



**CITY OF HERMOSA BEACH**

**CONTRACT DOCUMENTS AND SPECIFICATIONS FOR**

**CIP NO. 421**

**ANNUAL SEWER IMPROVEMENTS PHASE 2**

**May 2023**

## City of Hermosa Beach

### NOTICE INVITING BIDS

Notice is hereby given that the City of Hermosa Beach will receive electronic bids until **2:00 PM ON TUESDAY, JUNE 11, 2024**, at which time the electronic bids will be publicly opened at the City Council Chambers at 1315 Valley Drive, Hermosa Beach, CA 90254 and posted on Planet Bids for **CIP No. 421 Annual Sewer Improvements Phase 2**.

The project includes, but is not limited to, rehabilitation or replacement of approximately 27 sewer segments and 62 maintenance access holes throughout the City of Hermosa Beach using a variety of methods, dependent on the severity of pipe or maintenance access hole defects.

The engineer's cost estimate for the project is \$2,500,000. License requirement is a valid **State of California Contractors License Class "A"**.

All sidewalk and access ramp removals shall be replaced within 48 hours. Traffic control plans are required as part of this project to maintain uninterrupted safe vehicular and pedestrian traffic throughout the work areas.

The duration of the project is **140 working days**. All bids must be submitted electronically on Planet Bids Portal, accessible through the City's webpage at <https://www.hermosabeach.gov/our-government/city-clerk/bids-and-proposals> where you must first register as a vendor through our Planet Bids Portal. Contract Documents, plans, and specifications will be available for review on Planet Bids. All relevant materials shall be obtained from the link above.

Each proposal must be accompanied by a cash deposit, a certified or cashier's check, or a Bidder's bond, made payable to the City of Hermosa Beach, in an amount not less than 10 percent of the total bid submitted.

The successful Bidder will be required to furnish a faithful performance bond in the amount of 100 percent of the Contract price, a payment bond in the amount of 100 percent of the Contract price in the attached form satisfactory to the City Attorney. The successful Bidder will also be required to pay the State of California prevailing wage scale as determined by the Department of Industrial Relations, available at <https://www.dir.ca.gov/public-works/prevailing-wage.html>.

The Contractor must be registered with the Department of Industrial Relations at the time of bid. Contractor's registration information is available at: <https://www.dir.ca.gov/Public-Works/Contractor-Registration.html>

The City reserves the right to reject any or all bids and to waive any informality or irregularity in any bid received and to be the sole judge of the merits of the respective bids received. The award, if made, will be made to the lowest responsive and responsible Bidder.

Please submit any questions related to this bid on Planet Bids portal no later than **5:00 PM ON THURSDAY, MAY 30, 2024**.

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## City of Hermosa Beach

### CIP NO. 421

## ANNUAL SEWER IMPROVEMENTS PHASE 2

### I. PROJECT DESCRIPTION AND UNDERSTANDING

The general scope of work for this project is the rehabilitation or replacement of approximately 27 sewer segments and 62 maintenance holes throughout the City of Hermosa Beach using a variety of methods, dependent on the severity of pipe or maintenance hole defects.

The project includes sewer segments and maintenance holes throughout the city of Hermosa Beach, located in one of ten general areas:

- **Area 1** is in the eastern portion of Hermosa Beach, near Prospect Ave. between 14th St. and 19th St.
- **Area 2** is a large area south of Area 1 in the east portion of Hermosa Beach, along Aviation Blvd. and Prospect Ave. and the surrounding residential streets.
- **Area 3** is in the western portion of Hermosa Beach, along Hermosa Avenue and Manhattan Ave. between 14th St. and 19th St.
- **Area 4** is in the northern portion of Hermosa Beach, bounded by Gould Ave. and 24th Pl. from north to south; Palm Dr. and Park Ave. from west to east, including Valley Park.
- **Area 5** is in the southwest portion of Hermosa Beach along Beach Dr. between 6th Ct. and 10th Ct.
- **Area 6** is a long narrow area extending along Bayview Dr. between Circle Dr. and 1st St.
- **Area 7** is in the north portion of Hermosa Beach near the intersection of Loma Dr. and Ozone Ct.
- **Area 8** is in the central portion of Hermosa Beach along Ardmore Ave. between 7th St. and 11th St.
- **Area 9** is in the southern portion of Hermosa Beach near the intersection of Hermosa Ave. and Herondo St.
- **Area 10** is in the southern portion of Hermosa Beach near the intersection of 1st St. and Prospect Ave.

Works includes relocation and abandonment of sewer main with slurry and implementation of sewer bypass.

Pedestrian Traffic control including signage and protection barriers shall be implemented as part of the project to maintain pedestrian traffic safe and uninterrupted through the work area.

## II. NOTICE TO BIDDERS

**Prospective Bidder:** To be considered as a responsive Bidder you must register on Planet Bids portal through the city's website at <https://www.hermosabeach.gov/our-government/city-clerk/bids-and-proposals> .

**Pre-bid Meeting:** No pre-bid meeting will be held for this project. However, each prospective Bidder shall familiarize itself with the plans and work site(s) to satisfy itself that it has the abilities and resources to complete the work.

**Bid Documents:** Bid Documents, including but not limited to specifications and proposal forms, will be available for download on Planet Bids Portal, accessible through the webpage at:

<https://pbsystem.planetbids.com/portal/51313/bo/bo-search>.

To the extent required by Section 20103.7 of the Public Contract Code, upon request from a Contractor plan room service, the City shall provide an electronic copy of the Contract Documents at no charge to the Contractor plan room.

It is the responsibility of each prospective Bidder to download and print all bid documents for review and to verify the completeness of Bid Documents before submitting a bid. The City does not assume any liability or responsibility based on any defective or incomplete copying, excerpting, scanning, faxing, downloading, or printing of the Bid Documents.

**Questions:** All questions regarding this bid shall be submitted through Planet Bids no later than **MAY 30, 2024 at 5:00 PM**. Proposers shall not contact City personnel or Elected Officials with any questions or clarifications concerning this Invitation for Bids other than through Planet Bids. Any City response for this Bid that is not posted through Planet Bids is unauthorized and will be considered invalid.

**Submittal of Bids:** Electronic bids shall be submitted through Planet Bids until **JUNE 11, 2024 at 2:00 PM** at which time they will be publicly opened and read in the City Council Chambers at 1315 Valley Drive, Hermosa Beach, CA. All bids shall be valid for a period of 90 calendar days after the bid opening date.

**Bidder's Guarantee:** Each bid must be accompanied by cash or a certified check or a cashier's check or Bidder's bond made payable to the City of Hermosa Beach for an amount equal to at least ten percent (10%) of the bid price. In accordance with Public Contract Code Section 20170, the Bidder's Bond shall be issued by a surety company admitted to do business in the State of California. Further, in accordance with Public Contract Code Section 20172, such guarantee shall be forfeited should the Bidder to whom the Contract is awarded fail to enter into the Contract within the specified time.

**Payment, Performance Bonds:** The successful Bidder will be required to furnish a Faithful Performance Bond and a Labor and Material Payment Bond, each in an amount equal to one hundred percent (100%) of the Contract Price. Each bond shall be in the forms set forth herein and shall be secured from a surety company that meets all State of California bonding requirements, as defined in California Code of Civil Procedure Section 995.120, and that is a California admitted surety insurer.

**Substitution of Securities:** Pursuant to Section 22300 of the Public Contract Code of the State of California, the successful Bidder may substitute certain securities for funds withheld by the City to ensure its performance under the Contract.

**Contractor License:** In accordance with provisions of Section 3300 of the California Public Contract Code, City of Hermosa Beach has determined that the **Contractor shall possess a valid “A” California Contractor’s License**. Failure to possess such license may render the bid as non-responsive and bar the award of the Contract to that non-responsive Bidder.

**Prevailing Wages:** Pursuant to Labor Code Section 1773, the Contractor shall pay the prevailing rate of per diem wages and the prevailing wage rate for holiday and overtime work applicable in Los Angeles County from the Director of the Department of Industrial Relations for each craft, classification, or type of worker needed to execute this Contract. A copy of these prevailing wage rates may be obtained by visiting: <https://www.dir.ca.gov/Public-Works/Prevailing-Wage.html>

In addition, a copy of the prevailing rate of per diem wages will be made available at the City’s Public Works Department upon request. The successful Bidder shall post a copy of the prevailing wage rates at each job site. It shall be mandatory for the Bidder to whom the Contract is awarded, and for any subcontractors, to comply with all Labor Code provisions, which include but are not limited to the payment of not less than the said specified prevailing wage rates to all workers employed by them in the execution of the Contract, employment of apprentices, hours of labor, and debarment of Contractors and subcontractors.

**Contractor’s Registration with the Department of Industrial Relations (DIR):** The Bidder’s attention is directed to Labor Code Section 1725.5, which provides that a Contractor or subcontractor shall not be qualified to bid on, be listed in a Bid proposal, subject to the requirements of Public Contract Code Section 4104, or engage in the performance of any Contract that is subject to Labor Code Section 1720 et seq., unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. No Bid will be accepted, nor any Contract entered into without proof of the Contractor’s and subcontractors’ current registration with the DIR to perform public work. If awarded a Contract, the Bidder and its subcontractors, of any tier, shall maintain active registration with the DIR for the duration of the Project.

**Compliance Monitoring and Enforcement:** Contractor’s performance of the Work described in the Notice Inviting Bids is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. In bidding on this Project, it shall be the Bidder’s sole responsibility to evaluate and include the cost of complying with all labor compliance requirements under this Contract and applicable law in its Bid.

**Award of Contract:** The City shall award the Contract for the Project to the lowest responsive, responsible Bidder as determined by the City from the total base bid. City reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process.

### III. INSTRUCTION TO BIDDERS

**Form of Proposal:** The proposal shall be fully executed and submitted on the forms provided by the City. Proposal forms can be obtained from Planet Bids.

**Signatures:** All places where signatures are required must be fully executed.

**Proposal:** Documents which shall be signed and returned to the City with the Bid Proposal are:

- A. Proposal
- B. Bid Schedule
- C. Bid Bond
- D. Bidder's Assurance
- E. Bidder's Declaration
- F. Certificate of Non-Discrimination by Contractors
- G. Certification of Principal
- H. Declaration of Eligibility to Contract
- I. Non-Collusion Declaration
- J. References for Work
- K. SubContractor List
- L. Iran Contracting Act Certification
- M. Public Works Contractor Registration Certification
- N. Addenda (if applicable)

**Contract:** Documents which shall be signed and returned to the City by the successful Bidder within 10 days of notification of intent to award Contract:

- A. Contract Agreement
- B. Agreement of Indemnification and Hold Harmless and Waiver of Subrogation and Contribution
- C. Equals
- D. Faithful Performance Bond
- E. Payment Bond (Labor and Materials)
- F. Guarantee to the City of Hermosa Beach
- G. General Comprehensive Liability Additional Insured Endorsement
- H. Automobile Liability Additional Insured Endorsement
- I. Instructions for Completing, Executing, and Submitting Evidence of Insurance to the Owner
- J. Worker's Compensation Insurance Certificate
- K. Supplemental Information to be Completed by Principal
- L. W-9 Form
- M. Copy of City Business License

**Delivery of Proposal:** Each Bid prepared by Bidder shall be completed in itself and shall be submitted electronically through Planet Bids.

**Prevailing Wage:** In accordance with the provisions of Section 1770 et seq., of the Labor Code, the Director of the Department of Industrial Relations of the State of California has



ascertained the general prevailing rate of wages which is the minimum amount which shall be paid to all workers employed to perform the work. A copy of the determination is on file in the office of the City Clerk and is hereby incorporated herein and made a part hereof as though fully set forth herein.

A copy of the determination will be made available to any interested person upon request and shall be posted at the job site.

**Overtime:** As per Labor Code Section 1810 et seq., eight (8) hours is the legal working day. The Contractor shall pay overtime for each worker who works in excess of the legal working day.

**Payment:** Refer to the Contract Agreement for payment information. Contractor shall submit progress payment requests on City approved form.

**Required Bonds:** Prior to the execution of the Contract, the successful Bidder shall file with the City surety bonds in the amounts and for the purposes noted below. The surety insurer shall be a California admitted surety insurer, as defined in Code of Civil Procedure section 995.120. Contractor shall pay all premiums and costs thereof and incidental thereto.

Per Civil Code section 3247, a Payment Bond is required if the Contract is for more than \$25,000.

The successful Bidder shall give three (3) surety bonds with good and sufficient sureties:

"Payment Bond – Labor and Materials" shall be so conditioned as to insure to the benefit of persons furnishing materials for or performing labor upon the work. Bond to be in the sum of not less than 100% of the Contract price to assure the claims of materialmen supplying materials to Contractor, and for payment to laborers and subcontractors employed on the project.

"Faithful Performance Bond" in the sum of not less than 100% of the Contract price to assure the faithful performance of the Contract; shall be conditioned as to assure the faithful performance by the Contractor of all work under said Contract, in a manner that is satisfactory and acceptable to the City; that all materials and workmanship supplied by him will be free from original or developed defects; and that should original or developed defects or failures appear, the Contractor shall, at his own expense, make good such defects and failures and make all replacements and adjustments required, within a reasonable time after being notified by the City to do so, and to the satisfaction of the City.

**Rejection of Proposals:** The City reserves the right to reject any and all proposals and to waive any minor or technical discrepancies or irregularities. Proposals may be rejected if they show any alteration of form, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind.

**Agents:** When proposals are signed by an agent, other than the officer or officers of a corporation authorized to sign Contracts on its behalf or a member of a partnership, a "Power of Attorney" must be on file with the City prior to opening bids or shall be submitted with the proposal; otherwise, the proposal will be rejected as irregular and unauthorized.

**Withdrawal of Proposals:** Any bid may be withdrawn at any time prior to the time fixed in the public notice for the opening of bids only by written request for the withdrawal of the bid filed with the City Engineer. The request shall be executed by the Bidder or their duly authorized representative. The withdrawal of a bid does not prejudice the right of the Bidder to file a new bid. Bids are opened exactly at the time fixed in the public notice for opening bids. A bid will not be received after that time, nor may any bid be withdrawn after that time. No Bidder may withdraw his bid within ninety (90) days after the actual date of the opening thereof.

**Insurance:** Without limiting Contractor's indemnification, Contractor shall maintain in force at all times during the performance of this agreement the insurance provisions set out in the Contract Agreement.

**City Business License and Permits:** The successful Bidder shall obtain a valid City of Hermosa Beach Business License prior to commencing work under this Contract.

The successful Bidder will be required to obtain City Right of Way Permit to work in public right-of-way, issued at no fee for the project.

**Increased or Decreased Quantities:** The City reserves the right to increase, or decrease, or to entirely eliminate items or portions of items from work if found desirable or expedient.

**Approximate Estimate:** The quantities in the Bid Schedule are approximate only, being given as a basis for the comparison of bids. The City does not, expressly or by implication, agree that the actual amount of work will correspond therewith. The Contractor shall verify in the field the accuracy of the estimated quantities.

**Examination of Plans, Specifications, Contract, and Site of Work:** The Bidder shall examine carefully the site of the work contemplated, the Plans and Specifications, and the proposal and Contract forms therefor. The submission of a bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality and scope of work to be performed, the quantities of materials to be furnished, and as to the requirements of the proposal, Plans, Specifications, and the Contract.

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

The records of such investigations are not a part of the Contract and are shown solely for the convenience of the Bidder or Contractor. It is expressly understood and agreed that the City assumes no responsibility whatsoever in respect to the sufficiency or accuracy of the investigations thus made, the records thereof, or of the interpretations set forth therein or made by the City in its use thereof and there is no warranty or guaranty, either expressed or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout such areas, or any part thereof, or that unlooked

for developments may not occur, or that materials other than, or in proportions different than these indicated, may not be encountered.

Bidders shall satisfy themselves by personal examination of the locations of the proposed work, and by such other means as they may choose as to actual conditions and requirements and as to the accuracy of the quantities stated in the Proposal forms. Information derived from the maps, plans, specifications, profiles, or drawings, or from the Engineer or his assistants (or the Architects or their assistants), shall not relieve the Bidder of this responsibility, and the interpretation of the data disclosed by borings or other preliminary investigations is not guaranteed nor is any liability assumed by the City.

If a prospective Bidder is in doubt as to the true meaning or intent of any part of the Contract Documents including the Specifications, or discovers discrepancies in, or omissions from, the Specifications or Drawings, they may submit to the Engineer a written request for an interpretation or a correction thereof via Planet Bids. Interpretations or corrections of the Contract Documents including the Specifications and Drawings, shall be made only by addendum duly issued by the Engineer, and a copy of such addendum will be uploaded on Planet Bids and such addendum shall be considered a part of and incorporated in the Contract Documents.

**Relief of Bidders:** If the Bidder claims a mistake was made in their bid, the Bidder shall give the City written notice within five (5) days after the opening of the bids of the alleged mistake, specifying in the notice in detail how the mistake occurred.

**Disqualification of Bidders:** More than one proposal from an individual, firm, partnership, corporation, or combination thereof under the same or different names will not be considered. Reasonable grounds for believing that any individual, firm, partnership, corporation, or combination thereof is interested in more than one proposal for the work contemplated may cause the rejection of all proposals in which such individual, firm, partnership, corporation, or combination thereof is interested. If there is reason for believing that collusion exists among the Bidders, any or all proposals may be rejected. Proposals in which the prices obviously are unbalanced due to mathematical errors may be rejected.

**Award of Contract:** The award of the Contract, if it be awarded, will be to the lowest responsible Bidder whose proposal complies with all of the requirements prescribed. Such award, if made, will normally be made within in ninety (90) calendar days of the opening of the proposals.

If the lowest responsible Bidder refuses or fails to execute the Contract, the City may award the Contract to the second lowest responsible Bidder. If the second lowest responsible Bidder refuses or fails to execute the Contract, the City may award the Contract to the third lowest responsible Bidder.

**Execution of Contract:** The Contract shall be signed by the successful Bidder and returned, together with the Contract bonds, insurance endorsements and certificates, and all other required documents within ten (10) business days after the Bidder has received notice of intent to award.

**Failure to Execute Contract:** Failure of the lowest responsible Bidder, the second lowest responsible Bidder, or the third lowest responsible Bidder to execute the Contract and file acceptable bonds as provided herein within ten (10) business days after such Bidder has received notice that the Contract has been awarded to them shall be just cause for the forfeiture of the proposal guaranty. The successful Bidder may file with the City Engineer a written notice, signed by the Bidder, or his authorized representative, specifying that the Bidder will refuse to execute the Contract if presented to him. The filing of such notice shall have the same force and effect as the failure of the Bidder to execute the Contract and furnish acceptable bonds within the time herein above prescribed.

**Return of Proposal Guaranties:** Within ten (10) business days after the award of the Contract to the lowest responsible Bidder, the City will return the proposal guaranties, other than Bidder's bonds, accompanying such of the proposals as are not to be further considered in making the award. Retained proposal guaranties will be held until the Contract has been finally executed, after which all proposal guaranties, except Bidder's bonds and any guaranties which have been forfeited, will be returned to the respective Bidders whose proposals they accompany.

**Qualifications of Bidders:** Each Bidder shall be skilled and regularly engaged in the general class or type of work called for under the Contract. A statement setting forth their experience shall be submitted by each Bidder on the References of Work form provided herein.

Each Bidder shall possess valid active Contractor's License issued by the Contractor's State License Board at the time their bid is submitted. The class of license shall be applicable to the work specified in the Contract. Each Bidder shall also have no less than five (5) years' experience in the magnitude and the character of the work bid.

Pursuant to section 1103 of the Public Contract Code, City staff has determined that the following non-exhaustive experience is reasonably necessary to satisfactorily perform the public works Contract:

The Contractor shall have a minimum of three (3) projects of similar type of construction and magnitude with other public agencies within the past five (5) years.

The Contractor shall have been in the business under the same name and California Contractor's License for a minimum of five (5) continuous years prior to the bid opening date for this project. The license used to satisfy this requirement shall be of the same type as that required by the Contract.

The Contractor shall perform above 50% of the Contract with its own forces.

Bidders must be thoroughly competent and capable of satisfactorily performing the work covered by the proposal. They shall have had project experience similar to the project scope of work. When requested, they shall furnish such statements relative to previous experience on similar work, the plan or procedure proposed, and the organization, machinery, plant, and other equipment available for the contemplated work, and the financial condition and resources of the Bidder, as may be deemed necessary by the City Engineer in determining such competence and capability.

