



Town of
Yucca Valley

Yucca Valley, California

CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR

YUCCA VALLEY COMMUNITY CENTER PARK ATHLETIC
FACILITY IMPROVEMENTS PROJECT

TOWN PROJECT No.4100

September 18, 2024

PREPARED UNDER THE DIRECTION OF

Alex Qishta, P.E.
Director of Public Works

Signature



NOTICE INVITING SEALED BIDS OR PROPOSALS

Pursuant to a Resolution of Town Council of the Town of Yucca Valley, directing this notice, NOTICE IS HEREBY GIVEN that the Town of Yucca Valley will receive at the office of Town Clerk of the Town of Yucca Valley, located at 57090 29 Palms Hwy., Yucca Valley, California 92284 on or before the hour of 2:30 o'clock P.M. on the **Thursday, October 24, 2024**, sealed bids or proposals for the Construction of:

Project No. 4100:

**YUCCA VALLEY COMMUNITY CENTER PARK ATHLETIC FACILITY
IMPROVEMENTS PROJECT**

in said Town of Yucca Valley. Bids will be opened and publicly read immediately thereafter.

Bids must be made on a form provided for the purpose, addressed to the Town of Yucca Valley marked: Bid for Construction of

Project No. 4100:

**YUCCA VALLEY COMMUNITY CENTER PARK ATHLETIC FACILITY
IMPROVEMENTS PROJECT**

Non-Mandatory Pre-Bid Meeting will be held on **Tuesday October 8, 2024, at 11:00 a.m.**, in the office of the Town Engineer, Public Works Engineering Division, 58928 Business Center Drive, Yucca Valley, CA 92284. *Zoom meeting can be arranged upon request.*

PREVAILING WAGE: Notice is hereby given that in accordance with the provisions of California Labor Code, Division 2, Part 7, Chapter 1, Articles 1 and 2, the Contractor is required to pay not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the public work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work. In that regard, the Director of the Department of Industrial Relations of the State of California is required to and has determined such general prevailing rates of per diem wages. Copies of such prevailing rates of per diem wages are on file in the office of the Town Engineer, 58928 Business Center Drive, Yucca Valley, CA 92284, and are available to any interested party on request. The Town also shall cause a copy of such determinations to be posted at the job site. . These wages are available from the California Department of Industrial Relations' Internet web site at <http://www.dir.ca.gov/dir/databases.html>. General prevailing wage rates, in effect ten (10) days prior to the actual Bid Opening, which have been predetermined and are on file with the California Department of Industrial Relations are referenced and made a part thereof.

Pursuant to Labor Code § 1775, the Contractor shall forfeit, as penalty to the Town, not more than fifty dollars (\$50.00) for each laborer, workman, or mechanic employed for each calendar day or portion thereof, if such laborer, workman, or mechanic is paid less than the general prevailing rate of wages hereinbefore stipulated for any work done under the attached contract, by him or by any subcontractor under him, in violation of the provisions of said Labor Code.

In accordance with the provisions of § 1777.5 of the Labor Code, as amended, and in accordance with the regulations of the California Apprenticeship Council, properly indentured apprentices may be employed in the prosecution of the work. Attention is directed to the provisions in §§ 1777.5 and 1777.6 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor under him.

SUBCONTRACTED WORK: The name, Contractor License Number and location of business of any subcontractor who will perform work exceeding 1/2 of 1% of the prime contractor's total bid or ten thousand dollars (\$10,000), whichever is greater, must be submitted with the bid. Any other information regarding the foregoing subcontractors that is required by Town to be submitted may be submitted with the bid, or may be submitted to Town up to 24 hours after the deadline established herein for receipt of bid. The additional information must be submitted by the bidder to the same address and in the same form applicable to the initial submission of bid.

INELIGIBLE SUBCONTRACTORS: 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 1999.1 or 1777.7 of the Labor Code.

YOU MUST SUBMIT with your proposal cash, cashier's check, certified check, or bidder's bond, payable to the Town of Yucca Valley in an amount equal to at least ten percent (10%) of the bid as a guarantee that the bidder will enter into the contract if the same is awarded to him, and in the event of failure to enter into such contract said cash, cashier's check, certified check, or bond shall become the property of the Town of Yucca Valley. If the Town of Yucca Valley awards the contract to the next lowest bidder, the amount of the lowest bidder's security shall be applied to the difference between the low bid and second lowest bid, and the surplus, if any, shall be returned to the lowest bidder.

The Contractor shall be required to post a bond in the amount of 100% of the contract price and a labor and material bond equal to 50% of the contract price. No proposal will be considered from a Contractor who is not licensed as a **Class "A" or APPROPRIATE CLASS** contractor, at time of bid, or to whom a proposal form has not been issued by the Town of Yucca Valley.

The work is to be done in accordance with the plans and specifications on file in the Office of the Town Engineer. Electronic Copies of the specifications shall be available to be downloaded (copied) from the TOWN's website for bids/public works.

The Contractor may, upon the Contractor's request and the Contractor's sole cost and expense, substitute authorized securities in lieu of moneys withheld (performance retention).

The successful bidder will be required to enter into a contract satisfactory to the Town of Yucca Valley. The Town of Yucca Valley reserves the right to reject any and all bids, or to waive any irregularities in the bids.

By: _____
Town Clerk
Town of Yucca Valley

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CONTRACT DOCUMENTS

CONSTRUCTION AGREEMENT

By and Between

TOWN OF YUCCA VALLEY

and

**AGREEMENT FOR CONSTRUCTION SERVICES
BETWEEN THE TOWN OF YUCCA VALLEY AND**

THIS AGREEMENT FOR CONSTRUCTION SERVICES (herein“ Agreement”) is made and entered into this ____ day of _____, 20__ by and between the Town of Yucca Valley, a general law city (“Town”) and _____ (“Contractor”). Town and Contractor are sometimes hereinafter individually referred to as “Party” and hereinafter collectively referred to as the “Parties”).

RECITALS

A. Town has sought, by issuance of a Request for Proposals or Invitation for Bids, the performance of the services defined and described particularly in Article 1 of this Agreement.

B. Contractor, following submission of a proposal or bid for the performance of the services defined and described particularly in Article 1 of this Agreement, was selected by the Town to perform those services.

C. Pursuant to the Town’s Municipal Code, Town has authority to enter into and execute this Agreement.

D. The Parties desire to formalize the selection of Contractor for performance of those services defined and described particularly in Article 1 of this Agreement and desire that the terms of that performance be as particularly defined and described herein.

OPERATIVE PROVISIONS

NOW, THEREFORE, in consideration of the mutual promises and covenants made by the Parties and contained herein and other consideration, the value and adequacy of which are hereby acknowledged, the parties agree as follows:

ARTICLE 1. WORK OF CONTRACTOR

1.1 Scope of Work.

In compliance with all terms and conditions of this Agreement, the Contractor shall provide those services specified in the “Scope of Work” attached hereto as Exhibit “A” and incorporated herein by this reference, which may be referred to herein as the “services” or “work” hereunder. As a material inducement to the Town entering into this Agreement, Contractor represents and warrants that it has the qualifications, experience, and facilities necessary to properly perform the work required under this Agreement in a thorough, competent, and professional manner, and is experienced in performing the work and services contemplated herein. Contractor shall at all times faithfully, competently and to the best of its ability, experience and talent, perform all services described herein. Contractor covenants that it shall follow the highest professional standards in performing the work and services required hereunder and that all materials will be of good quality, fit for the purpose intended. For purposes of this Agreement, the phrase “highest professional standards” shall mean those standards of practice recognized by one or more first-class firms performing similar work under similar circumstances.

1.2 Contractor's Proposal.

This Agreement shall include the Request for Proposals or Invitation for Bids (“Contract Documents”) and the Scope of Service shall include the Contractor’s scope of work in Contractor’s accepted bid proposal (“Accepted Bid”). The Contract Documents and Accepted Bid shall be incorporated herein by this reference as though fully set forth herein. In the event of any inconsistency between the Contract Documents, Accepted Bid and/or this Agreement, the terms of this Agreement shall govern.

1.3 Compliance with Law.

Contractor shall keep itself informed concerning, and shall render all services hereunder in accordance with all ordinances, resolutions, statutes, rules, and regulations of the Town and any Federal, State or local governmental entity having jurisdiction in effect at the time service is rendered. In addition to the terms, conditions, and performance obligations for the Work set forth in this Contract, Contractor must also comply with the federal contract terms, conditions, rules, and regulations set forth in the attached Exhibit G (“**Federal Contract Terms, Conditions, and Regulations**”).]

1.4 Licenses, Permits, Fees and Assessments.

Contractor shall obtain at its sole cost and expense such licenses, permits, registrations, and approvals as may be required by law for the performance of the services required by this Agreement. Contractor shall have the sole obligation to pay for any fees, assessments and taxes, plus applicable penalties and interest, which may be imposed by law and arise from or are necessary for the Contractor’s performance of the services required by this Agreement, and shall indemnify, defend and hold harmless Town, its officers, employees or agents of Town, against any such fees, assessments, taxes penalties or interest levied, assessed or imposed against Town hereunder.

1.5 Familiarity with Work.

(a) By executing this Agreement, Contractor warrants that Contractor (i) has thoroughly investigated and considered the scope of work to be performed, (ii) has carefully considered how the services should be performed, and (iii) fully understands the facilities, difficulties and restrictions attending performance of the services under this Agreement. If the services involve work upon any site, Contractor warrants that Contractor has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services hereunder.

(b) Contractor shall promptly, and before the following conditions are disturbed, notify the Town, in writing, of any: (i) material Contractor believes may be hazardous waste as defined Section 25117 of the Health & Safety Code required to be removed to a Class I, II, or III disposal site in accordance with existing law; (ii) subsurface, unknown or latent conditions, materially different from those indicated; or (iii) unknown physical conditions at the site of any unusual nature, different from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Agreement, and will materially affect the performance of the services hereunder.

(c) Town shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in Contractor's cost of, or the time required for, performance of any part of the work shall issue a change order per Section 1.10 of this Agreement.

(d) In the event that a dispute arises between Town and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in Contractor's cost of, or time required for, performance of any part of the work, Contractor shall not be excused from any scheduled completion date set, but shall proceed with all work to be performed under the Agreement. Contractor shall retain any and all rights provided either by contract or by law, which pertain to the resolution of disputes and protests between the contracting parties.

1.6 Protection and Care of Work and Materials.

The Contractor shall adopt reasonable methods, including providing and maintaining storage facilities, during the life of the Agreement to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies and/or other components thereof to prevent losses or damages, and shall be responsible for all such damages, to persons or property, until acceptance of the work by Town, except such losses or damages as caused by Town's own negligence. Stored materials shall be reasonably accessible for inspection. Contractor shall not, without Town's consent, assign, sell, mortgage, hypothecate, or remove equipment or materials which have been installed or delivered and which may be necessary for the completion of the work.

1.7 Warranty.

Contractor warrants all work under the Agreement (which for purposes of this Section shall be deemed to include unauthorized work which has not been removed and any non-conforming materials incorporated into the work) to be of good quality and free from any defective or faulty material and workmanship. Contractor agrees that for a period of one year (or the period of time specified elsewhere in the Agreement or in any guarantee or warranty provided by any manufacturer or supplier of equipment or materials incorporated into the work, whichever is later) after the date of final acceptance, Contractor shall within ten (10) days after being notified in writing by the Town of any defect in the work or non-conformance of the work to the Agreement, commence and prosecute with due diligence all work necessary to fulfill the terms of the warranty at its sole cost and expense. Contractor shall act sooner as requested by the Town in response to an emergency. In addition, Contractor shall, at its sole cost and expense, repair, remove and replace any portions of the work (or work of other contractors) damaged by its defective work or which becomes damaged in the course of repairing or replacing defective work. For any work so corrected, Contractor's obligation hereunder to correct defective work shall be reinstated for an additional one year period, commencing with the date of acceptance of such corrected work. Contractor shall perform such tests as the Town may require to verify that any corrective actions, including, without limitation, redesign, repairs, and replacements comply with the requirements of the Agreement. All costs associated with such corrective actions and testing, including the removal, replacement, and reinstatement of equipment and materials necessary to gain access, shall be the sole responsibility of the Contractor. All warranties and guarantees of subcontractors, suppliers and manufacturers with respect to any portion of the work, whether express or implied, are deemed to be obtained by Contractor for the benefit of the Town, regardless of whether or not such warranties and guarantees have been transferred or assigned to the Town by separate agreement and Contractor agrees to enforce such warranties and guarantees, if necessary, on behalf

of the Town. In the event that Contractor fails to perform its obligations under this Section, or under any other warranty or guaranty under this Agreement, to the reasonable satisfaction of the Town, the Town shall have the right to correct and replace any defective or non-conforming work and any work damaged by such work or the replacement or correction thereof at Contractor's sole expense. Contractor shall be obligated to fully reimburse the Town for any expenses incurred hereunder upon demand.

1.8 Prevailing Wages.

Contractor is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 1600, et seq., (“Prevailing Wage Laws”), which require the payment of prevailing wage rates and the performance of other requirements on “Public Works” and “Maintenance” projects. If the services are being performed as part of an applicable “Public Works” or “Maintenance” project, as defined by the Prevailing Wage Laws, and if the total compensation is \$1,000 or more, Contractor agrees to fully comply with such Prevailing Wage Laws. Town shall provide Contractor with a copy of the prevailing rates of per diem wages in effect at the commencement of this Agreement. Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to execute the services available to interested parties upon request, and shall post copies at the Contractor’s principal place of business and at the project site. Contractor shall defend, indemnify and hold the Town, its elected officials, officers, employees and agents free and harmless from any claim or liability arising out of any failure or alleged failure to comply with the Prevailing Wage Laws.

1.9 Further Responsibilities of Parties.

Both parties agree to use reasonable care and diligence to perform their respective obligations under this Agreement. Both parties agree to act in good faith to execute all instruments, prepare all documents and take all actions as may be reasonably necessary to carry out the purposes of this Agreement. Unless hereafter specified, neither party shall be responsible for the service of the other.

1.10 Additional Work and Change Orders.

(a) Town shall have the right at any time during the performance of the services, without invalidating this Agreement, to order extra work beyond that specified in the Scope of Work or make changes by altering, adding to or deducting from said work. No such extra work may be undertaken unless a written change order is first given by the Contract Officer to the Contractor, incorporating therein any adjustment in (i) the Contract Sum, and/or (ii) the time to perform this Agreement, which said adjustments are subject to the written approval of the Contractor (“Change Order”). All Change Orders must be signed by the Contractor and Contract Officer prior to commencing the extra work thereunder.

(b) Any increase in compensation of up to ten percent (10%) of the Contract Sum or \$25,000, whichever is less; or any increase in the time to perform of up to one hundred eighty (180) days; and does not materially affect the work and which are not detrimental to the work or to the interest of the Town, may be approved by the Contract Officer. Any greater increases, taken either separately or cumulatively must be approved by the Town Council.

(c) Any adjustment in the Contract Sum for a Change Order must be in accordance with the rates set forth in the Schedule of Compensation in Exhibit "C". If the rates in the Schedule of Compensation do not cover the type of work in the Change Order, the cost of such work shall not exceed an amount agreed upon in writing and signed by Contractor and Contract Officer. If the cost of the Change Order cannot be agreed upon, the Town will pay for actual work of the Change Order completed, to the satisfaction of the Town, as follows:

(i) Labor: the cost of labor shall be the actual cost for wages of workers and subcontractors performing the work for the Change Order at the time such work is done. The use of labor classifications that would increase the cost of such work shall not be permitted.

(ii) Materials and Equipment: the cost of materials and equipment shall be at cost to Contractor or lowest current price which such materials and equipment are reasonably available at the time the work is done, whichever is lower.

(iii) If the cost of the extra work cannot be agreed upon, the Contractor must provide a daily report that includes invoices for labor, materials and equipment costs for the work under the Change Order. The daily report must include: list of names of workers, classifications, and hours worked; description and list of quantities of materials used; type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable; description of other Town authorized services and expenditures in such detail as the Town may require. Failure to submit a daily report by the close of the next working day may, at the Town's sole and absolute discretion, waive the Contractor's rights for that day.

It is expressly understood by Contractor that the provisions of this Section 1.10 shall not apply to services specifically set forth in the Scope of Work. Contractor hereby acknowledges that it accepts the risk that the services to be provided pursuant to the Scope of Work may be more costly or time consuming than Contractor anticipates and that Contractor shall not be entitled to additional compensation therefor. Town may in its sole and absolute discretion have similar work done by other contractors.

1.11 Special Requirements.

Additional terms and conditions of this Agreement, if any, which are made a part hereof are set forth in the "Special Requirements" attached hereto as Exhibit "B" and incorporated herein by this reference. In the event of a conflict between the provisions of Exhibit "B" and any other provisions of this Agreement, the provisions of Exhibit "B" shall govern.

ARTICLE 2. COMPENSATION AND METHOD OF PAYMENT.

2.1 Contract Sum.

Subject to any limitations set forth in this Agreement, Town agrees to pay Contractor the amounts specified in the "Schedule of Compensation" attached hereto as Exhibit "C" and incorporated herein by this reference. The total compensation, including reimbursement for actual expenses, shall not exceed _____ Dollars (\$_____) (the "Contract Sum"), unless additional compensation is approved pursuant to Section 1.10.

2.2 Method of Compensation.

The method of compensation may include: (i) a lump sum payment upon completion, (ii) payment in accordance with specified tasks or the percentage of completion of the services less the contract retention;, (iii) payment for time and materials based upon the Contractor's rates as specified in the Schedule of Compensation, provided that (a) time estimates are provided for the performance of sub tasks, (b) contract retention is maintained and (c) the Contract Sum is not exceeded; or (iv) such other methods as may be specified in the Schedule of Compensation.

2.3 Reimbursable Expenses.

Compensation may include reimbursement for actual and necessary expenditures for reproduction costs, telephone expenses, and travel expenses approved by the Contract Officer in advance, or actual subcontractor expenses of an approved subcontractor pursuant to Section 4.5, and only if specified in the Schedule of Compensation. The Contract Sum shall include the attendance of Contractor at all project meetings reasonably deemed necessary by the Town. Coordination of the performance of the work with Town is a critical component of the services. If Contractor is required to attend additional meetings to facilitate such coordination, Contractor shall not be entitled to any additional compensation for attending said meetings.

2.4 Invoices.

Contractor shall furnish to Town an original invoice for all work performed and expenses incurred at intervals consistent with the Schedule of Compensation in a form approved by Town's Finance Manager. By submitting an invoice for payment under this Agreement, Contractor is certifying compliance with all provisions of the Agreement. The Contractor shall provide Town will all information detailed on the Town's standard form application for payment to support the invoice.

Town shall independently review each invoice submitted by the Contractor to determine whether the work performed and expenses incurred are in compliance with the provisions of this Agreement. Except as to any charges for work performed or expenses incurred by Contractor which are disputed by Town, or as provided in Section 7.3. Town will cause Contractor to be paid within thirty (30) days of receipt of Contractor's correct and undisputed invoice; however, Contractor acknowledges and agrees that due to Town warrant run procedures, the Town cannot guarantee that payment will occur within this time period. In the event any charges or expenses are disputed by Town, the original invoice shall be returned by Town to Contractor for correction and resubmission. Review and payment by the Town of any invoice provided by the Contractor shall not constitute a waiver of any rights or remedies provided herein or any applicable law.

2.5 Waiver.

Payment to Contractor for work performed pursuant to this Agreement shall not be deemed to waive any defects in work performed by Contractor.

ARTICLE 3. PERFORMANCE SCHEDULE

3.1 Time of Essence.

Time is of the essence in the performance of this Agreement.

3.2 Schedule of Performance.

Contractor shall commence the services pursuant to this Agreement upon receipt of a written notice to proceed and shall perform all services within the time period(s) established in the "Schedule of Performance" attached hereto as Exhibit "D" and incorporated herein by this reference. When requested by the Contractor, extensions to the time period(s) specified in the Schedule of Performance may be approved in writing by the Contract Officer but not exceeding one hundred eighty (180) days cumulatively.

3.3 Force Majeure.

The time period(s) specified in the Schedule of Performance for performance of the services rendered pursuant to this Agreement shall be extended because of any delays due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, unusually severe weather, fires, earthquakes, floods, epidemics, quarantine restrictions, riots, strikes, freight embargoes, wars, litigation, and/or acts of any governmental agency, including the Town, if the Contractor shall within ten (10) days of the commencement of such delay notify the Contract Officer in writing of the causes of the delay. The Contract Officer shall ascertain the facts and the extent of delay, and extend the time for performing the services for the period of the enforced delay when and if in the judgment of the Contract Officer such delay is justified. The Contract Officer shall extend the time for performance in accordance with the procedures set forth in Section 1.10. The Contract Officer's determination shall be final and conclusive upon the parties to this Agreement. In no event shall Contractor be entitled to recover damages against the Town for any delay in the performance of this Agreement, however caused, Contractor's sole remedy being extension of the Agreement pursuant to this Section. Contractor shall be responsible for the cost of repairing or restoring damage to the work, which damage is determined to have been proximately caused by an act of God, up to five percent of the Contract Sum, in compliance with Public Contract Code section 7105.

3.4 Inspection and Final Acceptance.

Town may inspect and accept or reject any of Contractor's work under this Agreement, either during performance or when completed. Town shall reject or finally accept Contractor's work within forth five (45) days after submitted to Town. Town shall accept work by a timely written acceptance, otherwise work shall be deemed to have been rejected. Town's acceptance shall be conclusive as to such work except with respect to latent defects, fraud and such gross mistakes as to amount to fraud. Acceptance of any work by Town shall not constitute a waiver of any of the provisions of this Agreement including, but not limited to, Articles 1 and 5, pertaining to warranty and indemnification and insurance, respectively.

3.5 Term.

Unless earlier terminated in accordance with Article 7 of this Agreement, this Agreement shall continue in full force and effect until completion of the services but not exceeding one (1) year from the date hereof, except as otherwise provided in the Schedule of Performance (Exhibit "D").

ARTICLE 4. COORDINATION OF WORK

4.1 Representatives and Personnel of Contractor.

The following principals of Contractor (“Principals”) are hereby designated as being the principals and representatives of Contractor authorized to act in its behalf with respect to the work specified herein and make all decisions in connection therewith:

(Name) (Title)

(Name) (Title)

(Name) (Title)

It is expressly understood that the experience, knowledge, capability and reputation of the foregoing Principals were a substantial inducement for Town to enter into this Agreement. Therefore, the Principals shall be responsible during the term of this Agreement for directing all activities of Contractor and devoting sufficient time to personally supervise the services hereunder. All personnel of Contractor, and any authorized agents, shall at all times be under the exclusive direction and control of the Principals. For purposes of this Agreement, the Principals may not be replaced nor may their responsibilities be substantially reduced by Contractor without the express written approval of Town. Additionally, Contractor shall make every reasonable effort to maintain the stability and continuity of Contractor’s staff and subcontractors, if any, assigned to perform the services required under this Agreement. Contractor shall notify Town of any changes in Contractor’s staff and subcontractors, if any, assigned to perform the services required under this Agreement, prior to and during any such performance.

4.2 Status of Contractor.

Contractor shall have no authority to bind Town in any manner, or to incur any obligation, debt or liability of any kind on behalf of or against Town, whether by contract or otherwise, unless such authority is expressly conferred under this Agreement or is otherwise expressly conferred in writing by Town. Contractor shall not at any time or in any manner represent that Contractor or any of Contractor’s officers, employees, or agents are in any manner officials, officers, employees or agents of Town. Neither Contractor, nor any of Contractor’s officers, employees or agents, shall obtain any rights to retirement, health care or any other benefits which may otherwise accrue to Town’s employees. Contractor expressly waives any claim Contractor may have to any such rights.

4.3 Contract Officer.

The Contract Officer shall be such person as may be designated by the Town Manager. It shall be the Contractor’s responsibility to assure that the Contract Officer is kept informed of the progress of the performance of the services and the Contractor shall refer any decisions which

must be made by Town to the Contract Officer. Unless otherwise specified herein, any approval of Town required hereunder shall mean the approval of the Contract Officer. The Contract Officer shall have authority, if specified in writing by the Town Manager, to sign all documents on behalf of the Town required hereunder to carry out the terms of this Agreement.

4.4 Independent Contractor.

Neither the Town nor any of its employees shall have any control over the manner, mode or means by which Contractor, its agents or employees, perform the services required herein, except as otherwise set forth herein. Town shall have no voice in the selection, discharge, supervision or control of Contractor's employees, servants, representatives or agents, or in fixing their number, compensation or hours of service. Contractor shall perform all services required herein as an independent contractor of Town and shall remain at all times as to Town a wholly independent contractor with only such obligations as are consistent with that role. Contractor shall not at any time or in any manner represent that it or any of its agents or employees are agents or employees of Town. Town shall not in any way or for any purpose become or be deemed to be a partner of Contractor in its business or otherwise or a joint venturer or a member of any joint enterprise with Contractor.

4.5 Prohibition Against Subcontracting or Assignment.

The experience, knowledge, capability and reputation of Contractor, its principals and employees were a substantial inducement for the Town to enter into this Agreement. Therefore, Contractor shall not contract with any other entity to perform in whole or in part the services required hereunder without the express written approval of the Town. All subcontractors shall obtain, at its or Contractor's expense, such licenses, permits, registrations and approvals (including from the Town) as may be required by law for the performance of any services or work under this Agreement. In addition, neither this Agreement nor any interest herein may be transferred, assigned, conveyed, hypothecated or encumbered voluntarily or by operation of law, whether for the benefit of creditors or otherwise, without the prior written approval of Town. Transfers restricted hereunder shall include the transfer to any person or group of persons acting in concert of more than twenty five percent (25%) of the present ownership and/or control of Contractor, taking all transfers into account on a cumulative basis. In the event of any such unapproved transfer, including any bankruptcy proceeding, this Agreement shall be void. No approved transfer shall release the Contractor or any surety of Contractor of any liability hereunder without the express consent of Town.

ARTICLE 5. INSURANCE, INDEMNIFICATION AND BONDS

5.1 Insurance Coverages.

Contractor shall not commence Work under this Agreement until it has provided evidence satisfactory to the Town that it has secured all insurance required under this section. In addition, Contractor shall not allow any subcontractor to commence work on any subcontract until it has provided evidence satisfactory to the Town and the subcontractor has secured all insurance required under this section. Failure to provide and maintain all required insurance shall be grounds for the Town to terminate this Agreement for cause.

Contractor shall, at its sole cost and expense, procure and maintain for the duration of the Agreement and two years thereafter, including any extension thereof, insurance against claims for

injuries to persons for damages to property which may arise from or in connection with the performance of the Agreement by the Contractor, its agents, representatives, employees or subcontractors. Contractor shall also require of the subcontractors to procure and maintain the same insurance for the duration of the Agreement including any extension thereof. Such insurance shall meet at least the following minimum levels of coverage:

(a) Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than \$5,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

(b) Workers Compensation Insurance. A policy of workers compensation insurance in such amount as will fully comply with the laws of the State of California including the Labor Code and Employer’s Liability limit of \$1,000,000 per accident for bodily injury or disease.

(c) Automotive Insurance (Form CA 0001 (Ed 1/87) including “any auto” and endorsement CA 0025 or equivalent). A policy of comprehensive automobile liability insurance written on a per occurrence for bodily injury and property damage in an amount not less than \$1,000,000.

(d) Professional Liability (for Design Build). Professional liability insurance appropriate to the Contractor’s profession. This coverage may be written on a “claims made” basis, and must include coverage for contractual liability. The professional liability insurance required by this Agreement must be endorsed to be applicable to claims based upon, arising out of or related to services performed under this Agreement. If the insurance is on a Claims-Made basis, the retroactive date shall be no later than the commencement of the work. Coverage applicable to the work performed under this agreement shall be continued for five (5) years after completion of the work. Such continuation coverage may be provided by one of the following: (1) renewal of the existing policy; (2) an extended reporting period endorsement; or (3) replacement insurance with a retroactive date no later than the commencement of the work under this Agreement.

(e) Contractors’ Pollution Legal Liability and/or Asbestos Legal Liability and/or Errors and Omissions (if project involves environmental hazards) with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/remediation, the Contractors Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

(f) Builder’s Risk (Course of Construction) insurance utilizing an “All Risk” (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions.

(g) If the contractor maintains broader coverage and/or higher limits than the minimums shown above for all policies, the Entity requires and shall be entitled to the broader coverage and/or higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the Entity.

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

(i) Additional Insurance. Policies of such other insurance, as may be required in the Special Requirements.

(j) Subcontractors. Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and certified endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

5.2 General Insurance Requirements.

The Town, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as ISO Form CG 20 10, CG 11 85 or both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 forms if later revisions used).

For any claims related to this project, the Contractor's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the Town, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the Entity, its officers, officials, employees, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

If the deductible or self-insured retention exceeds \$_____, it must be approved in advance by the Town. Consultant is responsible for any deductible or self-insured retention and shall fund it upon the Town's written request, regardless of whether Consultant has a claim against the insurance or is named as a party in any action. The insurance policy must specify that where the primary insured does not satisfy the self-insured retention, any additional insured may satisfy the self-insured retention.

The policy shall cover inter-insured suits and include a "separation of insureds" or "severability" clause which treats each insured separately.

No work or services under this Agreement shall commence until the Contractor has provided the Town with Certificates of Insurance or appropriate insurance binders evidencing the above insurance coverages and said Certificates of Insurance or binders are approved by the Town. Town reserves the right to inspect complete, certified copies of all required insurance policies at any time. Any failure to comply with the reporting or other provisions of the policies including breaches or warranties shall not affect coverage provided to Town.

The insurance required by this Agreement shall be satisfactory only if issued by companies qualified to do business in California, rated "A" or better in the most recent edition of Best Rating Guide, The Key Rating Guide or in the Federal Register, and only if they are of a financial category

Class VII or better, unless such requirements are waived by the Town's Risk Manager or other designee of the Town due to unique circumstances.

All Coverages. Consultant shall provide immediate written notice if (1) any of the required insurance policies is terminated; (2) the limits of any of the required policies are reduced; (3) or the deductible or self-insured retention is increased.

The Contractor agrees that the requirement to provide insurance shall not be construed as limiting in any way the extent to which the Contractor may be held responsible for the payment of damages to any persons or property resulting from the Contractor's activities or the activities of any person or persons for which the Contractor is otherwise responsible nor shall it limit the Contractor's indemnification liabilities as provided in Section 5.3.

In the event the Contractor subcontracts any portion of the work in compliance with Section 4.5 of this Agreement, the contract between the Contractor and such subcontractor shall require the subcontractor to maintain the same policies of insurance that the Contractor is required to maintain pursuant to Section 5.1, and such certificates and endorsements shall be provided to Town.

5.3 Indemnification.

To the full extent permitted by law, Contractor agrees to indemnify, defend and hold harmless the Town, its officers, employees and agents ("Indemnified Parties") against, and will hold and save them and each of them harmless from, any and all actions, either judicial, administrative, arbitration or regulatory claims, damages to persons or property, losses, costs, penalties, obligations, errors, omissions or liabilities whether actual or threatened (herein "claims or liabilities") that may be asserted or claimed by any person, firm or entity arising out of or in connection with the negligent performance of the work, operations or activities provided herein of Contractor, its officers, employees, agents, subcontractors, or invitees, or any individual or entity for which Contractor is legally liable ("indemnors"), or arising from Contractor's reckless or willful misconduct, or arising from Contractor's or indemnors' negligent performance of or failure to perform any term, provision, covenant or condition of this Agreement, and in connection therewith:

(a) Contractor's obligation to indemnify the Indemnified Parties applies unless it is finally adjudicated that the liability was caused by the sole negligence, active negligence, or willful misconduct of an Indemnified Party. If a claim is finally adjudicated and a determination made that liability was caused by the sole negligence, active negligence, or willful misconduct of an Indemnified Party, then Contractor's indemnification obligation will be reduced in proportion to the established comparative liability.

(b) Contractor will defend any action or actions filed in connection with any of said claims or liabilities and will pay all costs and expenses, including legal costs and attorneys' fees incurred in connection therewith. The defense obligation includes an obligation to provide independent defense counsel if Contractor asserts that liability is caused in whole or in part by the negligence or willful misconduct of any Indemnified Party. If it is finally adjudicated that liability was caused by the sole negligence, active negligence, or willful misconduct of any Indemnified Party, then Contractor may submit a claim to Town for reimbursement of reasonable attorneys' fees and defense costs in proportion to the established comparative liability of the Indemnified Party.

(c) Contractor will promptly pay any judgment rendered against the Town, its officers, agents or employees for any such claims or liabilities arising out of or in connection with the negligent performance of or failure to perform such work, operations or activities of Contractor hereunder; and Contractor agrees to save and hold the Town, its officers, agents, and employees harmless therefrom;

(d) In the event the Town, its officers, agents or employees is made a party to any action or proceeding filed or prosecuted against Contractor for such damages or other claims arising out of or in connection with the negligent performance of or failure to perform the work, operation or activities of Contractor hereunder, Contractor agrees to pay to the Town, its officers, agents or employees, any and all costs and expenses incurred by the Town, its officers, agents or employees in such action or proceeding, including but not limited to, legal costs and attorneys' fees.

In addition, Contractor agrees to indemnify, defend and hold harmless the Indemnified Parties from, any and all claims and liabilities for any infringement of patent rights, copyrights or trademark on any person or persons in consequence of the use by the Indemnified Parties of articles to be supplied by Contractor under this Agreement, and of which the Contractor is not the patentee or assignee or has not the lawful right to sell the same.

Contractor shall incorporate similar, indemnity agreements with its subcontractors and if it fails to do so Contractor shall be fully responsible to indemnify Town hereunder therefore, and failure of Town to monitor compliance with these provisions shall not be a waiver hereof. This indemnification includes claims or liabilities arising from any negligent or wrongful act, error or omission, or reckless or willful misconduct of Contractor in the performance of professional services and work hereunder. The provisions of this Section do not apply to claims or liabilities occurring as a result of Town's sole negligence or willful acts or omissions, but, to the fullest extent permitted by law, shall apply to claims and liabilities resulting in part from Town's negligence, except that design professionals' indemnity hereunder shall be limited to claims and liabilities arising out of the negligence, recklessness or willful misconduct of the design professional. The indemnity obligation shall be binding on successors and assigns of Contractor and shall survive termination of this Agreement.

5.4 Performance and Labor Bonds.

Concurrently with execution of this Agreement Contractor shall deliver to the Town, the following:

(a) A performance bond in the amount of the Contract Sum of this Agreement, in the form provided by the Town Clerk, which secures the faithful performance of this Agreement.

(b) A labor and materials bond in the amount of the Contract Sum of this Agreement, in the form provided by the Town Clerk, which secures the payment of all persons furnishing labor and/or materials in connection with the work under this Agreement.

Both the performance and labors bonds required under this Section 5.4 shall contain the original notarized signature of an authorized officer of the surety and affixed thereto shall be a certified and current copy of his power of attorney. The bond shall be unconditional and remain in force during the entire term of the Agreement and shall be null and void only if the Contractor

promptly and faithfully performs all terms and conditions of this Agreement and pays all labor and materials for work and services under this Agreement.

5.5 Sufficiency of Insurer or Surety.

Insurance and bonds required by this Agreement shall be satisfactory only if issued by companies qualified to do business in California, rated “A” or better in the most recent edition of Best Rating Guide, The Key Rating Guide or in the Federal Register, and only if they are of a financial category Class VII or better, unless such requirements are waived by the Risk Manager of the Town (“Risk Manager”) due to unique circumstances. If this Agreement continues for more than 3 years duration, or in the event the Risk Manager determines that the work or services to be performed under this Agreement creates an increased or decreased risk of loss to the Town, the Contractor agrees that the minimum limits of the insurance policies and the performance bond required by Section 5.4 may be changed accordingly upon receipt of written notice from the Risk Manager; provided that the Contractor shall have the right to appeal a determination of increased coverage by the Risk Manager to the Town Council of Town within 10 days of receipt of notice from the Risk Manager.

5.6 Substitution of Securities.

Pursuant to Public Contract Code Section 22300, substitution of eligible equivalent securities for any funds withheld to ensure performance under this Agreement may be permitted at the request and sole expense of the Contractor. Alternatively, the Contractor may, pursuant to an escrow agreement in a form prescribed by Public Contract Code Section 22300, request payment of retentions funds earned directly to the escrow agent at the sole expense of the Contractor.

5.7 Release of Securities.

City shall release the Performance and Labor Bonds when the following have occurred:

(a) Contractor has made a written request for release and provided evidence of satisfaction of all other requirements under Article 5 of this Agreement;

(b) the Work has been accepted; and

(c) after passage of the time within which lien claims are required to be made pursuant to applicable laws; if lien claims have been timely filed, City shall hold the Labor Bond until such claims have been resolved, Contractor has provided statutory bond, or otherwise as required by applicable law.

ARTICLE 6. RECORDS, REPORTS, AND RELEASE OF INFORMATION

6.1 Records.

Contractor shall keep, and require subcontractors to keep, such ledgers books of accounts, invoices, vouchers, canceled checks, reports, studies, certified copies of accurate payroll records in compliance with all applicable laws, or other documents relating to the disbursements charged to Town and services performed hereunder (the “books and records”), as shall be necessary to

perform the services required by this Agreement and enable the Contract Officer to evaluate the performance of such services. Any and all such documents shall be maintained in accordance with generally accepted accounting principles and shall be complete and detailed. The Contract Officer shall have full and free access to such books and records at all times during normal business hours of Town, including the right to inspect, copy, audit and make records and transcripts from such records. Such records shall be maintained for a period of 3 years following completion of the services hereunder, and the Town shall have access to such records in the event any audit is required. In the event of dissolution of Contractor's business, custody of the books and records may be given to Town, and access shall be provided by Contractor's successor in interest. Notwithstanding the above, the Contractor shall fully cooperate with the Town in providing the public access to the books and records if a public request for such records is made and disclosure is required by law including but not limited to the California Public Records Act.

6.2 Reports.

Contractor shall periodically prepare and submit to the Contract Officer such reports concerning the performance of the services required by this Agreement as the Contract Officer shall require. Contractor hereby acknowledges that the Town is greatly concerned about the cost of work and services to be performed pursuant to this Agreement. For this reason, Contractor agrees that if Contractor becomes aware of any facts, circumstances, techniques, or events that may or will materially increase or decrease the cost of the work or services contemplated herein or, if Contractor is providing design services, the cost of the project being designed, Contractor shall promptly notify the Contract Officer of said fact, circumstance, technique or event and the estimated increased or decreased cost related thereto and, if Contractor is providing design services, the estimated increased or decreased cost estimate for the project being designed.

6.3 Ownership of Documents.

All drawings, specifications, maps, designs, photographs, studies, surveys, data, notes, computer files, reports, records, documents and other materials (the "documents and materials") prepared by Contractor, its employees, subcontractors and agents in the performance of this Agreement shall be the property of Town and shall be delivered to Town upon request of the Contract Officer or upon the termination of this Agreement, and Contractor shall have no claim for further employment or additional compensation as a result of the exercise by Town of its full rights of ownership use, reuse, or assignment of the documents and materials hereunder. Any use, reuse or assignment of such completed documents for other projects and/or use of uncompleted documents without specific written authorization by the Contractor will be at the Town's sole risk and without liability to Contractor, and Contractor's guarantee and warranties shall not extend to such use, reuse or assignment. Contractor may retain copies of such documents for its own use. Contractor shall have an unrestricted right to use the concepts embodied therein. All subcontractors shall provide for assignment to Town of any documents or materials prepared by them, and in the event Contractor fails to secure such assignment, Contractor shall indemnify Town for all damages resulting therefrom.

6.4 Confidentiality and Release of Information.

(a) All information gained or work product produced by Contractor in performance of this Agreement shall be considered confidential, unless such information is in the public domain or already known to Contractor. Contractor shall not release or disclose any

such information or work product to persons or entities other than Town without prior written authorization from the Contract Officer.

(b) Contractor, its officers, employees, agents or subcontractors, shall not, without prior written authorization from the Contract Officer or unless requested by the Town Attorney, voluntarily provide documents, declarations, letters of support, testimony at depositions, response to interrogatories or other information concerning the work performed under this Agreement. Response to a subpoena or court order shall not be considered "voluntary" provided Contractor gives Town notice of such court order or subpoena.

(c) If Contractor, or any officer, employee, agent or subcontractor of Contractor, provides any information or work product in violation of this Agreement, then Town shall have the right to reimbursement and indemnity from Contractor for any damages, costs and fees, including attorney's fees, caused by or incurred as a result of Contractor's conduct.

(d) Contractor shall promptly notify Town should Contractor, its officers, employees, agents or subcontractors be served with any summons, complaint, subpoena, notice of deposition, request for documents, interrogatories, request for admissions or other discovery request, court order or subpoena from any party regarding this Agreement and the work performed there under. Town retains the right, but has no obligation, to represent Contractor or be present at any deposition, hearing or similar proceeding. Contractor agrees to cooperate fully with Town and to provide Town with the opportunity to review any response to discovery requests provided by Contractor. However, this right to review any such response does not imply or mean the right by Town to control, direct, or rewrite said response.

6.5 Compliance Monitoring Requirements by Department of Industrial Relations.

Contractor is aware of the requirements of Section 1771.4 of the Labor Code and that if the Services are being performed as part of an applicable "Public Works" project, Contractors shall be subject to compliance monitoring and enforcement by the Department of Industrial Relations.

ARTICLE 7. ENFORCEMENT OF AGREEMENT AND TERMINATION

7.1 California Law.

This Agreement shall be interpreted, construed and governed both as to validity and to performance of the parties in accordance with the laws of the State of California. Legal actions concerning any dispute, claim or matter arising out of or in relation to this Agreement shall be instituted in the Superior Court of the County of San Bernardino, State of California, or any other appropriate court in such county, and Contractor covenants and agrees to submit to the personal jurisdiction of such court in the event of such action. In the event of litigation in a U.S. District Court, venue shall lie exclusively in the Central District of California, in Los Angeles.

7.2 Disputes; Default.

(a) The occurrence of any of the following is a default by Contractor under this Agreement:

- 1) Contractor refuses or fails to prosecute the work or any part thereof with such diligence as will ensure its completion within the time specified or any permitted extension.
- 2) Contractor fails to complete the work on time.
- 3) Contractor is adjudged bankrupt, or makes a general assignment for the benefit of creditors, or a receiver is appointed on account of Contractor's insolvency.
- 4) Contractor fails to supply enough properly skilled workers or proper materials to complete the work in the time specified.
- 5) Contractor fails to make prompt payment to any subcontractor or for material or labor.
- 6) Contractor fails to abide by any applicable laws, ordinances or instructions of Town in performing the work,
- 7) Contractor breaches or fails to perform any obligation or duty under the Agreement and such breach or failure remains uncorrected following Town's notice to Contractor of the breach.

(b) In the event that Contractor is in default, the Town shall not have any obligation or duty to continue compensating Contractor for any work performed after the date of default. Instead, the Town may give notice to Contractor of the default and the reasons for the default. The notice shall include the timeframe in which Contractor may cure the default. This timeframe is presumptively thirty (30) days, but may be extended, though not reduced, if circumstances warrant. During the period of time that Contractor is in default, the Town shall hold all invoices and shall proceed with payment on the invoices only when the default is cured. In the alternative, the Town may, in its sole discretion, elect to pay some or all of the outstanding invoices during the period of default. If Contractor does not cure the default, the Town may take necessary steps to terminate this Agreement under this Article. Any failure on the part of the Town to give notice of the Contractor's default shall not be deemed to result in a waiver of the Town's legal rights or any rights arising out of any provision of this Agreement. In the event of such termination, Town will also immediately serve written notice of the termination upon Contractor's surety. The surety will have the right to take over and perform pursuant to this Agreement; provided, however, that if the surety does not give Town written notice of its intention to take over and perform this Agreement within five days after service of the notice of termination or does not commence performance within 10 days from the date of such notice, Town may take over the work pursuant to Section 7.9 below.

7.3 Retention of Funds.

Contractor hereby authorizes Town to deduct from any amount payable to Contractor (whether or not arising out of this Agreement) (i) any amounts the payment of which may be in

dispute hereunder or which are necessary to compensate Town for any losses, costs, liabilities, or damages suffered by Town, and (ii) all amounts for which Town may be liable to third parties, by reason of Contractor's acts or omissions in performing or failing to perform Contractor's obligation under this Agreement. In the event that any claim is made by a third party, the amount or validity of which is disputed by Contractor, or any indebtedness shall exist which shall appear to be the basis for a claim of lien, Town may withhold from any payment due, without liability for interest because of such withholding, an amount sufficient to cover such claim. The failure of Town to exercise such right to deduct or to withhold shall not, however, affect the obligations of the Contractor to insure, indemnify, and protect Town as elsewhere provided herein.

7.4 Waiver.

Waiver by any party to this Agreement of any term, condition, or covenant of this Agreement shall not constitute a waiver of any other term, condition, or covenant. Waiver by any party of any breach of the provisions of this Agreement shall not constitute a waiver of any other provision or a waiver of any subsequent breach or violation of any provision of this Agreement. Acceptance by Town of any work or services by Contractor shall not constitute a waiver of any of the provisions of this Agreement. No delay or omission in the exercise of any right or remedy by a non-defaulting party on any default shall impair such right or remedy or be construed as a waiver. Any waiver by either party of any default must be in writing and shall not be a waiver of any other default concerning the same or any other provision of this Agreement.

7.5 Rights and Remedies are Cumulative.

Except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the parties are cumulative and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other party.

7.6 Legal Action.

In addition to any other rights or remedies, either party may take legal action, in law or in equity, to cure, correct or remedy any default, to recover damages for any default, to compel specific performance of this Agreement, to obtain declaratory or injunctive relief, or to obtain any other remedy consistent with the purposes of this Agreement. In addition to the claim requirements of Article 8 of this Agreement, Contractor must file a claim pursuant to Government Code Sections 905 et seq. and 910 et. seq., in order to pursue a legal action under this Agreement.

7.7 Liquidated Damages.

Since the determination of actual damages for any delay in performance of this Agreement would be extremely difficult or impractical to determine in the event of a breach of this Agreement, the Contractor and its sureties shall be liable for and shall pay to the Town the sum of _____ (\$_____) as liquidated damages for each calendar day of delay in the performance of any service required hereunder, as specified in the Schedule of Performance (Exhibit "D"). The Town may withhold from any monies payable on account of services performed by the Contractor any accrued liquidated damages. Liquidated damages for delay will cover administrative, overhead, interest on bonds, and general loss of public use damages suffered by Town as a result of delay. Liquidated damages will not cover the cost of

completion of the work, damages resulting from defective work, lost revenues or costs of substitute facilities, or damages suffered by others who then seek to recover their damages from Town (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof.

7.8 Termination Prior to Expiration of Term.

This Section shall govern any termination of this Contract except as specifically provided in the following Section for termination for cause. The Town reserves the right to terminate this Contract at any time, with or without cause, upon thirty (30) days' written notice to Contractor, except that where termination is due to the fault of the Contractor, the period of notice may be such shorter time as may be determined by the Contract Officer. In addition, the Contractor reserves the right to terminate this Contract at any time, with or without cause, upon sixty (60) days' written notice to Town, except that where termination is due to the fault of the Town, the period of notice may be such shorter time as the Contractor may determine. Upon receipt of any notice of termination, Contractor shall immediately cease all services hereunder except such as may be specifically approved by the Contract Officer. Except where the Contractor has initiated termination, the Contractor shall be entitled to compensation for all services rendered prior to the effective date of the notice of termination and for any services authorized by the Contract Officer thereafter in accordance with the Schedule of Compensation or such as may be approved by the Contract Officer, except as provided in Section 7.3. In the event the Contractor has initiated termination, the Contractor shall be entitled to compensation only for the reasonable value of the work product actually produced hereunder. In the event of termination without cause pursuant to this Section, the terminating party need not provide the non-terminating party with the opportunity to cure pursuant to Section 7.2.

7.9 Termination for Default of Contractor.

If termination is due to the failure of the Contractor to fulfill its obligations under this Agreement, Town may, after compliance with the provisions of Section 7.2, take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable to the extent that the total cost for completion of the services required hereunder exceeds the compensation herein stipulated (provided that the Town shall use reasonable efforts to mitigate such damages), and Town may withhold any payments to the Contractor for the purpose of set-off or partial payment of the amounts owed the Town as previously stated.

7.10 Attorneys' Fees.

If either party to this Agreement is required to initiate or defend or made a party to any action or proceeding in any way connected with this Agreement, the prevailing party in such action or proceeding, in addition to any other relief which may be granted, whether legal or equitable, shall be entitled to reasonable attorney's fees. Attorney's fees shall include attorney's fees on any appeal, and in addition a party entitled to attorney's fees shall be entitled to all other reasonable costs for investigating such action, taking depositions and discovery and all other necessary costs the court allows which are incurred in such litigation. All such fees shall be deemed to have accrued on commencement of such action and shall be enforceable whether or not such action is prosecuted to judgment.

7.11 Unfair Business Practices Claims.

In entering into this Agreement, Contractor offers and agrees to assign to the Town all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2, (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials related to this Agreement. This assignment shall be made and become effective at the time the Town renders final payment to the Contractor without further acknowledgment of the Parties.

ARTICLE 8. CONSTRUCTION CLAIMS

8.1 All Claims.

Public Contract Code Section 9204 specifies required provisions on resolving public works project contract claims. Those provisions shall apply to any claim (as claimed in defined in Public Contract Code section 9204(c)(1)) by Contractor under this Agreement.

8.2 Claims of \$375,000 or less.

Public Contract Code Sections 20104 et seq. specify required provisions on resolving public works project contract claims of \$375,000 or less. Those provisions shall apply to any claim (as claim in defined in Public Contract Code Section 20104(b)(2)) by Contractor under this Agreement for \$375,000 or less in addition to the requirements of Section 8.1.

ARTICLE 9. TOWN OFFICERS AND EMPLOYEES: NON-DISCRIMINATION

9.1 Non-liability of Town Officers and Employees.

No officer or employee of the Town shall be personally liable to the Contractor, or any successor in interest, in the event of any default or breach by the Town or for any amount which may become due to the Contractor or to its successor, or for breach of any obligation of the terms of this Agreement.

9.2 Conflict of Interest.

Contractor covenants that neither it, nor any officer or principal of its firm, has or shall acquire any interest, directly or indirectly, which would conflict in any manner with the interests of Town or which would in any way hinder Contractor's performance of services under this Agreement. Contractor further covenants that in the performance of this Agreement, no person having any such interest shall be employed by it as an officer, employee, agent or subcontractor without the express written consent of the Contract Officer. Contractor agrees to at all times avoid conflicts of interest or the appearance of any conflicts of interest with the interests of Town in the performance of this Agreement.

No officer or employee of the Town shall have any financial interest, direct or indirect, in this Agreement nor shall any such officer or employee participate in any decision relating to the Agreement which effects his financial interest or the financial interest of any corporation, partnership or association in which he is, directly or indirectly, interested, in violation of any State statute or regulation. The Contractor warrants that it has not paid or given and will not pay or give any third party any money or other consideration for obtaining this Agreement.

9.3 Covenant Against Discrimination.

Contractor covenants that, by and for itself, its heirs, executors, assigns, and all persons claiming under or through them, there shall be no discrimination against or segregation of, any person or group of persons on account of race, age, color, creed, gender, religion, sex, marital status, national origin, gender identity, gender expression, veteran status, disability, medical condition, pregnancy, childbirth and related medical conditions, military service, sexual orientation, genetic information or testing, ancestry, or other protected class in the performance of this Agreement. Contractor shall take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, creed, religion, sex, marital status, national origin, ancestry, or other protected class.

9.4 Unauthorized Aliens.

Contractor hereby promises and agrees to comply with all of the provisions of the Federal Immigration and Nationality Act, 8 U.S.C.A. §§ 1101, et seq., as amended, and in connection therewith, shall not employ unauthorized aliens as defined therein. Should Contractor so employ such unauthorized aliens for the performance of work and/or services covered by this Agreement, and should any liability or sanctions be imposed against Town for such use of unauthorized aliens, Contractor hereby agrees to and shall reimburse Town for the cost of all such liabilities or sanctions imposed, together with any and all costs, including attorneys' fees, incurred by Town.

ARTICLE 10. MISCELLANEOUS PROVISIONS

10.1 Notices.

Any notice, demand, request, document, consent, approval, or communication either party desires or is required to give to the other party or any other person shall be in writing and either served personally or sent by prepaid, first-class mail, in the case of the Town, to the Town Manager and to the attention of the Contract Officer, Town of Yucca Valley, 57090 Twentynine Palms Highway, Yucca Valley, California 92284 and in the case of the Contractor, to the person at the address designated on the execution page of this Agreement. Either party may change its address by notifying the other party of the change of address in writing. Notice shall be deemed communicated at the time personally delivered or in seventy-two (72) hours from the time of mailing if mailed as provided in this Section. All correspondence relating to this Agreement shall be serialized consecutively.

10.2 Interpretation; Governing Law; Venue.

The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction which might otherwise apply. Each party has had the opportunity to review this Agreement with legal counsel. This Agreement will be interpreted, construed and governed according to the laws of the State of California. In the event of litigation between the parties, venue in state trial courts will be in the County of San Bernardino, California.

10.3 Counterparts.

This Agreement may be executed in counterparts, each of which shall be deemed to be an original, and such counterparts shall constitute one and the same instrument.

10.4 Integration; Amendment.

This Agreement including the attachments hereto is the entire, complete and exclusive expression of the understanding of the parties. It is understood that there are no oral agreements between the parties hereto affecting this Agreement and this Agreement supersedes and cancels any and all previous negotiations, arrangements, agreements and understandings, if any, between the parties, and none shall be used to interpret this Agreement. No amendment to or modification of this Agreement shall be valid unless made in writing and approved by the Contractor and by the Town Council. The parties agree that this requirement for written modifications cannot be waived and that any attempted waiver shall be void.

10.5 Severability.

In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this Agreement shall be declared invalid or unenforceable by a valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this Agreement which are hereby declared as severable and shall be interpreted to carry out the intent of the parties hereunder unless the invalid provision is so material that its invalidity deprives either party of the basic benefit of their bargain or renders this Agreement meaningless.

10.6 Third Party Beneficiaries.

Contractor's subcontractor must agree to be bound to the terms of this Agreement to the extent of their scope of work, including but not limited to, terms regarding indemnity and dispute resolution, and must agree that Town is deemed an express third party beneficiary of their subcontracts. Nothing in this Agreement, however, shall operate to confer such or similar rights or benefits on persons or entities not party to this Agreement.

10.7 Corporate Authority.

The persons executing this Agreement on behalf of the parties hereto warrant that (i) such party is duly organized and existing, (ii) they are duly authorized to execute and deliver this Agreement on behalf of said party, (iii) by so executing this Agreement, such party is formally bound to the provisions of this Agreement, and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which said party is bound. This Agreement shall be binding upon the heirs, executors, administrators, successors and assigns of the parties.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date and year first-above written.

TOWN:

TOWN OF YUCCA VALLEY,
a municipal corporation

Curtis Yakimow, Town Manager

ATTEST:

Lesley Copeland, Town Clerk

APPROVED AS TO FORM:

BURKE, WILLIAMS & SORENSON , LLP

Thomas Jex, Town Attorney

CONTRACTOR:

By: _____
Name:
Title:

By: _____
Name:
Title:

Address: _____

Two signatures are required if a corporation.

NOTE: CONTRACTOR'S SIGNATURES SHALL BE DULY NOTARIZED, AND APPROPRIATE ATTESTATIONS SHALL BE INCLUDED AS MAY BE REQUIRED BY THE BYLAWS, ARTICLES OF INCORPORATION, OR OTHER RULES OR REGULATIONS APPLICABLE TO CONTRACTOR'S BUSINESS ENTITY.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

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

STATE OF CALIFORNIA

COUNTY OF SAN BERNARDINO

On _____, 2015 before me, _____, personally appeared _____, proved to me on the basis of satisfactory evidence to be the person(s) whose names(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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

WITNESS my hand and official seal.

Signature: _____

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER	DESCRIPTION OF ATTACHED DOCUMENT
<input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> CORPORATE OFFICER _____ TITLE(S)	_____ TITLE OR TYPE OF DOCUMENT
<input type="checkbox"/> PARTNER(S) <input type="checkbox"/> LIMITED <input type="checkbox"/> GENERAL <input type="checkbox"/> ATTORNEY-IN-FACT <input type="checkbox"/> TRUSTEE(S) <input type="checkbox"/> GUARDIAN/CONSERVATOR <input type="checkbox"/> OTHER _____ _____	_____ NUMBER OF PAGES
SIGNER IS REPRESENTING: (NAME OF PERSON(S) OR ENTITY(IES)) _____ _____	_____ SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

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

STATE OF CALIFORNIA

COUNTY OF SAN BERNARDINO

On _____, 2015 before me, _____, personally appeared _____, proved to me on the basis of satisfactory evidence to be the person(s) whose names(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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

WITNESS my hand and official seal.

Signature: _____

OPTIONAL

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	_____ DATE OF DOCUMENT
SIGNER IS REPRESENTING: (NAME OF PERSON(S) OR ENTITY(IES)) _____ _____	_____ SIGNER(S) OTHER THAN NAMED ABOVE

EXHIBIT "A"

SCOPE OF WORK

I. Project Name:

II. Project Number:

III. Project Description:

IV. The location(s) of the work, its general nature and extent, and the form and general dimensions of the Project and appurtenant work are shown on the Construction Drawings and are hereby made a part of this Agreement as listed herein:

List of Drawings

Refer to Section ___ of the Contract Documents and Specifications

Contractors shall have on file a minimum of one (1) set of Construction Drawings upon which Contractor shall record all variations between the work as built and as originally shown on the Construction Drawings or other Contracts Documents (“Record Drawings”). Record Drawings must be kept at the work site and be accessible at all times during the construction periods and shall be delivered to the Town Engineer within thirty (30) days after completion of the work.

V. In addition to the requirements of Section 6.2, during performance of the work, Contractor will keep the Town apprised of the status of performance by delivering the following status reports:

- A.**
- B.**
- C.**

VI. All work is subject to review and acceptance by the Town, and must be revised by the Contractor without additional charge to the Town until found satisfactory and accepted by Town.

VII. Contractor shall provide safe and continuous passage for pedestrian and vehicular traffic in accordance with the California Manual of Uniform Traffic Control Devices (CA MUTCD), latest edition.

VIII. Contractor will utilize the following personnel to accomplish the work:

See attached Exhibit “A-1” List of Personnel

EXHIBIT "B"

**SPECIAL REQUIREMENTS
(Superseding Contract Boilerplate)**

EXHIBIT "C"

SCHEDULE OF COMPENSATION

- I. Contractor shall perform all tasks as specified in the schedule of values, at the rates specified in the accepted bid. The schedule of value of the accepted bid is attached as Exhibit "C-1".**

- II. A retention of five percent (5%) shall be held from each payment as a contract retention to be paid as part of the final payment upon satisfactory completion of services.**

- III. Within the budgeted amounts for each Task, and with the approval of the Contract Officer, funds may be shifted from one Task sub budget to another so long as the Contract Sum is not exceeded per Section 2.1, unless Additional Work are approved per Section 1.10.**

- IV. The Town will compensate Contractor for the services performed upon submission of a valid invoice. Each invoice is to include:**
 - A. Application for payment in the following format AIA G702 and G703.**
 - B. Unredacted Certified payroll**

- V. The total compensation for the services shall not exceed \$_____ as provided in Section 2.1 of this Agreement.**

EXHIBIT "D"

SCHEDULE OF PERFORMANCE

- I. Contractor shall perform all work timely in accordance with the schedule to be developed by Contractor and subject to the written approval of the Contract Officer.**
- II. Contractor shall deliver the project to the Town in accordance to the time frame stated in the accepted Notice to Proceed**
- III. The Contract Officer may approve extensions for performance of the services in accordance with Section 3.2.**

EXHIBIT "E"

Appendix E of the Title VI Assurances

(US DOT Order 1050.2A)

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following nondiscrimination statutes and authorities; including but not limited to:

Pertinent Nondiscrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 U.S.C. § 4 71, Section 4 7123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, subrecipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

EXHIBIT "F"

PREVAILING WAGE DETERMINATION

EXHIBIT G

FEDERAL CONTRACT TERMS, CONDITIONS, AND REGULATIONS

In performing its Work under the Contract, Contractor must conform to all applicable federal, state, and local codes, laws, ordinances, rules and regulations, which will have full force and effect as though printed in full in the Contract. In addition to the terms, conditions, performance obligations, and other requirements set forth in the Contract, Contractor must comply with the following federal contract terms, conditions, and regulations, which are incorporated by reference in the Contract:

1. **Equal Employment Opportunity.** Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60–1.3 must include the equal opportunity clause provided under 41 CFR 60–1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 CFR Part, 1964–1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”

41 CFR 60–1.4(b) provides:

The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction Work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action will include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision will not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of Workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or Workers' representatives of the contractor's commitments under this section, and must post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering

agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction Work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in Work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

2. **Davis-Bacon Act, as amended (40 U.S.C. 3141-3148)**. When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the

wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public Work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

3. **Contract Work Hours and Safety Standards Act (40 U.S.C. 3701–3708)**. Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard Work week of 40 hours. Work in excess of the standard Work week is permissible provided that the Worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours Worked in excess of 40 hours in the Work week. The requirements of 40 U.S.C. 3704 are applicable to construction Work and provide that no laborer or mechanic must be required to Work in surroundings or under Working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
4. **Rights to Inventions Made Under a Contract or Agreement**. If the Federal award meets the definition of “funding agreement” under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research Work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.
5. **Clean Air Act (42 U.S.C. 7401–7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251–1387), as amended**. Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
6. **Debarment and Suspension (Executive Orders 12549 and 12689)**. A contract award (see 2 CFR 180.220) must not be made to parties listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names

of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

7. **Byrd Anti-Lobbying Amendment (31 U.S.C. 1352).** Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.
8. **2 CFR § 200.322 Procurement of Recovered Materials.** A non-Federal entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.
9. **Certification for Contracts, Grants, Loans, and Cooperative Agreements.** The parties to this Contract agree to comply with the provisions of 43 CFR 18, New Restrictions on Lobbying, including the following certification requirements:

In accordance with 43 C.F.R. § Part. 18, Appendix A, each of the parties to this Contract certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the parties, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the parties must complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The parties must require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients must certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification must be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

- 10. Executive Order 13513 of October 1, 2009, Federal Leadership On Reducing Text Messaging While Driving.** Text Messaging While Driving by Government Contractors, Subcontractors, and Recipients and Subrecipients. Each Federal agency, in procurement contracts, grants, and cooperative agreements, and other grants to the extent authorized by applicable statutory authority, entered into after the date of this order, must encourage contractors, subcontractors, and recipients and subrecipients to adopt and enforce policies that ban text messaging while driving company-owned or -rented vehicles or GOV, or while driving POV when on official Government business or when performing any Work for or on behalf of the Government. Agencies should also encourage Federal contractors, subcontractors, and grant recipients and subrecipients as described in this section to conduct initiatives of the type described in section 3(a) of this order.
- 11. Drug-Free Workplace (2 CFR §182 and §1401).** The Department of the Interior regulations at 2 CFR 1401—Government-wide Requirements for Drug-Free Workplace (Financial Assistance), which adopt the portion of the Drug-Free Workplace Act of 1988 (41 U.S.C. 701 et seq., as amended) are hereby incorporated by reference and made a part of this Contract. By entering into this Contract, the Contractor agrees to comply with 2 CFR 182.
- 12. Copeland Anti-Kickback Act (18 U.S.C. 874).** Contractor agrees to comply with the Copeland Anti-Kickback Act as supplemented by Department of Labor regulations (29 CFR part 5).

