project Manager will prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.
SECTION 801-2 – CONSTRUCTION MATERIALS AND METHODS FOR IRRIGATION SYSTEM

801-2.1 SUMMARY

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

B. Furnish all labor, material, equipment and services necessary to furnish and install the irrigation system as shown on the Drawings and described herein.

1. Automatic irrigation system including piping, fittings, drip irrigation equipment, emitters and accessories.

2. Valves, backflow preventer, and fittings.

3. Testing.

4. Excavating and backfilling irrigation system work.

5. Associated interior and exterior plumbing, and accessories to complete the system.

6. Pipe sleeves.

801-2.2 QUALITY ASSURANCE

A. Manufacturer’s Directions: Manufacturer’s directions and detailed drawings shall be followed in all cases where the manufacturers of the articles used in the work of this Section furnish directions covering points not shown on the Drawings or specified.

B. EXPLANATION OF DRAWINGS:

1. Due to the scale of the Drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of the work and plan the work accordingly, furnishing such fittings, etc. as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting and site features.

2. The Contractor shall not install the irrigation system as shown on the Drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the Project Manager. In the event this notification is not performed, the Contractor shall assume full responsibility for revisions necessary.
801-2.3 SUBMITTALS

A. MATERIAL LIST:
   1. Furnish the articles, equipment, materials, and processes specified in the Drawings and Specifications. No substitutions will be allowed without written request and approval.
   2. Submit complete materials list prior to performing work. Include the manufacturer, model number and description of all materials and equipment to be used.

C. RECORD DRAWINGS:
   1. These drawings shall also serve as work progress sheets and shall be the basis for measurement and payment for work completed. Make neat and legible annotations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for inspection.
   2. Final record drawings shall be prepared by hand on a 10'-scale site plan provided by the Project Manager.
   3. Dimension from (2) permanent points of reference, building corners, sidewalk, curbs, or road intersections, etc., the location of the following items:
      a. Connection to existing water lines.
      b. Connection to existing electrical power.
      c. Ball valves.
      d. Routing of sprinkler pressure lines (dimension max. 100 feet along routing).
      e. Remote control valves.
      f. Quick coupler valves.
      g. All main line and lateral lines.

D. OPERATION AND MAINTENANCE MANUALS:
   1. Prepare and deliver to the Project Manager within ten calendar days prior to completion of construction, two binders containing the following information:
      a. Index sheet stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturer's representative.
      b. Catalog and parts sheets on every material and equipment installed under this contract.
      c. Written statement guaranteeing all irrigation materials and workmanship for a period of 1 year from the date of final acceptance.
   2. Complete operating and maintenance instruction on all major equipment.
   3. Contractor shall submit manuals for review and approval in order to receive fifty percent payment on the project, regardless of how much work has been completed.
E. EQUIPMENT TO BE FURNISHED:

1. Supply the following tools:
   a. 2 sets of special tools required for removing, disassembling and adjusting each type of valve supplied on this Project.
   b. 1 quick coupler key and matching hose swivel for every 5 or fraction thereof of each type of quick coupling valve installed.
   c. Keys for lock on backflow preventer enclosure.

2. Turn over the above-mentioned equipment to the Project Manager at the conclusion of the installation and prior to the final inspection.

801-2.4 MEASUREMENT AND PAYMENT

A. Measurement and payment for the irrigation system shall be on a lump sum basis for all materials, testing, and labor to install the system. The amount of payment shall be based on percentage of system installed at each phase.

801-2.5 DELIVERY, STORAGE, AND HANDLING

A. Handling of PVC Pipe and Fittings: The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC pipe and fittings. Transport all PVC so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged shall be discarded and, if installed, shall be replaced with new piping.

801-2.6 MATERIALS

A. GENERAL: Use only new materials of brands and types noted on Drawings, specified herein, or approved equals.

B. PVC PRESSURE MAIN LINE PIPE AND FITTINGS:
   1. Pressure main line piping for sizes 2 1/2" and larger shall be Dura (or approved equal) PVC Class 315 pipe.
   2. Pipe shall be made from an NSF approved Type I, Grade I PVC compound conforming to ASTM resin specification D1784. All pipe shall meet requirements as set forth in Federal Specification PS-22-70, with an appropriate standard dimension (S.D.R.)(Solvent-weld pipe).
   3. Pressure main line piping for sizes 2 inches and smaller shall be Dura (or approved equal) PVC Schedule 40 pipe with solvent-welded joints.
   4. Pipe shall be made from NSF approved Type I, Grade I PVC compound conforming to ASTM resin specification 1785. All pipe shall meet requirements as set forth in Federal Specification PS-21-70.
5. PVC solvent-weld fittings shall be Schedule 40, 1-2, II-I NSF approved conforming to ASTM test procedure D2466.

6. Solvent cement and primer for solvent-weld and fittings shall be of type and installation methods prescribed by the manufacturer.

7. All PVC pipe shall bear the following markings:
   a. Manufacturer’s name.
   b. Nominal pipe size.
   c. Schedule or class.
   d. Pressure rating in P.S.I.
   e. NSF (National Sanitation Foundation) approval.
   f. Date of extrusion.

8. All fittings shall bear the manufacturer’s name or trademark, material designation, size, applicable I.P.S. schedule and NSF seal of approval.

C. PVC NON-PRESSURE LATERAL LINE PIPING:
   1. Non-pressure buried lateral line piping shall be Dura (or approved equal) PVC Schedule 40 pipe with solvent-weld joints.
   2. Pipe shall be made from NSF approved, Type I, Grade II PVC compound conforming to ASTM resin specification D1784. All pipe shall meet requirements set forth in Federal Specification PS-22-70 with an appropriate standard dimension ratio.
   3. All requirements for non-pressure lateral line pipe and fittings shall be the same as for solvent-weld pressure main line pipe and fittings as set forth in Article 2-16.6 B of this Section.

D. PVC PIPE SLEEVES: All piping installed under paving, through walls or footings shall be placed inside Schedule 40 PVC pipe sleeves of adequate size to allow free movement of the pipe in the sleeve.

E. COPPER PIPE AND FITTINGS: Type “K” copper pipe with wrought copper fittings shall be used related to backflow preventer installation. Type “K” copper pipe shall be used for irrigation system bridge crossings.

F. BALL VALVES:
   1. Ball valves 2-1/2 inches and smaller shall be 125 lb. SWP bronze ball valve.
   2. Ball valve 2-1/2 inches and smaller shall have threaded ends and shall be equipped with a bronze handle.
   3. Ball valves 2-1/2 inches and smaller shall be similar to those manufactured by Champion or approved equal
G. QUICK COUPLER VALVES: Rainbird No. 44NP 1” with valve key, or approved equal.

H. BACKFLOW PREVENTION UNITS: Shall be reduced-pressure type. Size and model number as indicated on the Drawings. Backflow preventer shall be installed in a metal enclosure of the size and type indicated on the drawings. Provide and install lock with keys for enclosure.

I. PRESSURE REGULATOR: Shall be of the type and size indicated on the Drawings.

J. CONTROL EQUIPMENT:
   1. Shall be weather base, 2-wire system and specified as shown on the Drawings.
   2. Install one per remote control valve per manufacturer’s recommendations.

K. ELECTRICAL CONTROL VALVES:
   1. All electric control valves shall be of the size and type shown on the Drawings.
   2. All electric control valves shall have a manual flow adjustment.
   3. Provide and install one control valve box for each electric control valve.

L. CONTROL VALVE BOXES:
   1. Use round box for all ball valves, Carson Industries, with green-bolt down cover or approved equal. Extension sleeve shall be PVC - 6 inches minimum size.
   2. Use rectangular box for all electrical control valves, Carson Industries, with locking cover or approved equal.

M. DRIP IRRIGATION EQUIPMENT (Pressure regulators, Y-filters, emitters and drip tubing): Of the size and type indicated on the drawings.

N. DECODER: shall be the type and size as indicated on the Drawings.

O. SURGE ARRESTOR: shall be the type and size as indicated on the Drawings.

P. MASTER VALVE: shall be the type and size as indicated on the Drawings.

Q. FLOW SENSOR: shall be the type and size as indicated on the Drawings.

R. POP UP ROTO: shall be the type and size as indicated on the Drawings.

S. POP UP IRRIGATION HEADS: shall be the type and size as indicated on the Drawings.

T. TREE BUBBLER: shall be the type and size as indicated on the Drawings.
801-2.7 EXAMINATION

A. SITE CONDITIONS:
   1. All scaled dimensions are approximate. The Contractor shall check and verify all size dimensions and report any discrepancies to the Project Manager prior to proceeding with work in this Section.
   2. Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damages to utilities which are caused by the Contractor's operations or neglect. Verify location of existing utilities prior to starting work.
   3. Coordinate installation of sprinkler irrigation materials including pipe, so there shall be no interference with utilities or other construction or difficulty in planting trees, shrubs and groundcovers.
   4. Carefully check grades before starting work on the irrigation system.

801-2.8 PREPARATION

A. PHYSICAL LAYOUT:
   5. Prior to installation, stake out all pressure supply lines, routing and location of sprinkler heads.
   6. All layout shall be approved by the Project Manager prior to installation.

B. WATER SUPPLY:
   1. Connect the irrigation system to water supply point of connection indicated.
   2. Make connections at approximate locations shown. Contractor is responsible for minor changes caused by actual site conditions.

801-2.9 INSTALLATION

A. TRENCHING:
   1. Dig trenches straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching excavation shall follow layout indicated on drawings and as noted.
   2. Provide for a minimum of 18 inches cover for all pressure supply lines.
   3. Provide for a minimum of 12 inches cover for all non-pressure lines.
   4. Provide for a minimum of 4 inches cover for all drip irrigation lines.

B. TRENCHING AND BACKFILLING IN LANDSCAPE AREAS:
1. Do not backfill trenches until all required tests are performed. Carefully backfill trenches with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, or other approved materials, free from large clods of earth or stones. Mechanically compact backfill in landscaped areas to a dry density equal to adjacent undisturbed soil in planting area. Backfill will conform to adjacent grades without dips, sunken areas, humps or other surface irregularities.

2. All backfill and bedding materials shall be compacted mechanically.

3. Flooding of trenches will be permitted only with the approval of the Project Manager.

4. If settlement occurs and subsequent adjustments in pipe, valves, drip lines or planting, or other construction is necessary, make all required adjustments without cost to the Project Manager.

C. TRENCHING AND BACKFILL UNDER PAVING: Comply with requirements of the Civil Drawings and the following:

1. Backfill trenches located under areas where paving, asphaltic concrete or concrete will be installed with sand (a layer 6 inches below the pipe and 3 inches above the pipe) and compact in layers to 95 percent compaction, using manual or mechanical tamping devices. Compact trenches for piping to equal the compaction of the existing adjacent undisturbed soil and leave in a firm unyielding grade. Set in place, cap and pressure test, all piping under paving prior to the paving work.

2. Piping under existing walks is generally done by jacking, boring or hydraulic driving, but where any cutting or breaking of sidewalks or concrete is necessary, it shall be done and replaced by the Contractor as a part of the contract cost. Obtain permission to cut or break sidewalks or concrete from the Project Manager. No hydraulic driving will be permitted under concrete paving.

3. Provide for a minimum cover of 18 inches between the top of the pipe and the bottom of the aggregate base for all pressure and on-pressure piping installed under asphaltic concrete paving.

D. ASSEMBLIES:

1. Routing of irrigation lines as indicated on the Drawings is diagrammatic. Install lines (and various assemblies) in such a manner as to conform with the details.

2. Install multiple assemblies in plastic lines. Provide each assembly with its own outlet.

3. Install all assemblies specified herein in accordance with respective detail. In absence of detail Drawings or Specifications pertaining to specific items required to complete the work, perform such work in accordance with best standard practice with prior approval of the Project Manager.
4. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.

5. On PVC to metal connections, work the metal connections first. Use teflon tape, or approved equal, on all threaded PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be welded.

E. LINE CLEARANCE: All lines shall have a minimum clearance of 6 inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another.

F. REMOTE CONTROL VALVES:

1. Install where shown on Drawings and details. When grouped together, allow at least 12 inches between valves. Install each remote control valve in a separate valve box. Label each controller and station number at the valve with a 2-1/4 inch by 2-3/4 inch polyurethane I.D. tag attached to the control wire of the valve.

2. Install drip emitters only after flushing the system has been accomplished to the satisfaction of the Project Manager.

G. BACKFLOW PREVENTER ENCLOSURE: Install metal enclosure on concrete pad per detail and manufacturer’s recommendations. Install lock and retain keys during the maintenance period.

801-2.10 TEMPORARY REPAIRS

A. The Project Manager reserves the right to make temporary repairs as necessary to keep the irrigation system equipment in operating condition. The exercise of this right by the Project Manager shall not relieve the Contractor's responsibility under the Contract Documents.
801-2.11 EXISTING TREES AND SHRUBS

A. Where it is necessary to excavate adjacent to existing trees and shrubs, use all possible care to avoid injury to trees, tree roots and shrubs. Excavation in areas where 2 inch and larger roots occur shall be done by hand. All roots 2 inches and larger in diameter, except directly in the path of pipe or conduit, shall be tunneled under and shall be heavily wrapped with burlap to prevent scarring or excessive drying. Where a ditching machine is run close to trees having roots smaller than 2 inches in diameter, the wall of the trench adjacent to the tree shall be hand trimmed, making clean cuts through. Roots 1 inch and larger in diameter shall be painted with 2 coats of tree paint.

801-2.12 FIELD QUALITY CONTROL

A. ADJUSTMENT OF THE SYSTEM:
   1. If it is determined that adjustments in the irrigation equipment will provide proper and more adequate coverage, make adjustments prior to planting. Adjustments may also include changes in emitter sizes as required.

B. TESTING OF IRRIGATION SYSTEM:
   1. Request the presence of the Project Manager in writing at least 48 hours in advance of testing.
   2. Test all pressure lines under hydrostatic pressure of 80 pounds per square inch and prove watertight. NOTE: Testing of pressure mainlines shall occur prior to installation of electrical control valves.
   3. Test all piping under paved areas under hydrostatic pressure of 80 pounds per square inch and proved watertight prior to paving.
   4. Sustain pressure in lines for not less than 2 hours. If leaks develop, replace joints and repeat test until entire system is proven watertight.
   5. Make all hydrostatic tests only in the presence of the Project Manager or other duly-authorized representative of the Project Manager. Do not backfill pipe until it has been duly inspected, tested, and approved.
   6. Furnish necessary force pump and all other test equipment.
   7. When the irrigation system is completed, perform a coverage test in the presence of the Project Manager, to determine if the water coverage for planting areas is complete and adequate. Furnish all materials and perform all work required to correct inadequacies of coverage due to deviations from Drawings, or after bringing this to the attention of the Project Manager. This test shall be accomplished before any groundcover is planted.
   8. Upon completion of each phase of work, test and adjust the entire system to meet site requirements.
C. MATERIAL LIST:

1. Equipment or materials installed or furnished which are not indicated on the Drawings or specified, may be rejected and the Contractor required to remove such materials from the site at the Contractor's expense.

801-2.13 MAINTENANCE

A. The entire irrigation system shall be under full automatic operation for a period of 7 days prior to any planting.

B. The Project Manager reserves the right to waive or shorten the operation period.

801-2.14 CLEANING

Clean up as each portion of work progresses. Remove refuse and excess dirt from the site, sweep all walks and paving clean, and repair damage sustained on the work of others to original conditions.

801-2.15 FINAL OBSERVATION PRIOR TO ACCEPTANCE

A. Operate each system in its entirety for the Project Manager at time of final observation. Any items deemed not acceptable by the Project Manager shall be reworked to the complete satisfaction of the Project Manager.

B. Show evidence that the Project Manager has received all accessories, Record Drawings, and equipment as required before final observation can occur.

801-2.16 OBSERVATION SCHEDULE

A. Notify the Project Manager in advance for the following observation meetings, according to the time indicated:

1. Pre-job conference: 7 days.
2. Pressure supply line installation and testing: 48 hours.
3. Lateral line and emitter installation: 48 hours.
4. Final inspection: 7 days.

B. When observations have been conducted by other than the Project Manager, show evidence in writing of when and by whom these observations were made.
C. No site observations will commence without Record Drawings. In the event that the Contractor calls for a site visit without Record Drawings, without completing previously noted corrections, or without preparing the system for said visit, he shall be responsible for reimbursing the Project Manager at his current billing rates per hour portal to portal (plus transportation costs) for inconvenience. No further site visits will be scheduled until this charge has been paid and received.