The City of Hermosa Beach will not enter into a Contract with any Bidder who is not properly licensed to do the work of this Contract under the provisions of Section 7000 et seq., of the Business and Professions Code, unless particularly exempted by the terms thereof. A bid by a Contractor who is not properly licensed shall be considered non-responsive and will be rejected. The Contractor must hold all sub-Contractors to these same Contract requirements.

The sheet for Bidder's signature in the Bid Proposal shall clearly show the Contractor's name, address, telephone number, State of California Contractor's license number, classification, and date of expiration.

**Completeness of Bids:** Bids are required for the entire work. The amount of the bid for comparison purposes will be the total bid price of all items. The Bidder shall set forth the bid price for each item in the respective spaces provided for these purposes.

In case of discrepancy between the unit price and the total set forth for the item, the unit price shall prevail, provided, however, if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any cause, or is omitted, or in the case where the unit price is the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

- a) As to lump sum items, the amount set forth in the "Total" column shall be the unit price.
- b) As to unit price items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

The City may waive technical or non-substantive inconsistencies in any bid.

**Non-discrimination:** Pursuant to the provisions of 31 CFR, Part 51, Section 51.55, the Revenue Sharing Act, notice is hereby given of the following policy, effective immediately:

The City of Hermosa Beach does not discriminate on the basis of handicapped status in admission or access to, or treatment of, or employment in, its programs and activities. The office that will coordinate compliance is that of Human Resources.

**Workers' Compensation Insurance:** Before execution of this Agreement by the City, the Contractor shall file with the City's Risk Manager the following signed certification:

"I am aware of, and will comply with, Section 3700 of the Labor Code, requiring every employer to be insured against liability for Workers' Compensation or to undertake self-insurance before commencing any of the work."

The Contractor shall also comply with Section 3700 of the Labor Code by securing, paying for and maintaining in full force and effect for the duration of this Agreement, complete Workers' Compensation Insurance, and shall furnish a Certificate of Insurance to the City's Risk Manager reflecting such insurance before this Agreement becomes effective. Contractor shall fully indemnify and hold harmless City, its attorneys, agents, officers, and employees for any claims in law or equity occasioned by the failure of Contractor to

comply with the terms of this section. Every Workers' Compensation Insurance policy required hereunder, shall bear an endorsement, or shall have attached a rider, providing that in the event of expiration or proposed cancellation of such policy for any reason whatsoever, the City's Risk Manager shall be notified of such action by registered mail, postage prepaid, return receipt requested, at least 30 days before such expiration or cancellation becomes effective.

**Indemnification:** Bidders are instructed to refer to the Contract Agreement.

**Subcontractors:** Bidders must list the name, address of the place of business, Contractor license number, and DIR registration number for each subcontractor to be responsible for more than 1/2 of 1% of the total bid, and the portion of the job for which that subcontractor is responsible. Only one subcontractor may be listed for each portion of the job.

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

**Bidder Registration Requirement:** Pursuant to Labor Code sections 1725.5 and 1771.1, all Contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a Contract to perform public work must be registered with the Department of Industrial Relations (DIR). No bid will be accepted, nor any Contract entered into without proof of the Contractor's and subcontractors' current registration with the DIR to perform public work. If awarded a Contract, the Bidder and its subcontractors, of any tier, shall maintain active registration with the DIR for the duration of the Project. To this end, Bidder shall sign and submit with its bid proposal the Public Works Contractor Registration Certification on the form provided, attesting to the facts contained therein. Failure to submit this form may render the bid non-responsive. In addition, each Bidder shall provide the registration number for each listed subcontractor in the space provided in the Subcontractors List form.

**Claim Procedures:** Bidders are instructed to refer to the Contract Documents, including by way of illustration and not by limitation the Contract Agreement.

**Protest Procedures:** Bidders may file a "protest" of a bid proposal with the City's City Manager. In order for a Bidder's protest to be considered valid, the protest must:

- A. Be filed in writing within five (5) calendar days after the bid opening date;
- B. Clearly identify the specific irregularity or accusation;
- C. Clearly identify the specific City staff determination or recommendation being protested;

- D. Specify in detail the grounds for protest and the facts supporting the protest;
- E. Include all relevant supporting documentation with the protest at time of filing; and
- F. Be transmitted concurrently to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

If the protest does not comply with each of these requirements, the City may reject the protest with or without further review.

If the protest is timely and complies with the above requirements, the City Manager, or other designated City staff member, shall review the protest, any response from the challenged Bidder(s), and all other relevant information, and will provide a written decision to the protestor.

The City Manager or designee shall have up to ten calendar days to decide whether to approve or reject the protest. The written decision of the City Manager or designee on the protest shall be served upon the protesting Bidder and any Bidder subject to the protest within fourteen (14) calendar days of receipt of the bid protest. The City Manager or designee may extend the ten (10) calendar days if necessary, to review additional information requested from any Bidder.

If the protester wishes to further contest the protest, it shall appeal this decision to the City Council by filing a statement of appeal with the City Clerk within five (5) days of the issuance of the City Manager's decision. Said statement of appeal shall include all information required of the original bid protest, as well as a short and plain statement setting forth why Protester disputes the City Manager's decision and the legal and factual basis for such dispute. Any person or entity may present a formal protest to the City with respect to solicitations being conducted by staff.

A Bidder whose bid has been protested by another Bidder may submit to the City Manager a written response to the protest by email or by personal delivery or overnight mail to City Hall, 1315 Valley Drive, Hermosa Beach, California 90254, so that it is received by the City no later than seven calendar days after the protest has been served by the protesting Bidder.

#### 1. Definitions

- a. "Bidder" means any person or firm providing a timely, written response to the City solicitation.
- b. "Bid Protest" means any protest with regard to the response submitted by another Bidder.
- c. "Response" means the written response to the City solicitation provided by a person or firm.
- d. "Solicitation Protest" means a statement of protest, dispute, challenge, disagreement, disapproval or other objection regarding documents,

determinations or actions taken or contemplated by the City with respect to a solicitation.

- e. "Solicitation" means the document by which the City identifies goods, equipment, services, or public construction projects for which it seeks a response.
2. Format – The protest must be in writing and include the following information at a minimum:
- a. The name, address, and phone number of the protester, or the authorized representative of the protester;
  - b. The signature of the protester or authorized representative of the protester;
  - c. The project number and title under which the protest is submitted;
  - d. A detailed description of the legal and/or factual grounds for the protest and all supporting documentation. For protests containing elements not based on publicly released information the protest must contain documentation clearly showing the date on which the protester received the information; and
  - e. The form of relief requested.

3. State or Federal Funding

If the subject matter of the solicitation or project is receiving any state or federal funds which requires a protest procedure different than the procedures stated above, then that protest procedure shall control.

In the event there is any lawsuit filed against the City relating to any federally funded project, the City will provide prompt notice of that lawsuit to all agencies who participated in the funding of the project.

4. Mandatory Procedure

This administrative procedure and the time limits set forth herein are mandatory. Failure to comply with these mandatory procedures shall constitute a waiver of any right to pursue the bid protest, including filing a Government Code claim or any legal proceedings or actions.



**IV. BID DOCUMENTS**

**A. PROPOSAL**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

CONTRACTOR: \_\_\_\_\_ Date: \_\_\_\_\_

TO: City of Hermosa Beach  
Honorable Mayor and Members of the City Council City Hall  
Hermosa Beach, California, 90254

Ladies and Gentlemen:

The undersigned declares that he/she has carefully examined the location of the proposed work and that he/she has examined the Plans and Specifications, has read the Contract Documents, and hereby agrees to furnish all labor, materials, equipment, tools, transportation, and services to do all work required for:

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

In accordance with the Plans and Specifications prepared by the Engineer, in accordance with the Special Provisions, the Contract Documents, and in accordance with the Standard Specifications for Public Works Construction 2021, Unified Building Code for Construction (current edition) (except Sections 1-9), and the requirements of the Engineer under said documents, for the prices shown herein.

**The Contractor also certifies that he/she is registered with the Department of Industrial Relations.**

**All work shall be completed within 140 working days from the date the Notice to Proceed is issued by the Engineer.**

\_\_\_\_\_  
Contractor Signature

\_\_\_\_\_  
PWCR Registration Number

**B. BID SCHEDULE**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

<b>Item No.</b>	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Description of Work</b>	<b>Specification Reference</b>	<b>Unit Price</b>	<b>Total</b>
<b>1</b>	1	LS	Mobilization and Demobilization (5% max. of total bid schedule cost)	01 01 00	-	\$
<b>2</b>	1	LS	Spill Containment Plan and Controls for Environmental Protection Plans Spill (5% max. of total bid schedule cost)	SSPWC 3-12.5.3	-	\$
<b>3</b>	1	LS	Temporary Bypass Pumping and Site Restoration	33 01 30	-	\$
<b>4</b>	1	LS	Traffic Control	SSPWC Part 6	-	\$
<b>5</b>	1	LS	Potholing	31 05 50	-	\$
<b>6</b>	6,725	LF	Pre-Installation Cleaning and CCTV Inspection	SSPWC 500-3	-	\$
<b>7</b>	6,725	LF	Post-Installation CCTV Inspection	SSPWC 500-3	\$	\$
<b>8</b>	10	LF	Spot Repair of Existing 6" Sewer Pipe by Removing and Replacing Pipe	33 30 31	\$	\$
<b>9</b>	60	LF	Spot Repair of Existing 8" Sewer Pipe by Removing and Replacing Pipe	33 30 31	\$	\$
<b>10</b>	25	LF	Spot Repair of Existing 10" Sewer Pipe by Removing and Replacing Pipe	33 30 31	\$	\$

<b>11</b>	4,850	LF	Construct 8" SDR-35 PVC Sewer Pipe	33 30 31	\$	\$
<b>12</b>	139	EA	Reconnect Existing Sewer Lateral to New Sewer Main After Spot Repairs and Pipe Replacement in Place	33 30 31	\$	\$
<b>13A</b>	69	EA	Reconnect Existing Sewer Lateral to New Sewer Main After Pipe Relocation	33 30 31	\$	\$
<b>13B</b>	642	LF	Extend and reconnect Existing Sewer Lateral to New Sewer Main After Pipe Relocation	33 30 31	\$	\$
<b>14</b>	14	EA	Installation of Full Depth Spray-on Polyurethane Maintenance Hole Liner in Existing Maintenance Holes Up to 15' Depth	33 01 38	\$	\$
<b>15</b>	19	EA	Reconstruction of Existing Maintenance Hole Bench and Channel	33 39 13	\$	\$
<b>16</b>	1	EA	Raise Existing Maintenance Hole Frame and Cover to Grade	SSPWC 403	\$	\$
<b>17</b>	50	EA	Install New Maintenance Hole Frame and Cover	SPPWC Std. Plan 210-4	\$	\$
<b>18</b>	17	EA	Install 48" I.D. Precast Reinforced Concrete Maintenance Hole with Polyurethane Liner	33 01 38 33 39 13	\$	\$
<b>19</b>	4	EA	Install 48" I.D. Precast Reinforced Concrete Drop Maintenance Hole with Polyurethane Liner	33 39 13 33 39 13	\$	\$
<b>20</b>	3	EA	Install 48" I.D. Precast Reinforced Concrete Shallow Maintenance Hole with Polyurethane Liner	33 39 13 33 39 13	\$	\$
<b>21</b>	1	EA	Install 60" I.D. Precast Reinforced Concrete Maintenance Hole with Polyurethane Liner	33 39 13 33 39 13	\$	\$
<b>22</b>	12	EA	Remove and Dispose of Existing Maintenance Hole and Base	33 39 13	\$	\$
<b>23</b>	7	EA	Abandon in Place Existing Maintenance Hole and Base	SSPWC 306-3.3	\$	\$

24	26,000	SF	Grind AC and Place Final Asphalt Pavement Overlay	City Std. Plan No. 117	\$	\$
25	540	SF	Remove and Reconstruct Concrete Longitudinal Gutter (Per SPPWC Standard Plan No. 122-3)	03 30 00 03 10 00	\$	\$
26	320	SF	Remove and Reconstruct Concrete Pavement	03 30 00 03 10 00	\$	\$
27	1	EA	Reconstruct Driveway Approach (Per Hermosa Std. Dwg. 102)	03 30 00 03 10 00	\$	\$
28	790	SF	Remove and Reconstruct Sidewalk	03 30 00 03 10 00	\$	\$
29	2	EA	Changeable Message Signs	01 01 00	\$	\$
30	1	LS	Public Noticing	01 01 00	\$	\$
31	1	LS	Provide As-Built Drawings	01 01 00	-	\$1,000
			Total (Base Bid)			\$

(Total Bid in Figures) \_\_\_\_\_

(Total Bid in Words) \_\_\_\_\_

Contractor Name: \_\_\_\_\_

In case of any discrepancy between the words and the figures, the words shall prevail. If the unit price and the total amount for any item are not in agreement, the unit price alone shall be considered to represent the Bidder's intention and all totals will be corrected to conform thereto. Attached hereto is cash, a certified check, a cashier's check, or a Bidder's bond in the amount of

\_\_\_\_\_ Dollars, said amount being not less than ten (10) percent of the amount bid. It is agreed a portion equal to the difference between the low bid and second low bid shall be retained as liquidated damages by the City if the undersigned fails or refuses to execute the Contract and furnish the required bonds and certificates of insurance within the time provided.

Contractor Signature: \_\_\_\_\_

PW Registration #: \_\_\_\_\_

State License #: \_\_\_\_\_

Contractor Company Name: \_\_\_\_\_

**C. BID BOND**

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, \_\_\_\_\_, (hereinafter referred to as "Contractor") intends to submit a bid to the City of Hermosa Beach, California, a Municipal Corporation, for the performance of certain work as required in the City of Hermosa Beach **CIP NO. 421 ANNUAL SEWER IMPROVEMENTS PHASE 2** said work being: **CIP NO. 421 ANNUAL SEWER IMPROVEMENTS PHASE 2** as shown in this specification, and in compliance with the specifications therefore under an invitation of said City contained in a notice or advertisement for bids or proposals.

NOW, THEREFORE, we, the Contractor, as Principal, and \_\_\_\_\_ a corporation organized and existing under the laws of the State of \_\_\_\_\_, duly authorized to transact business under the laws of the State of California as Surety, are held and firmly bound unto the City of Hermosa Beach, as Oblige, in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) lawful money of the United States of America, said sum being not less than ten percent (10%) of the bid amount for the payment of which sum well and truly to be made, the said Principal, and said Surety, 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 the bid of the said Principal is rejected by the said Oblige; or if the said Oblige shall accept the bid of the said Principal and said Principal shall enter into an Agreement with said Oblige in accordance with the terms of the bid, and shall give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Agreement and for the prompt payment of labor and material furnished in the prosecution thereof; or in the event of the failure of said Principal to enter such Agreement and give such bond or bonds, if said Principal shall pay to said Oblige the difference not to exceed the penalty thereof between the amount specified in said bid and such larger amount for which said Oblige may in good faith Contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. In case suit is brought upon this bond, the court shall fix and award and the surety shall pay, in addition to the face amount hereof, costs and reasonable attorney's fees incurred by the City of Hermosa Beach in successfully enforcing said obligation.

IN WITNESS THEREOF, we have hereunto, set our hands and seals this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Principal

By \_\_\_\_\_

\_\_\_\_\_  
Title

\_\_\_\_\_  
Surety

By \_\_\_\_\_

\_\_\_\_\_  
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 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 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.*

#### CAPACITY CLAIMED BY SIGNER

#### DESCRIPTION OF ATTACHED DOCUMENT

- .. Individual
- .. Corporate Officer

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

- |                           |                  |
|---------------------------|------------------|
| Title or Type of Document |                  |
|                           | Number of Pages  |
|                           | Date of Document |

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

\_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 Signer(s) Other Than Named Above



**D. BIDDER'S ASSURANCE**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

FROM:

Name of Bidder: \_\_\_\_\_

Business Address: \_\_\_\_\_

\_\_\_\_\_

Telephone No: \_\_\_\_\_

TO:

Members of the City Council  
c/o City Hall  
City of Hermosa Beach, California

Members of the City Council:

Pursuant to your published Notice Inviting Bids for: **CIP NO. 421 ANNUAL SEWER IMPROVEMENTS PHASE 2**

The undersigned declares that he/she has carefully examined the location of the proposed work; that he/she has carefully examined the Plans and Specifications, and read the accompanying Instructions to Bidders and hereby proposes to furnish all materials, machinery, tools, labor, and services and do all the work necessary to complete the project in accordance with said Plans and Specifications and other Contract Documents at the item prices on the Bid Documents.

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

## **E. BIDDER'S DECLARATION**

### **CIP NO. 421 ANNUAL SEWER IMPROVEMENTS PHASE 2**

It is understood and agreed that:

1. The undersigned has carefully examined all documents which will form a part of the Contract; namely, the Notice Inviting Bids, the Instructions to Bidders, this Proposal, the Bid Bond, the Contract, the Faithful Performance Bond, Warranty Bond, the Payment Bond, the federal requirements, if any, the Plans and Specifications, the Special Provisions, and the Technical Provisions.
2. The undersigned has, by investigation at the site of the work and otherwise, satisfied himself as to the nature and location of the work and fully informed himself as to all conditions and matters, which can in any way affect the work or the cost thereof.
3. The undersigned fully understands the scope of work and has checked carefully all words and figures inserted in this Proposal and he further understands that the City will not be responsible for any errors or omissions in the preparation of the Proposal.
4. The undersigned agrees and acknowledges that he is aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and that the undersigned will comply with such provisions before commencing the performance of the Contract if it is awarded to the undersigned.

The undersigned will execute the Contract and furnish the required statutory bonds and certificates of insurance within the period of time specified in the Contract Documents.

The undersigned will begin work after award of Contract and a Notice to Proceed has been given as herein specified and will complete said work within the time specified in the Bidding Schedule.

5. The undersigned certifies that this Proposal is genuine and not sham or collusive, or made in the interest or on behalf of a person not herein named, and the undersigned has not directly or indirectly induced or solicited any other Bidder to put in a sham bid nor induced any other person, firm, or corporation to refrain from bidding.
6. The undersigned will accept an award and enter into a Contract for all work scheduled herein on which he puts in a bid. The awards for such work are to be entirely at the discretion of the Owner after evaluation of the bids as submitted. The undersigned agrees that the Owner shall recover or retain as liquidated damages an amount equal to the difference between the low bid and amount of the bid of the Bidder with whom the City enters into a Contract, and the surplus, if any, shall be returned to the lowest Bidder in accordance with the provisions of the Public Contract Code section 20174 in the event of his failure to execute a Contract and furnish required bonds and insurance therefor within the time provided.
7. This bid will not be withdrawn within a period of ninety (90) days after the date of

its proper opening by the City.

8. The undersigned Bidder stated under penalty of perjury that the representations made in submitting this bid are, to the best of his/her knowledge, true, accurate, and complete.

Respectfully submitted,

_____ Contractor's Business Name	_____ Contractor Signature      Title
_____ Business Address: Street	_____ By                                      Title
_____ City                      State                      Zip Classification	_____ Contractor's License No. and
_____ Business Phone Number	_____ Date
_____ Name                                      Title	_____ Residence: Street
_____ City                      State                      Zip	_____ Residence Phone Number

Note: If the bid is made by an individual, it must be signed with the full name of the Bidder, whose address must be given: if it is made by a firm, it must be signed in the co-partnership's name by a general partner thereof, who shall also sign his or her own name, and the name and full address of each member must be given; and if it is made by a corporation, it must be signed by a properly authorized officer, the corporate name shall be set forth, and the corporate seal shall be affixed.

**F. CERTIFICATE OF NON-DISCRIMINATION BY CONTRACTORS**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

As suppliers of goods or services to the City, the firm listed below certifies that it does not discriminate in its employment with regard to race, color, religion, sex, or national origin; that it is in compliance with all applicable federal, state, and local directives, and executive orders regarding non-discrimination in employment; and that it agrees to pursue positively and aggressively the principle of equal opportunity in employment.

We agree specifically:

1. To establish or observe employment policies which affirmatively promote opportunities for minority persons at all job levels.
2. To communicate this policy to all persons concerned, including all company employees, outside recruiting services, especially those serving minority communities, and to the minority communities at large.
3. To take affirmative steps to hire minority employees within the company.

FIRM \_\_\_\_\_

TITLE OF PERSON SIGNING \_\_\_\_\_

SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

Please include any additional information available regarding equal opportunity employment programs now in effect within your company:

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**G. CERTIFICATION OF PRINCIPAL**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract. (Section 1861, Labor Code.)