NOTICE TO BIDDERS

If further information is needed regarding this work, please contact:

Alex Qishta – Public Works Director
Town of Yucca Valley
Public Works Department, Engineering Division
58928 Business Center Drive
Yucca Valley, CA 92284

Phone: 760-369-6579
FAX 760-228-0084
E-MAIL aqishta@yucca-valley.org

Monday through Thursday from 8:00 A.M. to 5:00 P.M.

All persons obtaining bid packets should immediately supply the Engineer with his or her facsimile telephone number in order that addenda and other information may be transmitted as rapidly as possible. **FAILURE TO PROVIDE SUCH A NUMBER MAY RESULT IN LATE NOTIFICATION.**

CONTRACTOR'S PROPOSAL

Company _____

Address _____

Telephone Number _____

State License Number _____

Town of Yucca Valley
58928 Business Center
Yucca Valley, California 92284

Ladies and Gentleman:

Pursuant to the Public Notice inviting bids or proposals, the undersigned declares that he has carefully examined the location of the proposed work, that he has examined plans, profiles, and specifications for **Project No. 4100: YUCCA VALLEY COMMUNITY CENTER PARK ATHLETIC FACILITY IMPROVEMENTS PROJCT** And read the accompanying proposal requirement, and hereby proposes to furnish all materials and do all work required to complete the said work in accordance with said plans, profiles, specifications, and special provisions for the unit or lump sum price set forth in the Schedule of Work Items.

Unless otherwise specified by the Contractor, the listing of an Item No. of Work shall be conclusive evidence that the subcontractor proposed to perform the Item of Work and shall perform the entirety of the work for that Item No. of Work.

All persons or parties submitting a bid proposal on the project shall complete the following form setting forth the Item Number (as specified in the "Schedule of Work Items"), the name, location, and place of business of each subcontractor who will perform work or labor or render services to the prime Contractor in or about the construction of the work of improvements, or a subcontractor licensed by the State of California, who, under subcontract to the prime Contractor, specially fabricates and installs a portion of the work or improvements according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent (1/2%) of the prime Contractor's total bid, or, if the bid is for the construction of streets or highways, including bridges, in excess of one-half of one percent (1/2%) of the prime Contractor's total bid or ten thousand dollars (\$10,000.00), whichever is greater.

It is noted that if a Contractor fails to specify a subcontract for any portion of the work to be performed under the Contract, he shall be deemed to have agreed to perform such portion himself, and he shall not be permitted to subcontract that portion of the work except by written consent of the awarding authority. The requirement of the submission of this list, the legal consequences for failure of the Contractor to do so, and other particular details

concerning the same shall be as set forth in the “Subletting and Subcontracting Fair Practices Act”, California Public Contract Code (§ 4100, *et seq.*) to which the bidder is hereby referred.

Item No. of Work	Name of Firm or Contractor	Location of Mill, Shop or Office	Sub- Contractor Classification	Town of Yucca Valley Business License No. *

* All Subcontractors are required to obtain a Town of Yucca Valley Business License before a Notice to Proceed may be issued.

The undersigned further agrees that in case of default in executing the required contract with necessary bonds within **ten (10) calendar days** after the notice of award of contract has been mailed, the proceeds of the check or bond accompanying his bid shall become the property of the Town. If the Town awards the contract to the next lowest bidder, the amount of the lowest bidder’s security shall be applied by the Town to the difference between the low bid and the second lowest bid, and the surplus, if any, shall be returned to the lowest bidder. The undersigned further agrees to complete the work within **Ninety (90) calendar days for Base Bid and One hundred forty-five (145) calendar days for Base Bid plus Alternate Bid#1** from the execution of the first contract.

Contractor, and any subcontractors utilized, shall be licensed in accordance with the provisions of the Contractor’s License Law, Chapter 9 of Division 3 of the State Business and Professions Code. Additionally, the Contractor must have at the time of bid opening for this project the following classification(s) of Contractor’s license and experience:

Classification

**Classification (A) General Engineering Contractor
OR
Appropriate calcifications that required for the construction**

BIDDER'S INTIATED ACKNOWLEDGEMENT OF ADDENDUMS:

ADDENDUM NO.1 _____ DATE: _____

ADDENDUM NO.2 _____ DATE: _____

ADDENDUM NO.3 _____ DATE: _____

ADDENDUM NO.4 _____ DATE: _____

BIDDING FORM
COMMUNITY CENTER PARK ATHLETIC
FACILITY IMPROVEMENTS PROJECT
PROJECT NO. 4100

Name of Bidder _____

The undersigned, having examined the proposed Contracts and having visited the site and examined the conditions affecting the work, hereby and agrees to furnish all labor, materials, equipment, and appliances, and perform operations necessary to complete the work as required by said proposed Contract Documents, excluding work of alternates for. The bids will be awarded on Base Bid.

BASE BID SCHEDULE					
COMMUNITY CENTER PARK ATHLETIC FACILITY IMPROVEMENTS					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	AMOUNT	SUBTOTAL
1	Mobilization per project specifications and bid item- not more than the 2% of bid amount	LS	1		
2	Clearing, Grubbing, Soil Import and Grading	LS	1		
3	Remove Existing Tree	EA	4		
4	Remove Existing Joshua Tree	EA	32		
5	Relocate existing Dumpster	LS	1		
6	Traffic Control	LS	1		
7	Construct 6" Thick Concrete Pavement	SF	8,500		
8	Construct 4" Thick AC Pavement over base	SF	15,000		
9	Construct Handrails for steps	LF	35		
10	Furnish and Install "SSTD" Traditional Mat System" Truncated domes	SF	30		
11	Furnish and Install 5' concrete wheel stops	EA	2		
12	Paint Parking Striping, Accessible Stalls and EV Stalls	LS	1		
13	Furnish and Install Dual -Port Level 3 EV Charging Station Anchor Plates	EA	2		
14	Construct Pickleball court paving, surfacing, striping, and netting	EA	8		
15	Construct 10' tall galvanized chainlink fence with black vinyl coating and windscreen	LF	525		

16	Construct 6' tall galvanized chainlink fence with black vinyl coating	LF	150		
17	Construct 4' tall galvanized chainlink fence with black vinyl coating	LF	400		
18	Construct 4' wide x 7' tall galvanized chainlink perimeter swing gate with black vinyl coating	EA	8		
19	Construct 4' wide x 4' tall galvanized chainlink interior swing gate with black vinyl coating	EA	6		
20	Furnish and Install Custom 10' x 162' Cantilever Shade Structure and Lights	LS	1		
21	Furnish and Install 8' Double Pedestal Bench	EA	10		
22	Furnish and Install Concrete Trash Receptacle	EA	2		
23	Furnish and Install Concrete Recycling Receptacle	EA	2		
24	Furnish and Install Shrubs and D.G. Groundcover	LS	1		
25	Furnish and Install Irrigation System	LS	1		
26	Construct Curbs and Gutters (Per Precise Grading Plans)	LS	1		
27	Construct Accessible Ramps and Curbs (Per Precise Grading Plans)	LS	1		
28	Furnish and Install Wet Utilities (Per Wet Utility Plans)	LS	1		
29	Construct Storm Drain System (Per Precise Grading Plans)	LS	1		
30	Construct Erosion Control (Per Erosion Control Plan)				
31	Furnish and Install Lighting and Electrical System (Per Electrical Improvement Plans)	LS	1		
GRAND TOTAL BASE BID ITEMS (In Figures)					
GRAND TOTAL BASE BID ITEMS (In Words)					

ADD ALT # 1 BID SCHEDULE COMMUNITY CENTER PARK ATHLETIC FACILITY IMPROVEMENTS					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	AMOUNT	SUBTOTAL
A-1	Construct 6" Thick Concrete Pavement	SF	2,000		
A-2	Construct Deepened Curb Edge	LF	300		

A-3	Furnish and Install concrete pavers	SF	3,500		
A-4	Furnish and Install 6' long Picnic Table	EA	6		
A-5	Furnish and Install 6' long Accessible Picnic Table	EA	2		
A-6	Furnish and Install Concrete Trash Receptacle	EA	1		
A-7	Furnish and Install Concrete Recycling Receptacle	EA	1		
A-8	Furnish and Install Tri-Leaf Shade Structure and Lights	EA	2		
A-9	Install Prefabricated Restroom Building	LS	1		
A-10	Construct Handrails	LF	100		
A-11	Construct 6' tall galvanized chainlink fence with black vinyl coating	LF	600		
A-12	Construct Channel Drain (Per Wet Utility Plans)	LS	1		
A-13	Furnish and Install Lighting and Electrical System (Per Electrical Improvement Plans – Add Alternate)	LS	1		
GRAND TOTAL ADD ALT #1 BID ITEMS (In Figures)					
GRAND TOTAL ADD ALT #1 BID ITEMS (In Words)					

TOTAL BASE BID: _____

TOTAL ADD ALT #1 BID: _____

TOTAL BASE BID AND ALTERATE BID: _____

(SEAL) By: _____

Title: _____

(Type or print name)

BUSINESS ADDRESS

PHONE: _____

E-MAIL: _____

DIR Number: _____

Dated: _____

NOTE:

If bidder is a corporation, enter State of Incorporation in addition to Business Address; if a partnership or joint venture, provide full names of all partners or joint venturer

WORKERS' COMPENSATION INSURANCE CERTIFICATION

The Contractor shall execute the following form as required by the California Labor Code, Section 1860 and 1861:

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

Date: _____
_____ (Contractor)

By: _____
(Title)

Attest:
By: _____

_____ (Title)

(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS PROPOSAL SHALL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE CERTIFICATIONS WHICH ARE A PART OF THIS PROPOSAL)

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

The bidder _____, proposed subcontractor _____, hereby certifies that he has _____, has not _____ participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246 and that, where required, he has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7 (b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5 (Generally only contracts or subcontracts of \$10,000.00, or under, are exempt).

Currently, Standard Form 100 (EE-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filled the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

(This affidavit shall be executed by all bidders at the time of bid submittal. Failure to execute the affidavit on this page will result in rejection of bid.)

NON-COLLUSION AFFIDAVIT

To the DEPARTMENT OF PUBLIC WORKS, TOWN OF YUCCA VALLEY, STATE OF CALIFORNIA.

The undersigned in submitting a bid for performing the following work by contract, being duly sworn, deposes and says:

That he or she is of the party making the foregoing bid, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; communication, or conference with anyone to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract on anyone interested in the proposed contract; or take any action in restraint of free competitive bidding in connection with such contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

_____ Firm Name

Signature of Bidder

_____ Printed Name and Title

Business Address

Place of Residence

Subscribed and sworn to (or affirmed) before me this ____ day of _____ 20____
the above proved to me on the basis of satisfactory evidence to be the person who appeared
before me.

Signed _____
Notary Public in and for the County of _____, State of California.

My Commission expires on _____, _____ Year

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____ as Principal, and _____ as Surety, are firmly held and bound unto the Town of Yucca Valley, organized and existing under the laws of the State of California, sometimes referred to as the Town, in the sum of \$ _____ (which is a sum no less than ten (10%) percent of the amount of the total bid) for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that, whereas the Principal has submitted to the Town the accompanying Proposal dated _____, for the construction of:

YUCCA VALLEY COMMUNITY CENTER ATHLETIC FACILITY IMPROVEMENTS PROJECT

TOWN PROJECT NO. 4100

NOW, THEREFORE, if the Principal withdraws said proposal within the period specified in said Proposal, or if the Principal shall not, within ten (10) calendar days after the receipt from the Town of Notice of Award of the Contract for any reason whatsoever except the fault of the Town, enter into the Contract with the Town in accordance with the Principal's Proposal, give bonds with good and sufficient surety and furnish the certificates of insurance as stated in said Proposal, then the above obligation shall be and remain in full force and effect; otherwise it shall be null and void. In the event suit is brought upon this Bond by the Town and judgment is recovered, the surety and sureties shall pay all costs incurred by the Town in such suit, including attorney's fees to be fixed by the court.

Dated: _____, 20_____

(Principal)

(Business Address)

In presence of:

(Address)

END OF PERFORMANCE BOND

PAYMENT BOND (LABOR AND MATERIALS)

KNOW ALL MEN BY THESE PRESENTS That

WHEREAS, the Town of Yucca Valley, a Charter Town and municipal corporation organized and operating under the laws of the State of California (hereinafter designated as the "Town"), by action taken or a resolution passed _____, 20_____, has awarded to _____ hereinafter designated as the "Principal," a contract for the work described as follows:

Contract No. _____ (the "Project"); and

WHEREAS, the work to be performed by the Contractor is more particularly set forth in the Contract Documents for the Project dated _____, (hereinafter referred to as "Contract Documents"), the terms and conditions of which are expressly incorporated herein by reference; and

WHEREAS, said Principal is required to furnish a bond in connection with said contract; providing that if said Principal or any of its Subcontractors shall fail to pay for any materials, provisions, provender, equipment, or other supplies used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of said Principal and its Subcontractors with respect to such work or labor the Surety on this bond will pay for the same to the extent hereinafter set forth.

NOW THEREFORE, we, the Principal and _____ as Surety, are held and firmly bound unto the Town in the penal sum of _____ Dollars (\$_____) lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his or its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Civil Code Section 9100, fail to pay for any materials, provisions or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department or Franchise Tax Board from the wages of employees of the contractor and his subcontractors pursuant to Revenue and Taxation Code Section 18663, with respect to such work and labor the Surety or Sureties will pay for the same, in an amount not exceeding the sum herein above specified, and also, in case suit is brought upon this bond, all litigation expenses incurred by the Town in such suit, including reasonable attorneys' fees, court costs, expert witness fees and investigation expenses.

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

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described, or pertaining or relating to the furnishing of labor, materials, or equipment therefore, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any

scheme or work of improvement herein above described, nor by any rescission or attempted rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the owner or the Town and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Civil Code Section 9100, and has not been paid the full amount of his claim.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract to be performed thereunder, shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of Contract, including but not limited to, the provisions of Sections 2819 and 2845 of the California Civil Code.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20____.

(Corporations require two (2) signatures; *one from each* of the following groups: A. Chairman of Board, President, or any Vice President; *AND* B. Secretary, Assistant Secretary, Treasurer, Assistant Treasurer, or Chief Financial Officer).

(Corporate Seal) _____
Contractor/ Principal

By _____

Title _____

(Corporate Seal) _____
Surety

By _____

Attorney-in-Fact

(Attach Attorney-in-Fact Certificate) Title _____

Notary Acknowledgment

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

STATE OF CALIFORNIA
 COUNTY OF _____

On _____, 20___, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory

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

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

WITNESS my hand and official seal.

 Signature of Notary Public

OPTIONAL

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

CAPATOWN CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

- Partner(s)
 - Limited
 - General
- Attorney-In-Fact
- Trustee(s)
- Guardian/Conservator
- Other:

	Title or Type of Document
	Number of Pages
	Date of Document
	Signer(s) Other Than Named Above

Signer is representing:
 Name Of Person(s) Or Entity(ies)

NOTE: This acknowledgment is to be completed for Contractor/Principal.

Notary Acknowledgment

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

STATE OF CALIFORNIA
 COUNTY OF _____

On _____, 20___, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory

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

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

WITNESS my hand and official seal.

 Signature of Notary Public

OPTIONAL

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

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 - General
- Attorney-In-Fact
- Trustee(s)
- Guardian/Conservator
- Other:

Signer is representing:
 Name Of Person(s) Or Entity(ies)

	Title or Type of Document
	Number of Pages
	Date of Document
	Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-Attorney to local representatives of the bonding company must also be attached.

END OF PAYMENT BOND

BIDDER'S FIRM NAME

**REFERENCES – YUCCA VALLEY COMMUNITY CENTER
PARK ATHLETIC FACILITY IMPROVEMENTS PROJECT**

Project No. 4100

Date _____

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**:

Public Agency's Name & Address	Type of Project	Contract Amount	Date Completed	Contract Name, Title & Phone Number
1. _____		\$		
2. _____		\$		
3. _____		\$		

DECLARATION OF ELIGIBILITY TO CONTRACT

[Labor Code Section 1777.1; Public Contract Code Section 6109]

The undersigned contractor, certifies and declares that:

1. The undersigned contractor 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, or being awarded, or performing work as a subcontractor on a public works project for specified periods of time.
2. The undersigned contractor 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 undersigned contractor 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 1777.1 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 undersigned contractor has investigated the eligibility of each and every subcontractor the undersigned 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 or 1777.7 of the Labor Code, or any other provision of law.

The undersigned declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed this _____ day of _____ 2024, at _____, California.

(place of execution)

Signature

Name (print or type)

Title

Name of company

TOWN OF YUCCA VALLEY
NON-DEBARMENT CERTIFICATION

Instructions for Certification.

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why they cannot provide the certification set out below. The certification or explanation will be considered in connection with the Town's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the Town determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the Town to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Town or agency entering into this transaction.
6. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals.
8. Nothing contained in the foregoing shall be construed to require establishment of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Expect for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower Tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies to the Federal Government, the Town may terminate this transaction for cause or default.

10. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion.

COUNTY OF _____

STATE OF _____

_____ being first
(President or duly authorized Company official)

duly sworn deposes and says that he is _____
(official capacity)

of _____ with the intention of becoming a primary
(name of company)

participant on Town of Yucca Valley Construction and that he certifies to the best of his knowledge and belief that said company and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property:

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification: and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Further affiant sayeth not.

(Signature)

(Print Name)

SUBSCRIBED AND SWORN to before me a notary public this _____

Day of _____, 20____

Notary Public

My commission expires: _____

GENERAL PROVISIONS
2021 GREEN BOOK, AS MODIFIED

TOWN OF YUCCA VALLEY GENERAL PROVISIONS

The Standard Specifications for the Town of Yucca Valley shall be the **STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2021 EDITION** (sometimes hereinafter referred to as the *Green Book*), written and promulgated by the Southern California Chapter, American Public Works Association, and Southern California Districts Associated General Contractors of California Joint Cooperative Committee, including all published amendments thereto except for the following amendments, deletions and modifications.

Any conflict arising between these modifications and the Standard Specifications for Public Works Construction shall be resolved by the Engineer, whose decision shall be final.

Modifications to the Standard Specifications for Public Works Construction.

The following amendments, additions and deletions shall be incorporated into the Green Book:

SECTION 1 - GENERAL

1-2 Terms and Definitions.

Agency - The Town of Yucca Valley

Board - The Mayor and Town Council of the Town of Yucca Valley

Clerk or Town Clerk – The Town Clerk of the Town of Yucca Valley

Engineer or Town Engineer - The Town Engineer of the Town of Yucca Valley or his or her designee.

Laboratory - The official testing laboratory of the Agency or other laboratories designated, in writing, by the Engineer.

1-6 – Bidding and Submission of Bid

Section 1-6 of the Green Book hereby amended, as follows:

1-6.3 Availability of Plans and Specifications: Plans and specifications may be examined at the Office of the TOWN Engineer. Copies of the plans and specifications are available at the Office of the Town Engineer. Copies of the Notice to Bidders and proposal forms may be obtained from the Town Engineer.

1-6.4 Approximate Estimate: The quantities given in the Notice to Bidders, proposal and contract forms are approximate only, being given as a basis for the comparison of bids, and the Agency does not, expressly or by implication, agree that the actual amount of work will correspond therewith. For work bid on a lump sum price basis, any estimate of quantities is provided for the convenience of Bidders and for comparison of bids and is not guaranteed to be correct by the Agency.

1-6.5 Examination of Plans, Specifications and Site of the Work. The Bidder shall carefully examine the site of the work contemplated and the proposal, plans, specifications and contract forms therefore. It will be assumed that the Bidder has

investigated and is satisfied as to the conditions to be encountered, as to the character, quality and quantities of work to be performed and materials to be furnished, and as to the requirements of these specifications, the plans and the contract.

1-6.6 Proposal Form: All proposals must be submitted on forms for that purpose furnished by the Agency. Letters of transmittal cannot be considered as part of the bid. All proposals shall give the prices proposed, both in writing and figures, and shall be signed by the Bidder, who must give his address. The Bidder shall fill out all blanks in the proposal form as therein required. In case of error, unit prices will govern over extensions and written words will govern over numerals, unless it can be established that an obviously incorrect entry has been made.

1-6.7 Rejection of Proposals Containing Alterations or Irregularities: Proposals may be rejected if they show any alterations of form, additions not called for, conditional bids, incomplete bids, or irregularities of any kind. When proposals are signed by an agent, other than an officer or manager of a corporation or a member of a partnership, a power of attorney or written authorization must be on file with the Agency prior to opening bids or shall be submitted with the proposal; otherwise, the proposal will be rejected as irregular and unauthorized.

1-6.8 Proposal Guaranty: All bids shall be presented in a sealed envelope and shall be accompanied by "Proposal Guaranty" made payable to the Agency and for an amount equal to at least ten percent (10%) of the bid unless otherwise specified on the "Notice Inviting Sealed Bids or Proposals." Said guaranty shall be cash, an unconditional certified or cashier's check, a bank or postal money order or bid bond executed as surety by a corporation authorized to issue surety bonds in the State of California.

1-6.9 Withdrawal of Proposals: Any bid may be withdrawn at any time prior to, but not after, the hour fixed in the public notice for the opening of bids, provided that a request in writing executed by the Bidder or his duly authorized representative, for the withdrawal of such bid is filed with the Clerk. The withdrawal of a bid shall not prejudice the right of a Bidder to file a new bid.

1-6.10 Disqualification of Bidders: More than one proposal from an individual, a firm or partnership, a Corporation or an association under the same or different names will not be considered. Reasonable grounds for believing that any bidder is interested in more than one proposal for the work contemplated will cause the rejection of all proposals in which such Bidder is interested. If there is reason for believing that collusion exists among the bidders, none of the participants in such collusion will be considered in this or future proposals. Proposals in which the prices are unbalanced may be rejected.

1-6.11 Competency of Bidders: Prior to the submission of bids, the Contractor shall be licensed in accordance with the provisions of Chapter 9 of Division III of the Business and Professional Code of the State of California and evidence of such license shall be presented to the Engineer on request. The Engineer may require the Bidder to present satisfactory evidence that he has sufficient experience and that he is fully prepared with the necessary capital, materials, machinery and skilled workmen to carry out the contract.

1-6.12 Material Guaranty: Before any contract is awarded, Bidders may be required to furnish a complete statement of the origin, composition and

manufacture of any or all materials to be used in the construction of the work, together with samples, which samples may be subjected to the tests provided for in these specifications to determine their quality and fitness for the work.

1-6.13 Progress Schedule: The successful bidder shall submit a progress schedule showing thereon the time he proposes to occupy in prosecuting the various major divisions of the work and his proposed sequence of operations.

Subsection 1-7 Award and Execution of Contract: of the *Green Book* hereby is **amended** to read as follows:

1-7.2 Contract Bonds: of the *Green Book* dealing with the "Payment Bond" (Labor and Material Bond) hereby is **amended** as follows:

Payment bond shall be:

1. One hundred percent of the total amount payable by the terms of the contract when the total amount payable does not equal or exceed five million dollars (\$5,000,000).
2. Fifty percent of the total amount payable by the terms of the contract when the total amount payable is not less than five million dollars (\$5,000,000) and does not exceed ten million dollars (\$10,000,000).
3. Twenty-five percent of the total amount payable by the terms of the contract if the contract exceeds ten million dollars (\$10,000,000).

1-7.3 Consideration of Bids: Bids will be opened publicly by the Town Engineer or a designated representative on the date and at the time set forth in the "Notice Inviting Sealed Bids or Proposals." The right is reserved by the Agency by action of the Board to reject any or all bids, to advertise for new proposals, to negotiate in the open market for a contract at a reasonable price, to purchase in the open market, or to have the work performed by Agency employees, or to abandon the work if, in the judgment of the Board, the best interest of the Agency will be promoted thereby.

1-7.4 Award of Contract: The award of the contract, if it be awarded, will be to the lowest responsible Bidder whose proposal complies with all the requirements prescribed. The award, if made, will be made within Sixty (60) calendar days after the opening of the proposals.

All bids will be compared on the basis of the Agency's estimate of the quantities of work to be done.

1-7.5 Return of Proposal Guarantees: All proposal guarantees will be held by the Agency until the contract has been signed, after which they will be returned to the respective bidders whose proposals they accompany. If bids are rejected, the proposal guarantees will be returned after the date of the rejection.

1-7.6 Execution of Contract: The contract shall be signed by the successful Bidder and returned together with the contract bonds, within ten (10) calendar days after the Notice of Award of Contract has been mailed, unless otherwise

specified by the Agency.

SECTION 2-SCOPE OF WORK -----[NO CHANGES]

SECTION 3-CONTROL OF WORK

Subsection 3-1 Assignment: of the *Green Book* is hereby **amended**, as

3-1.01 **General** – The award of the contract, if it be awarded, will be to the lowest responsible bidder whose bid complies with all the requirements prescribed. The award of the contract will be made by the Mayor and the Common Council at a Council meeting. **The bidder, to whom the contract is awarded, shall file with the Engineer all required bonds and insurance policies, and execute the contract within 10 calendar days after receiving notification of the award.** Failure to file the stipulated documents and execute the contract within the prescribed time shall constitute good and sufficient grounds for rescission of the award and payment of 10% of the bid to the Town as liquidated damages.

3-1.02 **Contract Bonds** -- The Payment and Faithful Performance Bonds shall be filed with the Engineer before the Notice to Proceed is executed by the TOWN. In accordance with Section 2-4, "CONTRACT BONDS", of the Standard Specifications, the contract bonds, including Payment Bond (Material and Labor Bond) and Performance Bond shall be underwritten by a surety company having a rating in Best's most recent Insurance Guide of "A" or better. Bonds must be issued by a surety who is listed in the latest version of U.S. Department of Treasury Circular 570 and is authorized to issue bonds in the State of California.

The Contractor shall provide to the TOWN three (3) original "wet" copies of Payment and Performance Bonds equal to 100% of the award amount of the contract.

3-1.03 **Disqualification of Bidders** -- In the event that any Bidder acting as a prime contractor has an interest in more than one bid, all such bids will be rejected and the Bidder will be disqualified. This restriction does not apply to subcontractors or suppliers who may submit quotations to more than one Bidder and, while doing so, may also submit a formal bid as a prime contractor.

No contract will be executed unless the Bidder is licensed in accordance with the provisions of the State Business and Professions Code.

The Contractor shall fill out all documents contained in the Bid Document section and comply with all the requirements of the Bid Documents and specifications contained in the Special Provisions. Failure of the bidder to fulfill the requirements of the Special Provisions for submittals required to be furnished after bid opening, including but not limited to BMP/SWPPP, traffic control and detour plans, WQMP or escrowed bid documents, where applicable, will delay the issue of the Notice to Proceed., and such delay will subject the bidder to a negative determination of the

bidder's responsibility should the bidder choose to participate in future public works bid offerings.

3-1.04 Award of Contract -- Following a review of the bids, the TOWN shall determine whether to award the contract or to reject all bids. The award of contract, if made, will be to the lowest responsible Bidder as determined solely by the TOWN. Additionally, the TOWN reserves the right to reject any or all bids, to accept any bid or portion thereof, to waive any irregularity and to take the bids under advisement for the period of time stated in the legal Notice Inviting Sealed Bids as may be required to provide for the best interest of the TOWN. The Contractor's original signature on the Bid Form shall constitute a commitment on the part of the Bidder to furnish the items as set forth in the Bid Form, the Special Provisions-Instructions to Bidders, the Plans, the Standard Specifications, the Notice Inviting Sealed Bids and Addenda, together with any attachments. The Bidder to whom the contract is awarded shall be notified upon approval of the contract by the Mayor and Common Council. The Bid Form, the Special Provisions-Instructions to Bidders, the Plans, the Standard Specifications, the Notice Inviting Sealed Bids and Addenda, together with any attachments, shall be considered as part of the contract between the TOWN and the Contractor to whom the contract is awarded. In no event will an award be made until all necessary investigations are made as to the responsibility and qualifications of the Bidder to whom the award is contemplated.

Subsection 3-5 Inspection: of the *Green Book* is hereby **amended**, as follows:
Add the following paragraphs at the end of Subsection:

The Contractor shall give the Engineer notice of the time when he or his subcontractors will start the various units of operations of the work. Notice shall be given at least forty-eight (48) hours in advance of starting or resumption time exclusive of Saturdays, Sundays or holidays, for the purpose of permitting the Engineer to make the necessary assignment of his representative or inspector on the work. Any work performed by the Contractor or his subcontractors in conflict with said notice shall be removed if so ordered by the Engineer or his representative or inspector on the work.

The inspection of the work shall not relieve the Contractor of any of his obligations to fulfill the contract as prescribed. Defective work shall be made good, and unsuitable materials may be rejected, notwithstanding the fact that such defective work or unsuitable materials may have been previously overlooked by the Engineer and accepted or estimated for payment.

Any project undertaken by the Agency in cooperation with, or under the control or supervision of, another public or quasi-public entity shall be subject, at all times, to inspection by the participating entity.

Subsection 3-10 Surveying: of the *Green Book* is hereby **amended**, as follows:

A new **Subsection 3-10.2** is **added** to the *Green Book*:
3-10.2 Survey Service:

The Contractor shall provide construction survey and construction staking to establish grades per plans and specifications, furnish all labor, materials, equipment to complete the surveying task at no extra cost to the Agency.

All disturbed street monumentation from the Contractor operations shall be replaced by the Contractor in accordance with the Town Standards by a Licensed Land Surveyor or an authorized Civil Engineer in the State of California. Corner Ties or Centerline Ties must be filed with the County by the Contractor.

All costs involved in construction survey shall be included in the various contract items of work and no additional compensation will be allowed therefore.

Subsection 3-12 Work Site Maintenance: of the *Green Book* is hereby **amended**, as follows:

3-12.6.3 Storm Water Pollution Prevention Plan (SWPPP). DELETE in its entirety and SUBSTITUTE the following:

Unless specifically prepared for the project and included in the Appendix, the Contractor shall be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) for this project, which shall be submitted to the Engineer for review and approval at the Pre-Construction Conference. The Contractor's attention is directed to the California Department of Transportation (Caltrans) website at:

www.dot.ca.gov/hq/construc/stormwater/manuals.htm

The Caltrans website contains SWPPP templates and other important information that may be useful in the preparation of a SWPPP for public works projects. The Contractor shall ensure that the SWPPP prepared for this project complies with the requirements of General Permit No. CAS000002 and Regional Board Order No. R8-2010-0036, NPDES No. CAS 618036.

Additionally the Contractor shall guarantee that the SWPPP complies with the following measures from the Regulatory Permits and Environmental Commitment Measures:

- Projects shall not discharge substances in concentrations toxic to human, plant, animal, or aquatic life or that produce detrimental physiological responses.
- Projects shall not discharge waste classified as "hazardous" as defined in Title 22 CCR section 66261 and the California Water Code section 19179;
- No oil, petroleum products, or rubbish shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the United States.
- No equipment maintenance will be done within or near any stream channel where petroleum products or other pollutants from the equipment may enter

waters of the United States.

- Equipment refueling shall not occur within waters of the United States.
- Any oil or grease leaks shall be immediately cleaned up. Upon approval of the SWPPP by the Engineer, the Town shall submit a Notice of Intent (NOI) to the Regional Water Quality Control Board (RWQCB). Although this project is subject to Board Order 2009-0009-DWQ General Permit No. CAS000002, the Contractor does not need to file a Notice of Intent for coverage under the State Water Resources Control Board's General National Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Runoff Associated with Construction Activity (Statewide General Permit) provided the Notice of Intent is filed with the RWQCB, in accordance with Board Order No. R8-2010-0036, NPDES No. CAS 618036. The Contractor shall refer to and comply with all requirements of the NPDES Permit, available for review online at:

www.waterboards.ca.gov/rwqcb8/board_decisions/adopted_orders/orders/2010/10_036_SBC_MS4_Permit_01_29_10.pdf

The Contractor shall ensure that the SWPPP is developed and amended or revised by a Qualified SWPPP Developer (QSD). The Contractor shall ensure that Best Management Practices (BMPs) within the SWPPP are implemented by a Qualified SWPPP Practitioner (QSP). To demonstrate compliance with requirements of this General Permit, the QSD shall include information in the SWPPP that supports the conclusions, selections, use, and maintenance of BMPs.

The Contractor shall designate the QSD and QSP, as the case may be, as the individuals directly responsible for and implementing the SWPPP requirements and maintenance of the documentation contained therein, during the course of construction until the project has been accepted as complete by the Town. The Contractor shall keep the SWPPP at the project site and make it available for review upon request of a representative of the RWQCB or the Engineer.

The Construction Superintendent shall prepare a Construction Schedule and BMP Sequencing Schedule for the project and include it into the SWPPP at the designated location.

Special Note: The Contractor shall ensure it has prepared, *in advance*, the required SWPPP for submittal at the Pre-Construction Conference. Failure to have prepared an adequate SWPPP for submittal at the Pre-Construction Conference will delay Contractor's start of work, however, the Notice to Proceed shall be issued and working days shall commence, regardless of construction work occurring due to the Contractor's delay in preparing and submitting an adequate SWPPP for the Engineer's approval. The Construction Superintendent shall prepare a Notice of Termination (NOT), included in the SWPPP, and submit it to the RWQCB following acceptance of the work by the Town, but prior to final payment.

Throughout the duration of the work, the Construction Superintendent shall ensure the following construction storm water monitoring actions are performed:

- Conduct site inspections before and after storm events.
- Conduct inspections of construction sites prior to anticipated storm events and after actual storm events to identify areas contributing to a discharge of storm water associated with construction activity and evaluate whether control practices to reduce pollutant loadings identified in the SWPPP are adequate and properly implemented or whether additional control practices are needed. A record of the inspections must include the date of the inspection, the individual(s) who performed the inspection, and the observations.
- Any noncompliance or anticipated noncompliance shall be reported to the Engineer immediately, for reporting to the Regional Water Quality Control Board (RWQCB). The notifications shall identify the type(s) of noncompliance, describe the actions necessary to achieve compliance, and include a time schedule, subject to the modifications by the RWQCB, indicating when compliance will be achieved.

The Contractor shall maintain a copy of the General Storm Water Permit and the SWPPP at the construction site and shall make the General Storm Water Permit available to operating personnel and local, State, and Federal agencies' representatives during construction activities. Should the Contractor elect not to have a construction field office, the Engineer will, on request, reserve filing space within the facilities for Town Inspection Personnel to assist in complying with this requirement. The Contractor shall allow authorized agents of the California Regional Water Quality Control Board (Regional Board), State Water Resources Control Board, U.S. Environmental Protection Agency, and local storm water management agencies, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter, at reasonable times, upon the construction site and the Contractor's facilities pertinent to the work.
2. Have access to and copy, at reasonable times, any records that must be kept as specified in the General Storm water Permit.
3. Inspect, at reasonable times, the construction site and related erosion and sediment control measures.
4. Sample or monitor, at reasonable times, for the purpose of ensuring compliance with the General Storm water Permit.
5. The Contractor shall grant Regional Water Board staff, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to enter the project site at reasonable times, to ensure compliance with the terms and conditions of the WQC and/or to

determine the impacts the project may have on waters of the United States.

Prior to commencing work, the Contractor shall make such amendments to the SWPPP as are required to make it coincide with the Contractor's planned operations and submit the amendments to the Engineer for approval and file. The amendments shall include an Erosion Control Plan (ECP), described in Section "Construction Project Diversion and Control of Water", along with any plan for water pollution control measures. The amended and approved SWPPP shall be kept at the project field office.

The Contractor is notified that the SWPPP must be amended from time to time during construction to reflect actual construction practices and such amendments shall be submitted to the Engineer within five (5) working days of the Engineer's written request. If the Contractor plans to amend the SWPPP, due to field conditions or any other reason, he shall propose the necessary amendments to the Engineer for approval at least five (5) working days prior to implementation.

The SWPPP and amendments shall not be construed to be a waiver of the Contractor's obligation to review and understand the General Storm Water Permit before submitting a Bid. By submitting a Bid, the Contractor acknowledges satisfaction as to the requirements of the General Storm Water Permit.

Payment – Full compensation for compliance with the provisions of Subsection 3-12.6.3 "**Storm Water Pollution Prevention Plan (SWPPP)**," of the Standard Specifications, and as amended by these Special Provisions, shall be considered as included in the lump sum bid item price for "**Mobilization**," or will be paid for at the bid item price for "**Water Pollution Control**," (if indicated), which price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved to establish, implement, monitor and maintain the BMP's required by the SWPPP, and no additional compensation shall be allowed therefore. The Contractor shall be responsible for payment of any administrative fines that may be imposed on the Town due to the Contractor's failure to comply with the terms of the applicable permits regulating Water Pollution Control. Administrative fines, if imposed, will be withheld from the Contractor's payments.

SECTION 4. CONTROL OF MATERIALS - [No Changes]

SECTION 5. LEGAL RELATIONS AND RESPONSIBILITIES

Subsections of Section 5 of the *Green Book* hereby is **amended** to read:

Laws and Regulations: The Contractor shall keep himself fully informed of all State and National laws and all municipal ordinances and regulations of the Agency which in any manner affect those engaged or employed in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.

The Contractor shall at all times observe and comply with, and shall cause all his

agents and employees to observe and comply with all such laws, ordinances, regulations, orders and decrees; and shall protect and indemnify the Agency, the Board and the Engineer, and all of its and their officers and agents and servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by himself or his employees. If any such discrepancy or inconsistency is discovered in the plans, drawings, specifications or contract for the work in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same in writing to the Engineer.

5-3.2 Prevailing Wage: Notice is hereby given that in accordance with the provisions of California Labor Code, Part 7, Chapter 1, Articles 1 and 2, the Contractor is required to pay not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the public work is performed, and not less than the general prevailing rate of per diem wages for holidays and overtime work. In that regard, the Director of the Department of Industrial Relations of the State of California is required to and has determined such general prevailing rates of per diem wages. Copies of such prevailing rates of per diem wages are on file in the office of the Town Clerk or Secretary of the Agency issuing the contract, 201 North D Street, San Bernardino, California, and are available to any interested party on request. The Agency also shall cause a copy of such determinations to be posted at the job site.

The Contractor shall forfeit, as penalty to the Agency, not more than fifty dollars (\$50.00) for each laborer, worker or mechanic employed for each calendar day or portion thereof such laborer, worker or mechanic is paid less than the general prevailing rate of wages hereinbefore stipulated for any work done under the attached contract, by him or by any subcontractor under him, in violation of the provisions of said Labor Code.

5-3.2.1 Taxes: The Agency is liable for the State Sales Tax and where the County of purchase has adopted the Uniform Sales Tax Law and a Town and/or County tax is collected by the State the Agency is liable for this tax also. Include this tax in the amount bid.

The Agency is exempt from the Federal Excise Tax and exception certificates will be furnished. In certain instances, the bidder and subcontractor may be liable for Federal Excise Tax. Bidder must determine whether Federal Excise Tax is chargeable to him and, if so, the amount of the tax should be included in the amount bid.

Any new or additional taxes levied after the adoption of these specifications that are payable by the Agency are not to be included in the price bid, but added thereto when invoiced.

5-3.2.2 Responsibility for Damage: The Agency, the Board and the Engineer 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 materials or equipment used in performing the work; or for injury or damage to person or persons, either workmen or the public; or for damage to adjoining property from any cause whatsoever during the progress of the work or at any time before final acceptance.

The Contractor shall be held responsible for any and all loss, accidents, injury or damage to persons or property which may be the result of this contract and for

which the Agency might be held liable. He shall protect and indemnify the Agency and save it harmless in every way from all claims, suits, or acts of law for damage or injury to persons or property that may arise or be occasioned in any way because of this contract. The Board may retain so much of the money due the Contractor as shall be considered necessary, until disposition as been made of such suits or claims for damages as aforesaid.

5-3.2.3 Contractor's Responsibility for Work: Until the formal acceptance of the work by the Engineer, the Contractor shall have the charge and care thereof except as provided in § 7-2.2.5 and shall bear the risk of injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the work occasioned by any cause before final acceptance and shall bear the expense thereof, except such injuries or damages as occasioned by acts of war.

5-3.2.4 Correction for Errors, Recovery for Errors, Dishonesty or Collusion: The Agency reserves the right to correct any error that may have been made in any estimate that has been paid. The Agency also reserves the right to claim and recover by process of law, any sums sufficient to correct any error or make good any deficiency in the work resulting from such error or from dishonesty or collusion between any of the parties or individuals having dealings pursuant to the construction of the work, regardless of when such error, dishonesty or collusion shall be discovered.

5-3.2.5 Rights in Materials and Salvage: Ownership of material incorporated in the work is vested in the name of the Agency. Any material delivered and paid for in part by the Agency or any material furnished by the Agency to be incorporated in the work, is or becomes the property of the Agency. Any salvageable materials or installations existing at the site of the work (such as manhole rings and covers, catch basin gratings, angle iron, pipe railings, valve boxes and lamp pole boxes, and other steel, cast iron or metallic materials) that are the property of the Agency if they are to be removed shall be delivered F.O.B. the storage yard designated by the Agency. The salvageable materials shall be cleaned of clinging concrete and debris and delivered to the storage yard in the same condition as it existed prior to removal, unless the Contractor is instructed otherwise by the Engineer.

5-3.4.1 Day's Work: Eight (8) hours of labor shall constitute a legal day's work for all workers employed in the execution of this contract and this Contractor and any subcontractor under him shall comply with and be governed by the laws of the State of California having to do with working hours as set forth in Division 2, Part 7, Chapter 1, Article 3 of the Labor Code of the State of California as amended.

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

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 § 1773.8.

5-3.5 Apprentices: In accordance with the provisions of § 1777.5 of the Labor Code as amended by Chapter 971, Statutes of 1939, and in accordance with the regulations of the California apprenticeship Council, properly indentured apprentices may be employed in the prosecution of the work.

Attention is directed to the provisions in §§ 1777.5 and 1777.6 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor under him.

Section 1777.5, as amended, requires the Contractor or subcontractor employing tradesmen in any apprentice 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 will 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 shall not be less than one to five except:

- a. When unemployment in the area of coverage by the joint apprenticeship committee has exceeded an average of fifteen percent (15%) in the ninety (90) days prior to the request for certificate, or
- b. When the number of apprentices in training in the area exceeds a ratio of one to five, or
- c. When the trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis statewide or locally, or
- d. When the Contractor provides evidence that he employs registered apprentices on all of his contracts on an annual average of not less than one apprentice to eight journeymen.

The Contractor is required to make contributions to funds established for the administration of apprenticeship programs if he 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.

The Contractor and subcontractor under him shall comply with the requirements of §§ 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, *ex-officio* the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

Subsection 5-4 Insurance: of the *Green Book* is hereby **amended**, as follows:

5-4.2 General Liability Insurance: *Replace the second and third paragraphs with the following:*

The Contractor shall maintain coverage with the following minimum limits:

General Liability: \$2,000,000.00 per occurrence and \$4,000,000.00 aggregate for bodily injury, personal injury, and property damage. Commercial General Liability Insurance or other form with a general aggregate limit shall apply separately to this project/location;

Products/Completed Operations: \$1,000,000.00 per occurrence and \$2,000,000.00 aggregate;

Automobile Liability: \$1,000,000.00 per accident for bodily injury and property damage;

Employer's Liability: \$1,000,000.00 per accident for bodily injury or illness;

Course of Construction: Complete value of the project.

SECTION 6. PROSECUTION, PROGRESS AND ACCEPTANCE OF WORK

A new **Subsection 6-1.1.1** is **added** to the *Green Book*:

6-1.1.1 Working Hours: Working hours shall be limited to 7:00 a.m. and 5:00 p.m. unless otherwise authorized, in writing, by the Engineer.

Subsection 6-3.1 of the *Green Book* is **amended** by changing the term "working days" to "calendar days."

SECTION 7 MEASUREMENT AND PAYMENT

Subsection 7-4 Payment For Extra Work: of the *Green Book* is hereby **amended**, as follows:

7-4.3 Markup

7-4.3.1 Work by Contractor. The following percentages shall be added to the Contractor's costs and shall constitute the markup for all overhead and profits:

- | | |
|---------------------------------|-----|
| 1. Labor | 20% |
| 2. Materials. | 15% |
| 3. Equipment Rental. | 15% |
| 4. Other Items and Expenditures | 15% |

To the sum of the costs and markups provided for in this subsection, 1% shall

be added as compensation for bonding.

7-4.3.2 Work by Subcontractor. When all or part of the extra work is performed by a Subcontractor, the markup established in 7-4.3.1 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 the work added in excess of \$5,000 of the subcontracted portion of the extra work may be added by the Contractor.

A new **Subsection 7-6 Construction Claims** hereby is **added** to the *Green Book* as follows:

7-6.1 Resolution of Construction Claims: Pursuant to the requirements of California Public Contract Code § 20104(c), set forth below is the procedure for resolution of construction claims by the contractor. This provision shall only apply to those claims specified in § 20104 of the California Public Contract Code:

§ 20104. Application of article; inclusion of article in plans and specifications.

- a. (1) This article applies to all public works claims of three hundred seventy- five thousand dollars (\$375,000.00) or less which arise between a contractor and a local agency.

(2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with § 10240) of Chapter 1 or Part 2.
- b. (1) "Public work" has the same meaning as in §§ 3100 and 3106 of the Civil Code, except that "public work" does not include any work or improvement contracted for by the state or the Regents of the University of California.

(2) "Claim" means a separate demand by the Contractor for (A) a time extension, (B) payment of money of damages arising from work done by or on behalf of the contractor pursuant to the contract for a public work and payment of which is not expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the local agency.
- c. The provisions of this article or a summary thereof shall be set forth in the plans or specifications for any work which may give rise to a claim under this article.
- d. This article applies only to contracts entered into on or after January 1, 1991.

§ 20104.2 Claims; Requirements; Tort Claims Excluded

For any claim subject to this article, the following requirements apply:

- a. The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final

payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

- b. (1) For claims of less than fifty thousand dollars (\$50,000.00), the local agency shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.

- c. (1) For claims of over fifty thousand dollars (\$50,000.00) and less than or equal to three hundred seventy-five thousand dollars (\$375,000.00), the local agency shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 30 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information or requested documents, whichever is greater.

- d. If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the local agency shall schedule a meet and confer conference within 30 days for settlement of the dispute.

- e. Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant may file a claim pursuant to Chapter 1 (commencing with § 900) and Chapter 2 (commencing with § 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time the claim is denied, including any period of time utilized by the meet and confer conference.

- f. This article does not apply to tort claims and nothing in this article is intended

nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with § 900) and Chapter 2 (commencing with § 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

§ 20104.4 Civil action procedures; mediation and arbitration; trial de novo; witnesses

The following procedures are established for all civil actions filed to resolve claims subject to this article:

- a. Within sixty (60) days, but no earlier than thirty (30) days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the fifteen (15) day period, any party may petition the court to appoint the mediator.

- b. (1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with § 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding § 1141.11 of that code.

The Civil Discovery Act of 1986 (Article 3 (commencing with § 2016) of Chapter 3 of Title 3 of Part 4 of the code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expense shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.

(3) In addition to Chapter 2.5 (commencing with § 1411.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees on appeal of the other party arising out of the trial de novo.

- c. The court may, upon request by any party, order any witness to participate in the mediation or arbitration process.

§ 20104.6 Payment on undisputed portion of claim; interest on arbitration awards or judgments

- a. No local agency shall fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in the contract.
- b. In any suit filed under § 20104.4, the local agency shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

SECTION 8- FACILITIES FOR AGENCY PERSONNEL

SPECIAL PROVISIONS

SPECIAL PROVISIONS

1.0 General

The Contractor shall furnish, in accordance with the plans and specifications, all labor, equipment, and materials required for all work as necessary for **Town Project No. 4100: YUCCA VALLEY COMMUNITY CENTER PARK ATHLETIC FACILITY IMPROVEMENTS PROJECT.**

Contractor shall provide all construction surveying, staking and monument/centerline ties at no extra cost. Compensation for construction surveying and staking shall be considered as included in various bid items. No additional compensations will be allowed.

1.1 Description of Work:

The work to be done by the Contractor under these Specifications will include **removal of existing conditions as noted on plans and performing all operations necessary for the construction of all the improvements as stated in the project specifications and bid items**, including but not limited to clearing and grubbing, demolition of existing improvements, grading (Rough and Fine), drainage, wet utilities, electrical utilities, installation of concrete walkways and pavers, asphalt parking lot, signage & striping, construction and installation of pickleball courts with fencing and lighting, shade structures with lighting, furnish and install all site furnishings, furnish and install restroom building, handrails, and landscape with irrigation. Project will include construction project signs, , Erosion & Dust Control, Periodic clean-up & hauling out for disposal any excess dirt, spoilage, wastes & un- salvageable items; Adjusting existing valves and pull boxes, compaction of subgrades, materials testing and inspections, coordination with Town inspectors, formwork and removal of formwork for concrete mix pour, and safety for daytime and night time work protecting items or improvements, coordination with various utility companies prior to any construction.

The Contractor will furnish all transportation, materials, equipment, labor and supplies to complete the improvements, together with the appurtenant work necessary or incidental to complete, in a workmanlike manner, the improvements as contemplated and as intended by the Plans and Specifications.

1.2 Project Location

Community Center Park Athletic Field located at 57090 29 Palms Hwy, Yucca Valley, CA

1.3 Approved Materials:

Whenever the expression “or approved equal” is used, it shall be taken to mean the approval by the Town Engineer of any substitution of material or material specified herein. All substitution requests shall state the reason for the request and the difference in price between the item specified and the requested substitution. All substitution requests shall be submitted to the Town Engineer in writing five (5) working days prior to the bid opening. No requests for substitutions will be considered by telephone. The Contractor shall submit to the Engineer for review and approval six (6) copies of all shop drawings. The Contractor shall make any corrections to shop drawings required by the Engineer.

1.4 Pre-Bid Inquiries:

NO ORAL representations or interpretations will be made to any Bidder as to the meaning of the Special Provisions, Plans, or other Contract Documents. Written requests for an interpretation, or to identify a potential omission, discrepancy, or misunderstanding will be accepted if received by 5:00 p.m. of the 6th working day prior to the day of the proposed bid opening.

If there are any questions regarding this project, please contact:

Town Engineer's Office
58928 Business Center Drive
Yucca Valley, CA 92284

SUBJECT:

**YUCCA VALLEY COMMUNITY CENTER PARK ATHLETIC FIELD
IMPROVEMENT PROJECT
SPECIAL PROVISIONS NO. 4 1 0 0**

Attention: Alex Qishta
Tel: (760) 369-6579; Fax: (760) 228-0084
E-mail: aqishta@yucca-valley.org

2.0 UTILITY LOCATION

The following list of individuals or entities, which are known to have facilities in the area to be improved is merely for the Contractor's information and may or may not be complete or inclusive:

Town of Yucca Valley (Engineering)	(760) 369-1265
HDWD (Water) Tony Culver	(760) 228-6286
Verizon (General Telephone), Bret Plaskey	(760) 929-9491
Time Warner Cable Television, Patrick Camey	(760) 674-5433
The Gas Company,	(760) 228-1400
Southern California Edison, Roy Rojas	(626) 893-4960
Underground Service Alert	(800) 227-2600
California Department of Transportation	(909) 383-6920

2.1 Compensation for Damage or Relocation

In accordance with Section 4215 of the California Government Code, the Contractor shall be compensated for the cost of locating and repairing damage to main or trunk line utility facilities located on the job site, not due to the failure of the Contractor to exercise reasonable care; for costs of removing or relocating such utility facilities not indicated in the Contract Documents with reasonable accuracy; and for the operating costs for equipment on the project necessarily idled during such work.

The Contractor shall notify the several utility companies and agencies listed above before

beginning excavation and shall coordinate his work with them.

The Contractor's attention is directed to the utility notification service provided by the Underground Service Alert (USA). USA member utilities will provide the Contractor with the location of their substructures in the construction area when the Contractor gives at least 48 hours' notice to the Underground Service Alert by calling 1-800-227-2600.

3.0 COMPLETION AND ACCEPTANCE

3.1 Guarantee of Work and Materials

The Contractor shall guarantee that all work performed by him under this contract fully meets the requirements thereof as to quality of workmanship and materials furnished. If any defects in materials or workmanship become evident within a period of one (1) year from the date of acceptance of the work by the Town Council or designee, the Contractor shall, at his own expense, make any repair or replacement necessary to restore the work to full compliance with these Special Provisions, including repair of settled backfill and resurfacing.

Such repair and replacement shall be made promptly upon receipt of written notice from the Town. If the Contractor fails to make such repair and replacement promptly, the Town may cause the work to be done and the costs incurred thereby shall become the liability of the Contractor and his surety.

If, in the opinion of the Engineer, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the Town or to prevent interruption of operations of the Town, the Town will attempt to give the notice required by this article.

If the Contractor cannot be contacted or does not comply with the Engineer's request for correction within a reasonable time as determined by the Engineer, the Town may, notwithstanding the provisions of this article, proceed to make such correction and the costs of such correction shall be charged against the Contractor. Such action by the Town will not relieve the Contractor of the guarantees provided in this article or elsewhere in the contract.

The foregoing obligations shall be secured by a surety bond in a form approved by the Engineer in an amount not less than ten percent (10%) of the final Contract price, and shall be delivered to the Engineer prior to final acceptance of the work.

Payment for fulfilling the requirements of this section shall be considered as included in the prices for the various Contract items of work and no additional compensation will be allowed.

3.2 Liquidated Damages

Liquidated damages shall be in the amount of **One Thousand Dollars (\$1,000.00)** per working day in excess of the time allowed under this Contract for the completion of the work, as adjusted by Change Order.

In the event that construction does not commence within the specified time following the issuance of notice to proceed, liquidated damages in the amount of **One Thousand Dollars (\$1,000.00)** per

working day shall be deducted from compensation due the Contractor.

The Contractor will not be assessed liquidated damages for delay in completion of the project, when such delay was caused by the failure of the Town or the owner of a utility to provide for removal or relocation of an existing or unknown facility.

4.0 TIME OF COMPLETION

The Contractor shall begin work within ten (10) working days after the date of the "Notice to Proceed," and shall diligently prosecute the same to completion by **Ninety (90) calendar days for Base Bid and One hundred forty-five (145) calendar days for Base Bid plus Alternate Bid#1** after date in said Notice.

5.0 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK

Further to Section 6.1 of the Standard Specifications, the Contractor shall submit construction schedule(s) as specified below:

5.1 INITIAL SCHEDULE

Within 48 hours after the Notice to Proceed has been given, and prior to the start of any work, the Contractor shall submit to the Engineer for approval three (3) copies of its proposed construction schedule in Critical Path Method format with sub schedules of related activity.

An electronic copy of the schedule shall also be submitted to the Town for its use. If the Engineer notifies the Contractor that the schedule is unacceptable, the Contractor shall submit a revised schedule within five (5) working days thereafter. Unless otherwise required, the construction schedule shall be in the form of bar charts with major activities of the project listed in chronological order showing the dates for beginning and completion of each activity. The Schedule shall also show Critical Path items. The construction schedule shall also contain:

An economic component showing the cost of each activity, the anticipated monthly earnings and a cash flow diagram.

A products availability schedule, which shall show the availability dates for Contractor furnished equipment affecting the progress of the work, indicate the required delivery dates for Town furnished materials and equipment and indicate the required installation date for utility-furnished equipment.

5.2 REVISED SCHEDULES

After start of the work, the Contractor shall submit revised construction schedules every two weeks on a Monday thereafter until completion of the contract.

Said schedules shall clearly indicate "in detail" all work to be procured within the following two weeks.

The revised schedules should show any significant changes in activities since submission of the

previous schedule with revised projections of progress and completion. It should also provide a narrative report of problem areas, anticipated delays and the impact on the schedule, corrective action recommended and its effect, and the effect of changes on schedules of other contractors involved with the work.

In the event that the revised schedules are not submitted in accordance with the above conditions, the Town reserves the right to suspend all work until a revised schedule is submitted. The Contractor shall not be entitled to any claims or contract time adjustment associated with said work suspension.

5.3 PROGRESS MEETINGS

Contractor shall also conduct Bi-weekly construction progress meetings at the job site or at the owners' construction office. Contractor shall prepare meeting notes and distribute them to the meeting attendees within 5 working days of the meeting date. The progress meeting shall be conducted to the level of detail necessary to address all issues and work elements that affect the construction schedule, impact to the public and project costs including potential claims and whatever work elements deemed necessary by the owner.

6.0 NOTIFICATION OF RESIDENTS AND BUSINESSES

The contractor shall notify all residents and business owners, in writing, of his proposed operations and schedule. Notice shall be delivered at least ten (10) working days prior to start of construction. The contractor shall prepare a letter for this purpose and submit the letter to the Engineer for approval at least five (5) working days prior to the date needed for its circulation. The Contractor shall be responsible for reproduction and distribution of the letters. The time to notify in advance shall be coordinated with the Town inspector.

Project sign board shall be in-placed in advance (days) prior to any start of construction. Check with the Town as to how far in advance to have the project signage to be in-placed.

Re-notification will be required if the Contractor's schedule is altered or other delays occur, which significantly affects the scheduled work. Then, it shall be at Contractor's expense.

Prior to actual start of operations, the Contractor shall inform the businesses of construction to preclude entrapment of cars and vehicles. All costs involved in notification of residents and businesses shall be included in the various contract items of work and no additional compensation will be allowed therefore.

7.0 TRAFFIC CONTROL DURING CONSTRUCTION

The Contractor shall follow: **Greenbook 2021**, Section 302-4.5 , pages 311 to 312; Greenbook 2018, Section 302-10.4, page 330, and Greenbook 2018, PART 6 TEMPORARY TRAFFIC CONTROL SECTION 600-ACCESS, All of Sections 600 and 601, that apply to this project, pages 525 to 532 and latest addition of MUTCD.

At a minimum, traffic controls, including but not limited to vehicular and pedestrian traffic controls, maintenance of vehicular and pedestrian access, detours and street closures, shall be in

accordance with the Greenbook 2018 and MUTCD, including all its subsequent amendments; the latest edition of the Manual of Traffic Controls for Construction and Maintenance Work Zones, as published by the Department of Transportation of the State of California; and the following Special Provisions. In the event of conflict, the Special Provisions shall take precedence over the Manual of Traffic Controls, and the Manual of Traffic Controls shall take precedence over the Standard Specifications.

The Contractor shall be responsible for all temporary paving, removal/reconstruction of conflicting improvements, striping, traffic control (furnishing a Town-approved Traffic Control Plan and/or Detour Plan), and adjustments to construction sequencing/logistics, as necessary to provide said travel lanes.

The Engineer reserves the right to direct all construction activities (including pot-holing, crack sealing sealable pavement cracks, removal of pavement humps and blisters, and removal of vegetation thriving on the pavement cracks) which creates conflicts with providing said travel lanes to be performed on weekends or night time hours.

Compensation for temporary improvements, weekend and night time work, shall be considered as included in various bid items. No additional compensations will be provided therefore,

1. The Contractor shall have exclusive control and responsibility for traffic control and safety devices, all signage and roadway markings, all equipment and materials, and the ongoing construction at all times.
2. The Contractor will be responsible for obtaining all street closure permits (if explicitly approved by the Engineer) from the Town of Yucca Valley prior to the start of any work. The street closure permits will identify additional signing requirements, work hours and other conditions as may be necessary to minimize inconvenience to motorists and businesses.

Ingress and egress to local residents, commercial and industrial properties must be accessible at all times.

3. All Traffic control and safety devices, equipment and materials, including but not limited to cones, delineators, flashing warning lights, barricades, high level warning devices (flag trees), flags, signs, markers, portable barriers, flashing arrow signs, markings and flagging equipment, shall be provided and maintained in “like new” condition.
4. The Contractor shall furnish and properly install, construct, erect, use and continuously inspect and maintain, twenty-four (24) hours per day, seven (7) days per week, all said devices, equipment and materials, and all temporary and permanent pedestrian and driving surfaces as necessary to provide for the safety and convenience of and to properly warn, guide, control, regulate and channelize project workers and the public beyond said limits as necessary to include areas affecting or affected by the work, from the start of work to the completion of the work.
5. High level warning devices (flag trees) are required at all times for any work being

performed within the roadway, unless otherwise specifically authorized by the Town. Flashing arrow boards will be required on all streets with four or more lanes as deemed necessary by the Engineer or Inspector.

6. All barricades shall be equipped with flashing warning lights and all traffic cones shall be no less than 28 inches in height except that shorter cones, 12 inches high or higher, may be used during striping maintenance operation where the only function of the cones is to protect the wet paint from traffic.
7. Contractor shall have exclusive control and responsibility for all flaggers at all times. Properly trained and experienced flaggers shall be provided at all times when the Contractor's operations encroach into the public right of way. Flaggers shall also be to direct traffic when said traffic is to be interrupted, when two-way traffic is to be reduced to one-way traffic at such time as necessary to safely pass the traffic through or around the work area, and when so directed by the Town. Any traffic control and safety devices and equipment being used which becomes damaged, destroyed, faded, soiled, refurbished and/or replace, and any traffic control and safety devices and equipment being used which are displaced or not in an upright position from any cause, shall be promptly returned or retorted to their proper position.
8. Any traffic control and safety devices and equipment being used which becomes damaged, destroyed, faded, soiled, refurbished and/or replace, and any traffic control and safety devices and equipment being used which are displaced or not in an upright position from any cause, shall be promptly returned or retorted to their proper position.
9. Contractor shall have exclusive control and responsibility for all signs and warning devices, and all trucks, equipment and materials at all times. An unobstructed view of all signs and warning devices including, but not limited to, stop signs, stop ahead signs, street name signs and other regulatory, warning and constructions signs, markers and warning devices shall be maintained at all times. No trucks or other equipment or materials shall be stopped, parked or otherwise placed from the view of vehicular and/or pedestrian traffic to which it applies.
10. When entering or leaving roadways carrying public traffic, the Contractor's equipment, whether empty or loaded, shall yield to said public traffic at all times, except where the traffic is being controlled by Police officers, Fire officers, or at traffic signalized intersections or the aforementioned construction traffic signal.
11. Contractor shall have exclusive control and responsibility for stockpile and/or storage areas at all times. Stockpiling and/or storage of materials on any public right of way or parking areas, or immediately adjacent to all such areas, will not be allowed without specific permission of the Town.

Materials spilled along or on said right of way or parking area shall be removed completely and promptly. All stockpile and/or storage areas shall be kept in a safe, neat clean and orderly fashion, and shall be restored to equal or better than original condition upon completion of the work.

12. On projects involving work on, closure of or partial closure of existing streets and where vehicular access to the abutting property must be restricted, the work shall be so selected, arranged and scheduled that the persons requiring access to said abutting property and/or residents along said streets affected will be able to park within a reasonable distance of not more than 500 feet from their homes and/or destination; and in addition, no two (2) adjoining streets shall be closed at the same time, except as otherwise authorized by the Town.
13. When work has been completed or has been suspended or rescheduled and said street is to be opened to vehicular traffic, all equipment, "NO PARKING" signs, other obstructions and unnecessary traffic control devices and equipment shall be promptly removed from the street, except as otherwise authorized or directed by the Town Engineer. Temporary traffic striping shall be applied prior to opening any newly paved area to traffic. This includes lane and centerlines.
14. Should the Contractor be neglectful, negligent or refuse, fail or otherwise be unavailable to promptly, satisfactorily and fully comply with the provisions specified and referred to hereinabove, the Town reserves the right to correct and/or mitigate any situation, which in the sole opinion of the Engineer constitutes a serious deficiency and/or serious case or non-compliance, by any means at its disposal at the Contractor and/or permittee's expense, and in the case of a contract Town project, to deduct the cost therefore from the Contractor's progress and/or final payments. Such corrective actions taken by the Town shall not reduce or abrogate the Contractor's legal obligations and liability for proper traffic control and safety measures and shall not serve to transfer said obligations and liability from the Contractor to the Town or the Town's agent.
15. Violations of any of the above provisions and/or provisions of the referenced publications, unless promptly and completely corrected to the satisfaction of the Engineer, shall, at the sole director of the Town, be grounds for termination of the Contract or shut down or partial shutdown of the work without compensation to the Contractor and/or permittee, or liability to the Town, all as prescribed by contractual obligations or State law, whichever is applicable.
16. Pedestrians - A minimum walkway of 48 inches in width must be maintained at all times for safe pedestrian passage through all parkway work areas. Crosswalks shall remain unobstructed at all times. Obstructions within the walkway areas shall be illuminated during the hours of darkness and marked with Type II barricades with flashing warning lights.