801-2.17 DEMONSTRATION

A. Provide the Project Manager's maintenance personnel with instructions for use of irrigation equipment and show evidence in writing to the Project Manager at the conclusion of the Project that this service has been rendered

^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
801-3 – TREE REMOVAL ON BIKEWAY

801-3.1 GENERAL

A. Section includes:
   1. Remove trees as shown on the bikeway plans.
   2. General specifications per Greenbook.
   3. As approved by the Engineer.
   4. As approved by the ISA Certified Arborist.

The following tree protection guidelines adhere to current International Society of Arboriculture (ISA) standards for tree preservation during construction activities:

1. Tree protection shall be established at the Tree Protection Zone (TPZ - canopy and/or root zone) or at the greatest distance possible from all trees.
2. The limits of the TPZ should be staked in the field prior to commencement of construction activities.
3. Any brush clearing or pruning required within the TPZ shall be accomplished with hand operated equipment.
4. All trimming, pruning or removal of trees shall be done by or monitored by an ISA Certified Arborist or Tree Worker and be in accordance with current ISA Standards.
5. No materials, equipment, spoil, waste or washout water shall be deposited, stored or parked within the TPZ.
6. Construction activities shall be completed using the smallest equipment possible and shall operate outside the TPZ.
7. If equipment placement within the TPZ is necessary for construction activities, ground protection shall be placed (2 inches of mulch, plywood) to prevent soil compaction.
8. Any roots over 1 inch in diameter exposed during construction activities shall be exposed to sound tissue and cut cleanly with a saw.
9. For any single native tree no more than 20% of live foliage shall be removed or greater than 20% of the ground under a tree be disturbed during the extent of construction activities for this project.

B. Greenbook Related Sections:

   Section 300 – Earthwork
   Section 300 -1.1 Clearing and Grubbing
   Section 301–Treated Soil, Subgrade Preparation and Placement of Base

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SECTION 900 – BIOFILTRATION TRENCHES

900-1 GENERAL

A. Section includes:
   1. Construction of Bio-Filtration Trenches

B. Greenbook Related Sections:
   N/A

C. References:
   2. Stormwater Technical Guide, Santa Barbara County

D. General Requirements
   1. Contractor shall be solely responsible for vehicular and pedestrian traffic control and safety and shall furnish, install, and maintain such fencing, signs, lights, trench plates, barricades, and/or other protection as is necessary for said control and safety.
   2. Contractor shall be responsible for coordinating work and interfacing improvements with work by other Contractors at this job site and with improvements required by plans by others.
   3. Contractor agrees that, in accordance with generally accepted construction practices, Contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of this project including safety of all persons and property, that this requirement shall be made to apply continuously and not be limited to normal working hours, and Contractor further agrees to defend, indemnify and hold design professionals harmless from all liability and claims, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professionals.
   4. Contractor agrees to assume sole and complete responsibility for protection of public and private property in the vicinity of the job site and further agrees to, at Contractor’s expense, repair or replace to original condition all existing improvements within or in the vicinity of the job site which are not designated for removal and which are damaged or removed as a result of Contractor’s operations.
   5. All unsuitable construction materials and rubbish and debris shall be removed from the job site, be transported to a suitable recycling location to the maximum extent economically feasible. All unusable, non-recyclable material shall be
removed from the job site, be transported and disposed of in a proper and legal manner.

6. Contractor shall make independent deductions and conclusions as to how existing surface and sub-surface conditions will affect or be affected by construction operations, including the nature of materials to be excavated, the degree of difficulty associated with making and maintaining the required excavations, and the degree of difficulty which may arise from subsurface conditions including groundwater, and shall accept full responsibility therefore.

900-2 SUBMITTALS

A. Submit in accordance with section – Submittal Requirements
   1. Product Data: Manufacturer’s literature describing products.
   2. Planting/Storage Media (Engineered Soil)
   3. Mulch for Bioretention/Biofiltration Facilities
   4. Gravel (Caltrans Class II)
   5. Geofabric Fabric

B. Provide signed material certificate certifying that each of the following materials complies with requirements:
   1. Caltrans Class II Gravel
   2. Planting/Storage Media Engineered Soil

C. Record Drawings:
   1. These drawings shall also serve as work progress sheets and shall be the basis for measurement and payment for work completed. Make neat and legible annotations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for inspection.
   2. Provide field verification and written certification by licensed surveyor (provided by the Contractor) that bio-filtration trenches conform to areas and depths indicated on the Drawings.
   3. Upon completion of the project, Contractor shall deliver this record of all construction changes to the Project Manager along with a letter which declares that other than these noted changes “the project was constructed in conformance with the approved plans and specifications”.
   4. Accurately record location of pipelines, conduits and structures which are abandoned in place, including depth below finish grade, for Record Documents.
   5. Accurately record changes in construction from that called for on the Drawings and Specifications, including unexpected physical conditions and unmarked or
inaccurately marked existing pipelines, conduits and structures, for Record Documents.2-3.3.

900-3 MEASUREMENT AND PAYMENT

A. The area and depth of the biofiltration trenches shall be as shown on the construction drawing and shall not be changed without Owner authorization. The final area shall be the bid quantity unless changes in lines, grades and/or elevations are made by the Project Manager during the course of construction. Construction of the biofiltration trenches shall include excavation to subgrade, installation of geofabric, hauling of excess materials from the site, placement of Class II gravel, placement of engineered soil, placement of mulch and the installation of 2-inch PVC monitoring wells for every 500 SF of biofiltration trench area. Payment for the construction of the biofiltration trenches will be made as a lump sum (LS) at the contract price under Bid Item 11.

B. Said payments for all the above items of work shall be considered full compensation for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the items. No payment will be made separately or directly for haul on any part of the work. All hauling will be considered a necessary and incidental part of the work, and its cost shall be considered by the Contractor and included in the contract unit price of the pay items of work involved.

900-4 MATERIALS

A. PRODUCT HANDLING:

1. Store materials in a dry and protected location. Protect from rusting, deformation, staining and moisture damage.

B. PLANTING/STORAGE MEDIA (ENGINEERED SOIL)

1. The planting media placed in the cell should achieve a long-term, in-place infiltration rate of at least 5 inches per hour. Higher infiltration rates of up to 12 inches per hour are permissible. Bioretention/biofiltration soil shall retain sufficient moisture to support vigorous plant growth.

2. Planting media should consist of 60 to 80% fine sand and 20 to 40% compost.

3. Sand should be free of wood, waste, coating such as clay, stone dust, carbonate, etc. or any other deleterious material. All aggregate passing the No. 200 sieve size should be non-plastic. Sand for bioretention should be analyzed by an accredited lab using #200, #100, #40, #30, #16, #8, #4, and 3/8 sieves (ASTM D 422 or as approved by the local permitting authority) and meet the
following gradation (Note: all sands complying with ASTM C33 for fine aggregate comply with the gradation requirements provided in Table H-1):

Table H-1. Sand Texture Specifications

<table>
<thead>
<tr>
<th>Sieve Size ASTM D422</th>
<th>Percent Passing by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>3/8 inch</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>90</td>
</tr>
<tr>
<td>No. 8</td>
<td>70</td>
</tr>
<tr>
<td>No. 16</td>
<td>40</td>
</tr>
<tr>
<td>No. 30</td>
<td>15</td>
</tr>
<tr>
<td>No. 40</td>
<td>5</td>
</tr>
<tr>
<td>No. 110</td>
<td>0</td>
</tr>
<tr>
<td>No. 200</td>
<td>0</td>
</tr>
</tbody>
</table>

**Note:** The gradation of the sand component of the media is believed to be a major factor in the hydraulic conductivity of the media mix. If the desired hydraulic conductivity of the media cannot be achieved within the specified proportions of sand and compost (#2), then it may be necessary to utilize sand at the coarser end of the range specified in above (“minimum” column).

4. Compost should be a well decomposed, stable, weed free organic matter source derived from waste materials including yard debris, wood wastes, or other organic materials not including manure or biosolids meeting standards developed by the US Composting Council (USCC). The product shall be certified through the USCC Seal of Testing Assurance (STA) Program (a compost testing and information disclosure program). Compost quality should be verified via a lab analysis to be:

a. Feedstock materials shall be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.

b. Organic matter: 35-75% dry weight basis.

c. Carbon and Nitrogen Ratio: 15:1 < C:N < 25:1

d. Maturity/Stability: shall have dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120 F) upon delivery or rewetting is not acceptable.

e. Toxicity: any one of the following measures is sufficient to indicate non-toxicity:
   i. NH4:NH3 < 3
   ii. Ammonium < 500 ppm, dry weight basis
   iii. Seed Germination > 80% of control
   iv. Plant trials > 80% of control
   v. Solvita® > 5 index value

f. Nutrient content:
   i. Total Nitrogen content 0.9% or above preferred
ii. Total Boron should be <80 ppm, soluble boron < 2.5 ppm

g. Salinity: < 6.0 mmhos/cm

h. pH between 6.5 and 8 (may vary with plant palette)

i. Compost for bioretention should be analyzed by an accredited lab using #200, ¼ inch, ½ inch, and 1 inch sieves (ASTM D 422) and meet the gradation described in Table H-2:

Table H-2. Compost Texture Specifications

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D422</td>
<td>Minimum</td>
</tr>
<tr>
<td>1 inch</td>
<td>99</td>
</tr>
<tr>
<td>½ inch</td>
<td>90</td>
</tr>
<tr>
<td>¼ inch</td>
<td>40</td>
</tr>
<tr>
<td>#200</td>
<td>2</td>
</tr>
</tbody>
</table>

Tests should be sufficiently recent to represent the actual material that is anticipated to be delivered to the site. If processes or sources used by the supplier have changed significantly since the most recent testing, new tests should be requested.

Note: the gradation of compost used in bioretention/biofiltration media is believed to play an important role in the saturated hydraulic conductivity of the media. To achieve a higher saturated hydraulic conductivity, it may be necessary to utilize compost at the coarser end of this range ("minimum" column). The percent passing the #200 sieve (fines) is believed to be the most important factor in hydraulic conductivity.

In addition, a coarser compost mix provides more heterogeneity of the bioretention media, which is believed to be advantageous for more rapid development of soil structure needed to support health biological processes. This may be an advantage for plant establishment with lower nutrient and water input.

5. Bioretention/Biofiltration soils not meeting the above criteria shall be evaluated on a case by case basis. Alternative bioretention soil shall meet the following specification:

"Soils for bioretention facilities shall be sufficiently permeable to infiltrate runoff at a minimum rate of 5 inches per hour during the life of the facility, and provide sufficient retention of moisture and nutrients to support healthy vegetation." The following steps shall be followed by the Permittees to verify that alternative soil mixes meet the specification:

a. Submittals – The applicant must submit to the Permittee for approval:

i. A sample of mixed bioretention/biofiltration soil.

   i. Certification from the soil supplier or an accredited laboratory that the bioretention/biofiltration soil meets the requirements of this specification.
ii. Certification from an accredited geotechnical testing laboratory that the bioretention/biofiltration soil has an infiltration rate of between 5 and 12 inches per hour.

iii. Organic content test results of mixed bioretention/biofiltration soil.

iv. Organic content test shall be performed in accordance with by Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, “Loss-On-Ignition Organic Matter Method”.

v. Organic grain size analysis results of mixed bioretention/biofiltration soil performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.

vi. A description of the equipment and methods used to mix the sand and compost to produce the bioretention/biofiltration soil.

b. The name of the testing laboratory(s) and the following information:
   i. Contact person(s)
   ii. Address(s)
   iii. Phone contact(s)
   iv. Email address(s)
   v. Qualifications of laboratory(s), and personnel including date of current
   vi. Certification by STA, ASTM, or approved equal.

c. Bioretention/biofiltration soils shall be analyzed by an accredited lab using #200, and 1/2” inch sieves (ASTM D 422 or as approved by municipality), and meet the gradation described in Table H-3).

Table H-3. Alternative Bioretention/Biofiltration Soil Texture Specifications

<table>
<thead>
<tr>
<th>Sieve Size ASTM D422</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ inch</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>200</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

d. Bioretention/biofiltration soils shall be analyzed by an accredited geotechnical lab for the following tests:
   i. Moisture – density relationships (compaction tests) shall be conducted on bioretention soil. Bioretention/biofiltration soil for the permeability test shall be compacted to 85 to 90 percent of the maximum dry density (ASTM D1557).
   ii. Constant head permeability testing in accordance with ASTM D2434 shall be conducted on a minimum of two samples with a 6-inch mold and vacuum saturation.

C. MULCH FOR BIORETENTION/BIOFILTRATION FACILITIES

Mulch is recommended for the purpose of retaining moisture, preventing erosion and minimizing weed growth. Projects subject to the State’s Model
Water Efficiency Landscaping Ordinance (or comparable local ordinance) will be required to provide at least two inches of mulch. Aged mulch, also called compost mulch, reduces the ability of weeds to establish, keeps soil moist, and replenishes soil nutrients. Aged mulch can be obtained through soil suppliers or directly from commercial recycling yards. It is recommended to apply 1” to 2” of composted mulch, once a year, preferably in June following weeding.

D. GRAVEL
1. The gravel under the planting media (engineered soil) shall be meet Caltrans Class II specifications.

E. GEOFABRIC
1. The geofabric in the biofiltration trenches shall be Mirafi 140N or approved equal.

900-5 EXECUTION

A. GENERAL REQUIREMENTS:
1. Perform grading operations as necessary to achieve subgrade elevations based on the Finish grades shown on the Drawings.
2. Construct biofiltration trenches in accordance with the drawings and Drawing Details.
3. Contractor shall refer to Civil and Landscape Architectural plans for layout dimensioning of hardscape, and other site dimensioning information.
4. Contractor shall refer to Civil Landscape Architectural plans and specifications for site development construction details.
5. Compaction of the subgrade, gravel, planting media and media shall be as shown on the construction drawings.

B. TESTING, INSPECTION AND OBSERVATION:
1. The contractor shall take photos of the installation off all Bio-filtration trenches and submit them to the Project Manager. The photos shall demonstrate the installation of each Biofiltration trench component including: excavation, installation of geofabric, placement of class II gravel, planting media and mulch.

C. WASTE MANAGEMENT:
1. Separate and recycle offcuts and waste materials in accordance with the Waste Management practices established onsite by the General Contractor and to the maximum extent economically feasible.
2. Place materials defined as hazardous or toxic waste in designated containers.
3. Return solvent and oil soaked rags for contaminant recovery and laundering or for proper disposal.

4. Use trigger operated spray nozzles for water hoses.

5. Set aside and protect the following surplus and uncontaminated waste materials: cementitious concrete, asphaltic concrete. General Contractor to deliver to or arrange collection for recycling of the same waste materials.

6. General Contractor to provide designated locations for the following materials:
   a. Recyclable trash (included but not limited to glass, plastics, cardboard, and paper products): all materials acceptable for recycling, sorted and separated from other trash, delivered to recycling center (or collected by recycling agency) as necessary to maintain site in an organized and clean condition.

7. All trades shall use the least toxic sealants, adhesives, sealers, and finishes necessary to comply with the requirements of this section.

D. SUBGRADE PREPARATION:

1. Scarifying and cultivating will be required for dry soils, which are impervious to the penetration of water, for soils which contain excessive amounts of moisture, which may result in unstable foundations, for soils which are non-uniform in character, which may result in non-uniform relative compactions and subsequent differential settlements of finished surfaces, or when pavement is to be placed directly on the subgrade material.

2. After rough grading has been completed and if scarifying and cultivating are required, the subgrade shall be loosened to a depth of at least 6 inches. The loosened material shall then be worked to a finely divided condition and all rocks larger than 3 inches in diameter shall be removed. The material shall then be compacted by approved equipment to the specified relative compaction.

3. Uniform pervious soils, that allow the immediate penetration of water or uniform impervious soils which allow the penetration of water to a depth of at least 6 inches after the addition of a suitable wetting agent, will not require scarifying and cultivating unless a condition previously set forth in this subsection requires such processing. When scarifying and cultivating are not required, the moisture content of the top 6 inches of the subgrade material shall be brought to optimum by the addition of water at the surface, and the material shall be compacted by approved equipment to the specified relative compaction.