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Name of Company: \_\_\_\_\_

**H. DECLARATION OF ELIGIBILITY TO CONTRACT**  
**[Labor Code Section 1777.1; Public Contract Code Section 6109]**

**CIP NO. 421**  
**ANNUAL SEWER IMPROVEMENTS PHASE 2**

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

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

2. The 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 1777.1 or 1777.7 of the Labor Code to bid on, be awarded, or perform work as a subcontractor on, a public works project. Every public works project shall contain a provision prohibiting a Contractor from performing work on a public works project with a subcontractor who is ineligible to perform work on the public works project pursuant to Section 1771.1 or 1777.7 of the Labor Code.”

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

4. The 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.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed this \_\_\_\_\_ day of \_\_\_\_\_, at \_\_\_\_\_ (place of execution), California.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Name of Company: \_\_\_\_\_

**I. NON-COLLUSION DECLARATION**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

The undersigned declares:

I am the \_\_\_\_\_ of \_\_\_\_\_, the party making the foregoing Bid.

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

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

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

\_\_\_\_\_  
NAME OF BIDDER

\_\_\_\_\_  
SIGNATURE OF BIDDER

\_\_\_\_\_  
ADDRESS OF BIDDER

\_\_\_\_\_  
CITY                      STATE                      ZIP

**J. REFERENCES OF WORK**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

Date: \_\_\_\_\_

The following are the names, addresses and phone numbers/ email addresses for at least three public agencies for which Bidder has performed similar work **within the past five years.**

**All contact information must be current.**

**1.** \_\_\_\_\_

Name and Address of Public Agency

\_\_\_\_\_  
Name and Telephone Number of Public Agency's Project Manager

\_\_\_\_\_  
Name and Detailed Description of Project

\_\_\_\_\_  
Original Contract Amount

\_\_\_\_\_  
Original Date of Completion

\_\_\_\_\_  
Final Contract Amount

\_\_\_\_\_  
Final Date of Completion

\_\_\_\_\_  
Number of Change Orders \_\_\_\_\_

**2.** \_\_\_\_\_

Name and Address of Public Agency

\_\_\_\_\_  
Name and Telephone Number of Public Agency's Project Manager

\_\_\_\_\_  
Name and Detailed Description of Project

\_\_\_\_\_  
Original Contract Amount

\_\_\_\_\_  
Original Date of Completion

\_\_\_\_\_  
Final Contract Amount

\_\_\_\_\_  
Final Date of Completion

\_\_\_\_\_  
Number of Change Orders \_\_\_\_\_

**3.** \_\_\_\_\_

Name and Address of Public Agency

\_\_\_\_\_  
Name and Telephone Number of Public Agency's Project Manager



---

Name and Detailed Description of Project

---

Original Contract Amount

Original Date of Completion

Final Contract Amount

Final Date of Completion

Number of Change Orders \_\_\_\_\_

**For additional References, please add separate sheets.**

NAME OF BIDDER

SIGNATURE OF BIDDER

DATE\_

**K. SUBCONTRACTORS LIST**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

In compliance with the "Subletting and Subcontracting Fair Practices Act" being Sections 4100-4113 of the Government Code of the State of California, and any amendments thereto, each Bidder shall set forth below: (a) the name and location of the place of business, (b) the California Contractor license number, (c) the DIR public works Contractor registration number unless exempt pursuant to Labor Code Sections 1725.5 and 1771.1, and (d) the portion of the work which will be done by each subcontractor who will perform work or labor or render service to the prime Contractor in or about the construction of the work or improvement in an amount in excess of one-half (1/2) of one percent (1%) of the prime Contractor's total bid, and shall further set forth the portion of the work which will be done by each subcontractor. Only one subcontractor for each such portion shall be listed.

Notwithstanding the foregoing, if the work involves the construction of streets and highways, then the Bidder shall list each subcontractor who will perform work or labor or render service to the Bidder in or about the work in an amount in excess of one-half of one percent (0.5%) of the Bidder's Total Bid Price or \$10,000, whichever is greater. No additional time shall be granted to provide the below requested information.

If the Contractor fails to specify a subcontractor 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 under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the work to which subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the legislative body of the Owner.

**We propose to use the following listed subcontractors as per Public Contract Code Section 4100 et seq.: List all Subcontractors. The subcontractor shall be licensed for the type of work they are performing.**

<b>Sub-Contractors Name:</b>	<b>Address:</b>
<b>Description of Work:</b>	
<b>CSLB Contractor License No.</b>	<b>DIR Registration No.</b>
<b>Phone No.</b>	<b>Dollar Amount of Work &amp; % of Work</b>

<b>Sub-Contractors Name:</b>	<b>Address:</b>
<b>Description of Work:</b>	
<b>CSLB Contractor License No.</b>	<b>DIR Registration No.</b>
<b>Phone No.</b>	<b>Dollar Amount of Work &amp; % of Work</b>

<b>Sub-Contractors Name:</b>	<b>Address:</b>
<b>Description of Work:</b>	
<b>CSLB Contractor License No.</b>	<b>DIR Registration No.</b>
<b>Phone No.</b>	<b>Dollar Amount of Work &amp; % of Work</b>

<b>Sub-Contractors Name:</b>	<b>Address:</b>
<b>Description of Work:</b>	
<b>CSLB Contractor License No.</b>	<b>DIR Registration No.</b>
<b>Phone No.</b>	<b>Dollar Amount of Work &amp; % of Work</b>

<b>Sub-Contractors Name:</b>	<b>Address:</b>
<b>Description of Work:</b>	
<b>CSLB Contractor License No.</b>	<b>DIR Registration No.</b>
<b>Phone No.</b>	<b>Dollar Amount of Work &amp; % of Work</b>

Percent of work to be performed by sub-Contractors: \_\_\_\_\_ %  
(Note: 50% of work is required to be performed by general Contractor)  
For additional Sub-Contractors, please add additional sheet(s)

**L. IRAN CONTRACTING ACT CERTIFICATION**  
**(Public Contract Code Section 2200 et seq.)**

As required by California Public Contract Code Section 2204, the Contractor certifies subject to penalty for perjury that the option checked below relating to the Contractor's status in regard to the Iran Contracting Act of 2010 (Public Contract Code Section 2200 *et seq.*) is true and correct:

The Contractor is not:

(1) identified on the current list of person and entities engaged in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203; or

(2) a financial instruction that extends, for 45 days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.

The City has exempted the Contractor from the requirements of the Iran Contracting Act of 2010 after making a public finding that, absent the exemption, the City will be unable to obtain the goods and/or services to be provided pursuant to the Contract.

The amount of the Contract payable to the Contractor for the Project does not exceed \$1,000,000.

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Firm Name: \_\_\_\_\_

Date: \_\_\_\_\_

Note: In accordance with Public Contract Code Section 2205, false certification of this form shall be reported to the California Attorney General and may result in civil penalties equal to the greater of \$250,000 or twice the Contract amount, termination of the Contract and/or ineligibility to bid on Contracts for three years.

**M. PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION**

Pursuant to Labor Code sections 1725.5 and 1771.1, all Contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a Contract to perform public work must be registered with the Department of Industrial Relations. See <http://www.dir.ca.gov/Public-Works/PublicWorks.html> for additional information.

No bid will be accepted nor any Contract entered into without proof of the Contractor’s and subcontractors’ current registration with the Department of Industrial Relations to perform public work.

Bidder hereby certifies that it is aware of the registration requirements set forth in Labor Code sections 1725.5 and 1771.1 and is currently registered as a Contractor with the Department of Industrial Relations.<sup>1</sup>

Name of Bidder: \_\_\_\_\_

DIR Registration Number: \_\_\_\_\_

DIR Registration Expiration: \_\_\_\_\_

Small Project Exemption: \_\_\_\_\_ Yes or \_\_\_\_\_ No

Unless Bidder is exempt pursuant to the small project exemption, Bidder further acknowledges:

1. Bidder shall maintain current DIR registration for the duration of the project.
2. Bidder shall maintain a current DIR registration for the duration of the project.
3. Bidder shall include the requirements of Labor Code sections 1725.5 and 1771.1 in its Contract with subcontractors and ensure that all subcontractors are registered at the time of bid opening and maintain registration status for the duration of the project.
4. Failure to submit this form or comply with any of the above requirements may result in a finding that the bid is non-responsive.

Name of Bidder \_\_\_\_\_

Signature \_\_\_\_\_

Name and Title \_\_\_\_\_

Dated \_\_\_\_\_

<sup>1</sup> If the Project is exempt from the Contractor registration requirements pursuant to the small project exemption under Labor Code Sections 1725.5 and 1771.1, please mark “Yes” in response to “Small Project Exemption.”

**V. CONTRACT DOCUMENTS**

**CIP NO. 421**

**ANNUAL SEWER IMPROVEMENTS PHASE 2**

## A. CONTRACT AGREEMENT

This Construction Agreement (“Agreement”) is made and entered into as of the date executed by the Mayor and attested to by the City Clerk, by and between [INSERT CONTRACTOR NAME] (hereinafter referred to as "CONTRACTOR") and the City of Hermosa Beach, California, a municipal corporation (hereinafter referred to as "CITY").

### RECITALS

- A. Pursuant to the Notice Inviting Sealed Bids for CIP NO. 421 ANNUAL SEWER IMPROVEMENTS PHASE 2 (“Project”), bids were received, publicly opened, and declared on the date specified in the notice; and
- B. On [INSERT DATE], City’s City Council declared CONTRACTOR to be the lowest responsible Bidder and accepted the bid of CONTRACTOR; and
- C. The City Council has authorized the Mayor to execute a written Contract with CONTRACTOR for furnishing labor, equipment, and material for the CIP No. 421 ANNUAL SEWER IMPROVEMENTS PHASE 2 in the City of Hermosa Beach.

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

1. GENERAL SCOPE OF WORK: CITY agrees to engage CONTRACTOR and CONTRACTOR agrees to furnish all necessary labor, tools, materials, appliances, and equipment for and do the work for the CIP NO. 421 ANNUAL SEWER IMPROVEMENTS PHASE 2 in the City of Hermosa Beach. The work shall be performed in accordance with the Plans and Specifications dated [INSERT DATE], (the “Specifications”) on file in the office of the City Clerk and in accordance with bid prices set forth in CONTRACTOR’S Bid Proposal and in accordance with the instructions of the City Engineer.
2. INCORPORATED DOCUMENTS TO BE CONSIDERED COMPLEMENTARY: The Contract documents for the aforesaid project shall consist of the Notice Inviting Bids, Instructions to Bidders, Bid Proposal, Builders General Provisions, Standard Specifications for Public Works Construction 2021 edition, Special Provisions, Exhibit A, B, C, D and E, and all referenced specifications, details, standard drawings, and appendices; together with this Agreement and all required bonds, insurance certificates, permits, notices and affidavits; and also, including any and all addenda or supplemental agreements clarifying, amending, or extending the work contemplated as may be required to insure its completion in an acceptable manner. All of the provisions of said Contract documents are made a part hereof as though fully set forth herein. This Contract is intended to require a complete and finished piece of work and anything necessary to complete the work properly and in accordance with the law and lawful governmental regulations shall be performed by CONTRACTOR whether set out specifically in the Contract or not. Should it be ascertained that any inconsistency exists between the aforesaid documents and this written agreement, the provisions of this Agreement, the Builders General Provisions and the Standard Specifications, in that order, shall control. Collectively, these Contract documents constitute the complete



agreement between CITY and CONTRACTOR and supersede any previous agreements or understandings.

3. COMPENSATION: CONTRACTOR agrees to receive and accept the prices set forth in its Bid Proposal [INSERT VALUE] as full compensation for furnishing all materials, performing all work, and fulfilling all obligations hereunder. Said compensation shall cover all expenses, losses, damages, and consequences arising out of the nature of the work during its progress or prior to its acceptance including those for well and faithfully completing the work and the whole thereof in the manner and time specified in the aforesaid Contract documents; and also including those arising from actions of the elements, unforeseen difficulties or obstructions encountered in the prosecution of the work, suspension or discontinuance of the work, and all other unknowns or risks of any description connected with the work.
4. TIME OF PERFORMANCE: CONTRACTOR agrees to complete the work within 140 working days from the date of the notice to proceed. By signing this Agreement, CONTRACTOR represents to CITY that the Contract time is reasonable for completion of the work and that CONTRACTOR will complete such work within the Contract time.
5. LIQUIDATED DAMAGES: In accordance with Government Code section 53069.85, it is agreed that CONTRACTOR will pay to CITY the sum set forth in Section 6-9 of the Special Provisions for each and every calendar day of delay beyond the time prescribed in the Contract Documents for finishing the Work, as Liquidated Damages and not as a penalty or forfeiture. In the event this is not paid, CONTRACTOR agrees CITY may deduct that amount from any money due or that may become due CONTRACTOR under the Contract. This Article does not exclude recovery of other damages specified in the Contract Documents.
6. SUBSTITUTION OF SECURITIES: Pursuant to section 22300 of the Public Contract Code of the State of California, CONTRACTOR may request CITY to make retention payments directly to an escrow agent or may substitute securities for any money withheld by CITY to ensure performance under the Contract. At the request and expense of CONTRACTOR, securities equivalent to the amount withheld shall be deposited with CITY or with a state or federally chartered bank as the escrow agent who shall return such securities to CONTRACTOR upon satisfactory completion of the Contract. Deposit of securities with an escrow agent shall be subject to a written agreement substantially in the form provided in section 22300 of the Public Contract Code.
7. PREVAILING WAGES AND CALIFORNIA LABOR LAWS.

Pursuant to Labor Code §§ 1720 *et seq.*, and as specified in 8 California Code of Regulations § 16000 (“Prevailing Wage Laws”), CONTRACTOR must pay its workers prevailing wages. It is CONTRACTOR’s responsibility to interpret and implement any prevailing wage requirements, and CONTRACTOR agrees to pay any penalty or civil damages resulting from a violation of the prevailing wage laws. CONTRACTOR shall defend, indemnify, and hold the CITY, its 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. CONTRACTOR and any

subcontractor shall forfeit a penalty of up to \$200 per calendar day or portion thereof for each worker paid less than the prevailing wage rates.

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

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

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

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

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

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

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

When CONTRACTOR provides evidence that CONTRACTOR employs registered apprentices on all of his Contracts on an annual average of not less than one apprentice to five journeymen.

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

CONTRACTOR and any subcontractor must comply with Labor Code §§ 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.

The CONTRACTOR or any subcontractor that is determined by the Labor Commissioner to have knowingly violated Section 1777.5 shall forfeit as a civil penalty an amount not exceeding \$100 for each full calendar day of noncompliance, or such greater amount as provided by law.

CONTRACTOR and each subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. The payroll records shall be certified and shall be available for inspection at all reasonable hours at the principal office of CONTRACTOR in the manner provided in Labor Code section 1776. In the event of noncompliance with the requirements of this section, CONTRACTOR shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects such CONTRACTOR must comply with this section. Should noncompliance still be evident after such 10-day period, CONTRACTOR shall, as a penalty to CITY, forfeit not more than \$100.00 for each calendar day or portion thereof, for each worker, until strict compliance is effectuated. The amount of the forfeiture is to be determined by the Labor Commissioner. A Contractor who is found to have violated the provisions of law regarding wages on Public Works with the intent to defraud shall be ineligible to bid on Public Works Contracts for a period of one to three years as determined by the Labor Commissioner. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due. The responsibility for compliance with this section is on CONTRACTOR. The requirement to submit certified payroll records directly to the Labor Commissioner under Labor Code section 1771.4 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Section 1771.4.

Any ineligible Contractor or subcontractor pursuant to Labor Code Sections 1777.1 and 1777.7 may not perform work on this Project.

By executing this Contract, CONTRACTOR verifies that it fully complies with all requirements and restrictions of state and federal law respecting the employment of undocumented aliens, including, but not limited to, the Immigration Reform and Control Act of 1986, as may be amended from time to time, and shall require all subcontractors and sub-subcontractors to comply with the same.

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

CONTRACTOR shall forfeit, as a penalty to City, twenty-five dollars (\$25.00) for each laborer, workman or mechanic employed in the execution of the Contract, by him or any subcontractor under it, upon any of the work hereinbefore mentioned, for each calendar day during which the

laborer, worker or mechanic is required or permitted to labor more than eight (8) hours in any one calendar day or 40 hours in any one calendar week in violation of the Labor Code.

9. PUBLIC WORKS CONTRACTOR REGISTRATION: Pursuant to Labor Code sections 1725.5 and 1771.1, all Contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a Contract to perform public work must be registered with the Department of Industrial Relations (DIR). No bid will be accepted nor any Contract entered into without proof of the Contractor's and subcontractors' current registration with the DIR to perform public work. Notwithstanding the foregoing, the Contractor registration requirements mandated by Labor Code Sections 1725.5 and 1771.1 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Sections 1725.5 and 1771.1.
10. LABOR COMPLIANCE AND STOP ORDERS: This Project is subject to compliance monitoring and enforcement by the DIR. It shall be CONTRACTOR's sole responsibility to evaluate and pay the cost of complying with all labor compliance requirements under this Contract and applicable law. Any stop orders issued by the DIR against CONTRACTOR or any subcontractor that affect CONTRACTOR's performance of Work, including any delay, shall be CONTRACTOR's sole responsibility. Any delay arising out of or resulting from such stop orders shall be considered CONTRACTOR caused delay subject to any applicable liquidated damages and shall not be compensable by the CITY. CONTRACTOR shall defend, indemnify and hold CITY, its officials, officers, employees and agents free and harmless from any claim or liability arising out of stop orders issued by the DIR against CONTRACTOR or any subcontractor.
11. DEBARMENT OF CONTRACTORS AND SUBCONTRACTORS: Contractors or subcontractors may not perform work on a public works project with a subcontractor who is ineligible to perform work on a public project pursuant to Labor Code section 1777.1 or 1777.7. 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. Any public money that is paid, or may have been paid to a debarred subcontractor by a Contractor on the Project shall be returned to the CITY. CONTRACTOR shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project.
12. LABOR/EMPLOYMENT SAFETY: CONTRACTOR shall comply with all applicable laws and regulations of the federal, state, and local government, including Cal/OSHA requirements and requirements for verification of employees' legal right to work in the United States

CONTRACTOR shall maintain emergency first aid treatment for its employees which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 *et seq.*), and California Code of Regulations, Title 8, Industrial Relations Division 1, Department of Industrial Relations, Chapter 4. CONTRACTOR shall ensure the availability of emergency medical services for its employees in accordance with California Code of Regulations, Title 8, Section 1512.

CONTRACTOR shall submit the Illness and Injury Prevention Program and a Project site specific safety program to CITY prior to beginning Work at the Project site. CONTRACTOR shall maintain a confined space program that meets or exceeds the CITY Standards. CONTRACTOR shall adhere to CITY's lock out tag out program.

13. TRAVEL AND SUBSISTENCE PAY: CONTRACTOR agrees to pay travel and subsistence pay to each worker needed to execute the work required by this Agreement as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with Labor Code Section 1773.8.
14. CONTRACTOR'S LIABILITY: The City of Hermosa Beach and its officers, agents and employees ("Indemnitees") shall not be answerable or accountable in any manner for any loss or damage that may happen to the work or any part thereof, or for any of the materials or other things used or employed in performing the work; or for injury or damage to any person or persons, either workers or employees of CONTRACTOR, of its subcontractors or the public, or for damage to adjoining or other property from any cause whatsoever arising out of or in connection with the performance of the work. CONTRACTOR shall be responsible for any damage or injury to any person or property resulting from defects or obstructions or from any cause whatsoever.

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

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

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

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

Contractor's obligations under this section apply regardless of whether or not such claim, charge, damage, demand, action, proceeding, loss, stop notice, cost, expense, judgment, civil fine

or penalty, or liability was caused in part or contributed to by an Indemnitee. However, without affecting the rights of City under any provision of this agreement, to the extent required by Civil Code section 2782, Contractor shall not be required to indemnify and hold harmless City for liability attributable to the active negligence of City, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction. In instances where City is shown to have been actively negligent and where City active negligence accounts for only a percentage of the liability involved, the obligation of Contractor will be for that entire portion or percentage of liability not attributable to the active negligence of City.

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

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

This indemnity is effective without reference to the existence or applicability of any insurance coverage which may have been required under this Agreement or any additional insured endorsements which may extend to Indemnitees.