Where construction prohibits pedestrian access, alternate crossing areas shall be established with appropriate signing and other devices as required by the Engineer. Pedestrian access facilities shall be provided through construction area within the right-of-way. Pedestrian walkways shall be provided with surfacing as required to maintain safe and accessible pathways. Surface shall be skid resistant and free of irregularities.

The Contractor shall keep the areas adjacent to the project site clear of any objects that

may be hazardous to pedestrians and motorists. Provisions to reroute pedestrians, including the disabled, around the work area must be clearly delineated and maintained. If the Contractor's operations require the closure of a walkway, then another walkway shall be provided nearby, off the traveled roadway, along the general path of travel.

17. Temporary Surfacing - Temporary A.C. paving shall be placed and maintained at locations determined by the Engineer wherever excavation is made through pavement, sidewalk or driveways, in accordance with Section 306-1.5.1 "Temporary Surfacing," of the SSPWC.

To facilitate public access between the street and adjacent properties, the Contractor shall construct temporary A.C. walkways/driveways between new curbs and existing sidewalks/driveways, throughout the project limits.

The Contractor shall maintain the temporary surfacing throughout the duration of the project until permanent pavement has been restored.

18. Steel Plating - The Contractor shall furnish, install and maintain steel plates as necessary to obtain minimum lane requirements specified herein and/or to maintain access to private property.

Steel trench plates shall be employed to bridge across open excavations and newly poured concrete. The Contractor shall be responsible to ascertain the appropriate size and placement of the steel plates and other devices to support vehicular traffic loading across open excavations and newly poured concrete without sustaining damage to the new improvements.

All steel plates shall be textured for skid-resistance. Steel plates shall be secured in place with cleats to prevent their movement, sliding or shifting. The edges of steel plates shall be ramped with temporary surfacing. Inspector shall direct when steel plates shall be recessed.

19. Pavement Transitions - The Contractor shall construct pavement transitions at all lateral and transverse join lines, created by trenching, base paving, temporary paving or any combination of each. A vertical drop-off or step between the lateral edges of the pavement under construction and the adjacent pavement shall not be permitted during non-working hours.

20. Driveways - Vehicular access to driveways shall be maintained at all times, except when necessary, construction precludes such access for temporary periods, as follows:

Special attention is directed to constructing the stamped colored concrete driveways. The Contractor shall evaluate all existing businesses as well as their driveways (number and width), and develop a construction staging/sequencing plan to ensure that two-way access to adjacent businesses are maintained to extent possible. The plan shall be submitted to the Town Engineer for review and approval at least five working days prior to commencement of work.

Subject to the approval of the Town Engineer, driveways may be closed for a maximum of 3 days during the forming, pouring and curing of PCC curb, gutter and driveway approaches (including decorative colored concrete), provided that alternate two-way (ingress/egress) driveway(s) is available. Subject to the approval of the Town Engineer, one half of a driveway may be closed for a maximum of 3 days during the forming, pouring and curing of PCC curb, gutter and driveway approaches (including decorative colored concrete), provided that sufficient driveway width remains available to accommodate ingress/egress access to adjacent business(s) in a safe and orderly fashion.

Driveway approaches shall be poured within 48 hours of the adjacent curb and gutter.

Curb and gutter shall be poured within 24 hours from the time access is blocked by formwork.

Driveway approaches shall cure for three days before being reopened to vehicular access.

Driveways shall not be closed over weekends, except for curing of concrete.

Driveways closed due to placement of bituminous pavement shall be reopened as the new pavement has cooled sufficiently to carry the traffic without damage.

The Contractor shall notify all residents and businesses at least 72 hours in advance of driveway closure.

During the time driveways are closed, a minimum of two Type II barricades with flashing warning lights shall be used to affect the closure.

Driveways shall be kept open at all other times, and if necessary, temporary A.C. ramps and/or steel plates shall be provided.

21. Parking - On-street parking may be restricted within the project limits. Temporary "NO PARKING – TOW AWAY" signs shall be provided and posted by the Contractor not less than forty-eight (48) hours in advance of the start of construction.

22. Street Lighting – The Contractor shall maintain illumination of the traveled roadway after the hours of darkness throughout the duration of the project, as follows:

The street lighting system shall be installed and removed in phases such that not less than one-half of the street lights are operable each evening.

A minimum illumination level of 0.4 foot-candle with a 6:1 uniformity ratio shall be provided, unless otherwise approved by the Engineer.

23. Lane Closures - The Contractor shall comply with the following general lane closure requirements:

Flashing Arrow Signs (sequential arrow boards) shall be utilized for all closures of through travel lanes on major roads and all signalized cross streets, as designated by the Engineer.

Left turns shall be maintained at all times to the fullest extent possible. Under extenuating circumstances and when permitted by the Engineer, left turn lanes may be closed with R-17, “NO LEFT TURN,” signs placed both at the beginning and end of each left turn lane closed.

Right turns shall be maintained at all times to the fullest extent possible. When permitted by the Engineer, right-turn lanes may be closed with R-16, “NO RIGHT TURN,” signs placed both at the beginning and end of each right turn lane closed.

To allow for equipment movement and cleanup during various construction operations, momentary stoppage of traffic and turn movements will be permitted, using flagging procedures.

24. Road Closures – Road closures shall be prohibited without prior permission of Engineer and issuance of permit.
25. Temporary Striping – The Contractor shall provide temporary traffic restriping at the conclusion of any working day for any centerline or lane line which is obliterated by construction.
26. Emergency Response - The Contractor shall provide the Engineer with names and telephone numbers of at least three people responsible for emergency service response. Upon notification, Contractor shall respond to Town emergency requests.

In the event these people do not promptly respond when notified, or it becomes necessary to call other forces to accomplish emergency service, the Contractor will be held liable for any costs incurred. A \$400/hour at 4 hours minimum will be charged to the Contractor.

A. During Working Hours:

In case of an emergency that threatens loss or injury of property, and/or safety of life during working hours, the Contractor shall act, without previous instructions from the Town, as the situation may warrant. He/she shall notify the Engineer of the emergency and the action taken immediately thereafter. Any compensation claimed by the Contractor, together with substantiating documents in regard to expense, shall be submitted to the Engineer within 15 calendar days after the emergency. Compensation, if allowed, will be paid for as extra work.

B. Outside of Working Hours:

Whenever, in the opinion of the Town, there relocate, and maintain warning devices and shall furnish the shall arise outside of the regular working hours on the Contract work of an emergency nature which threatens loss or injury of property, or danger to public safety, the Contractor shall act, without previous instructions from the Town as the situation may warrant. He/she shall notify the Engineer of the emergency and the action taken immediately thereafter. Any compensation claimed by the Contractor, together with substantiating documents in regard to expense, shall be

submitted to the Engineer within 15 calendar days after the emergency. Compensation, if allowed, will be paid for as extra work. In the event the Contractor is not able to respond to an emergency outside of regular working hours, the Town's forces will handle such emergency work. If such emergency arises out of or is the result of operations by the Contractor, the cost of the corrective measures will be billed to the Contractor and deducted from his/her payment as provided in the Contract documents. The performance of emergency work by Town forces will not relieve the Contractor of any of his/her responsibilities, obligations, or liabilities under the Contract.

Full compensation for compliance with the provisions specified and referred to hereinabove shall be considered as being fully included in the contract bid items provided and no additional compensation will be allowed therefore.

8.0 "RECORD DRAWINGS"

The Contractor shall maintain, on the job site, a set of full-size reproducible contract drawings, or a set of full-size blue-line or black-line prints (if available). On these, contractor shall mark all as-built conditions, locations, configurations, and other details, which may vary from the details represented on the original drawings. This master record of as-built conditions, including all revisions made necessary by addenda, change orders, and the like, shall be maintained up-to-date during the progress of work.

On a monthly basis, the Contractor shall submit progress record drawing(s) clearly delineating the improvements completed, for the purpose of review and processing progress payments. The Town's ability to process the progress payments is contingent upon the timely submittals of the progress record drawing(s).

Upon completion of the work and prior to final acceptance, the complete set of contract drawings (size D, 24x36 in), marked up to show as-built conditions, including daily photos, installation manuals, concrete delivery tickets, etc. shall be delivered to the Engineer. These drawings shall be known as "Record Drawings."

Full compensation for compliance with the provisions specified and referred to hereinabove shall be considered as being fully included in the various contract bid items for the project, and no additional compensation will be allowed therefore.

9.0 PLANS AND STANDARD DRAWINGS

The standard drawings that apply to this contract and shall be considered as part of the plans are included as part of these Specifications are listed in Appendix.

10.0 ORDER OF WORK

As required by these specifications, the Contractor shall submit a detailed construction schedule to the Engineer for approval prior to the preconstruction meeting. This schedule should be prepared with the following items in mind:

Contractor shall maintain access to all businesses during construction. All excavations shall be backfilled, compacted and all damaged private improvements are to be restored immediately after installation of improvements in that area. If, in the opinion of the Engineer, the Contractor is not conforming to these requirements, the Engineer may order the job to be made safe and all other work halted until a meeting can be held to determine the reasons for noncompliance and to resolve the situation. Contractor is advised that gravel, cobbles and boulders will be encountered during excavation of the project. Contractor is responsible for the removal and proper disposal of all such material. Compensation for said removal shall be considered as included in various bid items. Additional compensation will not be provided therefore.

10.1 Staged Construction

The Contractor shall plan and prosecute the construction to comply with the following phasing requirements:

- Order for construction equipment and materials for the street improvements and drainage improvements, disposal bins, Mobilization, setting up of Traffic Control and safety daytime and nighttime for pedestrians and vehicles, establishment of secured storage area for the materials and equipment for construction and related items, securing staged areas including fencing & lighting, posting signage, processing environmental applications to meet any but all required environmental requirements in order to be in compliance for the project, etc.
- Demolitions/removals/relocations, erosion control measures, BMP, are in place, clearing and grubbing, removal of nuisance vegetation encroaching into the project area and limits, removal of tree(s) and its roots so as not to impede the planned construction of improvements, regularly maintain general housekeeping of the project area, protection of items and improvements noted on the specifications, excavation compaction of sub-grade, formwork for concrete, installation of rebar reinforcements, coordination with the Town Inspectors for areas of construction requiring periodic and continuous inspections, saw cut of existing AC pavements, etc.
- Concrete pour & curing for all new concrete improvements, testing of materials, coordinating with Town Inspectors, formwork removals/inspection, having flaggers if necessary during operation, construction of concrete interim drainage open channel, etc.
- Construction of street improvements per General Notes, construction notes, sections, protection of items in place as noted on the plan drawings, adjusting valves and manholes, hauling out for disposals the wastes/spoils generated in the project, etc.
- Installation of traffic signs, painting pavement striping, pavement markers (including blue dots), legends, enhanced crosswalk, delineators and or object markers and other traffic signs recommended from the current MUTCD and per specifications etc.
- Final General Cleanup, final inspection, coordination and administration, etc.

Completion of the new curb and gutter shall be performed prior to removal of the existing curb and gutter on Town Streets, except as necessary to provide/maintain access to adjacent businesses.

The Contractor shall plan and prosecute the work such that all lanes of traffic are open during non-working hours. No lane closures will be permitted between the hours of 4:00 p.m. and 8:00 a.m. unless authorized by the Engineer.

The Contractor shall install steel trench plates and other devices as necessary to restore full use of the traveled way during non-working hours. The steel plates shall be sized as necessary to support vehicular traffic loading across open excavations and newly poured concrete crosswalks without sustaining damage to the new improvements.

The Contractor is hereby advised that some traffic signals within Town limit are under the jurisdiction of Caltrans. No additional compensation shall be provided for the adjustment(s).

10.2 Protection of Utilities

The Contractor's attention is directed to the Standard Specifications. The Contractor shall verify the existence and location of any underground utility pipes or structures that may be affected during the course of work. The Contractor will take due precautionary measures to protect the utilities shown and other utilities or structures not shown on the plans that might be discovered during the process of the job.

The Contractor shall determine the exact location of all utilities prior to beginning construction of the reclaimed water main, potable water, sanitary storm drain, electrical conduits/substructures, and other Contract Work which have potential conflicts with underground utilities. If conflicts are discovered, the Contractor shall notify the Engineer immediately. The cost of potholing shall be included in the various bid items, and no additional compensation will be paid.

The Contractor shall protect the existing water services and meters in place. Care shall be taken by the Contractor not to disturb the services or meters during excavation and/or tree and root removal operations. Meter boxes shall be raised to grade where parkway improvements are reconstructed.

Where water valve boxes, bollards or other utility facilities are encountered in areas designated for removals and reconstruction, the Contractor shall protect those boxes and facilities in place, remove or adjust to grade as necessary. **Payment for protection of utilities and/or adjustment shall be considered to be included in other items of work and no additional compensation will be allowed.**

In the event that a water service is damaged, the Contractor shall notify Water Operations and the Engineering Division immediately. The Contractor shall also arrange for the immediate repair of the water service by a licensed plumbing contractor, at no cost to the Town. In certain circumstances, the Contractor may encounter water services that are entangled in roots. In these circumstances, it may be necessary to replace the water service. Qualified personnel shall make all such replacements. **In order to receive compensation for this repair, the Town Inspector shall be contacted prior to any further root removals.**

10.3 Equipment and Material Storage

No storage of equipment or materials will be allowed on private property or in street right-of-way unless written permission has been provided to Town.

10.4 Joining Existing Facilities

All construction of items in this contract shall join existing improvements with a smooth transition. Portland cement concrete shall neatly join existing features.

10.5 Protection of Work

The provisions that is for “Materials and Workmanship” of the *Standard Specifications* shall apply except as modified and supplemented below:

The Contractor shall provide sufficient barricades, delineators and ribbon at each location to adequately protect the new and fresh concrete surfaces from vandalism and unauthorized markings. Newly poured and finished concrete areas shall be delineated or cordoned off with tape to inhibit and discourage pedestrians, bikers and skateboards from tracking across the fresh sidewalk surfaces.

Unauthorized markings (i.e. graffiti, footprints, bike tire marks, scuff marks) in the new sidewalk surfaces are not acceptable, and may be cause for rejection. All such areas rejected due to such cause shall be removed and replaced at the Contractor’s expense. All costs for protecting the new concrete surfaces and any graffiti removal shall be considered as incidental to the cost of the work and no additional compensation will be allowed therefore.

10.6 Cooperation and Collateral Work

A minimum of forty-eight (48) hours prior to construction, the Contractor will expose all known utility crossings in order to provide for grade and alignment adjustments, if necessary.

The Contractor shall be responsible for ascertaining the nature and extent of any simultaneous, collateral, and essential work by others. The Town, its workers, contractors and others shall have the right to operate within or adjacent to the Work site during the performance of such work. The Contractor shall include in its bid all costs involved as a result of coordinating its work with others.

The Contractor shall not be entitled to additional compensation or Contract Time extension from the Town for damages resulting from such simultaneous, collateral and essential work. The Contractor shall redeploy its work force to other parts of the project site, if necessary to avoid or minimize such damage or delay. The

Contractor shall take due precautions to protect all improvements placed by others in the vicinity of their operations.

10.7 Construction Water

The Contractor will furnish all water necessary for compactions, cleaning, flushing, dust control, etc. The Contractor shall comply with all the requirements of the Town of San Bernardino Water Department.

The cost of delivering, furnishing, and applying all water will be considered as included in the various items of work, and no additional compensation will be allowed.

10.8 Parkway Trees:

The provisions of section 300-1 "Clearing and Grubbing" of the *Standard specifications* shall apply except as modified and supplemented below:

Existing tree roots shall be removed within the areas where existing curb and gutter, sidewalk, driveway, and asphalt concrete pavement are to be removed and reconstructed, to a depth of 8" below subgrade as directed by the Engineer. Limits of tree root removal shall extend to 6" back of curb where at that point, roots shall be cut so that the remaining root ends have a neat, smooth surface. Contractor shall not backfill behind curb until the above mentioned root treatment has been inspected by inspector.

10.9 Safety

All construction will be performed in compliance with the standards as established by OSHA and in accordance with the appropriate State of California regulations. It will be the Contractor's responsibility to acquaint him and abide by these regulations during all phases of construction. The contractor will hold harmless and indemnify the Town and its agents for any damages caused by failure to abide by said regulations.

10.10 Night, Sunday and Holiday Work

Unless otherwise specified in the Contract Special Provisions, no work shall be performed at night, Sunday, or the eleven (11) legal holidays: New Year's Day, Martin Luther King, Jr. Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Friday following Thanksgiving Day, Christmas Eve and Christmas Day, except work pertaining to the public safety or with the permission of the Engineer, and accordance with such regulations as he/she shall furnish in writing. Before performing any work at said times, except work pertaining to the public safety, the Contractor shall give written notice to the Engineer so that proper inspection may be provided. "Night" as used in this paragraph shall be deemed to include the hours from 7:00 P.M. to 6:00 A.M. of the next succeeding day.

11.0 ENGINEER'S ESTIMATE

The quantities of work to be done and materials to be furnished are approximate as shown on the plans and/or proposal and are given as a basis of comparison of bids only. The Town does not expressly or by implication agree that the actual amount of work will correspond therewith.

12.0 FINAL CLEANUP

Prior to final acceptance, the Contractor shall restore the entire project site to a condition equal or better than the pre-construction condition as evidenced by film, notes, sketches and other construction records.

12.1 Cleaning and Dust Control

Clean up and dust control shall conform to the Standard Specifications. During execution of work, the Contractor shall clean the site, adjacent properties, and public access roads, and dispose of waste materials, debris, and rubbish to assure that all affected properties are maintained free from accumulations of water, materials and rubbish.

Contractor will provide for collection and for disposal of waste materials, spoils, debris, and rubbish.

Contractor will cover all loads of excavated material leaving the site or of material being imported, to prevent excessive dust from being created.

12.2 Protection and Restoration of Existing Improvements

The Town anticipates and the Contractor shall, if necessary, repair all existing improvements, which are not designated for removal, which are damaged or removed as result of the Contractor's operations in accordance with the Standard Specifications.

In particular, areas designated by the Contractor for haul routes shall be subject to a joint inspection by the Town and Contractor prior to any work occurring in order to reveal any deficiencies of the existing improvements. All existing improvements subject to repair and/or replacement due to the Contractor's operations shall be repaired and/or replaced in accordance with the applicable jurisdictional Agency's requirements. Items subject to repair and/or replacement include but are not limited to asphalt paving/base and subgrade sections, curbs and gutters, sidewalks, drives, culverts, utilities, landscaping turfs and hardscaping, etc.

The Contractor will be required to obtain a no-fee Construction Permit from the Town.

13.0 ASPHALT CONCRETE

13-1.01 GENERAL--Asphalt concrete shall comply with the requirements of Section 203-6, "Asphalt Concrete," and Section 302-5, "Asphalt Concrete Pavement," of the Standard Specifications and these Special Provisions.

The Performance Grade of the asphalt concrete shall be PG 64-10. Where dense graded asphalt is being constructed in two or more layers, the asphalt concrete pavement for the base course shall be B-PG 64-10. Where dense graded asphalt is being constructed in a single layer or for a finishing course or asphalt concrete overlay, the asphalt concrete pavement shall be C2-PG 64-10.

TACK COAT - Tack coat shall be applied in compliance with Sub-Section 302-5.4, "Tack Coat" of the Standard Specifications, and as directed by the Engineer.

13-1.02 PAVEMENT REPAIR--shall comply with the requirements for "asphalt concrete," as specified herein, and as shown on the Plans and/or where directed by the Engineer. The existing localized portions of failed pavement structural section, as shown on the Plans and when directed by the Engineer, shall be completely removed (remove Asphalt concrete pavement to reach underlying aggregate base material/ structural section material). Where removals are in an area that is to be milled, the removals are to be done after milling operations once underlying sub base or subgrade is compacted to 95% relative compaction. Asphalt pavement may be removed by sawcutting and removal of the existing pavement section, or by milling, as per Plan and/or as approved and directed by the Engineer.

13-1.03 CRACK SEALING (ASPHALT CONCRETE PAVEMENT)--Within each roadway's Project limits, all longitudinal and transverse cracks wider than 1/4" shall be cleaned and sealed with a hot-applied rubberized asphalt sealant, prior to placement of Asphalt concrete pavement overlay, or slurry seal, as appropriate. The Engineer shall have the final determination as to which cracks shall be sealed.

Crack sealing shall not take place until after all milling/planing operations for the roadway have been completed.

With each delivery of crack treatment material to the job site, submit:

1. Manufacturer's name
2. Production location
3. Product brand or trade name
4. Product designation
5. Crack treatment trade name
6. Batch or lot number
7. Maximum heating temperature

Crack treatment material must be delivered to the job site premixed in cardboard containers with meltable inclusion liners or in a fully meltable package. Heat hot-applied crack treatment material shall be installed in compliance with the manufacturer's instructions.

The crack sealing material shall be rubberized crack seal by "Crafco," or Engineer-approved equal.

The entire limits of the roadway shall be machine swept within 24 hours prior to crack treatment. Vegetation removal prior to crack cleaning shall be as specified in "Clearing and Grubbing," of these Special Provisions. Cracks must be cleaned out and dry before treating. Before treating, blast cracks with oil-free compressed air at a pressure of at least 90 psi.

If the pavement temperature is below 40 °F or if there is evidence of moisture in the crack, use a hot air lance immediately before applying crack treatment. The hot air lance must

not apply flame directly on the pavement.

Cracks between 1/4" inch wide and 1-1/2" wide, shall be cleaned full depth by blowing operations prior to applying sealant. The sealant shall be applied in accordance with the manufacturer's instructions. If after 2 days the crack treatment is more than 1/4 inch below the specified level, the sealant fails, or the crack re-opens, re-treat the crack.

Cracks greater than 1-1/2" wide shall be cleaned full depth by routing and blowing operations. A tack coat must be applied to the edges and then the crack is filled with a fine asphalt concrete hot mix approved for skin patch and compacted level with the top of the adjacent pavement.

Immediately remove crack treatment material spilled or deposited on the pavement surface.

Before opening to traffic, apply sand or the manufacturer's recommended de-tack agent to tacky crack treatment material within the traveled way. Sweep excess sand before opening to traffic.

Sand applied to tacky crack treatment material must be clean, free of clay, and comply with:

Sand Gradation

Sieve Size	Percent Passing
No. 4	100
No. 50	0 - 30
No. 200	0 - 5

13-1.04 TACK COAT--Tack coat shall be applied in compliance with Sub-Section 302-5.4, "Tack Coat," of the Standard Specifications, and as directed by the Engineer.

13-1.05 ADJUST MANHOLE, FRAME AND COVER, COVER, TO GRADE--Adjusting frames and covers to grade after completion of paving shall be in accordance with Section 403 "Manhole Adjustment and Reconstruction," of the Standard Specifications, and as directed by the Engineer.

All debris and foreign material shall be removed from the cover in accordance with Section 403 "Manhole Adjustment and Reconstruction," of the Standard Specifications.

The pavement surrounding the frames and covers shall meet the smoothness requirement as specified in Section 403 "Manhole Adjustment and Reconstruction," of the Standard Specifications.

13-1.06 ADJUST UTILITY FRAME AND COVER/VAULT--Adjusting all non-Town utility including water frame and cover/ vault frames, covers, meter boxes, valve canes to grade after completion of paving shall be performed by the contractor.

Full compensation for compliance with the provisions specified and referred to hereinabove shall be considered as being fully included in the various contract bid

items for the project, and no additional compensation will be allowed therefore.

13-1.07 SOIL STERILANT--The Contractor shall submit a proposal for a pre- emergent herbicide soil sterilant, with dye, and approved for use in California, to the Engineer for review and approval. The Contractor shall provide proof of registration for use in California which can be verified by accessing the California Department of Pesticide Regulation website at:

<http://www.cdpr.ca.gov/docs/label/labelque.htm#regprods>

Review and approval by the Engineer of the soil sterilant to be used on this Contract is for administration purposes only and does not relieve the Contractor from responsibility for providing and applying a suitable State registered soil sterilant in quantities and rates sufficient for its intended purpose.

Contractor shall apply soil sterilant using spray equipment that provides good mechanical agitation and even coverage of the area to be treated. Spray equipment shall be calibrated before material is applied. The Engineer shall be the sole evaluator of the effectiveness of the spray equipment before and during sterilant application, and the Engineer's decision concerning the use of the equipment on this Contract shall be final. If in the opinion of the Engineer, the sterilant applicator and application is not sufficient for the job, the Contractor shall immediately adjust, repair, or replace the spray equipment (and/or rate of application) to the satisfaction of the Engineer and at the Contractor's expense.

Contractor shall apply soil sterilant to the area(s) to be covered by asphalt concrete pavement, as shown on the plans, or as directed by the Engineer. Soil sterilant shall be applied at the rate specified by the manufacturer for the intended purpose, and repeated, as necessary, as recommended by the manufacturer. Great care shall be taken to apply soil sterilant to the designated areas only.

Asphalt concrete may only be placed after proper application and placement of soil sterilant and only as recommended by the manufacturer. It should be noted that some manufacturers require more than one soil sterilant application separated by a specific time period to be effective.

The dye shall not stain concrete or masonry where visible.

Full compensation for conforming to the requirements of Soil Sterilant shall be considered as included in Contract bid price paid for the various items of work involved and no additional compensation will be allowed therefore.

14.0 PERMITS

The Contractor will be required to obtain a no-fee Construction Permit and a no-fee Street Closure Permit from the Town. The contractor shall comply with all regulatory agency requirements and permits. These agencies include Caltrans, California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), and US Army Corps of Engineers (USACE).

A Condition of the 404 Permit issued by US Army Corps is the establishment and adherence to a Cultural Resources Monitoring and Treatment Plan. The Plan shall act as a guideline for cultural resource monitoring and the treatment of any cultural resources discovered during Project implementation. The protocol outlined in this Plan will be enforced by the USACE, and implemented by the Town throughout construction of the Project.

15.0 CONTRACT PAYMENTS

Payment will be made at the price for each item listed on the bidding form or as extra work as provided in the General Provisions.

Invoice format must be approved by the Town prior to submit the first progress payment.

Initial progress payment will not be made prior to approval by the Engineer of the Schedule of Values (breakdown of lump sum contract costs), the Construction Progress Schedule, and the Schedule of Submittals.

No subsequent progress payment will be made until the Engineer receives the monthly revision of the Construction Progress Schedule and Progress Record Drawings.

15.1 Schedule of Values for Payments

The Contractor shall submit to the Engineer, within ten (10) working days after Notice to Proceed, three (3) copies of a Schedule of Values. The Schedule of Values shall consist of a detailed breakdown of the Contract Lump Sum or designated Lump Sum bid items.

The Schedule of Values shall include an allocation of the major work task items required to perform and complete the work. In the event that the "Schedule of Values" is not submitted in accordance with the Specifications contained herein, the Contractor shall not be permitted to commence with lump sum work items. The Contractor shall not be entitled to contract time adjustments.

The total of the Schedule of Values shall agree with the total or lump sum price bid. The price breakdown shall, as a minimum, show the cost of each item of the Construction Progress Schedule. Any additional breakdown of the Schedule of Values, by quantities and prices of work and materials, considered necessary by the Engineer will be as determined by the Engineer. The price breakdown shall not be unbalanced, shall be subject to adjustment between the Engineer and the Contractor, and will be used as a basis for progress payments. Acceptance of the Schedule of Values by the Engineer shall not relieve the Contractor of the responsibility of performing all the work needed to complete the projects at the total or lump sum price bid.

15.2 Progress Payments

Determination by Engineer: The Engineer will make an approximate measurement of all approved materials delivered to the job site and work performed by the Contractor through the last working day of each calendar month for the purpose of making a progress payment.

No payment will be made for the fabrication or production of materials off the job site, or for materials stored off the job site. The Engineer will classify the work according to items listed on the Bid Form and will estimate the approval is given and submitted to the Town's Finance Division.

The invoice format must be approved by the Engineer prior to the submittal of first invoice.

15.3 Final Payment and Release of Claims

Notice of Completion and final payment: A Notice of Completion will be prepared by the Engineer and recorded with the office of the County Registrar-Recorder, within ten (10) days after acceptance of the work by the Town Council or designee.

Final payment will be made not sooner than thirty-five (35) calendar days following the date of recording of the Notice of Completion. Final payment shall include the remaining amount due the Contractor, less all prior payments and advances whatsoever to or for the account of the Contractor for supplies, materials, services, damages, or otherwise deductible under the terms of the Contract. All prior estimates and payments including those relating to extra work shall be subject to correction by this payment, which throughout this Contract is called "final payment."

16.0 PORTLAND CEMENT CONCRETE

16-1.01 GENERAL--Portland cement concrete construction shall comply with Section 201-1, "Portland Cement Concrete," and Section 303-5, "Concrete Curb, Walks, Gutters, Cross Gutters and spandrels, Alley Intersections, Access Ramps with and without spandrels and Driveways," of the Standard Specifications, as shown on the Plans, TOWN Standard Plans, SPPWC Standard Plans, CALTRANS Standard Special Provisions and Plans, these Special Provisions, and as directed by the Engineer.

Add the following paragraph:

Construction of PCC sidewalks, driveways, access ramps, curbs, gutters and cross gutters shall be formed and poured within 5 working days following removal of the existing material at any location. Any adjacent trench (i.e. 1-foot wide slot trench), required to remove and construct said PCC construction shall be restored per these Specifications and no later than 2 calendar days following the PCC construction. Failure by the Contractor to comply with these requirements in a timely manner may result in a liquidated damage assessed upon the Contractor. Such liquidated damage shall be determined by the Engineer and will be deducted, accordingly, from a Progress Payment due to the Contractor.

Portland cement concrete for all flatwork shall be 560-C-3250, with a maximum slump of four inches (4"), except that Contractor may substitute Class 560-C-3250 for sidewalk work, not within the driveway approach, only.

16-1.02 PCC CURB, OR CURB & GUTTER--The Contractor shall remove existing improvements and construct PCC curb, or curb and gutter, over 8" CAB where shown on Plans. **Concrete shall be 560-C-3250.**

Unless otherwise approved by the Engineer, the entire affected concrete curb, gutter, cross-gutter, or spandrel portion shall be removed by sawcutting the adjacent AC pavement one (1) foot from the edge of the affected area to be removed. This slot patch will have a 2” grind, 2’ from edge of slot patch, for paving.

For concrete curb and gutter work located in a spandrel, the spandrel shall be reconstructed as directed by the Engineer in the field.

For concrete curb and gutter construction work adjacent to cold milling areas or areas where adjacent pavement will remain in place, sawcut adjacent AC pavement a distance of one foot (1') from edge of gutter to be removed unless otherwise specified in the plans. This slot patch will have a 2” grind, 2’ from edge of slot patch, for paving. The Contractor shall construct this section with a 4" thick section of 1-sack cement and sand slurry mix on eight inches (8") of Crushed Aggregate Base. The final surface elevation of the 1-sack cement and sand slurry mix shall be 1-3/4" below edge of gutter elevation to accommodate the 2" AC overlay and a 1/4” high “lip” along the edge of gutter. Any curb drain that is located in sections of curb and gutter shall be restored in-kind, unless the sidewalk panel adjacent is being constructed. Curb drains restored in-kind shall be included in the various bid items, and no additional compensation shall be allowed.

For concrete curb and gutter construction work adjacent to areas of pavement reconstruction, the Contractor has the following 2 options:

1. The entire portion may be removed without sawcutting and removing the adjacent AC pavement; however, any damaged pavement must be removed and temporary AC provided and maintained in its place until the adjacent pavement is removed as per the contract; or
2. Remove the entire affected concrete curb or curb and gutter portion by sawcutting the adjacent AC pavement a distance of six (6) inches from the face of curb or edge of gutter to be removed. The contractor shall construct this six (6) inch wide section with a 2-inch thick section of temporary AC pavement on either Crushed Aggregate Base or imported fill with a sand equivalent of 30 or greater.

Payment for 1’ slot patch adjacent to areas of pavement reconstruction will be included in the payment for various curb and gutter items. **A 2” grind, 2’ from edge of slot pave limits, will be required prior to final paving, on roadways not subject to grind and overlay.**

Payment for AC reconstruction beyond 1’ from edge of gutter shall be paid for out of the bid items for “Cold Mill/Remove existing and construct 4” full depth ac pavement repair” and “Provisional bid item: Cold Mill/Remove existing and construct 4” full depth pavement repair in 4” and 2” lifts, where needed.”

The Contractor shall sawcut and remove existing improvements including pavement, base, subgrade, and other in-place materials as necessary for construction; prepare the subgrade; place base; and construct PCC curb or curb & gutter where noted and as shown per detail

drawings. New concrete improvements shall match existing finish and pattern as directed. Contractor shall coordinate with utility companies for utility adjustments needed when constructing the work.

All PCC work must drain to grade and must pass water test.

No separate payment shall be made for crushed aggregate base (CAB). CAB shall be fine grade (3/4"). CAB shall be compacted to 95% relative compaction per Greenbook requirements. Unless noted otherwise, CAB will be considered as included in payment for the bid items, and no separate payment will be made therefore.

16-1.04 PCC SIDEWALK--Portland cement concrete sidewalk shall be constructed in accordance with the Town of San Bernardino Standard No. 202, per Plan, and as directed by the Engineer. PCC sidewalk shall have the same surface pattern or scoring as per the adjacent panels.

The Contractor shall remove existing improvements and construct 4" or 6" PCC sidewalk over 95% compacted native, and shall comply with Subsection 303-5 of the Standard Specifications. **Concrete may be 560-C-3200.**

The Contractor shall sawcut and remove existing improvements including pavement, base, subgrade, and other in-place materials as necessary for construction; place base; and construct PCC sidewalk where noted and as shown per detail drawings. New concrete improvements shall match existing finish and pattern as directed. Contractor shall coordinate with utility companies for utility adjustments needed when constructing the work.

Sidewalks shall meet all ADA requirements.

Sidewalks shall not be monolithic with curb or curb & gutter.

16-1.05 PCC RESIDENTIAL AND COMMERCIAL DRIVEWAY AND ALLEY APPROACH

The Contractor shall remove existing improvements and construct a 6" PCC Driveway or alley approach over 95% compacted native as per Plans/Specifications, and shall comply with Subsection 303-5 of the Standard Specifications. **Concrete shall be 560-C-3250.**

The Contractor shall sawcut and removes existing improvements including pavement, base, subgrade, and other in-place materials as necessary for construction, place base; and construct PCC driveway as shown per plan and detail drawings. New concrete improvements shall match existing finish and pattern as directed. Contractor shall coordinate with utility companies for utility adjustments needed when constructing the work. Contractor shall wrap up utility poles and other obstruction in concrete with felt or clear plastic.

All PCC work must drain to grade and must pass water test.

The Contractor shall install steel plates over driveways or otherwise maintain access where there is open excavation or curing concrete. Payment for provision, installation, maintenance, and removal of steel plates shall be included in the bid item for driveway replacement.

The Contractor shall maintain driveway access at all times, except for short period during actual construction work. Closures shall be coordinated with the using resident or business, and shall be scheduled for their convenience as much as possible. Owners shall be notified of the planned work at two days in advance of construction. The Contractor shall provide for alternate access or parking, or provide plates spanning the work for access to the property. Any plates or other work affecting pedestrian crossing shall be properly signed and protected. PCC shall be protected until a minimum strength of 2,000 psi is attained. The Contractor may utilize high-strength early curing concrete upon approval of the Engineer to minimize plates/maintenance costs. Curb & gutter shall be placed separately from driveway and sidewalk pours.

Work Requested by a Property Owner. The Contractor is allowed to perform work which is not a part of this Contract and in the project area if the work is requested, and paid for, by a property owner provided that:

- a. The Contractor shall inform the Engineer of the nature, quantity and location of the work requested by the property owner; and
- b. The requested work does not impact the schedule or cost of the contract work; and
- c. The Property owner and Contractor are required to obtain all permits for requested work; and
- d. The Contractor is required to obtain all inspections and approvals.

On streets where a variable edge grind will cause the driveway to street slope grade difference to be steeper than 15% combined then the driveway is to be constructed per the appropriate Town standard.

16-1.06 BONDING--Joints between new and existing concrete shall be given surface preparation as follows:

Joints made with the mass of existing concrete by cutting, chipping, or grinding shall be cleaned free of all loose deleterious material by thorough brooming and compressed air jetting.

Original surfaces or existing concrete shall be cleaned free of bitumens, grease, paint, and other deleterious materials and clean aggregate of at least 3/8-inch size shall be exposed by rock hammer abrasive blast cleaning or machine scarifying.

16-1.07 PAYMENT--There will be "No Payment" of any kind for any new or modified curb ramps that do not meet current ADA Standards and the SPPWC Standard Plans 111-5.

Asphalt concrete that is used to fill the voids remaining after the Contractor's PCC work operations (the area that is left after removing concrete forms from gutter, curbs, cross

gutters, spandrels, driveway approaches, etc.) shall be considered as included in the various Contract bid items of work involved and no additional compensation will be allowed therefore.

The cost to re-establish irrigation works and any hardscape impacted or damaged by Contractor forces beyond the limits of the work is to be included in the various Contract items of work involved and no additional compensation is to be allowed therefore.

17.0 COLD MILLING

17-1.01 GENERAL--Cold milling operations shall be performed in accordance with Section 404, "Cold Milling," a of the Standard Specifications and these Special Provisions. Cold Milling shall include edge milling, header milling, micro-grinding and profile milling as necessary to provide the required grades and allow for a smooth pavement profile in preparation for asphalt concrete overlay paving. Milling limits shown on the plans are approximate. The Engineer may direct the Contractor to cold mill in other areas, or deeper, as necessary for construction. Some adjustment of limits and depths will be necessary to accommodate paving requirements. Cold milling shall be to the depth as specified or directed, or to the underlying base material, pavement fabric, or macadam material. Milling depth shall be adjusted so as not to remove any macadam encountered. Care shall be exercised not to damage adjacent concrete including curbs without gutters. Gutters or curbs damaged shall be replaced at the Contractor's expense. There are areas within the project that require cold planing which are inaccessible to the type of milling machine as described herein above. Some of these areas include local depressions, curb return, curbs without gutters, utility manholes and vaults. The Contractor shall be required to use a smaller hand machine or other device to cold plane the required horizontal limits and depth at those locations.

The Contractor shall remove existing asphalt concrete overlay from gutters adjacent to any area specified to be cold milled, as directed by the Engineer. ***Contractor shall take special care when milling and micro milling along Arrowhead so as not to damage existing culvert channel that runs north and south in alignment with the existing gutter. Any damage to existing culvert by milling shall be the responsibility of the contractor, and repaired per detail on plans, at the contractor's expense.***

Existing asphalt concrete shall be milled at the locations and to the dimensions shown on the Plans and as included in these Special Provisions. Cold Milling shall include wedge cuts, cold milling the entire street, to various depths, and header cuts, all per Plan and as directed by the Engineer.

The machine used for milling shall meet the following requirements:

The milling machine shall be specially designed and built for milling of bituminous pavement without the addition of heat, with the ability to plane Portland cement concrete patches in the bituminous pavement. The cutting drum shall be a minimum of 60 inches wide and shall be equipped with carbide-tipped teeth placed in a variable lacing pattern to produce the desired finish.

The machine shall be capable of being operated at speeds from 0 to 40 feet per minute. It shall be self-propelled and have the capability of spraying water at the cutting drum to minimize dust. The machine shall be capable of removing the material next to the gutter of the pavement being reconditioned and be designed so that the operator can at all times observe the milling operation without leaving the controls. The machine shall be adjustable for slope and depth and shall deep cut in one pass a maximum of 3 inches without producing fumes or smoke.

The Contractor shall provide a smaller machine if required to trim areas inaccessible to the larger machine at manholes, gate valve covers, curb returns, and intersections. The smaller machine shall be equipped with 12 inch minimum-width cutting drum mounted on a chassis allowing it to be positioned without interrupting traffic or pedestrian flow.

The depth, width, and shape of the cut shall be as indicated on the typical cross sections or as directed by the Engineer. The final cut shall result in a uniform surface conforming to the typical cross sections. The outside lines of the milled area shall be neat and uniform. The road surfacing to remain in place shall not be damaged in any way.

The material milled from the roadway surface, including material deposited in existing gutters or on the adjacent traveled way, shall be immediately removed. The removal crew shall follow within 50 feet of the planer, unless otherwise directed by the Engineer. During the milling operation, the Contractor shall sweep the entire street with mechanical equipment and remove all loosened material from Work site until completion of the removal work. The Contractor shall take all necessary measures to avoid dispersion of dust.

Milling of asphalt concrete pavement will be measured by the Square Foot, as per Bid Schedule. The quantity to be paid for will be the actual area of surface milled irrespective of the number of passes required.

After the cold milling operation(s), Contractor shall crack seal the entire roadway as per Section 14-1, ASPHALT CONCRETE, of these Special Provisions. Further, Contractor shall tack coat and pave/overlay the street with new pavement within **72 hours** of completion of cold milling operations, or as otherwise directed by the Engineer.

Payment for Crack Sealing for all roadways in this Contract shall be per Section ASPHALT CONCRETE, of these Special Provisions.

Where transverse joints are milled in the pavement at conform lines, no drop-off shall remain between the existing pavement and the milled area when the pavement is opened to public traffic.

If asphalt concrete has not been placed to the level of public traffic, a temporary asphalt concrete taper shall be constructed. The asphalt concrete shall be placed to the level of the existing pavement and tapered on a slope of 30:1 or flatter to the level of the milled area.

Asphalt concrete for tapers shall be commercial quality and may be spread and compacted by any method that will produce a smooth riding surface. Asphalt concrete tapers shall be

completely removed, including removing all loose material from the underlying surface, before placing the permanent surfacing. Temporary tapers shall remain in place no longer than the above 72 hour limit required for the application of new pavement surfacing after cold milling.

Asphalt concrete fillets shall be provided for all locations where milling depths exceed 1-1/2", adjacent to all driveways, access ramps and intersecting roadways, where the milled roadway is reopened to traffic before the Asphalt concrete overlay is placed.

If subgrade is reached during cold mill, those areas will be marked out by Engineer and treated as a 4" pavement repair section, and paid for per bid item for "Cold Mill/Remove Existing and Construct 4" Depth Pavement Repair, where needed."

21 PRE-ENGINEERED RESTROOM BUILDING

SECTION 1: Building Supplier Scope

1.1 Summary

- A. The work shall include furnishing the sealed architectural, structural, mechanical, and electrical plan sets and furnishing the structural, mechanical, and electrical building components as a complete, pre-designed restroom building package as specified herein. Contractor shall provide full architectural plans and engineering calculations and stamped by structural engineer, suitable for required building permit.

1.2 General Requirements

- A. Packaged restroom building design and engineering and furnishing all specified building package components shall be supplied by Public Restroom Company, or pre-approved alternate, hereafter designated as the *building supplier*.
- B. The *building supplier* shall be a single source design, engineering, and manufacturing firm who shall meet all the following requirements.
- C. The packaged concessions/restroom building shall be a current standard product of *building supplier*.
- D. *Building supplier* shall be regularly engaged in and have at least ten (10) years of experience in packaged restroom building engineering, design, supply, and construction.
- E. The *building supplier* must meet or exceed the product specifications.
- F. Alternate *building suppliers* shall demonstrate that they have designed, engineered, produced, delivered, and constructed at minimum ten (10) functioning site- built buildings of similar type. Project completion dates and a reference contact from the owner of each project must be provided.
- G. The building and its concrete footings, foundation, and slab are to be engineered by the *building supplier* to meet site-specific conditions, including wind and snow loading, local frost depth, and ground conditions.
- A. Fasteners that are normally included with individual components, as well

- any typical fasteners, shall be included.
- B. Building is to be designed and constructed to meet local codes and approvals for permanent structures.
 - C. No approval by any external entity will override the local building authority's codes and inspections.
 - D. Building sidings, treatments, and roofing are to be as specified. Precast buildings with painted textures are not considered architecturally equivalent.
 - O. The **building supplier** shall provide complete, code-compliant building plans including plans, elevations, sections, and details.
 - P. The **building supplier** shall provide complete structural calculations meeting code for design loads and seismic design under seal of a professional Engineer with current license in the state of California.
 - Q. The Town reserves the right to review or reject all submittals at its sole discretion.
 - R. All work and materials shall comply with current industry building codes and regulations for the state of California.
 - S. Americans with Disabilities Act Accessibility Guidelines (ADAAG) will be followed in design, manufacture, and construction.

1.3 Design & Submittal Documentation

- A. The building supplier work shall include the design of the architectural, mechanical, structural, and electrical components that will be required for this building.
- B. The building will be designed as a complete building package to be delivered to the job site for construction onsite by the contractor.
- C. Within one (1) week of contract award, the building supplier shall submit the packaged concessions/restroom building preliminary Scope of Supply and Design Submittal (SSDS), including the building plan view and elevation drawings.
- D. The building supplier will provide complete submittal documentation in the building supplier's standard electronic submittal format for review.
- E. The preliminary SSDS will be reviewed by relevant parties and returned to the building supplier with any required revisions to the terms, product data sheets, and/or building plan view and elevation drawings noted as comments.
- F. The building supplier shall make any required corrections or revisions and resubmit the preliminary SSDS until the preliminary SSDS is approved by the engineer.
- G. Once the preliminary SSDS has been approved, the building supplier will provide full sealed plan sets stamped by an engineer licensed in the state California for review by the Building Division.
- H. The following sections shall be included in the building supplier's preliminary Scope of Supply and Design Submittal. Incomplete submittals will be rejected and returned to the bidder:

- 1. INTRODUCTION
- 2. BUILDING DESIGN

- (a) SUPPLIED ITEMS
- (b) EXCLUDED ITEMS
- (c) PLAN VIEW AND ELEVATION DRAWINGS
- 3. PRODUCT DATA
- 4. WARRANTY & LIMITATIONS

1.4 Warranty

- A. The building package and all associated components provided by building supplier shall be warranted against defects in materials and workmanship for a period of not less than one (1) year from the date of acceptance of the project by the Town.
- B. Building supplier shall pass through to owner all relevant manufacturers warranties for individual products and components of the building package.

SECTION 2: BUILDING PACKAGE PRODUCTS

2.1 Approved Building Suppliers

Public Restroom Company, or approved equal
2587 Business Parkway, Minden, NV 89423 Tel: 888-888-2060; Fax: 888-888-1448

Web: www.PublicRestroomCompany.com

- A. Requests for use of an alternate building supplier will be considered and approved by the Town.

2.2 Building Description

- A. The installation methods for the materials and items described in this section.
- B. Building area shall match the restroom building proposed within plans.

2.3 Walls

- A. Concrete Masonry Units (CMU) shall be supplied by building supplier.
 - 1. Walls shall be constructed of 8"W x 16"L x 8"H split-face mortar joint concrete masonry units (concrete blocks).
 - 2. Blocks shall be manufactured to ASTM C90 designation for load bearing concrete masonry units.
 - 3. Block color to be Tan.
 - 4. Exterior 4' veneer with stone wainscot
- B. Interior and Exterior walls to have anti-graffiti coating supplied by building supplier.
- C. Sanitary tile cove base on interior walls to be supplied by building supplier.
- D. Kick proof wall vents for natural ventilation shall be supplied by building supplier.
 - 1. pre-assembled steel frame with 10-gauge, 1" square lock joint wire weave mesh and interior louver with integral insect screen.
 - 2. Vents are primed and painted black.
- E. Door system components shall be supplied by building supplier.
 - 1. Doors shall be 18-gauge galvanized steel.
 - 2. Door frame shall be pre-welded 16-gauge galvanized A-60 steel.

3. Masonry door clips (3/16 dia.) for door frame shall be fitted between the doorframe and concrete blocks to bond frame to wall. Door clips allow full internal grouting of the frame during installation.
 4. Hinges shall meet ANSI AS 112 with non-removable pin and two ball bearings.
 5. Hager 5100 Series Grade I door closer is constructed of cast iron, which makes it ideal for heavy duty, high use and abusive environments.
 6. Door to have 0.038"-gauge, stainless steel protection plates.
 7. Doors to have pull handles with stainless steel plates and deadbolt locks.
- F. Stainless steel, roll-up concession windows with self-closing QuikServ window and stainless-steel counters.

2.4 Roofing

- A. The following roof components shall be supplied by building supplier.
1. Pre-engineered wood truss roof system.
 2. Ceiling finish to be rough tex plywood.
- B. Roofing shall be Fabral, 26-gauge, Horizon 16, standing seam panels, with 16 in. coverage width.
1. Roofing package shall include inside and outside foam closures, matching trim (eaves, gables, and ridge) and fasteners, sheet metal flashing (all sides), and 30# felt (under metal).
 2. Roofing color to be selected by the owner from the manufacturers standard color chart.

2.5 Plumbing Fixtures & Accessories

- A. The following plumbing fixtures and accessories shall be included:
- B. Toilet shall be wall mount, top supply, stainless steel fixtures with manual lever for flush
- C. Urinal shall be wall mount, top supply, stainless steel fixture with manual lever for flush- minimum 2
- D. Lavatory shall be stainless steel fixture.
- I. Faucets shall be deck mounted single hole single supply metering, sink faucet.
- E. Grab bars shall be stainless steel.
- F. Freestanding, stainless steel, 21-gallon trash receptacle with no lid.
- G. Toilet paper dispenser shall be stainless steel, wall mount with three-roll capaTown.
- H. Surface-mounted automatic soap/sanitizer dispenser, with face formed with contemporary contours, radii and finish matching related accessories in manufacturer's designer series. CapaTown: 27-0z.
- I. Surface mounted baby changing station shall be solid light grey (9631) molded bacterial-resistant, high-density polyethylene. Steel to steel support hinges with pneumatic gas shock mechanism. Unit shall have integrated liner dispenser and bag hooks. Unit shall have an anti-microbial safety belt Unit shall be operable with less than 5lbs. of force and complies with ASTM F2285 Standard.
- J. Utility tub with legs and ADA faucet in the mechanical room.
- K. Surface mount, stainless steel, bi-level drinking fountain with bottle filler
- L. Concession room to have wall mount, stainless steel hand wash sinks with lever handle faucet

- M. Concession room to have stainless steel, 2-bay & utility sinks with faucets.
- N. Male restrooms have minimum 2 urinals and an ADA compliant stall. Female restroom must have minimum 3 stalls.

2.6 Electrical

- A. The following electrical fixtures shall be supplied by the Contractor.
- B. All light fixtures shall be supplied by contractor.
 - 1. Exterior lights to be LED downlights with cast-aluminum housing with corrosion-resistant paint in dark bronze. Polycarbonate lens protects the LED from moisture, dirt and other contaminants.
 - 2. Wall mounted, Lithonia, vandal resistant LED light fixtures shall have a durable polycarbonate housing and high-impact polycarbonate refractor.
 - 3. Interior surface mount, 48" LED light fixtures.
 - 4. Lights controlled by motion sensor.
 - 5. Electric tank, 50-gallon, 4.5kw water heater with expansion tank.
- C. Wall mount, Xlerator hand dryers.
- D. Main breaker panel shall be supplied and installed by the contractor.
- E. Breaker Panel shall be 400 Amp, single-phase, indoor.
- F. Contractor shall connect the building power with the existing power source (main breaker panel), complete functional; make any changes, relocation, upgrade (if required) to the existing system and provide power to the building.

The contractor should modify the main breaker panel as needed to be most efficient based on any design changes.

2.7 Delivery, Storage, and Handling

- A. The contractor shall be responsible to deliver per-fabricated building and pertinent material to the job site and secure until they are installed and protect the building until Town accepts the job.

SECTION 3: BUILDING INSTALLATION SCOPE

The contractor is responsible for building package installation, which include but not limited to furnish and install underground utilities, under the slab and 10' beyond the building line (including trenching), foundation/pad construction and building package assembly/construction.

3.1 Construction Submittals

- A. Contractor shall submit plans, data sheets and relevant information about the concessions/restroom building to the Town for review and approval.

3.2 Cast in-Place Concrete for Building

- A. All labor, trades, materials, tools, equipment, and incidentals, for cast-in-place concrete for footings and slab shall be provided by the contractor.
- B. Footings for the building package are to be dug by the contractor and

- poured on- site to meet local code for permanent structures. A prefabricated, modular mat placed on compacted base is not an accepted equal to a site specific, site poured, engineered foundation.
- C. Engineered fill shall be ¾" minus crushed aggregate around footings, foundations, and slabs, or as required in the final approved plans.
 - D. Slab vapor barrier shall be 6-mil continuous plastic under the concrete slab, or as required in the final approved plans.
 - E. The foundation shall be installed as designed with all cast in-place concrete poured to dimensions specified, or as required in the final plans.
 - F. Footings will be built to minimum 24" depth or greater if required by Building Department
 - 1. Minimum compressive strength of foundation concrete shall be in accordance with the Green Book, or as required in approved final plans.
 - 2. Slabs shall have a fine broom finish with joints required in flat work as shown on plans.
 - 3. Steel rebar shall be installed as specified in final plans; sub-grade shall be compacted to 90%.
 - G. Contractor shall supply and install concrete slab sealer.
 - 1. Concrete slab sealer shall be a water-based, transparent curing, sealing and dust proofing compound with two (2) coats to be applied per manufacturer's instructions.

3.3 Structure

- A. Masonry (concrete) grout shall be supplied and installed by the contractor.
 - 1. Grout shall have a minimum compressive strength per Greenbook.
 - 2. Fine or coarse grout may be used in accordance with the Greenbook.
 - 3. All CMU block must be fully grouted and may not be wetted.

Note: If required for installation, contractor will be responsible for providing appropriate equipment and labor for notching CMU block for bond beams, cutting CMU block to make any required shapes, and/or grinding CMU block for fixture mounting.

- B. Rebar for walls shall be supplied and installed by the contractor.
 - 1. All walls shall have # 4 and # 5 rebar. See final approved plans for spacing.
 - 2. All rebar used in the building must meet ASTM A615 manufacturing standards and is to be placed per the final approved plans.
- C. Interior block wall finish shall be latex epoxy paint supplied and installed by contractor.
- D. Interior floors to be sealed concrete finish supplied by contractor.
- E. Sealant for all exposed wood shall be supplied and installed by

- contractor.
- F. Sealant for all exterior CMU block is required, to be supplied and installed by contractor.
- G. Doors and frames are to be powder coated.

3.4 Plumbing

- A. Plumbing rough-in, installation and trim within 20' of the building footprints shall be provided by contractor.
 - 1. All underground water service and sewer drain(s) from building to be as specified in final approved site plan.
 - 2. Building water shutoff valve, drain, and all rough piping shall be as shown on final building plans. Final installation location to be determined onsite.
 - 3. Install the building package plumbing fixtures per the final approved plans.
 - 4. Piping shall be installed per the final approved plans with minimum pipe sizing per Uniform Plumbing Code Section 610.
- B. Floor drains in the building shall be supplied and installed by building installer.
 - 1. All floor drains shall be as shown on final approved plans.

3.5 Electrical

- A. Electrical rough-in, installation and trim shall be provided by contractor.
 - 1. All underground and/or overhead service to building shall be as specified in the final site plan.
 - 2. Building installer is responsible for all necessary wire, connectors, grounding, conduit, and related items to install the building package electrical components and meet all relevant national, state, and local codes.
 - 3. Contractor shall supply and install all switches and outlets required to complete the building package installation.

3.6 Other Materials & Equipment

- A. Unless otherwise specified, the following products and materials are supplied by Contractor (if applicable).
1. Building package installation
 2. Cast-in-place concrete foundations, footings, interior slabs
 3. Concrete slab & block sealer
 4. Mortar
 5. Concrete grout
 6. Rebar
 7. Latex epoxy paint
 8. Caulk for siding
 9. Plumbing rough in, installation and trim
 10. Electrical rough in, installation and trim
 11. Switches & outlets
 12. Typical fasteners; for example: roofing nails, staples, etc.
 13. Fasteners not included in product packaging
 14. Wood sealant for all decking, glulam beams, posts, and extensions
 15. All other items within the building footprint indicated on final plans or required by building codes to complete installation of the building package which are not specifically stated as supplied by building supplier.

3.8 Warranty

- A. Contractor shall provide warranty for one (1) year from the date of acceptance by the Town. Acceptance is the date when Notice of Completion is filed by the Town.
- B. Contractor shall pass through to owner all relevant manufacturers warranties for individual products and components supplied by building installer.

22 RUBBERIZED EMULSION AGGREGATE SLURRY (REAS) TYPE III

22-1 Description. This work shall consist of mixing asphaltic emulsions, aggregate, set-control additives, specially produced and graded crumb rubber, and water and spreading the mixture on a surfacing of pavement, as specified in these special provisions, Standard Specifications and as directed by the Engineer.

22-2 Materials. The materials for Rubberized Emulsion Aggregate Slurry (REAS) immediately prior to mixing shall conform to the following requirements and standard specification 203-5:

22-2.1 Asphaltic Emulsion. Asphaltic Emulsion shall be quick-setting Type III PMCQS-1h grade conforming to the requirements Standard Specification- Section 203-5 of these special provisions. Quick Setting PMCQS-1h Asphaltic Emulsions shall conform to the following requirements when tested in accordance with the specified

test method:

<u>Emulsion</u>	<u>Test</u>	<u>Requirements</u>
<u>Quality Tests</u>		
AASHTO T58	Residue after Distillation	60% min.
ASTM D244		
AASHTO T49	<u>Residue</u>	40-90
ASTM 2397	Penetration at 77F (25C)	

In addition, quick setting Type PMCQS-1h Asphaltic Emulsion shall test Positive for Particle Charge when tested in accordance with ASTM Designation: E70. If the Particle Charge Test result is inconclusive the Asphaltic Emulsion shall meet a pH requirement of 6.7 maximum.

22-2.2 Aggregate. The mineral aggregate used shall be Type III gradation as shown below. The aggregate shall be manufactured crushed stone such as granite, slag, limestone, chat, or other high quality aggregate, or combination thereof. Aggregate shall consist of rock dust except that 100 percent of any aggregate or combination of aggregates, larger than the No. 50 sieve size, used in the mix shall be obtained by crushing rock. The material shall be free from vegetable matter and other deleterious substances. All aggregate shall be free of caked lumps and oversized particles.

The percentage composition by weight of the aggregate shall conform to the following gradations when determined by California Test 202, modified by California Test 105 when there is a difference in specific gravity of 0.2 or more between blends of different aggregates.

Sieve Size	Percentage Passing	Stockpile Tolerance
No. 3/8	100	5%
No. 4	70-90	5%
No. 8	45-70	5%
No. 16	28-50	5%
No. 30	19-34	5%
No. 50	12-25	4%
No. 100	7-18	3%
No. 200	5-15	2%

The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted, then the percent passing each sieve shall not vary be more than the stockpile tolerance.

The aggregate shall also conform to the Standard Specifications:

The aggregate will be accepted at the job location or stockpile. The stockpile shall be accepted based on five gradation tests according to California Test 202, modified by California Test 105 when there is a difference in specific gravity of 0.2 or more

between blends of different aggregates. If the average of the five tests is within the gradation tolerances, then the material will be accepted. If the tests show the material to be out, the contractor will be given the choice to either remove the material or blend other aggregates with the stockpile material to bring it into specifications. Materials used in blending must meet the quality test before blending and must be blended in a manner to produce a consistent gradation.

22-3 Water. Water shall be of such quality that the asphalt will not separate from the emulsion before the slurry seal is in place in the work. If necessary for workability, a set- control agent that will not adversely affect the REAS material may be used. Pre-wetting of streets will not be required unless streets are subject to high temperatures and/or dust.

22-4 Crumb Rubber. The crumb rubber shall be ambient granulated or ground from whole passenger and/or truck tires only. Uncured or de-vulcanized rubber is not acceptable and may not be used. Rubber tire buffings from either recapping or manufacturing processes may not be used as a supplement to the crumb rubber mixture.

In order to remove steel and fabric, an initial separation stage which subjects the rubber to freezing temperatures may be used. The crumb rubber shall not be elongated or hair- like in shape and individual particles shall not be greater than 1/20 of an inch in length. The crumb rubber shall be free of contaminants including fiber, metal and mineral matter, to the following tolerances:

- A. The fiber content shall be less than 0.30% by weight
- B. The crumb rubber shall be free of metal particles. Metal imbedded in rubber particles will not be allowed. The amount of mineral contaminant allowed shall not exceed 0.10% by weight.
- C. The crumb rubber shall be dry with a moisture content of less than 0.75%.

Crumb rubber shall meet the following specifications:

Property	Specification Limits
Specific Gravity	1.15 +/- .05
Percent of Carbon Black	35.0 Maximum
Percent of Rubber Hydrocarbon	55.0 Maximum
Percent Ash	6.0 Maximum
Percent of Acetone Extract	10.0 Maximum
Percent of Chloroform Extract	3.0 Maximum
Percent Natural Rubber	40 Minimum

The crumb rubber shall conform to the following gradation and chemical properties:

Sieve Size	Percent Passing
No. 30	100
No. 40	90-100
No. 50	75-85

No. 100	25-35
No. 200	0-10

22-5 Polymer. The Polymer additive shall be SBR Latex or approved equal, which is added at a minimum of 4.5 percent by weight of the asphaltic emulsion.

22-6 Carbon Black. The carbon black solution shall be non-ionic in charge and liquid in form. The carbon black must be compatible with the emulsion system, polymers and additives being used.

Specification	Tolerances
Total Solids	40- 44
% Black by Weight	35-37
Type Black	Medium Furnace Color
Type Dispersing Agent	Non-ionic
pH	0.5- 4.5

22-7 Mineral Filler. Portland cement may be used if required by the mix design and may be used to facilitate set times as needed. Any cement used shall be considered as part of the dry aggregate weight for mix design purposes.

22-8 Laboratory Evaluation. Before work begins, the contractor shall submit a mix design covering the specific materials to be used on the project. The design will be performed by a laboratory who has experience in designing REAS. After the mix design has been approved, no substitution will be permitted unless approved by the Engineer.

22-8.1 Mix Design. The proposed Rubberized Emulsion Aggregate Slurry (REAS) mix design shall verify compatibility of the aggregate, emulsion, mineral filler, set-control additive and rubber blend. The Mixing Time test should be done at the highest temperatures expected during construction. The original lab report shall be signed by the laboratory that performed the mix design and shall show the results of tests on individual materials. The report shall clearly show the proportions of aggregate, mineral filler (min. and max.), water (min. and max.), additive (s) (usage), asphalt emulsion and asphalt rubber blend based on the dry weight of the aggregate.

All of the component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the project. The percentage of each individual material required shall be shown in the laboratory report. Adjustments may be required during the construction, based on field conditions.

22-8.2 Placing - The Rubberized Emulsion Aggregate Slurry (REAS) mixture shall be spread by means of a controlled spreader box. All spreader boxes shall be equipped with reversible motor-driven augers when placing REAS. Rear flexible strike-off blades shall make close contact with the pavement, and shall be capable of being adjusted to the various crown shapes so as to apply a uniform surfacing coat. Flexible drags, to be attached to the rear of the spreader box, shall be provided

as directed by the Engineer. All drags and strike-off blades (rubbers) shall be cleaned daily if problems with cleanliness and longitudinal scouring occur. The spreader box shall be clean, free of all slurry and emulsion, at the start of each work shift.