E. CLEANING

1. Upon completion of the work under this Section, the Contractor shall remove all rubbish, waste, and debris resulting from his operations offsite or as directed by the City’s Authorized Representative. Remove all equipment and implements of service, and leave the entire work area in a neat and clean condition as accepted by the City’s Authorized Representative.
901 – LOW WATER CROSSING

901-1 GENERAL

A. includes:
   1. Construction of Low Water Crossing improvements as shown on the plans.
   2. 1’x6’ openings with concrete backfill
   3. ¼”x18” metal plate with approved non-slip surface
   4. 2” long anchor bolt welded to bottom of plate (2 feet on center – both sides)
   5. Galvanize after fabrication and assembly
   6. As approved by the Engineer

B. Greenbook Related Sections:
   Section 201 – Concrete Mortar and Related Materials
   Section 206 – Miscellaneous Metal Items
   Section 211 – Soils and Aggregate Tests
   Section 300 – Earthwork
   Section 301–Treated Soil, Subgrade Preparation and Placement of Base Material
   Section 303 – Concrete and Masonry Construction
SECTION 902 – PRE-FABRICATED TRELLIS

902.1 GENERAL

A. The work required under this Section shall include but is not limited to all labor, tools, materials, equipment, and incidentals required to furnish and install all Shelter System (trellis) at the project site as shown on the Drawings.

B. DESCRIPTION OF PRODUCT

1. Shelter Type: 20' X 60' Gable style shelter 2 Tier Clerstory with Standing Seam roof panels.
   a. Roof Slope: 4:12
   b. Clear height under Tie Beam (UTB): 8'-0". This is the clearance under the tie beam which spans between the columns.

C. GREENBOOK RELATED SECTIONS

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

2. Coordinate related work specified in others parts of the Project Manual, including but not limited to following:
   a. Section 201 – Concrete Mortar and Related Materials
   b. Section 206 – Miscellaneous Metal Items
   c. Section 300 – Earthwork
   d. Section 301 – Treated Soil, Subgrade Preparation and Placement of Base Material
   e. Section 800 – Landscape and Irrigation Materials

D. REFERENCED STANDARDS

1. AISC – American Institute of Steel Construction
   b. AISC 360-10 Specification for Structural Steel Buildings

2. ASTM – American Society for Testing and Materials
   d. ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2010a
   e. ASTM A653/A653M – Standard Specification for Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvanealed) by the Hot Dip Process; 2010
f. ASTM A792/A792M – Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process; 2010

g. ASTM F1554 – Standard Specification for Anchor Bolts, Steel, 36, 50 and 105 ksi Yield Strength; 2007a

3. AWS – American Welding Society
   a. D1.1
   b. D1.3
   c. D1.8

4. OSHA – Occupational Safety and Health Administration

5. SSPC – Steel Structures Painting Council
   a. SSPC-SP 2 – Hand Tool Cleaning; 2004
   b. SSPC-SP 10/NACE No. 2 – Near White Blast Cleaning; 2007

6. LEED – Leadership in Energy and Environmental Design

7. ISO – International Organization for Standardization

E. SYSTEM DESCRIPTION

1. The structure shall be a pre-engineered package and shall be shipped as a pre-cut (excluding standing seam roof panels) and pre-fabricated package that shall include the structural framing members, roof panels, fasteners and roof trim as well as job specific installation instructions. The structure will be shipped in an un-assembled package for ease of shipment and minimum shipping charges.

F. QUALITY ASSURANCE

1. MANUFACTURER QUALIFICATIONS
   a. The product shall be designed, engineered and fabricated at a facility operated and directly supervised by the manufacturer.
   b. The manufacturer shall have a minimum of 9 years in steel shelter fabrication.
   c. Full Time on Staff Quality Assurance Manager.
   d. All welders must be AWS certified for welding steel structures.
   e. Membership in the American Welding Society (AWS).
   f. Membership in the American Institute of Steel Construction (AISC).
   g. Full Time on Staff Licensed Engineer.
   h. Published Quality Control System manual.
   i. Quality Control System must pass an annual audit by a Third Part Agency.
   j. ISO 9001 certification for Powder Coating System.

G. MANUFACTURER WARRANTY

1. Shelter shall have a 10 year limited warranty on the steel framing members.

2. Shelter shall have a 10 year limited warranty on the powder-coated elements.
3. For all Metal Roofing there will be a pass through warranty direct from the metal Roofing supplier, warranty shall be provided on request.

902.2 SUBMITTALS

A. Submit a minimum of four (4) sets of submittal drawings and (2) sets of structural calculations signed and sealed by a Professional Engineer licensed in the state of California.

B. PRODUCT DESIGN REQUIREMENTS:
   1. The structure shall meet the following design requirements
      b. Ground Snow Load: 20 p.s.f.
      c. Live Load: 20 p.s.f.
      d. Wind Speed: 90 m.p.h.
      e. Seismic Design Category: D

C. SUBMITTAL REQUIREMENTS
   1. Calculations:
      a. Design according to the requirements of the national, state or local building codes as indicated in Section 1.04.B.
      b. Calculations shall include all member design for each different member type.
      c. Connection design for each different connection that will determine the design of the bolts, welds, plate thickness and anchorage to the foundation.
      d. Foundation design shall be for the loads applied and not a generic foundation design, taking into account all soils information.
   2. Submittal Drawings:
      a. Anchor bolt layout with all appropriate dimensions for installation.
      b. Site specific foundation design.
      c. Isometric as well as elevation and plan views of the farming members along with the member sizes and locations indicated on the drawings.
      d. Connection details for every connection on the frame.
      e. Roof panel connections and trim installation details.
      f. All accessories on the structure shall have an installation detail as well as connection details.

D. FOUNDATION DESIGN
   1. The foundation design shall be supplied by the manufacturer.
   2. Anchor bolts shall be supplied by the manufacturer.
   3. Foundation materials and labor shall be provided by the structure contractor.
4. Owner should provide site specific soils information for proper foundation design, if that data is not provided the foundation will be design for the minimum soil values allowed by code.

902.3 MEASUREMENT AND PAYMENT

A. Measurement for installation of Shelter System shall be based as shown on the Manufacture’s Drawings.

B. Payment for Shelter System will be made at the contract unit price per each shelter system under Bid Item No. 24 and shall include: furnishing, shipping costs, site preparation, foundations, installation, and clean up.

902.4 MATERIALS

A. MANUFACTURERS:

   a. Pricing for this specific project and specified shelter can be requested from:
      1) Coast Recreation, Inc.
         3151 Airwaqy Ave.
         Suite A-3
         Costa Mesa, CA 92626
         Ph: 714-619-0100
         Fx: 714-619-0106
   b. The product shall be designed and fabricated at a facility operated and directly supervised by the manufacturer.

B. SUBSTITUTION LIMITATIONS:

1. The City of Goleta or their consultant will be solely responsible for the decision to accept or reject the “or equal” submission.

2. Substitutions must be approved a minimum of ten (10) business days prior to bid. All approved manufacturers shall be notified on writing before the bid date and shall not be allowed to bid without written notification. Any approval of an alternate manufacturer shall be through and official bid addendum prior to the bid date.

3. Alternate suppliers shall meet the requirements, qualifications and provide proof of certifications listed under Section 1.05 QUALITY ASSURANCE.
4. Alternate suppliers shall provide documentation that the power-coat system being provided meets or exceeds the ICON supplied powder-coat system listed under Section 2.01(c)(8).

C. PRODUCT REQUIREMENTS AND MATERIALS:

1. General:
   a. The pre-engineered and pre-fabricated package of parts shall be pre-cut and packaged unless noted otherwise. These packages will include all parts and pieces necessary to field assemble the shelter at the jobsite. The shelter shall be shipped in knocked down format to minimize shipping expenses. Field labor will be kept to a minimum with no on-site welding required.

2. Concrete for foundations:
   a. Concrete shall have a minimum 28-day compressive strength of 2,500 psi unless noted otherwise on the foundation detail.
   b. Reinforcing steel shall be ASTM A615, Grade 60.

3. Columns:
   a. Hollow Structural Section (HSS) columns shall meet ASTM A500, Grade B with a minimum wall thickness of 3/16" (0.1875”).
   b. Unless the columns are direct buried in the foundation the columns shall attach to the foundation with a minimum of four (4) anchor rods and shall meet OSHA Steel Erection Standard 29 CFR 1926.755(a)(1).

4. Structural framing:
   a. All Hollow Structural Sections (HSS) shall meet ASTM A500, Grade B. “I” Beams, tapered columns or open channel sections shall not be accepted for primary members.

5. Compression rings:
   a. Compression rings shall be made of ASTM A36 structural plate or of structural channel welded together to form the ring. All connections not requiring compression rings shall use ASTM A500, Grade B HSS sections for these connections.

6. Connection requirements:
   a. Anchor rods shall be ASTM F1554, Grade 36 unless otherwise noted.
   b. Structural fasteners shall be ASTM A325 high strength bolts and A563 nuts.
   c. All structural fasteners shall be hidden within the framing members whenever possible.
   d. No field welding shall be required to finish the construction of the shelter.
   e. Manufacturer shall supply extra fasteners.

7. Roofing materials:
   a. Primary roof deck – medallion-lok standing seam roofing:
i. Roofing shall be a minimum of 24 gauge Galvalume steel sheet with ribs that are 1 3/4” tall and the panels are 16” wide. Ribs shall run with the slope of the roof for proper drainage.

ii. Roof outside surface shall be a baked on Kynar 500 paint finish and shall be supplied in one of the manufacturer’s standard colors: TBD Ceiling color to be a “wash coat” primer.

iii. All roof panel angles shall be cut in the field.

iv. Metal roofing trim shall match the color of the roof and shall be factory made from 26 gauge Kynar 500 painted Galvalume sheet steel.

v. Trim includes panel ridge caps, hip caps, eave “J” trim, splice channels, rake trim, roof peak cap and corner trim as applicable for the model selected. Trim may need to be field cut to length. Please refer to the installation drawings for additional information and detail.

vi. Ridge, hip and valley caps shall be pre-formed with a single central bend to match the roof slope and shall be hemmed on both edges.

vii. Roof peak caps shall be pre-fabricated with no field assembly required.

viii. Roofing is attached to sub-framing with clips.

8. Factory frame finish:
   a. All structural steel shall be cleaned, pre-treated and finished in the following manner:
      i. The steel shall be shot-blasted to the specification of SSPC-SP10 near white blast cleaning. SSPC-SP2 hand tool cleaning will not be an acceptable alternative.
      ii. The shot-blasted parts are then washed with zinc-phosphate in an eight (8) stage washer.
      iii. The steel is then immersed in a liquid epoxy and coated through an electro-deposition process (E-coat), this is coated both inside and out to a uniform cover of 0.7-0.9 mils. The E-coat totally encapsulates the part for superior corrosion protection.
      iv. The parts are then coated with a color coat of TGIC polyester powder and then one clear coat for a final finish thickness of 8 to 12 mils.

9. Factory prime paint
   a. All steel shall be cleaned to the specification of SSPC-SP2 (Hand Tool cleaning) or better. This removes all loose mill scale, loose rust and any other loose foreign matter. The clean steel will then be primed with a quick dry, lead and chromate free alkyd primer.

10. Accessories
    a. Electrical access
       i. Standard in all column bases is a 1 3/4” diameter hole, located in the center of the plate. This allows electrical wiring into the column base.
902.5 INSTALLATION OF MATERIALS

A. The shelter shall be placed on prepared foundations that were designed by the manufacturer (unless otherwise noted). Materials for these foundations are not supplied by the Manufacturer but by the foundation installation contractor. Foundation shall be constructed to all local building code requirements and per good construction practices for the specific site conditions.

1. In accordance with OSHA Steel Erection Standard 29 CFR 1926.750 Part R, anchor rods shall be installed for proper column stability and shall have a minimum of four (4) anchor bolts per column. Therefore no single anchor rod column base connections shall be allowed.

B. FIELD OR SITE CONDITIONS

1. Foundations shall be installed per the Manufacture’s installation drawings.
   a. All foundations shall be cast at the same elevation unless specifically noted on the Manufacture’s installation drawings.

2. Anchor bolts shall be placed in the foundation as per the Manufacture’s installation drawings utilizing the anchor bolt template supplied with the anchor bolts.
   a. Anchor bolts shall be installed per the dimensions and orientation shown on the drawings.

C. The contractor shall install all parts and pieces per the manufacturer’s supplied installation instructions and these specifications.

D. The interface with other work required is to be coordinated by the customer or the customer’s agent. Some design may have electrical or plumbing requirements that are not supplied by the Manufacturer.

E. Tolerances on structural steel members are set according to AISC Code of Standard Practice for Steel Buildings and Bridges and have been used for the fabrication of this product. These tolerances will not and cannot be increased. No field slotting or opening of holes will be allowed without proper guidance from the ICON Engineering Department.

902.6 INSPECTION AND ACCEPTANCE

A. Within 2 days after the installation of any ICON Shelter System item, the Public Works Inspector shall inspect this item. If, after inspection, the Project Manager is satisfied, the Contractor shall be notified in writing of acceptance.

B. If, after inspection, the Project Manager is dissatisfied with the installation to date and their conformance to the Drawings and Specifications, the Project Manager will prepare a written punch list of necessary corrective actions on
defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.
SECTION 903-1 – PRE-FABRICATED BATHROOM

903-1.1 GENERAL

A. The general contractor for this project is responsible for furnishing and installation of all pre-fabricated buildings as shown on the construction drawings. Work includes the site survey and staking the building location, finished slab survey elevations and marking on site, construction and compaction of the required building pad; access to the site for a large crane and tractor trailers delivering the prefabricated building; providing water, sewer, and power at a point of connection (POC) within 6 feet of the building and at the depth required by the building subcontractor and local code; and the installation of any sidewalks outside the building footprint.

B. The specified prefabricated public restroom building requires coordination between the general contractor (who prepares the site pad and delivery access for the prefabricated storage building) and the prefabricated restroom building supplier (who completes the architectural design, engineering, off-site building construction, delivery and installation on site.) The specified prefabricated restroom building specifications include unique components/systems which are custom to the restroom building supplier. Since the restroom supplier is responsible for design, additional insurance requirements for errors and omissions is required.

C. The general contractor is responsible for verification to the building subcontractor design/build firm that there are no unanticipated site delivery issues such as overhead wires, trees, tree roots, or existing grade changes and that prevent a clear path of travel between a roadway and the final site exists for a tractor trailer and crane to expedite delivery. The design/build supplier requires that the owner or their general contractor certify that the required delivery crane must be able to set the building module/modules within 35’ distance from the center of the building to the center of the crane hoist.

D. SYSTEM DESCRIPTION

1. The prefabricated restroom building specialist will provide to the City or their general contractor final building design architectural drawings and engineering calculations under the responsibility of a licensed structural engineer, in compliance with all local, state and federal codes. The design/build supplier shall construct the building offsite as a permanently relocatable building, transport it to the final required destination, and install the building turnkey, (to 6' from the building footprint) on an general contractor prepared pad per the drawings included in this bid.
E. GREENBOOK RELATED SECTIONS

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

2. Coordinate related work specified in others parts of the Project Manual, including but not limited to following:
   a. Section 201 – Concrete Mortar and Related Materials
   b. Section 206 – Miscellaneous Metal Items
   c. Section 300 – Earthwork
   d. Section 301 – Treated Soil, Subgrade Preparation and Placement of Base Material
   e. Section 800 – Landscape and Irrigation Materials

F. QUALITY ASSURANCE

1. Licensing:
   a. The supplier must comply with all the State of California; Department of Housing and Community Development, prefabricated “Commercial Modular Requirements” as follows:
      i. The building manufacturer must be licensed by the State of California, Department of Housing and Community Development as a manufacturer.
      ii. The selling dealer (if applicable) must be a California licensed dealer and present their license for verification with the bid.
   b. The licensed dealer must also possess a State of California Contractors License Board Class B License and present their license for verification with the bid.

2. Certificate of Off-site Inspection and Construction Compliance, Provision for Maintenance Manuals, and Warranty
   a. The off-site restroom construction requires that a licensed third party inspection firm provide the owner and the local building official with certification and compliance for the building with the approved plans and specifications. A certificate of compliance shall be issued by this inspector to the local building official to provide certification that the building meets and or exceeds the approve plans and applicable codes.
   b. At the project conclusion, the building supplier shall furnish two sets of complete maintenance manuals including a trouble shooting guide, location of manufacturers of key components for replacement parts together with final as-built plans, and a five (5) year warranty to the owner or general contractor.
903-1.2 SUBMITTALS

A. INSURANCE RESPONSIBILITY

1. The building design/build supplier remains legally responsible for architecture, engineering, and all applicable building, safety, health, fire, and accessibility code compliance. Since they hold professional design responsibility to the owner, the building supplier must furnish certification that they provide product liability insurance in the amounts required by the general specifications to cover property damage and personal injury. Final drawings shall be stamped by a California engineer and California Department of Housing and Community Development, suitable for local permitting.