CONTRACTOR, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against the Indemnitees, while acting within the scope of their duties, from all claims, losses and liabilities arising out of or incident to activities or operations performed by or on behalf of the CONTRACTOR regardless of any prior, concurrent, or subsequent passive negligence by the Indemnitees.

15. THIRD PARTY CLAIMS. In accordance with Public Contract Code § 9201, CITY will promptly inform CONTRACTOR regarding third-party claims against CONTRACTOR, but in no event later than ten (10) business days after CITY receives such claims. Such notification will be in writing and forwarded in accordance with the "Notice" section of this Agreement. As more specifically detailed in the Contract documents, CONTRACTOR agrees to indemnify and defend the City against any third-party claim.
16. WORKERS COMPENSATION: In accordance with California Labor Code Sections 1860 and 3700, CONTRACTOR and each of its subcontractors will be required to secure the payment of compensation to its employees. In accordance with the provisions of California Labor Code Section 1861, CONTRACTOR, by signing this Contract, certifies as follows: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract.

17. INSURANCE: CONTRACTOR shall procure and maintain for the duration of the Agreement, and for 1 year thereafter, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the CONTRACTOR, its agents, representatives, employees, or subcontractors.
- a. Minimum Scope and Limit of Insurance. Coverage shall be at least as broad as:
    - i. 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 \$2,000,000 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.
    - ii. Automobile Liability: Insurance Services Office Form CA 0001 covering Code 1 (any auto), with limits no less than \$1,000,000 per accident for bodily injury and property damage.
    - iii. Workers’ Compensation insurance as required by the State of California, with Statutory Limits, and Employers’ Liability insurance with a limit of no less than \$1,000,000 per accident for bodily injury or disease.
    - iv. Professional Liability (if Design/Build), with limits no less than \$2,000,000 per occurrence or claim, and \$2,000,000 policy aggregate.
    - v. 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.
    - vi. If the Contractor maintains broader coverage and/or higher limits than the minimums shown above, the CITY requires and shall be entitled to the broader coverage and/or the higher limits maintained by CONTRACTOR. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the CITY.
  - b. Self-Insured Retentions. Self-insured retentions must be declared to and approved by the CITY. At the option of the CITY, either: the CONTRACTOR shall obtain coverage to reduce or eliminate such self-insured retentions as respects the CITY, its officers, officials, employees, and volunteers; or the CONTRACTOR shall provide a financial guarantee satisfactory to the CITY guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or CITY.
  - c. Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions:
    - i. The CITY, 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).

- ii. 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 CITY, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the CITY, its officers, officials, employees, or volunteers shall be excess of the CONTRACTOR's insurance and shall not contribute with it.
- iii. Each insurance policy required by this clause shall provide that coverage shall not be canceled, except with notice to the CITY.
- d. Builder's Risk (Course of Construction) Insurance.
  - i. CONTRACTOR may submit evidence of Builder's Risk insurance in the form of Course of Construction coverage. Such coverage shall name the CITY as a loss payee as their interest may appear.
  - ii. If the Project does not involve new or major reconstruction, at the option of the CITY, an Installation Floater may be acceptable. For such projects, a Property Installation Floater shall be obtained that provides for the improvement, remodel, modification, alteration, conversion or adjustment to existing buildings, structures, processes, machinery, and equipment. The Property Installation Floater shall provide property damage coverage for any building, structure, machinery or equipment damaged, impaired, broken, or destroyed during the performance of the Work, including during transit, installation, and testing at the CITY's site.
- e. Claims Made Policies. If any coverage required is written on a claims-made coverage form:
  - i. The retroactive date must be shown, and this date must be before the execution date of the Contract or the beginning of Contract work.
  - ii. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of Contract work.
  - iii. If coverage is cancelled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the Contract effective, or start of work date, the CONTRACTOR must purchase extended reporting period coverage for a minimum of five (5) years after completion of Contract work.
  - iv. A copy of the claims reporting requirements must be submitted to the CITY for review.
  - v. 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. Acceptability of Insurers. Insurance is to be placed with insurers authorized to conduct business in the state with a current A.M. Best rating of no less than A: VII, unless otherwise acceptable to the CITY.
  - g. Waiver of Subrogation. 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 CITY for all work performed by the CONTRACTOR, its employees, agents and subcontractors.
  - h. Verification of Coverage. CONTRACTOR shall furnish the CITY with original Certificates of Insurance including all required amendatory endorsements (or copies of the applicable policy language effecting coverage required by this clause) and a copy of the Declarations and Endorsement Page of the CGL policy listing all policy endorsements to CITY before work begins. However, failure to obtain the required documents prior to the work beginning shall not waive the CONTRACTOR's obligation to provide them. The CITY reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.
  - i. Subcontractors. CONTRACTOR shall require and verify that all subcontractors maintain insurance meeting all requirements stated herein, and CONTRACTOR shall ensure that CITY is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage with a form at least as broad as CG 20 38 04 13.
  - j. Special Risks or Circumstances. CITY reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other circumstances.
18. ASSIGNMENT: This Contract is not assignable nor the performance of either party's duties delegable without the prior written consent of the other party. Any attempted or purported assignment or delegation of any of the rights or obligations of either party without the prior written consent of the other shall be void and of no force and effect.
19. INDEPENDENT CONTRACTOR: CONTRACTOR is and shall at all times remain as to the CITY, a wholly independent Contractor. Neither the CITY nor any of its agents shall have control of the conduct of CONTRACTOR or any of CONTRACTOR'S employees, except as herein set forth. CONTRACTOR shall not at any time or in any manner represent that it or any of its agents or employees are in any manner agents or employees of CITY.
20. TAXES: CONTRACTOR is responsible for paying all retail sales and use, transportation, export, import, special or other taxes and duties applicable to, and assessable against any work, materials, equipment, services, processes and operations incidental to or involved in this Contract. CONTRACTOR is responsible for ascertaining and arranging to pay them. The prices established in the Contract shall include compensation for any taxes CONTRACTOR is required to pay by laws and regulations in effect at the bid opening date.

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

Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against Contractors if a complaint regarding a patent act or omission is filed within five (5) years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within ten (10) years of the date of the alleged violation. Any questions concerning a Contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.

22. RECORDS: CONTRACTOR shall maintain accounts and records, including personnel, property, and financial records, adequate to identify and account for all costs pertaining to this Agreement and such other records as may be deemed necessary by CITY or any authorized representative, and will be retained for four years after the expiration of this Agreement. All such records shall be made available for inspection or audit by CITY at any time during regular business hours.
23. SEVERABILITY. If any portion of these Contract documents are declared by a court of competent jurisdiction to be invalid or unenforceable, then such portion will be deemed modified to the extent necessary in the opinion of the court to render such portion enforceable and, as so modified, such portion and the balance of this Agreement will continue in full force and effect.
24. WHOLE AGREEMENT: This Agreement supersedes any and all other agreements either oral or written, between the parties and contains all of the covenants and agreements between the parties pertaining to the work of improvements described herein. Each party to this Contract acknowledges that no representations, inducements, promises or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which are not embodied herein, and that any other agreement, statements or promise not contained in this Contract shall not be valid or binding. Any modifications of this Contract will be effective only if signed by the party to be charged.
25. AUTHORITY: CONTRACTOR affirms that the signatures, titles, and seals set forth hereinafter in execution of this Agreement represent all individuals, firm members, partners, joint ventures, and/or corporate officers having a principal interest herein. Each party warrants that the individuals who have signed this Agreement have the legal power, right, and authority to make this Agreement and to bind each respective party. This Agreement may be modified by written amendment. CITY's city manager may execute any such amendment on CITY's behalf.
26. NOTICES: All notices permitted or required under this Agreement shall be in writing, and shall be deemed made when delivered to the applicable party's representative as provided in this Agreement. Additionally, such notices may be given to the respective parties at the following

addresses, or at such other addresses as the parties may provide in writing for this purpose. Such notices shall be deemed made when personally delivered or when mailed forty-eight (48) hours after deposit in the U.S. mail, first-class postage prepaid, and addressed to the party at its applicable address.

CITY OF HERMOSA BEACH  
1315 Valley Drive  
Hermosa Beach, CA 90254

Attention: \_\_\_\_\_ Project Manager

CONTRACTOR:

\_\_\_\_\_  
\_\_\_\_\_

Attention: \_\_\_\_\_

27. DISPUTES. Effective January 1, 1991, Section 20104 et seq., of the California Public Contract Code prescribes a process utilizing informal conferences, non-binding judicial supervised mediation, and judicial arbitration to resolve disputes on construction claims of \$375,000 or less. Effective January 1, 2017, Section 9204 of the Public Contract Code prescribes a process for negotiation and mediation to resolve disputes on construction claims. The intent of this Section is to implement Sections 20104 et seq. and Section 9204 of the California Public Contract Code. This Section shall be construed to be consistent with said statutes.

Claims. For purposes of this Section, “Claim” means a separate demand by CONTRACTOR, after a change order duly requested in accordance with the terms of this Contract has been denied by the CITY, for (A) a time extension, (B) payment of money or damages arising from Work done by or on behalf of CONTRACTOR pursuant to the Contract, or (C) an amount the payment of which is disputed by the CITY. A “Claim” does not include any demand for payment for which CONTRACTOR has failed to provide notice, request a change order, or otherwise failed to follow any procedures contained in the Contract Documents. Claims governed by this Section may not be filed unless and until CONTRACTOR completes all procedures for giving notice of delay or change and for the requesting of a time extension or change order, including but not necessarily limited to the change order procedures contained herein, and CONTRACTOR’s request for a change has been denied in whole or in part. Claims governed by this Section must be filed no later than fourteen (14) days after a request for change has been denied in whole or in part or after any other event giving rise to the Claim. The Claim shall be submitted in writing to the CITY and shall include on its first page the following in 16 point capital font: “THIS IS A CLAIM.” Furthermore, the claim shall include the documents necessary to substantiate the claim. Nothing in this Section is intended to extend the time limit or supersede notice requirements otherwise provided by Contract for the filing of claims, including all requirements pertaining to compensation or payment for extra Work, disputed Work, and/or changed

conditions. Failure to follow such Contractual requirements shall bar any claims or subsequent lawsuits for compensation or payment thereon.

Supporting Documentation. The CONTRACTOR shall submit all claims in the following format:

Summary of claim merit and price, reference Contract Document provisions pursuant to which the claim is made

List of documents relating to claim:

Specifications

Drawings

Clarifications (Requests for Information)

Schedules

Other

Chronology of events and correspondence

Analysis of claim merit

Analysis of claim cost

Time impact analysis in CPM format

If CONTRACTOR's claim is based in whole or in part on an allegation of errors or omissions in the Drawings or Specifications for the Project, CONTRACTOR shall provide a summary of the percentage of the claim subject to design errors or omissions and shall obtain a certificate of merit in support of the claim of design errors and omissions.

Cover letter and certification of validity of the claim, including any claims from subcontractors of any tier, in accordance with Government Code section 12650 *et seq.*

City's Response. Upon receipt of a claim pursuant to this Section, CITY shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide CONTRACTOR a written statement identifying what portion of the claim is disputed and what portion is undisputed. Any payment due on an undisputed portion of the claim will be processed and made within 60 days after the public entity issues its written statement.

If CITY needs approval from its governing body to provide the CONTRACTOR a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, CITY shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide CONTRACTOR a written statement identifying the disputed portion and the undisputed portion.

Within 30 days of receipt of a claim, CITY may request in writing additional documentation supporting the claim or relating to defenses or claims CITY may have against the

CONTRACTOR. If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of CITY and the CONTRACTOR.

CITY's written response to the claim, as further documented, shall be submitted to CONTRACTOR within 30 days (if the claim is less than \$50,000, within 15 days) after receipt of the further documentation, or within a period of time no greater than that taken by CONTRACTOR in producing the additional information or requested documentation, whichever is greater.

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

Mediation. Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, CITY shall provide the CONTRACTOR a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after CITY issues its written statement. Any disputed portion of the claim, as identified by CONTRACTOR in writing, shall be submitted to nonbinding mediation, with CITY and CONTRACTOR sharing the associated costs equally. CITY and CONTRACTOR shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing unless the parties agree to select a mediator at a later time.

If the Parties cannot agree upon a mediator, each Party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each Party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.

For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the Parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

Unless otherwise agreed to by CITY and CONTRACTOR in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

The mediation shall be held no earlier than the date CONTRACTOR completes the Work or the date that CONTRACTOR last performs Work, whichever is earlier. All unresolved claims shall be considered jointly in a single mediation unless a new unrelated claim arises after mediation is completed.

Procedures After Mediation. If following the mediation, the claim or any portion remains in dispute, CONTRACTOR must file a claim pursuant to Chapter 1 (commencing with Section

900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time CONTRACTOR 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 or mediation.

Civil Actions. The following procedures are established for all civil actions filed to resolve claims subject to this Section:

Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties or unless mediation was held prior to commencement of the action in accordance with Public Contract Code section 9204 and the terms of these procedures. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court.

If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1114.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 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.

In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, (A) arbitrators shall, when possible, be experienced in construction law, and (B) any party appealing an arbitration award who 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.

Government Code Claims. In addition to any and all Contract requirements pertaining to notices of and requests for compensation or payment for extra work, disputed work, claims and/or changed conditions, CONTRACTOR must comply with the claim procedures set forth in Government Code sections 900 et seq. prior to filing any lawsuit against the CITY. Such Government Code claims and any subsequent lawsuit based upon the Government Code claims shall be limited to those matters that remain unresolved after all procedures pertaining to extra work, disputed work, claims, and/or changed conditions have been followed by CONTRACTOR. If no such Government Code claim is submitted, or if any prerequisite Contractual requirements are not otherwise satisfied as specified herein, CONTRACTOR shall be barred from bringing and maintaining a valid lawsuit against the CITY. A Government Code claim must be filed no earlier than the date the work is completed or the date CONTRACTOR last performs work on the Project, whichever occurs first. A Government Code claim shall be inclusive of all unresolved claims unless a new unrelated claim arises after the Government Code claim is submitted.

Non-Waiver. CITY's failure to respond to a claim from CONTRACTOR within the time periods described in this Section or to otherwise meet the time requirements of this Section shall result in the claim being deemed rejected in its entirety. CITY's failure to respond shall not waive CITY's rights to any subsequent procedures for the resolution of disputed claims.

24. NON-DISCRIMINATION: Contractor represents that it is an equal opportunity employer and that it shall not discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, sex, age or other interests protected by the State or Federal Constitutions. Such non-discrimination shall include, but not be limited to, all activities related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination. A violation of this section exposes CONTRACTOR to the penalties provided for in Labor Code Section 1735.
25. TERMINATION: This Contract may be terminated by CITY at any time, either with or without cause, by giving CONTRACTOR three (3) days advance written notice. In the event of termination by CITY for any reason other than the fault of CONTRACTOR, CITY shall pay CONTRACTOR for all Work performed up to that time as provided herein. In the event of breach of the Contract by Contractor, CITY may terminate the Contract immediately without notice, may reduce payment to CONTRACTOR in the amount necessary to offset CITY's resulting damages, and may pursue any other available recourse against CONTRACTOR. CONTRACTOR may not terminate this Contract except for cause. In the event this Contract is terminated in whole or in part as provided, CITY may procure, upon such terms and in such manner as it may determine appropriate, services similar to those terminated. Further, if this Contract is terminated as provided, CITY may require CONTRACTOR to provide all finished or unfinished documents, data, diagrams, drawings, materials or other matter prepared or built by CONTRACTOR in connection with its performance of this Contract.
26. ANTI-TRUST CLAIMS: This provision shall be operative if this Contract Agreement is applicable to California Public Contract Code Section 7103.5. In entering into this Contract Agreement to supply goods, services or materials, Contractor hereby offers and agrees to assign to the Agency all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code) arising from purchases of goods, services, or materials pursuant to the Contract Agreement. This assignment shall be made and become effective at the time the Agency tender final payment to Contractor, without further acknowledgment by the Parties.
27. NO THIRD PARTY BENEFICIARY. This Contract and every provision herein is for the exclusive benefit of the Contractor and the City and not for the benefit of any other party. There will be no incidental or other beneficiaries of any of the Contractor's or the City's obligations under this Contract.
28. TIME IS OF ESSENCE. Time is of the essence for each and every provision of the Contract Documents.
29. FORCE MAJEURE. If CONTRACTOR is delayed in the performance or progress of the work by a Force Majeure Event, then the CONTRACTOR shall be entitled to a time extension, as

provided in the Contract documents, when the work stopped is on the critical path and shall not be charged liquidated damages. Such a non-compensable adjustment shall be CONTRACTOR's sole and exclusive remedy for such delays and the CONTRACTOR will not receive an adjustment to the Contract price or any other compensation. Contractor must submit a timely request in accordance with the requirements of the Contract documents. A Force Majeure Event shall mean an event that materially affects a party's performance and is one or more of the following: (1) Acts of God or other natural disasters occurring at the project site; (2) terrorism or other acts of a public enemy; (3) orders of governmental authorities (including, without limitation, unreasonable and unforeseeable delay in the issuance of permits or approvals by governmental authorities that are required for the work); (4) pandemics, epidemics or quarantine restrictions; and (5) strikes and other organized labor action occurring at the project site and the effects thereof on the work, only to the extent such strikes and other organized labor action are beyond the control of CONTRACTOR and its subcontractors, of every tier, and to the extent the effects thereof cannot be avoided by use of replacement workers. For purposes of this section, "orders of governmental authorities," includes ordinances, emergency proclamations and orders, rules to protect the public health, welfare and safety, and other actions of the City in its capacity as a municipal authority.

- 30. PROVISIONS REQUIRED BY LAW AND CONTRACTOR COMPLIANCE. Each and every provision of law required to be included in these Contract Documents shall be deemed to be included in these Contract Documents. The Contractor shall comply with all requirements of applicable federal, state and local laws, rules and regulations, including, but not limited to, the provisions of the California Labor Code and California Public Contract Code which are applicable to this Work.
- 31. ACCEPTANCE OF FACSIMILE SIGNATURES. The Parties agree that this Contract, agreements ancillary to this Contract, and related documents to be entered into in connection with this Contract will be considered signed when the signature of a party is delivered by facsimile transmission. Such facsimile signature will be treated in all respects as having the same effect as an original signature.
- 32. GOVERNING LAW: This Agreement shall be governed by the laws of the State of California, and exclusive venue for any action involving this Contract will be in Los Angeles County.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement with all the formalities required by law on the respective dates set forth opposite their signatures.

State of California  
CONTRACTOR'S License No. \_\_\_\_\_

CONTRACTOR  
\_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_                      By: \_\_\_\_\_  
Date    TITLE

CITY OF HERMOSA BEACH, CALIFORNIA

\_\_\_\_\_                      By: \_\_\_\_\_  
Date    MAYOR

ATTEST:

\_\_\_\_\_                      By: \_\_\_\_\_  
Date    CITY CLERK

CONTRACTOR'S Business Phone \_\_\_\_\_

Emergency Phone at which CONTRACTOR can be reached at any time: ( ) \_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
CITY ATTORNEY

\_\_\_\_\_  
Date

**B. AGREEMENT OF INDEMNIFICATION  
AND HOLD HARMLESS AND WAIVER OF SUBROGATION AND CONTRIBUTION**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

Contract/Agreement/License/Permit No. or description: \_\_\_\_\_

Indemnitor(s) (list all names): \_\_\_\_\_

To the fullest extent permitted by law, Indemnitor hereby agrees, at its sole cost and expense, to defend, protect, indemnify, and hold harmless the City of Hermosa Beach and its respective elected officials, officers, attorneys, agents, employees, volunteers, successors, and assigns (collectively "Indemnitees") from and against any and all damages, costs, expenses, liabilities, claims, demands, causes of action, proceedings, expenses, judgments, penalties, liens, and losses of any nature whatsoever, including fees of accountants, attorneys, or other professionals and all costs associated therewith (collectively "Liabilities"), arising or claimed to arise, directly or indirectly, out of, in connection with, resulting from, or related to any act, failure to act, error, or omission of Indemnitor or any of its officers, agents, servants, employees, subcontractors, materialmen, suppliers or their officers, agents, servants or employees, arising or claimed to arise, directly or indirectly, out of, in connection with, resulting from, or related to the above-referenced Contract, agreement, license, or permit (the "Agreement") or the performance or failure to perform any term, provision, covenant, or condition of the Agreement, including this indemnity provision. This indemnity provision is effective regardless of any prior, concurrent, or subsequent active or passive negligence by Indemnitees and shall operate to fully indemnify Indemnitees against any such negligence. This indemnity provision shall survive the termination of the Agreement and is in addition to any other rights or remedies which Indemnitees may have under the law. Payment is not required as a condition precedent to an Indemnitee's right to recover under this indemnity provision, and an entry of judgment against an Indemnitee shall be conclusive in favor of the Indemnitee's right to recover under this indemnity provision. Indemnitor shall pay Indemnitees for any attorney fees and costs incurred in enforcing this indemnification provision. Notwithstanding the foregoing, nothing in this instrument shall be construed to encompass (a) Indemnitees' sole negligence or willful misconduct to the limited extent that the underlying Agreement is subject to Civil Code 2782(a), or (b) the Contracting public agency's active negligence to the limited extent that the underlying Agreement is subject to Civil Code 2782(b). This indemnity is effective without reference to the existence or applicability of any insurance coverages which may have been required under the Agreement or any additional insured endorsements which may extend to Indemnitees.