Rubberized Emulsion Aggregate Slurry (REAS) shall be placed on the pavement in such away that the cured REAS shall have a uniform appearance, fill all cracks, adhere firmly to the surface and have a skid-resistant surface. ***The Engineer reserves the right, in his sole discretion, to require the Contractor to apply additional applications of REAS if the prior applications are not uniform in appearance.***

No application of Rubberized Emulsion Aggregate Slurry (REAS) shall occur until all deep patching, skin patching, crack sealing, or other preliminary pavement repairs have been completed by the Contractor. The surface shall be thoroughly cleaned and swept prior to the application of Rubberized Emulsion Aggregate Slurry (REAS). No Rubberized Emulsion Aggregate Slurry (REAS) shall be applied when the weather forecast indicates a probability of rainfall or when the air or pavement temperature is lower than 60 degrees Fahrenheit.

The Rubberized Emulsion Aggregate Slurry (REAS) shall be applied only when the existing surface is clean and free of visible moisture. The surface to be sealed shall be cleaned by the Contractor by washing, heating, scraping, sweeping, blowing, vacuuming, or other means as necessary to remove moisture, dirt, grease, or other foreign matter which would reduce the bond between the slurry and the pavement.

The Rubberized Emulsion Aggregate Slurry (REAS) shall be properly proportioned, mixed, and spread evenly on the surface as specified in the Standard Specifications and these Special Provisions, and as directed. The cured Rubberized Polymer Aggregate Slurry shall have a homogeneous appearance; it shall fill all surface voids and penetrate cracks, shall adhere firmly to the surface and shall have a skid-resistant texture.

Each slurry crew shall be composed of a coordinator at the project site at all times, a competent quick-set mixing man, a competent driver and sufficient laborers for any handwork and clean up.

Metal lutes will not be permitted for spreading slurry by hand methods.

If required by local temperature or dust conditions, the surface shall be pre-wetted by fogging ahead of the spreader box. The rate of application of the fog spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement but shall be kept to a minimum under all conditions.

The Rubberized Emulsion Aggregate Slurry (REAS) shall be spread at 16 to 22 pounds per square yard of dry aggregate. The spread rate will be sufficient to fill all voids in the existing pavement and to place sufficient material to embed the largest size aggregate particles. The maximum speed of the slurry machine shall not exceed

270 feet per minute. The completed spread rate shall be within 10% of the rate determined by the Engineer after consideration of the surface texture of the existing pavement and the physical size of the aggregate in the mix. The mixture shall be uniform and homogeneous after spreading on the surface and shall not show separation of the emulsion and aggregate after setting. Rubberized Emulsion Aggregate Slurry (REAS) material, to be spread in areas inaccessible to the controlled spreader box, may be spread by hand squeegees or other approved methods.

Following application of Rubberized Emulsion Aggregate Slurry (REAS) loose aggregate shall be removed from the parking lot to the satisfaction of the Engineer by means of vacuum sweeping.

Pneumatic rolling is required for application. Rolling shall commence as soon as the Rubberized Emulsion Aggregate Slurry (REAS) has set sufficiently to prevent any material from adhering to the tires. The slurry surface shall be rolled by two to five complete coverages, as directed by the Engineer. Rolling shall continue until all ridges have been ironed out and a uniform smooth surface is obtained. Pneumatic rollers shall be operated at a minimum tire pressure of 60 psi. Payment for providing pneumatic rolling of streets shall be considered as included in the unit price for Rubberized Emulsion Aggregate Slurry (REAS) and no additional compensation shall be allowed.

22-8.3 Cleaning Equipment - Power brooms, power blowers, air compressors, water flushing equipment (prior to slurry only), and hand brooms shall be suitable for cleaning the surface and cracks of the old surface.

22-8.4 Hand Tools - Hand squeegees, shovels, hand burlap drags and other equipment shall be provided as necessary to perform the work.

22-8.5 Joints - No excessive build-up causing unsightly appearance shall be permitted on longitudinal or transverse joints. Unless otherwise approved, the overlap at the joints shall not exceed 2 inches and shall be feathered; excessive unapproved overlaps will not be paid for. Joints between asphalt pavement and Portland concrete pavement and/or concrete gutters shall be completely and neatly sealed without excessive slop-over onto the concrete; any unsightly and objectionable excess shall be immediately removed. At street intersections and at the beginning and end of work segments, Rubberized Emulsion Aggregate Slurry (REAS) shall be neatly spread or trimmed to a straight line defined by the near curb lines of the street adjacent to the work. Approved squeegees or lutes shall be used to spread Rubberized Emulsion Aggregate Slurry (REAS) in areas inaccessible to the machine. Care shall be exercised to ensure the maximum rate of application with no excess and leaving no unsightly appearance. Texture of Rubberized Polymer Aggregate Slurry (REAS) spread by hand shall match that which was applied by machine. Contractor shall be responsible for the removal of all excess emulsion spread beyond slurry limits, on driveways, sidewalks, etc.

22-8.6 Smoothness - The finished surface of the Rubberized Emulsion Aggregate

Slurry (REAS) shall be at least as smooth as the original pavement surface.

22-8.7 Cleanup - During performance and upon completion of work on this project, the Contractor shall remove all unused equipment and instruments of service, all excess or unsuitable material, and all trash, rubbish, and debris and shall legally dispose of all such items. The Contractor shall leave entire area in a neat, clean and acceptable condition as approved by Engineer. The cost for this work shall be included in the prices for all bid items in the Bid Schedule and no additional payment will be made therefore.

22-8.8 Removal and Resealing - Any Rubberized Emulsion Aggregate Slurry (REAS) application that has been rejected shall be removed by cold planing to the original pavement. A new Rubberized Emulsion Aggregate Slurry (REAS) application shall then be placed on the pavement. Any placement of Rubberized Polymer Aggregate Slurry (REAS) that has been rejected shall be removed and replaced at the Contractor's expense.

23 CRACK SEALING

23-1 Description - The work shall consist of the preparation of cracks and placement of hot asphalt-rubber sealant material in all transverse, longitudinal, block and/or reflective pavement cracks greater than 1/4" in width but less than 1 1/2" in width prior to routing. Cracks 1 1/2" and wider shall be cleaned and filled with asphalt concrete material in accordance with Section 10-4 "Crack Filling" of these special provisions. The Contractor will be required to thoroughly complete preparation of all cracks at least 1/4" in width no matter the number of or how widespread the existing cracks extend across the asphalt pavement, to the satisfaction of the Engineer, prior to scheduling installation of pavement reinforcing fabric and construction of asphalt concrete overlay, or prior to scheduling slurry seal.

23-2 Delivery and Storage - All materials shall be delivered to the site in an undamaged condition. The materials shall be protected against damage and stored in a location approved by the Engineer. Defective or damaged materials shall be replaced by the Contractor at no expense to the Town.

23-3 Materials - Asphalt-vulcanized rubber crack sealant material for pavement cracks greater than 1/4", but less than 1 1/2" in width, shall be CrafcotTM PolyFlex Type 3 sealant or approved equal and shall conform to the following requirements:

1. Asphalt shall be PG 70-10 grade conforming to the provisions of Section 203 of the Standard Specifications.
2. Sealant material when heated in accordance with ASTM D5078 shall have the following characteristics:

<u>Test</u>	<u>Limits</u>
Cone Penetration (ASTM D5329)	20 – 40
Resilience (ASTM D5329)	30% Min.

Softening Point (ASTM D36)	210° F Min.
Ductility, 77° F (ASTM D113)	30 cm Min.
Flexibility (ASTM D3111 Modified)	Pass at 30° F
Flow 140° F (ASTM D5329)	3 mm Max
Asphalt Compatibility (ASTM D5329)	Pass
Bitumen Content (ASTM D4)	60% Min.
Tensile Adhesion (ASTM D5329)	400% Min.
400° F	
Recommended Pour Temperatures	380° F
Unit Weight at 60° F	10.0 lbs./gal.

3. The sealant material shall have no water or volatile solvents and shall cure immediately upon cooling to a sufficient viscosity to prevent tracking by traffic.
4. The material will be packaged in approximately 60 lb. boxes with a polyethylene liner. The boxes shall be placed on pallets weighing approximately 2200 lbs. and shall be covered with a weather resistant covering.
5. The asphalt-rubber crack sealant material shall be accompanied by a certificate of compliance with these specifications from the manufacturer.

The Contractor shall submit the manufacturer's material certification for the asphalt sealant to the Engineer for review and approval at least fourteen (14) days prior to commencing any work.

Cracks 1½" and wider shall be cleaned and filled with asphalt concrete material .

23-4 Equipment - The equipment to mix and apply rubberized asphalt crack sealer shall be CrafcotTM Model BC-220 or approved equal of current manufacturer.

The joint and crack routing and cleaning machine shall be CrafcotTM Model 200 or approved equal of current manufacturer.

The joint cleaner attachment shall be CrafcotTM Model 110 or approved equal of current manufacturer.

23-5 Preparation of Cracks - All cracks to be sealed (¼" or greater in width) shall be routed, swept, and cleaned with two passes of hot compressed air to remove dust, moisture and foreign material for a minimum of 6 inches on each side of the crack.

23-5.1 Weed Killer - All cracks and joints shall be treated with an approved weed killer at least two (2) days before sealant application if weeds or other plant material are present in the pavement cracks. The Contractor shall apply weed killer to all plant material prior to their removal, according to the manufacturer's specifications.

23-5.2 Routing – All cracks between ¼" and 1¼" in width prior to routing shall have a routed reservoir created with a rotary impact router. The completed reservoir

shall comply with the following dimensions:

1. The router shall remove at least 1/8" from each side of the crack and cut back to sound pavement.
2. The minimum reservoir width is 1/2", and the maximum width is 1 1/2".
3. The reservoir depth shall be 3/4".

23-5.3 Crack Cleaning and Drying – The crack and routed reservoir shall be cleaned and dried by making two (2) passes along the crack with a flame-free hot compressed air lance capable of delivering hot air at 3000°F and 3,000f/s. Care shall be taken to avoid overheating the pavement. The first pass should be made along the crack in a steady fashion, and should clean and heat, but not burn, the crack sidewalls. The heat lance should be held approximately 2 inches above the crack channel. Proper heating is manifested by a slightly darkened color; burning is apparent by a black color and a very gritty texture.

The second pass should completely remove all the dislodged crack particles from the roadway and shoulder.

The hot air-blasting operation shall be conducted immediately prior to the sealing operation to limit the amount of dust and debris blown into the cleaned crack channel, maximize crack warmth, and minimize the potential for formulation of moisture condensation in the crack channel.

23-6 Construction - The asphalt rubber sealant material shall be applied immediately following the heat lance operation that cleans and dries the crack and routed reservoir. The sealant applicator should stay within 50 yards of the heat lance during its second pass, and in no event shall the sealant be placed more than five (5) minutes after the crack has been heated by the heat lance.

The sealant material shall be melted in a jacketed double boiler type melting unit, which is equipped with both agitation and re-circulation systems, and applied at temperature of 380° F, using a pressure feed wand application system.

Joints and cracks shall be sealed from the bottom up and sealant material shall be applied so it is flush with the existing pavement surface. Care shall be taken to avoid spillage and runover onto the surface of the pavement. The surface of pavement shall be immediately squeegeed smooth after the cracks have been filled. Traffic shall not be allowed on the material until it has been sanded to prevent tracking.

In addition to these specifications, the crack preparation and application of crack sealant material shall be in accordance with the manufacturer's recommendations or as outlined in the booklet, "Sealing and Resealing Cracks the Crafcro Way," as published by Crafcro Inc., 420 N. Roosevelt Ave., Chandler, Arizona 85226; 800-528-8242.

23-7 Measurement and Payment - Payment for preparation of cracks and application of weed killer and asphalt-rubber sealant shall be considered as included

in the unit bid item price for Rubberized Polymer Aggregate Slurry (REAS), and shall represent full compensation for furnishing all labor, materials, tools, equipment and incidentals to accomplish the work as specified herein, and no additional compensation will be allowed therefore.

24 PARKING LOT STRIPING, MARKINGS, AND SIGNAGE

24-1 General - All existing Striping or markings on parking lots, to be slurred shall be removed by the Contractor. The parking lot striping shall be replaced with new in-kind striping, once the REAS is applied, including pavement markings and signs with posts, if missing.

24-2 Pavement Markings - Pavement markings shall conform to the provisions in Section 214, "Traffic Striping, Curb and Pavement Markings and Pavement Markers" of the Standard Specifications and these Special Provisions. All handicap parking stalls shall stripe back per code requirements or directed by the Engineer, including pavement markings, signs, and post (if missing)

24-3 Measurement and Payment – Payment for removal of existing striping, and installation of permanent striping, markings and legends, shall be considered as included in the unit bid item price for Rubberized Emulsion Aggregate Slurry (REAS), and shall represent full compensation for furnishing all labor, materials, tools, equipment and incidentals to accomplish the work as specified herein, and no additional compensation will be allowed therefore.

END OF SECTION

Construction Bid Items

Project No. 4100

YUCCA VALLEY COMMUNITY CENTER PARK ATHLETIC FIELD IMPROVEMENT PROJECT

Each respective bid item and bid schedule as shown on the proposal form shall comply with all respective sections of the most current edition of Standard Specifications for Public Works Construction (Green Book), its supplements, and any other publications as specified. If there is a conflict between these inclusions and the Standard Specifications, these inclusions shall have precedence.

Contractor shall provide all construction surveying and staking at no extra cost. Compensation for construction surveying and staking shall be considered as included in various bid items. No additional compensations will be allowed.

BID ITEM 1: MOBILIZATION

This bid item shall comply with the requirements of Section 7-3.4, "Mobilization", of the Standard Specifications. This bid item will *not exceed the 2%* of the total bid amount.

Mobilization may include, but not be limited to, the following principal items:

1. Submittal and modification, as required, of the Construction Schedule.
2. Providing a Project Office.
3. Review of the Site.
4. Obtaining all required Transportation Permits.
5. Submittal of all required insurance certificates and bonds as required by these Specifications
6. Moving onto the site, including, but not limited to:
 - A. Equipment
 - B. Arranging for and erection of Contractor's work and storage areas.
7. Installing construction fencing and temporary construction power and wiring.
8. Providing a minimum of one restroom facility for each twenty-five (25) workers occupying the site. Facilities may include existing functioning restrooms, or portable chemical facilities, or any combination thereof, and shall count as one for each urinal or one for each water closet (as required).
9. Installing all temporary utilities (as required).
10. Establishing required fire protection provisions.
11. Posting all OSHA required notices and establishment of safety programs.
12. Posting of all Department of Labor notices.
13. Having the Contractor's superintendent at the job site full-time and responding 24 hours per day.
14. Air and water quality protective measures, as necessary, and without limitation.
15. Potholing and other research and review as necessary to verify site conditions and utility locations.
16. Demobilization of the Site.
17. **Provide a project sign per Town requirements.**
18. Any other item as specified.

The cost of bonds, insurance, move in and move out costs, preparation and submission of submittals, obtaining encroachment permits, and miscellaneous incidental costs, shall be included in the Bid Item provided for mobilization and demobilization and incidental project costs as a lump sum item, for which 75 percent (75%) will be eligible for inclusion in the first progress payment, with the remaining 25 percent (25%) not eligible for inclusion until 100 percent (100%) of the work has been completed and if progress of the work is satisfactory. No work shall be started without prior approval of the submittals. Failure to comply with the preceding requirement will be sufficient ground for the Engineer to stop all work on the project until the requirements are met.

Payment for this bid item shall be paid per lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in Mobilization per project plans or specifications; no additional compensation will be allowed.

BID ITEM 2: CLEARING, GRUBBING, SOIL IMPORT AND GRADING

The area subject to Clearing, Grubbing, and Grading shall include the entire work zone and shall conform to Section 300-1 of the Standard Specifications for Public Works Construction (Green Book). Limits of clearing and grubbing include all areas where grading activity will occur.

The Bid Item to include the removal of approximately 900 LF of parking striping, removal of 17 concrete wheel stops, removal of 4 existing signs, and removal of two bollard as shown on the plans.

Grading shall include grading of all materials that must be removed and/or replaced. The bid item shall include removing, storing, processing, hauling, placing, importing, disposing and compacting existing materials as engineered fill at the locations shown on the drawings.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work per project plans or specifications; no additional compensation will be allowed.

BID ITEM 3: REMOVE EXISTING TREE

This bid item shall include removing an existing tree listed on the plans and as specified in these Special Provisions, or as directed by the Engineer. Removal of an existing tree work will include cutting, excavation and removal of existing tree including stump and roots, and shall be carefully done to avoid damage to all existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in removing an existing tree per project plans and specifications; no additional compensation will be allowed.

BID ITEM 4: REMOVE EXISTING JOSHUA TREE

This bid item shall include removing an existing Joshua tree listed on the plans and as specified in these Special Provisions, or as directed by the Engineer. Removal of an existing Joshua tree work will include cutting, excavation and removal of existing tree including stump and roots, and shall be carefully done to avoid damage to all existing facilities not designated for removal.

The Town will be providing a Permit issued by the Department of Fish and Game for the removal of the Joshua Trees. Its customary that the permit processing time can vary and can take up to 6 months before issuing Take Permit.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in removing an existing tree per project plans and specifications; no additional compensation will be allowed.

BID ITEM 5: RELOCATE EXISTING DUMPSTER

This bid item shall include relocate an existing dumpster listed on the plans and as specified in these Special Provisions, or as directed by the Engineer. Relocation of an existing dumpster work will include relocating dumpster out of construction area and to designated location on site per Town Representative's direction, and shall be carefully done to avoid damage to all existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved per project plans and specifications; no additional compensation will be allowed.

BID ITEM 6: TRAFFIC CONTROL

All traffic control operations and devices proposed for use on this project shall conform to the project traffic control plans, prepared by the Town, and the Special Provisions as contained herein.

Work under this section shall include, but not be limited to, traffic control as shown on the approved traffic control plans and additional control as specified by the Town including temporary traffic light signals, barricades, flaggers (flagmen), portable delineators, traffic cones, signs, portable flashing beacons, channelizers, temporary railing (Type K), and crash barriers. The Contractor shall utilize solar powered equipment as much as possible to maintain the control existing traffic. Battery operated equipment shall be utilized for nighttime operations.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work per project plans or specifications; no additional compensation will be allowed.

BID ITEM 7: FURNISH AND INSTALL 6" CONCRETE PAVING

This bid item shall include providing and installing all 6" concrete paving listed on the plans and as specified in these Special Provisions, or as directed by the Engineer. 6" concrete paving work will include excavation and removal of soil, forming, pouring and finishing sidewalks walkways and slabs and shall be carefully done to avoid damage to all existing facilities not designated for removal.

Payment for this bid item shall be paid per Square Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in 6" concrete paving per project plans and specifications; no additional

compensation will be allowed.

BID ITEM 8: CONSTRUCT 4” THICK AC PAVEMENT OVER BASE

This bid item shall include constructing all AC paving listed on the plans and as specified in these Special Provisions, or as directed by the Engineer. Asphalt paving work will include excavation and removal of soil, forming, pouring and coating and shall be carefully done to avoid damage to all existing facilities not designated for removal.

Payment for this bid item shall be paid per Square Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in AC paving per project plans and specifications; no additional compensation will be allowed

BID ITEM 9: CONSTRUCT HANDRAILS FOR STEPS

This bid item shall include providing and installing all handrails for steps listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing handrails, reinforcement, excavation and removal of soil, forming and finishing for concrete footings, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Linear Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the handrails per project plans and specifications; no additional compensation will be allowed.

BID ITEM 10: FURNISH AND INSTALL ‘SSTD TRADITIONAL MAT SYSTEM’ TRUNCATED DOMES

This bid item shall include providing and installing ‘SSTD traditional mat system’ truncated domes listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing ‘SSTD traditional mat system’ truncated domes, and it shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Square Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the ‘SSTD traditional mat system’ truncated domes per project plans and specifications; no additional compensation will be allowed.

BID ITEM 11: FURNISH AND INSTALL 5’ LONG CONCRETE WHEEL STOPS

This bid item shall include providing and installing 5’ long concrete wheel stops listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing 5’ long footing wheel stops, steel rebar reinforcing, and it shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 5' long concrete wheel stops per project plans and specifications; no additional compensation will be allowed.

BID ITEM 12: STRIPING PARKING LOT, ACCESSIBLE STALLS, AND EV STALLS AND SIGNING

This bid item shall include providing and installing all parking lot striping listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing parking lot striping, markings, symbols, street striping and markers and it shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

All pavement striping and markings shall be replaced in kind. Painting removing traffic striping shall be performed as shown on the plans and conform to the provisions in Section 84 "Traffic Stripes and Pavement Markings," of the State of California Transportation Department Standard specifications and these Special Provisions.

Paint for pavement marking and striping shall be either rapid dry white conforming to State Specification 711-80-195 or rapid dry yellow conforming to state Specification 711-80-198, in accordance with the color stipulated on the plans or as directed by the Engineer.

Two coats of paint shall be applied. Reflective material consisting of glass beads shall be applied. Reflective material consisting of glass beads shall be applied to the surface of each coat of paint prior to setting so that the beads shall have proper adhesion.

Glass beads shall conform to State Specification 69-80-34 and shall be mechanically applied at a rate of 6 to 8 pounds of beads per gallon of paint. Glass beads shall be applied to pavement markings, crosswalks, and striping by a dispensing device developed for this purpose or other methods approved by the Engineer. Stencils for pavement marking shall match Town of Yucca Valley stencils exactly.

Thermoplastic traffic stripes (traffic lanes) and pavement markings shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these special provisions. Thermoplastic material shall conform to the requirements in State Specification 8010-19A.

Where striping joins existing striping, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.

Pavement markers shall be placed in conformance with the provisions in Section 85, "Pavement Markers," of the Standard Specifications and these Special Provisions.

The Bid Item shall include the installation of 2 Accessible Parking Stall Signs as shown on the plans.

Retroreflective pavement markers shall comply with the specific intensity provisions for
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reflectance after abrading the lens surface in conformance with the “Steel Wool Abrasion Procedure” as specified in Section 85-1.05 “Retroreflective Pavement Markers”.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in striping the parking lot and street per project plans and specifications; no additional compensation will be allowed.

BID ITEM 13: FURNISH AND INSTALL DUAL – PORT LEVEL 3 EV CHARGING STATION ANCHOR PLATES

This bid item shall include providing and installing dual-port Level 3 EV charging stations anchor plates for future EV Charging Station installation listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing the dual-port EV charging stations anchor plates, wire, pull boxes, conduit, excavation and backfill for conduit and wires, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the dual-port series Level 3 EV charging station anchor plates per project plans and specifications; no additional compensation will be allowed.

BID ITEM 14: CONSTRUCT PICKLEBALL COURT PAVING, SURFACING, STRIPING, AND NETTING

This bid item shall include constructing and installing all Pickleball Courts listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include constructing and installing pickleball court paving, steel rebar reinforcing, colored surfacing, court striping, and court netting and it shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the Pickleball Courts per project plans and specifications; no additional compensation will be allowed.

BID ITEM 15: CONSTRUCT 10’ TALL GALVANIZED CHAINLINK FENCE WITH BLACK VINYL COATING AND WINDSCREEN

This bid item shall include constructing and installing 10’ high chainlink fence with black vinyl coating and windscreen listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include constructing and installing all fence material and finishes, footings, reinforcement, excavation and removal of soil, forming and finishing for concrete footings, providing and installing windscreen, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Linear Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 10’ tall galvanized chainlink fence with black vinyl coating and windscreen

per project plans and specifications; no additional compensation will be allowed.

BID ITEM 16: CONSTRUCT 6' TALL GALVANIZED CHAINLINK FENCE WITH BLACK VINYL COATING

This bid item shall include constructing and installing 6' high chainlink fence with black vinyl coating listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include constructing and installing all fence material and finishes, footings, reinforcement, excavation and removal of soil, forming and finishing for concrete footings, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Linear Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 6' tall galvanized chainlink fence with black vinyl coating per project plans and specifications; no additional compensation will be allowed.

BID ITEM 17: CONSTRUCT 4' TALL GALVANIZED CHAINLINK FENCE WITH BLACK VINYL COATING

This bid item shall include constructing and installing 4' high chainlink fence with black vinyl coating listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include constructing and installing all fence material and finishes, footings, reinforcement, excavation and removal of soil, forming and finishing for concrete footings, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Linear Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 4' tall galvanized chainlink fence with black vinyl coating per project plans and specifications; no additional compensation will be allowed.

BID ITEM 18: CONSTRUCT 4' WIDE X 7' TALL GALVANIZED CHAINLINK GATE WITH BLACK VINYL COATING

This bid item shall include constructing and installing 4' wide x 7' tall chainlink gate with black vinyl coating listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include constructing and installing all gate material and finishes, footings, reinforcement, excavation and removal of soil, forming and finishing for concrete footings, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 4' wide x 7' tall chainlink gate with black vinyl coating per project plans and specifications; no additional compensation will be allowed.

BID ITEM 19: CONSTRUCT 4' WIDE X 4' TALL GALVANIZED CHAINLINK GATE WITH BLACK VINYL COATING

This bid item shall include constructing and installing 4' wide x 4' tall chainlink gate with black vinyl coating listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include constructing and installing all gate material and finishes, footings, reinforcement, excavation and removal of soil, forming and finishing for concrete footings, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 4' wide x 4' tall chainlink gate with black vinyl coating per project plans and specifications; no additional compensation will be allowed.

BID ITEM 20: FURNISH AND INSTALL CUSTOM 10' X 162' CANTILEVER SHADE STRUCTURE AND LIGHTS

This bid item shall include providing and installing the Custom 10' x 162' Cantilevered Shade Structure and lights listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing the shade structure, light fixtures, wire, pull boxes, conduit, post footings, and associated excavation and removal of soil, forming and finishing for concrete footings, excavation and backfill for conduit and wires, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the Custom 10' x 162' Cantilevered Shade Structure and lights per project plans and specifications; no additional compensation will be allowed.

BID ITEM 21: FURNISH AND INSTALL 8' DOUBLE PEDESTAL BENCH

This bid item shall include providing and installing the 8' double pedestal benches listed on the plans and as specified in these Special Provisions, or as directed by the Engineer. Work will include providing and installing the benches, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 8' double pedestal benches per project plans and specifications; no additional compensation will be allowed.

BID ITEM 22: FURNISH AND INSTALL TRASH RECEPTACLE

This bid item shall include providing and installing the trash receptacle listed on the plans and as specified in these Special Provisions, or as directed by the Town Engineer. Work will include providing and installing the trash receptacle per the manufactures specifications, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for

furnishing all labor, materials, tools, equipment, concrete, and incidentals for doing all work involved in the trash receptacle per project plans and specifications; no additional compensation will be allowed.

BID ITEM 23: FURNISH AND INSTALL RECYCLING RECEPTACLE

This bid item shall include providing and installing the recycling receptacle listed on the plans and as specified in these Special Provisions, or as directed by the Town Engineer. Work will include providing and installing the recycling receptacle per the manufactures specifications, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, concrete, and incidentals for doing all work involved in the recycling receptacle per project plans and specifications; no additional compensation will be allowed.

BID ITEM 24: FURNISH AND INSTALL SHRUBS AND D.G. GROUNDCOVER

This bid item shall include installing shrubs and D.G as listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing shrubs, amending soil, excavation and removal of excess soil, grading, and providing and installing a 3” layer of decomposed granite top cover, and it shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in installing shrubs and D.G. groundcover per project plans and specifications; no additional compensation will be allowed

BID ITEM 25: FURNISH AND INSTALL IRRIGATION SYSTEM

This bid item shall include installing the irrigation system as listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing pipe, wire, valves, drip equipment, emitters, and accessories, excavation and removal of excess soil, backfilling, grading, and it shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in installing the irrigation system per project plans and specifications; no additional compensation will be allowed

BID ITEM 26: CONSTRUCT CURBS AND GUTTERS (PER PRECISE GRADING PLANS)

This bid item shall include providing and installing curb and gutters listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing curb and gutter, excavation and removal of soil, forming, pouring and finishing curb, gutters, and slabs, connection to street sewer and it shall be carefully done to

avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in installing curb and gutters per project plans and specifications; no additional compensation will be allowed.

BID ITEM 27: CONSTRUCT ACCESSIBLE RAMPS AND CURBS (PER PRECISE GRADING PLANS)

This bid item shall include constructing accessible ramps and curbs listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include constructing accessible ramps and curbs, excavation and removal of soil, forming, pouring and finishing slabs, removal of soil, forming and finishing concrete slabs and it shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in constructing accessible ramps and curbs per project plans and specifications; no additional compensation will be allowed.

BID ITEM 28: FURNISH AND INSTALL WET UTILITIES (PER WET UTILITIES PLANS)

This bid item shall include providing and installing all wet utilities listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing sewer pipes, sewer cleanouts, domestic water pipes, gate valves, and associated excavation and removal of soil, forming and finishing for concrete footings, excavation and backfill for conduit and wires, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in providing and installing all wet utilities per project plans and specifications; no additional compensation will be allowed.

BID ITEM 29: FURNISH AND INSTALL STORM DRAIN SYSTEM (PER PRECISE GRADING PLANS)

This bid item shall include providing and installing Storm Drain System listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing catch basins, storm drain pipes, manholes, and associated excavation and removal of soil, forming and finishing for concrete footings, excavation and backfill for conduit and wires, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in providing and installing Storm Drain System per project plans and specifications; no additional

compensation will be allowed.

BID ITEM 30: FURNISH AND INSTALL EROSION CONTROL (PER EROSION CONTROL PLANS)

This bid item shall include providing and installing Erosion Control listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing silt fence, gravel bag, fiber roll, street sweeping, storm drain inlet protection, stabilized construction entrance/exit tracking control, and associated vehicular/equipment fueling/maintenance, material delivery/storage/use, spill prevention/control, solid waste management, concrete wash out, and septic waste management, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in providing and installing Erosion Control per project plans and specifications; no additional compensation will be allowed.

BID ITEM 31: FURNISH AND INSTALL LIGHTING AND ELECTRICAL SYSTEM

This bid item shall include providing and installing lighting and electrical system listed on the plans and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing lights and electrical system, light fixtures, wire, pull boxes, conduit, post footings, and associated excavation and removal of soil, forming and finishing for concrete footings, excavation and backfill for conduit and wires, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in installing lighting and electrical system per project plans and specifications; no additional compensation will be allowed.

ALTERNATE BID ITEMS

ADDITIVE ALTERNATE BID ITEM A-1: FURNISH AND INSTALL 6” CONCRETE PAVING

This bid item shall include providing and installing all 6” concrete paving listed on the plan sheet CP-3 additive alternate 1 and as specified in these Special Provisions, or as directed by the Engineer. 6” concrete paving work will include excavation and removal of soil, forming, pouring and finishing sidewalks walkways and slabs and shall be carefully done to avoid damage to all existing facilities not designated for removal.

Payment for this bid item shall be paid per Square Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in 6” concrete paving per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-2: FURNISH AND INSTALL DEEPENED EDGE CURB

This bid item shall include providing and installing deepened edge curb adjacent to paver area listed on the plan sheet CP-3 additive alternate 1 and as specified in these Special Provisions, or as directed by the Engineer. Deepened curb work work will include excavation and removal of soil, forming, pouring and finishing deepened curb and shall be carefully done to avoid damage to all existing facilities not designated for removal.

Payment for this bid item shall be paid per Linear Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in deepened edge curb per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-3: FURNISH AND INSTALL CONCRETE PAVERS

This bid item shall include providing and installing all concrete pavers listed on the plan sheet CP-3 additive alternate 2 and as specified in these Special Provisions, or as directed by the Engineer. Concrete paver work will include excavation and removal of soil, geotextile, aggregate base, sand, paver installation, and shall be carefully done to avoid damage to all existing facilities not designated for removal.

Payment for this bid item shall be paid per Square Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in concrete pavers per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-4: FURNISH AND INSTALL 6’ LONG PICNIC TABLE

This bid item shall include providing and installing the 6' long picnic tables listed on the plan sheet CP-3 additive alternate 3A and as specified in these Special Provisions, or as directed by the Engineer. Work will include providing and installing the 6' long picnic tables, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 6' long picnic tables per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-5: FURNISH AND INSTALL 6' LONG ACCESSIBLE PICNIC TABLE

This bid item shall include providing and installing the 6' long accessible picnic tables listed on the plan sheet CP-3 additive alternate 3B and as specified in these Special Provisions, or as directed by the Engineer. Work will include providing and installing the 6' long accessible picnic tables, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 6' long accessible picnic tables per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-6: FURNISH AND INSTALL CONCRETE TRASH RECEPTACLE

This bid item shall include providing and installing the concrete trash receptacle listed on the plan sheet CP-3 additive alternate 4A and as specified in these Special Provisions, or as directed by the Engineer. Work will include providing and installing the concrete trash receptacle, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the concrete trash receptacle per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-7: FURNISH AND INSTALL CONCRETE RECYCLING RECEPTACLE

This bid item shall include providing and installing the concrete recycling receptacle listed on the plan sheet CP-3 additive alternate 4B and as specified in these Special Provisions, or as directed by the Engineer. Work will include providing and installing the concrete recycling receptacle, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the

concrete recycling per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-8: FURNISH AND INSTALL TRI-LEAF SHADE STRUCTURE AND LIGHTS

This bid item shall include providing and installing the Tri-Leaf Shade Structure and lights listed on the plan sheet CP-3 additive alternate 5 and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing the shade structure, light fixtures, wire, pull boxes, conduit, post footings, and associated excavation and removal of soil, forming and finishing for concrete footings, excavation and backfill for conduit and wires, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Each and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the Tri-Leaf Shade Structure and lights per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-9: INSTALL PREFABRICATED RESTROOM BUILDING

This bid item shall include installing the prefabricated restroom building listed on the plan sheet CP-3 additive alternate 6 and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include installing the prefabricated restroom building, footings, light fixtures, wire, pull boxes, conduit, connecting to potable water line, connection to a sewer line and plumbing, and associated excavation and removal of soil, forming and finishing for concrete base, excavation and backfill for conduit and wires, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Prefabricated Restroom plans must be submitted with stamped footing plans.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the prefabricated restroom building per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-10: CONSTRUCT HANDRAILS

This bid item shall include providing and installing handrails listed on the plan sheet CP-3 additive alternate 7 and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing handrails and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Linear Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the handrails per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-11: CONSTRUCT 6' TALL GALVANIZED CHAINLINK FENCE WITH BLACK VINYL COATING

This bid item shall include constructing and installing 6' high chainlink fence with black vinyl coating listed on the plan sheet CP-3 additive alternate 8 and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include constructing and installing all fence material and finishes, footings, reinforcement, excavation and removal of soil, forming and finishing for concrete footings, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Linear Foot and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in the 6' tall galvanized chainlink fence with black vinyl coating per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-12: CONSTRUCT CHANNEL DRAIN (PER WET UTILITY PLANS)

This bid item shall include providing and installing Channel Drain listed on the plan sheet CP-3 additive alternate 10 and sheet C2.01 construction note 22, and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing Channel Drain and associated excavation and removal of soil, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in providing and installing Channel Drain per project plans and specifications; no additional compensation will be allowed.

ADDITIVE ALTERNATE BID ITEM A-13: FURNISH AND INSTALL LIGHTING AND ELECTRICAL SYSTEM (PER ELECTRICAL IMPROVEMENT PLANS)

This bid item shall include providing and installing lighting and electrical system listed on the plan sheet CP-3 additive alternate 9 and sheet E-1.2 Enlarged Electrical Site Plan – Additive Alternate, and as specified in these Special Provisions or approved equal, or as directed by the Engineer. Work will include providing and installing lights and electrical system, light fixtures, wire, pull boxes, conduit, post footings, and associated excavation and removal of soil, forming and finishing for concrete footings, excavation and backfill for conduit and wires, and shall be carefully done to avoid damage to all new and existing facilities not designated for removal.

Payment for this bid item shall be paid per Lump Sum and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in installing lighting and electrical system per project plans and specifications; no additional compensation will be allowed.

EXHIBIT “A”

Technical specifications

SECTION 01 30 00- ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Coordination and project conditions.
 2. Field engineering.
 3. Preconstruction meeting.
 4. Site mobilization meeting.
 5. Progress meetings.
 6. Pre-installation meetings.
 7. Cutting and patching.
 8. Special procedures.
 9. Construction staking.

1.2 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.
- C. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 FIELD ENGINEERING

- A. Employ Land Surveyor registered in State of California and acceptable to the Engineer.
- B. Locate and protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.
- C. Control datum for survey is that shown on Drawings. Verify its accuracy with the existing improvements elevation.
- D. Verify setbacks and easements; confirm drawing dimensions and elevations.
- E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
- F. Submit copy of site drawing signed by Land Surveyor certifying elevations and locations of the Work are in conformance with Contract Documents.
- G. Maintain complete and accurate log of control and survey work as Work progresses.
- H. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

- I. Promptly report to Engineer loss or destruction of reference point or relocation required because of changes in grades or other reasons.
- J. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.

1.4 PRECONSTRUCTION MEETING

- A. Owner or Engineer will schedule meeting after Notice of Award.
- B. Attendance Required: Owner, Engineer, and Special Subconsultants Contractor.
- C. Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, list of products, schedule of values, unit costs and progress schedule.
 - 5. Designation of personnel representing parties in Contract, inspection and Engineer.
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 7. Scheduling.
 - 8. Scheduling activities of Geotechnical Engineer and other technical subconsultants.
- D. Record minutes and distribute copies within two (2) days after meeting to participants, with copies to Engineer, Owner, and those affected by decisions made.

1.5 SITE MOBILIZATION MEETING

- A. This meeting could be the same as the pre-construction meeting. Engineer or Owner will schedule meeting at Project site prior to Contractor occupancy.
- B. Attendance Required: Owner, Engineer, Geotechnical Engineer, Surveyor, or other Special Consultants, Contractor, Contractor's Superintendent, and major Subcontractors.
- C. Agenda:
 - 1. Use of premises by Owner and Contractor.
 - 2. Owner's requirements and partial occupancy.
 - 3. Construction facilities and controls provided by Owner.
 - 4. Temporary utilities provided by Owner.
 - 5. Survey layout.
 - 6. Security and housekeeping procedures.
 - 7. Schedules.
 - 8. Application for payment procedures.
 - 9. Procedures for testing.
 - 10. Procedures for maintaining record documents.
- D. Record minutes and distribute copies within two 2 days after meeting to participants, with copies to Engineer, Owner, and those affected by decisions made.

1.6 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at a maximum of monthly intervals.
- B. Contractor will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job superintendent, major subcontractors and suppliers, Owner, Engineer, or as appropriate to agenda topics for each meeting.
- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems impeding planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of off-site fabrication and delivery schedules.
 - 7. Review of requests for information (RFI).
 - 8. Maintenance of progress schedule.
 - 9. Corrective measures to regain projected schedules.
 - 10. Planned progress during succeeding work period.
 - 11. Coordination of projected progress.
 - 12. Maintenance of quality and work standards.
 - 13. Effect of proposed changes on progress schedule and coordination.
 - 14. Other business relating to Work.
- E. Record minutes and distribute copies within two (2) days after meeting to participants, with copies to Engineer, Owner, and those affected by decisions made.

1.7 PRE-INSTALLATION MEETINGS

- A. When required in individual specification sections, convene pre-installation meetings at Project site prior to commencing work of specific section.
- B. Require attendance of parties directly affecting, or affected by, Work of specific section.
- C. Notify Engineer four (4) days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of installation, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two (2) days after meeting to participants, with copies to Engineer, Owner, and those affected by decisions made.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.1 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements affecting:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor.
- C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Execute work by methods to avoid damage to other Work, and to provide proper surfaces to receive patching and finishing.
- E. Cut masonry and concrete materials using masonry saw or core drill.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection.
- H. Identify hazardous substances or conditions exposed during the Work to Engineer for decision or remedy.

3.2 SPECIAL PROCEDURES

- A. Materials: As specified in product sections; match existing with new products and salvaged products for patching and extending work.
- B. Employ skilled and experienced installer to perform alteration work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to permit installation of new work and finishes.
- G. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original or specified condition.
- H. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

- I. Where change of plane of 1/4 inch or more occurs, submit photograph with recommendation for providing smooth transition; to Engineer for review request instructions from Engineer.
- J. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

3.3 CONSTRUCTION STAKING

- A. All improvements to be surveyed by an engineer/surveyor licensed in the State of California to provide surveying services.
- B. Contractor to provide to Town/Engineer all cut sheets, stake-out sheets upon request.

END OF SECTION

SECTION 01 30 00- SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Submittal procedures.
 - 2. Construction progress schedules.
 - 3. Proposed products list.
 - 4. Product data.
 - 5. Shop drawings.
 - 6. Samples.
 - 7. Design data.
 - 8. Test reports.
 - 9. Certificates.
 - 10. Manufacturer's instructions.
 - 11. Manufacturer's field reports.
 - 12. Construction photographs.

1.2 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer accepted form.
- B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- C. Identify Project, Contractor, subcontractor and supplier, pertinent drawing and detail number, and specification section number, appropriate to submittal.
- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite Project and deliver to Town's Project Manager. Coordinate submission of related items.
- F. For each submittal for review, allow seven (7) calendar days excluding delivery time to and from Contractor.
- G. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.
- H. Allow space on submittals for Contractor and Engineer review stamps.
- I. When revised for resubmission, identify changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
- K. Submittals not requested will not be recognized or processed.

1.3 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedules within fifteen (15) days after date of Owner-Contractor Agreement or as established in Notice to Proceed. After review, resubmit required revised data within ten (10) days.
- B. Submit revised Progress Schedules with each Application for Payment.
- C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.
- D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.
- E. Submit computer generated horizontal bar chart with separate line for each section of Work, identifying first workday of each week.
- F. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.
- G. Indicate estimated percentage of completion for each item of Work at each submission.
- H. Submit separate schedule of submittal dates for shop drawings, product data, and samples, including Owner furnished products and products identified under Allowances, and dates reviewed submittals will be required from Engineer. Indicate decision dates for selection of finishes.
- I. Indicate delivery dates for Owner furnished products and products identified under Allowances.
- J. Revisions To Schedules:
 - 1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
 - 2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
 - 3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect (including effect of changes on schedules of separate contractors).

1.4 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Owner-Contractor Agreement or as stated in the Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.5 PRODUCT DATA

- A. Product Data: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Submit one (1) electronic copy.

- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.6 SHOP DRAWINGS

- A. Shop Drawings: Submit to Engineer if necessary or requested in construction documents for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
 - 1. Include signed and sealed calculations to support design.
 - 2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
 - 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- D. Submit number of opaque reproductions Contractor requires, plus one (1) copy Engineer will retain.
- E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.7 SAMPLES – Not Used

1.8 DESIGN DATA

- A. Submit for Engineer's knowledge as contract administrator or for Owner.
- B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.9 TEST REPORTS

- A. Submit for Engineer's knowledge as contract administrator or for Owner.
- B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.10 CERTIFICATES

- A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Engineer, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product but must be acceptable to Engineer.

1.11 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.12 CONSTRUCTION PHOTOGRAPHS – Not Used

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 40 00 – QUALITY REQUIREMENTS

PART 1 - - GENERAL

1.1 SECTION INCLUDES

- A. Section Includes:
 - 1. Quality control and control of installation.
 - 2. Tolerances.
 - 3. References.
 - 4. Labeling.
 - 5. Mock-up requirements.
 - 6. Testing and inspection services.
 - 7. Examination.
 - 8. Preparation.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

1.3 TOLERANCES

- A. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

1.4 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on Contract Documents except where specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

- E. Neither contractual relationships, duties, nor responsibilities of parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 LABELING

- A. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
 - 1. Model number.
 - 2. Serial number.
 - 3. Performance characteristics.

1.6 MOCK-UP REQUIREMENTS – Not Used

1.7 TESTING AND INSPECTION SERVICES

- A. Building Permit will be issued and an IOR will be assigned to this project and will conduct inspections for compliance.

PART 2 - - PRODUCTS - Not Used

PART 3 - - EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities:
 - 1. Temporary electricity.
 - 2. Temporary lighting for construction purposes.
 - 3. Temporary water service.
 - 4. Temporary sanitary facilities.

- B. Construction Facilities:
 - 1. Field offices and sheds.
 - 2. Vehicular access.
 - 3. Parking.
 - 4. Progress cleaning and waste removal.
 - 5. Project identification.
 - 6. Traffic regulation.
 - 7. Fire prevention facilities.

- C. Temporary Controls:
 - 1. Barriers.
 - 2. Enclosures and fencing.
 - 3. Security.
 - 4. Water control.
 - 5. Dust control.
 - 6. Erosion and sediment control.
 - 7. Noise control.
 - 8. Pest control.
 - 9. Pollution control.
 - 10. Rodent control.

- D. Removal of utilities, facilities, and controls.

1.2 TEMPORARY ELECTRICITY

- A. Provide and pay for power service required from utility as needed for construction operation. This requirement could be waived if authorized by Owner and existing power service has the capacity. In that case, utilize the Owner's existing power service, provide separate metering and reimburse Owner for cost of energy used.

- B. Complement existing power service capacity and characteristics as required for construction operations.

- C. Permanent convenience receptacles may be utilized during construction.

1.3 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain incandescent lighting for construction operations.

- B. Provide and maintain sufficient lighting to exterior staging and storage areas after dark for security purposes.

- C. Maintain lighting and provide routine repairs.

1.4 TEMPORARY WATER SERVICE

- A. Provide and pay for suitable quality water service as needed to maintain specified conditions for construction operations. Connect to existing water source, if approved by Owner and provide separate metering and reimburse Owner for cost of water used.
- B. Extend branch piping with outlets located so water is available by hoses with threaded connections.

1.5 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide facilities at time of project mobilization.

1.6 FIELD OFFICES AND SHEDS

- A. Do not use existing facilities for field offices or for storage.
- B. Locate offices and sheds minimum distance of thirty (30) feet from existing and new structures.
- C. Storage Areas and Sheds: Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and for inspection of products.
- D. Removal: At completion of Work remove temporary buildings, foundations, utility services, and debris. Restore areas.

1.7 VEHICULAR ACCESS

- A. Extend and relocate vehicular access as Work progress requires, provide detours as necessary for unimpeded traffic flow.
- B. Provide unimpeded access for emergency vehicles. Maintain twenty (20) feet wide driveways with turning space between and around combustible materials.
- C. Provide and maintain access to fire hydrants and control valves free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Use existing on-site roads for construction traffic.

1.8 PARKING

- A. Arrange for temporary parking areas to accommodate construction personnel.
- B. Locate as approved by Engineer and Owner.
- C. When site space is not adequate, provide additional off-site parking.
- D. Use of existing on-site streets and driveways for construction traffic permitted but shall be

approved by Owner/Engineer. Tracked vehicles not allowed on paved areas.

- E. Use of existing parking facilities by construction personnel is permitted but shall be approved by Owner/Engineer.
- F. Do not allow heavy vehicles or construction equipment in parking areas.
- G. Maintenance:
 - 1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, and mud.
 - 2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.
- H. Removal, Repair:
 - 1. Remove temporary materials and construction at Substantial Completion.
 - 2. Remove underground work and compacted materials to depth of two (2) feet; fill and grade site as specified.
 - 3. Repair existing facilities damaged by use, to original condition.

1.9 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
- B. Remove debris and rubbish from construction, traffic, and parking areas.
- C. Collect and remove waste materials, debris, and rubbish from site periodically and dispose off-site.

1.10 TRAFFIC REGULATION

- A. Signs, Signals, And Devices:
 - 1. Post Mounted and Wall Mounted Traffic Control and Informational Signs: As approved by authority having jurisdiction.
 - 2. Traffic Cones and Drums, Flares and Lights: As approved by authority having jurisdiction.
 - 3. Flagperson Equipment: As required by authority having jurisdiction.
- B. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.
- C. Flares And Lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.
- D. Haul Routes:
 - 1. Consult with authority having jurisdiction, establish public thoroughfares to be used for haul routes and site access.
 - 2. Confine construction traffic to designated haul routes.
 - 3. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic, if necessary.

- F. Traffic Signs and Signals:
 - 1. Provide signs at approaches to site and on site, at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.
 - 2. Provide, operate, and maintain traffic control signals to direct and maintain orderly flow of traffic in areas under Contractor's control, and areas affected by Contractor's operations.
 - 3. Relocate as Work progresses, to maintain effective traffic control.

- G. Removal:
 - 1. Remove equipment and devices when no longer required.
 - 2. Repair damage caused by installation.
 - 3. Remove post settings to depth of two (2) feet, repair to original or better.

1.11 FIRE PREVENTION FACILITIES

- A. Prohibit smoking on campus. Campus is a smoke and vape free anywhere on property.

- B. Establish fire watch for cutting and welding and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.

- C. Portable Fire Extinguishers: NFPA 10; 10-pound capacity, 4A-60B: C UL rating.
 - 1. Provide minimum one fire extinguisher in every construction trailer and storage shed.

1.12 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

- B. Provide protection for plants designated to remain. Replace damaged plants.

- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.13 SECURITY

- A. Security Program:
 - 1. Protect Work existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
 - 2. Initiate program in coordination with Owner's existing security system at project mobilization.
 - 3. Maintain program throughout construction period until directed by Engineer.

- B. Entry Control:
 - 1. Restrict entrance of persons and vehicles into Project site.
 - 2. Allow entrance only to authorized persons with proper identification.
 - 3. Maintain log of workers and visitors, make available to Owner on request.
 - 4. Coordinate access of Owner's personnel to site in coordination with Owner's security forces.

1.14 WATER CONTROL

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.15 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.16 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize surface area of bare soil exposed at one time.
- C. Provide temporary measures including berms, dikes, and drains, and other devices to prevent water flow.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
- E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

1.17 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise from produced by construction operations.

1.18 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
- B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.19 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Remove underground installations to minimum depth of two (2) feet.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

END OF SECTION

SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 - - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Products.
 - 2. Product delivery requirements.
 - 3. Product storage and handling requirements.
 - 4. Product options.
 - 5. Product substitution procedures.
 - 6. Equipment electrical characteristics and components.

1.2 PRODUCTS

- A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.
- C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- E. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

- G. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during bidding period to requirements specified in this section.
- B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that Bidder:
 - 1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 - 2. Will provide same warranty for Substitution as for specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5. Will reimburse Owner [and Engineer] for review or redesign services associated with re-approval by authorities having jurisdiction.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.
- F. Substitution Submittal Procedure:
 - 1. Submit three (3) copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 - 2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
 - 3. Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 - - PRODUCTS – Not Used

PART 3 - - EXECUTION - Not Used

END OF SECTION

SECTION 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Quality Assurance – all work
 - 2. Closeout procedures.
 - 3. Final cleaning.
 - 4. Protecting installed construction.
 - 5. Project record documents.
 - 6. Product warranties and product bonds.

1.2 QUALITY ASSURANCE – ALL WORK

- A. All work performed under these specifications and construction drawings shall conform as a minimum with the latest edition of the following requirements:
 - 1. Standard Specifications for Public Works Construction (SSPWC)
 - 2. California Building Standards Codes, Title 24, 2022 Edition (CBC-22).

1.3 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
- B. Provide submittals to Engineer and Town.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Town will occupy all areas constructed and landscaped.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean site: sweep paved areas, rake clean landscaped surfaces.
- C. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.5 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Prohibit traffic from landscaped areas.

1.6 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following approved documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. All documents are to be reviewed, approved, and permits issued by the Town IOR. One set of approved construction documents shall be used onsite for construction purposes.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
 - 4. All documents are to be reviewed, approved, and permits issued by the Town IOR. One set of approved construction documents shall be used onsite for construction purposes.
- F. Record Drawings and Shop Drawings, if applicable: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish surface datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Field changes of dimension and detail.
 - 4. Details not on original Contract drawings.
- G. Submit documents to Engineer with claim for final Application for Payment.

1.7 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten (10) days after completion of applicable item of work.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- C. Verify documents are in proper form, contain full information, and are notarized.
- D. Submit prior to final Application for Payment.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 02 40 00 - SITE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the "Standard Specifications for Public Works Construction," latest edition, shall apply except as modified herein.

1.2 SCOPE OF WORK

- A. Work of this Section includes all material, equipment, and labor necessary for and incidental to completing all Site Demolition work complete, as indicated on the Drawings, as reasonably implied, or as specified and designated herein, including, but not limited to, the following:
 1. Clearing and grubbing of all vegetation from site work areas.
 2. Removal and legal disposal of all deleterious materials.
 3. Removal and legal disposal of any additional deleterious items not specifically mentioned herein which may be found within the work limits.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Grading: Section 31 22 00

1.4 RESPONSIBILITY AND CO-ORDINATION

CONTRACTOR SHALL SECURE AND MAINTAIN ALL REQUIRED PERMITS AND LICENSES AND PAY ALL FEES NECESSARY TO LEGALLY COMPLETE THE WORK OF THIS SECTION.

- A. Contractor shall notify utility companies for all utilities to be cut off, modified or relocated, and shall maintain and protect all active utilities.
- B. Contractor shall coordinate all work with the City in an effort to avoid any conflicts.

1.5 PROTECTION AND SAFETY

- A. Contractor shall provide signs and construction fencing in all necessary places to exclude persons, except those connected with the work, from entering the working area. Contractor is responsible for protecting the project site and adjacent properties from dirty water, mud and water accumulation due to Contractor's operations, rainfall run-off or any water that enters the project site from any other source.
- B. Contractor to protect from any hazards resulting from his operations.

1.6 SALVAGE MATERIALS

- A. All salvage materials are the property of the City. In the event that the City elects not to take possession of these materials, they then become the property of the Contractor and he must immediately remove them from the site.

PART 2 - MATERIALS - (Not applicable.)

PART 3 - EXECUTION

3.1 GENERAL

- A. No work of this section shall commence until the construction fence is in place.

3.2 SITE CLEARANCE AND DISPOSAL

- A. Contractor shall notify the City prior to start of demolition, to allow the City to salvage any site furnishings proper to their disposal. Demolition work shall be carefully done to avoid damage to all existing facilities not designated for removal.
- B. Clear the site to be improved of weed growth, rubbish and debris, and concrete rubble, etc., that are to be removed for construction of the improvements shown on the construction plans. Roots three inches (3") in diameter and larger, and rocks and broken masonry larger than four inches (4") in the greatest dimension shall be removed to a minimum depth of twelve inches (12") below finished grade.
- C. All deleterious materials shall be disposed of off the site in a legal manner by the Contractor, who shall make all necessary arrangements and pay all related costs.

3.3 PROTECTION

- A. Protect all items to remain as designated on the plans. Any damage to protected site features shall be repaired and/or replaced at the no additional cost to the city.

3.4 UTILITIES

- A. All known underground utilities are noted on the plans.
- B. All miscellaneous inactive underground facilities (e.g., drainage devices, cables, abandoned water lines, irrigation pipes, wiring, etc.), located twelve inches (12") or more below finish grade shall be removed as necessary for proper completion of the work. All miscellaneous active underground facilities that are encountered during the work shall be protected.
- C. Should the Contractor encounter any existing underground utilities not shown on the drawings, he shall at once notify the City Project Inspector who will determine further procedure.

3.5 DEBRIS BURNING

- A. Burning of debris will not be permitted.

3.6 DUST CONTROL

- A. Dust shall be kept to a minimum during site clearing operations by means of wetting the site with water or other approved method. After all site clear and grub operations are complete, sweep down all existing sidewalks and roadways on and off the site that have become soiled due to Contractor's operations.

END OF SECTION

SECTION 03 10 00 – CONCRETE FORMING AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Formwork for cast-in place concrete.
 - 2. Shoring, bracing, and anchorage.
 - 3. Form stripping and accessories.
- B. Related Sections:
 - 1. Section 32 13 13 - Concrete Paving

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Formwork (Vertical Structures):
 - 1. Basis of Measurement: By the square foot.
 - 2. Basis of Payment: Includes form materials, placement, placing accessories, stripping.
- B. Formwork (Horizontal Supported Structures):
 - 1. Basis of Measurement: By the square foot.
 - 2. Basis of Payment: Includes form materials, placement, placing accessories, stripping.

1.3 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials.
 - 2. ACI 301 - Specifications for Structural Concrete.
 - 3. ACI 318 - Building Code Requirements for Structural Concrete.
 - 4. ACI 347 - Guide to Formwork for Concrete.
- B. American Forest and Paper Association:
 - 1. AF&PA - National Design Specifications for Wood Construction.
- C. The Engineered Wood Association:
 - 1. APA/EWA PS 1 - Voluntary Product Standard for Construction and Industrial Plywood.
- D. American Society of Mechanical Engineers:
 - 1. ASME A17.1 - Safety Code for Elevators and Escalators.
- E. ASTM International:
 - 1. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 - 2. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
- F. West Coast Lumber Inspection Bureau:
 - 1. WCLIB - Standard Grading Rules for West Coast Lumber.
- G. Standard Specifications for Public Works Construction (SSPWC).
- H. California Building Standards Codes, Title 24, 2022 Edition (CBC-22).

1.4 DESIGN REQUIREMENTS

- A. Design, engineer and construct formwork, shoring and bracing in accordance with ACI 318 and to conform to design SSPWC requirements to achieve concrete shape, line and dimension as indicated on Drawings.

1.5 PERFORMANCE REQUIREMENTS

- A. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96, Procedure A.

1.6 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data on void form materials and installation requirements.

1.7 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Perform Work in accordance with ACI 347, ACI 301 and ACI 318.
- C. For wood products furnished for work of this Section, comply with AF&PA.
- D. Perform Work in accordance with SSPWC and the CBC-22
- E. Maintain one (1) copy of each document on site.

1.8 QUALIFICATIONS – Not Used

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver void forms and installation instructions in manufacturer's packaging.
- B. Store off ground in ventilated and protected manner to prevent deterioration from moisture.

1.10 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate this Section with other sections of work, requiring attachment of components to formwork.

PART 2 - PRODUCTS

2.1 WOOD FORM MATERIALS

- A. Form Materials: At discretion of Contractor and as approved by Engineer.

2.2 PREFABRICATED FORMS

- A. Manufacturers:
 1. Aluma-Systems Inc., Burke Co.
 2. Economy Forms Corp.
 3. Molded Fiber Glass Concrete Forms Co.
 4. Sonoco Products Co.
 5. Symons Corp.
 6. Western Forms, Inc.
 7. Substitutions: Permitted as approved by Engineer.

2.3 FORMWORK ACCESSORIES

- A. Form Ties: Removable type, galvanized metal, adjustable length, with waterproofing washer, free of defects.
- B. Spreaders: Standard, non-corrosive metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete face. Wire ties, wood spreaders or through bolts are

not permitted.

- C. Form Anchors and Hangers:
 - 1. Do not use anchors and hangers exposed concrete leaving exposed metal at concrete surface.
 - 2. Symmetrically arrange hangers supporting forms from structural steel members to minimize twisting or rotation of member.
 - 3. Penetration of structural steel members is not permitted.
- D. Form Release Agent: Colorless mineral oil that will not stain concrete, or absorb moisture.
 - 1. Manufacturers:
 - a. Arcal Chemical Corporation Arcal-80.
 - b. Industrial Synthetics Company Synthex.
 - c. Nox-Crete Company Nox-Crete Form Coating.
 - d. Substitutions: Permitted as approved by Engineer.
- E. Corners: Fillet or Chamfer, rigid plastic or wood strip maximum possible lengths, size per drawings.
- F. Dovetail Anchor Slot: Galvanized steel, 22 gage thick, release tape sealed slots, anchors for securing to concrete formwork.
- G. Vapor Retarder: Where indicated on Drawings, 8 mil thick polyethylene sheet.
- H. Bituminous Joint Filler: ASTM D1751.
- I. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Size, strength and character to maintain formwork in place while placing concrete.
- J. Water Stops: Rubber or Polyvinyl chloride, minimum 1,750 psi tensile strength, minimum 50 degrees F to plus 175 degrees F working temperature range, maximum possible lengths, ribbed profile, preformed corner sections, heat welded jointing.

2.4 COATINGS

- A. Coatings for Aluminum: Polyamide epoxy finish coat with paint manufacturer's recommended primer for aluminum substrate. Apply one coat primer and one coat finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify lines, levels, and centers before proceeding with formwork. Verify dimensions agree with Drawings.
- C. When formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement before proceeding, request instructions from Engineer.

3.2 INSTALLATION

- A. Earth Forms – Not Allowed
- B. Formwork - General:
 - 1. Provide top form for sloped surfaces steeper than 1.5 horizontal to 1 vertical to hold shape of concrete during placement, unless it can be demonstrated that top forms can be omitted.
 - 2. Construct forms to correct shape and dimensions, mortar-tight, braced, and of sufficient strength to maintain shape and position under imposed loads from construction operations.
 - 3. Camber forms where necessary to produce level finished soffits unless otherwise shown on Drawings.
 - 4. Carefully verify horizontal and vertical positions of forms. Correct misaligned or misplaced

- forms before placing concrete.
5. Complete wedging and bracing before placing concrete.
- C. Forms for Smooth Finish Concrete:
1. Use steel, plywood or lined board forms.
 2. Use clean and smooth plywood and form liners, uniform in size, and free from surface and edge damage capable of affecting resulting concrete finish.
 3. Install form lining with close-fitting square joints between separate sheets without springing into place.
 4. Use full size sheets of form lines and plywood wherever possible.
 5. Tape joints to prevent protrusions in concrete.
 6. Use care in forming and stripping wood forms to protect corners and edges.
 7. Level and continue horizontal joints.
 8. Keep wood forms wet until stripped.
- D. Forms for Surfaces to Receive Membrane Waterproofing: Use plywood or steel forms. After erection of forms, tape form joints to prevent protrusions in concrete.
- E. Framing, Studding and Bracing:
1. Space studs at 16 inches on center maximum for boards and 12 inches on center maximum for plywood.
 2. Size framing, bracing, centering, and supporting members with sufficient strength to maintain shape and position under imposed loads from construction operations.
 3. Construct beam soffits of material minimum of 2 inches thick.
 4. Distribute bracing loads over base area on which bracing is erected.
 5. When placed on ground, protect against undermining, settlement or accidental impact.
- F. Erect formwork, shoring, and bracing to achieve design requirements, in accordance with requirements of ACI 301 and ACI 318.
- G. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- H. Install fillet and chamfer strips on external corners if indicated in drawings.
- I. Install void forms in accordance with manufacturer's recommendations.
- J. Do not reuse wood formwork more than three (3) times for concrete surfaces to be exposed to view unless approved by Engineer. Do not patch formwork.

3.3 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces are indicated to receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.
- D. Reuse and Coating of Forms: Thoroughly clean forms and reapply form coating before each reuse. For exposed work, do not reuse forms with damaged faces or edges. Apply form coating to forms in accordance with manufacturer's specifications. Do not coat forms for concrete indicated to receive "scored finish". Apply form coatings before placing reinforcing steel.

3.4 INSTALLATION - INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Install formed openings for items to be embedded in or passing through concrete work.
- B. Locate and set in place items required to be cast directly into concrete.
- C. Coordinate with Work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.

- D. Install accessories straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- E. Install water stops continuous without displacing reinforcement.
- F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- G. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.
- H. Form Ties:
 - 1. Use sufficient strength and sufficient quantity to prevent spreading of forms.
 - 2. Place ties at least 1 inch away from finished surface of concrete.
 - 3. Leave inner rods in concrete when forms are stripped.
 - 4. Space form ties equidistant, symmetrical and aligned vertically and horizontally unless otherwise shown on Drawings.
- I. Arrangement: Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.
- J. Construction Joints:
 - 1. Install surfaced pouring strip where construction joints intersect exposed surfaces to provide straight line at joints.
 - 2. Just prior to subsequent concrete placement, remove strip and tighten forms to conceal shrinkage.
 - 3. Show no overlapping of construction joints. Construct joints to present same appearance as butted plywood joints.
 - 4. Arrange joints in continuous line straight, true and sharp.
- K. Embedded Items:
 - 1. Make provisions for pipes, sleeves, anchors, inserts, anchor slots, nailers, water stops, and other features.
 - 2. Do not embed wood or uncoated aluminum in concrete.
 - 3. Obtain installation and setting information for embedded items furnished under other Specification sections.
 - 4. Securely anchor embedded items in correct location and alignment prior to placing concrete.
 - 5. Verify conduits and pipes, including those made of coated aluminum, meet requirements of ACI 318 for size and location limitations.
- L. Screeds:
 - 1. Set screeds and establish levels for tops of concrete slabs and levels for finish on slabs.
 - 2. Slope slabs to drain where required or as shown on Drawings.
 - 3. Before depositing concrete, remove debris from space to be occupied by concrete and thoroughly wet forms. Remove freestanding water.