2. The supplier may request invoicing for a percentage of building completion in-plant, monthly. Under UCC law, this means that the supplier is turning over responsibility for the portion invoiced to the general contractor yet the building will not be on the City’s property and may not be covered by the City insurance. Therefore, the building supplier must provide a separate insurance policy insuring the City and their general contractor as additionally insured for liability, damage and/or vandalism to the building while in the manufacturing facility, while in transit, and/or while in storage at a certified bonded storage facility or at the final project site for up to $200,000 for each prefabricated building module, until the building is final accepted by owner.

B. ERRORS AND OMISSIONS INSURANCE

1. The building design/build supplier must also provide proof of Professional Architectural and Engineering Errors and Omissions insurance, in the minimum amount of $2,000,000, to cover claims against the City or their general contractor for State and Federal ADA handicapped accessibility and other design/engineering code issues. This Errors and Omission Policy must remain in effect for 5 years from the completion and owner acceptance of the project. Products liability insurance (since it does not cover professional design responsibility only) will be insufficient for this bid and will be cause for rejection of the bidder.

C. SPECIFICATIONS

1. Specifications for the building foundation/pad shall be provided herein by the specified design/build supplier. Due to the responsibility of the specified building supplier for architecture, engineering and a five-year warranty, the site pad/foundation must meet the suppliers design so the pad and building can be considered from a single source for warranty purposes. The supplier must accept the pad and compactions tests before they take responsibility for the entire system under their warranty.
D.  REQUIRED INDEPENDENT TESTING LABORATORY CERTIFICATION

1. The prefabricated building slab special concrete technology claims to be water and urine resistant for life due to special additive technology. The building subcontractor must furnish a test certification of compliance from a national independent testing laboratory to support the claim for absorption resistance. The written report must state the concrete compressive strength (minimum of 7,000 PSI) and absorption resistance (not greater than 3%) per ASTM standard #C642 and #C39 respectively. Since this non-absorbency capability is so significant, the design/build subcontractor must provide a general certification of compliance with the above standards.

903-1.3  MEASUREMENT AND PAYMENT

A. Measurement for installation of Pre-fabricated buildings shall be based on the City approved building design/build supplier’s drawings.

B. Payment for Pre-fabricated buildings will be made at the contract unit price per each under Bid Item No. 23 and 25 and shall include: furnishing, site preparation, concrete footings, installation, and clean up.

903-1.4  MATERIALS

A. MANUFACTURERS:

1. Public Restroom Company, 2587 Business Parkway, Minden, Nevada, 89423 and specifies herein that this firm is the standard for architectural design, safety, green design, code compliance, and site specific compatibility. Public Restroom Company is the standard of building performance and quality for the 50-year building design-life with low maintenance based upon the longevity of the materials selected.

   Contact: Chris Gaughan, Project Development Manager
   Phone: 888-888-2060 extension 106
   Fax: 888-888-1448
   Email: ChrisG@PublicRestroomCompany.com
   Web: www.publicrestroomcompany.com

2. Or approved equal

B. SUBSTITUTION LIMITATIONS:

1. The city of Goleta may also allow other firms to become qualified to bid but any firms so authorized to bid must comply with the bid specifications and plans, or be subject to post bid rejection.

2. In order to provide full and open competition, other firms may request approval as “or equal.” The following items must be provided to the City in accordance
with substitution requirements outlined in the project specifications. Failure to supply these items will result in bid rejection.

a. Or Equal applicant shall provide with their bid submission, scaled floor plans and elevations, to show general architectural design criteria is met.

b. Or Equal applicant shall provide with their bid submission, a written list of each and every deviation from the published bid specifications/plans. Lack of specificity to each deviation from the bid specifications will be cause for rejection.

c. Or Equal applicant shall provide with their bid submission, manufacturer’s certification of test compliance from a national independent testing laboratory (within the past year) to support the claim for absorption resistance of the slab type that will be used in their proposed restroom. The written report must state the concrete compressive strength (minimum of 7,000 PSI) and absorption resistance (not greater than 3%) per ASTM standard #C39 and #C642, respectively.

d. Or Equal applicant must provide a list of every building they designed and built over the last 3 years utilizing the same building materials/systems design criteria as published in this bid. Provide date of building bid, date of completion, and most knowledgeable owner contact.

e. Or equal applicant shall provide certification of the special insurance required in this bid.

f. Or Equal applicant shall be responsible for and bear all cost for architecture, plan checks, design and structural engineering and all fees in obtaining approvals and permits from applicable agencies.

3. The City of Goleta or their consultant will be solely responsible for the decision to accept or reject the “or equal” submission.

C. PRODUCT REQUIREMENTS AND MATERIALS:

1. Mat Engineered Concrete Building Slab/Foundation

a. The mat engineered 8” thick slab/foundation shall be engineered and constructed to withstand the transportation weight of the building without cracking and to resist absorption from any liquids deposited on the surface. The concrete slab shall be constructed inside a steel angle curb, reinforced with dual mats (tension and compression,) and poured with a custom concrete formula with special admixtures to create a finished slab that is water proof for life.

b. Perimeter Steel Curb: 5/16” 50,000 kip steel 6” X 6” welded continuous angle.

c. Rebar Steel Mat: Two layers of 40,000 tensile steel rebar in varying sizes per engineers requirements, including a perimeter structural continuous grade beam design inside the exterior steel angle and at any other location deemed by the engineer of record as required for the use intended. In coastal locations or when required for corrosion resistance rebar shall be epoxy coated or fiberglass to resist permanent corrosion.
Rebar mats shall be wire tied to code with a minimum of three turns of the wire and overlaps shall be minimum of 15 diameters for any connection.

d. All slab openings shall be surrounded with two layers of steel collars as required by the engineer of record to stop corner cracking and to reinforce the openings for lifting.

e. 1” thick by 3” minimum length threaded nuts shall be welded to the steel perimeter frame with continuous ¼” fillet welds. Nuts shall be welded to common steel plates per the engineer of records design and attached to the interior steel rebar structural mats.

f. The engineer of record shall provide lifting locations with sufficient reinforcement to allow the safe lifting of the entire designed weight of the structure with dual 1” steel bolts and washers at each lifting location. The number of lifting locations with each location fitted with removable ¾” 8” X 8” 50,000 tensile strength steel angles shall be determined by the engineer of record.

g. The slab shall be poured over a 1” thick steel plate table. The concrete mix design shall not exceed a 3” slump and shall be stinger vibrated for maximum consolidation. All floors shall slope to any floor drains within each room and if no floor drain is present the floor should not slope. The surface shall be a very light broom that should meet a coefficient of friction on the surface of .06. Birdbaths shall be cause for rejection.

h. The steel perimeter angle will remain below the concrete surface by nominal two inches to prevent corrosion. After the site concrete sidewalks are poured, the joint shall be full flow sealed with self-leveling grey urethane caulk to prevent penetration of water into the joint.

i. The building shall be designed for future relocation and shall provide protection for the lifting openings in the mat slab so that the threaded openings will be available for future use if needed.

j. The building system shall be designed for placement on an owner or their general contractor site prepared class 2 building pad/and or footings as required by code, per the bid drawings, suitable for 1500 pounds soil bearing capacity minimum. Any soils survey (if necessary) shall be by owner or engineer of record.

2. Exterior & Interior Masonry Block Walls

a. The exterior walls shall be 4” thickness per State of California codes or engineering for wind and seismic. The interior walls shall be 4” block to ceiling height.

b. The 8” mat engineered concrete slab shall be cured a minimum of 7 days. Holes for vertical dowels shall be drilled into the mat engineered slab avoiding any grade beams or other structural reinforcement. Once the holes are drilled, blow out the remaining material and using two part structural epoxy, wet set the #3 or #4 vertical rebar (as specified on the engineering calculations into holes drilled to the depth per the engineer of record requirements. Each rebar shall be held vertical to allow equal epoxy support to each dowel during the drying period. Engineering
calculations require that rebar shall be installed in each concrete block center void or every block hole. The engineered uplift on each rebar shall be sufficient to restrain any load imposed on the masonry block wall for vertical rebar pull out from the concrete mat engineered slab.

c. The block walls shall be nominal 8” x 16” CMU. The building corners shall have special corner return block that matches the exterior finish and creates a uniform appearance. All 4” CMU shall be custom fabricated with an enlarged interior hole for placement of the grout and vertical rebar.

3. Roof System
a. The roof structure shall be 2” x 6” wood rafters at 24” on center with 5/8” OSB sheathing, and ice and water shield membrane with 26 gauge standing seam metal roof panels, color selected by owner. The rake and fascia shall be 14 gauge formed steel painted in a color selected by owner. The rake and fascia shall be 14 gauge formed steel painted in a color selected by Landscape Architect in coordination with the City.
b. Roof shall be designed per plans to reduce vandals climbing on roof and to obtain proper ventilation size openings for the gables to provide fan-free ventilation.
c. The restroom ventilation screens (described in a following section) shall be attached to the truss frames and non-removable by vandals. Roof color shall be determined by Landscape Architect in coordination with the City.

4. Interior Wall Finish
a. Interior precision CMU block masonry walls shall be smoothed to a pebble grain finish with 2-4 mil layers of 7-day curing block fillers and painted with two additional 4 mil layers of industrial high solids (white) industrial grade enamel.

5. Exterior Wall Finish, Masonry and Gable
a. The building exterior finishes shall be precision 8” x 16” CMU to wall height per the exterior elevations in the bid plans. The block color shall be integral, color selected by owner from manufacturer’s available colors.
i. Anti-Graffiti Coating: Exterior walls shall be coated with a site-installed anti-graffiti coating manufactured and applied by Vitrocem.

6. Gable Ventilation System
a. Shall be woven ¼” X 1” X 1”, 316T, stainless steel woven crimp-stop wire mesh set into grooved channels within the CMU block with a stainless steel channel at the connection to roof structure.

7. Doors and Gates
a. The restroom entry doors shall be 7’-0” high, custom fabricated, 14 gauge steel; reinforced with 14 gauge steel ribs welded at 6” intervals on each face, concealed; reinforced with a welded plate for door closer mounting; hung on a single continuous, 1 million cycle, aluminum gear hinge with stainless steel vandal resistant screws at nominal 4” on center. The doors shall weigh nominally 176 lbs each for a 36” X 84” door. Custom
fabricated 14 gauge steel door jambs with 4” steel heads shall be welded to the steel cap beam and be solid filled with 3000 psi masonry grout mix.

b. All entry doors shall have a 1/8” thick plate stainless steel “Z-shaped” anti-microbial pull handles with integral latch guard (latch guard on concession entry door and utility chase door only) and Schlage B-600 series commercial series dead bolts.

c. The door closer (restroom entry doors only) shall be “LCN” heavy duty #4210 Series, fastened to a structural reinforced door plate per door manufacturer design. Stainless steel vandal resistant fasteners shall be used on all hardware.

d. Stainless steel vandal resistant fasteners shall be used on all hardware.

8. Restroom Specialties

All specialty washroom equipment shall be commercial grade stainless steel fastened securely to walls with vandal resistant stainless steel screws to avoid removal by vandals as follows:

a. Toilet paper holder shall be a covered two-roll, 18 gauge stainless steel. Toilet paper holders shall be attached to block walls with 4 epoxy bedded vandal resistant stainless steel fasteners.

b. Stainless steel grab bars to code shall be 1 ¼” minimum exposed fastener vandal resistant design and installed at each accessible water closet.

c. Cast Aluminum ADA compliant signs shall be recessed into block surface flush with masonry exterior. Signs shall have raised pointed Braille tips and shall be blind secured with epoxy adhesive and stainless steel fasteners.

d. Baby Changing Stations shall be Koala KB-200 Horizontal baby changing stations.

e. Hand dryers shall be Dyson Airblade V, nickel finish, mounted adjacent to lavatories

9. Restroom Plumbing

a. Building shall be fully compliant with the following codes:

i. All applicable State of California Building Codes. Latest edition applicable.


b. GENERAL: All components and fabrications shall be designed to reduce life cycle maintenance, be compatible with current maintenance spare parts, and shall be listed in a spare parts/maintenance manual (two copies) delivered in utility chase of building.

c. WATER PIPING: Shall be type L copper above grade and type K with silver solder below grade. All water piping shall be designed and constructed with high and low point drain fittings. All piping shall be mounted on Uni-strut wall brackets with neoprene isolators, to code.

d. WATER PRESSURE GAUGE/VALVE COMBO: install three commercial grade industrial water pressure gauges, isolation ball valves, 10 micron water filter with clear canister and check valve.
e. Plumbing Faucets, Isolation Valves and Actuators: All fixtures except those with flush valves shall be isolated with ball valves for each fixture, concealed hydraulic button-type flush valves, and metered push-button type lavatory faucets.

f. DWV PIPING: DWV piping shall be concealed behind the wall. DWV piping shall be PVC DWV, solvent welded, for all concealed piping. A cast iron no hub DWV vent pipe with a cast iron roof mounted vandal cap vent shall be required, through the roof.

g. REMOVABLE PIPE TRAPS: All floor drain, sink drain, and waste traps shall be removable for maintenance. Floor drains shall be trapped behind the wall in the utility chase using a combination waste and vent system. Floor drains shall be increased two pipe sizes over standard to allow code use. All surface mounted utility chase piping shall be mounted on Uni-strut with plastic isolators to code. Sink drain traps shall be concealed behind the utility chase walls where maintenance staff can access all plumbing.

h. PLUMBING FIXTURES: Plumbing fixtures shall be 14 gauge 316 stainless steel manufactured by Acorn. Toilets shall be wall hung, rear discharge, with concealed push button flush valves. Toilet seats shall be black solid core plastic, non-flammable construction with continuous stainless steel concealed self-checking hinges. Lavatories shall have concealed remote traps behind the mechanical wall. Schedule of fixtures:
   i. Water Closets: Acorn Penal-Ware, 1675-W-1-HET-FVBO-ada-PFS
   ii. Water Closet Flush Valve: Zurn Z6143AV-HET-BG-7L
   iii. Urinal: Acorn Penal-Ware 1709 HEU-W-1-0.125-FVBO
   iv. Urinal Flush Valve: Zurn Z6195AV-ULF-7L-BG Lever Flush Valve
   v. Lavatories: Acorn Penal-ware 1652LRB-1-DM-03-M

i. FLOOR GRATES: Removable 350 lbs per square foot pultruded fiberglass non-skid floor grates shall be installed over every opening in the utility chase for OSHA protection/compliance.

j. HOSE BIB: There shall be one Woodford 24-PC hose bib provided in the utility chase.

k. HOSE REEL: One commercial grade hose reel with capacity for 75’ X 3/4” commercial heavy duty hose and nozzle shall be hung in mechanical room for cleaning of restrooms. One 75’ x 3/4” commercial hose shall be furnished.

10. Electrical (Restroom and Storage Building)
   a. GENERAL: Electrical system and components shall be commercial grade or better and piping conduits shall be installed on commercial Uni-strut wall hangers. Interior and exterior electrical lighting fixtures in public areas shall provide lifetime manufacturer’s warranty.

   b. PANEL/WIRING: One 100 amp main industrial grade Panel Board, Square "D" QO series, shall be mounted in the utility chase in the restroom building. All breakers shall be plug-on type, minimum 10,000 A.I.C. RMS (Sym) at 120/240 vac. Wiring shall be stranded copper wire #12 min in EMT piping with screw fittings.
c. PIPING: All piping shall be surface mounted to the masonry block walls with minimum of 2" fastener penetration. EMT conduit shall be compression type. Main panel shall maintain a 30" X 36" safety code required clear space, floor to 6' above finished floor.

d. EXTERIOR LIGHTING: Luminaire YWP610, LED, vandal resistant, high-impact polycarbonate lens fixtures shall be installed per plans.

e. INTERIOR LIGHTING: Luminaire SWP610, LED, vandal resistant high-impact polycarbonate lens fixtures shall be installed in the restrooms per plans (2 in each restroom). The utility chase shall have one (1), 4’ single-tube LED fixture, suitable for wet locations, with a single switch at door entry.

f. LIGHTING CONTROL: All exterior restroom lighting shall be controlled by a photo cell mounted 8’ high on the utility chase/restroom wall. Two (2) bypass switches shall be located in the utility chase (one for interior lighting and one for exterior lighting), so maintenance staff can check operation during daylight hours. A time clock mounted in the utility chase shall control all interior lighting.

g. ELECTRICAL OUTLETS: (1) commercial spec grade dedicated GFCI in the utility chase.

h. HAND DRYER (Restroom Only): Shall be Dyson Airblade V, nickel finish, mounted adjacent to lavatories.

i. WATER HEATER (Restroom Lavatories): Shall be a Stiebel DHC-E-8 tankless located in the utility chase.