Indemnitor, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against the Indemnitees, while acting within the scope of their duties, from all claims, losses and liabilities arising out of or incident to activities or operations performed by or on behalf of the Indemnitor regardless of any prior, concurrent, or subsequent active or passive negligence by the Indemnitees. Accountants, attorneys, or other professionals employed by Indemnitor to defend Indemnitees shall be selected by Indemnitees.

In the event there is more than one person or entity named in the Agreement as an Indemnitor, then all obligations, liabilities, covenants and conditions under this instrument shall be joint and several.

"Indemnitor"

Name \_\_\_\_\_

Name \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

**C. EQUALS**

**CIP NO. 421**

**ANNUAL SEWER IMPROVEMENTS PHASE 2**

The undersigned desires to use the material, product, thing, or service described below, as “an equal” to such item as specified.

If the City shall find any item so described equal to the respective item specified, then the undersigned may furnish such item, together with all necessary labor, materials, equipment and incidentals required to perform and complete the work.

\_\_\_\_\_  
Contractor’s Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone Number

<b>Materials, apparatus or equipment specified for which Bidder proposes “an equal”</b>	<b>Complete description of the materials, apparatus or equipment the Bidder desires to use as “an equal” and name of Contractor if different</b>
<i>Specify page number</i>	
1.	
2.	
3.	

**D. FAITHFUL PERFORMANCE BOND**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the City of Hermosa Beach, (hereinafter referred to as “City”) has awarded to \_\_\_\_\_, (hereinafter referred to as the “Contractor”) an agreement for **Contract No.** \_\_\_\_\_, (hereinafter referred to as the “Project”).

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, the Contractor is required by said Contract Documents to perform the terms thereof and to furnish a bond for the faithful performance of said Contract Documents.

NOW, THEREFORE, we, \_\_\_\_\_, the undersigned Contractor and \_\_\_\_\_ as Surety, a corporation organized and duly authorized to transact business under the laws of the State of California, are held and firmly bound unto the City in the sum of \_\_\_\_\_ DOLLARS, (\$\_\_\_\_\_), said sum being not less than one hundred percent (100%) of the total amount of the Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Contractor, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any alteration thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all obligations including the one (1) year guarantee of all materials and workmanship; and shall indemnify and save harmless the City, its officials, officers, employees, and authorized volunteers, as stipulated in said Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees including reasonable attorney’s fees, incurred by City in enforcing such obligation.

As a condition precedent to the satisfactory completion of the Contract Documents, unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of one (1) year after the acceptance of the work by City, during which time if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the

City from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the City's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure Section 337.15.

Whenever Contractor shall be, and is declared by the City to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly, at the City's option:

- i. Take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or
- ii. Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible Bidder, arrange for a Contract between such Bidder, the Surety and the City, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the Contract price, including other costs and damages for which Surety may be liable. The term "balance of the Contract price" as used in this paragraph shall mean the total amount payable to Contractor by the City under the Contract and any modification thereto, less any amount previously paid by the City to the Contractor and any other set offs pursuant to the Contract Documents.
- iii. Permit the City to complete the Project in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the Contract price, including other costs and damages for which Surety may be liable. The term "balance of the Contract price" as used in this paragraph shall mean the total amount payable to Contractor by the City under the Contract and any modification thereto, less any amount previously paid by the City to the Contractor and any other set offs pursuant to the Contract Documents.

Surety expressly agrees that the City may reject any Contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Contractor.

Surety shall not utilize Contractor in completing the Project nor shall Surety accept a bid from Contractor for completion of the Project if the City, when declaring the Contractor in default, notifies Surety of the City's objection to Contractor's further participation in the completion of the Project.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project 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 the Contract Documents or to the Project.

By their signatures hereunder, Surety and Contractor hereby confirm under penalty of perjury that surety is an admitted surety insurer authorized to do business in the State of California.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

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

Contractor/ Principal \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

Surety \_\_\_\_\_

By \_\_\_\_\_  
Attorney-in-Fact

Title \_\_\_\_\_

The rate of premium on this bond is \_\_\_\_\_ per thousand. The total amount of premium charges is \$\_\_\_\_\_.  
(The above must be filled in by corporate attorney.)

**THIS IS A REQUIRED FORM**

Any claims under this bond may be addressed to:

(Name and Address of Surety) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Name and Address of Agent or Representative for service of process in California, if different from above) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Telephone number of Surety and Agent or Representative for service of process in California) \_\_\_\_\_

## 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 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 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.*

#### CAPACITY CLAIMED BY SIGNER

#### DESCRIPTION OF ATTACHED DOCUMENT

- .. Individual
- .. Corporate Officer

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

- |  |                           |
|--|---------------------------|
|  | Title or Type of Document |
|  | Number of Pages           |
|  | Date of Document          |

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

\_\_\_\_\_  
 \_\_\_\_\_

Signer(s) Other Than Named Above

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 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 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.*

#### CAPACITY CLAIMED BY SIGNER

#### DESCRIPTION OF ATTACHED DOCUMENT

- .. Individual
- .. Corporate Officer

- |  |                                    |
|--|------------------------------------|
| _____<br>Title(s)  | _____<br>Title or Type of Document |
| .. Partner(s)      .. Limited<br>.. General                                  | _____<br>Number of Pages           |
| .. Attorney-In-Fact<br>.. Trustee(s)<br>.. Guardian/Conservator<br>.. Other: | _____<br>Date of Document          |

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

\_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 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 PERFORMANCE BOND**



**E. PAYMENT BOND (LABOR AND MATERIALS)**

**CIP NO. 421**

**ANNUAL SEWER IMPROVEMENTS PHASE 2**

KNOW ALL MEN BY THESE PRESENTS That

WHEREAS, the City of Hermosa Beach (hereinafter designated as the "City"), 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, 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 City 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 City 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 City 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 and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned, including but not limited to the provisions of sections 2819 and 2845 of the California Civil Code.

By their signatures hereunder, Surety and Principal hereby confirm under penalty of perjury that surety is an admitted surety insurer authorized to do business in the State of California.

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

\_\_\_\_\_  
Contractor/ Principal

By \_\_\_\_\_

Title \_\_\_\_\_

\_\_\_\_\_  
Surety

By \_\_\_\_\_  
Attorney-in-Fact

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 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 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.*

#### CAPACITY CLAIMED BY SIGNER

#### DESCRIPTION OF ATTACHED DOCUMENT

- .. Individual
- .. Corporate Officer

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

- |  |                           |
|--|---------------------------|
|  | Title or Type of Document |
|  | Number of Pages           |
|  | Date of Document          |

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

\_\_\_\_\_  
 \_\_\_\_\_

Signer(s) Other Than Named Above

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 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 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.*

#### CAPACITY CLAIMED BY SIGNER

#### DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

- |  |  |
|--|--|
|  | Title(s)   |
| <input type="checkbox"/> Partner(s) <input type="checkbox"/> Attorney-In-Fact<br><input type="checkbox"/> Trustee(s)<br><input type="checkbox"/> Guardian/Conservator<br><input type="checkbox"/> Other: | <input type="checkbox"/> Limited<br><input type="checkbox"/> General |

- |  |                           |
|--|---------------------------|
|  | Title or Type of Document |
|  | Number of Pages           |
|  | Date of Document          |

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

\_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 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**

**F. GUARANTEE TO THE CITY OF HERMOSA BEACH**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

As a material inducement to the City to award the Contract for CIP No. \_\_\_\_\_ to the \_\_\_\_\_, the undersigned (“Guarantor”) has agreed to enter into this guarantee. The Guarantor hereby unconditionally guarantees to the fullest extent allowed by law the following work included in this project: \_\_\_\_\_ (“the work”).

Guarantor guarantees that the materials and equipment used by itself and its sub-Contractors will be free from defects and that the work will conform to the plans and specifications. Should any of the materials or equipment prove defective or should the work as a whole, or any part thereof, prove defective for any reason whatsoever (except due to intentional torts by the City), or should the work as a whole or any part thereof fail to operate properly or fail to comply with the plans and specifications, Guarantor will, at the City’s sole election: 1) reimburse the City, upon written demand, for all of the City’s expenses incurred replacing or restoring any such equipment or materials, including the cost of any work necessary to make such replacement or repairs; or 2) replace any such defective material or equipment and repair said work completely, all without any cost to the City. Guarantor further guarantees that any such repair work will conform to the plans and specifications for the project. This guarantee will remain in effect for one year from the date on which the Contract for the work is accepted by the City.

Guarantor understands and agrees that the City shall have the unqualified option to make any replacements or repairs itself or to have such replacement, repair, performed by the undersigned. The City shall have no obligation to consult with Guarantor before the City proceeds to perform any repair, replacement, or work itself. If the City elects to have Guarantor perform said repair, replacement, or work, Guarantor agrees that the repair, replacement, or work shall be performed within 15 days after receipt of a written demand from the City.

If the City elects to perform the replacement, repairs itself, Guarantor agrees to make reimbursement payment within 15 days after receipt of a written demand for payment from the City.

If the Guarantor fails or refuses to comply with this guarantee, the City shall be entitled to all costs and expenses, including attorneys and expert fees, reasonably incurred by reason of Guarantor’s failure or refusal.

Guarantor

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Date

\_\_\_\_\_  
By

\_\_\_\_\_  
Title

**G. GENERAL COMPREHENSIVE LIABILITY ADDITIONAL INSURED  
ENDORSEMENT**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

---

NAME OF ADDRESS OF INSURED:

---

General description of agreement(s) and/or activity(ies) insured:

---

Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or in any endorsement now or hereafter attached thereto, it is agreed as follows:

1. That the City of Hermosa Beach and its or their elected officials, officers, agents and employees are insureds thereunder in relation to those activities described generally above with regard to operations performed by or on behalf of the named insured.
2. Such insurance shall be primary, and not contributing with any other insurance maintained by the City.
3. The policy to which this endorsement is attached shall apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the company's liability.
4. The policy to which this endorsement is attached shall not be subject to cancellation, change in coverage, reduction of limits or non-renewal except after written notice to Risk Management, City of Hermosa Beach, by certified mail, return receipt requested, not less than thirty (30) days prior to the effective date thereto.

CANCELLATION NOTICE AND ENDORSEMENT TO BE SENT TO:

Risk Management  
City of Hermosa Beach  
1315 Valley Dr. Hermosa  
Beach, CA 90254  
(310) 318-0202

Except as stated above and not in conflict with this endorsement, nothing contained herein shall be held to waive, alter or extend any of the limits, agreements, or exclusions of the policy to which this endorsement is attached.

Endorsement No. \_\_\_\_\_ Effective Date \_\_\_\_\_ Policy No. \_\_\_\_\_

TYPE OF COVERAGES TO WHICH LIMITS OF THIS ENDORSEMENT ATTACHES LIABILITY POLICY PERIOD FROM TO

Scheduled items or locations are to be identified on an attached sheet.

The following inclusions relate to the above coverages includes:

- Premises & Operations
- Contractual Liability
- Independent Contractors
- Products/Completed Operations
- Broad Form Property Damage
- Broad Form Liability Endorsement
- Explosion Hazard
- Collapse
- Underground Hazard
- Personal Injury
- \_\_\_\_\_

A deductible or self-insured retention (strike out one) of \_\_\_\_\_ applies to \_\_\_\_\_ coverage.

DEDUCTIBLE APPLIES PER CLAIM, \_\_\_\_\_ PER OCCURRENCE \_\_\_\_\_

INSURANCE COMPANY  
ADDRESS: \_\_\_\_\_

I, \_\_\_\_\_, (print name) hereby declare under penalty of perjury, under the laws of the State of California, that I have the authority to bind the above-named insurance company to this endorsement and by my execution hereof, do so bind said company.

Signature of Authorized Representative (Original Signature only; No facsimile signature or initialed signature accepted)

Executed at \_\_\_\_\_, \_\_\_\_\_ on \_\_\_\_\_ 20 .

Phone No.: ( ) \_\_\_\_\_

**H. AUTOMOBILE LIABILITY ADDITIONAL INSURED ENDORSEMENT**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

---

NAME OF ADDRESS OF INSURED:

---

General description of agreement(s) and/or activity(ies) insured:

---

Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or in any endorsement now or hereafter attached thereto, it is agreed as follows:

1. That the City of Hermosa Beach and its or their elected officials, officers, agents and employees are insureds thereunder in relation to those activities described generally above with regard to operations performed by or on behalf of the named insured.
2. Such insurance shall be primary, and not contributing with any other insurance maintained by the City.
3. The policy to which this endorsement is attached shall apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the company's liability.
4. The policy to which this endorsement is attached shall not be subject to cancellation, change in coverage, reduction of limits or non-renewal except after written notice to Risk Management, City of Hermosa Beach, by certified mail, return receipt requested, not less than thirty (30) days prior to the effective date thereto.

CANCELLATION NOTICE AND ENDORSEMENT TO BE SENT TO:

Risk Management  
City of Hermosa Beach  
1315 Valley Dr. Hermosa  
Beach, CA 90254  
(310) 318-0202



Except as stated above and not in conflict with this endorsement, nothing contained herein shall be held to waive, alter or extend any of the limits, agreements, or exclusions of the policy to which this endorsement is attached.

Endorsement No. \_\_\_\_\_ Effective Date \_\_\_\_\_ Policy No. \_\_\_\_\_

TYPE OF COVERAGES TO WHICH LIMITS OF THIS ENDORSEMENT ATTACHES POLICY PERIOD FROM TO  
LIABILITY

Scheduled items or locations are to be identified on an attached sheet.

The following inclusions relate to the above coverages includes:

- Owned Automobiles
- Non-owned Automobiles
- Hired Automobiles
- Owned, Non-owned and Hired Automobiles

A deductible or self-insured retention (strike out one) of \_\_\_\_\_ applies to \_\_\_\_\_ coverage.

DEDUCTIBLE APPLIES PER CLAIM, \_\_\_\_\_ PER OCCURRENCE \_\_\_\_\_

\_\_\_\_\_  
INSURANCE COMPANY  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_, (print name) hereby declare under penalty of perjury, under the laws of the State of California, that I have the authority to bind the above-named insurance company to this endorsement and by my execution hereof, do so bind said company.

\_\_\_\_\_  
Signature of Authorized Representative (Original Signature only; No facsimile signature or initialed signature accepted)

Executed at \_\_\_\_\_, \_\_\_\_\_ on \_\_\_\_\_ 20 .

Phone No.: ( ) \_\_\_\_\_



**I. INSTRUCTIONS FOR COMPLETING, EXECUTING, AND SUBMITTING  
EVIDENCE OF INSURANCE TO THE OWNER**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

Insured: \_\_\_\_\_ Date: \_\_\_\_\_  
(Contractor, Lessee, Permittee, etc.)

**Insured**

- A. In order to reduce problems and time delays in providing evidence of insurance to the City, you are requested to give your insurance agent or broker a copy of the attached Insurance Requirements and endorsement forms along with these instructions for completing, executing, and submitting evidence of insurance.

If the agreement requires Workers' Compensation coverage and you have been authorized by the State of California to self-insure Workers' Compensation, then a copy of the certificate from the State authorizing self-insurance for Workers' Compensation shall meet the requirements for Workers' Compensation insurance covering activities within the State of California.

All questions relating to insurance should be directed to the department or office responsible for your Contract, lease, permit, or other agreement.

**Insurance Agent or Broker**

- B. The appropriate Endorsement Form shall be used. No changes in the terms of the Endorsement will be permitted. Certificates of Insurance alone will not be accepted by the City.

More than one insurance policy may be required to comply with the insurance requirements. Endorsement forms appropriate to your insured's Contract, lease or permit are checked below and enclosed.

- Workers' Compensation/Employers Liability
- General Liability
- Automobile Liability
- Excess/umbrella Liability
- Professional Liability
- Property insurance
- Fine Arts Property Insurance

You shall have an authorized representative of the insurance company sign the completed endorsement forms, note his phone number at the bottom of page 2 and have said representative

transmit the forms to the City. Signatures must be originals as the City will not accept facsimile (rubber stamp, photocopy, etc.) or initialed signatures.

The name of the Insurance Company underwriting the coverage and its address shall be noted on page 2 of the endorsement form.

The "General description of agreement(s) and/or activity(ies) insured" shall include reference to the activity and/or to either the specific City Contract number, lease number, permit number or construction approval number.

The coverages and limits for each type of insurance are specified in the attached sheet of insurance requirements. When coverage is on a scheduled basis, then a separate sheet is to be attached to the endorsement listing such scheduled locations, vehicles, etc., so covered.

Endorsements to excess policies will be required when primary insurance is insufficient in complying with the City's requirements.

If there is insufficient space on the form to note pertinent information, such as inclusions, exclusions or specific provisions, etc., a separate sheet may be attached.

When additional sheets are attached, change the number of pages at the bottom of the form.

Completed Endorsement(s) and questions relating to the required insurance are to be directed to:

Risk Management  
City of Hermosa Beach  
1315 Valley Dr. Hermosa  
Beach, CA 90254  
(310) 318-0202

Improperly completed Endorsements will be returned to your insured for correction by an authorized representative of the insurance company.

**DELAY IN SUBMITTING PROPERLY COMPLETED ENDORSEMENT FORMS MAY DELAY YOUR INSURED'S INTENDED OCCUPANCY OR OPERATION UNDER AGREEMENT WITH THE OWNER.**

For extensions or renewals of insurance policies which have the City's Endorsement Form(s) attached, the City will accept a copy of the endorsement (with an original signature) to extend the period of coverage as evidence of continued coverage.

**J. WORKER'S COMPENSATION INSURANCE CERTIFICATE**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

The Contractor shall execute the following form as required by the California Labor Code, Sections 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 the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of the Contract.

DATED: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

By: \_\_\_\_\_

Signature

\_\_\_\_\_  
Title

ATTEST:

By: \_\_\_\_\_

Signature

\_\_\_\_\_  
Title

**K. SUPPLEMENTAL INFORMATION TO BE COMPLETED BY PRINCIPAL**

**CIP NO. 421  
ANNUAL SEWER IMPROVEMENTS PHASE 2**

If an individual, so state. If a firm or co-partnership, state the firm and give the names of all individual co-partners composing the partnership. If a corporation, state legal name of corporation; state also the names of the president, secretary, treasurer, and manager thereof.

---

---

---

Business Address:

---

---

---

Telephone Number:

---

Date:

---

Print Name:

---

Principal

Signature:

---

# L. W9 FORM

Form **W-9**  
 (Rev. October 2018)  
 Department of the Treasury  
 Internal Revenue Service

## Request for Taxpayer Identification Number and Certification

**Give Form to the  
 requester. Do not  
 send to the IRS.**

▶ Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

Print or type.  
 See Specific Instructions on page 3.

<p><b>1</b> Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.</p> <hr/> <p><b>2</b> Business name/disregarded entity name, if different from above</p> <hr/> <p><b>3</b> Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only <b>one</b> of the following seven boxes.</p> <p><input type="checkbox"/> Individual/sole proprietor or single-member LLC    <input type="checkbox"/> C Corporation    <input type="checkbox"/> S Corporation    <input type="checkbox"/> Partnership    <input type="checkbox"/> Trust/estate</p> <p><input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____</p> <p><b>Note:</b> Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.</p> <p><input type="checkbox"/> Other (see instructions) ▶ _____</p>	<p><b>4</b> Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):</p> <p>Exempt payee code (if any) _____</p> <p>Exemption from FATCA reporting code (if any) _____</p> <p><small>(Applies to accounts maintained outside the U.S.)</small></p>
<p><b>5</b> Address (number, street, and apt. or suite no.) See instructions.</p> <hr/> <p><b>6</b> City, state, and ZIP code</p> <hr/> <p><b>7</b> List account number(s) here (optional)</p>	<p>Requester's name and address (optional)</p> <hr/> <hr/> <hr/>

### Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

**Note:** If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

<b>Social security number</b>											
				-			-				
<b>or</b>											
<b>Employer identification number</b>											
				-							

### Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

<b>Sign Here</b>	Signature of U.S. person ▶	Date ▶
------------------	----------------------------	--------

### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9).