3.5 FORM CLEANING

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.
- C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
- D. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.6 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads and removal has been approved by Engineer.
- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.
- D. Leave forms in place for minimum number of days as specified in ACI 347.

3.7 ERECTION TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI 301 and ACI 318.

3.8 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by IOR.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.
- C. Notify Engineer after placement of reinforcing steel in forms, but prior to placing concrete.
- D. Schedule concrete placement to permit formwork inspection before placing concrete.

END OF SECTION

SECTION 03 20 00 – CONCRETE REINFORCING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Reinforcing bars.
 - 2. Welded wire fabric.
 - 3. Reinforcement accessories.
- B. Related Sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories.
 - 2. Section 03 30 00 – Cast-In-Place Concrete.
 - 3. Section 04 20 16 – Reinforce Unit Masonry.
 - 4. Section 33 05 13 – Manholes and Structures.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Bar Reinforcement:
 - 1. Basis of Measurement: By the ton.
 - 2. Basis of Payment: Includes reinforcement, placement, and accessories.
- B. Welded Wire Fabric Reinforcement:
 - 1. Basis of Measurement: By the square foot.
 - 2. Basis of Payment: Includes welded wire reinforcement, placement, and accessories.

1.3 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 318 - Building Code Requirements for Structural Concrete.
 - 3. ACI 530.1 - Specifications for Masonry Structures.
 - 4. ACI SP-66 - ACI Detailing Manual.
- B. ASTM International:
 - 1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - 2. ASTM A184/A184M - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
 - 3. ASTM A496 - Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.
 - 4. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
 - 5. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - 6. ASTM A704/A704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.
 - 7. ASTM A706/A706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
 - 8. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
 - 9. ASTM A775/A775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars.
 - 10. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement.
 - 11. ASTM A934/A934M - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
 - 12. ASTM A996/A996M - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.

13. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Reinforcing Steel Bars.
- C. American Welding Society:
 1. AWS D1.4 - Structural Welding Code - Reinforcing Steel.
- D. Concrete Reinforcing Steel Institute:
 1. CRSI - Manual of Standard Practice.
 2. CRSI - Placing Reinforcing Bars.
- E. Standard Specifications for Public Works Construction (SSPWC).
- F. California Building Code, 2022 Edition (CBC-22).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate bar sizes, spacings, locations, and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, and supporting and spacing devices.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
 1. Submit certified copies of mill test report of reinforcement materials analysis.

1.5 QUALITY ASSURANCE

- A. Inspections shall be requested to The Town of Yucca Valley (Town).
- B. Perform Work in accordance with ACI 301 and ACI 318.
- C. Prepare shop drawings in accordance with ACI SP-66.
- D. Perform Work in accordance with SSPWC and CBC-22.
- E. Maintain one (1) copy of each document on site.

1.6 QUALIFICATIONS

- A. Welders: AWS qualified within previous 12 months.

1.7 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate with placement of formwork, formed openings and other Work.

PART 2 - PRODUCTS

2.1 REINFORCEMENT

- A. Deformed Reinforcement: ASTM A615/A615M; 60 ksi yield strength, steel bars, unfinished.
- B. Welded Deformed Wire Fabric: ASTM A497; in flat sheets or coiled rolls; unfinished.

2.2 ACCESSORY MATERIALS

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions including load bearing pad on bottom to prevent vapor retarder puncture.
- C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete

Surfaces type; size and shape to meet Project conditions.

2.3 FABRICATION

- A. Fabricate concrete reinforcement in accordance with ACI 318.
- B. Form standard hooks for bends as indicated on Drawings.
- C. Form reinforcement bends with minimum diameters in accordance with ACI 318.
- D. Fabricate column reinforcement with offset bends at reinforcement splices.
- E. Form ties and stirrups as indicated in drawings.
- F. Weld reinforcement in accordance with AWS D1.4 if specified in drawings.
- G. Locate reinforcement splices not indicated on Drawings, at point of minimum stress. Review location of splices with Architect/Engineer.

2.4 SOURCE QUALITY CONTROL

- A. Make completed reinforcement available for inspection at manufacturer's factory prior to packaging for shipment. Notify Architect/Engineer at least seven days before inspection is allowed.
- B. When fabricator is approved by authority having jurisdiction, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents.

PART 3 - EXECUTION

3.1 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position beyond specified tolerance.
 - 1. Do not weld crossing reinforcement bars for assembly except as permitted by Architect/Engineer.
- B. Do not displace or damage vapor retarder.
- C. Accommodate placement of formed openings.
- D. Space reinforcement bars with minimum clear spacing in accordance with ACI 318 of one bar diameter, but not less than 1 inch.
 - 1. Where bars are indicated in multiple layers, place upper bars directly above lower bars.
- E. Maintain concrete cover around reinforcement in accordance with ACI 318 as follows:

Reinforcement Location		Minimum Concrete Cover
Footings and Concrete Formed Against Earth		3 inches
Concrete exposed to earth or weather	No. 6 bars and larger	2 inches
	No. 5 bars and smaller	1-1/2 inches
Supported Slabs, Walls, and Joists	No. 14 bars and larger	1-1/2 inches
	No. 11 bars and smaller	3/4 inches
Beams and Columns		1-1/2 inches
Shell and Folded Plate Members	No. 6 bars and larger	3/4 inches
	No. 5 bars and smaller	1/2 inches

- F. Splice reinforcing where indicated on Drawings in accordance with splicing device manufacturer's

instructions.

3.2 ERECTION TOLERANCES

- A. Install reinforcement within the following tolerances for flexural members, walls, and compression members:

Reinforcement Depth	Depth Tolerance	Concrete Cover Tolerance
Greater than 8 inches	plus or minus 3/8 inch	minus 3/8 inch
Less than 8 inches	plus or minus 1/2 inch	minus 1/2 inch

- B. Install reinforcement within the tolerances specified in ACI 530.1 for foundation walls and retaining walls.

3.3 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Field inspection and testing will be performed by Town's testing laboratory in accordance with ACI 318.
- C. Provide free access to Work and cooperate with appointed firm.
- D. Reinforcement Inspection:
1. Placement Acceptance: Specified and ACI 318 material requirements and specified placement tolerances.
 2. Welding: Inspect welds in accordance with AWS D1.1. (If required in drawings).
 3. Periodic Placement Inspection: Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.

END OF SECTION

SECTION 03 30 00 – CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete for the following:
 - 1. Light pole foundations
 - 2. Control, expansion and contraction joint devices.
- B. Related Sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories.
 - 2. Section 04 05 03 – Masonry Mortaring and Grouting.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Concrete - Slab-on-fill or grade:
 - 1. Basis of Measurement: By the square foot.
 - 2. Basis of Payment: Includes concrete steel reinforcing, placement accessories, consolidating and leveling, troweling, curing.
- B. Concrete - Vertical in Forms:
 - 1. Basis of Measurement: By the square foot.
 - 2. Basis of Payment: Includes concrete steel reinforcing, placement accessories, consolidating, curing.
- C. Concrete - Miscellaneous Locations:
 - 1. Basis of Measurement: By the cubic yard.
 - 2. Basis of Payment: Includes concrete steel reinforcing, placement accessories, consolidating and leveling, troweling, curing.
- D. Concrete - Grouting:
 - 1. Basis of Measurement: By the cubic yard.
 - 2. Basis of Payment: Includes preparation of substrate, grout, placement, consolidating, troweling, curing.

1.3 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 305 - Hot Weather Concreting.
 - 3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
 - 4. ACI 308.1 - Standard Specification for Curing Concrete.
 - 5. ACI 318 - Building Code Requirements for Structural Concrete.
- B. ASTM International:
 - 1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - 2. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - 3. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 4. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 5. ASTM C42/C42M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
 - 6. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
 - 7. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
 - 8. ASTM C150 - Standard Specification for Portland Cement.
 - 9. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.

10. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
 11. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 12. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
 13. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
 14. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
 15. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
 16. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
 17. ASTM C685/C685M - Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing.
 18. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
 19. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
 20. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
 21. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
 22. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
 23. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
 24. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
 25. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
 26. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
 27. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
 28. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 29. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
 30. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
 31. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
 32. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
 33. ASTM E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.
 34. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
- C. South Coast Air Quality Management District:
1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.
- D. Standard Specifications for Public Works Construction (SSPWC).
- E. California Building Standards Codes, Title 24, 2022 Edition (CBC-22).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on joint devices, attachment accessories, admixtures and aggregates.
- C. Design Data:
 1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
 2. Hot and cold weather concrete work.
 3. Air entrained concrete work.
 4. Identify mix ingredients and proportions, including admixtures.
 5. Identify chloride content of admixtures and whether or not chloride was added during

manufacture.

6. All mix designs shall be in accordance with Section 201 of SSPWC.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.
- B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.

1.6 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. All mix designs, mix uses, and other work shall conform to Section 201 of the SSPWC.
- C. Perform Work in accordance with ACI 301 and ACI 318.
- D. Conform to ACI 305 when concreting during hot weather.
- E. Conform to ACI 306.1 when concreting during cold weather.
- F. Acquire cement and aggregate from one source for Work.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain concrete temperature after installation at minimum 50 degrees F for minimum 7 days.
- B. Comply with local agencies environmental requirements.

1.8 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type V - Sulfate Resistant, Portland type.
- B. Normal Weight Aggregates: ASTM C33.
 1. Combined (Coarse and Fine) Aggregate Maximum Size: In accordance with ACI 318 and table 201-1.1.2(A) of the SSPWC.
- C. Water: ACI 318; potable, without deleterious amounts of chloride ions conforming to Section 201 of the SSPWC.

2.2 ADMIXTURES

- A. Furnish materials in accordance with SSPWC and CBC-22.
- B. Air Entrainment: ASTM C260, if approved by Engineer.
- C. Chemical: ASTM C494/C494M Type A - Water Reducing, Type B - Retarding, Type C - Accelerating, Type D - Water Reducing and Retarding, Type E - Water Reducing and Accelerating, Type F - Water Reducing, High Range, Type G - Water Reducing, High Range and Retarding, if approved by Engineer.
- D. Fly Ash (Calcined Pozzolan): ASTM C618 Class F.

- E. Silica Fume: ASTM C1240, if approved by Engineer.
- F. Slag: ASTM C989; Grade 100; ground granulated blast furnace slag, if approved by the Engineer.
- G. Plasticizing: ASTM C1017/C1017M Type I, plasticizing or Type II, plasticizing and retarding, if approved by the Engineer.

2.3 ACCESSORIES

2.4 JOINT DEVICES AND FILLER MATERIALS

- A. Joint Filler: ASTM D1751, ASTM D994; Asphalt impregnated fiberboard or felt, or as approved by the Engineer.
- B. Expansion and Contraction Joint Devices: ASTM B221.
- C. Sealant: ASTM D6690.

2.5 CONCRETE MIX

- A. Select proportions for normal weight concrete mix and admixtures in accordance with ACI 301 and Section 201 of SSPWC.
- B. Select Concrete Class or alternate Class according to the type of construction conforming to table 201-1.1.2 (A) of the latest edition of the SSPWC.
- C. Select Concrete aggregates combined gradations types A, B, C, D or E conforming to Table 201-1.3.2 (A) of SSPWC.
- D. Do not use calcium chloride unless otherwise approved by the Engineer.
- E. Use a water-cement ratio by weight sufficient to obtain the required slump, not to exceed 0.50.
- F. Use Cement Type II or V
- G. Ready Mixed Concrete: Mix and deliver concrete in accordance with ASTM C94/C94M or ASTM C685/C685M.
- H. Site Mixed Concrete: Mix concrete in accordance with ACI 318.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.
- B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- C. Remove debris and ice from formwork, reinforcement, and concrete substrates.
- D. Remove water from areas receiving concrete before concrete is placed.

3.3 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301 and ACI 318.
- B. Notify testing laboratory and Engineer minimum 24 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.
- D. Separate slabs on grade from vertical surfaces with ¾-inch thick joint filler.
- E. Place joint filler in pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- F. Extend joint filler from bottom of slab to within 1/8-inch of finished slab surface.
- G. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- H. Install joint device anchors. Maintain correct position to allow joint cover to be flush with floor and wall finish.
- I. Install joint covers in longest practical length when adjacent construction activity is complete.
- J. Apply sealants in joint devices.
- K. Deposit concrete at final position. Prevent segregation of mix.
- L. Place concrete in continuous operation for each panel or section determined by predetermined joints.
- M. Consolidate concrete.
- N. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- O. Place concrete continuously between predetermined expansion, control, and construction joints.
- P. Do not interrupt successive placement; do not permit cold joints to occur.
- Q. Place floor slabs in saw cut pattern indicated.
- R. Saw cut joints within 12 hours after placing. Use 3/16-inch-thick blade, cut into 1/4 depth of slab thickness.
- S. Screed slabs on grade level, maintaining surface flatness.

3.4 CONCRETE FINISHING

- A. Provide formed concrete surfaces to be left exposed with smooth rubbed finish as Scheduled in this section.
- B. Finish concrete floor surfaces in accordance with ACI 301.
- C. Steel trowel surfaces which are indicated to be exposed.

3.5 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure concrete in accordance with ACI 308.1.

3.6 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Field inspection and testing will be performed by Owner's testing laboratory in accordance with ACI 318 unless otherwise specified in contract documents.
- C. Provide free access to Work and cooperate with appointed firm.
- D. Submit proposed mix design of each class of concrete to Engineer and an inspection and testing firm for review prior to commencement of Work.
- E. Concrete Inspections:
 - 1. Continuous Placement Inspection: Inspect for proper installation procedures.
 - 2. Periodic Curing Inspection: Inspect for specified curing temperature and procedures.
- F. Strength Test Samples:
 - 1. Sampling Procedures: ASTM C172.
 - 2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, standard cured.
 - 3. Sample concrete and make one (1) set of three (3) cylinders for every 10 cu yds or less of each class of concrete placed each day and for every 1,000 sf of surface area for slabs and walls.
 - 4. When the volume of concrete for any class of concrete would provide less than 5 sets of cylinders, take samples from five randomly selected batches, or from every batch when less than 5 batches are used.
 - 5. Make one additional cylinder during cold weather concreting, and field cure.
- G. Field Testing:
 - 1. Slump Test Method: ASTM C143/C143M.
 - 2. Air Content Test Method: ASTM C173/C173M.
 - 3. Temperature Test Method: ASTM C1064/C1064M.
 - 4. Measure slump and temperature for each compressive strength concrete sample.
 - 5. Measure air content in air entrained concrete for each compressive strength concrete sample.
- H. Cylinder Compressive Strength Testing:
 - 1. Test Method: ASTM C39.
 - 2. Test Acceptance: In accordance with ACI 318.
 - 3. Test one (1) cylinder at seven (7) days.
 - 4. Test two cylinders at 28 days.
 - 5. Retain one (1) cylinder for 28 days for testing when requested by Engineer.
 - 6. Dispose remaining cylinders when testing is not required.
- I. Core Compressive Strength Testing:
 - 1. Sampling and Testing Procedures: ASTM C42/C42M.
 - 2. Test Acceptance: In accordance with ACI 318.
 - 3. Drill three (3) cores for each failed strength test from concrete represented by failed strength test.
- J. Water Soluble Chloride Ion Concentration Test Method: ASTM C1218; tested at 28 days.
 - 1. Maximum Concentration: As permitted by SSPWC.
- K. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

3.7 PATCHING

- A. Allow Engineer to inspect concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Engineer upon discovery.
- C. Patch imperfections as directed by Engineer and in accordance with ACI 301.
- B.

3.8 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by Engineer.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.

3.9 SCHEDULE - CONCRETE TYPES AND FINISHES

- A. As stated in Section 201 of the SSPWC.

3.10 SCHEDULE - JOINT FILLERS

- A. Slab Perimeter: Joint filler Type A set 1/8 inch below floor slab elevation.

END OF SECTION

SECTION 03 32 00 – COURT SURFACING PLEXICOURT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the "Standard Specifications for Public Works Construction," latest edition, shall apply except as modified herein.

1.2 SCOPE OF WORK

- A. Work of this Section includes all material, equipment, and labor incidental to and necessary for completing all Court Surfacing and Striping work, as indicated on the Drawings and designated herein, including, but not limited to, the following:
 1. Observation of placing, finishing, and curing of concrete tennis and basketball courts.
 2. Preparation of all surfaces to be coated.
 3. Court surfacing system and application.
 4. Playing lines.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Concrete Reinforcement: Section 03 20 00
- B. Concrete: Section 03 30 00

1.4 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specific requirements and the methods needed for proper performance of the work of this Section.
- B. Contractor shall verify drawing dimensions with actual field conditions. Inspect related work and adjacent surfaces. Report to the Landscape Architect all conditions which prevent proper execution of this work.

1.5 GUARANTEE

- A. The manufacturer shall guarantee the material for one (1) year from date of finished application against checking, fading, chalking, discoloration, or other adverse effects from ultra violet rays of the sun, from weather moisture, or from weather temperatures. The material shall be delivered to the site in its original, unopened containers clearly labeled with trade name and name of manufacturer.

PART 2 - MATERIALS

2.1 "OR APPROVED EQUIVALENT" PRODUCTS

- A. This project is a Public Works project. Sole sourcing of material is not allowed. Any reference or call out on the plans and/or in the specifications to a specific manufacturer shall be interpreted as

"or approved equivalent". The County Engineer's and Landscape Architect's approval is required as to whether or not a product meets the County's standard to be an approved equivalent. Bidders shall use the pricing for the products as specified to avoid risks of disapproval. No substitutions will be considered prior to the award of the contract.

2.2 MATERIALS

- A. Plexipave Court Patch Binder – shall conform to CPC Specification 10.14
- B. Acrylotex MA – Shall conform to CPC specification 10.25 (contains 60-80 mesh fillers)
- C. Acrylotex LA – Shall conform to CPC specification 10.25 (contains 80-100 mesh fillers)
- D. Plexichrome – shall conform to CPC specification 10.1
- E. Portland Cement – Type I (White)
- F. Plexicolor Line Paint – shall conform to CPC specification 10.4
- G. Water – shall be fresh and potable

2.3 COURT SURFACING AND STRIPING

- A. Court surfacing shall be a three coat acrylic surfacing system, as manufactured by: California Products Corp. 'Plexipave', California Products Corp. (800) 225-1141. Or, approved equal.

2.4 COLOR

- A. Surface colors per plan shall be selected from manufacturer's samples. Submit to Landscape Architect and/or County at the pre-construction meeting.
- B. Submit three (3) samples of each color selected on 12" x 12" tempered hardboard after selection of color and prior to proceeding with installation work for approval of County.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. Concrete shall have a wood float or light broom finish.
- B. Do not steel-trowel concrete.
- C. Do not allow any curing agents or hardeners to be used.
- D. Concrete must cure for 28 days.
- E. Thoroughly remove all dirt, dust, mud, oil, and all foreign matter.

3.2 CONCRETE PREPARER

- A. Uncoated concrete surface must be etched with Concrete Preparer solution according to specification 10.13. After drying, all latent material must be removed from the surface.

3.3 PRIMER COAT

- A. Mix and apply California Ti-Coat epoxy primer according to specification 10.17. Use only on uncoated surfaces. NOTE: Plexibond Coating may be used as an alternate for priming concrete courts. Consult manufacturer before mixing.

3.4 ACRYLIC UNDERLAYMENT

- A. At least one application of California Acrylic Resurfacer (black) shall be applied to the surface within 1-3 hours after the application of Ti-Coat and while still tacky to fingertip touch. Dilution with water and sand is required utilizing the following mix:

Acrylic Resurfacer	55 gal.
Sand - (60-80 mesh)	600-900 lbs.
Water	20-40 gal.
Liquid yield:	112-138 gal.
Application rate	07-.08 gal./s.y.

3.5 DEPRESSIONS

- A. After the Acrylic Resurfacer has dried, the court shall be flooded to located depressions covering a nickel. Depressions shall be filled with Court Patch Binder according to specification 10.14 using the following mix:

100 lbs. 60-80 mesh silica sand (dry)
3 gallons Plexipave Court Patch Binder
1 to 2 gallons Portland cement (dry), Type 1 (20 lbs. min.)

- B. Tack Coat: A tack coat is necessary under patches only and shall be mixed as follows:

Plexipave Court Patch Binder diluted with 1 part Court Patch Binder to 2 parts water and allowed to thoroughly dry prior to patching. After patching, the surface shall not vary more than 1/8 in 10 ft. measured in any direction.

3.6 Base Texture/Play Courses

- A. Acrylotex MA and Plexichrome shall be blended by a mechanical mixer to obtain a smooth homogeneous blend and applied with a rubber bladed squeegee in at least two applications to achieve a total application rate of .12-.18 gal./sy. prior to dilution. No application shall be covered by a succeeding application until thoroughly cured.

- B. Acrylotex MA and Plexichrome shall be mixed as follows:

Acrylotex MA – 30 gallons
Plexichrome – 10 gallons (up to 20 gal. maybe added for additional color intensity)
Water – 20 gallons
Portland Cement – Type I (White) – 1-2 gallons of Portland cement shall be blended

slowly with the water. The cement adds hardness and enhances drying.

3.7 Surface Texture/Play Course

- A. Acrylotex LA and Plexichrome shall be blended by a mechanical mixer to obtain a smooth homogeneous blend and applied with a rubber bladed squeegee to achieve a total application rate of at least .05 gal./sy. prior to dilution.
 - 1. Acrylotex LA and Plexichrome shall be mixed as follows:
 - Acrylotex LA – 30 gallons
 - Plexichrome – 10 gallons (up to 20 gal. maybe added for additional color intensity)
 - Water – 20 gallons
 - Portland Cement – Type I (White) – 1-2 gallons of Portland cement shall be blended slowly with the water. The cement adds hardness and enhances drying.
- B. The finished surface shall have a uniform appearance and be free from ridges and tool marks.

3.8 Playing Lines

After the surface has thoroughly dried the designated game lines shall be marked. 2-inch wide textured playing lines shall be accurately located, marked and painted with Plexicolor Line Paint as specified by the U.S. Tennis Association.

3.9 Limitations

- A. Do not apply if surface temperature is less than 50° F or more than 140° F.
- B. Allow concrete to cure for a minimum of 28 days.
- C. No curing agents allowed on concrete surfaces.
- D. Do not store in hot sun.
- E. Apply only when ambient temperature is 50° F and rising.
- F. Do not apply when rain is imminent.
- G. After diluting with water, use mixed material promptly.
- H. Keep containers tightly closed when not in use.
- I. Keep from freezing.

3.10 CLOSEOUT

- A. Upon completion of work of this Section, the Contractor shall remove all equipment, excess material, and waste products from the site.
- B. Provide a one (1) year warranty on all materials installed.

3.11 PAYMENT TERMS

- A. Payment for court surfacing & striping will be at the lump sum price bid for each court surfacing bid item (i.e., tennis courts, basketball courts, etc). Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work in court surfacing & striping as herein specified. A 5% retention shall apply to all court surfacing & striping work.

END OF SECTION

SECTION 04 05 03 – MASONRY MORTARING AND GROUTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes mortar and grout for masonry.
- B. Related Sections:
 - 1. Section 04 20 16 - Reinforced Unit Masonry: Installation of mortar and grout.
 - 2. Section 33 05 13 - Manholes and Structures.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Mortar Materials: Includes mortar materials and preparation ready for placement.
 - 1. Payment under Section 04 20 16 or 33 05 13.

1.3 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 530 - Building Code Requirements for Masonry Structures.
 - 2. ACI 530.1 - Specifications for Masonry Structures.
- B. ASTM International:
 - 1. ASTM C91 - Standard Specification for Masonry Cement.
 - 2. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
 - 3. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
 - 4. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
 - 5. ASTM C150 - Standard Specification for Portland Cement.
 - 6. ASTM C270 - Standard Specification for Mortar for Unit Masonry.
 - 7. ASTM C387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
 - 8. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
 - 9. ASTM C476 - Standard Specification for Grout for Masonry.
 - 10. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
 - 11. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
 - 12. ASTM C1019 - Standard Test Method for Sampling and Testing Grout.
 - 13. ASTM C1142 - Standard Specification for Extended Life Mortar for Unit Masonry.
 - 14. ASTM C1314 - Standard Test Method for Constructing and Testing Masonry Prisms Used to Determine Compliance with Specified Compressive Strength of Masonry.
 - 15. ASTM C1329 - Standard Specification for Mortar Cement.
 - 16. ASTM C1357 - Standard Test Method for Evaluating Masonry Bond Strength.
- C. Standard Specifications for Public Works Construction (SSPWC).
- D. California Building Code, 2022 Edition (CBC-22).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal requirements.
- B. Samples: Submit two (2) samples of mortar, illustrating mortar color and color range.
- C. Design Data: Submit design mix when Property specification of ASTM C270 is to be used, required environmental conditions, and admixture limitations.
- D. Test Reports:
 - 1. Submit reports on mortar indicating conformance of mortar to property requirements of ASTM C270 or mortar to requirements of ASTM C1142, and test and evaluation reports to

- ASTM C780 for aggregate ratio and water content, air content, consistency and compressive strength.
2. Submit reports on grout indicating conformance of grout to property requirements of ASTM C476 and test and evaluation reports to ASTM C1019.
- E. Manufacturer's Installation Instructions: Submit premix mortar with manufacturer's installation instructions.
 - F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Perform Work in accordance with ACI 530 and ACI 530.1.
- C. Perform Work in accordance with SSPWC and CBC-22 as a minimum.
- D. Maintain one (1) copy of each document on site.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather Requirements: In accordance with ACI 530.1 when ambient temperature or temperature of masonry units is less than 40 degrees F.
- B. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

PART 2 - PRODUCTS

2.1 MORTAR AND MASONRY GROUT

- A. Furnish materials in accordance with SSPWC.

2.2 COMPONENTS

- A. Portland Cement: ASTM C150, Type IV, gray color.
- B. Mortar Aggregate: ASTM C144, standard masonry type.
- C. Grout Aggregate: ASTM C404, fine and coarse.
- D. Water: Clean and potable.
- E. Mortar Color: Mineral oxide pigment color as selected by Architect.
- F. Calcium chloride is not permitted.

2.3 MIXES

- A. Mortar Mixes:
 1. Provide Mortar mixes in accordance with Section 201 of the SSPWC.
- B. Mortar Mixing:
 1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.
 2. Achieve uniformly damp sand immediately before mixing process.
 3. Add mortar color and admixtures if approved by Architect/Engineer to achieve uniformity of mix and coloration.
 4. Re-temper only within two hours of mixing.
- C. Grout Mixes:

1. Provide grout mixes in accordance with SSPWC.
- D. Grout Mixing:
1. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476.
 2. Add admixtures; mix uniformly.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Request inspection of spaces to be grouted.

3.2 PREPARATION

- A. Apply bonding agent to existing surfaces.

3.3 INSTALLATION

- A. Install mortar and grout in accordance with ACI 530.1 Specifications for Masonry Structures.

3.4 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Establishing Mortar Mix: In accordance with ASTM C270.
- C. Testing of Mortar Mix: In accordance with ASTM C780 for aggregate ratio and water content, air content, consistency, and compressive strength.
- D. Testing of Grout Mix: In accordance with ASTM C1019 for compressive strength, and in accordance with ASTM C143/C143M for slump.
- E. Test flexural bond strength of mortar and masonry units to ASTM C1357; test in conjunction with masonry unit sections specified.
- F. Test compressive strength of mortar and masonry to ASTM C1314; test in accordance with masonry unit sections specified.

END OF SECTION

SECTION 04 20 16 – REINFORCED UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes hollow concrete masonry units; reinforcement, anchorage, and accessories.
- B. Related Sections:
 - 1. Section 04 05 03 - Masonry Mortaring and Grouting: Mortar and grout.
 - 2. Section 03 20 00 - Steel Reinforcing.
 - 3. Section 09 96 23 - Graffiti-Resistant Coatings.

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 530 - Building Code Requirements for Masonry Structures.
 - 2. ACI 530.1 - Specifications for Masonry Structures.
- B. ASTM International:
 - 1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 2. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - 3. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
 - 4. ASTM A580/A580M - Standard Specification for Stainless Steel Wire.
 - 5. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - 6. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 7. ASTM A951 - Standard Specification for Masonry Joint Reinforcement.
 - 8. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.
 - 9. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
 - 10. ASTM C55 - Standard Specification for Concrete Brick.
 - 11. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.
 - 12. ASTM C140 - Standard Test Methods of Sampling and Testing Concrete Masonry Units.
 - 13. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 - 14. ASTM C744 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units.
- C. National Fire Protection Association:
 - 1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.
- D. Underwriters Laboratories Inc.:
 - 1. UL 723 - Tests for Surface Burning Characteristics of Building Materials.
- E. Standard Specifications for Public Works Construction (SSPWC).
- F. California Building Code, 2022 Edition (CBC-22).

1.3 PERFORMANCE REQUIREMENTS

- A. Concrete Masonry Compressive Strength ($f'm$) as required by the SSPWC.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal requirements.
- B. Shop Drawings: Indicate bars sizes, spacings, locations, reinforcement quantities, bending and cutting schedules, supporting, and spacing devices for reinforcement, accessories.
- C. Product Data:
 - 1. Submit data for masonry units and fabricated wire reinforcement, wall ties anchors, and other accessories.
- D. Design Data: Indicate required mortar strength, specified compressive strength of masonry, masonry unit assembly strength in each plane, supportive test data.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- F. Samples: Submit full-size sample of block and samples of colored mortar for approval. Block and colored joint mortar require approval of the Engineer before they may be used in the concrete masonry work.

1.5 QUALITY ASSURANCE

- A. Inspections shall be requested to Riverside County Facilities Management (FM-PMO).
- B. Perform Work in accordance with ACI 530 and ACI 530.1.
- C. Perform Work in accordance with SSPWC and CBC-22 as a minimum.
- D. Maintain one (1) copy of each document on site.
- E. Codes and standards: In addition to complying with all pertinent codes and regulations, comply with the standards of masonry installation described in "Concrete Block Masonry Inspectors' Manual" published by the Technical Committee of California Concrete Masonry Manufacturers Association

1.6 QUALIFICATIONS

- A. Installer: Company specializing in performing Work of this section with minimum three years documented experience.
- B. Qualifications of workmen:
 - 1. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
 - 2. Provide one skilled journeyman mason who shall be present at all times during execution of this portion of the Work and who shall personally direct all work performed under this Section.

1.7 MOCKUP

- A. Section 01 40 00 - Quality Requirements: Mock-up requirements.
- B. Construct reinforced masonry wall mockup, eight (8) feet long height specified in drawings, including masonry, mortar and accessories, vapor retarder, and preparation for fencing if applicable.
- C. Locate where directed by RivCoParks/Engineer.
- D. Retain accepted mockup as completed Work. All future installments shall meet the general construction and appearance of the approved concrete masonry units.

1.8 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

- B. Convene minimum 1 (one) week prior to commencing work of this section.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. As stated on SSPWC.
- B. Protection: Use all means necessary to protect the materials and final finish of this section before, during and after installation and to protect the work materials of all other trades.
- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the RivCoParks and at no additional cost to the Owner.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather Requirements: In accordance with ACI 530.1 when ambient temperature or temperature of masonry units is less than 40 degrees F.
- B. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

1.11 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate masonry work with fencing and concrete paving operations.

1.12 EXTRA MATERIALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

PART 2 - PRODUCTS

2.1 REINFORCED UNIT MASONRY ASSEMBLIES

- A. Furnish materials in accordance with SSPWC.

2.2 COMPONENTS

- A. Hollow Load Bearing Concrete Masonry Units (CMU): ASTM C90; normal weight.
- B. Pre-faced Concrete Masonry Units: ASTM C744 with resinous surfacing on ASTM C55; Grade N, ASTM C90; ASTM C129; masonry units; normal weight; color as selected.
 - 1. Furnish single faced units.
 - 2. Furnish coved base units at first courser above finished floor.
- C. Concrete Masonry Unit Size and Shape: Nominal modular size as specified on drawings. Furnish special units for 90-degree corners, bond beams.
- D. Split-Face units(if called for by Plans):
 - 1. Split-face concrete masonry units shall conform with ASTM C90, as specified above for concrete masonry units, of modular face dimensions and thicknesses indicated. Face of units shall have special surface texture split-face, scored to dimensional module indicated. Minimum strength requirements shall conform with foregoing specified concrete masonry units.
 - 2. Block shall have integral color as selected by the Landscape Architect from manufacturer's standards
- E. Concrete Block shall be readily identified as to origin. All block used for the entire work shall be

obtained from a single source.

- F. Color shall be as noted on the drawings.
- G. Block type shall be as noted on the Drawings.
- H. All blocks shall be manufactured in one run to insure color uniformity.
- I. Water Content:
 - 1. At the time of the delivery to the Job Site, concrete masonry units shall have a value, in weight of contained water, of not more than 35% of the fully saturated content for the unit tested.
 - 2. Ship all units from the factory and store at the Job Site with all necessary protection to prevent increase of water content from rain and other sources.
 - 3. Certification required by Paragraph 1.05-B above shall show results of tests more than 12 months prior to delivery of concrete masonry units to the Job Site, shall show compliance with the specified values, and shall certify that the mix design, yield per batch, and curing procedures for the units delivered to the Job Site will be equal to those submitted for the test.

2.3 ACCESSORIES

- A. Reinforcing Steel: Type specified in Section 03 20 00.
- B. Anchor Rods: ASTM A307; Grade C; J-shaped or L-shaped; complete with washers and heavy hex nuts; sized for minimum 15-inch embedment; galvanized finish.
 - 1. Hot-Dipped Galvanizing: ASTM A153/A153M.
 - 2. Mechanical Galvanizing: ASTM B695; Class 55.
- C. Mortar and Grout: As specified in Section 04 05 03.
- D. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.
- E. Control Joint Materials: Conform with requirements of ACI 530.1
- F. Water Proofing Admixture.
 - 1. Grout: Provide SIKA RED LABEL or an equal approved by the Owners Representative, in all grout, following manufacturer's recommendations for amount and procedures.
 - 2. Mortar: Provide SIKA RED LABEL at a rate of 1 pint per 100 pounds of cement in all water or an equal approved by the Owners Representative.

2.4 SOURCE QUALITY CONTROL

- A. Inspect products at source conforming to SSPWC.
- B. All units shall be sound and free of cracks, chips or other defects.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify field conditions are acceptable and are ready to receive work.
- C. Verify items provided by other sections of work are properly sized and located.
- D. Verify built-in items are in proper location, and ready for roughing into masonry work.

3.2 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied to other Sections.

- B. Temporary cut slope at back of wall per OSHA and SSPWC requirements.

3.3 INSTALLATION

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form bed and head joints of uniform thickness.
- C. Coursing of Concrete Masonry Units:
 - 1. Bond: Common.
 - 2. Coursing: One unit and one mortar joint to equal eight (8) inches, unless otherwise specified in drawings.
 - 3. Mortar Joints: Concave.
- D. Placing And Bonding:
 - 1. Lay hollow masonry units with face shell bedding on head and bed joints.
 - 2. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
 - 3. Remove excess mortar as Work progresses.
 - 4. Interlock intersections and external corners.
 - 5. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
 - 6. Perform job site cutting of masonry units with proper tools to assure straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- E. Weeps and vents: As specified in drawings.
- F. Joint Reinforcement and Anchorage:
 - 1. Install horizontal joint reinforcement 16 inches oc, unless otherwise specified in drawings.
 - 2. Place joint reinforcement continuous in first joint below top of walls.
 - 3. Lap joint reinforcement ends minimum six (6) inches.
 - 4. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
 - 5. Embed anchors embedded in concrete.
- G. Grouted Components:
 - 1. Reinforce bond beam as specified in drawings.
 - 2. Lap splices bar diameters required by code.
 - 3. Support and secure reinforcing bars from displacement.
 - 4. Place and consolidate grout fill without displacing reinforcing.
- H. Reinforced Masonry:
 - 1. Place reinforcing, reinforcement bars, and grout as indicated on Drawings.
 - 2. Splice reinforcement in accordance with Section 03 20 00.
 - 3. Support and secure reinforcement from displacement.
 - 4. Place and consolidate grout fill without displacing reinforcing.
 - 5. Place grout in accordance with ACI 530.1 Specification for Masonry Structures.
- I. Control And Expansion Joints:
 - 1. Install control and expansion joints at the following maximum spacings, unless otherwise indicated on Drawings:
 - a. Exterior Walls: 20 feet on center and within 24 inches on one side of each interior and exterior corner.
 - b. At changes in wall height.
 - 2. Do not continue horizontal joint reinforcement through control and expansion joints.
 - 3. Form control joint with sheet building paper bond breaker fitted to one side of hollow contour end of block unit. Fill resultant elliptical core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.
 - 4. Size control joint in accordance with Section 07 90 00 for sealant performance.
 - 5. Form expansion joint by omitting mortar and cutting unit to form open space.
- J. Built-In Work:

1. As work progresses, install built-in anchor bolts, plates, and posts and other items to be built-in the work and furnished by other sections.
 2. Install built-in items plumb and level.
 3. Do not build in materials subject to deterioration.
- K. Cutting And Fitting:
1. Cut and fit for pipes posts or other accessories as shown on plans. Coordinate with other sections of work to provide correct size, shape, and location.
 2. Obtain Architect/Engineer's approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.
- L. Install Work in accordance with SSPWC and CBC-22 as a minimum.

3.4 ERECTION TOLERANCES

- A. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.
- B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- C. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- E. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft.
- F. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.
- G. Maximum Variation for Steel Reinforcement:
 1. Install reinforcement within the tolerances specified in ACI 530.1 for foundation walls and retaining walls.
 2. Plus or minus 1/2 inch when distance from centerline of steel to opposite face of masonry is 8 inches or less.
 3. Plus or minus 1 inch when distance is between 8 and 24 inches.
 4. Plus or minus 1-1/4 inch when distance is greater than 24 inches.
 5. Plus or minus 2 inches from location along face of wall.

3.5 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by FM-PMO IOR.
- B. Concrete Masonry Units: Test each type in accordance with ASTM C140.

3.6 CLEANING

- A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Replace defective mortar. Match adjacent work.
- D. Clean soiled surfaces with cleaning solution.
- E. Use non-metallic tools in cleaning operations.

3.7 SEALER/COATINGS

- A. Apply per plans and Section 09 96 23 Graffiti Resistant Coatings.

3.8 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect exposed external corners subject to damage.

- C. Protect base of walls from mud and mortar splatter.
- D. Protect masonry and other items built into masonry walls from mortar droppings and staining caused by mortar.
- E. Protect tops of masonry work with waterproof coverings secured in place without damaging masonry. Provide coverings where masonry is exposed to weather when work is not in progress.

END OF SECTION

SECTION 04 22 00 – CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the "Standard Specifications for Public Works Construction," latest edition, shall apply except as modified herein.

1.2 SCOPE

- A. Work of this Section includes all material, equipment, and labor incidental to completing all Concrete Unit Masonry work complete as indicated on the Drawings and designated herein, including but not limited to, the following:
 - 1. Concrete unit masonry.
 - 2. Grouting of masonry.
 - 3. Installing reinforcing steel in masonry.
 - 4. Mortar.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- 1. Concrete Reinforcement: Section 03 20 00
- 2. Concrete: Section 03 30 00

1.4 STANDARDS

- A. Materials and workmanship shall conform to the requirements of all applicable building codes, except that requirements specified herein shall govern where they exceed those in the Building Code. Refer and comply with the provisions of the following Standards, except as otherwise shown or specified:

"Concrete Block Masonry Inspectors' Manual" published by the Technical Committee of California Concrete Masonry Manufacturers Association.

1.5 QUALITY ASSURANCE

- A. The Contractor shall maintain, continuously, one skilled journeyman mason, who shall be present at all times during execution of this portion of the work and who shall direct all work performed under this Section.
- B. Use adequate numbers of skilled workmen who are thoroughly trained and experience in the necessary crafts and who are completely familiar with the specific requirements and the methods needed for proper performance of the work of this Section.
- C. Contractor shall verify drawing dimensions with actual field conditions. Inspect related work and adjacent surfaces. Report to the Landscape Architect all conditions which prevent proper execution of this work.

1.6 SUBMITTALS

- A. Samples: Within ten (10) calendar days after award of this Contract and before any concrete unit masonry materials are delivered to the job site, submit one sample of each proposed concrete masonry unit to the Landscape Architect for recommended approval.
- B. Certification: Prior to delivery of concrete masonry materials to the job site, deliver to the Parks & Recreation Department a letter from the manufacturer of the propose masonry units certifying that all such units to be delivered to the job site are in strict accordance with the provisions of this Section.

1.7 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Park and Recreation Department and at no additional cost to the County.

PART 2 - MATERIALS

- A. All products shall conform with Section 202 of the "Standard Specifications" except as modified herein.

2.1 "OR APPROVED EQUIVALENT" PRODUCTS

- A. This project is a Public Works project. Sole sourcing of material is not allowed. Any reference or call out on the plans and/or in the specifications to a specific manufacturer shall be interpreted as "or approved equivalent". The County Engineer's and Landscape Architect's approval is required as to whether or not a product meets the County's standard to be an approved equivalent. Bidders shall use the pricing for the products as specified to avoid risks of disapproval. No substitutions will be considered prior to the award of the contract.

2.2 CONCRETE BLOCKS

- 1. All units shall be sound and free of cracks, chips, or other defects.
 - 2. Sizes and shapes of the units shall be as required to construct the work as shown on the Drawings, using open-end units with closed-end units for openings and corners. Where soaps are required or indicated, they shall be cut from full-sized standard units at the site.
 - 3. Concrete block shall be readily identified as to origin. All block used for the entire work shall be obtained from a single source and shall be manufactured in one run to insure uniformity of color.
 - 4. Type and color shall be as noted on the Drawings.
- B. Water Content:
 - 1. At the time of the delivery to the job site, concrete masonry units shall have a value, in weight of contained water, of not more than 35% of the fully saturated content for the unit tested.
 - 2. Ship all units from the factory and store at the job site with all necessary protection to prevent increase of water content from rain and other sources.
 - 3. Certification required by Paragraph 1.06-B above shall show results of tests made not more than twelve (12) months prior to delivery of concrete masonry units to the job site, shall show compliance with the specified values, and shall certify that the mix design, yield per

batch, and curing procedures for the units delivered to the job site will be equal to those submitted for the test.

2.3 MORTAR

- A. All mortar shall be Class D conforming to Section 202-3 of the "Standard Specifications," color to match block color. Mortar shall contain a waterproofing admixture.

2.4 GROUT

- A. Provide transit-mixed grout complying with ASTM C94, and conforming to Section 202-3 of the "Standard Specifications," and consisting of one part Portland Cement, two and one-half (2-1/2) parts sand, two (2) parts pea gravel and adequate water to produce a concrete of approximately ten inches (10") slump. Grout shall contain a waterproofing admixture.

2.5 WATER PROOFING ADMIXTURE

- A. For all walls exposed to weather provide Sika Red Label, or County approved equal, in all grout and mortar. Follow Manufacturer's recommendations for application rate in grout. Apply at a rate of 1 pint per 100 pounds of cement in all mortar.

2.6 REINFORCEMENT STEEL

- A. Provide reinforcement steel as indicated on the Drawings and in conformance with the requirements of the "Uniform Building Code," latest edition.

2.7 FORMS

- A. All forms and shoring shall be thoroughly braced and sufficiently strong to safely carry, without deflection, all dead loads and live loads to which they may be subjected. Shoring shall be in place not less than ten (10) days. Wide grout joints in pier of jambs shall be formed with wood wherever necessary to hold the grout.

2.8 OTHER MATERIALS

- A. All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be as selected by the Contractor subject to the recommended approval of the Landscape Architect and County.

PART 3 - EXECUTION

- A. All work shall conform with Section 303 of the "Standard Specifications" except as modified herein.

3.2 GENERAL

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

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

3.3 MIXING MORTAR

- A. Use a mechanical mixer of one sack minimum capacity. Mix mortar for at least three (3) minutes after all materials have been added. Mix only as much mortar as can be used in one (1) hour after water has been first mixed into the batch, Do not re-temper mortar. Use calibrate measuring box, shovel measurements will not be allowed.

3.4 INSTALLATION

- A. General: Lay up all walls in running bond, plumb level and true to the lines and dimensions shown on the Drawings, with minimal cutting of block units or use of odd joint sizes or bond. Do not use chipped or broken units. If any such units are discovered in the finished wall, the Landscape Architect or County may require their removal and replacement with new units at no additional cost to the County. Contractor shall core all plumbing, breaking of masonry unit will not be allowed.
- B. Dampening:
 - 1. Store all masonry units on the job so that they are kept off the ground and are protected from the rain.
 - 2. Wetting the units will not be permitted, except when hot and dry weather exists causing the units to be warm to the touch and then only the surface may be wetted with a light fog spray.
 - 3. Laying Up:
 - 4. Place all units in mortar with full shoved bed and head joints.
 - 5. Align with vertical cells to maintain a clear, unobstructed systems of flues.
 - 6. Hold racking to an absolute minimum.
 - 7. Provide clean-outs at the bottom of each cell for removing mortar dropping. Do not close the clean-outs until they have been inspected for recommended approval by the Landscape Architect or County.
 - 8. Coordinate with other trades to insure proper installation of inserts into wall (e.g., flanges for wrought iron fencing, posts for chain link fencing, etc.)
- C. Reinforcements:
 - 1. Install all reinforcement as indicated on the Drawings. Fully embed reinforcement in grout, not in mortar or mortar joints. Provide all required metal accessories to ensure accurate alignment of steel during grout filling operations.
 - 2. The dowels shall be placed in the center of the masonry wall unless otherwise detailed. Dowels shall be placed so that they align with the vertical wall steel.
 - 3. All steel reinforcing shall be lap or weld spliced. Provide a minimum forty (40) diameter lap splice.
- D. Tooling:
 - 1. Tool all joints to a dense, smooth, flush surface.
- E. Grouting:
 - 1. Timing: Do not grout until masonry has cured at least twenty-four (24) hours.
 - 2. Fill all block cells solid with grout.

3.5 TESTS

- A. All tests shall be made by an independent laboratory, as selected by the Parks Department. At the beginning of all masonry work, at least one test sample of mortar and grout shall be taken on three (3) successive working days.
- B. Mortar samples shall be taken from the surface soon after spreading. Test cylinders shall be two inches (2") in diameter and four inches (4") high. When tested at twenty-eight (28) days the compressive strength shall not be less than 1800 pounds per square inch.
- C. Grout specimens shall be cast in block cell using masonry units taken from the site. Grout shall be poured into the sample units and puddled, as nearly as possible, in the same manner as that being poured into the wall. Specimens shall remain in the block for three (3) days. Line block with a thin paper towel to permit removal of the specimen without damage. This specimen shall be tested for compression at twenty-eight (28) days and shall develop a minimum ultimate compressive strength of 2000 pounds per square inch.
- D. Concrete Block shall be tested in accordance with "Standard Methods of Sampling and Testing Concrete Units." ASTM Des. C-140. The average compressive strength shall not be less than 1000 pounds per square inch on the gross area.

3.6 CLEAN-UP

- A. Contractor shall leave exposed surfaces clean and free of surplus mortar or foreign material. Exercise care to keep grout and mortar droppings off finished surfaces.

3.7 PAYMENT TERMS

- A. Payment for concrete unit masonry will be at the lump sum price bid for masonry. Payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work in concrete unit masonry as herein specified,. A 5% retention shall apply to all masonry work.

END OF SECTION

SECTION 05 50 00 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the "Standard Specifications for Public Works Construction," latest edition, shall apply except as modified herein.

1.2 SCOPE

- A. Work of this Section includes all material, equipment, and labor necessary for and incidental to completing all Metal Fabrication work, as indicated on the Drawings, as reasonably implied or as designated herein, including, but not limited to, the following:
 - 1. Wrought Iron Fencing
 - 2. Miscellaneous Metal Fabrications

1.3 RELATED WORK SPECIFIED ELSEWHERE

- 1. Concrete: Section 03 30 00
- 2. Site Furnishings: Section 32 33 00

1.4 QUALITY ASSURANCE

- A. The Contractor shall use adequate numbers of skilled workers who are trained and experienced in the necessary crafts and who are familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Welding: Perform all shop and field welding required in connection with the work of this Section, adhering of the American Welding Society.

1.5 SUBMITTALS

- A. The following are to be submitted to the Landscape Architect at the pre-construction conference.
 - 1. Complete materials list of all items proposed to be furnished and installed under this Section.
 - 2. Manufacturer's specifications and other data required to demonstrate compliance with specified requirements.
 - 3. Shop Drawings of all items proposed to be furnished and installed under this Section. Include plans, sections, elevations, and details as needed.
 - 4. Templates for anchor and bolt installation by other trades.

1.6 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the work and materials of all other trades.

- B. Replacement: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Park and Recreation Department.

PART 2 - MATERIALS

All materials shall conform with Section 206 of the Standard Specifications except as modified herein.

2.1 "OR APPROVED EQUIVALENT" PRODUCTS

- A. This project is a Public Works project. Sole sourcing of material is not allowed. Any reference or call out on the plans and/or in the specifications to a specific manufacturer shall be interpreted as "or approved equivalent". The City Engineer's and Landscape Architect's approval is required as to whether or not a product meets the City's standard to be an approved equivalent. Bidders shall use the pricing for the products as specified to avoid risks of disapproval. No substitutions will be considered prior to the award of the contract.

2.2 MATERIALS AND COMPONENTS

- A. Metal surfaces, general: For fabrication of the work of this Section which will be exposed to view, use only those materials which are smooth and free from surface blemishes including pitting, seam marks, roller marks, rolled trade name, and roughness.
- B. Standards: All materials shall comply with:
 1. Steel plates, shapes, and bars: ASTM A36.
 2. Steel plates to be bent or cold formed: ASTM A283, Grade C.
 3. Steel tubing, hot-formed, welded, or seamless: ASTM A501.
 4. Steel bars and bar-size shapes: ASTM A306, Grade 65, or ASTM A36.
 5. Cold-finished steel bars: ASTM A108, grade as selected by the fabricator.
 6. Cold-rolled carbon steel sheets: ASTM A336.
 7. Galvanized carbon steel sheets: ASTM A526, with ASTM A525, G90 zinc coating.
 8. Stainless steel sheets: Type 302/304 of American Iron and Steel Institute, 24-gauge, with number 4 finish.
 9. Gray iron castings: ASTM A48, Class 30.
 10. Malleable iron castings: ASTM A47, grade as selected by the fabricator.
 11. Steel pipe: ASTM A53, type as selected, Grade A, black finish unless galvanizing is required, standard weight (Schedule 40) unless otherwise indicated.
 12. Concrete inserts: Threaded or wedge type, galvanized ferrous castings, either malleable iron ASTM A47 or cast steel ASTM A27. Provide bolts, washers, and shims as required, hot-dip galvanized, ASTM A153.
 13. Non-shrink nonferrous grout: CE CRD C588.

2.3 FASTENERS

- A. General: Provide zinc-coated fasteners for exterior use and where built into exterior walls. Select fasteners for the type, grade, and class required.
- B. Standards: All fasteners shall comply with :
 1. Bolts and nuts: regular hexagon-head type, ASTM A307, Grade A, Galvanized.
 2. Lag bolts: square-head type, Fed. Spec. FF-B-561, Galvanized.
 3. Machine screws: cadmium plated steel Fed. Spec. FF-S-92.
 4. Wood screws: flat-head carbon steel, Fed. Spec. FF-W-92.
 5. Plain washers: round, carbon steel Fed. Spec. FF-W-92.

6. Masonry anchorage devices: lead expansion shield, Fed. Spec.. FF-S-325.
7. Toggle bolts: tumble-wing type, Fed. Spec. FF-B-588, type, class and style as required.
8. Lock washers: helical spring type carbon steel, Fed. Spec. FF-W-84.

2.4 PAINT

- A. Metal primer paint:
 1. Use mixed pigment, alkyd varnish, linseed oil paint complying with Fed. Spec. TT-P-86, Type II; or iron oxide, raw linseed oil, alkyd paint, complying with SSPC Paint 2-64, or basic silico chromate base iron oxide, linseed oil, alkyd paint complying with Fed. Spec. TT-P-615, Type II.
 2. Primer selected shall be compatible with finish coats of paint. Coordinate selection of metal primer with actual finish paint specified.
- B. Galvanizing repair paint: Use a high zinc oxide-zinc dust content paint for re-galvanizing welds in galvanized steel, complying with Military Specifications MIL-P-15145.

2.5 FABRICATION

- A. Workmanship:
 1. Use materials for size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in the finished product.
 2. Work to dimensions shown on the plans, or as shown on the approved Shop Drawings, if submitted, using proven details of fabrication and support.
 3. Use type of materials shown or specified for the various components of the Work.
 4. Form exposed work true to line and level, with accurate angles and surfaces and with straight sharp edges.
 5. Ease the exposed edges to a radius of approximately 0.8 mm (1/32") unless otherwise shown.
 6. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
 7. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections grind exposed welds smooth and flush; match and blend with adjoining surfaces.
 8. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown or, if not shown, use Phillips flat-head (counter-sunk) screws or bolts.
 9. Provide for anchorage of the type shown. Coordinate with supporting structure. Fabricate and space the anchoring devices to provide adequate support for intended use.
 10. Cut, reinforce, drill, and tap miscellaneous metal work as indicated to receive finish hardware and similar items.
- B. Galvanizing: Provide a zinc coating for those items shown or specified to be galvanized, as follows:
 1. ASTM A153 for galvanizing iron and steel hardware.
 2. ASTM A123 for galvanizing rolled, pressed, and forged steel shapes, plates, bars, and strip 3mm (1/8") thick and heavier.
 3. ASTM A386 for galvanizing assembled steel products.
- C. Shop Painting:
 1. Remove oil, grease, and similar contaminants in accordance with Standard Specifications, Section 310.
 2. Clean off heavy rust and loose mill scale and other deleterious materials before applying shop coat in accordance with Standard Specifications, Section 310-2.

3. Immediately after surface preparation, brush or spray on primer in accordance with manufacturer's recommendations, and at a rate to provide the recommended dry film thickness.
4. Shop paint miscellaneous metal work, except members or portions of members to be embedded in concrete or masonry, surfaces and edges to be field welded, and galvanized surfaces, unless otherwise specified.
5. Use painting methods which will result in full converge of joints, corners, edges, and exposed surfaces.
6. Apply one shop coat to fabricated metal items; except, apply two shop coats to surfaces inaccessible after assembly or erection. Change color of second coat to distinguish it from the first coat.

2.6 MISCELLANEOUS METAL FABRICATIONS

- A. Rough hardware:
 1. Provide bent or otherwise custom fabricated bolts, plates, anchors, hangars, dowels, and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete and other structures.
 2. Manufacture or fabricate items of sizes, shapes, and dimensions required.
 3. Provide malleable iron washers for heads and nuts which bear on wood structural connections; elsewhere furnish steel washers.

PART 3 - EXECUTION

- A. All work shall conform with Section 304 of the "Standard Specifications," except as modified herein.

3.2 INSPECTION

- A. Examine the areas and conditions under which miscellaneous metal items are to be installed, and correct conditions detrimental to the proper and timely completion of the work. Do not proceed until satisfactory conditions have been corrected.

3.3 PREPARATION

- A. Furnish setting Drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, anchor bolts, and miscellaneous items having integral anchors, which are to be embedded in concrete construction. Coordinate delivery of such items to project site.

3.4 INSTALLATION

- A. Fastening to in-place construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction including threaded fasteners for concrete inserts, toggle bolts, wood screws, and other connectors as required.
- B. Cutting, fitting, and placement:
 1. Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications.
 2. Set work accurately in location, alignment, and elevation, and make plumb, level, true and free from rack, measured from established lines and levels.

3. Provide temporary bracing or anchors in formwork for items which are to be built into concrete similar construction.
 4. Fit exposed connections accurately together to form tight hairline joints.
 5. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations.
 6. Grind exposed joints smooth, and touch up shop paint coat. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections, except where required for vandal resistant anchorage.
- C. Field welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of weld made and methods in correcting welding work. Tack weld all exposed fasteners to prevent unauthorized removal.
- D. Touch-up painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same materials as used for shop painting. Apply by brush or spray to provide minimum dry film thickness of 0.051 mm (2.0 mils).

3.5 CLEAN-UP

- A. Upon completion of the work of this Section, clean up the project work site removing all unused materials, trimmings, cuttings, metal shavings, burrs, or bits and all other miscellaneous debris and trash that results from this work. Wipe down all fabricated items and adjacent improvements to remove cutting oil, grease, or other soil and stains that may result from this work.

END OF SECTION

SECTION 26 00 00 – ELECTRICAL

PART 1 - GENERAL REQUIREMENTS

1.1 SCOPE OF WORK

- A. The work covered by this section consists of furnishing and installing all I, materials, equipment, fixtures and performing all labor and operations for complete and operable systems.
- B. Provide all new materials, unless noted otherwise, of the best quality, and in perfect condition, and materials of the same make and quality throughout the work and as hereinafter specified. Comply with the requirements of ASTM, NEMA, U.L., and NBFM for materials and equipment.
- C. The intent of these specifications is to establish a standard of quality of materials installed. Include materials as specified without exception in the Base Bid. Submit for approval any proposed substitution, complete descriptive, technical, and cost comparison data and test reports. Do not furnish or install any substitute items without written approval at the time of contract signing. Reimburse the Owner for any additional engineering charges and for any changes in the work of other trades resulting from substitutions. List proposed substitutions on the Bid Form, stating the reasons for substitution. When requested by the Architect or Electrical Engineer, samples, electrically wired at 120V. with plug, or system demonstrations of both specified and proposed items will be submitted for inspection at the Electrical Engineer's office and at a time convenient to all concerned parties.
- D. Where a substitution alters the design or space requirements indicated on the plans, Contractor is responsible for all additional cost for Engineering to revise plans.
- E. Verifying Drawings and Job Conditions:
 - 1. Examine all drawings and specifications in a manner to be fully familiar of all work required.
 - 2. Visit the site and verify existing conditions. Where existing conditions differ from drawings, make adjustments and allowances for all necessary equipment to complete all parts of the drawings and specifications.
- F. Shop Drawings:
 - 1. Submit drawings in six sets accompanied by letter of transmittal listing the number and dates of the drawings submitted.
 - 2. Mark the drawings submitted with the name of the project, numbered consecutively, and bearing approval as evidence that the drawings have been checked. Any drawings submitted without this approval will be returned for resubmission.
 - 3. Submit Shop drawings on, but not limited to, the following:
 - a. Panelboards
 - b. Transformer
 - c. Time Switch
 - d. Light Fixtures
 - e. Distribution Panel
 - f. Electrical Product List
- G. Drawings of Record:

Provide and keep up-to-date, a complete record set of blue line prints. Show every change from the original drawings. Keep this set of prints on the job site, and use only as a record set. Do not make changes in the layout without definite instruction in each case. Obtain a set of Contract Drawings from Architect and incorporate all changes as noted on the record set of prints. Deliver this set to the Architect upon completion and acceptance of work.

H. Accuracy of Plans and Specifications:

Plans and/or specifications showing deviation from standard practice methods or from compliance with codes, and/or any omissions, does not relieve the responsibility of furnishing, making or installing all items required by code and/or intended for the function of the system.

I. Permits, Fees and Insurance:

Obtain and pay for all insurance, permits, etc. necessary for this Contract.

J. Codes and Regulations:

All work performed under this Section of the Specifications complies with the rules and regulations of the Division of Industrial Safety, State of California, as set forth in the latest edition of the Electrical Safety Orders, the National Electrical Code, NFPA, and all rules and regulations of local codes having jurisdiction, including the presently adopted edition Title 21 and 24 California Administrative Code.

K. Testing and Adjustment:

Test all circuits, outlets, switches, lights, motors, circuit breakers and any other electrical equipment, upon completion of all electrical work.

L. Guarantees of Materials and Workmanship:

Furnish and install all materials under this Contract, new and free from all defects, and guaranteed for a period of two years from the date of acceptance of the work. Should any trouble develop during this period due to defective material or faulty workmanship, furnish all necessary labor and materials to correct the trouble without additional cost to the Contract. Correct any defective material or inferior workmanship noticed at the time of installation immediately, to the satisfaction of the Architect.

M. Removal of Rubbish:

Remove rubbish, excess materials, tools or equipment related to this portion of the work, frequently during construction and upon completion of the work.

N. Drawings and Specifications:

1. The electrical drawings are considered as part of these specifications, and any work or materials shown on the drawings and not mentioned in the specifications, or vice versa, shall be as if specifically mentioned in both.

2. The data herein specified and shown on the drawings is as exact as could be prepared, but their extreme accuracy is not guaranteed. The drawings and specifications are for assistance and guidance. The installation is essentially as shown and specified. The exact location of the equipment, material, apparatus and devices as well as the distances and levels, are more or less governed by the physical conditions and arrangements of the building. Accept this Contract with this understanding.

3. Make minor changes, when ordered by the Architect, accommodating the installation of the work with other sections of the Contract without additional cost to the Contract.

O. Safety Conditions:

It is the Contractor's responsibility to prevent any damages to personnel and/or property resulting from contact with new or existing energized circuits, switches, circuit breakers, or other electrical apparatus. All electrical work to be constructed with electrical systems de-energized in the area of work.

P. Final Inspection and Acceptance:

After all requirements of the specifications and drawings have been fully completed, a representative of the Owner will inspect the work. Provide competent personnel to demonstrate the operation of any item or system involved to the complete satisfaction of each representative.

PART 2 - PRODUCTS

2.1 MAIN ELECTRICAL SERVICE AND DISTRIBUTION/MOTOR CONTROL CENTER EQUIPMENT:

- A. Type and size of the Main Service and Distribution panels is as indicated on the drawings.
- B. The distribution panels will consist of a completely enclosed, self-supported structure, of the required number of formed vertical panel sections, as shown on the plans. Bolt all fastenings between vertical panel sections to provide flexibility during installation. Completely enclose the gear on the front sides, top and rear with sufficient louvered openings for proper ventilation. Provide bolted frames and insulating block to support the main horizontal bus for short circuit stresses as indicated on the drawings.
- C. All buses will be 100% rated, made with tin plated copper bars sized for a current density of not more than 1000 amperes per square inch. Provide a 1/4" x 2" copper ground bus within 12" of neutral bus and connect with a removable link. Where copper bus is shown, bus shall be sized for a maximum current density of 1000A per square inch and be provided with silver plated bus connections.
- D. Identify each device as to what function it performs by an engraved plastic nameplate attached adjacent to the switch or device. Nameplate subject to Architect's approval.
- E. Gray enamel finish on the main service and distribution panel inside and outside. Rustproof all steel parts before painting.
- F. The manufacturer producing the switchboard must be regularly engaged in the construction of this type of equipment, being equal to Westinghouse, RSE/Sierra, General Electric, or ITE Siemens.
- G. Fusible switches, 800A or greater indicated as 100% rated shall comply with UL 977, bolted pressure type, suitable for 100% rated.
- H. Provide weatherproof enclosure

2.2 PANELBOARDS:

- A. Provide the automatic circuit breaker type, quick-make and quick-break panelboards. Provide wiring gutter sides, top and bottom.