11. Shipping Protection

The building, while traveling over roads to the destination may encounter inclement weather or road grime that could require substantial cleaning when it arrives on site. The building shall be shrink-wrapped before transportation and sufficiently strong to arrive at the owner site intact for exterior finish protection. Materials removed on site shall be disposed of and recycled by restroom building install staff.

12. Certifications

Building shall be certified in compliance with the plan approval by the State of California, Department of Housing and Community Development and shall be delivered with an applied insignia in compliance with all State regulations. The local building authority shall provide site inspections for the underground mechanical piping and final connections, footings, and access issues outside the restroom footprint. Restroom building subcontractor shall also furnish 5 year warranty, certifications for the concrete slab specification compliance, and maintenance manuals for the building and components.
903-1.5 INSTALLATION OF MATERIALS

A. Site Scope of Work by General Contractor

1. The general contractor shall prepare the restroom building sub grade pad to receive the prefabricated building in accordance with the bid drawings.
   a. The building pad shall be excavated to 14” deep from the final building concrete slab elevation in accordance with the drawing titled “foundation pad design.”
   b. The building pad shall meet compaction per the Geotechnical Engineering Report that has been prepared for this Project by Earth Systems Southern California dated October 27, 2013, and updated March 8, 2018, in lifts using class II base for the first four inches and coarse sand for the last two inches of the pad, leaving the finished sub grade pad elevation at finished floor, minus 8”.
   c. The general contractor shall provide water point of service at 30” below finished building slab; sewer at 24” below the finished building slab; and electrical at 36” below the finished building slab or other per bid plans.
   d. General contractor shall coordinate with restroom supplier to provide full site delivery access for a 70’ tractor-trailer and hydro crane to the final building site.
   e. If the final site access is over existing sidewalks, utilities, or landscaping, the owner or their general contractor shall be responsible for plating and or tree trimming, utility line removal, or other to protect any existing conditions.
   f. The hydro crane must be able to locate no greater than 35’ from the center point of the building to the center point of the crane.
   g. The utilities shall be furnished per bid site plans at specified points of connection (POC) nominally 6’ from the building line.
   h. General contractor shall furnish and install final grading, landscaping and sidewalks.

B. Connection to Utilities

1. The restroom subcontractor will furnish Electrical, Water, and Sewer at the proper POINT OF CONNECTION AND AT THE PROPER ELEVATION BELOW GRADE, for this project. Restroom subcontractor shall provide final hook up of the water from building to POC; sewer hookup to POC; and electrical sleeve from building panel to POC only. Final utility connections shall be by general contractor. General contractor shall flush the water lines thoroughly before making final water connection to the building.
903-1.6 INSPECTION AND ACCEPTANCE

A. Within 2 days after the installation of any Pre-fabricated building item, the Public Works Inspector shall inspect this item. If, after inspection, the Project Manager is satisfied, the Contractor shall be notified in writing of acceptance.

B. If, after inspection, the Project Manager is dissatisfied with the installation to date and their conformance to the Drawings and Specifications, the Project Manager will prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.
SECTION 903-2 – PRE-FABRICATED TRASH ENCLOSURE

903-2.1 GENERAL

A. The general contractor for this project is responsible for furnishing and installation of all pre-fabricated buildings as shown on the construction drawings. Work includes the site survey and staking the building location, finished slab survey elevations and marking on site, construction and compaction of the required building pad; access to the site for a large crane and tractor trailers delivering the prefabricated building; providing water, sewer, and power at a point of connection (POC) within 6 feet of the building and at the depth required by the building subcontractor and local code; and the installation of any sidewalks outside the building footprint.

B. The specified prefabricated public restroom building requires coordination between the general contractor (who prepares the site pad and delivery access for the prefabricated storage building) and the prefabricated restroom building supplier (who completes the architectural design, engineering, off-site building construction, delivery and installation on site.) The specified prefabricated restroom building specifications include unique components/systems which are custom to the restroom building supplier. Since the restroom supplier is responsible for design, additional insurance requirements for errors and omissions is required.

C. The general contractor is responsible for verification to the building subcontractor design/build firm that there are no unanticipated site delivery issues such as overhead wires, trees, tree roots, or existing grade changes and that prevent a clear path of travel between a roadway and the final site exists for a tractor trailer and crane to expedite delivery. The design/build supplier requires that the owner or their general contractor certify that the required delivery crane must be able to set the building module/modules within 35’ distance from the center of the building to the center of the crane hoist.

D. SYSTEM DESCRIPTION

1. The prefabricated restroom building specialist will provide to the City or their general contractor final building design architectural drawings and engineering calculations under the responsibility of a licensed structural engineer, in compliance with all local, state and federal codes. The design/build supplier shall construct the building offsite as a permanently relocatable building, transport it to the final required destination, and install the building turnkey, (to 6’ from the building footprint) on an general contractor prepared pad per the drawings included in this bid.
E. GREENBOOK RELATED SECTIONS

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

2. Coordinate related work specified in others parts of the Project Manual, including but not limited to following:
   a. Section 201 – Concrete Mortar and Related Materials
   b. Section 206 – Miscellaneous Metal Items
   c. Section 300 – Earthwork
   d. Section 301 – Treated Soil, Subgrade Preparation and Placement of Base Material
   e. Section 800 – Landscape and Irrigation Materials

F. QUALITY ASSURANCE

1. Licensing:
   a. The supplier must comply with all the State of California; Department of Housing and Community Development, prefabricated “Commercial Modular Requirements” as follows:
      i. The building manufacturer must be licensed by the State of California, Department of Housing and Community Development as a manufacturer.
      ii. The selling dealer (if applicable) must be a California licensed dealer and present their license for verification with the bid.
      iii. The licensed dealer must also possess a State of California Contractors License Board Class B License and present their license for verification with the bid.

2. Certificate of Off-site Inspection and Construction Compliance, Provision for Maintenance Manuals, and Warranty
   a. The off-site restroom construction requires that a licensed third party inspection firm provide the owner and the local building official with certification and compliance for the building with the approved plans and specifications. A certificate of compliance shall be issued by this inspector to the local building official to provide certification that the building meets and or exceeds the approve plans and applicable codes.
   b. At the project conclusion, the building supplier shall furnish two sets of complete maintenance manuals including a trouble shooting guide, location of manufacturers of key components for replacement parts together with final as-built plans, and a five (5) year warranty to the owner or general contractor.
903-2.2 SUBMITTALS

A. INSURANCE RESPONSIBILITY

1. The building design/build supplier remains legally responsible for architecture, engineering, and all applicable building, safety, health, fire, and accessibility code compliance. Since they hold professional design responsibility to the owner, the building supplier must furnish certification that they provide product liability insurance in the amounts required by the general specifications to cover property damage and personal injury. Final drawings shall be stamped by a California engineer and California Department of Housing and Community Development, suitable for local permitting.

2. The supplier may request invoicing for a percentage of building completion in-plant, monthly. Under UCC law, this means that the supplier is turning over responsibility for the portion invoiced to the general contractor yet the building will not be on the City’s property and may not be covered by the City insurance. Therefore, the building supplier must provide a separate insurance policy insuring the City and their general contractor as additionally insured for liability, damage and/or vandalism to the building while in the manufacturing facility, while in transit, and/or while in storage at a certified bonded storage facility or at the final project site for up to $200,000 for each prefabricated building module, until the building is final accepted by owner.

B. ERRORS AND OMISSIONS INSURANCE

1. The building design/build supplier must also provide proof of Professional Architectural and Engineering Errors and Omissions insurance, in the minimum amount of $2,000,000, to cover claims against the City or their general contractor for State and Federal ADA handicapped accessibility and other design/engineering code issues. This Errors and Omission Policy must remain in effect for 5 years from the completion and owner acceptance of the project. Products liability insurance (since it does not cover professional design responsibility only) will be insufficient for this bid and will be cause for rejection of the bidder.

C. SPECIFICATIONS

1. Specifications for the building foundation/pad shall be provided herein by the specified design/build supplier. Due to the responsibility of the specified building supplier for architecture, engineering and a five-year warranty, the site pad/foundation must meet the suppliers design so the pad and building can be considered from a single source for warranty purposes. The supplier must accept the pad and compactions tests before they take responsibility for the entire system under their warranty.
D. REQUIRED INDEPENDENT TESTING LABORATORY CERTIFICATION

1. The prefabricated building slab special concrete technology claims to be water and urine resistant for life due to special additive technology. The building subcontractor must furnish a test certification of compliance from a national independent testing laboratory to support the claim for absorption resistance. The written report must state the concrete compressive strength (minimum of 7,000 PSI) and absorption resistance (not greater than 3%) per ASTM standard #C642 and #C39 respectively. Since this non-absorbency capability is so significant, the design/build subcontractor must provide a general certification of compliance with the above standards.

903-2.3 MEASUREMENT AND PAYMENT

A. Measurement for installation of Pre-fabricated buildings shall be based on the City approved building design/build supplier’s drawings.

B. Payment for Pre-fabricated buildings will be made at the contract unit price per each under Bid Item No. 25 and shall include: furnishing, site preparation, concrete footings, installation, and clean up.

903-2.4 MATERIALS

A. MANUFACTURERS:

1. Public Restroom Company, 2587 Business Parkway, Minden, Nevada, 89423 and specifies herein that this firm is the standard for architectural design, safety, green design, code compliance, and site specific compatibility. Public Restroom Company is the standard of building performance and quality for the 50-year building design-life with low maintenance based upon the longevity of the materials selected.
   
   Contact: Chris Gaughan, Project Development Manager
   Phone: 888-888-2060 extension 106
   Fax: 888-888-1448
   Email: ChrisG@PublicRestroomCompany.com
   Web: www.publicrestroomcompany.com

2. Or approved equal

B. SUBSTITUTION LIMITATIONS:

1. The city of Goleta may also allow other firms to become qualified to bid but any firms so authorized to bid must comply with the bid specifications and plans, or be subject to post bid rejection.

2. In order to provide full and open competition, other firms may request approval as “or equal.” The following items must be provided to the City in accordance
with substitution requirements outlined in the project specifications. Failure to supply these items will result in bid rejection.

a. Or Equal applicant shall provide with their bid submission, scaled floor plans and elevations, to show general architectural design criteria is met.
b. Or Equal applicant shall provide with their bid submission, a written list of each and every deviation from the published bid specifications/plans. Lack of specificity to each deviation from the bid specifications will be cause for rejection.
c. Or Equal applicant shall provide with their bid submission, manufacturer’s certification of test compliance from a national independent testing laboratory (within the past year) to support the claim for absorption resistance of the slab type that will be used in their proposed restroom. The written report must state the concrete compressive strength (minimum of 7,000 PSI) and absorption resistance (not greater than 3%) per ASTM standard #C39 and #C642, respectively.
d. Or Equal applicant must provide a list of every building they designed and built over the last 3 years utilizing the same building materials/systems design criteria as published in this bid. Provide date of building bid, date of completion, and most knowledgeable owner contact.
e. Or equal applicant shall provide certification of the special insurance required in this bid.
f. Or Equal applicant shall be responsible for and bear all cost for architecture, plan checks, design and structural engineering and all fees in obtaining approvals and permits from applicable agencies.

3. The City of Goleta or their consultant will be solely responsible for the decision to accept or reject the “or equal” submission.

C. PRODUCT REQUIREMENTS AND MATERIALS:

1. Mat Engineered Concrete Building Slab/Foundation

a. The mat engineered 8” thick slab/foundation shall be engineered and constructed to withstand the transportation weight of the building without cracking and to resist absorption from any liquids deposited on the surface. The concrete slab shall be constructed inside a steel angle curb, reinforced with dual mats (tension and compression,) and poured with a custom concrete formula with special admixtures to create a finished slab that is water proof for life.
b. Perimeter Steel Curb: 5/16” 50,000 kip steel 6” X 6” welded continuous angle.
c. Rebar Steel Mat: Two layers of 40,000 tensile steel rebar in varying sizes per engineers requirements, including a perimeter structural continuous grade beam design inside the exterior steel angle and at any other location deemed by the engineer of record as required for the use intended. In coastal locations or when required for corrosion resistance rebar shall be epoxy coated or fiberglass to resist permanent corrosion.
Rebar mats shall be wire tied to code with a minimum of three turns of the wire and overlaps shall be minimum of 15 diameters for any connection.

d. All slab openings shall be surrounded with two layers of steel collars as required by the engineer of record to stop corner cracking and to reinforce the openings for lifting.

e. 1” thick by 3” minimum length threaded nuts shall be welded to the steel perimeter frame with continuous ¼” fillet welds. Nuts shall be welded to common steel plates per the engineer of records design and attached to the interior steel rebar structural mats.

f. The engineer of record shall provide lifting locations with sufficient reinforcement to allow the safe lifting of the entire designed weight of the structure with dual 1” steel bolts and washers at each lifting location. The number of lifting locations with each location fitted with removable ¾” 8” X 8” 50,000 tensile strength steel angles shall be determined by the engineer of record.

g. The slab shall be poured over a 1” thick steel plate table. The concrete mix design shall not exceed a 3” slump and shall be stinger vibrated for maximum consolidation. All floors shall slope to any floor drains within each room and if no floor drain is present the floor should not slope. The surface shall be a very light broom that should meet a coefficient of friction on the surface of .06. Birdbaths shall be cause for rejection.

h. The steel perimeter angle will remain below the concrete surface by nominal two inches to prevent corrosion. After the site concrete sidewalks are poured, the joint shall be full flow sealed with self-leveling grey urethane caulk to prevent penetration of water into the joint.

i. The building shall be designed for future relocation and shall provide protection for the lifting openings in the mat slab so that the threaded openings will be available for future use if needed.

j. The building system shall be designed for placement on an owner or their general contractor site prepared class 2 building pad/and or footings as required by code, per the bid drawings, suitable for 1500 pounds soil bearing capacity minimum. Any soils survey (if necessary) shall be by owner or engineer of record.

2. Exterior & Interior Masonry Block Walls

a. The exterior walls shall be 4” thickness per State of California codes or engineering for wind and seismic. The interior walls shall be 4” block to ceiling height.

b. The 8” mat engineered concrete slab shall be cured a minimum of 7 days. Holes for vertical dowels shall be drilled into the mat engineered slab avoiding any grade beams or other structural reinforcement. Once the holes are drilled, blow out the remaining material and using two part structural epoxy, wet set the #3 or #4 vertical rebar (as specified on the engineering calculations into holes drilled to the depth per the engineer of record requirements. Each rebar shall be held vertical to allow equal epoxy support to each dowel during the drying period. Engineering
calculations require that rebar shall be installed in each concrete block center void or every block hole. The engineered uplift on each rebar shall be sufficient to restrain any load imposed on the masonry block wall for vertical rebar pull out from the concrete mat engineered slab.

c. The block walls shall be nominal 8" x 16" CMU. The building corners shall have special corner return block that matches the exterior finish and creates a uniform appearance. All 4" CMU shall be custom fabricated with an enlarged interior hole for placement of the grout and vertical rebar.

3. Roof System
   a. The roof structure shall be 2" x 6" wood rafters at 24" on center with 5/8" OSB sheathing, and ice and water shield membrane with 26 gauge standing seam metal roof panels, color selected by owner. The rake and fascia shall be 14 gauge formed steel painted in a color selected by owner. The rake and fascia shall be 14 gauge formed steel painted in a color selected by Landscape Architect in coordination with the City.
   b. Roof shall be designed per plans to reduce vandals climbing on roof and to obtain proper ventilation size openings for the gables to provide fan-free ventilation.
   c. The restroom ventilation screens (described in a following section) shall be attached to the truss frames and non-removable by vandals. Roof color shall be determined by Landscape Architect in coordination with the City.