**Purpose of Form**

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

*If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.*

**CIP No. 421**  
**ANNUAL SEWER IMPROVEMENTS**

**VI. SPECIAL PROVISIONS**

The following Special Provisions supplement and amend the 2021 Standard Specifications for Public Works Construction (SSPWC). These Special Provisions have been arranged into a format and sequence that parallels the Standard Specifications for Public Works Construction.



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## **PART 1 – GENERAL PROVISIONS**

### **PREFACE: STANDARD SPECIFICATIONS AND STANDARD DRAWINGS**

The Standard Specifications for Public Works Construction (SSPWC), written and promulgated by the Southern California Chapter of the American Public Works Association and the Southern California Districts of the Associated General Contractors of California, shall be the Standard Specifications of the City. All work shall conform to the edition indicated in this document and in the bid proposal documents, including supplements, of the SSPWC, these Special Provisions which supplement or modify the SSPWC, the Standard Plans for Public Works Construction (SPPWC) of the same edition as the SSPWC, and the Standard Drawings as issued by the City available at the time bids are opened unless otherwise specified in the Contract Documents.

The above referenced Standard Specifications, Special Provisions and Standard Drawings are hereby made a part of the Contract Documents.

### **SECTION 1 – GENERAL.**

#### **1-2 TERMS AND DEFINITIONS.**

Whenever the following terms are used in the SSPWC, they shall be understood to mean and refer to the following:

- a) Board – The City Council of the City of Hermosa Beach
- b) Contract Documents – Documents including but not limited to the proposal forms, Special Provisions, Bonds, Insurance, Contract, and all Addenda setting forth any modifications to the documents.
- c) Engineer – The Director of Public Works/City Engineer or their authorized representative
- d) Bidder – An individual, co-partnership, association, or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.
- e) Legal Address of Contractor – The address given on the Contractor’s bid and is hereby designated as the place to which all notices, letters or other communications to the Contractor shall be mailed or delivered.

### **SECTION 2 – SCOPE OF THE WORK.**

#### **2-2 PERMITS.**

Add the following:

Prior to beginning work, the Contractor shall obtain authorization and permits from the City of Hermosa Beach. The Contractor will be responsible to protect and preserve all property and improvements in accordance with the Contract Documents.

The Contractor must have or obtain a valid City of Hermosa Beach Business License in accordance with the provisions of the Hermosa Beach Municipal Code.

City Right of Way Permit

A City Right of Way Permit is required to work within public right-of-way and will be issued at no cost to the Contractor.

Right of Way Permits

When work occurs in the right-of-way of other entities, the Contractor shall obtain a no fee right of way permit as required for an encroachment from that entity.

**2-5 THE CONTRACTOR’S EQUIPMENT AND FACILITIES.**

**2-5.4 Haul Routes.**

Replace the entire subsection with the following:

Haul Routes shall be per the City of Hermosa Beach Truck Routes map. See Cover Sheet on project plans.

Add the following subsections:

**2-5.5 Contractor’s Responsibility for Work.**

Until the formal acceptance of the work by the City, the Contractor shall have the charge and care thereof and shall, subject to the insurance protection furnished, bear the risk of accident, loss or damage to any part thereof by 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 otherwise correct damages to any portion of the work occasioned by any of the above causes before its acceptance.

In case of suspension of work from any cause whatever, the Contractor shall be responsible for all materials and the proper temporary storage thereof.

**2-5.6 Notice and Service Thereof.**

Any notice required or given by one party to the other under the Contract shall be in writing and shall be dated and signed by the party giving such notice or by a duly authorized representative of such party. Any such notice shall not be effective for any purpose whatever unless served in the following manner:

Notice shall be given to the City by personal delivery thereof to the City’s Engineer or by depositing the same in the United States mail enclosed in a sealed envelope, registered and with postage prepaid, addressed to:

Public Works Department  
City of Hermosa Beach  
1315 Valley Dr.  
Hermosa Beach, CA 90254

Notice shall be given to the Contractor by personal delivery thereof to said Contractor or to his authorized representative at the site of the project, or by depositing the same in the United States mail, enclosed in a sealed envelope addressed to said Contractor at the address established for the conduct of the work under this Contract, postage prepaid and registered.

Notice shall be given to the Surety, or any other person, by personal delivery to said Surety or other person, or by depositing the same in the United States Mail, enclosed in a sealed envelope addressed to such Surety or persons at the address of said Surety or persons last communicated to the party giving the notice, postage prepaid and registered.

**2-5.7           Warranty of Title.**

No materials, supplies, or equipment for the work under this Contract shall be purchased subject to any chattel mortgage or under a conditional sale Contract or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants clear and good title to all materials, supplies, and equipment installed and incorporated in the work, and agrees upon completion of all work to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by them to the City free from any claims, liens, encumbrances, or charges, and further agrees that neither they nor any person, firm, or corporation furnishing any material or labor for work covered by the Contract shall have any right to a lien upon the premises or any improvement or appurtenance thereon; provided, that this shall not preclude the Contractor from installing metering devices or other equipment of utility companies the title of which is commonly retained by the utility company.

Nothing contained in this section, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection, or any right under any law permitting such persons to look to funds due the Contractor, which are in the hands of the City.

**2-11           RETENTION OF IMPERFEFCT WORK.**

If any portion of the work done or materials furnished under the Contract proves defective or not in accordance with the specifications and Contract drawings, and if the imperfection in the same is not of sufficient magnitude or importance to make the work dangerous or undesirable, or if the removal of such work is impracticable or will create conditions which are dangerous or undesirable in the opinion of the Engineer, the Engineer shall have the right and authority to retain the work instead of requiring it to be removed and reconstructed, but he shall make such deductions therefor in the payment due the Contractor as may be just and reasonable.

**SECTION 3 – CONTROL OF THE WORK.**

**3-6           THE CONTRACTOR’S REPRESENTATTIVE.**

Add the following:

The Contractor shall provide the Engineer with the name, address, and business and home telephone numbers of the person responsible for the maintenance of barricades, traffic control signs, lights and other safety devices.

**3-7 CONTRACT DOCUMENT.**

**3-7.2 Precedence of Contract Documents.**

Replace the entire subsection with the following:

If there is a conflict between any of the Contract Documents, the document highest in the order of precedence shall control. The order of precedence, from highest to lowest, shall be as follows:

1. Requirements of law, including the Code and Ordinances of the City of Hermosa Beach.
2. Permits from other agencies as may be required by law.
3. Permits from City of Hermosa Beach Departments as may be required by law or ordinance.
4. The Contract.
5. The Bid Proposal.
6. Addenda.
7. Notice Inviting Bids.
8. Instructions to Bidders.
9. Special and General Provisions.
10. Plans.
11. City of Hermosa Beach Standard Plans.
12. Other Standard Plans.
13. Standard Specifications for Public Works Construction.
14. Reference Specifications.

Change orders, supplemental agreements, and approved revisions to Plans and Specifications will take precedence over documents listed above, except those listed as FIRST, SECOND, and THIRD. Detailed plans shall have precedence over general plans.

**3-8 SUBMITTALS.**

**3-8.1 General.**

Add the following:

The Contractor shall submit the following submittals within ten (10) days of notification of the City's intent to award this Contract:

- Project Construction Schedule, sequence, and phase sequence plan
- Preconstruction CCTV video on USB documenting existing sewer condition, 2 copies
- Copy of City Business License (Prime and Subcontractors)

- 24 Hr. Emergency Phone Call List
- Letters identifying site authorized Contractor’s representative or “Superintendent” and Contractor’s designated ”Safety Officer” for on-site work.
- Vehicular and Pedestrian Traffic Control Plan (paper and PDF)
- SWPPP / Erosion Control Plan (paper and PDF)
- Sewer Bypassing Plan (paper and PDF)
- WPCP / Best Management Practices
- Asphalt Concrete material specifications and mix design
- Concrete material specifications and mix design
- Crushed Aggregate Base material specifications
- Topsoil material specifications
- Construction Notices sample template shall be provided by the City to the Contractor and modified and submitted to the engineer for review and approval. Approved Construction Notice shall be distributed by Contractor. See Exhibit B.
- Post-construction video on USB, 2 copies (to be provided after construction)
- Material data, Supplemental Plans, and Other Submittals (For all required submittals see Technical Specifications)

**3-13                    COMPLETION, ACCEPTANCE, AND WARRANTY.**

Add the following subsection:

**3-13.4                Completion and Acceptance.**

In addition to the guarantees as required in Section 2-4 of the Standard Specifications, the Faithful Performance Bond shall remain in full force and effect for a period of one year after acceptance of the work by the City to insure that defects, which appear within said period, will be repaired, replaced, or corrected by the Contractor, at its own cost and expense, to the satisfaction of the Engineer within thirty (30) days of written notice thereof by the City.

## **SECTION 5 - LEGAL RELATIONS AND RESPONSIBILITIES.**

### **5-3 LABOR.**

Add the following subsection:

#### **5-3.6 Laws.**

Each Bidder must submit with the Bid Proposal a fully executed Certificate of Non-Discrimination by Contractors. Bids will not be considered unless accompanied by the completed Certificate.

After the opening of bids and the determination of the low Bidder, said low Bidder shall submit to the Public Works Department, no later than 5:00 P.M. on the third working day following the bid opening, a completed "Fair Employment Practices Contractor Compliance Report".

The Contractor shall comply with all applicable provisions of Sections 1776, 1777.5 and 1777.7 of the California Labor Code. The Contractor shall be responsible for compliance with Section 1776 and shall insert a provision in all subcontracts requiring subcontractors to comply with said section.

The Contractor is prohibited from performing work on this project with a subcontractor who is ineligible to perform work on the project pursuant to Section 1777.1 or 1777.7 of the Labor Code.

### **5-4 INSURANCE.**

Replace the entire subsection with the following:

The Contractor shall, at its expense, maintain in effect all times during the performance of work under the Contract not less than the following coverage and limits of insurance, which shall be maintained with insurers licensed to sell insurance in the State of California and having a "A-" or higher rating in the latest edition of Best's Insurance Guide, and shall be subject to approval by the City's Risk Manager:

#### Workers' Compensation and Employer's Liability

- Workers' Compensation – coverage as required by law
- Employer's Liability – limits of at least \$1,000,000 per occurrence

#### Comprehensive General Liability

- Combined Single Limit - \$2,000,000

#### Automobile Liability

- Combined Single Limit - \$1,000,000

The automobile and general comprehensive liability policies may be combined in a single policy with a combined single limit of \$1,000,000.

All of the Contractor's policies shall contain an endorsement providing written notice shall be given to the City at least 30 calendar days prior to termination, cancellation or reduction of coverage in the policy



The Bodily Injury and Property Damage Liability policies shall contain the following:

1. An endorsement extending coverage to the City as an insured, in the same manner as the named insured as respects liabilities arising out of the performance of any work under the Contract. Such insurance shall be primary insurance as respects the interest of the City, and any other insurance maintained by the City shall be excess and not contributing insurance with the insurance required hereunder.
2. "Severability of Interest" clause.
3. Elimination of any exclusion regarding loss or damage to property caused by explosion or resulting from collapse of buildings or structures or damage to property underground, commonly referred to by insurers as the "XCU" hazards.
4. Provision or endorsement stating that such insurance, subject to all of its other terms and conditions, applies to the liability assumed by the Contractor under the Contract.

Promptly on execution of the Contract, and prior to commencement of any work, the Contractor shall deliver to the City copies of all required policies and endorsements thereto on the forms supplied by the City.

The Contractor shall require and verify similar insurance on the part of its subcontractors.

The foregoing requirements as to the types, limits and City approval of insurance coverage to be maintained by the Contractor are not intended to and shall not in any manner limit or qualify the liabilities and obligation assumed by the Contractor under the Contract.

Any policy or policies of insurance that the Contractor or his Subcontractors elects to carry as insurance against loss or damage to their construction equipment and tools or other personal property used in fulfillment of this Contract shall include a provision waiving the insurer's right of subrogation against the City.

The cost of all insurance shall be included in the Contractor's bid.

## **5-7 SAFETY.**

Add the following subsection:

### **5-7.9 Emergency Provisions.**

Unusual conditions may arise on the work which will require that immediate and unusual provision be made to protect the public from danger or loss or damage to life and property, due directly or indirectly to the prosecution of the work, and it is part of the service required of the Contractor to make such provisions and to furnish such protection.

Whenever, in the opinion of the City, an emergency exists of which the City is aware and against which the Contractor has not taken sufficient precaution for the safety of the public or the protection of utilities or of adjacent structures or property which may be injured by the progress of construction; and whenever, in the opinion of the City, immediate action shall be considered necessary in order to protect public or private personnel or property interests, or prevent likely loss of human life or damage on account of the operations under the Contract, then in that event the City may provide suitable protection to said interests by causing such work to be done and material to be furnished, as in the opinion of the City may seem reasonable and

necessary, all at the expense of the Contractor.

Add the following subsections:

**5-8 LAWS TO BE OBSERVED.**

**5-8.1 Laws and Regulations.**

The Contractor shall keep himself fully informed of all Federal and State laws, County and City ordinances and regulations which, in any manner, affect those engaged or employed on the work, the materials used in the work or the conduct of the work. If any discrepancy or inconsistency should be discovered in this Contract or in the Plans or Specifications herein referred to, in relation to any such law, ordinance or regulation, the Contractor shall forthwith report the same in writing to the Engineer. 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 applicable laws, ordinances and regulations in effect or which may become effective before completion of this Contract. He shall protect and indemnify the City and its officers and agents against any claim or liability arising from or based on the violations of any such laws, ordinances or regulations whether by himself or by his employees or his subcontractors or their employees.

Except as otherwise explicitly provided in these Specifications, all permits and licenses necessary to the prosecution of the work shall be secured by the Contractor at his own expense and he shall pay all taxes properly assessed against his equipment or property used or required in connection with the work.

All state laws, all county and city ordinances and regulations now imposed by competent authority and relating to any materials required to be furnished under these specifications and works required to be done hereunder, shall be deemed to be and hereby are made controlling and part of these specifications.

**5-8.2 General.**

The Contractor shall keep himself fully informed of all existing state and national laws and municipal ordinances and regulations which in any manner affect those engaged or employed in the work, or the materials used 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.

**5-8.3 Eight-Hour Law.**

Eight (8) hours labor constitutes a legal day's work. The Contractor shall forfeit as a penalty \$25.00 (Twenty-five dollars) for each workman employed in the execution of the Contract by the Contractor or any subcontractor under him for each calendar day during which such workman is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of the Labor Code and in particular, Section 1810 to Section 1815 thereof inclusive except that work performed by employees of Contractors in excess of eight (8) hours per day and forty (40) hours during any one week, shall be compensated at not less than one and one-half (1 1/2) times the basic rate of pay as provided in Section 1815.

#### **5-8.4 Prevailing Rate of Per Diem Wages.**

Pursuant to the provisions of Section 1773 of the Labor Code, the general prevailing wage rates in the County in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates. The Federal Minimum wage rates for this project as predetermined by the United States Secretary of labor are set forth herein by addenda and in copies that may be examined at the offices described above where project plans, special provisions, and proposal forms may be seen. Addenda to modify the federal minimum wage rates, if necessary, will be issued to holders. Future effective general prevailing wage rates which have been predetermined and are on file with the California Department of Industrial Relations are referenced but not printed in the general prevailing wage rates.

Attention is directed to the Federal minimum wage rate requirements in these Special Provisions. If there is a difference between the minimum wage rates predetermined by the Secretary of labor and the general prevailing wage rates determined by the Director of the California Department of Industries Relations for similar classifications of labor, the Contractor and subcontractor shall pay not less than the higher wage rate. The City will not accept lower State wage rates not specifically included in the Federal minimum wage determination. This includes "helper" (or other classifications based on hours of experience) or any other classifications not appearing in the Federal wage rate determination. Where Federal wage determinations do not contain the State wage rate determination otherwise available for use by the Contractor and subcontractor, the Contractor and subcontractor shall pay not less than the Federal minimum wage rate which most closely approximates the duties of the employees in question.

The U.S. Department of Transportation (DOT) provides a toll-free "hotline" service to report bid rigging activities. Bid rigging activities can be reported Mondays through Fridays, between 8:00 a.m. and 5:00 p.m., eastern time, Telephone No. 1-800-424-9071. Anyone with knowledge of possible bid, Bidder collusion, or other fraudulent activities should use the "hotline" to report these activities. The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction Contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

The Contractor shall comply with Labor Code Section 1775. In accordance with said section, the Contractor shall forfeit as a penalty to the City \$50.00 (fifty dollars) for each calendar day, or portion thereof, for each workman paid less than the stipulated prevailing rates for such work or craft in which such workman is employed for any work done under the Contract by him or by any subcontractor under him in violation of the provisions of the Labor Code and in particular Labor Code Sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to said Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each workman for each calendar day or portion thereof for which each workman was paid less than the stipulated prevailing wage rate shall be paid to each workman by the Contractor.

### **5-8.5 Certified Payroll.**

Pursuant to Section 1776 of the Labor Code, the Contractor and/or subcontractors shall submit weekly to the City for each week in which any Contract work is performed a certified copy of all payroll records. Should the Contractor fail to provide such payroll certificates, the City may withhold.

\$1,000.00 for each weekly payroll certificate not received from payment due.

### **5-9 FAIR EMPLOYMENT PRACTICE COMMISSION CERTIFICATION.**

The Contractor's attention is directed to the requirements in Section 12990 of the Government Code for nondiscrimination and compliance employment programs.

## **SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK.**

### **6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK.**

#### **6-1.1 Construction Schedule.**

Add the following:

The Contractor's proposed construction schedule shall be submitted to the Engineer within ten (10) days of notification of the City's intent to award this Contract. The schedule shall be supported by written statements from each supplier of materials or equipment indicating that all orders have been placed and acknowledged, and setting forth the dates that each item will be delivered.

In preparation of the construction schedule, the following items shall be considered:

- The City observes the following holidays, which shall be considered non-working days. If the Contractor elects to work on any of the City holidays the Contractor shall be responsible for paying any associated inspection costs, including overtime and holiday premiums. **Any work not completed and fully open to public traffic shall be maintained in a safe and delineated condition. Traffic control and safety devices shall be maintained at all times.**
  - New Year's Day
  - Martin Luther King Jr.'s Birthday
  - Washington's Birthday
  - Cesar Chavez Day
  - Memorial Day
  - Juneteenth
  - Independence Day
  - Labor Day
  - Veterans Day
  - Thanksgiving
  - Christmas Day
- The Contractor's working hours shall be limited to the hours between 8:00 A.M. and

6:00 P.M., Monday through Friday. Deviation from normal working hours will not be allowed unless written permission has been duly obtained beforehand from the office of the City Engineer. The Contractor shall provide adequate light for proper prosecution of the work, for the safety of the workmen and the public, and for proper inspection.

- In the event of either a requested or emergency deviation, inspection service fees will be charged against the Contractor. The service fees will be calculated at overtime rates including benefits, overhead and travel time. The service fees will be deducted from any amounts due to the Contractor.

Prior to issuing the Notice to Proceed, the Engineer will schedule a preconstruction meeting with the Contractor to review the proposed construction schedule and delivery dates, arrange utility coordination, discuss construction methods and clarify inspection procedures.

The names, addresses, and telephone numbers of the Contractor and subcontractors, or their representatives, shall be filed with the Public Works Manager and the County Sheriff's Department or the City Police Department prior to beginning work.

The Contractor shall also notify the City of Hermosa Beach and the owners of all utilities and substructures not less than 72 hours prior to starting construction. The following utility companies list of names and telephone numbers is intended for the convenience of the Contractor and is not guaranteed to be complete or correct:

Southern California Edison Co.	310/783-9332
The Gas Co.	310/605-7837
Verizon	818/837-0394
Hermosa Beach Police & Fire	310/524-2750
Time Warner (Cable TV)	310/216-4184
West Basin Municipal Water District	310/217-2411
Athens Services	626/934-4696
California Water Service Co.	310/257-1428
Underground Service Alert	800/227-2600
Los Angeles County Flood Maintenance	562/861-0316
Los Angeles County Public Works	626/458-3109

The Contractor shall submit periodic Progress Reports to the Director of Public Works by the tenth day of each month. The report shall include an updated Construction Schedule. Any deviations from the original schedule shall be explained. Progress payments will be withheld pending receipt of any outstanding reports.