- B. Provide panelboards from the same manufacturers as the main switchboard; type, mounting, and size as noted on the drawings with silver-plated copper bussing.
- C. Where space is called for on the panelboard schedules, provide space and mounting for future circuit breaker installation as indicated.
- D. Use trims having doors equipped with flush type combination lock and catch, two milled type keys supplied with each panel, all locks are keyed alike. Provide a clear covered directory frame with a typed identification card, indicating type of circuit and location, in accordance with final circuitry and panel designation on each door. Completely fill in all panel directories, using actual connections, Owners designations or other factual information. Key all doors to Yale LL803, or as directed by Owner.
- E. Where called for on the drawings, provide a separate compartment within the panelboards for contactors and/or time switches.

2.3 CIRCUIT BREAKERS:

Provide circuit breakers with inverse time characteristic thermal and magnetic tripping elements, with an interrupting capacity of not less than 10,000 amperes, UL labeled, NEMA rated, molded case type. Use common trip single handle multi-pole breakers. Handle extensions are not permitted. All circuit breakers will have covers sealed on non-interchangeable trip breakers and trip unit covers sealed in interchangeable trip breakers to prevent tampering. Be sure the circuit breaker current rating markings clearly visible after breaker is installed. One manufacturer for all circuit breakers for a given panel. Provide bolt-on circuit breakers unless specifically noted on electrical drawings.

2.4 CONDUIT AND FITTINGS:

- A. Rigid Conduit (RGS): Hot dipped galvanized or sherardized steel. Republic Steel Co. or approved equal. Intermediate metal conduit may be used, where CEC allows, in lieu of RGS.
- B. Electrical metallic tubing (EMT): Welded, electro-galvanized thin wall steel tubing. All couplings are gland compression type.
- C. Non-metallic conduit (PVC): Polyvinyl chloride Schedule 40 or 80. Install a copper ground wire, sized per National Electrical Code, in all non-metallic conduit power raceways. Use PVC in underground installations only.
- D. Liquidtight Flexible Metal Electrical Conduit: Hot-dipped galvanized steel with exterior, molded polyvinyl jacket. Use for all final connections to all vibrating equipment, transformers and the like. 18" maximum. Provide a code sized ground wire.
- E. Flexible metallic steel tubing: Liquid tight without a nonmetallic jacket. Use as allowed by code and where permitted by this Specification, section 3.06.C. Provide a code sized ground conductor.
- F. Condulet Type Fittings: As manufactured by Crouse Hinds Company, Appleton Electric Company or Pyle National or approved equal, smooth inside and out, taper threaded with integral bushings.

2.5 CONDUCTORS:

- A. Provide copper conductors, 600 volt A.C. unless noted otherwise. Aluminum conductors are not permitted.

- B. Use THWN conductors for underground and damp locations, THHN for dry areas.
- C. Deliver conductors to the site in unbroken packages, marked with the manufacturer's name, date of manufacture, voltage and classification letters. Use only wire recently manufactured (10 months or less).
- D. Provide signal service and low voltage control conductors as specified or noted on the drawings.
- E. No conductor supplying 120 volts or more will be smaller than No. 12 AWG unless otherwise noted on the drawings.
- F. Fixture wire to comply with latest requirements of the National Board of Fire Underwriters. The carrying capacity of the wire as per the latest requirements of the National Electrical Code. No fixture wire may be smaller than #18 gauge. Protect wiring with tape or tubing at all points where abrasion is likely to occur.
- G. Install all conductors of each electrical system in an approved raceway. Factory assemblies, non-metallic/pliable/corrugated raceways, type UF cable or multi-conductor assemblies are not approved.
- H. Use solid conductor, size #10 AWG and smaller, stranded for #8 AWG and larger.

2.6 JUNCTION AND PULL BOXES:

Above grade level, provide galvanized junction and pull boxes with removable covers, secured with machine screws. The sizes of all boxes determined by the number and size of conductors entering the box, and by the sizes of conduit terminating in the box. All boxes conform to the applicable Electrical Safety Orders, State of California. Pullboxes flush with grade shall be concrete, with bolt down concrete or steel covers, per plans, with engraved or beadweld identification.

2.7 OUTLET BOXES:

- A. Provide galvanized outlet boxes and covers, one piece pressed steel, knockout fixture outlets equipped with 3/8" fixture studs and plaster rings.
- B. Where standard boxes are not suitable, provide boxes of special design to fit space.
- C. Cast aluminum or cast iron for outlet boxes exposed to weather, in damp locations, or surface mounted with threaded hubs for conduit connections; cover made watertight with gasket and non-ferrous screws.
- D. Provide outlet boxes in plaster covered walls with raised covers or plaster rings to finish flush with plaster.

2.8 RELAYS:

Install control relays for automatic controls or for interlocking as indicated in the drawings. Provide relays with the number and type of poles and with operating coils as indicated. Equip relays with contacts rated not less than 15 amperes for continuous inductive load, unless otherwise shown or specified. Rate operating coils for continuous duty at the operating voltage shown on the drawings.

2.9 FUSES:

- A. Provide (in a location designated by the Owner) a spare fuse cabinet with the following:
 - 1. Nameplate "spare fuses".
 - 2. Necessary fuse holders.
 - 3. Spare set of each size and type of fuses.
- B. Provide dual element fuses for all 600 volt or lower voltage requirements unless otherwise indicated or specified. Where fuses are not made for this application, furnish Buss "Limitron" or approved equal fuses.
- C. Provide Bussman Fuses as indicated on plans.
- D. Replace fuses "blown" or damaged during construction with new fuses of proper rating and type for the particular use, replace spare sets.

2.10 LIGHTING FIXTURES:

Furnish, install and connect lighting fixtures of type designed on the plans.

- A. Verify all fixture locations with Landscape Architectural drawings prior to rough in.
- B. Where there is conflict in fixture quantities on any of the plans the greatest amount will prevail. The description of the lighting fixture supersedes the catalog number and is to be furnished and installed with type to fit description.

2.11 RECEPTACLES:

- A. Convenience outlets consist of a duplex convenience receptacle mounted in an outlet box in the wall, flush with the finish surface and complete with plate.
- B. Receptacles for convenience outlets: Standard duplex, 3-wire grounding type 15 ampere, 125 volt, Hubbell, Bryant, Leviton or Arrow Hart #5262 white, unless otherwise indicated.
- C. Weatherproof G.F.C.I. receptacles: 15 ampere, 2P 3-wire grounding type, 125 volt with grey fiberglass lift cover plate, Hubbell #GF5262, unless otherwise shown on plans.

2.12 NAMEPLATES:

Shall be micarta or lamacoid plate, 1/8" thick and have approved size, with beveled edges and engraved white letters on black background. Provide nameplates for all items of electrical equipment as well as circuits in the service distribution and power distribution panelboards; lighting distribution panelboards; separately mounted motor starting switches; disconnect switches; motor control pushbutton stations and other similar devices. Each nameplate as approved by the Architect. Use two machine screws for attachment. Cement/adhesive is not approved.

2.12 TRANSFORMER:

- A. Provide copper transformers manufactured with the minimum following attributes:
- B. Provide insulation with temperature rise not exceeding 150 degrees C, under full load, in an ambient temperature of 40 degrees C.

- C. Provide transformers manufactured in accordance with current standards of IEE, ANSI, and NEMA, and provide UL listing and label.
- D. Install the transformer case on suitable vibration isolators, and connect on primary and secondary sides with minimum of 18" of liquidtight flexible metallic conduit.
- E. Where drawings specify transformers suitable for non-sinusoidal current load of specified "K Factor", the transformer shall be U.L. listed specifically for that application.

PART 3 - EXECUTION

- 3.1 If construction of building reveals that any part of the Electrical Work would not be readily accessible if installed according to drawings, notify the Architect before proceeding with such installation.
- 3.2 All concrete work such as pull boxes, raised pads, conduit envelopes and other areas where affecting Electrical Work are the responsibility of the Electrical Contractor.
- 3.3 Coordinate layout and installation of electrical work with the overall construction schedule and work schedules of various trades to prevent delay in completion of the project.

- A. Verify dimensions and information regarding accurate location of equipment, structural limitations, and finish with other affected sections.

- B. Job Conditions:

The drawings do not always show offsets, bends, special fittings or junctions or pull boxes necessary to meet job conditions. Provide the items as required at no cost to the Owner.

- C. Weatherproof Equipment:

Use weather resistant electrical devices or equipment located in damp, semi-exposed areas. Comply with NEMA Type 3R requirements for enclosures.

- D. Where devices are shown diagrammatically in the same location, neatly group them together in a reasonable manner. Provide one-piece plate where such is manufactured.

- 3.4 Equipment requiring electrical under other sections is part of the Contract. Work includes all necessary connections.

- 3.5 EXCAVATION AND BACKFILLING:

Excavate and backfill in accordance with section in these documents covering that work.

- 3.6 CONDUIT:

- A. Install all conduit concealed, except where specifically indicated as exposed. Use rigid galvanized steel or I.M.C. for all exposed conduit. Paint with two coats to match adjacent surroundings, if viewed by the public.

- B. Use galvanized rigid steel on all conduit installed in concrete and masonry walls, 3/4 inch trade size minimum, unless otherwise specified and/or noted on the plans. Verify conduit runs in concrete slab, prior to placement. Otherwise, do not run conduits in slabs.

- C. All conduit installed in the dry walls or dry ceilings of the building structures, shall be steel tube (EMT), except that in certain locations and for certain runs where it is impractical to install EMT, and where permission to do so has been given by the Architect, galvanized flexible steel conduit may be used, with a code sized ground conductor.

- D. Run conduit so as not to interfere with or contact other piping, fixtures or equipment. Maintain 6" separation from water piping.
- E. Cut the ends of all conduit square and carefully ream out to full size, and shoulder in fitting.
- F. No running threads will be permitted in locations exposed to the weather, in concrete or underground. Use special watertight union fittings in these locations.
- G. Use PVC Schedule 40 or 80 for all underground conduits. Install all underground conduit at a depth of not less than 24 inches below the final finish grade, unless under concrete slabs or otherwise noted and/or specified. Provide metallic high voltage tape buried 12" above conduit, except under floor slab or under concrete walk, in which case, install 6" below bottom of slab. Use IMC for all horizontal and vertical sweeps or risers with factory applied PVC coating. Verify with serving utilities for service conduits, bends, depth below grade, backfill, etc. for specific types. Schedule 80 PVC sweeps are permitted for conduits 2" diameter and greater.
- H. Cut and patch all pavements, curbs, sidewalks and gutters, whenever necessary for laying conduit, or whenever damaged by the operations of this trade. Replace materials with quality and finish equal to that removed or damaged.
- I. Where conduit extends through roof to equipment on roof areas, provide weatherproofing as specified in the appropriate section of these Specifications.
- J. Support all conduit in intervals not less than 10'-0" and within 36 inches from any outlet and at each side of bends and elbows. Use galvanized, concealed conduit supports, heavy stamped, one hole malleable conduit clamps secured with nails. On exposed conduit supports, use two hole clamps with screws, or galvanized steel framed channels secured by screws may be used for conduit supports. Perforated iron for supporting conduit is not permitted.
- K. Use rigid galvanized steel or I.M.C., threaded, for exposed conduit runs. Install parallel or perpendicular to walls, structural members or intersection of vertical plane and ceilings. Avoid field made bends and offsets where possible. Do not install crushed or deformed raceways.
- L. Provide metal sleeves and install where conduit passes through masonry or concrete walls. Use No. 20 gauge galvanized steel sleeves, no more than 1/2 inch greater in diameter than the outside diameter of the conduit. Caulk conduit into sleeves with stone wool, Duseal or Oakum and weatherproof below grade. Where conduit passes through fire resistive walls, partitions, and floors, pack void spaces between conduits with U.S.G. Thermafiber or equal, as approved by the State Fire Marshal.
- M. Provide a heavy nylon cord pull rope in all empty conduits for future use. Leave in place for future use in all runs and tagged with plastic tag at terminating end indicating the location of the opposite end of the conduit.
- N. Use factory-manufactured ells, except where noted otherwise. Field bends are permitted for EMT conduit less than 1" diameter. Conduit radius for signal system is ten times the internal diameter of the conduit.
- O. Cap or seal all conduit ends until wires are pulled.
- P. Use watertight gland compression type connectors and couplings on fittings for thin wall metallic conduit. Screw type or crimp type are not permitted.
- Q. Wire all rotating electrical equipment with flexible, liquid-tight conduit with appropriate slack from disconnect switch to equipment.

- R. Install expansion coupling at all expansion joint locations, refer to Architectural. Drawings for locations.
- S. Use approved type-bending machines for PVC conduits. Use of blow torch is prohibited.
- T. For grouping, use conduit trapezes made up of suitable Unistrut or Kindorf hangers.
- U. Seal or cap all conduit for a watertight installation.
- V. Use approved conductor pulling machines for all underground conduits. Use of truck is prohibited.

3.7 OUTLET BOXES:

- A. Attach outlet boxes on metal studs with TEC screws. Use wood screws for attachment on wood studs. Nails are not acceptable.
- B. Cover all boxes with outlet box protector, Appleton SB-CK or approved equal. Keep plaster and dirt from entering box or panels. If plaster does get in, removed it prior to pulling in wires.
- C. Close all unused openings with plugs.

3.8 INSTALLATION OF CONDUCTORS:

- A. Unless otherwise indicated or specified, do not install conductors of less than No. 12 AWG size. For control conductors protected by 15 ampere or lower overcurrent protection, No. 14 AWG conductors will be installed. Where approved by Code, remote control and signal circuits utilize No. 18 or No. 16 AWG sizes. Increase No. 12 to No. 10 AWG for 120 volt home runs exceeding 75 feet.
- B. Color code power wire and cable for feeders and branch circuits.
- C. Install all electrical conductors, including signal and communications circuits in an approved raceway.
- D. Neatly group conductors in panels, switchgear and terminal cabinets, etc., and form in a manner to fan into terminals with regular spacing. Lace formed groups of conductors with No. 12 waxed twine, or Panduit Co. Nylon Straps Numbers "SST-4-H" or "SST-2". Lace larger conductors with marlin and secure with cleats, or Panduit Co. Nylon Sta-Straps Numbers "SSC-4-H" and tie anchors ETA-1, TA-2 or TM-1-2-3.
- E. Install U.L. approved covered wire from all lighting fixture lamp sockets into outlet or junction box.

3.10 WIRING COLOR CODE

- A. 120/240 Volt System
 - Phase A - Black.
 - Phase A Switch Leg - Black with "S" tag.
 - Phase B - Red.
 - Phase B Switch Leg - Red with "S" tag.
 - Travelers - Yellow.
 - Neutral - White.
 - Equipment Ground - Green.

- B. 480Y/277 Volt System
 - Phase A - Brown Phase A - Brown.
 - Phase A Switch Leg - Brown with "S" tag.
 - Phase B - Orange.
 - Phase B Switch Leg - Orange with "S" tag.
 - Phase C - Yellow.
 - Phase C Switch -Leg- Yellow with "S" tag.
 - Travelers - Yellow with "T" tag.
 - Neutral - Grey.
 - Equipment Ground - Green with Yellow stripe.
- C. Provide identification tags on each conductor entering panel, switch, junction box and pull box to identify conductor.

3.11 UNDERGROUND PULL BOXES:

- A. Set underground pull boxes at +3" above highest adjacent grade level.
- B. Size per NEC.
- C. Provide nameplate on all covers.
 - "ELEC"
 - "LOW VOLTAGE"

3.12 CONDUCTOR JOINTS AND TAPING:

Make joints in conductors smaller than No. 6 AWG with solderless, tapeless, wing nut type pressure cable connector. Join conductors No. 6 AWG and larger together with approved type or pressure connector and tape to provide insulation not less than that of the conductor. Make connections to switch or bus bar with one-piece copper lugs for conductors No. 8 AWG or larger.

3.13 GROUNDING:

Provide grounding for entire electrical installation as required by the serving utility and codes mentioned in these specifications. Including:

- A. Conduit.
- B. Neutral or identified conductor of interior wiring system.
- C. Power and lighting panelboards.
- D. Non-current carrying metal parts or fixed equipment.
- E. Electrical panels in separate buildings.

END OF SECTION

SECTION 31 10 00 – SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Removing surface debris.
 - 2. Removing designated paving, curbs, gutters and v-ditches.
 - 3. Removing designated trees, shrubs, and other plant life.
 - 4. Removing abandoned utilities.
 - 5. Removing designated fencing, gates, and posts.
 - 6. Excavating topsoil.
- B. Related Sections:
 - 1. Section 31 22 13 - Rough Grading.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Site Clearing:
 - 1. Basis of Measurement: By square foot.
 - 2. Basis of Payment: Includes clearing site, loading and removing waste materials from site, applying herbicide to designated plant life.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data for herbicide. Indicate compliance with applicable codes for environmental protection.

1.4 REFERENCES

- A. Standard Specifications for Public Works Construction (SSPWC).
- B. California Building Code 2022 (CBC-22).

1.5 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Conform to SSPWC and CBC-22 as a minimum for environmental requirements, disposal of debris and use of herbicides.
- C. Perform Work in accordance with SSPWC and these specifications.
 - 1. Maintain one (1) copy of each document on site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Herbicide: As approved by authority having jurisdiction and selected by Town/Engineer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify existing plant life designated to remain is tagged or identified.
- C. Identify waste area and salvage area for placing removed materials.

3.2 PREPARATION

- A. Call Local Utility Line Information service not less than three (3) working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.

3.3 PROTECTION

- A. Locate, identify, and protect utilities indicated to remain, from damage.
- B. Protect trees, plant growth, and features designated to remain, as final landscaping as specified in Section 01 50 00 - Temporary Facilities and Controls.
- C. Protect benchmarks, survey control points, and existing structures from damage or displacement.

3.4 CLEARING

- A. Clear areas required for access to site and execution of Work to minimum depth of twelve (12) inches.
- B. Remove trees and shrubs within marked areas. Remove stumps, main root ball, root system to depth of 36 inches, surface rock, and others as specified in demolition plans.
- C. Clear undergrowth and deadwood, without disturbing subsoil.
- D. Apply herbicide to remaining stumps to inhibit growth.

3.5 REMOVAL

- A. Remove debris, rock, and extracted plant life from site.
- B. Partially remove paving, curbs, and, gutter as indicated on drawings. Neatly saw cut edges at right angle to surface.
- C. Remove abandoned utilities. Indicated removal termination point for underground utilities on Record Documents.
- D. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- E. Do not burn or bury materials on site. Leave site in clean condition.

3.6 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or regraded and marked areas without mixing with foreign materials for use in finish grading.
- B. Do not excavate wet topsoil.
- C. Stockpile in area designated and protect from erosion. Stockpile material on impervious material and cover, until disposal.
- D. Remove excess topsoil not intended for reuse, from site.

END OF SECTION

SECTION 31 22 13 – ROUGH GRADING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Site grading, backfilling, and compacting.
 - 2. Topsoil materials.
 - 3. Subsoil materials.
 - 4. Erosion control.
- B. Related Sections:
 - 1. Section 02 00 00 - Site Demolition.
 - 2. Section 31 10 00 - Site Clearing.
 - 3. Document: Geotechnical report.
 - 4. Document: Storm Water Pollution Prevention Plan (SWPPP).

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Topsoil Fill:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes excavating existing soil, supplying soil materials, stockpiling, scarifying substrate surface, placing where required, and compacting.
- B. Subsoil Fill:
 - 1. Basis of Measurement: By the cubic yard.
 - 2. Basis of Payment: Includes excavating existing subsoil, supplying subsoil materials, stockpiling, scarifying substrate surface, placing where required, and compacting.
- C. Structural Fill:
 - 1. Basis of Measurement: By the cubic yard.
 - 2. Basis of Payment: Includes excavating existing subsoil, supplying structural fill materials, stockpiling, scarifying substrate surface, placing where required, and compacting.
- D. Granular Fill:
 - 1. Basis of Measurement: By the cubic yard.
 - 2. Basis of Payment: Includes supplying granular fill materials, stockpiling, scarifying substrate surface, placing where required, and compacting.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. ASTM International:
 - 1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 3. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
 - 4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 5. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - 6. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.

7. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head).
 8. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 9. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
- C. Standard Specifications for Public Works Construction (SSPWC).
 - D. California Building Standards Codes, Title 24, 2022 Edition (CBC-22).
 - E. California Stormwater Quality Association BMP Handbook (CASQA).
 - F. General Permit for Discharges of Storm Water Associated with Construction Activities (SWRCB Order No. 2022-0057-DWQ) (CGP).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers, 10 (ten) lb sample of each type of fill material to testing laboratory.
- C. Materials Source: Submit name of imported materials suppliers.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

1.6 QUALITY ASSURANCE

- A. Furnish each fill material from single source throughout the work .
- B. Inspections shall be requested to the Town of Yucca Valley (Town).
- C. Perform Work in accordance with SSPWC and CBC-22 as a minimum.
- D. Maintain one (1) copy of each document on site.

PART 2 - PRODUCTS

2.1 SUBSOIL AND FILL MATERIALS

- A. Comply with the requirements of Section 200 of the SSPWC.
- B. Subsoil Type S1 – Unclassified Fill: Conforming to Section 300-4 of the SSPWC
- C. Subsoil Type S2:
 1. Excavated and re-used material or imported borrow, conforming to Section 300-5 of the SSPWC

2.2 TOPSOIL MATERIALS

- A. The Engineer shall determine the suitability of topsoil prior to use. Topsoil shall be transported from the source to its final destination unless stockpiling is specified.
- B. Topsoil Class A (Imported): Conforming to Section 212-1.1.2 of the SSPWC.
- C. Topsoil Class B (Selected): Conforming to Section 212-1.1.3 of the SSPWC.

- D. Topsoil Class C (Unclassified): Conforming to Section 212-1.1.4 of the SSPWC.

2.3 EROSION CONTROL MATERIALS

- A. Conform to Sections 300-9, 300-11 and 308-4.9 of the SSPWC and the CASQA Manual.

2.4 SOURCE QUALITY CONTROL

- A. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698, ASTM D1557 or AASHTO T180, as approved by Geotechnical Engineer.
- B. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D698, ASTM D1557 or AASHTO T180, as approved by Geotechnical Engineer.
- C. When tests indicate materials do not meet specified requirements, change material and retest.
- D. Furnish materials of each type from same source throughout the Work

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify site conditions.
- C. Verify survey benchmark and intended elevations for the Work are as indicated on Drawings.

3.2 PREPARATION

- A. Call Local Utility Line Information service not less than three (3) working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum.
- C. Notify utility company to remove and relocate utilities, if necessary.
- D. Protect utilities indicated to remain from damage.
- E. Protect plant life, lawns, rock outcropping and other features remaining as portion of final landscaping.
- F. Protect benchmarks, survey control point, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.3 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or regraded, marked areas, without mixing with foreign materials for use in finish grading.
- B. Do not excavate wet topsoil.
- C. Stockpile in area designated on site and protect from erosion. Stockpile material on impervious material and cover, until disposal, or reuse.
- D. Remove excess topsoil not intended for reuse, from site.

3.4 SUBSOIL EXCAVATION

- A. Excavate subsoil from areas to be further excavated, re-landscaped, or regraded. and marked

areas.

- B. Do not excavate wet subsoil.
- C. When excavating through roots, perform Work by hand and cut roots with sharp axe.
- D. Remove excess subsoil not intended for reuse, from site.
- E. Stockpile excavated material in area designated on site.
- F. Benching Slopes: Horizontally bench existing slopes greater than 1:4 to key placed fill material to slope to provide firm bearing.
- G. Stability: Replace damaged or displaced subsoil as specified for fill.

3.5 FILLING

- A. Fill areas to contours and elevations with unfrozen materials.
- B. Place fill material in continuous layers and compact in the maximum compacted depth approved by Geotechnical Engineer.
- C. Maintain optimum moisture content of fill materials to attain required compaction density.
- D. Slope grade away from building minimum two (2) percent slope for minimum distance of 10 ft, unless noted otherwise.
- E. Make grade changes gradual. Blend slope into level areas.
- F. Install Work in accordance with SSPWC and CBC-22 as a minimum.

3.6 TOLERANCES

- A. Top Surface of Subgrade ± 0.10 foot from required elevation.

3.7 STOCKPILING

- A. Stockpile materials on site as designated by Architect/Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Stockpile topsoil eight (8) feet high maximum, unless otherwise approved by Engineer.
- E. Prevent intermixing of soil types or contamination.
- F. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- G. Stockpile unsuitable and hazardous materials on impervious material and cover to prevent erosion and leaching, until disposed of.
- H. Stockpile to be covered at the end of each workday and prior to forecasted rain per the project SWPPP and Construction General Permit.

3.8 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

3.9 EROSION CONTROL

- A. Place erosion control measures as shown on construction drawings and SWPPP and conforming

to Sections 300-9, 300-11 and 308-4.9 of the SSPWC.

B.

3.10 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Perform laboratory material tests in accordance with SSPWC, ASTM D1557 or ASTM D698, as approved by the Geotechnical Engineer.
- C. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D2922.
 - 2. Moisture Tests: ASTM D3017.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- E. Frequency of Tests:
 - 1. Perform tests as frequent as required by the Geotechnical Engineer.

END OF SECTION

SECTION 31 23 17 – TRENCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Excavating trenches for utilities.
 - 2. Compacted fill from top of utility bedding to subgrade elevations.
 - 3. Backfilling and compaction.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete: Concrete materials.
 - 2. Section 31 22 13 - Rough Grading: Topsoil and subsoil removal from site surface.
 - 3. Section 33 11 16 - Site Water Utility Distribution Piping: piping and bedding.
 - 4. Section 33 31 00 - Sanitary Utility Sewerage Piping: piping and bedding.
 - 5. Section 33 41 00 - Storm Utility Drainage Piping: piping and bedding.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Trenching:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes excavating to required elevations, protecting excavation, and stockpiling excavated materials removing excavated materials from site. Over Excavating: Payment is not made for over excavated work nor for replacement materials.
- B. Subsoil Fill:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes furnishing fill material, stockpiling, scarifying substrate surface, placing where required, and compacting.
- C. Structural Fill:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes furnishing fill material, stockpiling, shaping substrate surface, placing where required, and compacting.
- D. Granular Fill:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes furnishing fill material, stockpiling, scarifying substrate surface, placing where required, and compacting.
- E. Concrete Fill:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes furnishing materials, forming, mixing and placing where required, and curing.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. ASTM International:
 - 1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 3. ASTM D1556 - Standard Test Method for Density of Soil in Place by the Sand-Cone Method.
 - 4. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil

- Using Modified Effort (6,000 ft-lbf/ft³ (2,700 kN-m/m³)).
5. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 6. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 7. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
- C. Standard Specifications for Public Works Construction (SSPWC).
 - D. California Building Code 2022 (CBC-22).

1.4 DEFINITIONS

- A. Utility: Any buried pipe, duct, conduit, or cable.

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.
- C. Product Data: Submit data for geotextile fabric indicating fabric and construction.
- D. Materials Source: Submit name of imported fill materials suppliers.
- E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Perform Work in accordance with SSPWC and CBC-22 as a minimum.
- C. Maintain one (1) copy of each document on site.

1.7 QUALIFICATIONS

- A. Prepare excavation protection plan under direct supervision of Professional Engineer experienced in design of this Work and licensed in the State of California.

1.8 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.9 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 - PRODUCTS

2.1 FILL MATERIALS

- A. Provide fill materials conforming to Section 200 of the SSPWC.
- B. If the material from site excavations is intended for reuse, shall be approved by Geotechnical

Engineer.

2.2 ACCESSORIES

- A. Geotextile Fabric: Non-biodegradable, non-woven.
 - 1. Alkzo Nobel Geosynthetic Co.
 - 2. Huesker, Inc.
 - 3. TC Mirafi.
 - 4. Tenax Corp.
 - 5. Tensar Earth Technologies, Inc.
 - 6. Substitutions: Permitted with prior approval from Town or Engineer.

PART 3 - EXECUTION

3.1 LINES AND GRADES

- A. Lay pipes to lines and grades indicated on Drawings.
 - 1. Engineer and Town reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- B. Use laser-beam instrument with qualified operator to establish lines and grades, if available.
- C. Maintain grade alignment of pipe using string line parallel with grade line and vertically above centerline of pipe.
 - 1. Establish string line on level batter boards at intervals of not more than 25 feet.
 - 2. Install batter boards spanning trench, rigidly anchored to posts driven into ground on both sides of trench.
 - 3. Set three adjacent batter boards before laying pipe to verify grades and line.
 - 4. Determine elevation and position of string line from elevation and position of offset points or stakes located along pipe route.
 - 5. Do not locate pipe using side lines for line or grade.

3.2 PREPARATION

- A. Call Local Utility Line Information service not less than three (3) working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum locations.
- C. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- D. Protect benchmarks, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Maintain and protect above and below grade utilities indicated to remain.
- F. Establish temporary traffic control and detours when trenching is performed in public right-of-way. Relocate controls and reroute traffic as required during progress of Work.

3.3 TRENCHING

- A. Remove lumped subsoil, boulders, and rock up of 1/6 cubic yard, measured by volume.
- B. Perform excavation within 24 inches of existing utility service.
- C. Do not advance open trench more than 200 feet ahead of installed pipe.
- D. Cut trenches to width indicated on Drawings sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.

- E. Excavate bottom of trenches maximum two (2) feet wider than outside diameter of pipe.
- F. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and pipe.
- G. Do not interfere with 45 degree bearing splay of foundations.
- H. When Project conditions permit, slope side walls of excavation starting two (2) feet above top of pipe. When side walls cannot be sloped, provide sheeting and shoring to protect excavation as specified in this section.
- I. When subsurface materials at bottom of trench are loose or soft, excavate to greater depth as directed by Engineer until suitable material is encountered notify Engineer, and request instructions.
- J. Cut out soft areas of subgrade not capable of compaction in place. Backfill with acceptable fill material and compact to density equal to or greater than requirements for subsequent backfill material.
- K. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.
- L. Correct areas over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as directed by Engineer.
- M. Remove excess subsoil not intended for reuse, from site.
- N. Stockpile subsoil in area designated on and protect from erosion.

3.4 SHEETING AND SHORING

- A. Sheet, shore, and brace excavations to prevent danger to persons, structures and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.
- B. Support trenches more than four (4) feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Design sheeting and shoring to be left in place as part of the completed Work, cut off minimum 18 inches below finished grade.
- D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- E. Repair damage to new and existing Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

3.5 BACKFILLING

- A. Backfill trenches to contours and elevations with unfrozen fill materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Place geotextile fabric following manufacturer's specifications if required on drawings.
- D. Place fill material in continuous layers and compact conforming to SSPWC.
- E. Employ placement method that does not disturb or damage foundation perimeter drainage, or utilities in trench.
- F. Maintain optimum moisture content of fill materials to attain required compaction density.
- G. Do not leave more than 50 feet of trench open at end of working day.
- H. Protect open trench to prevent danger to Town and the public.

3.6 TOLERANCES

- A. Top Surface of Backfilling Under Paved Areas: Plus or minus ½ inch from required elevations.
- B. Top Surface of General Backfilling: Plus or minus one (1) inch from required elevations.

3.7 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Perform laboratory material tests in accordance with ASTM D1557.
- C. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D2922, as directed by Geotechnical Engineer.
 - 2. Moisture Tests: ASTM D3017.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.
- E. Frequency of Tests: As required by Geotechnical Engineer.

3.8 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Protecting finished work.
- B. Reshape and re-compact fills subjected to vehicular traffic during construction.

3.9 SCHEDULE

- A. Per project drawings.

END OF SECTION

SECTION 32 11 23 – AGGREGATE BASE COURSES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Aggregate subbase.
 - 2. Aggregate base course.
- B. Related Sections:
 - 1. Section 31 22 13 - Rough Grading: Preparation of site for base course.
 - 2. Section 32 13 13 - Concrete Paving: Finish concrete surface course.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Aggregate Subbase:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes supplying fill material, stockpiling, scarifying substrate surface, placing where required, and compacting.
- B. Aggregate Base Course:
 - 1. Basis of Measurement: By the cubic yard.
 - 2. Basis of Payment: Includes supplying fill material, stockpiling, scarifying substrate surface, placing where required, and compacting.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
 - 2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. ASTM International:
 - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 2. ASTM D1556 - Standard Test Method for Density of Soil in Place by the Sand-Cone Method.
 - 3. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - 5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 6. ASTM D2940 - Standard Specification for Graded Aggregate Material For Bases or Subbases for Highways or Airports.
 - 7. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
- C. Standard Specifications for Public Works Construction (SSPWC).
- D. California Building Code, 2022 Edition (CBC-22).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data:

1. Submit data for geotextile fabric and herbicide.
- C. Materials Source: Submit name of aggregate materials suppliers.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Furnish each aggregate material from single source throughout the Work.
- C. Perform Work in accordance with SSPWC and CBC-22 as a minimum.
- D. Maintain one (1) copy of each document on site.

PART 2 - PRODUCTS

2.1 AGGREGATE MATERIALS

- A. Subbase Aggregate: ASTM D2940; graded type.
- B. Base Aggregate: ASTM D2940; graded type.
- C. Comply with requirements of Table 200-1.4 (B) of Chapter 2 of SSPWC.

2.2 ACCESSORIES

- A. Herbicide: as approved by Architect/Engineer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify compacted substrate is dry and ready to support paving and imposed loads.
 1. Proof roll substrate compaction roller in a minimum of two (2) perpendicular passes to identify soft spots to the satisfaction of IOR.
 2. Remove soft substrate and replace with compacted fill.
- C. Verify substrate has been inspected, gradients and elevations are correct.

3.2 PREPARATION

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

3.3 AGGREGATE PLACEMENT

- A. Place aggregate equal thickness layers to total compacted thickness of six (6) inches \pm two (2) inches.
 1. Maximum Layer Compacted Thickness: eight (8) inches.
 2. Minimum Layer Compacted Thickness: four (4) inches.
- B. Roller compact aggregate to 95 percent maximum density.
- C. Level and contour surfaces to elevations, profiles, and gradients indicated.

- D. Add small quantities of fine aggregate to coarse aggregate when required to assist compaction.
- E. Maintain optimum moisture content of fill materials to attain specified compaction density.
- F. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.4 TOLERANCES

- A. Maximum Variation From Thickness: 1/4 inch.
- B. Maximum Variation From Elevation: 1/4 inch.

3.5 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- C. Compaction testing will be performed in accordance with ASTM D1556, ASTM D1557, ASTM D698, AASHTO T180, ASTM D2167, ASTM D2922, or ASTM D3017, as directed by Geotechnical Engineer.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.
- E. Frequency of Tests: As scheduled by Town.

END OF SECTION

SECTION 32 12 16 – ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Asphalt materials.
 - 2. Aggregate materials.
 - 3. Asphalt paving base course, binder course, and wearing course.
 - 4. Asphalt paving overlay for existing paving.
 - 5. Surface slurry.
- B. Related Sections:
 - 1. Section 31 22 13 - Rough Grading: Preparation of site for paving and base.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Asphalt Paving Base Course:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes priming surfaces, tack coating surfaces, furnishing, placing, compacting, and testing base course.
- B. Asphalt Paving Binder Course:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes priming surfaces, tack coating surfaces, furnishing, placing, compacting, and testing binder course.
- C. Asphalt Paving Wearing Course:
 - 1. Basis of Measurement: By cubic yard.
 - 2. Basis of Payment: Includes priming surfaces, tack coating surfaces, furnishing, placing, compacting, and testing wearing course.
- D. Tack Coat:
 - 1. Basis of Measurement: By square yard.
 - 2. Basis of Payment: Includes preparing surfaces and applying.
- E. Crack Treatment:
 - 1. Basis of Measurement: By square yard.
 - 2. Basis of Payment: Includes all work involved in treating cracks, complete in place, including filling treatment.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO M17 - Standard Specification for Mineral Filler for Bituminous Paving Mixtures.
 - 2. AASHTO M29 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
 - 3. AASHTO M140 - Standard Specification for Emulsified Asphalt.
 - 4. AASHTO M208 - Standard Specification for Cationic Emulsified Asphalt.
 - 5. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
 - 6. AASHTO M320 - Standard Specification for Performance-Graded Asphalt Binder.
 - 7. AASHTO M324 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
 - 8. AASHTO MP1a - Standard Specification for Performance-Graded Asphalt Binder.
- B. Asphalt Institute:
 - 1. AI MS-2 - Mix Design Methods for Asphalt Concrete and Other Hot- Mix Types.
 - 2. AI MS-19 - Basic Asphalt Emulsion Manual.

3. AI SP-2 - Superpave Mix Design.
- C. ASTM International:
1. ASTM C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
 2. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
 3. ASTM D242 - Standard Specification for Mineral Filler For Bituminous Paving Mixtures.
 4. ASTM D692 - Standard Specification for Coarse Aggregate for Bituminous Paving Mixtures.
 5. ASTM D946 - Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction.
 6. ASTM D977 - Standard Specification for Emulsified Asphalt.
 7. ASTM D1073 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
 8. ASTM D1188 - Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens.
 9. ASTM D2027 - Standard Specification for Cutback Asphalt (Medium-Curing Type).
 10. ASTM D2397 - Standard Specification for Cationic Emulsified Asphalt.
 11. ASTM D2726 - Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures.
 12. ASTM D2950 - Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods.
 13. ASTM D3381 - Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction.
 14. ASTM D3515 - Standard Specification for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
 15. ASTM D3549 - Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens.
 16. ASTM D3910 - Standard Practices for Design, Testing, and Construction of Slurry Seal.
 17. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
 18. ASTM E408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
 19. ASTM E903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
 20. ASTM E1918 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
 21. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
- D. California Department of Transportation (Caltrans) Standard Specifications.
- E. Standard Specifications for Public Works Construction (SSPWC).
- F. California Building Standards Codes, Title 24, 2022 Edition (CBC-22).

1.4 PERFORMANCE REQUIREMENTS

- A. Per construction documents.

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
 1. Submit product information for asphalt and aggregate materials.
 2. Submit mix design with laboratory test results supporting design.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Mixing Plant: Conform to SSPWC and CBC-22 as a minimum.
- C. Obtain materials from same source throughout.
- D. Perform Work in accordance with SSPWC and CBC-22 as a minimum.
- E. Maintain one (1) copy of each document on site.

1.7 QUALIFICATIONS

- A. Installer: Company specializing in performing work of this section with minimum three (3) years documented experience and approved by manufacturer.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not place asphalt mixture when ambient air or base surface temperature is less than 40 degrees F, or surface is wet or frozen.
- B. Place asphalt mixture when temperature is not more than 15 degrees F less than initial mixing temperature.
- C. Do not place asphalt mixture during rainy days.

PART 2 - PRODUCTS

2.1 ASPHALT MATERIALS

- A. Asphalt Binder: Shall conform to Sections 203 and 302 of the SSPWC.
- B. Primer: In accordance with Sections 203 and 302 of the SSPWC.
- C. Tack Coat: ASTM D977 and AASHTO M140; diluted emulsified asphalt, type SSS-1h unless otherwise specified in construction documents.
- D. Oil: In accordance with Sections 203 and 302 of the SSPWC.

2.2 AGGREGATE MATERIALS

- A. Coarse and Fine Aggregate: in accordance with Sections 203 and 302 of the SSPWC.
- B. Mineral Filler: ASTM D242 or AASHTO M17; finely ground mineral particles, free of foreign matter.

2.3 ACCESSORIES

- A. Sealant: ASTM D6690 Type II or Type III; hot applied type, unless otherwise specified on drawings.

2.4 MIXES

- A. Use dry material to avoid foaming. Mix uniformly.
- B. Asphalt Paving Mixtures: Designed in accordance with sections 203 and 302 of the SSPWC with maximum 15 percent by weight reclaimed asphalt pavement.
- C. Asphalt Base Course Mix: C2-PG 64-10.
- D. Parking and Drive Area Mix: D2-PG 64-10.
- E. Surface Slurry: ASTM D3910, Type I; emulsified asphalt slurry.

2.5 SOURCE QUALITY CONTROL

- A. Submit proposed mix design of each class of mix for review and approval by Engineer prior to beginning of Work.
- B. Test samples in accordance with AI MS-2.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify utilities indicated under paving are installed with excavations and trenches backfilled and compacted.
- C. Verify compacted subgrade subbase is dry and ready to support paving and imposed loads.
 - 1. Compact native soils to 95% relative compaction in preparation for base and/or direct application of ac pavement.
 - 2. Proof roll subbase with compaction roller approved by Engineer in minimum two (2) perpendicular passes to identify soft spots.
 - 3. Remove soft subbase and replace with compacted fill as specified in these specifications.
- D. Verify gradients and elevations of base are correct. Tolerance ± 0.05 feet.
- E. Verify gutter drainage grilles and frames, manhole frames and other features are installed in correct position and elevation.

3.2 SUBBASE

- A. Verify that subbase is in accordance with SSPWC.

3.3 EXISTING WORK

- A. Saw cut and notch existing paving as indicted on Drawings.
- B. Clean existing paving to remove foreign material, excess joint sealant and crack filler from paving surface.
- C. Repair surface defects in existing paving to provide uniform surface to receive new paving.

3.4 PRIMER

- A. Apply primer in accordance with AI MS-2 and SSPWC.
- B. Use clean sand to blot excess primer.

3.5 TACK COAT

- A. Apply tack coat in accordance with AI MS-19 and SSPWC.
- B. Apply tack coat to contact surfaces of curbs, gutters.
- C. Coat surfaces of manhole and catch basin frames with oil to prevent bond with asphalt paving. Do not tack coat these surfaces.

3.6 SINGLE COURSE ASPHALT PAVING

- A. Install Work in accordance with Sections 203 and 302 of the SSPWC.
- B. Place asphalt within 24 hours of applying primer or tack coat.

- C. Place asphalt wearing course to thickness indicated on Drawings.
- D. Compact paving by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
- E. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

3.7 DOUBLE COURSE ASPHALT PAVING

- A. Place asphalt binder course within 24 hours of applying primer or tack coat.
- B. Place binder course to thickness indicated on Drawings.
- C. Place wearing course within 24 hours of placing and compacting binder course. When binder course is placed more than 24 hours before placing wearing course, clean surface and apply tack coat before placing wearing course.
- D. Place wearing course to thickness indicated on Drawings.
- E. Compact each course by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
- F. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.8 ASPHALT PAVING OVERLAY

- A. Apply tack coat to existing paving surface at rate recommended by geotextile fabric manufacturer.
- B. Install geotextile fabric in accordance with manufacturer's instructions to permit asphalt saturation of fabric. Lap fabric edge and end joints 4 inches.
- C. Place wearing course to thickness indicated on Drawings.
- D. Compact overlay by rolling to specified density. Do not displace or extrude paving from position. Hand compact in areas inaccessible to rolling equipment.
- E. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.9 SURFACE SLURRY

- A. Install uniform thickness surface slurry over existing paving in accordance with ASTM D3910.
- B. Allow slurry to cure.
- C. Roll paving to achieve uniform surface.

3.10 ERECTION TOLERANCES

- A. Flatness: Maximum variation of 1/4 inch measured with 10-foot straight edge.
- B. Scheduled Compacted Thickness: Within 1/4 inch.
- C. Variation from Indicated Elevation: Within 1/2 inch.

3.11 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- C. Take samples and perform tests in accordance with AI MS-2 or AI SP-2 as approved by Geotechnical Engineer.
- D. Verify that tests are in accordance with SSPWC.

- E. Asphalt Paving Mix Temperature: Measure temperature at time of placement.
- F. Asphalt Paving Thickness: ASTM D3549; test one core sample from every 1000 square yards compacted paving or as directed by Engineer.
- G. Asphalt Paving Density: ASTM D1188 or ASTM D2726; test one core sample from every 1000 square yards compacted paving or as directed by Engineer.

3.12 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Immediately after placement, protect paving from mechanical injury for 24 hours or until surface temperature is less than 140 degrees F.

END OF SECTION

SECTION 32 13 13 – CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Aggregate subbase and base course.
 - 2. Concrete paving for:
 - a. Concrete pavement.
 - b. Concrete curbs.
- B. Related Sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories.
 - 2. Section 03 30 00 – Cast-In-Place Concrete
 - 3. Section 31 22 13 – Rough Grading.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Concrete Paving:
 - 1. Basis of Measurement: By cubic yard,
 - 2. Basis of Payment: Includes forms, reinforcing, concrete, accessories, placing, finishing, curing, and testing.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO M324 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
- B. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.
- C. ASTM International:
 - 1. ASTM A184/A184M - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
 - 2. ASTM A185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
 - 3. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
 - 4. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - 5. ASTM A706/A706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
 - 6. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
 - 7. ASTM A775/A775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars.
 - 8. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement.
 - 9. ASTM A934/A934M - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
 - 10. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - 11. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 12. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 13. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

14. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
15. ASTM C150 - Standard Specification for Portland Cement.
16. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
17. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
18. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
19. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
20. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
21. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
22. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
23. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
24. ASTM C979 - Standard Specification for Pigments for Integrally Colored Concrete.
25. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
26. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
27. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
28. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
29. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
30. ASTM C1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emisometers.
31. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
32. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
33. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
34. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
35. ASTM E408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
36. ASTM E903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
37. ASTM E1918 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
38. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

D. Standard Specifications for Public Works Construction (SSPWC).

E. California Building Standards Codes, Title 24, 2022 Edition (CBC-22).

1.4 PERFORMANCE REQUIREMENTS

A. Paving: Designed for pedestrian and light vehicle traffic.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data:

1. Submit data on concrete materials, joint filler, admixtures, and curing compounds.

C. Design Data:

1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
 - a. Hot and cold weather concrete work.
 2. Identify mix ingredients and proportions, including admixtures.
 3. Identify chloride content of admixtures and whether or not chloride was added during manufacture.
- D. Samples: Submit samples illustrating exposed aggregate finish as required by Engineer.

1.6 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Perform Work in accordance with ACI 301 and requirements of Section 03 10 00 and Section 03 20 00.
- C. Obtain cementitious materials from same source throughout.
- D. Perform Work in accordance with SSPWC and CBC-22.
- E. Maintain one (1) copy of each document on site.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three (3) years documented experience.
- B. Installer: Company specializing in performing work of this section with minimum three (3) years documented experience and approved by manufacturer.

1.8 MOCKUP – Not Used

1.9 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one (1) week prior to commencing work of this section.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. Form Materials: Conform to ACI 301 and as specified in Section 03 10 00.
- B. Joint Filler: ASTM D1751; Asphalt impregnated fiberboard or felt, 1/4 inch thick.

2.2 REINFORCING

- A. Not Used.

2.3 CONCRETE MATERIALS

- A. Concrete Materials: As specified in Section 03 30 00. Provide in accordance with SSPWC Section 201.

2.4 ACCESSORIES

- A. Curing Compound: ASTM C309, Type 1, Class A.
- B. Joint Sealers: Specified in Section 03 30 00.

2.5 CONCRETE MIX

- A. Design mix and deliver concrete AS specified in Section 03 30 00 and in accordance with SSPWC Section 201.

2.6 SOURCE QUALITY CONTROL AND TESTS

- A. Submit proposed mix design of each class of concrete to appointed firm for review prior to commencement of Work.
- B. Tests on cement, aggregates, and mixes will be performed to ensure conformance with specified requirements.
- C. Test samples in accordance with Section 03 30 00 – Cast-In-Place Concrete.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify compacted subgrade subbase is dry and ready to support paving and imposed loads.
 - 1. Proof roll subbase with compaction roller approved by Engineer in minimum two (2) perpendicular passes to identify soft spots.
 - 2. Remove soft subbase and replace with compacted fill as specified in these specifications.
- C. Verify gradients and elevations of base are correct.

3.2 SUBBASE or BASE COURSE

- A. Prepare subbase or base course in accordance with SSPWC.

3.3 PREPARATION

- A. Moisten substrate to minimize absorption of water from fresh concrete.
- B. Coat surfaces of manhole catch basin frames with oil to prevent bond with concrete paving.
- C. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

3.4 FORMING

- A. Place and secure forms and screeds to correct location, dimension, profile, and gradient.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Conform to requirements of Section 03 10 00 – Concrete Forming and Accessories.

3.5 REINFORCING

- A. Place reinforcing as indicated on Drawings.
- B. Interrupt reinforcing at contraction and expansion joints.
- C. Place reinforcing to achieve paving and curb alignment as detailed.

- D. Provide doweled joints at regular spacing at interruptions of concrete with one end of dowel set in capped sleeve to allow longitudinal movement.

3.6 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301 and as specified in Section 03 30 00.
- B. Place concrete in accordance with SSPWC and CBC-22.
- C. Ensure reinforcing, inserts, embedded parts, formed joints are not disturbed during concrete placement.
- D. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.
- E. Place concrete to pattern indicated on drawings.

3.7 JOINTS

- A. Place expansion joints at 20-foot intervals unless otherwise directed by Engineer. Align curb, gutter, and sidewalk joints.
- B. Place joint filler between paving components and building or other appurtenances.
- C. Provide sawn joints as specified on drawings.
- D. Provide keyed joints as indicated on drawings.
- E. Seal joints as indicated on Drawings.

3.8 FINISHING

- A. Sidewalk Paving: Light broom, radius to 1/4-inch radius, and trowel joint edges. Wood float.
- B. Curbs and Gutters: Light broom, radius to 1/4-inch radius.
- C. Direction of Texturing: Parallel to paving direction.
- D. Place curing compound on exposed concrete surfaces immediately after finishing.

3.9 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure floor surfaces in accordance with ACI 301 and SSPWC. See Section 03 30 00.

3.10 ERECTION TOLERANCES

- A. Maximum Variation of Surface Flatness: 1/4-inch in 10 ft.
- B. Maximum Variation from True Position: 1/4-inch.

3.11 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. See Section 03 30 00, Subsection 3.6.

3.12 PROTECTION

- A. Immediately after placement, protect paving from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Do not permit pedestrian or vehicular traffic over paving for seven (7) days minimum after finishing or until 75 percent design strength of concrete has been achieved.

3.13 SCHEDULES

- A. Per Table 201-1.1.2(A) of the SSPWC.

END OF SECTION

SECTION 32 15 40 – DECOMPOSED GRANITE

PART 1 - GENERAL

1.1 SUMMARY

- A. Provide all decomposed granite surfacing work, complete.

1.2 1.02 RELATED WORK IN OTHER SECTIONS (including but not limited to)

- A. Concrete : 03 30 00
- B. Site Grading : 31 22 00

1.3 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
ASTM D 1557 1991 Laboratory Compaction
 Characteristics of Soil Using Modified Effort
 (55,000 ft-lbf/ft (2,700 KN-M/m))

1.4 QUALITY CONTROL

- A. Deliver one sample load of the decomposed granite to the project site for approval by the City Construction Supervisor prior to delivery of the remainder.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Per materials referenced on plans.

PART 3 - EXECUTION

3.1 PLACING DECOMPOSED GRANITE

- A. All areas not otherwise surfaced shall receive a 3-inch layer (compacted thickness) of decomposed granite, unless indicated otherwise on the drawings.
- B. Evenly spread over entire areas to designated lines and grades; moisten or aerate to optimum moisture content, then compact to a 3-inch thickness with a 5 ton (or larger) roller to a dense firm surface (at least 90 percent maximum dry density, ASTM D 1557) smoothly finished and uniformly pitched. Correct high or low spots in excess of 0.20 inch above or below a 10 foot straight edge in any direction.

3.2 CLEAN-UP

- A. Clean-up spills and remove surplus material to an off-site legal disposal area. Leave adjacent walks and paved areas broom clean.

END OF SECTION

SECTION 32 17 23 – PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Traffic lines and markings.
 - 2. Legends.
 - 3. Paint.
- B. Related Sections:
 - 1. Section 32 12 16 - Asphalt Paving.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Traffic Lines and Markings:
 - 1. Basis of Measurement: By linear foot.
 - 2. Basis of Payment: Includes furnishing, installing, inspecting, and maintaining pavement markings for minimum of three (3) years, and related maintenance and protection of traffic.
- B. Legends:
 - 1. Basis of Measurement: By square foot.
 - 2. Basis of Payment: Includes furnishing, installing, inspecting, and maintaining pavement markings for minimum of three (3) years, and related maintenance and protection of traffic.

1.3 REFERENCES

- A. ASTM International:
 - 1. ASTM D34 - Standard Guide for Chemical Analysis of White Pigments.
 - 2. ASTM D126 - Standard Test Methods for Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate and Chromium Oxide Green.
 - 3. ASTM D562 - Standard Test Method for Consistency of Paints Using the Stormer Viscometer.
 - 4. ASTM D711 - Standard Test Method for No-Pick-Up Time of Traffic Paint.
 - 5. ASTM D713 - Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials.
 - 6. ASTM D969 - Standard Test Method for Laboratory Determination of Degree of Bleeding of Traffic Paint.
 - 7. ASTM D1301 - Standard Test Methods for Chemical Analysis of White Lead Pigments.
 - 8. ASTM D1394 - Standard Test Methods for Chemical Analysis of White Titanium Pigments.
 - 9. ASTM D1475 - Standard test Method for Density of Liquid Coatings, Inks, and Related Products.
 - 10. ASTM D1640 - Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature.
 - 11. ASTM D2202 - Standard Test Method for Slump of Sealants.
 - 12. ASTM D2371 - Standard Test Method for Pigment Content of Solvent-Reducible Paints.
 - 13. ASTM D2621 - Standard Test Method for Infrared Identification of Vehicle Solids From Solvent-Reducible Paints.
 - 14. ASTM D2743 - Standard Practices for Uniformity of Traffic Paint Vehicle Solids by Spectroscopy and Gas Chromatography.
- B. California Manual on Uniform Traffic Control Devices (CMUTCD).

- C. California Department of Transportation (Caltrans) Standard Specifications.
- D. Standard Specifications for Public Works Construction (SSPWC).
- E. California Building Standards Codes, Title 24, 2022 Edition (CBC-22).

1.4 PERFORMANCE REQUIREMENTS

- A. Paint Adhesion: Adhere to road surface forming smooth continuous film one minute after application.
- B. Paint Drying: Tack free by touch so as not to require coning or other traffic control devices to prevent transfer by vehicle tires within two minutes after application.

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit paint formulation for each type of paint.
- C. Test Reports: Submit source and acceptance test results in accordance with AASHTO M247.
- D. Manufacturer's Installation Instructions: Submit instructions for application temperatures, eradication requirements, application rate, line thickness, and any other data on proper installation.
- E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

- A. Inspections shall be requested to Town of Yucca Valley Building and Safety Department (Town).
- B. Perform Work in accordance with SSPWC, CBC-22, Caltrans, and the MUTCD.
- C. Maintain one (1) copy each document on site.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three (3) years documented experience.
- B. Applicator: Company specializing in performing work of this section with minimum three (3) years documented experience and approved by Engineer.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Invert containers several days prior to use when paint has been stored more than 2 months. Minimize exposure to air when transferring paint. Seal drums and tanks when not in use.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.
- B. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.
- C. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.
- D. Do not apply paint when temperatures are expected to fall below 50 degrees F for 24 hours after application.
- E. Volatile Organic Content (VOC). Do not exceed State or Environmental Protection Agency maximum VOC on traffic paint.

1.10 WARRANTY

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.
- B. Furnish three (3) year manufacturer's warranty for traffic paints.

1.11 MAINTENANCE SERVICE

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance service.
- B. Furnish service and maintenance of traffic paints for three years from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PAINTED PAVEMENT MARKINGS

- A. Manufacturers:
 - 1. Pervo Paint Company.
 - 2. Pathmark Traffic Products.
 - 3. Safety Coatings Inc.
 - 4. Franklin Paint Company.
 - 5. EZ-Liner Industries Model.
 - 6. Substitutions: Permitted with prior approval of Engineer.
- B. Furnish materials in accordance with SSPWC, Caltrans, and the CMUTCD.
- C. Comply with requirements of Section 84 of Caltrans.

2.2 EQUIPMENT

- A. Continuous Longitudinal Line Application Machine: Use application equipment with following capabilities.
 - 1. Dual nozzle paint gun to simultaneously apply parallel lines of indicated width in solid or broken patterns or various combinations of those patterns.

2. Measuring device to automatically and continuously measure length of each line placed, to nearest foot.
 3. Device to heat paint to approved temperature for fast dry applications.
- B. Machine Calibration:
1. Paint Line Measuring Device: Calibrate automatic line length gauges to maintain tolerance of ± 25 feet per mile.
 2. Cycle Length/Paint Line Length Timer: Calibrate cycle length to maintain tolerance of ± 6 inches per 40 feet; calibrate paint line length to maintain tolerance to ± 1 inches per 10 feet.
 3. Paint Guns: Calibrate to simultaneously apply paint binder at uniform rates as specified with an allowable tolerance of plus or minus 1 mil.
- C. Other Equipment:
1. For application of crosswalks, intersections, stop lines, legends, and other miscellaneous items by walk behind strippers, hand spray or stencil trucks, apply with equipment meeting requirements of this section. Do not use hand brushes or rollers.

2.3 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing, inspection, and analysis requirements.
- B. Test and analyze traffic paints in accordance with these specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Do not apply paint to concrete surfaces until concrete has cured for 28 days, unless otherwise approved by Engineer.

3.2 PREPARATION

- A. Maintenance and Protection of Traffic:
 1. Provide short term traffic control in accordance with Section 01 50 00 - Temporary Facilities and Controls.
 2. Prevent interference with marking operations and to prevent traffic on newly applied markings before markings dry.
 3. Maintain access to existing businesses and other properties requiring access.
- B. Surface Preparation.
 1. Clean and dry paved surface prior to painting.
 2. Blow or sweep surface free of dirt, debris, oil, grease, or gasoline.
 3. Spot location of final pavement markings as specified and as indicated on Drawings by applying pavement spots 25 feet on center.
 4. Notify Engineer after placing pavement spots and minimum three (3) days prior to applying traffic lines.

3.3 EXISTING WORK

- A. Remove existing markings in an acceptable manner. Do not remove existing pavement markings by painting over with blank paint. Remove by methods that will cause least damage to pavement structure or pavement surface. Satisfactorily repair any pavement or surface damage caused by removal methods.
- B. Clean and repair existing remaining or reinstalled lines and legends.

3.4 APPLICATION

- A. Agitate paint for 1-15 minutes prior to application to ensure even distribution of paint pigment.
- B. Dispense paint at approved temperature to wet-film thickness of 15 mils, except dispense edge markings to wet-film thickness of 12 mils.
- C. Apply markings to indicated dimensions at indicated locations.
- D. Prevent splattering and over spray when applying markings.
- E. Unless material is track free at end of paint application convoy, use traffic cones to protect markings from traffic until track free. When vehicle crosses a marking and tracks it or when splattering or over spray occurs, eradicate affected marking and resultant tracking, and apply new markings.
- F. Collect and legally dispose of residues from painting operations.
- G. Install Work in accordance with SSPWC, Caltrans, and CMUTCD.

3.5 APPLICATION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation from Wet Film Thickness: 1 mil.
- C. Maximum Variation from Wet Paint Line Width: $\pm 1/8$ inch.
- D. Maintain cycle length for skip lines at tolerance of plus or minus six (6) inches per 40 feet and line length of plus or minus one (1) inch per 10 feet unless otherwise approved by Engineer.
- E. Maximum Variation from Specified Application Temperature: ± 5 degrees F

3.6 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Section 01 40 00 - Quality Requirements and 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- C. Inspect for incorrect location, insufficient thickness, line width, coverage, retention, uncured or discolored material, and insufficient bonding.
- D. Repair lines and markings, which after application and curing do not meet following criteria:
 - 1. Incorrect Location: Remove and replace incorrectly placed patterns.
 - 2. Insufficient Thickness, Line Width, or Paint Coverage: Prepare defective material by acceptably grinding or blast cleaning to remove substantial amount paint and to roughen

- marking surface. Remove loose particles and debris. Apply new markings on cleaned surface in accordance with this Section.
3. **Uncured or Discolored Material, Insufficient Bonding:** Remove defective markings in accordance with this Section and clean pavement surface one foot beyond affected area. Apply new markings on cleaned surface in accordance with this Section.
- E. Replace defective pavement markings as specified throughout a three (3) year warranted period. Replace markings damaged by anti-skid materials, studded tires, tire chains, chemical deicers, snow plowing or other loss of marking material regardless of cause. When markings are damaged by pavement failure or by Owner's painting, crack sealing, or pavement repair operations, Contractor is released from warranty requirements for damaged work. If this requirement is different in the Contract Documents, then the Contract Documents override this specification.
 - F. Prepare list of defective areas and areas requiring additional inspection and evaluation to decide where material may need replaced. Provide traffic control as necessary if markings require more detailed evaluation.
 - G. Replace failed or defective markings in entire section of defective markings within 30 days after notification when any of the following exists during warranty period:
 1. Average retroreflectivity within any 528-foot section is less than 1225 mcd/m²/1x for white pavement markings and 100 mcd/m²/1x for yellow pavement markings.
 2. Marking is discolored or exhibits pigment loss and is determined to be unacceptable by three member team based on visual comparison with beaded color plates.
 3. More than 15 percent of area of continuous line, or more than 15 percent of combined area of skip lines, within any 528-foot section of roadway is missing.
 - H. Replace pavement marking material under warranty using original or better type material. Continue warranty to end of original three (3) year period even when replacement materials have been installed as specified.
 - I. When eradication of existing paint lines is necessary, eradicate by shot blast or water blast method. Do not gouge or groove pavement more than 1/16 inch during removal. Limit area of removal to area of marking plus 1 inch on all sides. Prevent damage to transverse and longitudinal joint sealers and repair any damage according to requirements in Section 32 13 13 or Section 32 12 16.
 - J. Maintain daily log showing work completed, results of above inspections or tests, pavement and air temperatures, relative humidity, presence of any moisture on pavement, and any material or equipment problems. Make legible entries in log in ink, sign and submit by end of each workday. Enter environmental data into log prior to starting work each day and at two additional times during day.

3.7 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect painted pavement markings from vehicular and pedestrian traffic until paint is dry and track free. Follow manufacturer's recommendations or use minimum of 30 minutes. Consider barrier cones as satisfactory protection for materials requiring more than 2 minutes dry time.

3.8 SCHEDULES

- A. Pavement Markings: Use the following schedule unless otherwise specified in construction drawings.

Items	Location
4 inch White Conventional	Edge
4 inch White Fast Dry	Edge
12 inch White Fast Dry	Stop Line
4 inch Yellow Conventional	Center
4 inch Yellow Fast Dry	Center

END OF SECTION

SECTION 32 17 26 – DETECTABLE WARNING MAT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Surface Applied detectable warning tiles.
- B. Related Requirements:
 - 1. Section 32 13 13 "Concrete Paving" for concrete walkways serving as substrates for tactile warning surfaces.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Warning Mat:
 - 1. Basis of Measurement: By each.
 - 2. Basis of Payment: Includes tactile mat unit, installed.

1.3 REFERENCES

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Americans with Disabilities Act (ADA) Title 49 CFR Transportation, Part 37.9 Standards for Accessible Transportation Facilities, Appendix A, Section 4.29.2 Detectable Warnings on Walking Surfaces.
- C. FHA Memo (5-06-02) titled Truncated Domes.
- D. Federal Register Volume 71, No. 209, 49 CFR Part 37 (10-30-06).
- E. ADA Standards for Transportation Facilities (11-29-06, DOT): Sections 406, 705, and 810.
- F. ADA Standards for Accessible Design – 2010 (9/05/11, DOJ).
- G. ADAAG: Sections 705 and 810. Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Rights of Way (7/23/11, Access Board), PROWAG: Sections R208, R304, R305, R308, and R309.
- H. American Society for Testing and Materials (ASTM) Test Methods B 117, C 501, C 1028, D 543, D 570, D 638, D 695, D 790, G 151, G 155, and E 84.
- I. American Association of State Highway and Transportation Officials (AASHTO): Test Method AASHTO-H20.
- J. California Code of Regulations (CCR 2007) Title 24 Part 1 Articles 2, 3 and 4, and Part 2 Section 205 definition of "Detectable Warning", Section 1127B.5 for "Curb Ramps", and Section 1133B.8.5 for "Detectable Warnings at Hazardous Vehicle Areas". California Department of Transportation Detectable Warning Surface Authorized Material List. Division of the State Architect IR 11B-3 (1/26/05) and IR 11B-4 (1/01/11). IR 11B-4 (1/01/11) removed the requirement for a "staggered" pattern and now calls for the "square grid" (in-line) pattern.