4. Interior Wall Finish
   a. Interior precision CMU block masonry walls shall be smoothed to a pebble grain finish with 2-4 mil layers of 7-day curing block fillers and painted with two additional 4 mil layers of industrial high solids (white) industrial grade enamel.

5. Exterior Wall Finish, Masonry and Gable
   a. The building exterior finishes shall be precision 8" x 16" CMU to wall height per the exterior elevations in the bid plans. The block color shall be integral, color selected by owner from manufacturer’s available colors.
      i. Anti-Graffiti Coating: Exterior walls shall be coated with a site-installed anti-graffiti coating manufactured and applied by Vitrocem.

6. Gable Ventilation System
   a. Shall be woven ¼" X 1” X 1”, 316T, stainless steel woven crimp-stop wire mesh set into grooved channels within the CMU block with a stainless steel channel at the connection to roof structure.

7. Doors and Gates
   a. The restroom entry doors shall be 7’-0” high, custom fabricated, 14 gauge steel; reinforced with 14 gauge steel ribs welded at 6” intervals on each face, concealed; reinforced with a welded plate for door closer mounting; hung on a single continuous, 1 million cycle, aluminum gear hinge with stainless steel vandal resistant screws at nominal 4” on center. The doors shall weigh nominally 176 lbs each for a 36” X 84” door. Custom
fabricated 14 gauge steel door jambs with 4” steel heads shall be welded to the steel cap beam and be solid filled with 3000 psi masonry grout mix.

b. All entry doors shall have a 1/8” thick plate stainless steel “Z-shaped” anti-microbial pull handles with integral latch guard (latch guard on concession entry door and utility chase door only) and Schlage B-600 series commercial series dead bolts.

c. The door closer (restroom entry doors only) shall be “LCN” heavy duty #4210 Series, fastened to a structural reinforced door plate per door manufacturer design. Stainless steel vandal resistant fasteners shall be used on all hardware.

d. Stainless steel vandal resistant fasteners shall be used on all hardware.

8. Restroom Specialties

All specialty washroom equipment shall be commercial grade stainless steel fastened securely to walls with vandal resistant stainless steel screws to avoid removal by vandals as follows:

a. Toilet paper holder shall be a covered two-roll, 18 gauge stainless steel. Toilet paper holders shall be attached to block walls with 4 epoxy bedded vandal resistant stainless steel fasteners.

b. Stainless steel grab bars to code shall be 1 ¼” minimum exposed fastener vandal resistant design and installed at each accessible water closet.

c. Cast Aluminum ADA compliant signs shall be recessed into block surface flush with masonry exterior. Signs shall have raised pointed Braille tips and shall be blind secured with epoxy adhesive and stainless steel fasteners.

d. Baby Changing Stations shall be Koala KB-200 Horizontal baby changing stations.

e. Hand dryers shall be Dyson Airblade V, nickel finish, mounted adjacent to lavatories

9. Restroom Plumbing

a. Building shall be fully compliant with the following codes:
   i. All applicable State of California Building Codes. Latest edition applicable.

b. GENERAL: All components and fabrications shall be designed to reduce life cycle maintenance, be compatible with current maintenance spare parts, and shall be listed in a spare parts/maintenance manual (two copies) delivered in utility chase of building.

c. WATER PIPING: Shall be type L copper above grade and type K with silver solder below grade. All water piping shall be designed and constructed with high and low point drain fittings. All piping shall be mounted on Uni-strut wall brackets with neoprene isolators, to code.

d. WATER PRESSURE GAUGE/VALVE COMBO: install three commercial grade industrial water pressure gauges, isolation ball valves, 10 micron water filter with clear canister and check valve.
e. Plumbing Faucets, Isolation Valves and Actuators: All fixtures except those with flush valves shall be isolated with ball valves for each fixture, concealed hydraulic button-type flush valves, and metered push-button type lavatory faucets.

f. DWV PIPING: DWV piping shall be concealed behind the wall. DWV piping shall be PVC DWV, solvent welded, for all concealed piping. A cast iron no hub DWV vent pipe with a cast iron roof mounted vandal cap vent shall be required, through the roof.

g. REMOVABLE PIPE TRAPS: All floor drain, sink drain, and waste traps shall be removable for maintenance. Floor drains shall be trapped behind the wall in the utility chase using a combination waste and vent system. Floor drains shall be increased two pipe sizes over standard to allow code use. All surface mounted utility chase piping shall be mounted on Uni-strut with plastic isolators to code. Sink drain traps shall be concealed behind the utility chase walls where maintenance staff can access all plumbing.

h. PLUMBING FIXTURES: Plumbing fixtures shall be 14 gauge 316 stainless steel manufactured by Acorn. Toilets shall be wall hung, rear discharge, with concealed push button flush valves. Toilet seats shall be black solid core plastic, non-flammable construction with continuous stainless steel concealed self-checking hinges. Lavatories shall have concealed remote traps behind the mechanical wall. Schedule of fixtures:
   i. Water Closets: Acorn Penal-Ware, 1675-W-1-HET-FVBO-ada-PFS
   ii. Water Closet Flush Valve: Zurn Z6143AV-HET-BG-7L
   iii. Urinal: Acorn Penal-Ware 1709 HEU-W-1-0.125-FVBO
   iv. Urinal Flush Valve: Zurn Z6195AV-ULF-7L-BG Lever Flush Valve
   v. Lavatories: Acorn Penal-ware 1652LRB-1-DMS-03-M

i. FLOOR GRATES: Removable 350 lbs per square foot pultruded fiberglass non-skid floor grates shall be installed over every opening in the utility chase for OSHA protection/compliance.

j. HOSE BIB: There shall be one Woodford 24-PC hose bib provided in the utility chase.

k. HOSE REEL: One commercial grade hose reel with capacity for 75' X 3/4" commercial heavy duty hose and nozzle shall be hung in mechanical room for cleaning of restrooms. One 75' x 3/4" commercial hose shall be furnished.

10. Electrical (Restroom and Storage Building)
   a. GENERAL: Electrical system and components shall be commercial grade or better and piping conduits shall be installed on commercial Uni-strut wall hangers. Interior and exterior electrical lighting fixtures in public areas shall provide lifetime manufacturer's warranty.

   b. PANEL/WIRING: One 100 amp main industrial grade Panel Board, Square "D" QO series, shall be mounted in the utility chase in the restroom building. All breakers shall be plug-on type, minimum 10,000 A.I.C. RMS (Sym) at 120/240 vac. Wiring shall be stranded copper wire #12 min in EMT piping with screw fittings.
c. PIPING: All piping shall be surface mounted to the masonry block walls with minimum of 2" fastener penetration. EMT conduit shall be compression type. Main panel shall maintain a 30" X 36" safety code required clear space, floor to 6' above finished floor.

d. EXTERIOR LIGHTING: Luminaire YWP610, LED, vandal resistant, high-impact polycarbonate lens fixtures shall be installed per plans.

e. INTERIOR LIGHTING: Luminaire SWP610, LED, vandal resistant high-impact polycarbonate lens fixtures shall be installed in the restrooms per plans (2 in each restroom). The utility chase shall have one (1), 4' single-tube LED fixture, suitable for wet locations, with a single switch at door entry.

f. LIGHTING CONTROL: All exterior restroom lighting shall be controlled by a photo cell mounted 8' high on the utility chase/restroom wall. Two (2) bypass switches shall be located in the utility chase (one for interior lighting and one for exterior lighting), so maintenance staff can check operation during daylight hours. A time clock mounted in the utility chase shall control all interior lighting.

g. ELECTRICAL OUTLETS: (1) commercial spec grade dedicated GFCI in the utility chase.

h. HAND DRYER (Restroom Only): Shall be Dyson Airblade V, nickel finish, mounted adjacent to lavatories.

i. WATER HEATER (Restroom Lavatories): Shall be a Stiebel DHC-E-8 tankless located in the utility chase.

11. Shipping Protection

The building, while traveling over roads to the destination may encounter inclement weather or road grime that could require substantial cleaning when it arrives on site. The building shall be shrink-wrapped before transportation and sufficiently strong to arrive at the owner site intact for exterior finish protection. Materials removed on site shall be disposed of and recycled by restroom building install staff.

12. Certifications

Building shall be certified in compliance with the plan approval by the State of California, Department of Housing and Community Development and shall be delivered with an applied insignia in compliance with all State regulations. The local building authority shall provide site inspections for the underground mechanical piping and final connections, footings, and access issues outside the restroom footprint. Restroom building subcontractor shall also furnish 5 year warranty, certifications for the concrete slab specification compliance, and maintenance manuals for the building and components.
903-2.5 INSTALLATION OF MATERIALS

A. Site Scope of Work by General Contractor

1. The general contractor shall prepare the restroom building sub grade pad to receive the prefabricated building in accordance with the bid drawings.
   a. The building pad shall be excavated to 14" deep from the final building concrete slab elevation in accordance with the drawing titled “foundation pad design.”
   b. The building pad shall meet compaction per the Geotechnical Engineering Report that has been prepared for this Project by Earth Systems Southern California dated October 27, 2013, and updated March 8, 2018, in lifts using class II base for the first four inches and coarse sand for the last two inches of the pad, leaving the finished sub grade pad elevation at finished floor, minus 8”.
   c. The general contractor shall provide water point of service at 30” below finished building slab; sewer at 24” below the finished building slab; and electrical at 36” below the finished building slab or other per bid plans.
   d. General contractor shall coordinate with restroom supplier to provide full site delivery access for a 70’ tractor-trailer and hydro crane to the final building site.
   e. If the final site access is over existing sidewalks, utilities, or landscaping, the owner or their general contractor shall be responsible for plating and or tree trimming, utility line removal, or other to protect any existing conditions.
   f. The hydro crane must be able to locate no greater than 35’ from the center point of the building to the center point of the crane.
   g. The utilities shall be furnished per bid site plans at specified points of connection (POC) nominally 6’ from the building line.
   h. General contractor shall furnish and install final grading, landscaping and sidewalks.

B. Connection to Utilities

1. The restroom subcontractor will furnish Electrical, Water, and Sewer at the proper POINT OF CONNECTION AND AT THE PROPER ELEVATION BELOW GRADE, for this project. Restroom subcontractor shall provide final hook up of the water from building to POC; sewer hookup to POC; and electrical sleeve from building panel to POC only. Final utility connections shall be by general contractor. General contractor shall flush the water lines thoroughly before making final water connection to the building.
903-2.6 INSPECTION AND ACCEPTANCE

A. Within 2 days after the installation of any Pre-fabricated building item, the Public Works Inspector shall inspect this item. If, after inspection, the Project Manager is satisfied, the Contractor shall be notified in writing of acceptance.

B. If, after inspection, the Project Manager is dissatisfied with the installation to date and their conformance to the Drawings and Specifications, the Project Manager will prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SECTION 904 – SITE FURNISHINGS

904-1 GENERAL

A. The work required under this Section shall include but is not limited to all labor, tools, materials, equipment, and incidentals required to furnish and install trash receptacles, recycled plastic picnic table, recycled plastic backless bench, bike parking, basketball hoops, chess/checkers tables, ping pong tables, fitness stations, single-pedestal and double-posted barbecues, hot ash receptacles, playground equipment, piñata poles, Bankshot stations, bocce court, tennis court, pickleball court and handball court at the project site as shown on the Drawings, contained in these Specifications, and directed by the Project Manager.

B. GREENBOOK RELATED SECTIONS

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

2. Coordinate related work specified in others parts of the Project Manual, including but not limited to following:
   a. Section 201 – Concrete Mortar and Related Materials
   b. Section 206 – Miscellaneous Metal Items
   c. Section 300 – Earthwork
   d. Section 301 – Treated Soil, Subgrade Preparation and Placement of Base Material

904-2 SUBMITTALS

A. Contractor shall submit catalogue cut sheets, manufacturer installation details and specifications for approval by Project Manager.

904-3 MATERIALS

A. Prefabricated trash receptacle – Eight (8) receptacles, Model Urban Renaissance Receptacle SLURB-36RB; Stainless steel & aluminum litter receptacle with standard powdercoat finish; color evergreen, in-ground installation units from Form + Surfaces (800) 451-0410 or equal approved by the City’s Project Manager.

B. Prefabricated recycled plastic picnic table – Eighteen (18) tables, Model 113139A-L 84” inches, Configuration 4, powder coated frame, color brown, manufacture by Landscape Structures (818) 735-3838 or equal approved by the City’s Project Manager.
C. Prefabricated recycled plastic backless park bench– Four (4) benches, Model Contour Poly #111640 backless 60” inches, direct burial, powder coated frame, color brown, manufacture by Landscape Structures (818) 735-3838 or equal approved by the City’s Project Manager.

D. Prefabricated bike parking – Ten (10) racks, Model Nature Bike Rack 38054 Standard, standard finish, color evergreen powdercoat, manufacture by David Williams & Associates (435) 245-5055 or equal approved by the City’s Project Manager.

E. Prefabricated basketball hoop assembly – Two (2) hoop assemblies, Model 12C54 Pole w/ Model -01 Backboard w/ Model SD-4D Roughneck Gorilla Rim, finish w/ anti-graffiti coating, manufacture by LA Steelcraft (626)798-7401 or equal approved by the City’s Project Manager.

F. Prefabricated concrete chess/checker table – Two (2) chess/checkers tables, Model 108S-CGB Square Coffee Table – 4 Seat W/ Game Board, finish smooth W/ acrylic sealer and nano non-sacrificial anti-graffiti coating, manufacture by Outdoor Creations (530) 365-6106 or equal approved by the City’s Project Manager.

G. Prefabricated concrete ping pong table – Two (2) ping pong tables, Model Tennis Table W/ Stainless Steel Net W/ custom pattern, finish smooth W/ acrylic sealer and nano non-sacrificial anti-graffiti coating, manufacture by Outdoor Creations (530) 365-6106 or equal approved by the City’s Project Manager.

H. Prefabricated fitness stations – Four (4) Healthbeat Outdoor Fitness Stations, Model (1) Healthbeat Ab Crunch/Leg Lift, (1) Healthbeat Cardio Stepper, (1)Healthbeat Elliptical, (1) Healthbeat Pull-Up/Dip, standard finish, manufacture by Landscape Structures (888) 752-9574 or equal approved by the City’s Project Manager.

I. Prefabricated single-pedestal barbecue – Two (2) barbecues, Model 616-3 Rotating Flip-Back Grill, color standard black, manufacture by UltraSite (951) 741-3337 or equal approved by the City’s Project Manager.

J. Prefabricated double-posted barbecue – Four (4) barbecues, Model 650 Dual Grate Grill W/ standard coating, manufacture by UltraSite (951) 741-3337 or equal approved by the City’s Project Manager.

K. Prefabricated concrete hot ash receptacle – Six (6) receptacles, Model 300CR, standard smooth finish W/ acrylic sealer and nano non-sacrificial anti-graffiti coating, manufacture by Outdoor Creations (530) 365-6106 or equal approved by the City’s Project Manager.
L. Custom nature-based playground – One (1) playground, custom design, W/ manufacture by Landscape Structures (888) 752-9574 or equal approved by the City’s Project Manager. Components:

1. (1) global motion, DB only
2. (2) log benches
3. (1) full bucket seat toddler swing w/ proguard chain
4. (1) molded seat harness w/ proguard chains 8' beam height
5. (2) belt seat w/ proguard chains 8' beam height
6. (1) single post swing add’l bay w/ flower topper
7. (1) single post swing w/ 2 flower toppers
8. (1) climbing structure:
   a. (1) right transfer module pb 2-5 yrs
   b. (1) transfer point
   c. (1) wood plank wiggle ladder
   d. (2) dtr pb flower post topper
   e. (1) riansound wheel panel
   f. (1) store front panel
   g. (1) tic-tac-toe panel
   h. (1) 30" DIA tunnel, 32" W/ no view
   i. (1) log balance beam
   j. (4) log stepper w/ handloop and handrail, db only
   k. (2) play structure seat
   l. (2) recycled wood-grain lumber panel
   m. (1) table panel
   n. (1) tree house recycled roof w/ stack & w/ sign
   o. (1) welcome sign (Lsi provided) 2-5 years
   p. (1) double slide
9. (1) talktube, DB
10. (1) welcome sign (Lsi provided) 5-12 yrs
11. (1) play structure:
   a. (1) right transfer module
   b. (2) cooltopper single post, db only
   c. (1) transfer point
   d. (1)color splash panel
   e. (1) wood plank wiggle ladder
   f. (1) log stack climber w/ wood-grain handholds
   g. (1) slidewinder 2
   h. (1) skyways integrated shade: single-post pyramid
   i. (1) traveler climber w/ 2 hanger brackets
   j. (1) 72" spyroslide
k. (1) discovery tree climb w/o roof, db only
l. (1) corkscrew w/ recycled wood-grain handholds
m. (1) skyways integrated shade: single-post pyramid
n. (1) marble panel
o. (1) hole panel
p. (1) talk tube 40’ tubing kit

12. (1) seesaw 4-seats
13. (4) 8” rise kickplate

M. Prefabricated Bankshot station – Six (6) stations, one each of the following backboard models: (1) Triple Bank Down, (1) Chute Shot, (1) Roll Back + Below, (1) Large Ricochet, (1) Double Glance Shot, (1) Black Hole; manufacture by Bankshot (301) 309-0260 or equal approved by the City’s Project Manager.