**6-4.3 Payment for Delays.**

To the furthest extent permitted by law, replace the entire subsection with the following:

In compliance with the provisions of California Public Contract Code § 7102, the Contractor will be compensated for damages incurred due to delays in completing the Work due solely to the fault of the City, where such delay is unreasonable under the circumstances and not contemplated by the parties. The Contractor and City agree that determining actual damages is impracticable and extremely difficult. As such, the Contractor shall be entitled to the appropriate time extension and to payment of liquidated damages in the sum of \$1,200 per Day of delay in excess of the time specified for the Completion of the Work. Such amount shall constitute the only payment allowed and shall necessarily include all overhead (direct or indirect), all profit, all administrative costs, all bond costs, all labor, materials, equipment and rental costs, and any other costs, expenses and fees incurred or sustained as a result of such delay. The Contractor expressly agrees to be limited solely to the liquidated damages for all such delays as defined in this subsection.

#### **6-9 LIQUIDATED DAMAGES.**

Add the following:

The amount of liquidated damages is hereby amended to **\$1,500** for each consecutive calendar day.

### **SECTION 7 – MEASUREMENT AND PAYMENT.**

#### **7-3 PAYMENT.**

##### **7-3.2 Partial and Final Payment.**

Replace the entire subsection with the following:

The closure date for periodic progress payments shall be the twenty-fifth day of each month. Authorization to pay is commonly received on the tenth day of the following month. However, payments will be withheld pending receipt of any outstanding reports required by the Contract Documents.

##### **7-3.4 Mobilization.**

Replace the entire subsection with the following:

Mobilization and demobilization shall include all site visits; preparation of all submittals; BMPs; obtaining all permits, insurance, and bonds; video recording of the site existing conditions; moving onto the site all materials and equipment; set up of any temporary facilities (e.g. sanitary facilities, parking, construction water, equipment and materials staging area, fencing); distribution of all notification materials; removal of same at completion of the work; site cleanup; and other work as required to perform and complete the work.

No material, equipment, or vehicles to be left overnight on sidewalks or streets. If staging area is needed by contractor, City facilities and grounds will not be available for use by the contractor. Possible staging area can be found in Redondo Beach at the corner of Pacific Coast Highway and Herondo Street. This lot is owned by Edison. Contact information is provided below for inquires to use the lot for staging.

Maria Parcell, SCE Land Services

[Maria.Parcell@sce.com](mailto:Maria.Parcell@sce.com)

(909) 274-1877

A minimum of one week prior to the start of construction, the Contractor shall video record all areas where construction is to take place. Such video recordings shall be provided to the Engineer before construction commences. These video recordings shall serve as a record of the existing conditions for disputes arising from restoration and should therefore be taken along the line of construction and site access and staging areas at sufficient detail as necessary to clearly depict details of existing conditions. Video recordings shall document existing sidewalks, and adjacent conditions. The video recordings shall be on two USB copies and given to the Engineer. All video recordings shall be indexed and catalogued in such a manner that each photographed area is readily identifiable and shall also indicate the date and time (hour, minutes, and seconds) on which the recording was made. The Contractor shall also video record any unusual conditions encountered during construction that are not already a matter of photographic record. In any areas where existing conditions cannot be determined by means of video recording, the area shall be restored as approved by the Engineer at Contractor's expense. All video recordings shall become the property of the City.

Payment for MOBILIZATION AND DEMOBILIZATION (5% MAXIMUM) shall be on a lump sum basis, and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the Contract Documents. The total cost of mobilization and demobilization shall not exceed five (5) percent of the total bid price. Any other costs of work not directly attributed to any specific bid item shall be considered included in mobilization.

Add the following subsection:

**7-3.9 Work Performed Without Direct Payment.**

Tools and materials of any class for which no price is fixed in the Proposal, it shall be understood that such work, equipment, labor, tools, and materials shall be provided without extra charge, allowance, or direct payment of any kind. The cost of performing such work or furnishing such equipment, labor, tools, and materials shall be included in the unit bid prices in the Proposal and no additional compensation will be paid therefor.

**7-4.2 Basis for Establishing Costs.**

**7-4.2.1 Labor.**

Replace the entire subsection with the following:

The costs of labor will be the actual cost for wages of workers performing the extra work at the time the extra work is done, plus the employer payments of payroll taxes, health and welfare, pension, vacation, apprenticeship funds, and other direct costs, resulting from Federal, State, or local laws, as well as assessments or benefits required by collective bargaining agreements.

**7-4.3 Markup**

**7-4.3.1 Work by the Contractor.**

Replace the entire subsection with the following:

An allowance for overhead and profit shall be added to the Contractor's costs and shall

constitute the full and complete markup for all overhead and profit on extra work performed by the Contractor. The Contractor shall also be compensated for the actual increase in the Contractor's bond premium caused by the extra work. The markup shall be:

- a. Labor – 20%
- b. Materials – 15%
- c. Tool and Equipment Rental – 15%
- d. Other Items – 15%

**7-4.3.2 Work by a Subcontractor.**

When any of the extra work is performed by a subcontractor, the markup shall be applied to the subcontractor's costs. An allowance for the Contractor's overhead and profit shall be added to the sum of the subcontractor's costs and markup and shall constitute the full and complete markup for all overhead and profit for the Contractor on work by the subcontractor. For Contractor markup of subcontractor's costs, the allowance shall be 10% on the first \$2,000 or portion thereof and 5% on costs in excess of \$2,000.



## **PART 2 – CONSTRUCTION MATERIALS**

### **SECTION 200 – ROCK MATERIALS.**

#### **200-2 UNTREATED BASE MATERIALS.**

##### **200-2.1 General.**

Replace the entire subsection with the following:

Materials for use as untreated base or subbase shall be crushed miscellaneous base.

### **SECTION 201 – CONCRETE, MORTAR, AND RELATED MATERIALS.**

#### **201-1 PORTLAND CEMENT CONCRETE.**

##### **200-1.1 General.**

Add the following:

Concrete shall be type 520-C-2500 PSI concrete.

#### **203-6 ASPHALT CONCRETE.**

##### **203-6.1 General.**

Add the following:

Asphalt concrete shall be type C2-PG 64-10 for surface courses. No reclaimed asphalt concrete material (RAP) is allowed.

## **PART 3 – CONSTRUCTION METHODS**

### **SECTION 300 – EARTHWORK.**

#### **300-1 CLEARING AND GRUBBING.**

##### **300-1.2 Root Pruning and Tree Trimming.**

Replace the entire section with the following:

a. Equipment

Pruning of roots shall be done using a Vermeer trenching machine with a root pruning attachment or a comparable piece of equipment, as approved by the Engineer. The equipment shall safely cut a narrow trench four to six inches wide to accommodate the installation of the root barrier.

Where sidewalks, curb ramp, or curbs are removed, the roots can be severed at the point adjacent to the edge of the new sidewalk, curb ramp, or curb to be installed, using other pneumatic tools to make the break-out and removal work more efficient.

Any roots over three inches in diameter must be cleanly cut using a chain saw or other sawing tool before the barrier is installed and the trench backfilled.

b. Execution

Tree roots and other objectionable material shall be removed from areas of construction to a depth of 6 inches below the bottom of concrete. Tree roots shall be removed from parkways if visible or if instructed by Engineer.

Cleanly cut roots do not need to be painted or treated in any way other than the installation of root deflection barrier.

#### **300-1.4 Payment.**

Replace the entire subsection with the following:

There shall be no separate payment for root pruning or tree trimming; all costs thereto shall be considered included in the Contract unit prices for the items of work for which the pruning or trimming is required.

There shall be no separate payment for clearing and grubbing; all costs thereto shall be considered included in the Contract unit prices for the items of work for which clearing and grubbing is required.

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

**301-1 SUBGRADE PREPARATION.**

**301-1.1 General.**

Add the following:

Base is required under all PCC and AC improvements as shown on the Plans.

A minimum of 4 inches of CMB shall be placed under sidewalks and access ramps.

A minimum of 8 inches of CMB shall be placed under curb and gutter.

**301-1.7 Payment.**

Add the following:

There shall be no separate payment for placement and preparation of subgrade material under curb, curb and gutter, sidewalks, and access ramps; all costs thereto shall be considered included in the Contract unit prices for the items of work for which subgrade material is required.

**SECTION 303 – CONCRETE AND MASONRY CONSTRUCTION.**

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

**303-5.1 Requirements.**

**303-5.1.1 General.**

Add the following:

PCC access ramps, sidewalks, and driveways shall not be poured monolithically with any new concrete adjacent to them.

**303-5.5 Finishing.**

**303-5.5.2 Curb.**

Add the following:

Unless otherwise approved by the Engineer, the entire affected concrete curb or curb and gutter portion shall be removed by sawcutting the adjacent AC pavement two (2) feet from the edge of the area to be removed. The Contractor shall reconstruct this two-foot-wide section in accordance with Standard Plan 111-5 of the SPPWC or as directed by the Engineer.

Curb and curb and gutter shall be constructed within 72 hours of removal of sidewalks, ADA curb ramp, and curb and gutter in each location. Clearing and grubbing shall be in accordance with Subsection 300-1, per the SSPWC, including removal and disposal of materials, and pruning and removal of interfering tree roots underneath or adjacent to existing access ramp.

The Contractor shall contact the Engineer a minimum of 24 hours prior to performing any excavations within a 25-foot radius of a street tree. Any damage to the street tree may result in tree replacement by Contractor or payment of replacement costs by Contractor based on the value of the damaged tree.

### **303-5.5.3 Walk.**

Add the following:

Sidewalk shall be constructed within 72 hours of removal of sidewalks in each location. The Contractor shall remove all existing concrete sidewalk shown on the plans to the nearest control joint. Clearing and grubbing shall be in accordance with Subsection 300-1, per the SSPWC, including removal and disposal of materials, and pruning and removal of interfering tree roots underneath existing sidewalk or adjacent to sidewalk.

Finished surfaces shall match the finish and color of adjacent concrete.

The Contractor shall be responsible for protecting newly constructed concrete improvements from damage. Contractor shall remove and replace all concrete damaged prior to acceptance. Concrete shall be replaced score line to score line unless otherwise directed by the Engineer. Patching damaged concrete is not allowed.

The Contractor shall contact the Engineer a minimum of 24 hours prior to performing any excavations within a 25-foot radius of a street tree. Any damage to the street tree may result in tree replacement by Contractor or payment of replacement costs by Contractor based on the value of the damaged tree.

The expansion joint and weakened joint pattern shall be maintained and reconstructed, unless otherwise directed by the Engineer.

The Contractor shall mark all manholes, valves, substructures, survey monuments, vaults, utility boxes, or any other items that are visible on the surface and that will interfere with constructing a fully compliant sidewalk. The Contractor shall protect and adjust to grade any such items to match grade of the surrounding concrete to the satisfaction of the Engineer.

Vegetation interfering with construction operations shall be carefully trimmed without damaging the integrity of the vegetation. Vegetation, which must be removed for construction, shall be removed, and disposed of by the Contractor. The Contractor shall protect in place or reconstruct any irrigation lines and sprinkler heads hindering (and adjacent to) the construction activity area as directed by the Engineer. Damage to existing irrigation lines and sprinkler heads shall be replaced at Contractors expense.

### **303-5.5.5 Alley Intersections, Access Ramps, and Driveways.**

Add the following:

Unless otherwise approved by the Engineer, the entire affected concrete curb or curb and gutter portion shall be removed by sawcutting the adjacent AC pavement two (2) feet from the edge of the area to be removed. The Contractor shall reconstruct this two (2) foot wide section in accordance with Standard Plan 111-5 of the SPPWC or as directed by the Engineer.

Curb ramps shall be constructed within 72 hours of removal of sidewalks, ADA curb ramp, and

curb and gutter in each location. Clearing and grubbing shall be in accordance with Subsection 300-1, per the SSPWC, including removal and disposal of materials, and pruning and removal of interfering tree roots underneath or adjacent to existing access ramp.

The Contractor shall contact the Engineer a minimum of 24 hours prior to performing any excavations within a 25-foot radius of a street tree. Any damage to the street tree may result in tree replacement by Contractor or payment of replacement costs by Contractor based on the value of the damaged tree.

Where necessary to match existing grades at the back or side of the ramp, the Contractor shall construct a rear curb for curbramps. Curb height shall be constructed to match existing grade. Where existing walls are adjacent to curb ramp construction, the rear side curb shall be constructed to protect existing walls. Contractor shall protect in place existing vegetation and miscellaneous items adjacent to rear curb for access ramps adjacent to private property.

The Contractor shall mark all manholes, valves, substructures, survey monuments, vaults, utility boxes, or any other items that are visible on the surface and that will interfere with constructing a fully compliant curb ramp. The Contractor shall protect and adjust to grade any such items to match grade of the surrounding concrete to the satisfaction of the Engineer.

Vegetation interfering with construction operations shall be carefully trimmed without damaging the integrity of the vegetation. Vegetation, which must be removed for construction, shall be removed, and disposed of by the Contractor. The Contractor shall protect in place or reconstruct any irrigation lines and sprinkler heads hindering (and adjacent to) the construction activity area as directed by the Engineer. Damage to existing irrigation lines and sprinkler heads shall be replaced at Contractors expense.

The Contractor shall relocate existing facilities such as street sign poles that are within the curb ramp area that conflict with the new proposed improvement. Any damaged signs due to construction shall be replaced at the Contractor's expense. The new location for such facility shall be as directed by the Engineer, if not already included in the plans, in the field and shall be within the general vicinity of the existing.

The Contractor shall tie down any survey monuments/markers obliterated during construction and reestablish said monuments/markers following construction.

Add the following subsections:

**303-5.5.6 Detectable Warning Surface.**

Access ramps shall have a single piece prefabricated detectable warning surface with dimensions of 36 inches (perpendicular to curb) by 48 inches (parallel to curb).

Detectable warning surface(s) shall be Armor-Tile Tactile Systems, Yellow Detectable Warning Tiles, or equivalent by a single manufacturer of Cast In Place Detectable/Tactile Warning Surface Tiles, cast-in-place, and installed per manufacturer's recommendation. All material submittals must be submitted and approved by the Engineer prior to commencement of construction. The finished surfaces of the detectable warning tiles shall be free from blemishes. Panels may have embedded frames with replaceable surfaces or non-removable surfaces.

Tiles/Panels are to be cut so that they align flush with any curved edges or radius of the curb ramp.

Prior to constructing all cast-in-place detectable warning tiles, the Contractor shall demonstrate the ability to produce a detectable warning tile conforming to the details shown on the plans and these special provisions by constructing a test panel at one of the curb ramp locations.

The manufacturer shall provide a written and signed 5-year warranty equal to or exceeding the remedies by Armor-Tile Tactile Systems for prefabricated detectable warning tiles (see appendix), guaranteeing replacement when there are defects in workmanship and material including deterioration, breakage and delamination. The warranty period shall begin upon acceptance of the Contract. A signed warranty shall be provided to the City prior to final progress payment and release of retention.

### **303-5.5.6.1 Quality Assurance.**

Installer shall be an experienced installer qualified for installation, who has successfully completed installations similar in material, design, and extent to that indicated for project.

Contractor shall use only approved DSAAC detectable warning products as provided in the California Code of Regulations (CCR) Title 24, Part 2, Cast In Place Detectable/Tactile Warning Surface Tiles shall be an epoxy polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated domes or a homogenous glass and carbon reinforced composite, which is colorfast, and UV stable. The tile shall incorporate an in-line pattern of truncated domes measuring nominal 0.2” height, 0.9” base measured side by side and a center-to-center spacing of 1.67” minimum and 2.35” maximum. For safety, the field area shall consist of a non-slip surface with a minimum of 40 – 90 degrees raised points 0.045” high, per square inch; “Armor-Tile” as manufactured by Engineered Plastics Inc., ADA Solutions or approved equal.

Detectable/tactile warning surface tiles shall meet or exceed the following requirements:

1. Water Absorption of Tile when tested by ASTM D 570-98 not to exceed 0.07%
2. Slip resistance of tile when tested by ASTM C 1028-96 the combined wet and dry static coefficients of friction not to be less than 0.80 on top of domes and field area when wet.
3. Compressive strength of tile when tested by ASTM D 695-02a not to be less than 28,000 psi.
4. Tensile strength of tile when tested by ASTM D 638-03 not to be less than 11,000 psi.
5. Flexural strength of tile when tested by ASTM D 790-03 not to be less than 25,000 psi.
6. Chemical stain resistance of tile when tested by ASTM D 543-95 (re- approved 2001) to withstand without discoloration or staining –10% hydrochloric acid, urine, saturated calcium chloride, black stamp pad ink, chewing gum, red aerosol paint, 10% ammonium hydroxide, 1% soap solution, turpentine, urea 5%, diesel fuel and motor oil or no deterioration per ASTM 1308.
7. Resistance to wear of unglazed ceramic tile by taber abrasion per ASTM C501-84 (re-approved 2002) shall not be less than 500.

8. Fire resistance of tile when tested to ASTM E 84-05 flame spread shall be less than 20.
9. Accelerated weathering of tile when tested by ASTM G 155 for 2000 hours shall exhibit the following result -  $DE < 5.0$ , as well as no deterioration, fading or chalking of surface.
10. Salt and spray performance of tile when tested to ASTM B 117-03 not to show any deterioration or other defects after 200 hours of exposure.
11. Accelerated aging and freeze thaw test of tile and adhesive system when tested to ASTM D 1037-99 shall show no evidence of cracking, delamination, warp age, checking, blistering, color change, loosening of tile or other detrimental defects or no disintegration per ASTM 1026.

#### **303-5.5.6.2 Site Conditions.**

Maintain minimum temperature of 40 degrees Fahrenheit in spaces to receive Cast in Place Detectable/Tactile Warning Surface Tiles for at least 24 hours prior to installation, during installation, and for not less than 24 hours after installation.

The use of water for work, cleaning, or dust control, shall be contained and controlled and shall not be allowed to come into contact with the general public. Provide barricades or screens to protect the general public.

#### **303-5.5.6.3 Installation Procedure.**

Installation shall be in strict accordance with manufacturer' recommendations. During tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.

The specifications of the structural adhesives, fasteners, and related materials shall be in strict accordance with the Contract documents and the guidelines set by their respective manufacturers.

The physical characteristics of the concrete shall be consistent with the Contract specifications while maintaining a slump range of 4 – 7 to permit solid placement of the Cast-In-Place Tile System. An overly wet mix will cause the Cast-In-Place System to float. Under these conditions, suitable weights such as 2 concrete blocks or sandbags (25 lb.) shall be placed on each tile.

The concrete pouring and finishing operations require typical mason's tools, however, a smart level with electronic slope readout, 25 lb. weights, and a large rubber mallet can be used for the installation of the Cast-In-Place System. A vibrating mechanism such as that manufactured by Vibco can be employed, if desired. The vibrating unit should be fixed to a soft base such as wood, at least 1-foot square.

The factory-installed plastic sheeting must remain in place during the entire installation process, to prevent the splashing of concrete onto the finished surface of the tile.

When preparing to set the tile, it is important that no concrete be removed in the area to accept the tile. It is imperative that the installation technique eliminates any air voids under the tile. Holes around the tile perimeter allow air to escape during the installation process. Concrete will flow through the large holes in each vane on the underside of the tile. This will lock the tile solidly into the cured concrete.

The concrete shall be poured and finished true and smooth to the required dimensions and slope prior to the tile placement. Immediately after finishing concrete, the electronic level should be used to check that the required slope is achieved. The tile shall be placed true and square to the curb edge in accordance with the Contract drawings. The Cast-In-Place Tiles shall be tamped (or vibrated) into the fresh concrete to ensure that the field level of the tile is flush to the adjacent concrete surface. The Contract drawings indicate that the tile field level (base of truncated dome) is flush to adjacent surfaces to permit proper water drainage and eliminate tripping hazards between adjacent finishes. The tolerance for elevation differences between tile and adjacent surface is 1/16”.

Immediately after tile placement, the tile elevation is to be checked to adjacent concrete. The tile elevation and slope should be set consistent with Contract drawings to permit water drainage to curb as the design dictates.