- K. Standard Specifications for Public Works Construction (SSPWC).
- L. California Building Code, 2022 Edition (CBC-22).

1.4 **SUBMITTALS**

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: For each type of product, submit manufacturer's literature describing products.
- C. Shop Drawings: For each type of tactile warning surface.
 - 1. Submit standard manufacturer shop drawings showing all pertinent characteristics, including profile, sound on cane contact amplification feature, and installation methods.
- D. Samples for Verification:
 - 1. Submit two (2) tactile warning surface samples minimum **8-inch x 8-inch** of the kind proposed for use.
 - 2. Samples shall be properly labeled and shall contain the following information: Name of Project, Submitted by, Date of Submittal, Manufacturer's Name, and Catalog Number.
- E. Material Test Reports:
 - 1. Submit current test reports from qualified, accredited independent testing laboratory in accordance with ASTM guidelines and indicating that materials proposed for use are in compliance with specification requirements and the meet properties indicated.
- F. Maintenance Data: For tactile warning surfacing, to include in maintenance manuals.
 - 1. Maintenance Instructions: Include copies of manufacturer's specified maintenance practices for each type of tactile warning surface tiles and accessories.

1.5 **QUALITY ASSURANCE**

- A. Inspections shall be requested to Town of Yucca Valley Building and Safety Department (Town).
- B. Perform Work in accordance with SSPWC, CBC-22, Caltrans, and the MUTCD.
- C. Maintain one (1) copy each document on site.

1.6 **QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three (3) years documented experience.
- B. Installer: Company specializing in performing work of this section with minimum three (3) years documented experience and approved by Engineer.

1.7 **DELIVERY, STORAGE, AND HANDLING**

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

1.8 **ENVIRONMENTAL REQUIREMENTS**

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- B. Weather Limitations for Adhesive Application:
 - 1. Apply adhesive only when ambient temperature is above **50 deg F** and when temperature has not been below **35 deg F** for 12 hours immediately before application. Do not apply when substrate is wet or contains excessive moisture.
 - 2. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602. Provide artificial shade and windbreaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of **100 deg F** and higher.
 - a. When ambient temperature exceeds **100 deg F**, or when wind velocity exceeds **8 mph** and ambient temperature exceeds **90 deg F**, set unit pavers within 1 minute of spreading setting-bed mortar.

1.9 WARRANTY

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.
- B. Manufacturer agrees to repair or replace components of tactile warning surfaces that fail in materials within specified warranty period.
 - 1. Warranty includes: manufacturing defects, breakage, and deformation.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TACTILE WARNING SURFACING, GENERAL

- A. Accessibility Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities ICC A117.1 and Public Right of Way Accessibility Guidelines, July 23, 2011, for tactile warning surfaces.
 - 1. For tactile warning surfaces composed of multiple units, provide units that when installed provide consistent side-to-side and end-to-end dome spacing that complies with requirements.
- B. Source Limitations: Obtain each type of tactile warning surfacing, joint material, setting material, anchor, and fastener from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.2 PERFORMANCE REQUIREMENTS

- A. Compliance: Tactile Warning Tiles.
 - 1. Compliant with ADAAG, PROWAG, and CA Title 24 requirements.
 - 2. Compliant with Division of the State Architect IR 11B-3 (1/26/05) and IR 11B-4 (1/01/11).
- B. Test Criteria: Meet or exceed the following test criteria, using the most current test methods.
 - 1. Water Absorption: Not to exceed 0.20 percent, when tested in accordance with ASTM D 570.
 - 2. Slip Resistance: 0.80 minimum combined wet/dry static coefficient of friction, when tested in accordance with ASTM D 695.

3. Compressive Strength: 25,000 psi minimum, when tested in accordance with ASTM C 1028.
 4. Tensile Strength: 10,000 psi minimum, when tested in accordance with ASTM D 638.
 5. Flexural Strength: 25,000 psi minimum, when tested in accordance with ASTM D 790.
 6. Chemical Stain Resistance: No reaction to 1 percent hydrochloric acid, motor oil, calcium chloride, gum, soap solution, bleach, and antifreeze, when tested in accordance with ASTM D 543.
 7. Abrasion Resistance: 300 minimum, when tested in accordance with ASTM C 501.
 8. Flame Spread: 25 maximum, when tested in accordance with ASTM E 84.
 9. Accelerated Weathering: ΔE less than 5.0 at 2,000 hours minimum exposure, when tested by ASTM G 155 or ASTM G 151.
 10. AASTHO_H20 Load Bearing Test: No damage at 16,000 pounds loading.
 11. Salt and Spray Performance: No deterioration or other defects after 200 hour of exposure, when tested in accordance with ASTM B 117.
- C. Surface Applied Detectable Warning Tiles: Truncated-dome detectable warning for surface application on existing concrete walkway surfaces, with slip-resistant surface treatment on domes; large perimeter beveled edges for smooth transition, secured with color matched fasteners, and structural adhesive. Surface Applied tiles are **3/16 inch** thick with beveled edges.
1. Basis-of-Design Product: Subject to compliance with requirements, provide ADA Solutions, Inc.; Surface Applied Detectable Warning Tiles or comparable product by one of the following:
 - a. Detectable Warning Systems, Inc.
 - b. Armorcast Products Co.
 - c. ADA Solutions, Inc.
 2. Material: Homogeneous glass and carbon composite material which is colorfast and UV stable.
 3. Color: Uniform throughout, and not reliant on any type of paint coating to achieve color stability. Federal Yellow (Y) per Federal Standard 595B Table IV, Color No. 33538.
 4. Shapes and Sizes:
 - a. Rectangular Surface Applied Tile, **1.6-2.4-inch** dome spacing: **36 by 60 inches**.
 5. Mounting: Adhered and fastened to existing concrete substrate.

2.3 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of tactile warning surfaces, noncorrosive and compatible with each material joined, and complying with the following:
 1. Furnish color appropriate nylon sleeve, stainless-steel fasteners for exterior use.
 2. Fastener Heads: For nonstructural connections, use flathead or oval countersunk screws and bolts with tamper-resistant heads, colored to match tile.
- B. Adhesive: As recommended by manufacturer for adhering tactile warning surfacing unit to substrate.
- C. Sealant: As recommended by manufacturer for sealing perimeter of tactile warning surfacing unit.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that concrete is in suitable condition to begin installation according to manufacturer's written

instructions. Verify that installation of tactile warning surfacing will comply with accessibility requirements upon completion.

3.2 **INSTALLATION OF TACTILE WARNING SURFACING**

- A. General: Prepare substrate and install tactile warning surfacing according to manufacturer's written instructions unless otherwise indicated.
- B. Place tactile warning surfacing units in dimensions and orientation indicated in contract documents.

3.3 **INSTALLATION OF DETECTABLE WARNING TILES**

- A. Surface Applied Detectable Warning Tiles:
 - 1. Tile Installation: Follow manufacturer's detailed installation guidelines.
 - 2. To the maximum extent possible, the Surface Applied Tiles shall be oriented such that the rows of in-line truncated domes are parallel with the direction of the ramp. When multiple Surface Applied Tiles regardless of size are used, the truncated domes shall be aligned between the tactile warning surface tiles and throughout the entire tactile warning surface installation.
 - 3. In accordance with the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Rights of Way (7/23/11, Access Board): Sections 304 + 305), Tactile Warning Surface Tile shall be located relative to the curb line as shown within Sections 304 + 305 of the Guidelines.
 - 4. Cutting of Surface Applied Tiles may be required to accommodate specific site conditions. All possible attempts shall be made to minimize cutting of the Surface Applied Tiles. Minimum acceptable width of the cut Surface Applied Tile shall be 9 inches.
 - 5. Environmental Conditions: Air and substrate temperatures must exceed 40 degrees for at least 8 daytime hours for a sound and proper installation. A "weed torch" may be used to boost the substrate temperature to expedite cure of adhesives and sealants.
 - 6. Immediately prior to installing the Surface Applied Tiles, the concrete surfaces must be inspected to ensure that they are clean, dry, free of voids, curing compounds, projections, loose material, dust, oil, grease, sealers and determined to be structurally sound with a minimum four (4) day concrete cure period (unless otherwise directed by the Surface Applied Tile manufacturer) and that the surface is flat. As necessary, substrate may be mechanically cleaned with a diamond cup grinder or shot blaster to remove any dirt or foreign material although a broom or leaf blower is usually adequate for cleaning of the substrate.
 - 7. Apply adhesive on the backside of the Surface Applied Tiles following the perimeter border and internal cross pattern established by the Surface Applied Tile manufacturer. Sufficient adhesive must be placed on the prescribed areas to have full coverage across the 2-inch width of the adhesive locator.
 - 8. For certain applications, generally encountered in the retail environment, the Tactile Warning Surface manufacturer may direct that full coverage adhesive be applied so as to optimize the tactile warning surface Tile's performance and load bearing capacity.
 - 9. Set the Surface Applied Tile(s) true and square to the curb ramp areas as detailed in the Drawings. Allow 3/16-inch separation between successive Surface Applied Tiles for expansion/contraction.
 - 10. Drill holes true and straight to a depth of 2 1/2 inches by 1/4 inch using the recommended bit. As necessary, additional countersunk holes may be added to the Surface Applied Tile by using a 5-point 1/2-inch (82 degree) countersink to create the necessary holes.
 - 11. Mechanically fasten Surface Applied Tile to the concrete substrate using a 32oz. to 48oz. hammer to set the composite sleeve anchors. Ensure that the fastener has been set to full depth, straight and true. Care should be taken when setting the fastener to avoid any inadvertent blows with the hammer to the Surface Applied Tile.

12. Following the installation of the Surface Applied Tile, the sealant system should be applied to the perimeter edge. Follow the Tactile Warning Surface manufacturer's recommendations when applying the sealant in a cove type profile to blend and seal the Surface Applied Tile edge to the adjoining surfaces.
13. Do not allow foot traffic on installed Surface Applied Tile until the perimeter edge sealant has cured sufficiently to avoid tracking. If the Surface Applied Tile must be placed into immediate pedestrian service, apply baby powder to the sealant to minimize the possibility of tracking while the sealant cures. Foot imprints may appear in the fully cured sealant application
14. On Continuous Runs: The Installer shall leave a 3/16-inch nominal gap between successive Tactile Warning Surface Tiles. As part of the concrete finishing operation, the Installer shall apply 1/8 - 1/4-inch edge treatment around the perimeter of the Tactile Warning Surface Tiles to facilitate future replacement of the Tactile Warning Surface Tile. A Urethane Sealant such as Sikaflex 1a or BASF NP1 shall be applied to the edge treatment for a watertight Tactile Warning Surface Tile installation.
15. Protect installed tiles from traffic until adhesive has set.

3.4 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Section 01 40 00 - Quality Requirements and 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

3.5 CLEANING AND PROTECTION

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect detectable warning tiles against damage during construction period to comply with tile manufacturer's specifications.
- C. During and after the detectable warning tiles installation and the concrete curing stage, it is imperative that there are no walking, leaning, or external forces placed on the tile to rock the tile, causing a void between the underside of the tile and the concrete substrate.
- D. Remove protective plastic sheeting from detectable warning tiles within 24 hours of installation.
- E. Clean tiles not more than four days prior to date scheduled for inspection intended to establish date of substantial completion in each area of the project.

END OF SECTION

SECTION 32 33 00 – SITE FURNISHINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The work of this section shall conform to the "Standard Specifications for Public Works Construction", latest edition, except as modified herein.

1.2 SCOPE OF WORK

- A. Work of this Section includes all materials, labor and equipment necessary to provide and install the Site Furnishings as shown on the drawings, as reasonably implied or as specified herein. The equipment shall be assembled on site as per manufacturer's recommendations and this section. All work and equipment provided shall be subject to approval of the Project Inspector.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Concrete: Section 03 30 00

1.4 SUBMITTALS

- A. Contractor shall submit a complete list of materials along with manufacturer's catalog data for all materials proposed for use in the work at the pre-construction conference. Proposals for substitution of those materials specified herein shall be submitted and reviewed.
- B. Manufacturer's Product Data: Submit three (3) copies of manufacturer's literature for each item of site furnishings.
- C. Shop Drawings: Manufacturer's shop Drawings shall be provided for all prefabricated items. Shop Drawings which show complete details shall be furnished in quadruplicate for all items requiring shop fabrication in accordance with Section 2-5.3 of the Standard Specifications.

1.5 GUARANTEE & LIABILITY INSURANCES

- A. Manufacturer shall guarantee all materials and workmanship for a period of one (1) year exclusive of vandalism. Manufacturer will be required to provide product liability insurance coverage in the minimum amount of \$10,000,000 per incident. Manufacturer or his representative shall inspect all installation work and provide written certification that equipment has been installed in accordance with the manufacturer's specifications.
- B. Each Manufacturer will be required to provide complete installation drawings including specifications and a replacement parts list for all products.
- C. Contractor shall provide a written guarantee on his firm's letterhead for all materials and workmanship for a period of one (1) year exclusive of vandalism. Written guarantee shall be submitted to the City at the final inspection prior to final acceptance of the work.

1.6 PROPOSED SUBSTITUTIONS

- A. Products proposed for substitutions as "equals" to those specified are subject to the approval of the City. If at the time proposed equals are delivered to the site, it is determined by the City that they are not equal to those specified, they shall be removed and products as specified shall be provided by the Contractor at no additional cost to the City.

1.7 LOCATION INSPECTION

- A. No equipment or apparatus or foundations for same shall be placed until location stakes have been inspected for recommended approval by the Landscape Architect and/or Project Inspector.

PART 2 - MATERIALS

ALL MATERIALS SHALL BE AS CALLED FOR ON PLANS

2.1 EXECUTION: "OR APPROVED EQUIVALENT" PRODUCTS

- A. This project is a Public Works project. Sole sourcing of material is not allowed. Any reference or call out on the plans and/or in the specifications to a specific manufacturer shall be interpreted as "or approved equivalent". The City Engineer's and Landscape Architect's approval is required as to whether or not a product meets the City's standard to be an approved equivalent. **Bidders shall use the pricing for the products as specified to avoid risks of disapproval. No substitutions will be considered prior to the award of the contract.**

PART 3 - EXECUTION

3.1 LAYOUT

- A. Contractor shall stake/mark locations for all slabs equipment or apparatus or foundations for same and shall obtain the acceptance of their location from Landscape Architect and/or Park Inspector prior to commencing any digging. Locations shall be adjusted to provide minimum clear distances required from all edges of slabs, trees, irrigation heads, or other obstructions.

3.2 CONCRETE WORK

- A. All concrete foundation work shall be performed in accordance with the Standard Specifications, Section 201. Contractor shall obtain the acceptance of all forming from the Park Inspector prior to pouring any concrete. Foundations holes shall be inspected and accepted by the Inspector prior to pouring concrete.

3.3 STEEL FABRICATION AND WELDING

- A. All steel members shall be thoroughly hand cleaned and solvent cleaned to remove all rust, scale, oil, grease, and foreign material prior to welding. All welds shall be continuous fillet welds along

all abutting surfaces. Sand all welds smooth. Galvanized steel shall be touched up after welding with Galvicon paint.

3.4 SITE FURNISHINGS

- A. All Site Furnishings shall be installed plumb, at a height above the finish surface as recommended by the manufacturer. Minimum footing size shall conform to the manufacturer's recommendations. All footings shall be installed prior to placement of concrete slabs, where they occur. **No "block outs" will be permitted.**

3.5 PAINTING

- A. All items to be painted shall be properly primed prior to application of a minimum of two (2) finish coats.
- B. After installation, all site furnishings and play equipment shall be touched-up as necessary. Touch-up paint shall be as supplied by the manufacturer.

3.6 CLEAN-UP

- A. Contractor shall clean up and legally dispose of all unused materials, excess soil, and debris at regular intervals throughout the duration of the work, and as directed by the City.

END OF SECTION

SECTION 32 80 00 – IRRIGATION

PART 4 - GENERAL REQUIREMENTS

4.1 DESCRIPTION

- A. Work Included: Unless otherwise specified, the construction of irrigation systems shall include the furnishing, installing and testing of mains, laterals, risers and fittings, quick couplers, gate valves, back flow preventers, furnishing and installing of irrigation controllers, booster pumps, excavation and backfill, and all other work in accordance with the plans and specifications for a complete operating system.
1. The intent of the drawings and specification is to indicate and specify a complete and efficient irrigation system ready for use in accordance with the manufacturer's recommendations and meeting the recommended approval of the Landscape Architect. All work shall be in accordance with applicable City and County codes, and these plans/specifications.
 2. Irrigation systems shall be constructed to the sizes and grades and at the location shown on the drawings. Lines shown on the plans are essentially diagrammatic. Locations of all heads, valves, etc., shall be reviewed by the Landscape Architect at the time of construction. Do not exceed spacing of the heads as shown on plans.
 3. The applicable provisions of the General Conditions and the Special Conditions of these specifications shall govern the work of this section as if herein written in full.
 4. The Contractor shall maintain, continuously, a competent superintendent or foreman, satisfactory to the Owner, during the progress of work, with authority to act for him in all matters pertaining to the work.
 5. Work noted as "N.I.C.", "existing" or "to be supplied and/or installed by others" is not a part of this section.
 6. The work in this section shall be coordinated with all underground utilities and trades responsible for their installation.
- B. Field Conditions: Verify drawing dimensions with actual field conditions. Inspect related work and adjacent surfaces. Report to the Landscape Architect all conditions which prevent proper execution of this work.
- C. Permits and Fees: The contractor shall apply and pay for all necessary fees and permits required in the pursuit of his work as required by governing codes.
- D. All assemblies specified herein shall be installed in accordance with the respective details. In the absence of detail drawings or specifications pertaining to the specific items required to complete the work, the Contractor shall perform such work in accordance with the best standard practice and to the satisfaction of the Landscape Architect.
- E. Irrigation Contractor is responsible for replacing or repairing any acts of theft or vandalism during construction and the maintenance period.
- F. Permission to shut off any water lines must be obtained from the Owner. Disruption of existing systems shall be kept to a minimum.
- G. Contractor shall maintain irrigation system throughout plant establishment and maintenance period.
- H. Contractor shall provide one year guarantee.

4.2 RELATED WORK DESCRIBED ELSEWHERE

- A. Planting: Section 32 90 00

4.3 QUALITY ASSURANCE

- A. Codes and Standards: In addition to complying with all pertinent codes and regulations, comply with the latest rules of the National Electrical Code and the Electrical Safety Orders of the State of California, Division of Industrial Safety, for all electrical work and materials.
- B. Qualifications of Installers: Provide at least one person who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the materials manufacturer's recommended methods of installation, and who shall direct all work performed under this Section.

4.4 SUBMITTALS

- A. General: Comply with the provisions of Section 01 32 00.
- B. Product Data: Within 45 days after award of the Contract, and before any materials of this Section have been delivered to the job site, submit to the Architect:
 - 1. A complete materials list of all items proposed to be furnished and installed under this Section.
 - 2. The manufacturer's recommended methods of installation which, when recommended for approval by the Architect, shall become the basis for review and accepting or rejecting actual installation methods used on the work when not otherwise specified or detailed.
- C. Materials and Samples: If materials are to be employed, other than designated on the plans, the Contractor shall, prior to the installation of any irrigation work, submit for recommended approval by the Landscape Architect, a list of materials and equipment he proposes to use. The material and equipment list shall include, but not be limited to, polyvinyl chloride pipe, automatic controllers and control valves, quick coupling valves and irrigation heads.
 - 1. Should the Contractor propose to use materials or equipment other than those listed on the plans, he shall submit samples of the make and type proposed. Samples shall be submitted a sufficient time in advance of the start of construction to allow a period of not less than seven (7) days for testing and recommended approval.
 - 2. Recommended approval of irrigation equipment and materials shall depend on the following:
 - a. Conformance to specification requirements.
 - b. Acceptable test results and/or field performance.
 - c. Durability and low maintenance.
 - d. Availability of parts and service.
 - e. Compatibility with owner's materials inventories.
- D. Project Record Drawings: Provide separate and complete Project Record Drawings prepared in accordance with the provisions of these Specifications, Sub-section 3.8, following

4.5 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

- B. Delivery: Polyvinyl chloride pipe shall be delivered to the work site in unbroken bundles or rolls packaged in such a manner as to provide adequate protection for the pipe ends, threaded or plain.
- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the recommended approval of the Architect and at no additional cost to the Owner.

PART 5 - PRODUCTS

5.1 "OR APPROVED EQUIVALENT" PRODUCTS

- A. This project is a Public Works project. Sole sourcing of material is not allowed. Any reference or call out on the plans and/or in the specifications to a specific manufacturer shall be interpreted as "or approved equivalent". The City Representative and Landscape Architect's approval is required as to whether or not a product meets the city's standard to be an approved equivalent. **Bidders shall use the pricing for the products as specified to avoid risks of disapproval. No substitutions will be considered prior to the award of the contract.**

5.2 PIPE

- A. Plastic Pipe:
 - 1. Unless otherwise specified, the construction of lateral lines and main lines shall include excavation and backfill, the furnishing, installing and testing of pipe, tube and fittings, the furnishing and installing of anchors, thrust blocks and location wire, the improvements, line flushing and testing, and all other work in accordance with the plans and specifications.
 - 2. Main supply pressure lines shall be PVC; 4" and larger Class 200, 2" - 3" Class 315, 1 1/2" and smaller Schedule 40, as manufactured by Pacific Plastics, Inc., or approved equal.
 - 3. Lateral non-pressure lines shall be PVC. Schedule 40 polyvinyl chloride, as manufactured by Pacific Plastics, Inc., or approved equal.
 - 4. Irrigation Lines Sleeves shall be PVC. Schedule 40 polyvinyl chloride, as manufactured by Pacific Plastics, Inc., or approved equal.
 - 5. Low Voltage Control Wire Sleeves (valve wires) shall be PVC Schedule 40 polyvinyl chloride, as manufactured by Pacific Plastics, Inc., or approved equal. All exposed wires shall be sleeved in PVC Schedule 40 ULV electrical conduit with ULV Schedule 40 fittings.
 - a. Identification: All pipe shall be continuously and permanently marked with the following information: The normal pipe size, the type and schedule or class of material, the working pressure or pressure rating at 73.4 degrees F., the manufacturer's name or trade mark, and the National Sanitation Foundation (N.S.F.) seal of approval.
 - 6. All plastic pipe shall be guaranteed by its manufacturer to have passed, or be capable of passing, the Anhydrous Acetone Immersion Test and to be free from manufacturing defects.
- B. Identification: All pipe shall be continuously and permanently marked with the following information: The normal pipe size, the type and schedule or class of material, the working pressure or pressure rating at 73.4 degrees F., the manufacturer's name or trade mark, and the National Sanitation Foundation (N.S.F.) seal of approval.
 - 1. All plastic pipe shall be guaranteed by its manufacturer to have passed, or be capable of passing, the Anhydrous Acetone Immersion Test and to be free from manufacturing defects.
- C. Polyvinyl Chloride Pipe Fittings and Connections:

1. Polyvinyl chloride pipe fittings and connections approved for irrigation systems shall be polyvinyl chloride, Type II, Grade I, Schedule 40, high impact molded fittings, manufactured from virgin compounds.
2. The Schedule 40 fittings shall be tapered socket type, or molded thread type, suitable for either solvent weld or screwed connections.
3. Machine threaded fittings will be acceptable only if thread-stripping resistance test results are submitted and approved.
4. In line fittings, such as couplings, unions and bushings may be machined from extruded stock.
5. Plastic saddle and flange fittings will not be acceptable.
6. All fittings shall be permanently marked with the following information: The normal pipe size, the type and schedule of material, and the National Sanitation Foundation (N.S.F.) seal of approval.

D. Galvanized Pipe and Fittings:

All galvanized steel pipe shall be Schedule 40, threaded, coupled and hot-dip galvanized, and shall comply with ASTM A120 and A53.

1. All fittings for galvanized steel pipe shall be 150 PSI rated galvanized malleable iron, banded pattern.
2. Pipe sizes indicated on the drawings are nominal inside diameter unless otherwise noted.

5.3 VALVES

A. Ball Valves:

1. All ball valves shall be all bronze construction full port; 1/2" thru 2", Nibco T585.
2. Working Pressure Rated: 150 PSI stem, 400 PSI W.O.G.
3. Ball valves installed underground shall be housed in a rectangular plastic valve box.

B. Gate Valves:

1. All gate valves shall be all bronze construction full port; 1/2" thru 2", Nibco T113.
2. Working Pressure Rated: 200 PSI non rising stem, screw in bonnet, solid wedge.

C. Butterfly Valves:

1. All butterfly valves shall be 2 1/2" and larger, Nibco WD2000.
2. Butterfly valves installed underground shall be housed in a rectangular plastic valve box.

D. Automatic Control Valves (Electric):

1. All automatic control valves (electric) shall be as called for on plans, electrically controlled, hydraulically operated, single seat, normally closed no equivalents or equals.
2. The valves shall be actuated by a normally closed solenoid valve operator using 24 volts, 60 cycle alternating current. The wires in the coil of the solenoid shall be embedded in an epoxy resin. Valves shall automatically close in event of electrical power failure.
3. All automatic control valves shall have a flow control device for manually adjusting the amount of flow of water through the valve. The flow control device shall be adjusted so that the pressure at the nozzle of the irrigation head farthest from the automatic control valve shall be that as specified in the irrigation legend per plan. The pressure at the irrigation head shall be measured by means of a pilot pressure gauge while the irrigation head is operating.

4. Automatic control valves shall be constructed of brass or stainless steel springs and screens, and composition material (neoprene) seals and seat washers.
5. Valve stems shall have a cross handle.
6. All automatic control valves shall be equipped with a pet clock for manual operation control.
7. The Contractor shall furnish one valve box key for each six or less valve boxes installed.
8. All valves shall have a T.C. Christie valve marking plastic tag.

5.4 QUICK COUPLERS

- A. Quick couplers shall be as called out for on plans.

5.5 CONTROLLERS AND WIRE

- A. Automatic Controllers (Electric):
 1. Controller shall as called for on plans.
 2. All automatic controllers treated in this specification shall be for use with solenoid operated (24-volt electric), normally closed, control valves.
 3. Automatic controllers shall meet the following requirements:
 - a. Be completely automatic in operation with remote control.
 - b. Shall electrically start the sprinkling cycle.
 - c. Shall electrically time the individual stations.
 - d. Shall operate on single phase, 120 volt, 60 cycle, and alternating current.
 - e. Shall contain electrical circuits for pump and master valve operations.
 - f. Shall have complete operating instructions and charts indicating controller station to valve locations mounted inside the controller in full view when controller is open.
 - g. Smart irrigation controller which automatically adjusts frequency and/or duration of irrigation events in response to changing weather conditions.
- B. Control Wire:
 1. All control wire shall be of the Underwriter's Laboratory type UF (underground feeder), single conductor, solid copper, plastic insulated, 600 volt rated, for direct burial applications. Maximum conductor operating temperature, 60 degrees C. for both wet and dry locations. Wire composition is as follows:
 - a. Conductor - The conductors shall be solid annealed uncoated copper meeting the applicable requirements of the latest revisions of A.S.T.M. B-3.
 - b. Insulation - The insulation shall be colored plastic which meets the test requirements of I.P.C.E.A. (The Insulated Power Cable Engineer's Association) Pub. No. S-61-402, dated July 1961, Section 3.7 for 60 degrees C. polyvinyl chloride insulation. The insulation shall be flame retardant, resistant to fungus, resistant to corrosive fumes, suitable for wet locations and furnish some degree of inherent protections against mechanical abuse. Insulation thickness shall be 47 mils for AWG #14, 12 & 10, and 62 mils for AWG #8.
 - c. Color Coding - The conductor insulation shall be color coded as follows:
 - 1) All common ground wire shall be white.
 - 2) All pilot (valve control) wire shall be black.
 - d. All wire splices shall be made within a control valve box or a separate valve box. Each splice shall be made with a Spears Dri-Splice DS-100 wire connector and filled with Spears DS-300 sealant.

5.6 VALVE BOXES

- A. Valve Boxes: All valve boxes and lids shall be made of rigid polyolefin. Valve boxes shall be green unless specified for use with reclaimed water, then valve box shall be per plan and marked for such use. Rectangular valve boxes shall be 16" wide by 21-1/2" long and 12" high. Use

rectangular boxes for master valves, flow sensors, ball/gate valves, butterfly valves, control valve, and pull boxes. Use jumbo rectangular valve boxes for drip valve assemblies. Round valve boxes shall be 10" diameter and 10-1/4" high. Use round valve boxes for quick couplers, flush valve and spare wires. Heat brand valve box lid with appropriate two-inch high (2") identification letter or numbers.

5.7 IRRIGATION HEADS

- A. Irrigation Heads:
 - 1. Irrigation heads shall be as called for on plans. Irrigation heads shall be of the types and sizes, with the diameter (or radius) of throw, pressure, discharge and any other designations necessary to determine the types and sizes, as indicated on the plans.
 - 2. All irrigation heads of a particular type of function in the system shall be of the same manufacture and, with the exception of shrubbery heads, shall be marked with the manufacturer's name and model number. This identification shall be visible without having to remove the irrigation head from the system.
 - 3. Unless otherwise specified, all irrigation heads & body shall be constructed of cyclac with the following exceptions: bearings, washers, gaskets, seals, spray pins and rocker arms.

5.8 DRIP VALVE ASSEMBLIES:

- A. Electric Remote Control Valves: Electric control valves with pressure regulating feature two way solenoid, pilot operated made of synthetics, non corrosive material; diaphragm activated and slow closing. Include freely pivoted seat seal, retained (mounted) without attachment to diaphragm.
- B. Wye Strainer: 150 mesh screen for point to point drip
- C. Isolation Ball Valve: Ball Socket Ball Valve with thermoplastic molded one piece construction and teflon seat with EDPM cushions.

5.9 HARD PIPED POINT TO POINT DRIP IRRIGATION:

- A. Riser Assembly For Hard Piped Point to Point Drip Irrigation:
 - 1. 12" Long, 1/2" IPS flexible PVC tubing with factory attached 1/2" schedule 40 PVC MIPT adapters on both ends.
- B. Emitters For Hard Piped Point to Point Drip Irrigation:
 - 1. Pressure compensating single outlet emitter with 1/2" FIPT base and 20 mesh screen. 1/2 GPH, 1 GPH or 2GPH. Mulch Camo Brown in color.

5.10 SUB SURFACE DRIP IRRIGATION:

- A. Drip Tubing For Subsurface Drip Tubing:
 - 1. Nominal sized 1/2" low density, ultra-violet resistant, linear polyethylene tubing with internal pressure-compensating, continuous self-cleaning, integral drippers at a specified interval. The tubing shall be brown in color and conform to an outside diameter (O.D.) of 0.66" and an inside diameter (I.D.) of 0.57". The dripperline shall be capable of a discharge rate of 0.4, 0.6 or 0.9 gallons per hour (GPH) between operating pressures of 7-70 PSI for each individual dripper.
 - 2. The individual continuous self-cleaning, pressure compensating drippers shall be welded to the inside of the tubing wall. The drippers shall be constructed of three individual pieces:

- a. a black-colored dripper containing a filtration system on the inlet side, compensation cell, and a recessed chamber with a water outlet,
 - b. a hard plastic diaphragm retainer with color denoting discharge rate, with chamfered edges and recessed groove in the center extending the full length of the diaphragm and,
 - c. a flexible black elastomer diaphragm that allows pressure to build up within the chamber to purge sediment or other debris that may not have been captured by the disc filter.
 - d. Dripper spacings shall be available in the following on-center intervals – 12”, 18”, and 24”.
- B. Pressure Regulator Valves For Subsurface Drip Tubing:
- 1. The pressure regulator valve(s) shall be a spring-operated piston type with an externally accessible regulation unit that can be serviced without removing the valve from the system. The valve shall be constructed from molded black plastic with six different colored tops with interchangeable springs denoting different pressure regulation and flow ranges. The regulator shall have a built-in indicator that shows when the proper outlet pressure is reached. Operating ranges for the valves shall be from 15-50 PSI in 5-PSI increments. Inlet and outlet ports of the valve shall be a combination of male/female threads.
- C. Disc Filter For Subsurface Drip Tubing:
- 1. The disc filter body shall be molded of black plastic with male pipe threads (MPT) for both the inlet and outlet ports. A threaded cap on one end of the body shall be capable of periodic servicing by unscrewing the cap or releasing the latched band from the main filter body. On one ¾” model, a manual shut-off valve shall be co-molded to the opposing end of the removable cap as part of the main body. This device shall be capable of closing off the inlet port so the disc element can be removed when the main line is still pressurized.
- D. Air /Vacuum Relief Valves for Subsurface Drip Tubing:
- 1. Air / vacuum relief valves shall be constructed of grey and/or black plastic with an internal sliding poppet valve that is capable of venting air or preventing vacuum.. The main body shall have a ½” male pipe thread (MPT). Operating pressure range for the air/vacuum relief valve shall be 7 PSI minimum to 140 PSI maximum.
- E. Stainless Steel Clamps for Subsurface Drip Tubing:
- 1. Tubing clamps shall be constructed to 304 AISI stainless steel and shall be one “ear” type. This “ear” shall be capable of being pinched with a pinching tool to secure the tubing around the barbed insert fitting. Interior clamp wall shall be smooth to prevent crimping and pinching of tubing. Wall thickness of clamps shall be .0236” (0.6mm) with an overall band width of ¼” (7 mm).

5.11 CHECK VALVES:

- A. Swing Check Valves: PVC, Slip x Slip check valves, for non-pressure lateral line applications on slopes.

5.12 FLUSH VALVE ASSEMBLIES:

- A. Schedule 80 Ball Valve, threaded schedule 80 nipples and fittings with polyethylene tubing for flush hose.

5.13 BUBBLERS:

- A. Bubblers shall be constructed of heavy duty plastic and be pressure compensation full circle. The bubbler shall have a 20 mesh screen to protect it from clogging.
- B. Bubblers shall be adjustable from .25 - 1.0 GPM and operate between 20-90 PSI.

PART 6 - EXECUTION

6.1 SURFACE CONDITIONS

- A. Inspection:
 - 1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
 - 2. Verify that irrigation system may be installed in strict accordance with all pertinent codes and regulations, the original design, the reference standards and the manufacturer's recommendations.
- B. Discrepancies:
 - 1. In the event of discrepancy, immediately notify the Landscape Architect.
 - 2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

6.2 FIELD MEASUREMENTS

- A. General:
 - 1. Trenches and other excavations for irrigation pipe and appurtenances shall be excavated true to alignment and grade, and shall be of ample size for the proper performance of installation work, review, testing and backfill.
 - 2. Where it is necessary to excavate adjacent to existing trees, the Contractor shall use all possible care to avoid injury to trees and tree roots.
 - 3. Protect all existing utilities and repair any damage to existing utilities with matching new materials, at no increase in contract price.
 - 4. Generally, piping under concrete shall be installed by jacking, boring or hydraulic driving. Where any cutting or breaking of sidewalks and/or concrete work is necessary, it shall be removed and replaced by the Contractor. Permission to cut or break sidewalks and/or concrete shall be obtained from the Architect. No hydraulic driving will be permitted under asphaltic concrete paving.
 - 5. Coordinate with planting operations, as 10" deep cross-ripping is required prior to irrigation systems installation. (Cross-ripping is part of the planting work).

- B. Plastic Pipe Trenches:
1. Minimum trench width shall be six (6) inches.
 2. Minimum trench depth below bottom of pipe shall be two (2) inches.
 3. Minimum cover shall be based on finished grades, unless otherwise noted on Drawings.
 - a. Lateral Line minimum cover shall be twelve (12) inches.
 - b. Main Line minimum cover shall be eighteen (18) inches.
 - c. Pipe and Wire Sleeves minimum cover shall be twenty-four (24) inches.
- C. Backfill Material:
1. All plastic pipe shall be bedded and encased with approved backfill material free of rocks and clods as indicated in the following table and/or shown on the plans.
 - a. Thickness Under Pipe Minimum Two (2) inches
 - b. Thickness Above Pipe Minimum Four (4) inches
 - c. Thickness at Side of Pipe Minimum Two (2) inches
 2. The balance of backfill material shall be approved soil. Unsuitable material, including clods and rocks over 2 to 2-1/2 inches in size, shall be removed from the premises and disposed of legally at no cost to the Owner.
 3. Backfill material shall be sufficiently compacted under and on each side of the pipe to provide support free of voids. On slope areas over 3:1 gradient compaction shall be 85% (min) or equal to the requirements of the grading plans, whichever is greater. Pipe joints shall remain exposed until the completion of pressure and leakage test, unless authorized by the Architect. The top six (6) inches of backfill shall be free of rocks over one (1) inch, subsoil, rubbish and debris.
 4. The remainder of the backfill material shall contain no lumps or rocks larger than two and one-half (2-1/2) inches, nor contain rubbish and debris.
 5. Backfill shall be tamped or puddled to the dry density of adjacent soil. Backfill within areas of structurally compacted soils shall be returned to the original relative density as before trenching.
- D. Location Wire:
1. Location wire shall be placed on top of the four-inch select backfill over all mainline (pressure bearing) pipes, except copper pipe. Wire shall be No. 12 gauge copper, new or used or an approved substitute, and shall provide a continuous electrical conductor between gate valves and control valves. Each end shall be brought to the valve sleeve and two feet of wire looped free in the trench beside the valve body. This location wire may be omitted where copper hydraulic control tubing or electric control wire follows the water main.

6.3 INSTALLATION OF POLYVINYL CHLORIDE PIPE

- A. Polyvinyl chloride pipe shall be installed in such a manner so as to provide for expansion and contraction as recommended by the manufacturer.
- B. All polyvinyl chloride pipe shall lay free in the trench with no induced strain. Where there is evidence of induced pipe strain, the Contractor shall be required to make pipe cuts and install angle fittings as necessary to eliminate the strain.
- C. When a connection is plastic to metal, a female adapter shall be used. The metal nipple shall be hand-tightened, plus one turn with a strap wrench. Joint compound shall be Permatex, Type 2, or Teflon Tape.
- D. The Contractor will be required to remove and replace any fitting which induces a torque strain to the pipe.

- E. Polyvinyl chloride pipe shall be cut with a PVC pipe cutter, hand saw or hack saw with the assistance of a square and sawing vise or in a manner so as to ensure square ends. Burrs at cut ends shall be removed prior to installation so that a smooth unobstructed flow will be obtained.
- F. All plastic to plastic joints shall be solvent-weld joints. Only the solvent recommended by the pipe manufacturer shall be used.
- G. The solvent-weld joints shall be made in the following manner:
 - 1. Thoroughly clean the mating pipe and fitting with a clean dry cloth.
 - 2. Try the parts for fit. The parts should "dry-mate" between one-third and two-thirds the depth of the socket. If adequate insertion is not obtained, or bottoming occurs, try another part until a satisfactory "dry-fit" is obtained.
 - 3. Apply a uniform coat of solvent to the outside of the pipe with a non-synthetic bristle brush.

NOTE: For PVC. Type I, 1120-1220, pipe mating surface shall first be cleaned with the application of Methyl Isobutyl Ketone (MIBK) solvent. This cleaning shall be accomplished by applying MIBK solvent to the full mating surface area and wiping off with a clean cloth, repeating the process, if necessary, until no trace of shine remains (neither streaks nor spots). The use of commercial PVC solvent-cement thinners as a substitute of MIBK is not allowed.

- 4. Apply a uniform coat of solvent-weld to the fitting socket.
- 5. Re-apply a light coat of solvent-weld to the pipe and quickly insert it into the fitting.
- 6. Give the pipe or fitting a quarter turn to ensure even distribution of the solvents and make sure that the pipe is inserted to the full depth of the fitting socket.
- 7. Hold in position for at least 15 seconds.
- 8. Wipe off excess solvent that appears at the outer shoulder of the fitting.

6.4 INSTALLATION OF CONTROL WIRE

- A. Unless otherwise specified, the installation of control wire shall include excavation and backfill, the furnishing, installing and testing of the wires, the removal and/or restoration of existing improvements and all other work in accordance with the plans and specifications.
- B. Unless otherwise specified all neutral (common ground) wire shall be AWG #12 and all pilot (valve control) wire shall be AWG #14.
- C. At least one spare wire shall be installed from the controller clock to the most distant valve. When wire runs go in different directions from the controller clock, a separate spare wire shall be installed from the controller clock to the most distant valve in each different wire run direction.
- D. Tape and bundle all control wires at 10' o/c maximum; place wiring with 18" minimum cover. When wiring is placed in common trenches with piping, set wiring 2" from any piping.
- E. All wire splicing shall take place in the valve boxes and/or pull boxes. All splices shall be made with a mechanical connector encased in a self-curing epoxy resin which provides a permanent watertight connection.
- F. All direct burial control wires shall be identified as to their respective valve number and controller clock letter in all pull boxes and at all wire termination. Spare wires and "future valve" wires, if any, shall also be identified. Labels and tags shall be used for identification which are not affected by moisture or temperatures between minus 30 degrees F. and plus 200 degrees F. The labels and tags shall be resistant to abrasion, dirt, grease, and chemicals used in lawn fertilizers and conditioners. The labels and tags shall be firmly attached to the wire in every case. The Contractor shall submit samples of the labels or tags to be used, to the Architect for recommended

approval, prior to the installation of the control wire. Examples of nomenclature of tags or labels are as follows:

1. Neutral (common ground) wire = "Neutral" Clock "A"
2. Pilot (valve control) wire = "A.V. #1." Clock "A"
3. Spare Wire = "Spare" Clock "A"

- G. The final operating sequence of the remote control valves, within each individual controller clock, shall be as called out on drawings.
- H. Testing:
1. All direct burial control wire installed shall be tested in the following manner.
 - a. Before any backfill material is placed over the control wires in the trench, the wires shall be tested with a meter for insulation resistance. Minimum insulation resistance to ground shall be fifty (50) megohms. Any conductor not meeting this requirement shall be replaced.
 - b. After backfill encasement, the wires shall again be tested with a meter. The minimum acceptable insulation resistance to ground on this test shall be one (1) megohm. Any conductor not meeting this requirement shall be replaced.
- I. Provide separate common wire for each controller installed.

6.5 INSTALLATION OF VALVES

- A. General: Unless otherwise specified, the installation of the valves shall include excavation and backfill, the furnishing, installing and testing of risers, fittings and valves, the furnishing and installing of appurtenances, accessories, anchors and thrust blocks, the removal and/or restoration of existing improvements and all other work in accordance with the plans and specifications.
- B. Group control valves together as specified on the drawings with a minimum spacing of 36" between each valve box.
- C. Automatic control valves shall be set upright with a minimum clearance of 3" between top of cross and bottom of valve box lid. The Contractor shall brand, the identification number of the valve and clock on the outside cover of the box.

6.6 INSTALLATION OF AUTOMATIC CONTROLLERS

- A. Unless otherwise specified, the installation of automatic controllers shall include the furnishing, the installing, making necessary electrical connections, the testing of controllers and connection, and all other work as called for on the plans and/or in the specifications.
- B. All electrical conduit shall be P.V.C. Sunstop ULV Schedule 40 pipe & fittings.
- C. Install controllers at 5' min. away from 3 phase power.
- D. Install a separate ground rod and wire for each controller as specified on the drawings and per manufacture's specifications.
- E. Unless otherwise specified the installation of controllers shall be as detailed on plan.
- F. Controllers shall be tested for fourteen (14) calendar days after complete installation of the irrigation system. System shall operate automatically in the manner shown on the drawings and/or specified herein.

6.7 INSTALLATION OF IRRIGATION HEADS

- A. Unless otherwise specified, the installation of irrigation heads shall include excavation and backfill, the furnishing, installing and testing of risers, fittings and heads, the furnishing and installing of anchors and thrust blocks, the furnishing and installing of cone shaped screens at base of each head, the removal and/or restoration of existing improvements and all other work shall be in accordance with the plans and specifications.
- B. Flushing: All water lines shall be thoroughly out before heads are installed.
- C. Location and arc of heads shall be adjusted, if required to eliminate any dry spots, over water or spillage on adjacent areas.
- D. All seeded area irrigation heads shall be installed adjacent to existing walks, curbs, or other paved areas, shall be set to the grade of the improvements. Irrigation heads which are to be installed in areas where the turf has not yet been established shall be set one (2) inches above the proposed finished grade. Heads installed in this manner shall be lowered by the Contractor prior to final acceptance. In established lawn areas the irrigation heads shall be set to existing grade.
- E. All shrubbery heads to be installed within three (3) feet of curbs shall be set to a maximum height of six (6) inches above the grade of the curb. Shrubby heads installed in all other areas shall be twelve (12) inches above finished grades unless otherwise indicated on the plans. Pop-up shrub heads shall be installed as detailed.

6.8 DRIP IRRIGATION SPECIALTY INSTALLATION

- A. Install drip tubing per plans and details.
- B. Install application pressure regulators in piping near device being protected, and in control-valve boxes.
- C. Install air relief valves and vacuum relief valves in piping, and in control-valve boxes.

6.9 DRAWINGS OF RECORD AND TURNOVER ITEMS

- A. Record Drawings: The Contractor shall provide and keep up to date, a complete record set of bond prints which shall be corrected daily and show every change from the original drawings and specifications and the exact locations, sizes and kinds of equipment. Prints for this purpose may be obtained from the Owner. This set of drawings shall be kept on the site and shall be used only as a record set.
- B. The drawings shall also serve as work progress sheets, and the contractor shall 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 inspections and shall be kept in a location designated by the Owner.
- C. In order to complete the record drawings in a neat, legible manner, the contractor shall employ a competent draftsman, satisfactory to the Owner's authorize representative, to indicate the necessary changes on mylar tracings or revised CAD drawings procured from the Owner and deliver same to the Owner two weeks prior to the final review by the Architect.
- D. The contractor shall dimension from two (2) permanent points of reference, building corners, sidewalks, or road intersections, etc., the location of the following items:
 - 1. The routing of the irrigation main lines
 - 2. Connections to the existing water lines

3. Control valves and Butterfly valves
4. Hose Bibs
5. Any other pertinent underground item, if so deemed by the Landscape Architect.

E. Controller Charts:

1. Provide one controller chart for each controller supplied.
2. Record drawings shall be recommended for approval by the Landscape Architect before charts are prepared.
3. These charts shall be completed and reviewed prior to final observation of the irrigation system, and prior to final payment.
4. Update and prepare new controller charts at end of the 1 year maintenance period.
5. The chart shall show the area controlled by automatic controller and shall be no larger than the 24" x 36" original.
6. The chart is to be a reduced drawing of the actual system. However, the chart shall only be reduced to a size which is completely legible.
7. Chart shall be black line print and shall be colored with a different color for each station.
8. The chart shall be mounted using Velcro, or an approved equal type of tape.
9. When completed and recommended for approval, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 20 mils thick.

F. Turnover Items, supply as part of this contract the following items:

1. Four (4) additional irrigation heads of each type and spray pattern shown on plans.
2. Five (5) drip emitters of each type and (5) poly flex risers, for each 100 emitters installed on the project.
3. Two (2) wrenches for disassembly and adjustment of each type of irrigation head shown on plans.
4. Two (2) keys for each automatic controller.
5. Two (2) service manuals for equipment installed.
6. Two (2) quick couplers with a 3/4" bronze hose bib, bent nose type with hand wheel and two (2) quick coupler keys to match quick couplers shown on plan.
7. Two (2) valve box cover keys or wrenches.
8. One (1) 5-foot tee wrench for operating butterfly valves 3 inches or larger.
9. Backflow device valve handles and Water Department inspection documentation.
10. 100 L.F. of drip tubing.

6.10 TESTS

A. Pressure Tests:

1. All pressure lines shall be tested under hydrostatic pressure of 125 pounds per square inch, and all non-pressure lines shall be tested under the existing static pressure and both be proved watertight. Contractor shall provide all equipment for hydrostatic tests at no cost to the Owner.
2. Pressure shall be sustained in the lines for not less than two (2) hours. If leaks develop, the joints shall be replaced and the test repeated until the entire system is proved watertight.
3. Tests shall be observed and recommended for approval by the Landscape Architect prior to backfill.

B. Coverage Test:

1. When the irrigation system is completed, the Contractor, in the presence of the Architect, shall perform a test coverage of water afforded the planting areas, complete and adequate. The Contractor shall furnish all materials and perform all work required to correct any inadequacies of coverage disclosed arising from his work.
2. Contractor shall inform the Owner's representative of any deviation from the plan required due to wind, planting, soil or site conditions that bear on proper coverage; and upon

approval, perform changes to provide for proper coverage at no additional cost to the Owner.

6.11 REVIEWS

- A. Normal Progress Reviews: Normal progress reviews shall be requested from the Architect at least 48 hours in advance of any anticipated review. A review will be made by the Architect on each of the steps listed below. The Contractor will not be permitted to initiate the succeeding steps of work until he has received written approval to proceed by the inspector.
1. Immediately prior to the commencement of the work of the section.
 2. Irrigation materials and equipment to be used.
 3. After trenching and before backfill.
 4. Completion of line testing, test to be made prior to backfill.
 5. After placement of all heads, bubblers, emitters, valves and controllers for coverage.
 6. Final review and receipt of "Record Drawings"/"Controller Charts".
 7. Final acceptance of project by Owner.
 8. In no event shall the Contractor cover up or otherwise remove from view any work under this contract without prior approval. Any work covered prior to review shall be opened to view by the Contractor, at his expense.
- B. Unprepared Review Requests: In the event the Contractor requests review of work and said work is incomplete, the Contractor shall be responsible for review cost.
- C. Completion: The work will be accepted, in writing, when the whole shall have been completed satisfactorily to the Owner and the Architect. In judging the work, no allowance for deviation from the original plans and specifications will be made unless already approved by Owner, in writing, at the proper times.
1. Leave the entire installation in complete operating order, free from any and all defects in material, workmanship or finish, regardless of any discrepancies and/or omissions in plans or specifications.
 2. Remove from the site all debris and rubbish resulting from the work, and leave the installation in clean condition.

6.12 GUARANTEE

- A. General: The entire irrigation system, including all work done under this contract, shall be guaranteed against all defects and fault of material and workmanship for a period of one (1) year following the filing of the Notice of Completion. All materials used shall carry a manufacturer's guarantee of one (1) year.

Should any problem with the irrigation system be discovered within the guarantee period, it shall be corrected by the Contractor at no additional expense to the City within ten (10) calendar days of receipt of written notice from the City. When the nature of the repairs as determined by the City constitute an emergency (e.g. broken pressure line) the City may proceed to make repairs at the Contractor's expense. Any and all damages to existing improvement resulting either from faulty materials or workmanship, or from the necessary repairs to correct same, shall be repaired to the satisfaction of the City by the Contractor, all at no additional cost to the City.

- B. Form of Guarantee: Guarantee shall be submitted on Contractors own letterhead as follows:

FORM OF GUARANTEE FOR IRRIGATION SYSTEM

We hereby guarantee that the irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse, or neglect

excepted. We agree to repair or replace any defects in materials or workmanship which may develop during the period of one year from date of filing of the Notice of Completion and also the repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the City. We shall make such repairs or replacements within 10 calendar days following written notification by the City. In the event of our failure to make such repairs or replacements within the time specified after receipt of written notice from the City, we authorize the City to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT: _____
LOCATION: _____
SIGNED: _____
ADDRESS: _____

PHONE: _____

- C. After the system has been completed, the Contractor shall instruct the Owner in the operation and maintenance of the system and shall furnish a complete set of operating instructions.
- D. Any setting of trenches which may occur during the one-year period following acceptance shall be repaired to City's satisfaction by the Contractor without any additional expense to the City. Repairs shall include the complete restoration of all damage to planting, paving or other improvements of any kind as a result of the work.

6.13 MAINTENANCE

- A. Maintenance of irrigation system prior to job completion, and during the Landscape Maintenance period, shall be the responsibility of the Contractor including, but not limited to, the following:
 - 1. Cleaning of plugged irrigation heads.
 - 2. Irrigation heads adjustments.
 - 3. Volume of water being applied (coordinate with landscape maintenance.)
 - 4. Programming of the controller (coordinate with landscape maintenance.)
 - 5. Repairing leaking valves, etc.
 - 6. Any other problem areas which occur after installation attributed to the irrigation system.
 - 7. Repair or replace equipment due to acts of vandalism, theft or pest damage.
 - 8. Lower all seeded area heads to final grades prior to final acceptance by Owner.

END OF SECTION

SECTION 32 90 00 – PLANTING

PART 7 - GENERAL

7.1 RELATED DOCUMENTS

- A. The provisions of the "**Standard Specifications for Public Works Construction, (SSPWC)**" latest edition, shall apply except as modified herein.

7.2 SCOPE

- A. Work of this Section includes all material, equipment, and labor necessary for and incidental to completing all Landscape Planting work as indicated on the Drawings, or as reasonably implied, or as designated herein, including, but not limited to, the following.
 1. Soil testing approvals.
 2. Weed abatement.
 3. Soil preparation.
 4. Finish grading.
 5. Preparation of all planting holes.
 6. Furnishing and installation of all plant materials unless otherwise noted.
 7. Furnishing and installation of all required fertilizers, planting backfill materials, top
 8. Dressing and miscellaneous materials.
 9. Staking and tying trees.
 10. Providing plant establishment (30 days).
 11. Providing landscape maintenance (90 days).
 12. Clean-up and weeding of all landscape areas.
 13. One year guarantee.

7.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Earthwork: Section 31 10 00
- B. Irrigation system: Section 32 80 00

7.4 QUALITY ASSURANCE

- A. The Contractor shall provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with the type of materials being installed and the proper materials and methods for their installation, and who shall direct all work performed under this Section.
- B. All plants and planting material shall meet or exceed the specifications of Federal, State and County laws requiring inspection for plant disease and insect control.
- C. Quality and size shall conform with the current edition of "Horticultural Standards" for number one grade nursery stock as adopted by the American Association of Nurserymen, and California Department of Agriculture regulations.

- D. The Applicator of all weed control materials shall be licensed by the State of California as a Pest Control Operator and a Pest Control Advisor in addition to any subcontractor licenses that are required.
- E. All materials and methods used for Weed Abatement must conform to Federal, State, and Local Regulations.

7.5 APPROVALS

- A. All irrigation system work shall be inspected for recommended approval by the Landscape Architect and/or the City prior to start of any work in this section.

7.6 TESTING

- A. An Agricultural Soil Suitability Report for all planting areas shall be obtained by the Contractor, after completion of rough grading, and prior to start of soil preparation work. The Contractor, at his own expense, shall submit at least four (4) site soil samples to a Soil Laboratory recommended by the Landscape Architect. Samples are to be taken from the top six inches (6") of soil in areas to receive planting. All test results and recommendations shall be provided to the Landscape Architect and/or the City. The requirements for fertilization and amendments as specified herein, may be modified as necessary prior to start of work in this section.
- B. After the completion of soil preparation and prior to the start of any planting, soil samples shall again be taken. Quantity and methods shall be the same as previously executed. Contractor shall not commence planting until so directed by the Landscape Architect and the City.

7.7 SUBMITTALS

- A. Materials lists: Within forty-five (45) days after award of the Contract, submit a complete list of all materials proposed to be furnished and installed under this Section, demonstrating complete conformance with the requirements specified.
 - 1. Materials list shall include the weed control materials and quantities per acre intended for use in controlling the weed types prevalent and expected on the site, as supplied by the Pest Control Advisor. Pest Control Advisor shall furnish the Landscape Contractor and Landscape Architect data to demonstrate the compatibility of the weed control materials and methods with the intended plant and seed varieties.
 - 2. Materials list shall include nursery provided photos of trees and plant material. Each photo shall note representative height x width and box size of trees, gallon size of plants, and nursery company name/location/contact name. Quantities of each plant type shall be noted.
- B. Certificates: Deliver all certificates to the Landscape Architect upon delivery to job site. Include:
 - 1. Quantity of commercial fertilizers used.
 - 2. Quantity of soil amendments.
 - 3. Quantity of seed.
 - 4. Quantity of plant material.

7.8 PRODUCT HANDLING

- A. Delivery and Storage:
 - 1. Deliver all items to the job site in their original containers with all labels intact and legible at time of Landscape Architect's review.

2. Immediately remove from the site all plants which are not true to name, and all materials which do not comply with the specified requirements.
 3. Use all means necessary to protect plant materials before, during, and after installation and to protect the work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the recommended approval of the Landscape Architect and at no additional cost to the City.

7.9 RESPONSIBILITY AND COORDINATION DURING WEED ABATEMENT

- A. During Weed Abatement procedures, the Landscape Contractor is responsible for the erection of all signs and barriers required to prevent intrusion into the treated areas and to notify the public.
- B. No material or methods used for Weed Abatement shall affect the landscape planting or hydroseed germination. No material or method shall render the job site unusable for more than ten (10) days from date of application.

PART 8 - MATERIALS

All materials shall conform to the requirements of Section 212 of the Standard Specifications, except as modified herein.

8.1 LANDSCAPE FINISH GRADING

- A. Site topsoil material - No import soil.

8.2 NON-SELECTIVE HERBICIDES

- A. Non-selective contact herbicide and/or non-selective systemic herbicides (as recommended by the Pest Control Advisor).

8.3 SELECTIVE HERBICIDES

- A. Selective pre-emergent herbicides ('Ronstar G' or equal or as recommended by the Pest Control Advisor).

8.4 SOIL CONDITIONERS AND FERTILIZERS

- A. Soil conditioners may include any or all of the conditioners herein specified and shall be applied at rates indicated on the plans or as determined by the Agronomical Soils Report.
- B. Shavings: Nitrogen stabilized organic amendments derived from redwood sawdust, fir sawdust or finely ground bark of fir or pine containing the following physical properties:

<u>Percent Passing</u>	<u>Sieve Size</u>
95 – 100	6.33 mm (1/4 inch)
80 – 100	2.38 mm (No. 8, 8 mesh)
0 – 30	500 Micron (No. 35, 32 mesh)

- C. Nitrogen Content - Dry weight 0.56% - 0.84%
- D. Iron Content - Minimum 0.08% dilute acid soluble Fe. on dry weight basis.
- E. Soluble Salts - 2.5 millimhos/centimeter at 25 degrees C. as determined by maximum saturation extract method.
- F. Ash - (Dry weight) 0 - 6.0%
- G. Fertilizer: Commercial fertilizers with an analysis of 5-3-1 Gro-Power Plus, 16-20-0, and 12-8-8 Gro-Power Controlled Release Nitrogen, as designated herein, or approved substitute as required by the Agronomical soils report.
 - 1. Fertilizer shall be delivered to the site in the original unopened containers, bearing the manufacturer's guaranteed analysis. Any fertilizer that becomes caked or damaged, making it unsuitable for use, will not be accepted.
 - 2. Available from: Gro Power (213) 245-6849 or (714) 750-3830.
- H. Gypsum: To be agricultural grade gypsum and shall conform to Section 212-1.2 of Standard Specifications for Public Works Construction, Latest Edition.
- I. Iron Sulfate: Pelleted or granular form containing not less than 18.5% expressed metallic iron and shall be registered as an agricultural mineral, with the State Department of Agriculture in compliance with Article 2 - "Fertilizer Materials," Section 1030 of the Agricultural Code.
- J. Ammonium Sulfate: Granular form containing not less than 21% nitrogen and 24% sulfur and shall be registered as an agricultural miner, with the State Department of Agriculture in compliance with Article 2 - "Fertilizer Materials," Section 1030 of the Agricultural Code.

8.5 PLANTING TABLETS

- A. Fertilizer planting tablets shall be tightly compressed commercial grade planting tablets having a 12-8-8 formula, weighting 7 grams each, as "Gro-Power" planter tablets or equal. The planting tablets shall be delivered to the site in the original, unopened containers, bearing the manufacturer's guaranteed analysis. Any damaged tablets will not be accepted.

8.6 PLANT MATERIALS

- A. Nomenclature: The scientific and common names of plants herein specified conform to industry standards. (Refer to list of plant materials on Drawings).
- B. Labeling: Each group of plant materials delivered to the site shall be clearly labeled as to species and variety and nursery source.
- C. Quality and Size:
 - 1. Plants shall be in accordance with the California State Department of Agriculture's regulation for nursery inspections, rules and grading. All plants shall have a normal habit of growth and shall be sound, healthy, vigorous, and free of insect infestations, plant diseases, sun scalds, fresh abrasions of the bark, excessive abrasions, or other objectionable disfigurements. All plants shall have normally well-developed branch

system, with vigorous and fibrous root systems which are not root or pot bound. In the event of disagreement as to condition of the plants furnished by the Contractor in containers will be determined by removal of earth from the roots of not less than two plants or more than 2% of the total number of plants of each species or variety. Where container grown plants are from several sources, the roots of not less than two plants of each species or variety from each source will be inspected. In case the sample plants reviewed are found to be defective, the Landscape Architect and the City may judge acceptability. Any plants rendered unsuitable for planting because of this review will be considered as samples and will be provided at the expense of the Contractor.

2. The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock, or as specified in the special Conditions or Drawings. The minimum acceptable size of all plants measured before pruning with the branches in normal position, shall conform with the measurements, if any, specified on the Drawings in the list of plants to be furnished. Plants larger in size than specified may be used with the recommended approval of the Landscape Architect, but the use of larger plants will make no change in contract price. If the use of larger plants is recommended for approval, the ball of earth or spread of roots for each plant shall be increased proportionately.

D. Rejection or Substitution: All plants not conforming to the requirements herein specified shall be considered defective, and such plants, whether in place or not, shall be marked as rejected and immediately removed from the site of the work and replaced with new plants at the contractor's expense. The plants shall be of the species, variety, size and condition specified herein or shown on the drawings. Under no condition will there be any substitution of plants or sizes for those listed on the accompanying plans, except with the expressed consent of the Landscape Architect.

E. Pruning: At no time shall the tree or plant materials be pruned, trimmed or topped prior to delivery, and any alteration of their shape shall be conducted only with the recommended approval and when in the presence of the Landscape Architect.

F. Protection: All plants at all times shall be handled and stored so that they are adequately protected from drying out, from wind burn, or from any other injury.

G. Right of Review: The Landscape Architect reserves the right to recommend approval or rejection at any time upon delivery or during the work, any or all plant material regarding size, variety or condition.

8.7 MULCH

A. Shall be per plan. Supply sample prior to purchase and install.

8.8 TREE SUPPORTS

A. Tree ties shall be "CINCH-TIE" black rubber ties, and shall be uniform throughout the project. Or, City approved equal.

B. Tree support stakes shall be minimum two inches (2") diameter lodge pole pine, copper naphthenate treated, ten feet (10') length.

PART 9 - EXECUTION

Installation shall conform to the requirements of Section 308 of the "Standard Specifications," except as modified herein.

9.1 GENERAL

- A. Prior to the start of work of this Section, all trash and deleterious materials on the surface of the ground shall be removed and legally disposed of.

9.2 WEED ABATEMENT

- A. Prior to the installation of the irrigation system, all weed growth shall be removed within the areas designated to be cleared and grubbed. Refer to plans for limit of work.
 - 1. If in the opinion of the Pest Control Advisor, perennial grasses and weeds existing in the planting areas will require control prior to removal, spray these areas per Pest Control Adviser's recommendations. Allow herbicide to kill all weeds. Rake or hoe off all dead weeds to a depth of one to two inches (1" to 2") below the surface of the soil. Physically remove all weeds from the site.
- B. Upon completion of the irrigation system and rototilling of soil amendments into the soil and immediately preceding the installation of plant material, perform weed abatement as follows, and per Pest Control Advisors recommendation.
 - 1. Apply Sulfate of Ammonia at the rate of five pounds (5 lbs.) per one thousand square feet (1,000 sf.) to all planting areas.
 - 2. Irrigate area for fourteen (14) consecutive days, to germinate existing weed seeds.
 - 3. Apply by spray a non-selective herbicide to eradicate all existing weeds. Do not irrigate for seven (7) days after application.
 - 4. Remove weeds after herbicide has had time to sufficiently kill. Remove all dead weeds by rake or hoe to a depth of one to two inches (1" to 2") below the surface of the soil. Remove all weed residue and top growth and dispose of in a legal manner.