N. Bocce ball court – One (1) court, custom design INCL. 4” DG paving, 6” aggregate base, and 6” concrete curb. Or approved equal., custom design INCL. CMU wall, concrete footing, striping. 904.4 MEASUREMENT

O. Tennis court – One (1) court, prefabricated removable posts, netting, concrete footings, and anti-graffiti coating.

P. Pickleball court – One (1) court, prefabricated removable posts, netting, concrete footings, and anti-graffiti coating.

904-4 MEASUREMENT

A. Measurement for installation all site amenities shall be shown on the Drawings. Unless changes are made by the Project Manager during the course of construction.

904-5 PAYMENT

A. Payment for furnishing and installation of prefabricated trash receptacle shall be on a unit basis under Bid Item 27 and shall be full compensation for materials, installation, and clean up.

B. Payment for furnishing and installation of prefabricated recycled plastic picnic table shall be on a unit basis under Bid Item 28 and shall be full compensation for materials, installation, and clean up.

C. Payment for furnishing and installation of prefabricated recycled park bench shall be on a unit basis under Bid Item 29 and shall be full compensation for materials, installation, and clean up.
D. Payment for furnishing and installation of prefabricated bike rack shall be on a unit basis under Bid Item No. 30 and shall be full compensation for materials, installation, and clean up.

E. Payment for furnishing and installation of prefabricated double-posted barbecue shall be on a unit basis under Bid Item 31 and shall be full compensation for materials, installation, and clean up.

F. Payment for furnishing and installation of prefabricated single-pedestal barbecue shall be on a unit basis under Bid Item 32 and shall be full compensation for materials, installation, and clean up.

G. Payment for furnishing and installation of prefabricated hot ash receptacle shall be on a unit basis under Bid Item 33 and shall be full compensation for materials, installation, and clean up.

H. Payment for furnishing and installation of custom nature-based playground shall be on a lump sum basis under Bid Item 34 and shall be full compensation for materials, installation, and clean up.

I. Payment for furnishing and installation of handball court shall be on a lump sum basis under Bid Item 35 and shall be full compensation for materials, installation, and clean up.

J. Payment for installation of bocce ball court shall be on a lump sum basis under Bid Item 36 and shall be full compensation for materials, installation, and clean up.

K. Payment for furnishing and installation of prefabricated basketball hoop assembly shall be on a unit basis under Bid Item 37 and shall be full compensation for materials, installation, and clean up.

L. Payment for furnishing and installation of prefabricated tennis court equipment shall be on a lump sum basis under Bid Item 37A and shall be full compensation for materials, installation, and cleanup.

M. Payment for furnishing and installation of prefabricated pickleball court equipment shall be on a lump sum basis under Bid Item 37B and shall be full compensation for materials, installation, and cleanup.

N. Payment for furnishing and installation of prefabricated fitness stations shall be on a lump sum basis under Bid Item 38 and shall be full compensation for materials, installation, and clean up.

O. Payment for furnishing and installation of prefabricated concrete ping pong table shall be on a unit basis under Bid Item 39 and shall be full compensation for materials, installation, and clean up.
P. Payment for furnishing and installation of prefabricated concrete chess/checkers table shall be on a unit basis under Bid Item 40 and shall be full compensation for materials, installation, and clean up.

Q. Payment for furnishing and installation of custom piñata pole shall be on a unit basis under Bid Item 41 and shall be full compensation for materials, installation, and clean up.

R. Payment for furnishing and installation of prefabricated Bankshot stations shall be on a unit basis under Bid Item 42 and shall be full compensation for materials, installation, and clean up.

904-6 EXECUTION

A. Contractor shall prepare the areas for trash receptacles, recycled plastic picnic table, recycled plastic backless bench, bike parking, basketball hoops, chess/checkers tables, ping pong tables, fitness stations, single-pedestal and double-posted barbecues, hot ash receptacles, playground equipment, tennis and pickleball removable posts and netting, and Bankshot stations in accordance with the vendor's specifications.

B. Contractor shall install trash receptacles, recycled plastic picnic table, recycled plastic backless bench, bike parking, basketball hoops, chess/checkers tables, ping pong tables, fitness stations, single-pedestal and double-posted barbecues, hot ash receptacles, playground equipment, tennis and pickleball removable posts and netting, and Bankshot stations in accordance with vendor's specifications.

C. The exact location of trash receptacles, recycled plastic picnic table, recycled plastic backless bench, bike parking, basketball hoops, chess/checkers tables, ping pong tables, fitness stations, single-pedestal and double-posted barbecues, hot ash receptacles, playground equipment, tennis and pickleball removable posts and netting, piñata poles, Bankshot stations, bocce court and handball court shall be verified by Project Manager prior to placement.

904-7 INSPECTION AND ACCEPTANCE

A. Within 5 days after the installation of the trash receptacles, recycled plastic picnic table, recycled plastic backless bench, bike parking, basketball hoops, chess/checkers tables, ping pong tables, fitness stations, single-pedestal and double-posted barbecues, hot ash receptacles, playground equipment, piñata poles, Bankshot stations, bocce court, tennis court, pickleball court, and handball court, the Project Manager shall inspect these items. If, after
inspection, the Project Manager is satisfied, the Contractor shall be notified in writing of acceptance.

B. If, after inspection, the Project Manager is dissatisfied with the trash receptacles, recycled plastic picnic table, recycled plastic backless bench, bike parking, basketball hoops, chess/checkers tables, ping pong tables, fitness stations, single-pedestal and double-posted barbecues, hot ash receptacles, playground equipment, piñata poles, Bankshot stations, bocce court, tennis court, pickleball court, and handball court to date and their conformance to the Drawings and Specifications, the Project Manager will prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.
905 – REMOVABLE BOLLARD

905-1 GENERAL

C. includes:

2. Bollard model #B-3 as manufactured by fairweather site furnishings and accessories, port Orchard Washington, 1-800-323-798 or equal approved by the Engineer.
3. Install bollards per manufacturers recommendations and as shown on the plans.
4. Concrete footing.
5. Gravel for drain.

D. Greenbook Related Sections:
Section 201 – Concrete Mortar and Related Materials
Section 206 – Miscellaneous Metal Items
Section 300 – Earthwork
Section 301–Treated Soil, Subgrade Preparation and Placement of Base Material
Section 303 – Concrete and Masonry Construction

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SECTION 906 – SKATEPLAZA

906-1 GENERAL

A. SUMMARY: The Contractor shall provide all labor, materials, equipment, tools and transportation necessary and required to complete the skate plaza in accordance with the Contract Documents. Work shall include, but not be limited to grading, construction of all concrete elements, half pipe steel coping, ledge steel edging, handrails, and grind rails.

B. Greenbook Related Sections:
Section 201 – Concrete, Mortar and Related Materials
Section 206 – Miscellaneous Metal Items
Section 210 – Paint and Protective Coating
Section 211 – Material Test
Section 217 – Bedding and Backfill Materials
Section 300 – Earthworks
Section 301 – Treated Soil, Subgrade Preparation and Placement of Base materials
Section 303 – Concrete and Masonry Construction
Section 304 – Metal Fabrication and Construction

C. REFERENCE STANDARDS FOR SKATEPLAZA
Standards: comply with the requirements of the current edition of Greenbook standards, except as herein modified:

1. All Welding Shall Conform To Requirements Of AWS Standards.
2. All concrete shall meet all the requirements of ACI 301 with type i/ii cement.
3. All slab construction shall conform to ACI 302.1.
5. ASTM A-36 For C, Mc, Angles, And Plates.
8. ASTM A-780 Standard Practice For Repair Of Damaged And Uncoated Areas Of Hot-Dip Galvanized Coatings.
9. ACI – American Concrete Institute: 506, Chapter 13, Wet Method. Chapter 5, Shotcrete Crew

10. ACI 301 Specifications For Structural Concrete For Buildings

11. ACI 318 Building Code Requirements For Reinforced Concrete

D. QUALITY ASSURANCE

1. Testing services: coordinate the following testing with the owner retained testing agency (if required by the project standard specifications):
   a. Material evaluations tests for aggregate base, subgrade, and imported structural fill.
   b. Inspection of structural fill placement and compaction.
   c. Inspection of final subgrade.
   d. Base material compaction test for every 1000 s.f. of concrete flatwork in skatepark area to ensure 95% compaction in accordance with Geotechnical Report prepared by Earth Systems and testing agency recommendations.
   e. Concrete cylinders shall be taken and tested per the ACI code, when required by the project.

2. The earthwork shall be done under supervision of a soils engineer retained by the owner (if required by the project), who shall verify earthwork specifications for the support of slab on grade and for the control of soil swelling. Field density tests to determine the level of compaction being achieved in the fill shall be performed on each lift at the beginning of fill placement and at a frequency mutually agreed upon by the project team for the remainder of the project.

3. Owner shall retain a soils engineer to verify excavations for assumed allowable soil bearing, low settlement and swell potential, and to make any additional recommendations.

4. Project conditions
   a. Existing conditions: the existing topographic conditions are shown on the drawings for reference only.
   b. Upon beginning the earthwork, contractor represents that he has inspected the site and satisfied himself as to actual grades and levels and the true conditions under which the work is to be performed.
   c. Promptly notify the owner's representative of unexpected subsurface conditions.

5. Protection
   a. Maintain benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed.
   b. Protect excavations by shoring, bracing, sheeting, underpinning, or other methods, as required to prevent cave-ins or loose dirt from entering
excavations. Barricade open excavations adjacent to public streets and walks.
c. Cover holes and trenches when work is not in progress.
d. Promptly repair damage to adjacent facilities caused by earthwork operations. Cost of repair at contractor's expense.

E. SUBMITTALS
1. Manufacturer's data: current printed specifications with application and installation instruction for proprietary materials including concrete admixtures.

F. SPECIALTY CONSTRUCTION:
1. All work in this section is considered specialty skatepark construction. Please see bidder qualifications for contractors eligible to perform this work as specified herein. Bidder qualification forms must be turned in with the bid
2. Construct all formwork to follow skatepark drawings, unless otherwise approved by the Project Manager. Construct formwork to allow for removal without damaging finished concrete surfaces.
3. Place all concrete to follow skatepark drawings, unless otherwise approved by the Project Manager.
4. Description: shotcrete application, cutting, sculpting and finish work has been deemed as specialty construction work within the construction documents. All work related to the specialty construction shall be coordinated by the project engineer, and the pre-qualified specialty contractor, prior to the start of construction.

906-3 – PROCUREMENT AND CONTRACTING REQUIREMENTS

A. SKATEPARK QUALIFICATION FORM
1. As part of their bid, the General Contractor must submit this form identifying the supplier and installer of the contractor placing, shooting and finishing the specialty skatepark concrete.
2. Submission of these forms does not constitute qualification. The Owner will review the firm’s project references for acceptable quality and workmanship. In the Owner's absolute discretion, if the prior work of the firm is deemed unacceptable, the General Contractor will be declared a non-responsive bidder.

B. CAST-IN-PLACE CONCRETE & SHOTCRETE QUESTIONNAIRE
1. Does the contractor have a minimum of 5 (five) years of experience placing, shooting and finishing concrete for public skateparks?

   YES  or  NO
2. Is the contractor’s shotcrete nozzleman certified by the American Concrete Institute?
   YES or NO

3. Shotcrete Nozzleman:
   Name ________________________________
   Certification ID ________________________________
   Certification Expiration Date ________________________________

4. In the past 5 (five) years has the contractor been sued for damages for breach of contract, defective construction or breach of warranty by a public entity?
   YES or NO

5. In the past 5 (five) years has a claim or lawsuit been filed against the contractor’s performance bonding company arising from a breach of contract or defective construction?
   YES or NO

6. List 5 (five) public projects where the contractor successfully placed, shot and finished concrete for a public skatepark within the last 5 (five) years. Projects must have been open and continuously in good operating condition for at least one year.
   a. PROJECT NAME: ________________________________
      OWNER: ________________________________
      OWNER CONTACT INFORMATION: ________________________________
      SHOTCRETE NOZZLEMAN: ________________________________
      YEAR CONSTRUCTED: ________________________________

   b. PROJECT NAME: ________________________________
      OWNER: ________________________________
      OWNER CONTACT INFORMATION: ________________________________
      SHOTCRETE NOZZLEMAN: ________________________________
      YEAR CONSTRUCTED: ________________________________

   c. PROJECT NAME: ________________________________
      OWNER: ________________________________
      OWNER CONTACT INFORMATION: ________________________________
      SHOTCRETE NOZZLEMAN: ________________________________
      YEAR CONSTRUCTED: ________________________________

   d. PROJECT NAME: ________________________________
      OWNER: ________________________________
      OWNER CONTACT INFORMATION: ________________________________
      SHOTCRETE NOZZLEMAN: ________________________________

   e. PROJECT NAME: ________________________________
      OWNER: ________________________________
      OWNER CONTACT INFORMATION: ________________________________
      SHOTCRETE NOZZLEMAN: ________________________________
YEAR CONSTRUCTED: _______________________________

e. PROJECT NAME: ____________________________________________

OWNER: ________________________________________________________

OWNER CONTACT INFORMATION: _________________________________

SHOTCRETE NOZZLEMAN: ________________________________

__________________

YEAR CONSTRUCTED: ________________________________

906-3 PAYMENT

A. Payment for construction of the Skateplaza will be made at the contract unit price per lump sum under Bid Items 22 and shall include: (1) excavating, grading, loading, hauling, disposing of excess material, depositing, spreading concrete material complete in place, and subgrade preparation as indicated on the plans; (2) all grading, hauling, depositing, spreading and compacting of subgrade backfill, complete and in place, as indicated on the plans; and (3) poured in place concrete, reinforcing, finishes, metal elements and other materials; and clean up; complete and in place, as indicated on the plans.

B. Said payments for all the above items of work shall be considered full compensation for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the items. No payment will be made separately or directly for haul on any part of the work. All hauling will be considered a necessary and incidental part of the work, and its cost shall be considered by the Contractor and included in the contract unit price of the pay items of work involved.

906-4 MATERIALS

A. CONCRETE FORMING

1. Form materials: plywood, metal, metal-framed plywood, or other approved panel-type materials free from defects and distortion, and to provide full-depth, continuous, straight, smooth exposed surfaces.

2. Use flexible or curved forms as required to provide vertical and horizontal radii as indicated in the drawings.

3. Provide 2” nominal thickness, surfaced plank wood forms for straight sections. Use flexible metal, 1” lumber, or plywood forms for radius bends. Do not overlap forms, creating an offset finished edge.
4. Form-release agent: commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

B. CONCRETE REINFORCING
   1. Joint dowel bars: plain steel dowels, ASTM A615/A615M, grade 60. Cut bars true to length with ends square and free of burrs.
   2. Slip dowels are acceptable.
   3. Bar supports: bolsters, chairs, spacers and other devices for spacing, supporting, and fastening reinforcements bars, and dowels in place. Manufacture bar supports according to CRSI’s “Manual of Standard Practice” from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete.

C. CAST-IN-PLACE CONCRETE
   1. All concrete shall meet all the requirements of ACI 301 with type I/II cement. Minimum 28 day strength 4,000 psi, except as follows:
      a. Small to medium aggregate (3/4” max.)
      b. Mix designs containing fly ash: the amount of fly ash used shall not exceed 20% by weight of the combined weight of fly ash plus cement.
      c. Air entrainment not to exceed 3%.
      d. Water/cement ratio of .45 or less

D. SHORTCRETE
   1. Shortcrete Mix Design
      b. The amount of fly ash used shall not exceed 20% by weight of the combined weight of fly ash plus cement.
      c. Air entrainment not to exceed 3%.
      d. Water/cement ratio of .45 or less
      e. Provide mix designs that will meet the minimum requirements listed herein.
      f. Concrete application equipment
   2. For wet mix shotcrete:
      a. Mixing equipment: capable of thoroughly mixing aggregate, cement and water in sufficient quantity to maintain continuous placement.
      b. Ready-mixed concrete: ASTM C94, except that it may be delivered to the site in the dry state if the equipment is capable of adding the water and mixing it satisfactorily with the dry ingredients.
c. 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.
d. Delivery equipment: capable of discharging aggregate-cement-water mixture accurately, uniformly, and continuously through delivery hose.

E. CONCRETE CURING
1. Absorptive cover: AASHTO M 182, class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. Yd. Dry.
5. Evaporation retardant: waterborne, monomolecular film forming, manufactured for application to fresh concrete, such as eucobar evaporation retardant by the euclid chemical company. Apply evaporation retardant to concrete surfaces if hot, dry, or windy conditions cause moisture loss before and during finishing operations. Apply to exposed surface of concrete according to manufacturers written instructions as necessary.

F. METAL FABRICATION
1. Furnish materials and perform labor required to execute this work as indicated on the drawings, as specified, and as necessary to complete the contract, including, but not limited to bowl steel coping, ledge steel edging, handrails, and grind rails.
2. Use materials of size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in the finished product.

G. JOINT SEALANTS
1. Expansion and isolation joint filler strips: expansion joint materials shall be flexible polyethylene closed cell foam or similar and supplied by concrete contractor. Deck-o-foam or equivalent.
2. Expansion joint sealant: sikaflex - 1A NS TG polyurethane elastomeric sealant, or approved equal. Color of caulk should resemble natural color of concrete (aluminum gray or limestone).
H. EARTHMOVING

1. Provide EPS 15 structural foam fill as required to meet proposed subgrade elevations in accordance with grading plan, civil engineering specifications and testing agency recommendations.

2. Provide the specified depth of compacted aggregate base material if required.

3. Suitable materials may be obtained from onsite excavations, may be processed onsite materials, or may be imported provided these materials meet all the requirements in the contract documents. If imported materials are required to meet the requirements of this section or to meet the quantity requirements of the project, the contractor shall provide the imported fill materials and the required conformance reports of test results at no additional expense to the owner, unless a unit price item is included for imported materials (including the appropriate required testing reports) in the bidding schedule.

906-5 EXECUTION

A. CONCRETE FORMING

1. Edge forms and screed construction

2. 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.

3. Do not overlap forms, creating an offset finished edge.

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

B. CONCRETE REINFORCING

1. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

2. All reinforcing bars to be deformed. Latest ACI code and detailing manual apply. Clear concrete coverages to any reinforcing including ties are as follows:

3. 2" formed concrete exposed to earth or weather.

4. 1" slabs and joists not exposed to weather.

5. 1-1/2" all other.

6. Smaller clearances permissible for precast or prestressed.

7. Tension lap splices in concrete: unless noted otherwise, provide the following:

   a. #3, 22"; #4, 29"; #5, 36". Multiply by 1.3 for top bars.
8. Minimum clear cover for spliced reinforcing is greater than one bar diameter, and minimum clear spacing is greater than two bar diameters. Splice bottom bar over supports and top bar at midspan only. Where bars are shown spliced, they may run continuous at contractor's option.

9. Place rebar per CRSI manual. Rebar spacings given are maximum on center whether stated as "O.C." or not, and all rebar is continuous whether stated as "cont." or not. Provide bent corner rebar to match and lap with horizontal rebars at corners and intersection of walls, beams, bond beams and footings per ACI manual. Dowel all vertical rebar to foundations. Securely tie all rebar, including dowels, in location before placing concrete or grout.

C. CAST-IN-PLACE CONCRETE

1. Concrete Placement
   a. Do not install concrete work over saturated, muddy, or frozen subgrade.
   b. Protect adjacent work and provide temporary barricades as required for protection of project work and public safety.
   c. All reinforcing, including dowels and anchor bolts, shall be securely tied in location before placing concrete or grout. Dowels will not be allowed to be "stabbed" in.
   d. If entire slab cannot be poured in one day, subcontractor must discuss pour options with the skate park designer.
   e. Conduits, pipes, and sleeves embedded in concrete shall conform to the requirements of ACI 6.3.
   f. Mechanically vibrate all concrete flatwork when placed, except that slabs on grade and slabs on deck need to be vibrated only around embedded items.
   g. 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.
      i. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
   h. Cold weather placement: comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
      i. When air temperature has fallen to or is expected to fall below 40 DEG fahrenheit, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 DEG fahrenheit at point of placement.
      ii. Do not use frozen materials or materials containing ice or snow.
iii. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

i. **Hot-weather placement:** place concrete according to recommendation in ACI 305r and as follows when hot-weather conditions exist:
   
i. Cool ingredients before mixing to maintain concrete temperature at time of placement below 100 DEG fahrenheit. Chilled mixing water 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 contractors option.
   
ii. Fog-spray forms, reinforcement steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

j. Finish: all exposed concrete surfaces are to receive hard steel trowel finish unless otherwise noted. Trowel until all visible pores are closed. Cease troweling before surface becomes glossy. Do not broom finish and do not trowel burn surface.

i. All edge tooling should be 1/8 inch radius unless otherwise specified.

k. **Color:** all concrete surfaces are to be natural gray color unless otherwise noted. Minor variations in appearance of colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

2. **Pavement tolerances**
   
a. Contractor must achieve positive drainage for all surfaces within the skatepark area-- level to a tolerance of ¼ inch in 10 feet when tested with a 10 foot steel straightedge placed on the surface. Standing water will not be allowed. (refer to civil grading plan).

3. **Repairs and protection**
   
a. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements in this section. The contractor shall fix all cracks and displacements larger than 3/32” up to the project completion.

b. 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.

c. Maintain concrete pavement of free stains, discoloration, dirt, and other foreign material.

D. **SHORTCRETE**

1. **Inspection**
   
a. Examination: 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. Correct deficiencies.

b. Notification: notify other trades involved in ample time to permit the proper installation of their work. Cooperate in setting such work.


2. Preparation for installation of concrete
   a. Forms: use a form-coating material on removable forms to prevent absorption of moisture and to prevent bond with shotcrete.

3. Concrete batching and mixing
   a. Proportions: mix proportions shall be controlled by weight batching.
   b. Scheduling: concrete shall not exceed a temperature of 100 DEG fahrenheit at time of placement unless pre-approved by the project engineer.

4. Concrete placement
   a. Placement: use suitable delivery equipment and procedures that will result in shotcrete in place meeting the requirements of this specification. Determine operating 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.
      i. 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.
      ii. Hold nozzle as perpendicular to surface as work will permit, to secure maximum compaction with minimum rebound.
      iii. In shotcreting walls, begin application at bottom. Ensure work does not sag.
      iv. Layering:
         1) Build up layers by making several passes of nozzle over work area.
         2) Make sure surface is adequately rough to which, after hardening, additional layers of shotcrete are to be bonded.
         3) Dampen surface just prior to application of succeeding layers.
         4) Allow each layer of shotcrete to take initial set before applying succeeding layers.
         5) Use radial templates to insure exact radii from flat bottom of bowl/pipe to face of coping. Template shall be fabricated from steel or ¾” minimum (19.05mm) plywood. Check every horizontal foot (30.48cm) 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.
6) Remove any rebound or accumulated loose aggregate from surfaces to be covered prior to placing the initial or any succeeding layers of shotcrete. Rebound shall not be used as aggregate.

c. Placement around reinforcement:
   i. Hold the nozzle at such distance and angle to place materials behind reinforcement before any material is allowed to accumulate on its face.
   ii. 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, by removal of randomly selected bars, or coring or other suitable standards.

d. Access: allow easy access to shotcrete surfaces for screeding and finishing, permitting uninterrupted application.

5. Removal of surface defects in concrete
   a. General: remove and replace shotcrete which 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.

6. Shotcrete finish
   a. Finish: all exposed shotcrete surfaces are to receive hard steel trowel finish unless otherwise noted. Trowel until all visible pores are closed. Cease trowel before surface becomes glossy. Do not broom finish and do not trowel burn surface.
   b. Grinding the surfaces will not be an acceptable means of achieving the intended radii/angle.
   c. Color: all shotcrete surfaces are to be natural gray color unless otherwise noted. Minor variations in appearance of colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.
   d. During the curing period, concrete shall be maintained at a temperature above 40 degrees fahrenheit and in moist condition. For initial curing, concrete shall be kept moist for 24 hours after placement is complete. Final curing shall continue for seven days after placement. Cover concrete with polyethylene plastic to maintain temperature if necessary. Lap seams in the plastic 6” and weigh down.
   e. The contractor shall fix all cracks and displacements larger than 3/32” up to the project completion.

7. Concrete joints
   a. Cleaning: the entire joint shall be thoroughly cleaned and wetted prior to the application of additional shotcrete.
   b. Reinforcement: make joints perpendicular to the main reinforcement. Continue reinforcement across joints.

8. Cracking
a. Cracking from inadequate curing is not allowed. Saw cut joints and construction joints may be shown in the construction drawings for diagrammatic purposes only. The contractor may, with approval of the skatepark designer, recommend and detail other joints required to prevent cracking.

b. The contractor shall fix all cracks and displacements larger than 3/32” up to the project completion.

E. CONCRETE CURING

1. Protect concrete surfaces against rapid drying. Keep moist for necessary amount of time to reach concrete strength and inhibit moisture loss after placing.

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

3. Curing methods: cure concrete by curing compound, moisture curing, moisture-retaining-cover curing, or a combination of these as follows:
   a. Curing compound: meet requirements of manufacturer’s current printed application instructions and coverage rate chart. For horizontal applications, immediately apply after all surface water has disappeared and the concrete surface is hard enough to walk on. For vertical applications, apply immediately after removing the concrete forms. Apply in a uniform and continuous manner. Avoid over-application or puddling of curing compound. Protect surface from water, adjacent shotcrete work, and debris.
   b. Moisture curing: keep surfaces continuously moist for not less than seven days with the following materials:
      c. Water.
      d. Continuous water-fog spray.
      e. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges, overlap seams min. 6” between adjacent absorptive covers.
      f. Moisture-retaining-cover curing: cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 6 inches.

4. Cracking:
   a. Cracking from inadequate curing is not allowed. Saw cut joints and construction joints may be shown in the construction drawings for diagrammatic purposes only. The contractor may, with approval of the skatepark designer, recommend and detail other joints required to prevent cracking.
   b. The contractor shall fix all cracks and displacements larger than 3/32” up to the project completion.
F. METAL FABRICATION

1. All welding shall conform to requirements of AWS standards. All welding shall be shielded metal arc welding. Welds in finish work shall be filled out flush, ground and distressed. Welders for structural shall be certified.

2. Using skilled workers, form and fabricate items of work as indicated and as required to meet installation conditions. Make provisions to connect with or receive the work of other trades.

3. Unless otherwise indicated, where applicable weld or bolt connections between members. Where possible, conceal connections on the finished work. Fit or miter exposed joints to hairline tolerance or use welded joints. On finished surfaces, grind all welds smooth and flush with base metal.

4. Where applicable weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations.

5. Cap all exposed tube or pipe ends. Use size and thickness of material shown. Properly fit and weld cap at joint, grind weld smooth and flush with base metal.

6. Bend pipe or tubing without collapsing or deforming the walls, so as to produce a smooth uniform curved section and maintain uniform sectional shape.

7. Where items are to be embedded in concrete or masonry, provide welded-on anchors or lugs as indicated or required.

8. Provide temporary bracing or anchors in formwork for items which are to be built into concrete or similar construction.

9. Fastening to in-place construction: provide anchoring devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction including threaded fasteners for concrete inserts, or other connectors as required.

10. Galvanizing repair – use a high zinc dust content paint for re-galvanizing welds in galvanized steel. Use rust-oleum cold galvanizing compound spray, or similar.

G. JOINT SEALANTS

1. Concrete
   a. Expansion joints: form expansion joints of specified joint-filler strips where indicated
      i. Locate expansion joints as indicated on drawings.
      ii. Extend joint fillers full width and depth of joint.
   b. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half dowel length to prevent concrete bonding to one side of joint.
c. Control joints: form weakened-plane joints, sectioning concrete into areas as indicated. Construct control joints for a depth as indicated in the drawings (generally 1/3 of the pavement thickness), as follows:
   i. Sawed joints: form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8 inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface an before developing random contraction cracks. Early saw cuts are approximately 1 inch deep, regardless of pavement thickness. Refer to control joint guide drawing of plan set if applicable.
   ii. If skatepark project design utilizes poured steps, control joints must be cut 3 - 4 feet from the edge of the top step.

d. All joints created by the placement of concrete adjacent to previously cast concrete (including precast concrete skate components, if applicable) is the responsibility of the party placing the abutting concrete.

e. Post cure detail work (as needed): grind smooth any inconsistencies in the finish or high spots between pours.

H. EARTH MOVING

1. Establish and maintain required lines and grade elevations. Designate and identify datum elevation and project engineering reference points.

2. Before starting grading and excavation, establish the location and extent of underground utilities in the work area. Exercise care to protect existing utilities during earthwork operations. Perform excavation work near utilities by hand and provide necessary shoring, sheeting, and supports as the work progresses. Immediately notify respective utility companies of damage caused to active utilities.

3. Proof-roll exposed subgrades with a loaded tri-axle dump truck or similar piece of rubber-tired construction equipment to assist in the evaluation of the subgrades across the site. If unstable areas are detected, an initial attempt should be made to aerate (12 inches min.) And densify the subgrade by recompression where natural moisture contents are at appropriate levels. If this procedure is ineffective, the disturbed soils should be undercut and replaced with clean fill and/or stabilizing materials. Compact to 95% of the maximum dry density in accordance with astm d698 standard proctor method. Fill and consolidate depressed areas. A firm, non-yielding subgrade should be established prior to proceeding with fill placement.

4. Soil compaction shall be achieved by means of pneumatic tire rollers, hoe packs, ride-on drum roller or other mechanical tampers (plate, rammer, or walk behind roller).

5. Build up subgrade using stockpiled fill material and/or approved import material with low plasticity. The fill should be placed in lifts thin enough to attain the specified compaction level throughout the entire lift thickness. Prior to
compaction, moisture condition as needed. Compact each lift to at least 95 percent of ASTM D698.

6. The excavation contractor shall remove all swellable soil as directed by the soils engineer.

7. Excavation and compaction of fill shall extend to 5 feet beyond skatepark footprint.

8. any portion of the backfill operation that does not meet the minimum compaction requirements of this section shall be removed, recompacted, and re-tested at the cost of the contractor until passing tests are obtained.

9. Proceed with sub-base (if required) only after nonconforming conditions have been corrected and subgrade has been inspected. A firm, non-yielding subgrade should be established prior to base course placement.

10. Provide the specified depth of compacted aggregate base material when required. Compact aggregate base to 95% of the maximum dry density in accordance with ASTM D698 standard proctor method.

11. Proceed with concrete only after nonconforming conditions have been corrected, subgrade has been inspected, and formwork and field mock-ups have been reviewed.

12. Upon completion of earthwork operation, clean areas within contract limits, remove tools and equipment.

13. Remove and properly dispose of all rocks and other debris from grading operations at approved recycling centers and/or licensed landfill, in accordance with local codes and ordinances.
907 – TREE GRATES

907-1 GENERAL

A. INCLUDES:
   1. Construction and installations of Tree Grates. One half per tree.
   2. Tree Grates model 66” round model R8851 Parkway Collection; standard finish, from Neenah Foundry, Tel. 921.725.7000 or equal approved by the City Project Manager.
   3. Install tree grates and secure to frame per manufacturers recommendations and as shown on the plans.
   4. Concrete footing.

B. Greenbook Related Sections:
   Section 201 – Concrete Mortar and Related Materials
   Section 206 – Miscellaneous Metal Items

907-2 MEASUREMENT

C. Measurement for installation of tree grates shall be based on each as shown on the Drawings, according to these Specifications, and as approved by the Project Manager.

907-3 PAYMENT

D. Payment for metal gates railing and fence shall be on a lump sum under Bid Item No. 48, 49 and 60 shall include all materials and labor required for construction and installation.
SECTION G

CONSTRUCTION OF HOLLISTER/KELLOGG PARK

PROJECT PLAN