9.3 SOIL PREPARATION AND FINE GRADE

- A. Soil Preparation: Prior to spreading soil amendments and prior to installation of irrigation systems, crossrip or otherwise till to a depth of ten inches (10") all planting areas to receive soil preparation. All rock one inch (1") and larger shall be removed to a depth of twelve inches (12"). Dispose of all debris off-site in a legal manner.
- B. Planting Areas: To all planting areas (turf, shrub and groundcover), uniformly broadcast soil amendments and thoroughly incorporate to a minimum six inch (6") depth by means of a rototiller or equal.
- C. Soil Amendments are to be thoroughly incorporated at the following rates per one thousand square feet (1,000 sf.) by rototilling or other approved method:

3 cu. yds.	Nitrogen stabilized organic amendment
200 lbs.	5-3-1 commercial fertilizer
10 lbs.	Iron Sulfate*
50 lbs.	Agricultural Gypsum

(Mix to be used for bidding purposes only, to be verified with Agronomical Soils Test.)
* Care shall be taken when using or handling Iron Sulfate to avoid contact with cement.
- D. Finish Grade:
 - 1. Rough grade has been left within one tenth (1/10) of one foot (1') of finish grade.
 - 2. Work such as fine grading and light cultivation are required of all planting areas indicated on plan to prepare grades prior to seed or stolon planting.
 - 3. After approximate finished grades have been established, all soil areas shall be compacted and settled by application of heavy irrigation to a minimum depth of twelve inches (12").

9.4 FINAL GRADES

- A. After the foregoing specified deep watering, minor modifications to grade may be required to establish the final grade. These areas shall not be worked until the moisture content has been reduced to a point where working it will not destroy soil structure.
- B. Finish grading shall ensure proper drainage of the site.
- C. Finished earth berm surfaces shall be smooth and even between contours; shapes shall be to the satisfaction of the Landscape Architect.
- D. All areas shall be graded so the final grades will be one inch (1") below adjacent paved areas, sidewalks, valve boxes, clean-outs, drains, manholes, etc.
- E. All shrub areas to receive mulch per plan.
- F. Surface drainage shall be away from all building foundations.
- G. Eliminate all erosion scars.
- H. The Contractor shall request a review by the Landscape Architect for recommended approval of the final grades and elevations before beginning planting operations.

9.5 TREE AND SHRUB INSTALLATION

- A. All planting and bare dirt areas (except areas to receive hydroseed) are to be treated with a pre-emergent chemical (subject to approval by Landscape Architect prior to application). Chemicals are to be applied by a licensed by a Pest Control Agent at the rates recommended by the manufacturer. This treatment shall be applied at the following times during the contract: a) before planting, b) at the beginning of plant establishment period and c) at the end of the plant establishment period. No chemicals shall be applied other than in the presence of the inspector.
- B. Actual planting shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted practice, as reviewed by the Landscape Architect.
- C. All irrigation work shall have been reviewed by the Landscape Architect prior to beginning any planting.
- D. Installation of all plant material shall be in accordance with the details on the Planting Plans.
- E. Locations for plants and outlines of areas to be planted shall be marked on the ground by the Contractor before any plant pits are dug. All such locations shall be reviewed by the Landscape Architect and Owner/Agent. If an underground construction or utility line is encountered in the excavation of planting areas, notify Landscape Architect so that other locations for planting may be selected.
- F. Excavation for Planting:
 - 1. Excavation for planting shall include the stripping and stacking of all acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plant pits and planting beds.
 - 2. Protect all areas from excessive compaction when trucking plants or other material to the planting site.
 - 3. All excavated holes shall have vertical sides with roughened surfaces and shall be of a size that is at least two times the width and depth of the original plant container. The holes shall

be, in all cases, large enough to permit handling and planting without injury or breakage to the roots or root ball.

G. Planting:

1. No planting shall be done in any area until the area concerned has been satisfactorily prepared in accordance with these Specifications.
2. No more plants shall be distributed in the planting area on any day than can be planted and watered on that day.
3. Containers shall be cut and plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken, and they shall be planted and watered as herein specified immediately after the removal from the containers. Containers shall not be cut prior to placing the plants in the planting area.
4. The amended surface soil can be used for backfill around trees and shrubs; where additional quantities are required, use the following formula (thoroughly blended):
 - a. Native On-Site Soil (No rock larger than 1") 6 parts
 - b. Nitrolized Wood Shavings 4 parts
 - c. Commercial Fertilizer Gro-Power Plus, 5-3-1 15 lbs/cy
 - d. Iron Sulfate 2 lbs/cy
 - e. For Acid Loving Plants
 - 1) 80% Course Peat Moss
 - 2) 20% Sponge Rock or Light Soil Mix

(Mix to be used for bidding purposes only, to be verified with Agronomical Soils Test).

5. Three inches (3") of amended backfill shall be thoroughly mixed with three inches (3") of native soil at the bottom of each hole to provide a transitional soil mix of at least six inches (6") between the native soil and the backfill.
6. Backfill shall be placed at the bottom of each hole, and thoroughly compacted to a height that when a plant is placed in the hole, its root crown is slightly above the established final grade. Any plants which settle deeper than specified above shall be raised back to the correct level. After the plant has been placed, additional backfill shall be added to the hole to cover approximately one-half the height of the root ball. At this stage, water shall be added to the top of the partly filled hole to thoroughly saturate the root ball and adjacent soil.
7. After the water has completely drained, fertilizer tablets shall be placed as indicated below:
 - a. 3 tablets per one gallon container.
 - b. 6 tablets per five gallon container.
 - c. 12 tablets per fifteen gallon container.
 - d. 14 tablets per 24" box container.
 - e. 18 tablets per 36" box container.

The remainder of the hole shall then be backfilled.

8. Set the tablets to be used with each plant on the top of the root ball while the plants are still in their containers so the required number of tablets to be used in each hole can be easily verified.
9. After backfilling, an earthen basin shall be constructed around each plant. Each basin shall be of a depth sufficient to hold at least two inches (2") of water. Basins shall be of a size suitable for the individual plant. In no case, shall the basin for a fifteen (15) gallon plant be less than four feet (4') in diameter; a five (5) gallon plant less than three feet (3') in diameter; and a one (1) gallon plant less than two feet (2') in diameter. the basins shall be constructed of amended backfill material. Rake out basins prior to planting lawn areas or groundcover areas.

H. Pruning: Pruning shall be limited to the minimum necessary to remove injured twigs and branches, and to compensate for loss of roots during transplanting, but never to exceed one-third (1/3) of the branching structure. Upon recommended approval of the Landscape Architect,

pruning may be done before delivery of plants, but not before plants have been reviewed and recommended for approval. Cuts over three quarters of an inch (3/4") in diameter shall be painted with an approved tree wound paint.

I. Staking and Tying:

1. Support stakes tall enough to support the particular tree shall be driven thirty-six inches (36") into the soil. Stake shall be placed on the leeward side of the tree from the most troublesome direction, refer to details on Drawings.
2. Ties shall be placed as low on the trunk as possible but high enough so the tree will return to upright after deflection.
3. To find the proper height for tie locations, hold the trunk in one hand, pull the top to one side and release. The height at which the trunk will just return to the upright when the top is released is the height at which to attach the ties.
4. Ties are to form a loose loop around the tree trunk so that the trunk cannot work towards the support stakes.
5. One tree of each size shall be staked and reviewed by the Landscape Architect prior to continued staking.

9.6 WATERING

- A. Apply water to all planted areas during operations and thereafter, until acceptance of the work.
- B. Immediately after planting, apply water to each shrub by means of a hose. Apply water in a moderate stream in the planting hole until the material about the roots are completely saturated from the bottom of the hole to the top of the ground.
- C. Apply water in sufficient quantities and as often as seasonal conditions require to keep the planted areas sufficiently moist at all times, well below the root system of grass and plants.
- D. All turf and groundcover areas shall be kept damp at all times and irrigation should be adjusted accordingly. This normally would involve four (4) to six (6) watering periods daily, each watering period (ON) regulated to just dampen the mulch without creating run off.
- E. Intervals between irrigation (OFF) sequence should be judged by the length of the time mulch remain damp. Once the mulch begins to dry out, the water (ON) sequence should be repeated.

9.7 ESTABLISHMENT AND MAINTENANCE PERIOD

- A. The Contractor shall continuously maintain all areas involved in this contract during the progress of the work and during the establishment and maintenance period until final acceptance of the work by the City.
- B. Plant establishment period: The contractual establishment period shall be for no less than thirty (30) continuous calendar days. The contractual establishment period begins on the first day after all planting in this project is completed and accepted and the planted areas are brought to a neat, clean and weed free condition.
 1. Any day upon which no work will be required, as determined by the Landscape Architect, will be credited as one of the plant establishment working days regardless of whether or not the Contractor performs plant establishment work.
 2. Any day when the Contractor fails to adequately maintain plantings, replace unsuitable plants or do weed control or other work, as determined necessary by the Landscape Architect, will not be credited as one of the plant establishment working days.
 3. In order to carry out the plant establishment work, the Contractor shall furnish sufficient men and adequate equipment to perform the work during the plant establishment period.

4. Improper maintenance or possible poor condition of any planting at the termination of the scheduled establishment period may cause postponement of the final acceptance of Plant Establishment. Contractor shall bear all costs for extension of the Plant Establishment period.
- C. Plant Maintenance Period: The contractual maintenance period shall be no less than ninety (90) continuous calendar days, and shall begin at the acceptance of the Plant Establishment Period.
1. All areas shall be kept free of debris, and all planted areas shall be weeded at intervals of not more than ten (10) days. Watering, trimming, fertilization, spraying and pest control, as may be required, shall be included in the maintenance period. Maintenance shall include pest control (squirrel, gopher, rabbits, etc.).
 2. Post fertilize all turf areas at the end of every 30 days (of maintenance) at the rate of five pounds (5 lbs.) per one thousand square feet (1,000 s.f.) using ammonium sulfate, evenly applied and thoroughly watered in. Post fertilize all groundcover areas at the end of every thirty (30) days (of maintenance) at the rate of thirty pounds (30 lbs.) per one thousand square feet (1,000 s.f.), using 5-3-1 Gro-Power. For the final feeding of all areas, use 12-8-8 Gro-Power Controlled Release Nitrogen at the rate of thirty pounds (30 lbs.) per one thousand square feet (1,000 s.f.).
 3. Mowing of turf will commence when turf grass has reached a height of one and one-half inches (1 1/2"). Turf shall be cut with a reel type mower at a one (1) inch height. Mowing will be at least weekly after the first cut. Turf must be well established and free of bare spots and weeds to the satisfaction of the Landscape Architect prior to final acceptance by the City. Excess grass clippings, as determined by the Landscape Architect, shall be picked up and removed from the site and premises.
 4. The Contractor shall maintain the irrigation systems in a like new operating condition; adjusting head heights and spray arcs as necessary. The Contractor is responsible for proper watering of all planting areas, for providing any necessary supplemental water as may be required, and shall replace any material damaged due to improper moisture.
 5. During the maintenance period, the Contractor shall be responsible for maintaining adequate protection for all planting areas. Any damaged areas shall be repaired and any plant materials replaced at the Contractor's expense.
 6. The Contractor's maintenance period will be extended past ninety (90) days if these provisions are not filled.

9.8 GUARANTEE AND REPLACEMENT

- A. All plant material installed under the contract shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship for a period of one (1) year. Any plant found to be dead or in poor condition due to such faulty materials or workmanship, as determined by the Landscape Architect, shall be replaced by the Contractor at his expense.
- B. All palms shall be guaranteed by the contractor for twenty-four (24) months after final acceptance of the project. Contractor liability shall cover cost of labor, equipment, and materials to replace trees of similar size during the covered period.
- C. Any material found to be dead, missing, or in poor condition during the establishment period shall be replaced immediately. The Landscape Architect shall be the judge as to the condition of material. Material to be replaced within the guarantee period shall be replaced by the contractor within fifteen (15) days of written notification by the City.
- D. Replacement shall be made to the same specifications required for original plantings within five (5) working days after written notification.
- E. Material and Labor involved in the replacing of material shall be supplied by the Landscape Contractor at no additional cost to the City.

9.9 REVIEWS

- A. Normal progress reviews shall be requested from the Landscape Architect at least forty-eight (48) hours in advance of an anticipated inspection. A review will be made by the Landscape Architect on each of the steps listed below. The Contractor will not be permitted to initiate the succeeding steps of work until he has received written recommendation of approval to proceed by the Landscape Architect.
1. Immediately prior to the commencement of the work on this Section.
 2. Spotting of all shrubs, trees and palms, and minor adjustments prior to planting.
 3. Preparation of areas to groundcover and turf installation.
 4. Final review, start of establishment & maintenance period.
 5. After thirty (30) day plant establishment & maintenance.
 6. Final acceptance of project/ninety (90) day maintenance.

END OF SECTION

SECTION 32 90 01 – TREE PROTECTION AND TRIMMING

PART 10 - GENERAL

10.1 RELATED DOCUMENTS

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

10.2 SUMMARY

- A. This Section includes trimming and protection of trees that are indicated to remain but interfere with or are close to new construction, as herein specified. Trees which are to remain and must be protected are indicated on the Drawings.

- 1. Pruning Terminology to be utilized as developed by the National Arborist Association.

- B. Related Section Division 2 Section, "Site Clearing" limits removal of trees, shrubs, and other vegetation to plants interfering with new construction, unless otherwise indicated. The following Section contains requirements that relate to this Section:

10.3 SUBMITTALS

- A. Certification: Submit written certification by qualified arborist that trees indicated to remain have been protected during the course of construction in accordance with recognized standards and that where damage did occur, trees were promptly and properly treated. Indicate which damaged trees (if any) are incapable of retaining full growth potential and are recommended to be replaced.

- 1. "Arborist" shall be an individual currently a member of the National Arborist Association or the International Society of Arboriculture and verify proof of certification by such organization.

10.4 QUALITY ASSURANCE

- A. Arborist Qualifications: Engage a qualified certified arborist who has successfully completed tree protection and trimming, to perform the following work:

- 1. Remove branches from trees that are to remain, if required.

- 2. Recommend procedures to compensate for loss of roots and perform initial pruning of branches and stimulation of root growth where removed to accommodate new construction.

- 3. Recommend procedures for excavation and grading work juxtaposed to established plants.

- 4. Perform tree repair work for damage incurred by new construction.

- 5. All pruning to conform to ISA Pruning Standards and National Arborist Association Class I-IV as specified

10.5 PROJECT CONDITIONS

- A. Temporary Protections: Provide a minimum of 5'-0" height temporary fencing, barricades, or other suitable guards located outside drip-line (outer perimeter of branches) to protect trees and other plants that are to remain from damage.
- B. Protect root systems: Do not store construction materials, debris, or excavated material within drip line of trees to remain. Do not permit vehicles within drip line. Restrict foot traffic to prevent excessive compaction of soil over root systems within drip line.

PART 11 - PRODUCTS

2.1 MATERIALS

- A. Drainage Fill: Selected stone or gravel, graded to pass a 3-inch sieve and retained on a 1-inch sieve.
- B. New Topsoil: Fertile, friable, surface soil, containing natural loam. Obtain from local sources or from areas having similar characteristics to indigenous topsoil. Provide topsoil that is reasonably free of subsoil and clay lumps, and free of brush, weeds, roots, stones larger than 2 inches in any dimension and free of other extraneous or toxic matter harmful to plant growth. Obtain topsoil only from well-drained sites where soil occurs in depth of 4 inches or more; do not obtain from bogs or marshes. All top soil, prior to use, must be laboratory tested for horticulture suitability and such test must be approved by Architect prior to placement.

PART 12 - EXECUTION

3.1 GENERAL

- A. Protect tree root systems from damage due to noxious materials caused by run-off or spillage during mixing, placement, or storage of construction materials. Protect root systems from flooding, eroding, or excessive wetting resulting from dewatering operations.
- B. Do not allow fires under or adjacent to trees or other plants that are to remain.
- C. Branches may be removed for construction purposes only upon approval of the Architect or Arborist and subject to local governing agency ordinances.
 - 1. Where directed by Architect/Arborist, extend pruning operation to restore natural shape of entire tree.
 - 2. Cut branches and roots, if required, with sharp pruning instruments; do not break or chop.

3.2 EXCAVATION AROUND TREES

- D. Excavate within proximity of trees only where indicated. Do not machine excavate within drip line.
- E. Where excavating for new construction is required within drip line of trees, hand excavate to minimize damage to root systems. Provide sheeting at excavations if required. Use narrow-tine spading forks and comb soil to expose roots.
 - 1. Relocate roots in backfill areas wherever possible. If large, main lateral roots are encountered, expose beyond excavation limits as required to bend and relocate without

breaking. If encountered immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3 inches back from new construction.

- C. Do not allow exposed roots to dry out before permanent backfill is placed; provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage until permanently relocated and covered with earth.
- D. Where trenching for utilities is required within drip line, tunnel under or around roots by hand digging. Do not cut main lateral roots or tap roots; cut only smaller roots that interfere with installation of new work. Cut roots cleanly with sharp, appropriate pruning instruments; do not break or chop roots.
- E. Prune branches to balance loss to root system caused by damage or cutting of root system as directed by Architect/Arborist.

3.3 GRADING AND FILLING AROUND TREES

- A. Maintain existing grade within drip line of trees.
- B. Lowering Grades: Where existing grade is to be lowered around a specimen tree, gradually slope grade away from the tree as recommended by the Arborist. Do not reduce the grade within the tree drip line. Consult Architect/Arborist for appropriate plans on grade cuts exceeding 12" which may require details as to drains, special backfill mixes and retaining walls.
 - 2. Branch pruning may be required to stimulate root growth and to compensate for loss of roots. All pruning only shall be accomplished per written recommendations from Arborist and will conform to established pruning standard practices. Arborist to provide Owner typed instructions for recommended long-term maintenance procedures to be followed after completion of construction operations.
- C. Raising Grades: Where existing grade is to be raised 6" or more within the tree root zone, the Architect/Arborist shall be consulted to provide appropriate remedial plans to accommodate this grade change. Such plans may address perforated pipe bents, drain lines, grates and retaining walls as may be required.
 - 3. No soil fill will be allowed to cover over existing tree root zone grade. No soil shall be placed as to cover the tree trunk root flare.

3.4 REPAIR AND REPLACEMENT OF TREES

- F. Repair trees damaged by construction operations. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.
- G. Remove and replace dead and damaged trees that arborist determines to be incapable of restoration to normal growth pattern.
- H. Provide new trees of same size and species as those being replaced. Plant and maintain as specified under Section "Trees and Shrubs."
- I. If trees over 6 inches in caliper measurement (taken 12 inches above grade) are required to be replaced, provide new trees of 6-inch caliper size and of species selected by the Architect.

3.5 DISPOSAL

- J. Burning on Owner's property of removed trees and branches is not permitted on site.
- K. Removal from Owner's Property: Remove excess excavation, displaced trees, and trimmings and dispose of in a legal manner off Owner's property.

END OF SECTION

SECTION 33 05 13 – MANHOLES AND STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Modular precast concrete structures with tongue-and-groove joints with masonry transition to cover frame, covers, anchorage, and accessories.
 - 2. Bedding and cover materials.
- B. Related Sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories.
 - 2. Section 03 20 00 – Concrete Reinforcing.
 - 3. Section 03 30 00 – Cast-In-Place Concrete.
 - 4. Section 31 22 13 – Rough Grading
 - 5. Section 31 23 17 – Trenching
 - 6. Section 04 05 03 – Masonry Mortaring and Grouting

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Structures:
 - 1. Basis of Measurement: By each unit.
 - 2. Basis of Payment: Includes excavating, concrete base pad, reinforced concrete or precast sections, brick masonry construction, brick masonry transition to cover frame, cover frame and cover, to indicated depth, forming and sealing pipe inlets and outlets as applicable and specified on drawings.

1.3 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 318 - Building Code Requirements for Structural Concrete.
 - 2. ACI 530/530.1 - Building Code Requirements for Masonry Structures and Specifications for Masonry Structures.
- B. ASTM International:
 - 1. ASTM A48/A48M - Standard Specification for Gray Iron Castings.
 - 2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 3. ASTM A536 - Standard Specification for Ductile Iron Castings.
 - 4. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 5. ASTM C55 - Standard Specification for Concrete Brick.
 - 6. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale).
 - 7. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
 - 8. ASTM C497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
 - 9. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures.
 - 10. ASTM C923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals.
 - 11. ASTM D3753 - Standard Specification for Glass-Fiber-Reinforced Polyester Manholes.
- C. Standard Specifications for Public Works Construction (SSPWC).
- D. California Building Code 2022 (CBC-22).

1.4 DESIGN REQUIREMENTS

- A. Equivalent strength: Based on structural design of reinforced concrete as outlined in ACI 318.
- B. Design of Lifting Devices for Precast Components: In accordance with ASTM C913.
- C. Design of Joints for Precast Components: In accordance with ASTM C913; maximum leakage of 0.025 gallons per hour per foot of joint at 3 feet of head.

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Shop Drawings: Indicate structure locations, elevations, piping, and conduit with elevations of penetrations.
- C. Product Data: Submit cover and frame construction, features, configuration, dimensions manufacturer specifications.

1.6 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Perform Work in accordance with SSPWC and CBC-22.
- C. Maintain one (1) copy of each document on site.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three (3) years documented experience.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Comply with precast concrete manufacturer's instructions for unloading, storing and moving precast manholes and structures.
- B. Store precast concrete manholes and structures to prevent damage to Town's property or other public or private property. Repair property damaged from materials storage.
- C. Mark each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.
- B. Cold Weather Requirements: ACI 530.

PART 2 - PRODUCTS

2.1 MANHOLES AND STRUCTURES (Precast)

- A. Shall comply with ASTM C478.
- B. Manufacturers:
 - 1. Brooks Products.
 - 2. Jenson Precast.
 - 3. Oldcastle Precast.
 - 4. Substitutions: Permitted with prior approval from Town/Engineer.
- C. Manhole and Structure Sections: Reinforced precast concrete in accordance with ASTM C478

with gaskets in accordance with ASTM C923.

- D. Reinforced Cast-In-Place concrete manholes and structures as specified in Section 03 30 00.
- E. Mortar and Grout: As specified in Section 04 05 03, Masonry Mortaring and Grouting.
- F. Reinforcement: As specified in Section 03 20 00.

2.2 FRAMES AND COVERS

- A. Manufacturers:
 - 1. Barry Pattern and Foundry Co., Inc.
 - 2. Campbell Foundry Co.
 - 3. McKinley Iron Works.
 - 4. Neenah Foundry Co.
 - 5. Fontana Foundry.
 - 6. Substitutions: Permitted with prior approval from Town/Engineer.
- B. Product Description: Galvanized steel, machined flat bearing surface, cover design as specified on drawings.

2.3 COMPONENTS

- A. Base Pad: Compacted aggregate base as specified on drawings.

2.4 CONFIGURATION

- A. Shaft Construction: lipped male/female joints; sleeved to receive pipe or conduit unless otherwise specified on drawings.
- B. Shape: Round.
- C. Clear Inside Dimensions: As indicated on Drawings.
- D. Design Depth: As indicated on Drawings.
- E. Clear Cover Opening: As indicated on Drawings.
- F. Pipe and Conduit Entry: Furnish openings as indicated on Drawings.

2.5 BEDDING AND COVER MATERIALS

- A. Granular Bedding: ASTM C33; See Section 31 23 17.
- B. Cover: Fill as specified in Section 31 23 17.
- C. Soil Backfill from Above Pipe to Finish Grade: as specified in Section 31 23 17. Subsoil with no rocks over six (6) inches in diameter, frozen earth or foreign matter.

2.6 FINISHING - STEEL

- A. Galvanizing: ASTM A123/A123M; galvanize after fabrication.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify items provided by other sections of Work are properly sized and located.
- C. Verify built-in items are in proper location, and ready for roughing into Work.

- D. Verify correct size of manhole and structure excavation.

3.2 PREPARATION

- A. Coordinate placement of inlet and outlet pipe or duct sleeves required by other sections.
- B. Do not install structures where site conditions induce loads exceeding structural capacity of structures.
- C. Inspect precast concrete structures immediately prior to placement in excavation to verify structures are internally clean and free from damage. Remove and replace damaged units.

3.3 PRECAST CONCRETE MANHOLE AND STRUCTURE INSTALLATION

- A. Excavation and Backfill:
 - 1. Excavate for structures in accordance with Section 31 22 13 and 31 23 17 in location and to depth shown. Provide clearance around sidewalls of structure for construction operations.
 - 2. When groundwater is encountered, prevent accumulation of water in excavations. Place manholes and structures in dry trench.
 - 3. Where possibility exists of watertight structure becoming buoyant in flooded excavation, anchor structure to avoid flotation.
- B. Lift precast components at lifting points designated by manufacturer.
- C. When lowering manholes and structures into excavations and joining pipe to units, take precautions to ensure interior of pipeline and structure remains clean.
- D. Set precast structures bearing firmly and fully on crushed stone bedding, compacted in accordance with provisions of Section 31 22 13 and 31 23 17 or on other support system shown on Drawings.
- E. Assemble multi-section structures by lowering each section into excavation. Lower, set level, and firmly position base section before placing additional sections.
- F. Remove foreign materials from joint surfaces and verify sealing materials are placed properly. Maintain alignment between sections by using guide devices affixed to lower section.
- G. Joint sealing materials may be installed on site or at manufacturer's plant.
- H. Verify manholes and structures installed satisfy required alignment and grade.
- I. Cut structure to receive piping without creating openings larger than required to receive pipe. Fill annular space with mortar.
- J. Cut pipe to finish flush with interior of structure.
- K. Shape inverts through manhole and structures as shown on Drawings.

3.4 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- C. Test cast-in-place concrete in accordance with Section 03 30 00.
- D. Vertical Adjustment of Existing Manholes and Structures:
 - 1. Where required, adjust top elevation of existing manholes and structures to finished grades shown on Drawings.
 - 2. Reset existing frames, grates and covers, carefully removed, cleaned of mortar fragments, to required elevation in accordance with requirements specified for installation of castings.
 - 3. Remove concrete without damaging existing vertical reinforcing bars when removal of existing concrete wall is required. Clean vertical bars of concrete and bend into new

- concrete top slab or splice to required vertical reinforcement, as indicated Drawings.
4. Clean and apply sand-cement bonding compound on existing concrete surfaces to receive cast-in-place concrete in accordance with Section 03 30 00.

3.5 SCHEDULES

- A. Manholes and structures schedule per construction documents.

END OF SECTION

SECTION 33 11 16 – SITE WATER UTILITY DISTRIBUTION PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Pipe and fittings for site water line including domestic water line.
 - 2. Underground pipe markers.
 - 3. Bedding and cover materials.
- B. Related Sections:
 - 1. Section 31 05 13 - Soils and Fill Materials for Earthwork: Soils for backfill in trenches.
 - 2. Section 31 23 17 - Trenching: Execution requirements for trenching required by this section.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Pipe and Fittings:
 - 1. Basis of Measurement: By the linear foot. Basis of Payment: Includes hand trimming excavation, pipe and fittings, bedding, laterals to five (5) feet away from buildings, and connection to utility water source.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. American Society of Mechanical Engineers:
 - 1. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
 - 2. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
- C. American Society of Sanitary Engineering:
 - 1. ASSE 1012 - Backflow Preventer with Intermediate Atmospheric Vent.
 - 2. ASSE 1013 - Reduced Pressure Principal Backflow Preventers.
- D. ASTM International:
 - 1. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
 - 2. ASTM C858 - Standard Specification for Underground Precast Concrete Utility Structures.
 - 3. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m<sup>3 - 4. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft³ (2,700 kN-m/m<sup>3 - 5. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
 - 6. ASTM D2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).
 - 7. ASTM D2466 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
 - 8. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
 - 9. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 10. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
 - 11. ASTM D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter.</sup></sup>

12. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
- E. American Welding Society:
1. AWS A5.8 - Specification for Filler Metals for Brazing and Braze Welding.
- F. American Water Works Association:
1. AWWA C104 - American National Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
 2. AWWA C105 - American National Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems.
 3. AWWA C111 - American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 4. AWWA C151 - American National Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water.
 5. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service.
 6. AWWA C502 - Dry-Barrel Fire Hydrants.
 7. AWWA C504 - Rubber-Sealed Butterfly Valves.
 8. AWWA C508 - Swing-Check Valves for Waterworks Service, 2 in. (50 mm) Through 24 in. (600 mm) NPS.
 9. AWWA C509 - Resilient-Seated Gate Valves for Water-Supply Service.
 10. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
 11. AWWA C606 - Grooved and Shouldered Joints.
 12. AWWA C700 - Cold-Water Meters - Displacement Type, Bronze Main Case.
 13. AWWA C701 - Cold-Water Meters - Turbine Type, for Customer Service.
 14. AWWA C702 - Cold-Water Meters - Compound Type.
 15. AWWA C706 - Direct-Reading, Remote-Registration Systems for Cold-Water Meters.
 16. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 in. through 12 in., for Water Distribution.
 17. AWWA C901 - Polyethylene (PE) Pressure Pipe and Tubing, 1/2 in. through 3 in., for Water Service.
 18. AWWA M6 - Water Meters - Selection, Installation, Testing, and Maintenance.
- G. Underwriters Laboratories Inc.
- H. Standard Specifications for Public Works Construction (SSPWC).
- I. California Building Code 2022 (CBC-22).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data on pipe materials, pipe fittings, valves and accessories.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Perform related work in accordance with SSPWC and CBC-19.

- C. Maintain one (1) copy of each document on site.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Deliver and store valves in shipping containers with labeling in place.

PART 2 - PRODUCTS

2.1 WATER PIPING

- A. Copper Tubing: ASTM B88, Type K hard-drawn.
 - 1. Fittings: ASME B16.51, press-fit copper.
 - 2. Joints: Compression connection.
 - 3. Manufacturers:
 - a. Mueller Streamline.
 - b. Viega.
 - c. Global Metals.
 - 4. Substitutions: Permitted with prior approval from Town/Engineer.

2.2 UNDERGROUND PIPE MARKERS

- A. Plastic Ribbon Tape: Bright colored, continuously printed, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service imprinted with "Domestic Water" in large letters.
- B. Trace Wire: Magnetic detectable conductor

2.3 BEDDING AND COVER MATERIALS

- A. Bedding: Conforming to Section 31 05 13.
- B. Cover: Conforming to Section 31 05 13.

2.4 ACCESSORIES

- A. Not Used.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify building service connection and municipal utility water main size, location, and invert are as indicated on Drawings.

3.2 PREPARATION

- A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare pipe connections to equipment with flanges or unions.

3.3 BEDDING

- A. Excavate pipe trench in accordance with Section 31 23 17 for Work of this Section.
- B. Form and place concrete for pipe thrust restraints at change of pipe direction. Place concrete to permit full access to pipe and pipe accessories. Provide sufficient thrust restraint bearing area on subsoil as specified by IOR.
- C. Place bedding material at trench bottom, level fill materials in one continuous layer not exceeding eight (8) inches compacted depth; compact to 95 percent, conforming to ASTM D1557.
- D. Backfill around sides and to top of pipe with cover fill, tamp in place and compact to 95 percent, with material approved by Architect/Engineer.
- E. Maintain optimum moisture content of fill material to attain required compaction density.

3.4 INSTALLATION - PIPE

- A. Maintain separation of water main from sewer piping in accordance with the State Department of Health Services.
- B. Install pipe to indicated elevation to within tolerance of 5/8 inches.
- C. Route pipe in straight line.
- D. Install pipe to allow for expansion and contraction without stressing pipe or joints.
- E. Install access fittings to permit disinfection of water system performed under Section 3.8 of this specification.
- F. Form and place concrete for thrust restraints at each elbow or change of direction of pipe main.
- G. Establish elevations of buried piping with not less than 42 inches of cover, unless otherwise approved by IOR and Engineer.
- H. Install trace wire (Type No. 14AWS insulated copper) continuous next to pipe in the location designated and held in place by looping the pipe at 20 feet intervals maximum.
- I. Install Work in accordance with Section 31 23 17.

3.5 SERVICE CONNECTIONS

- A. Not Used.

12.2 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- B. Contractor shall furnish all equipment, labor and materials for the proper disinfection (chlorination and flushing) of all pipelines and appurtenances. As part of the Work, and unless specified otherwise, Contractor shall install, at no cost to Town, top outlets (service taps) or temporary Blow offs for required disinfection and sampling. Testing and disinfection must be completed before any pipelines are connected to the existing system.
- C. The Contractor will disinfect pipelines and appurtenances after they have been subjected to hydrostatic and leakage tests.
- D. Disinfection shall conform with provisions of AWWA C651. The chlorinating agent, liquid chlorine gas, shall be applied or injected as approved by IOR at locations no more than 10 feet from existing water system as selected by or designated by IOR. The concentration of the dosage applied to the water within the pipeline shall be at least 50 ppm and it shall not exceed 200 ppm.
- E. Chlorinated water must be retained in the pipeline long enough to destroy all non-spore-forming bacteria. Said period shall be at least 24 hours but not more than 72 hours. After the chlorine-treated water has been retained for the required time, the chlorine residual at the pipe extremities and at other representative locations shall be at least 25 ppm.
- F. Following chlorination, Contractor shall flush all pipelines and appurtenances in the manner and with the procedure prescribed or approved by IOR. Permission and permits from regulatory agencies for discharging water shall be obtained by the Contractor. During flushing, all valves

shall be in full open free discharge position. Flushing shall continue until all chlorine, debris, and foreign materials have been removed from pipelines and appurtenances.

- G. If so directed by IOR, Contractor shall remove portions of certain appurtenances such as air valve installations, blowoff installations, and service installations in order to accomplish complete flushing; Contractor shall replace same without adversely affecting disinfected pipelines and appurtenances.
- H. Following flushing, water shall be maintained in the pipeline for at least twenty-four hours, thereafter, bacteriological samples shall be taken and analyzed by a certified independent laboratory as approved by IOR. If initial treatment fails to produce satisfactory disinfection as evidenced by bacteriological analysis, chlorination and flushing shall be repeated until acceptable results have been obtained.
- I. Contractor shall arrange and pay for chlorine residual and bacteriological quality tests. Contractor shall obtain IOR's prior approval of the times, places, locations, and numbers of samples or tests. IOR shall witness all sampling. Contractor shall provide an Affidavit of Compliance (in triplicate) to IOR evidencing satisfactory disinfection.
- J. Following disinfection, pipelines and appurtenances shall remain isolated from any operational water system facilities until evidence has been submitted to IOR demonstrating that said pipelines and appurtenances have been adequately and properly disinfected. Said evidence shall consist of aforementioned Affidavit of Compliance together with said bacteriological test results, as submitted by the approved certified laboratory. Normally, said pipelines and appurtenances shall be isolated for at least 48 hours, longer if so determined by IOR.

3.6 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Section 01 40 00 - Quality Requirements and Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- C. Perform pressure test on domestic site water distribution system in accordance with AWWA C600.
- D. Pressure test system to pressure required by IOR. Repair leaks and re-test.
 - 1. After completion of pipeline installation, including backfill, but prior to final connection to existing system, conduct, in presence of Architect/Engineer, concurrent hydrostatic pressure and leakage tests in accordance with AWWA C600.
 - 2. Provide equipment required to perform leakage and hydrostatic pressure tests.
 - 3. Test Pressure: Not less than 200 psi or 50 psi in excess of maximum static pressure, whichever is greater.
 - 4. Conduct hydrostatic test for at least two-hour duration.
 - 5. No pipeline installation will be approved when pressure varies by more than 5 psi at completion of hydrostatic pressure test.
 - 6. Before applying test pressure, completely expel air from section of piping under test. Provide corporation cocks so air can be expelled as pipeline is filled with water. After air has been expelled, close corporation cocks and apply test pressure. At conclusion of tests, remove corporation cocks removed and plug resulting piping openings.
 - 7. Slowly bring piping to test pressure and allow system to stabilize prior to conducting leakage test. Do not open or close valves at differential pressures above rated pressure.
 - 8. Examine exposed piping, fittings, valves, hydrants, and joints carefully during hydrostatic pressure test. Repair or replace damage or defective pipe, fittings, valves, hydrants, or joints discovered, following pressure test.
- E. Perform pressure test on domestic site water distribution system in accordance with IOR

standards.

- F. Compaction Testing for Bedding: In accordance with ASTM D1557.
- G. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.

3.7 SCHEDULE

- A. As specified on Construction Documents.

END OF SECTION

SECTION 33 31 00 – SANITARY UTILITY SEWAGE PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sanitary sewage pipe.
 - 2. Underground pipe markers.
 - 3. Cleanouts.
 - 4. Bedding and cover materials.

- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete: Concrete type for manhole base pad construction.
 - 2. Section 31 05 13 - Soils and Fill Materials for Earthwork: Soils for backfill in trenches.
 - 3. Section 31 23 17 - Trenching: Execution requirements for trenching required by this section.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Pipe and Fittings:
 - 1. Basis of Measurement: By the linear foot.
 - 2. Basis of Payment: Includes hand trimming excavation, bedding, pipe and fittings, connection to municipal sewer and laterals to five (5) feet away from building.

- B. Cleanout:
 - 1. Basis of Measurement: By the unit.
 - 2. Basis of Payment: Includes hand trimming, excavating, foundation pad, unit installation with accessories, connection to sewer piping.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
 - 2. ASTM International:
 - 3. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
 - 4. ASTM A746 - Standard Specification for Ductile Iron Gravity Sewer Pipe.
 - 5. ASTM C14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
 - 6. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 - 7. ASTM C443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
 - 8. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
 - 9. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 10. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 11. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
 - 12. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
 - 13. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 - 14. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.

15. ASTM D2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
 16. ASTM D2729 - Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 17. ASTM D2751 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
 18. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
 19. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 20. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
 21. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 22. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- B. Standard Specifications for Public Works Construction (SSPWC).
- C. California Building Code, 2022 Edition (CBC-22).

1.4 DEFINITIONS

- A. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data indicating pipe material used, and pipe accessories.
- C. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.6 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents:
1. Record location of pipe runs, connections, manholes, cleanouts, rim and invert elevations.
 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.7 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Perform Work in accordance with SSPWC and CBC-19.
- C. Maintain one (1) copy of each document on site.

1.8 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one (1) week prior to commencing work of this section.
- A.

1.9 FIELD MEASUREMENTS

- A. Verify field measurements and elevations are as indicated on drawings.

1.10 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate the Work with termination of sanitary sewer connection outside building, connection to municipal sewer utility service, paving and landscaping operations.

PART 2 - PRODUCTS

2.1 SANITARY SEWAGE PIPE

- A. Plastic Pipe: ASTM D3034, SDR35, Poly (Vinyl Chloride) (PVC) material; with minimum pipe stiffness of 46 psi in accordance with ASTM D2412, diameter per drawings, bell and spigot style rubber ring sealed gasket joint.
 - 1. Fittings: PVC sewer fittings conforming to ASTM D3034, SDR35.
 - 2. Joints: ASTM F477, elastomeric gaskets.

2.2 UNDERGROUND PIPE MARKERS

- A. Plastic Ribbon Tape: Bright colored, continuously printed, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service imprinted with "Sanitary Sewer" in large letters.
- B. Trace Wire: Magnetic detectable conductor

2.3 CATCH BASINS, CLEANOUTS, BEDDING, AND COVER MATERIALS

- A. See Section 33 05 13: Manholes and Structures.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify trench cut and excavation base is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

3.2 PREPARATION

- A. Hand trim excavations to required elevations.
- B. Correct over excavation with fine aggregate.
- C. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling or compaction.

3.3 BEDDING

- A. Excavate pipe trench in accordance with Section 31 23 17 for work of this Section.
- B. Hand trim excavation for accurate placement of pipe to elevations indicated.
- B.
- C. Place bedding material at trench bottom, level materials in continuous layer not exceeding six (6) inches compacted depth.

- D. Maintain optimum moisture content of bedding material to attain required compaction density.

3.4 INSTALLATION - PIPE

- A. Install pipe, fittings, and accessories in accordance with ASTM D2321, and in accordance with the manufacturer's specifications and applicable published standards unless modified herein.
- B. Place pipe on minimum six (6) inch deep bed of filter aggregate.
- C. Lay pipe to slope gradients noted on drawings with maximum variation from indicated slope of 1/8 inch in 10 feet.
- D. Pipe laying shall proceed upgrade with the spigot ends of bell-and spigot pipe pointing in the direction of flow. Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with the adjoining pipe. Care shall be taken by the Contractor to ensure sage installation of the pipe in an undamaged condition. Pipe which is damaged after installation shall be removed and replaced.
- E. At all times when the work of installing sewer pipeline is not in progress, all openings into the pipe and the ends of the pipe in the trench shall be kept tightly closed to prevent entrance of animals and foreign materials. The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source. The Contractor shall assume full responsibility for any damage due to any cause and shall restore and replace the pipe to its specified condition and grade if it is damaged during construction. The pipe sections shall be installed in the trench to true alignment and grade in accordance with the plans and these specifications. Exceptional care shall be taken in placing the pipe and making the field joint. All pipe shall be installed without break, up-grade from structure to structure, with the socket (bell) ends of the pipe up-grade.
- F. Pipe shall be installed true to line and grade with a uniform bearing under the full length of the barrel of the pipe. Suitable excavation shall be made to receive the socket (bell) of each pipe section. All adjustments to line and grade must be made by scraping away or tamping earth under the body of the pipe, and not by wedging or blocking up the spigot. Pipe shall be installed only in dry trenches.
- G. Install aggregate at sides and over top of pipe. Install top cover to minimum compacted thickness of 12 inches, compact to 95 percent, unless otherwise specified on drawings.
- H. Refer to Section 31 23 17 and 31 22 13 for backfilling and compacting requirements. Do not displace or damage pipe when compacting.
- I. Sewers shall be installed with bedding and backfill as specified herein and as shown on the drawings for the trench load factor specified.
- J. Install trace wire continuous over top of pipe buried six (6) inches above pipeline; coordinate with Section 31 23 17.
- K. Where sewer lines are placed crossing above existing waterlines, C900 Class 200 PVC pipe shall be used 10 feet on each side of the waterline in accordance with the State of California Department of Health Services' guidelines. No joints shall be allowed in the C900 Class 200 PVC pipe.
- L. Before final acceptance of sewer facilities or prior to putting any sewer online, all sewer facilities shall be flushed with water and "ballad" or cleaned by acceptable method prior to final air testing to ensure that all dirt, debris, and obstructions are removed from the system.
- M. Install Work in accordance with SSPWC.

3.5 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

- C. Compaction Testing: Per Section 31 22 13 and 31 23 17 in accordance with ASTM D1557.
- D. When tests indicate work does not meet specified requirements, remove work, replace and retest.
- E. Frequency of Compaction Tests: As required by local agency having jurisdiction and Geotechnical Engineer.
- F. Infiltration Test: Test in accordance with ASTM 969.
- G. Pressure Test: Test in accordance with ASTM C924 and ASTM C1103, depending on size of pipe.

3.6 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.
 - 1. Take care not to damage or displace installed pipe and joints during construction of pipe supports, backfilling, testing, and other operations.
 - 2. Repair or replace pipe that is damaged or displaced from construction operations.

3.7 SCHEDULE

- A. As specified on construction drawings.

END OF SECTION

SECTION 33 41 00 – STORM UTILITY DRAINAGE PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Storm drainage piping.
 - 2. Accessories.
 - 3. Underground pipe markers.
- B. Related Sections:
 - 1. Section 31 23 17 - Trenching: Execution requirements for trenching required by this section.

1.2 UNIT PRICE - BASIS OF MEASUREMENT

- A. Pipe and Fittings:
 - 1. Basis of Measurement: By the linear foot.
 - 2. Basis of Payment: Includes excavating, bedding, pipe and fittings, and granular cover.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. ASTM International:
 - 1. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
 - 2. ASTM C14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
 - 3. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 - 4. ASTM C443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
 - 5. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
 - 6. ASTM C924 - Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method.
 - 7. ASTM C969 - Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
 - 8. ASTM C1103 - Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
 - 9. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 10. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 11. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
 - 12. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 - 13. ASTM D2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
 - 14. ASTM D2729 - Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 - 15. ASTM D2751 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
 - 16. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.

17. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 18. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
 19. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 20. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- C. Standard Specifications for Public Works (SSPWC).
 - D. California Building Code 2022 Edition (CBC-22).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data indicating pipe, and pipe accessories.
- C. Manufacturer's Installation Instructions: Submit special procedures required to install Products specified.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents:
 1. Accurately record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.
 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

- A. Inspections shall be requested to the Town of Yucca Valley (Town).
- B. Perform Work in accordance with SSPWC and CBC-22.
- C. Maintain one (1) copy of each document on site.

1.7 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one (1) week prior to commencing work of this section.

1.8 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

PART 2 - PRODUCTS

2.1 STORM DRAINAGE PIPING

- A. HDPE: ASTM F2648, High Density Polyethylene material with smooth interior and annular exterior corrugations; inside nominal diameter per drawings, bell and spigot.
 1. Fittings: HDPE, ASTM F2306, watertight.
 2. Joints: ASTM F2487, Elastomeric Gasket, watertight.

2.2 ACCESSORIES

- A. Filter Fabric: Non-biodegradable.
- B. Grout: Specified in Section 03 30 00 and 04 05 03.

2.3 UNDERGROUND PIPE MARKERS

- A. Plastic Ribbon Tape: Bright colored, continuously printed, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service imprinted with "Storm Drain" in large letters.
- B. Trace Wire: Magnetic detectable conductor

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify trench cut or excavation base is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

3.2 PREPARATION

- A. Hand trim excavations to required elevations. Correct over excavation with fine aggregate.
- B. Remove large stones or other hard matter which could damage piping or impede consistent backfilling or compaction.

3.3 BEDDING

- A. Excavate pipe trench in accordance with Section 31 23 17 for work of this Section. Hand trim excavation for accurate placement of pipe to elevations indicated.
- B. Place bedding material at trench bottom, level materials in continuous layer not exceeding six (6) inches compacted depth.
- C. Maintain optimum moisture content of bedding material to attain required compaction density.

3.4 INSTALLATION - PIPE

- A. Install pipe, fittings, and accessories in accordance with ASTM D2321. Seal joints watertight.
- B. Place pipe on minimum six (6) inch deep bed of filter aggregate.
- C. Lay pipe to slope gradients noted on drawings with maximum variation from indicated slope of 1/8 inch in 10 feet.
- D. Install aggregate at sides and over top of pipe. Install top cover to minimum compacted thickness of 12 inches, compact to 95 percent, unless otherwise specified on drawings.
- E. Refer to Section 31 23 17 and 31 22 13 for backfilling and compacting requirements. Do not displace or damage pipe when compacting.
- F. Install Work in accordance with SSPWC.

3.5 FIELD QUALITY CONTROL

- A. All inspections are to be conducted by Town IOR.
- B. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

- C. Request inspection prior to placing aggregate cover over pipe.
- D. Compaction Testing: Per Section 31 22 13 and 31 23 17.
- E. When tests indicate work does not meet specified requirements, remove work, replace and retest.
- F. Frequency of Compaction Tests: As required by local agency having jurisdiction and Geotechnical Engineer.
- G. Infiltration Test: Test in accordance with ASTM 969.
- H. Pressure Test: Test in accordance with ASTM C924 and ASTM C1103, depending on size of pipe.

3.6 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Protecting finished Work.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.
 - 1. Take care not to damage or displace installed pipe and joints during construction of pipe supports, backfilling, testing, and other operations.
 - 2. Repair or replace pipe that is damaged or displaced from construction operations.

3.7 SCHEDULE

- A. As specified on Construction Documents.

END OF SECTION

EXHIBIT "B"
LOCATION MAP



EXHIBIT “C”

COMPLIANCE WITH AMERICAN RESCUE PLAN ACT
(ARPA)

EXHIBIT C
COMPLIANCE WITH AMERICAN RESCUE PLAN ACT (ARPA)
CORONAVIRUS LOCAL FISCAL RECOVERY FUND (CLFRF) FEDERAL GUIDELINES
USE OF ARPA CLFRF AND REQUIREMENTS

This Contract may be funded in whole or in part with funds provided by the American Rescue Plan Act - Coronavirus Local Fiscal Recovery Fund (ARPA), Federal Award Identification Number (FAIN): SLT0628 and Assistance Listing Number (formerly known as a CFDA number): 21.027, and therefore Contractor agrees to comply with any and all ARPA requirements in addition to any and all applicable County, State, and Federal laws, regulations, policies, and procedures pertaining to the funding of this Contract. The use of the funds must also adhere to official federal guidance issued or to be issued on what constitutes a necessary expenditure. Any funds expended by Contractor or its subcontractor(s) in any manner that does not adhere to the ARPA requirements shall be returned or repaid to the County. Any funds paid to Contractor i) in excess of the amount to which Contractor is finally determined to be authorized to retain; ii) that are determined to have been misused; or iii) that are determined to be subject to a repayment obligation pursuant to section 603(e) of the Act and have not been repaid, shall constitute a debt to the federal government. Contractor agrees to comply with the requirements of section 603 of the Act, regulations adopted by Treasury pursuant to the Act, and guidance issued by Treasury regarding the foregoing. Contractor shall provide for such compliance in any agreements with subcontractor(s).

Contractor agrees to comply with the following:

A. In accordance with Title 2 Code of Federal Regulations (C.F.R.) Section 200.322, the nonFederal Contractor should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section: “Produced in the United States” means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. “Manufactured products” means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

B. In accordance with Title 2 C.F.R. Section 200.471, costs incurred for telecommunications and video surveillance services or equipment such as phones, internet, video surveillance, cloud servers are allowable except for the following circumstances: Obligor or expending covered telecommunications and video surveillance services or equipment or services (as described in Title 2 C.F.R. Section 200.216) to: 1) Procure or obtain, extend or renew a contract to procure or obtain; 2) Enter into a contract (or extend or renew a contract) to procure; or 3) Obtain the equipment, services, or systems, as described in Title 2 C.F.R. Section 200.216 that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei

Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities) and: (i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities); (ii) Telecommunications or video surveillance services provided by such entities or using such equipment; and (iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country. In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

C. A non-Federal Contractor that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at Title 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

D. Byrd Anti-Lobbying Amendment (31 U.S.C. Section 1352) - Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by Title 31 U.S.C. Section 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

E. Clean Air Act (42 U.S.C. Sections 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. Sections 1251-1389), as amended - Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. Sections 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. Sections 1251-1389). **F.** Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under Title 37 C.F.R. Section 401.2(a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental,

developmental, or research work under that “funding agreement,” the Title 33 U.S.C. Sections 3 1251-1387 recipient or subrecipient must comply with the requirements of Title 37 C.F.R. Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.

G. Contract Work Hours and Safety Standards Act (40 U.S.C. Sections 3701-3708). Where applicable, all contracts awarded by the non-Federal Contractor in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with Title 40 U.S.C. Sections 3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. Part 5). Under Title 40 U.S.C. Section 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of Title 40 U.S.C. Section 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to health or safety. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

H. Davis-Bacon Act, as amended (40 U.S.C. Sections 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. Sections 3141-3148) as supplemented by Department of Labor regulations (29 C.F.R. Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal contractor must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal Contractor must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (18 U.S.C. Section 874 and 40 U.S.C. Section 3145), as supplemented by Department of Labor regulations (29 C.F.R. Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal contractor must report all suspected or reported violations to the Federal awarding agency.

- i. The Contractor and all Subcontractors and Sub-subcontractors are required to pay their employees and workers a wage not less than the minimum wage for the work classification as specified in both the Federal and California wage decisions. See Exhibit “B” for additional information regarding California Prevailing Wage Rate Requirements and the applicable general prevailing wage determinations which are on file with the County and are available to

any interested party on request. The higher of the two applicable wage determinations, either California prevailing wage or Davis-Bacon Federal prevailing wage, will be enforced for all applicable work/services under this Contract. 4

I. Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by Title 41 U.S.C. Section 1908, must address administrative, contractual, or legal remedies in instances where Contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

J. All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal Contractor including the manner by which it will be effected and the basis for settlement.

K. Equal Employment Opportunity. Except as otherwise provided under Title 41 C.F.R. Part 60, all contracts that meet the definition of “federally assisted construction contract” in Title 41 C.F.R. Section 60-1.3 must include the equal opportunity clause provided under Title 41 C.F.R. Section 60-1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 C.F.R. Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 C.F.R. part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.” The identified clause is below and Contractor shall comply with the clause and all legal requirements and include the equal opportunity clause in each of its nonexempt subcontracts.

i. The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at Title 41 C.F.R. Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause: During the performance of this contract, the contractor agrees as follows: (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause. (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin. (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant.

This provision shall not apply to instances in which an employee 5 who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information. (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and the rules, regulations, and relevant orders of the Secretary of Labor. (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders. (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law. (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract. 6 The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not

demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

L. Data Collection Requirements – Contractor agrees to collect pre-post data per County, and United States Treasury guidelines and timeline, for project tracking and monitoring and various reporting purposes. Data including, but not limited to: Required Project Demographic Distribution Data; Required Performance Indicators and Programmatic Data; Required Expenditure Report Data; and Required Program Evaluation Data. Contractor agrees to track and monitor data in a quantifiable and reportable database - retrievable collective data that needs to be available to County, State or Federal governments upon request.

M. Data Submission Requirements - Contractor agrees to furnish data to the County upon request, per County, and United States Treasury guidelines and timeline, for project tracking and monitoring and various reporting purposes. Data including, but not limited to: Required Project Demographic Distribution Data; Required Performance Indicators and Programmatic Data; Required Expenditure Report Data; Required Program Evaluation Data. Contractor agrees to track and monitor data in a quantifiable and reportable database - retrievable collective data that needs to be available at request.

N. Project Progress Reporting - Contractor agrees to provide project timeline and progress updates to the County upon request, per County, and United States Treasury guidelines and timeline. Contractor agrees to routine and impromptu program and project evaluation by the County.

O. Contractor shall comply with Title 2 Code of Federal Regulations Part 200 (Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards), including, but not limited to, Title 2 C.F.R. Section 200.303 (internal control), Title 2 C.F.R. Sections 200.331 through 200.333 (subrecipient monitoring and management), and Title 2 C.F.R. Part 200 Subpart F (audit requirements), as these sections currently exist or may be amended. The use of funds must also adhere to official federal guidance issued or to be issued on what constitutes an eligible expenditure. Any funds expended by Contractor or its 7 subcontractor(s) in any manner that does not adhere to official federal guidance shall be returned to the County. Contractor agrees to comply with all official guidance regarding the ARPA CLFRF. Contractor also agree that as additional federal guidance becomes available, an amendment to this Contract may become necessary. If an amendment is required, Contractor agrees to promptly execute the Contract amendment.

P. Contractor shall retain documentation of all uses of the funds, including but not limited to invoices and/or sales receipts in a manner consistent with Title 2 C.F.R. Section 200.334 (retention requirements for records). Such documentation shall be produced to County upon

request and may be subject to audit. Unless otherwise provided by Federal or State law (whichever is the most restrictive), Contractor shall maintain all documentation connected with its performance under this Contract for a minimum of five (5) years from the date of the last payment made by County or until audit resolution is achieved, whichever is later, and to make all such supporting information available for inspection and audit by representatives of the County, the State or the United States Government during normal business hours at Contractor. Copies will be made and furnished by Contractor upon written request by County.

Q. Contractor shall establish and maintain an accounting system conforming to Generally Accepted Accounting Principles (GAAP) to support Contractor's requests for reimbursement which segregate and accumulate costs of Contractor and produce monthly reports which clearly identify reimbursable costs, matching fund costs (if applicable), and other allowable expenditures by Contractor. Contractor shall provide a monthly report of expenditures under this Contract no later than the 20th day of the following month.

R. Contractor shall cooperate in having an audit completed by County, at County's option and expense. Any audit required by ARPA CLFRF and its regulation and United States Treasury guidance will be completed by Contractor at Contractor's expense.

S. Contractor shall repay to County any reimbursement for ARPA CLFRF funding that is determined by subsequent audit to be unallowable under the ARPA CLFRF within the time period required by the ARPA CLFRF, but no later than one hundred twenty (120) days of Contractor receiving notice of audit findings, which time shall include an opportunity for Contractor to respond to and/or resolve the findings. Should the findings not be otherwise resolved and Contractor fail to reimburse moneys due County within one hundred twenty (120) days of audit findings, or within such other period as may be agreed between both parties or required by the ARPA CLFRF, County reserves the right to withhold future payments due Contractor from any source under County's control.

T. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, Title 2 C.F.R. Part 200, other than such provisions as Treasury may determine are inapplicable and subject to such exceptions as may be otherwise provided by Treasury. Subpart F – Audit Requirements of the Uniform Guidance, implementing the Single Audit Act, shall apply.

U. Universal Identifier and System for Award Management (SAM), Title 2 C.F.R. Part 25.

V. Reporting Subaward and Executive Compensation Information, Title 2 C.F.R. Part 170.

W. OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (nonprocurement), Title 2 C.F.R. Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 28 C.F.R. Part 180, subpart B) that the award is subject to Title 2 C.F.R. Part 180 and Treasury's implementing regulation at Title 31 C.F.R. Part 19. Debarment and Suspension (Executive Orders 12549 and 12689) - A contract award (see 2 C.F.R. Section 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at Title 2 C.F.R. Part 180 that implement Executive Orders 12549 (3 C.F.R. Part 1986 Comp., p. 189) and 12689 (3 C.F.R. Part 1989 Comp., p. 235),

“Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

X. Recipient Integrity and Performance Matters, pursuant to which the award terms set forth in Title 2 C.F.R. Part 200, Appendix XII to Part 200 is hereby incorporated by reference.

Y. Government Requirements for Drug-Free Workplace, Title 31 C.F.R. Part 20.

Z. New Restrictions on Lobbying, Title 31 C.F.R. Part 21.

AA. Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (42 U.S.C. Sections 4601-4655) and implementing regulations.

BB. Applicable Federal environmental laws and regulations.

CC. Statutes and regulations prohibiting discrimination include, without limitation, the following: i. Title VI of the Civil Rights Act of 1964 (42 U.S.C. Sections 2000d et seq.) and Treasury’s implementing regulations at Title 31 C.F.R. Part 22, which prohibit discrimination on the basis of race, color, or national origin under programs or activities receiving federal financial assistance. ii. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. Sections 3601 et seq.), which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status, or disability. iii. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. Section 794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance. iv. The Age Discrimination Act of 1975, as amended (42 U.S.C. Sections 6101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto. v. Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. Sections 12101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.

DD. Contractor understands that making false statements or claims in connection with the ARPA funded activities is a violation of federal law and may result in criminal, civil, or administrative sanctions, including fines, imprisonment, civil damages and penalties, debarment from participating in federal awards or contracts, and/or any other remedy available by law.

EE. Any publications produced with ARPA funds must display the following language: “This project [is being] [was] supported, in whole or in part, by federal award number SLT-0628 awarded to San Bernardino County by the U.S. Department of Treasury.” 9

FF. Pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), Contractor is being encouraged to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented, or personally owned vehicles.

GG. Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), Contractor is being encouraged to adopt and enforce policies that ban text messaging while driving and establishing workplace safety policies to decrease accidents caused by distracted drivers.

HH. As a recipient of federal financial assistance, the Civil Rights Restoration Act of 1987 applies, and Contractor assures that it: i. Ensures its current and future compliance with Title VI of the Civil Rights Act of 1964, as amended, which prohibits exclusion from participation, denial of the benefits of, or subjection to discrimination under programs and activities receiving federal funds, of any person in the United States on the ground of race, color, or national origin (42 U.S.C. Sections 2000d et seq.), as implemented by the Department of the Treasury Title VI regulations at Title 31 C.F.R. Part 22 and other pertinent executive orders such as Executive Order 13166, directives, circulars, policies, memoranda and/or guidance documents. ii. Acknowledges that Executive Order 13166, “Improving Access to Services for Persons with Limited English Proficiency,” seeks to improve access to federally assisted programs and activities for individuals who, because of national origin, have Limited English proficiency (LEP). Contractor understands that denying a person access to its programs, services, and activities, because of LEP is a form of national origin discrimination prohibited under Title VI of the Civil Rights Act of 1964 and the Department of the Treasury’s implementing regulations. Contractor shall initiate reasonable steps, or comply with the Department of the Treasury’s directives, to ensure LEP persons have meaningful access to its programs, services, and activities. Contractor understands and agrees that meaningful access may entail provide language assistance services, including oral interpretation and written translation where necessary, to ensure effective communication. iii. Agrees to consider the need for language services for LEP persons during development of applicable budgets and when conducting programs, services, and activities. iv. Agrees to maintain a complaint log of any complaints of discrimination on the grounds of race, color, or national origin, and limited English proficiency covered by Title VI of the Civil Rights Act and implementing regulations and provide, upon request, a list of all such reviews or proceedings based on the complaint, pending or completed, including outcome.

II. The County must include the following language in every contract or agreement subject to Title VI and its regulations: “The sub-grantee, contractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or nation origin (42 U.S.C. Section 2000d et seq.), as implemented by the Department of the Treasury’s Title VI regulations, Title 31 C.F.R. Part 22, which are herein incorporated by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with “Limited English Proficiency” in any program or activity receiving federal financial assistance, 42 U.S.C. 10 Section 2000d et seq., as implemented by the Department of the Treasury’s Title VI regulations, Title 31 C.F.R. Sections Part 22, and herein incorporated by reference and made a part of this contract or agreement.”

JJ. Contractor shall cooperate in any enforcement or compliance review activities by the County and/or the Department of the Treasury. Contractor shall comply with information requests, on-site compliance reviews, and reporting requirements.

KK. Contractor shall maintain records and financial documents sufficient to evidence compliance with section 603(c), regulations adopted by Treasury implementing those sections, and guidance issued by Treasury regarding the foregoing.

LL. County has the right of access to records (electronic or otherwise) of Contractor in order to conduct audits or other investigations. **MM.** Contractor shall maintain records for a period of five

(5) years after the completion of the contract or a period of five (5) years after the last reporting date the County is obligated with the Department of the U.S. Treasury, whichever is later.

NN. Contractor must disclose in writing any potential conflict of interest in accordance with Title 2 C.F.R. Section 200.112.

OO. In accordance with Title 41 U.S.C. Section 4712, subrecipient or Contractor may not discharge, demote, or otherwise discriminate against an employee in reprisal for disclosing to any of the list of persons or entities provided below, information that the employee reasonably believes is evidence of gross mismanagement of a federal contract or grant, a gross waste of federal funds, an abuse of authority relating to a federal contract or grant, a substantial and specific danger to public health or safety, or a violation of law, rule, or regulation related to a federal contract (including the competition for or negotiation of a contract) or grant. The list of persons and entities referenced in the paragraph above includes the following: (i) A member of Congress or a representative of a committee of Congress; (ii) An Inspector General; (iii) The Government Accountability Office; (iv) A Treasury employee responsible for contract or grant oversight or management; (v) An authorized official of the Department of Justice or other law enforcement agency; (vi) A court or grand jury; or (vii) A management official or other employee of Recipient, subrecipient, contractor, or subcontractor who has the responsibility to investigate, discover, or address misconduct. Subrecipient or Contractor shall inform its employees in writing of the rights and remedies provided under this section, in the predominant native language of the workforce.

PP. County and Contractor acknowledge that if additional federal guidance is issued, an amendment to this Contract may be necessary. In the event any of the terms in this Exhibit conflict with any other terms in the Contract, the terms in this Exhibit shall control.