While concrete is workable, a 3/8” radius edging tool can be used to create a finished edge of concrete. A steel trowel can be used to float the concrete around the tile’s perimeter, flush to the field level of tile.

During and after the tile installation and the concrete curing stage, it is imperative that there is no walking, no leaning or external forces placed on the tile to rock the tile, causing a void between the underside of tile and concrete.

Following tile placement, review installation tolerances to Contract drawings and adjust tile before the concrete sets. Two suitable weights of 25 lb. each can be placed on each tile as necessary to ensure solid contact of the underside of tile to concrete.

Following the curing of the concrete, protective plastic wrap is to be removed from the tile face by cutting the plastic with a sharp knife, tight to the concrete/tile interface. If concrete bled under the plastic, a soft wire brush will clean the residue without damage to the tile surface.

Tiles can be cut to custom sizes, or to make a radius, using a continuous rim diamond blade in a circular saw or mini grinder. Use of a straightedge to guide the cut is advisable where appropriate.

Any sound-attenuating plates on the underside of the tile, which are dislodged during handling or cutting, should be replaced, and secured with construction adhesive. The air gap created between these plates and the bottom of the tile is important, in preserving the detect-ability properties of the Armor-Tile System.

### **303-5.9 Measurement and Payment.**

There shall be no separate payment for adjusting miscellaneous facilities to grade outside of curb ramp area; all costs thereto shall be considered included in the Contract unit prices for the items of work for which the adjustment is required.

There shall be no separate payment for adjusting miscellaneous facilities to grade within access ramps; all costs thereto shall be considered included in the Contract unit prices for the items of work for which the adjustment is required.

Add the following subsections:

### **303-9 CONCRETE GRINDING.**



**303-9.1 General.**

Where PCC is shown on the plans to be grinded, the existing surface shall be grinded to remove concrete lip and shall have a neat finish across the grinded section.

Any area of excess concrete grinding shall be removed and replaced to the satisfaction of the Engineer. No over grinding will be allowed; any found shall be corrected at the Contractors expense.

**SECTION 314 – TRAFFIC STRIPING, CURB AND PAVEMENT MARKINGS, AND PAVEMENT MARKERS.**

**314-1 GENERAL.**

Replace the last paragraph with the following:

Crosswalk and stop bar shall be thermoplastic.

**314-2 REMOVAL OF TRAFFIC STRIPING AND CURB AND PAVEMENT MARKINGS.**

**314-2.1 General.**

Replace the first paragraph with the following:

Striping and markings shall be removed by wet sandblasting and all sand shall be removed without delay as the sandblasting operation progresses. All sand blasted asphalt pavement shall be sealed with an asphalt emulsion (SS-1H Emulsified Asphalt). The Contractor shall remove and replace any new construction work that has been altered by graffiti markings and blemishes at no additional cost to the City.

## **PART 4 – EXISTING IMPROVEMENTS**

### **SECTION 400 – PROTECTION AND RESTORATION.**

Add the following subsections:

#### **400-4 TREES.**

The Contractor shall take care to protect all trees not approved for removal by the Engineer.

There shall be no separate payment for protection of existing trees; all costs thereto shall be considered included in the Contract unit prices for the items of work for which the protection is required.

#### **400-5 SIGN POST.**

Contractor shall remove existing sign post from parkway when shown on plans to be removed by excavating to a depth necessary to remove the post and any existing foundation or anchoring assembly. Contractor shall protect and store the existing post and signs for reinstallation.

Contractor shall install a new anchoring assembly and reinstall the existing post with signs.

Contractor shall obtain approval by the Engineer of sign placement before permanently installing the new post. All signs and posts shall be reset the same day as the existing signs and posts are removed.

The bottom of the lowest sign shall be 7 feet above the sidewalk, if applicable. The lowest sign can be lower if in the parkway as approved by the Engineer.

### **SECTION 401 – REMOVAL.**

#### **401-3 CONCRETE AND MASONRY IMPROVEMENTS.**

Add the following subsections:

##### **401-3.4 Parkway Concrete and Brick.**

Existing parkway concrete areas shown on Plans, or as requested by Engineer, shall be removed using pneumatic tools or hand tools approved by the Engineer. Contractor shall take care to protect adjacent sidewalk, curb, gutter, and other improvements. Existing improvements damaged during removal operations shall be repaired at Contractor's expense. Parkway concrete shall be disposed of immediately following removal.

Existing brick areas shown on Plans, or as requested by the Engineer, shall be removed by hand or hand tools. Contractor shall take care to protect adjacent sidewalk, curb, gutter, and other improvements. Existing improvements damaged during removal operations shall be repaired at Contractor's expense. Brick shall be disposed of immediately following removal.

## **PART 6 – TEMPORARY TRAFFIC CONTROL**

### **SECTION 600 – ACCESS.**

#### **600-1 GENERAL.**

Add the following:

Access to street intersections, public and private parking lots, commercial businesses, residences, and other public and private properties shall be maintained at all times. At least 72 hours in advance of commencing any work that may affect the access to private properties, the Contractor shall provide construction notices to adjacent residential properties, and commercial establishments. The Construction Notice template (attached on “Exhibit C Construction Notice Template”) shall be modified by the Contractor and sent to the engineer for review and approval. The Contractor shall distribute notices to residents and commercial establishments affected by construction once approved by the Engineer. Vehicular access to and from commercial and residential driveways and parking lots shall be maintained at all times, except when performing items of work which cannot be accomplished without access restriction.

When access must be restricted, as determined by the Engineer, it shall occur only for the time period required to accomplish the particular item of work.

Modifications to traffic control shall be performed to correct any deficiencies in traffic flow (vehicular, bicycle, pedestrian, etc.) as deemed necessary by the Engineer or Public Works Inspector.

All traffic lanes shall be open for public use on the days and at the times specified below:

1. Saturdays, Sundays, and legal holidays: from 12:00 a.m. to 11:59 p.m.
2. Fridays and any day preceding a legal holiday: from 5:00 a.m. to 11:59 p.m.
3. All days not covered in 1 and 2 above: 7:00 a.m. to 8:30 a.m. and 4:00 p.m. to 6:00 p.m.
4. Non-construction hours: all hours when the Contractor's employees are not physically present at the construction site actively performing Contract work.
5. In the vicinity of any Elementary or Middle School, the Contractor shall determine arrival and departure times of said school and shall provide for adequate traffic control for any school age pedestrian and/or bicycle routes to the school during the arrival and departure periods. The submittal of traffic control plans shall include arrival and departure times for each school. At no time will traffic control be allowed in the immediate vicinity so as to cause a hazard to a school pedestrian crosswalk during arrival and departure time periods.

On those days and hours when closure of traffic lanes is not prohibited under the provisions of the preceding subparagraph A, no more than one lane may be closed at any time during construction hours. During any lane closure, Type II flashing arrow boards shall be used in accordance with the most recent Edition of the Manual on Uniform Traffic Control Devices (MUTCD), the California Supplement to the MUTCD hereinafter referred as CAMUTCD issued by the State of California.

## **SECTION 601 – TEMPORARY TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE WORK ZONES.**

### **601-1 GENERAL.**

Replace the first paragraph with the following:

All work required for maintaining and controlling traffic shall conform to the most recent Edition of the Manual on Uniform Traffic Control Devices (MUTCD), the California Supplement to the MUTCD hereinafter referred as CAMUTCD issued by the State of California, Department of Transportation (Caltrans), and the "Work Area Traffic Control Handbook," published by Building News, Inc.

Add the following:

All construction work and traffic control shall be scheduled and constructed to provide for a minimum of inconvenience and a maximum of safety to the public vehicular, bicycle and pedestrian traffic.

The Contractor shall be responsible for the protection of vehicular, bicycle and pedestrian traffic until the work called for in the Plans, the Standard Specifications, and Special Provisions have been accepted by the Engineer.

The Contractor shall notify the Engineer of intent to begin work following notice to proceed before work is to begin. The Contractor shall cooperate with the Engineer relative to handling traffic through the area and shall make all arrangements relative to keeping the working area clear of parked vehicles.

Contractor's equipment and personal vehicles of the Contractor's employees shall not be parked on the traveled way nor on any section where traffic is restricted at any time.

During any period when two-way traffic is not provided, as approved by the engineer, the Contractor shall employ flaggers to control traffic through the construction zone.

The Contractor shall notify the Engineer of any operation that will affect two-way flow of traffic more than five minutes for every half hour of working time, at least two working days in advance of such operation. Submitted traffic control plans must be signed/stamped by a licensed Traffic Engineer.

If the Contractor fails to maintain and control traffic at any time during the construction period such that the safety to public vehicular, bicycle and/or pedestrian traffic is compromised in any way in the opinion of the Engineer or the City Police Department, the City will require the Contractor to stop work and open all traffic lanes, or immediately modify the traffic control plan, subject to approval by the City, to ensure that the unsafe situation is corrected. If, due to the nature of the work, it is impossible to open all traffic lanes, or the Contractor is unable to immediately modify the traffic control plan to restore safe and adequate traffic control, the City may mobilize emergency forces to re-establish adequate and safe traffic control. The emergency forces may include Police Department, Maintenance Services Division, Engineering Division, Contractors or consultants hired by the City or other personnel as required to re-establish adequate and safe traffic control.

The Contractor shall pay for the full and complete time and material cost for any emergency response by City forces and firms hired by the City as described herein. This payment shall be in addition to the liquidated damages provided for in Section 6-9 of these specifications. Contractor agrees to pay such costs as provided for in this paragraph, and in case the same are not paid, Contractor agrees that City may deduct the amount of such costs from any money that is due or that may be due the Contractor under the Contract. The Contractor shall not be entitled to any delay claims for work stopped by the City in order to correct an unsafe traffic condition, regardless of whether traffic control was set up in accordance with an approved traffic control plan.

**601-3.5 Signs and Signage.**

**601-3.5.1 General.**

Replace the entire subsection with the following:

Signs shall conform to the most recent Edition of the Manual on Uniform Traffic Control Devices (MUTCD), the California Supplement to the MUTCD hereinafter referred as CAMUTCD issued by the State of California, Department of Transportation (Caltrans), and the "Work Area Traffic Control Handbook," published by Building News, Inc. Each sign shall consist of a base, standard or framework, and a sign panel. Sign units shall be capable of being delivered to the work site and placed into immediate operation.

Signs shall include all temporary signs required for the direction of traffic through or around the work site. Sign placement shall conform to the documents listed above and the Traffic Control Plan.

Advance warning signs shall be provided with orange warning flags in advance of temporary stop signs. Temporary stop signs are required any time a traffic signal is dark. Temporary stop signs shall be mounted at 7 feet high.

The Contractor shall post standard "NO PARKING" construction zone signs 72 hours prior to construction, not more than 50 feet apart within the work area, showing the date and time of construction. "NO PARKING" signs are to have the language "By order of the H.B.P.D. 318-0360 CVC 22658 / HBMC 10.32.220 & 10.12.040" on the signs. Signs can be obtained from the City.

**601-3.5.2 Payment.**

Replace the entire subsection with the following:

Payment for temporary traffic control signs and signage shall be made per the Contract bid price for TRAFFIC CONTROL on a lump sum basis and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the Contract Documents. Should the Engineer require any modifications to the traffic control, such changes shall be implemented at no additional cost to the City.

## **601-3.6 Channelizing Devices.**

### **601-3.6.1 General.**

Add the following:

Channeling devices shall be spaced as necessary for proper delineation; however, in no case shall the spacing between portable delineators exceed 25 feet on tangents or 10 feet on curves.

Fluorescent traffic cones shall be new or reconditioned, and of good commercial quality flexible material suitable for the purpose intended. The outer section of the portion above the base of the cone shall be a highly pigmented fluorescent orange polyvinyl compound. The overall height of the cone shall be at least 28 inches. The base shall be of sufficient weight and size or shall be anchored in a manner such that the traffic cone will remain in an upright position.

The fluorescent traffic cones shall be spaced as necessary for proper delineation; however, in no case shall the spacing between fluorescent traffic cones exceed 25 feet on tangents or 10 feet on curves.

Only one type of channelizing device shall be used at any one time.

Channelizing devices shall be placed at all locations shown on the Traffic Control Plan and at such locations as directed by the Engineer.

Channelizing devices shall be left in place at their designated locations, maintained, repaired, and replaced as required until their removal is approved by the Engineer.

If the channelizing devices are damaged, or are not in an upright position, for any reason, said devices shall immediately be replaced, or restored to their original locations in an upright position, by the Contractor, 24 hours per day, 7 days per week for as long as required by the City.

Payment for temporary traffic channelizing devices shall be made per the Contract bid price for TRAFFIC CONTROL on a lump sum basis and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the Contract Documents. Should the Engineer require any modifications to the traffic control, such changes shall be implemented at no additional cost to the City.

Add the following subsection:

### **601-7 PAYMENT.**

Payment for TRAFFIC CONTROL shall be made on a lump sum basis and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the Contract Documents. Should the Engineer require any modifications to the traffic control, such changes shall be implemented at no additional cost to the City.

## **EXHIBIT “A” – SOLID WASTE REPORTING**

### **CIP No. 421**

### **ANNUAL SEWER IMPROVEMENTS PHASE 2**

#### **SOLID WASTE REPORTING**

Pursuant to the California Integrated Solid Waste Management Act of 1989, the City is required to report the amount of solid waste generated within the City and the disposal of that waste with the ultimate required goal of being a reduction of at least 50% in the amount of solid waste being disposed in landfills. To permit the City to comply with this State law, the Contractor is required to complete the Solid Waste Report form, a copy of which is included in these special provisions. The report includes a summary of the solid waste generated by the project, a summary of solid waste disposed of at class III landfills and a summary of solid waste diverted from disposal through recycling and re-use. The Contractor may use a self-generated report format that includes all of the information included on the City form.

The report shall be filed with the City after project completion and prior to final payment. If the project time span includes more than one calendar year, a separate report is required for the solid waste in each calendar year. A report for a calendar year that does not coincide with project completion shall be filed with the City on or before January 31<sup>st</sup>.

Supporting documents to be submitted with the report shall include legible copies of weigh tickets, receipts, or invoices that specifically identify the job site location that generated the waste materials. If materials are taken to a location where weigh tickets, receipts, or invoices are not available, the Contractor shall provide the documentation on its own company letterhead.

The Contractor is encouraged to divert solid waste from disposal at landfills through recycling and re-use when possible while maintaining compliance with all other Contract specifications and special provisions.

Contractor's Construction and Demolition  
Waste Diversion Reporting Form

Job Site Address (where waste was generated):

City Permit No.:

Material	Name of Facility/Site Where Taken	Disposal	Aggregate	Recycled or Reused				
				Alter-native landfill	Compost	Engineer ed Fill	Mulch	Other
				Tons	Tons	Tons	Tons	Tons
ASPHALT								
CONCRETE								
DIRT								
GREEN WASTE								
METAL								
OTHER SEGREGATED MATERIALS(Describe)								
ROCKS								
WOOD								
MIXED WASTE								
OTHER CONSTRUCTION OR DEMOLITION WASTE								
TOTAL								
COMPANY NAME:					DATE OF REPORT:			



## EXHIBIT “B” – CONSTRUCTION NOTICE TEMPLATE

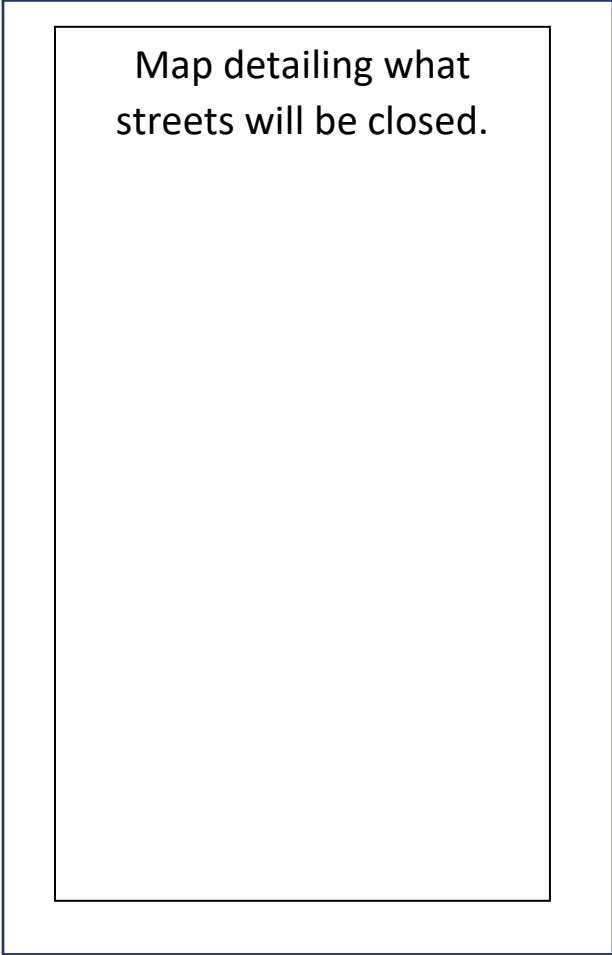
COMPANY LETTERHEAD

### NOTICE OF WORK/CONSTRUCTION

Name of Project Date of Notice

Dear Residents and Businesses (if applicable):

Provide a brief description of the work that is to be performed. Four to five sentences should suffice.



Map detailing what streets will be closed.

**What:** Provide a brief description of what is happening. One sentence should suffice.

**Start/Duration:** When is the project expected to start and how long is it anticipated to take for it to be completed? If there are different phases, indicate the estimated time.

**What to Expect:** Will there be noise? Will there be flaggers directing traffic? Will residents have access or will it be a full closure? Will parking be temporarily blocked? Include enough details.

**Equipment in Use:** What kind of equipment will be seen?

**Working Hours:** What are the working hours and days?

#### **Contact Information**

Always include contact information for residents and business owners in case they have questions or concerns.

We apologize for any inconvenience and thank you for your patience. Sincerely,

Contractor Name

**CIP No. 421  
ANNUAL SEWER IMPROVEMENTS**

**VII. TECHNICAL SPECIFICATIONS**

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**PROJECT TECHNICAL SPECIFICATIONS**  
**CIP No. 421**  
**ANNUAL SEWER IMPROVEMENTS PHASE 2**

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**END OF SECTION**

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**SECTION 01 01 00**  
**SUMMARY OF WORK AND SEQUENCE OF CONSTRUCTION**

**PART 1 – GENERAL**

**1.1 Summary of Work Covered by Contract Documents**

- A. The Work covered under this contract includes replacement or rehabilitation of multiple sewer segments and maintenance holes throughout the city of Hermosa Beach, using a variety of rehabilitation methods.
- B. The Contractor is required to furnish all labor, materials, services, equipment, insurance, bonds, security, notifications, licenses, permits and fees in accordance with applicable federal, state and local regulatory requirements to complete the specified work in strict accordance with the Contract Documents. Any miscellaneous labor, equipment and/or materials not specifically detailed or specified, but required to complete the project, shall be provided by the Contractor as an integral part of the work, at no increase in cost to the Owner.

**1.2 Descriptions of Items in the Bid Schedule**

- A. The dimensions, measurements, and quantity of materials listed in this specification and on the construction drawings are estimated and are presented to give the contractor a description of the total scope of work. The contractor is required to visit the site to verify the existing conditions, quantities of materials, and amount and nature of the work required. The contractor is responsible for assuring that the bid reflects all work required to accomplish this project.
- B. The following descriptions of Bid Items are intended to clarify and expand on the description of Bid Items in the Bid Schedule. All items of work described shall be included in the amount bid for that item.
  - 1. Bid Item No.1 - Mobilization and Demobilization. Work under this item shall include furnishing all labor, material and equipment to provide bonds, insurance and financing, prepare and update construction schedules, obtain required permits, attend construction progress meetings as needed, and all other related work as required by the Contract Documents. When necessary, contractor is responsible to obtain permission to access LACSD maintenance holes and facilities prior to construction. Both before the start of construction and after the completion of construction, contractor to prepare photo surveys and written documentation of the sewer alignment and the entire area affected by construction, including, but not limited to, pavement, sidewalks, driveways, curb and gutter, retaining walls, fencing, decorative paving, and existing trees and landscaping. This bid item shall also include work to demobilize from the project site including, but not limited to site cleanup, removal of USA markings and providing any required documentation as noted in these specifications. Payment for this item will be made at lump sum price named in Bid Schedule, not to exceed 5% of project cost.
  - 2. Bid Item No. 2 - Spill Containment Plan and Controls for Environmental Protection. Work to be paid for under this item shall include furnishing all labor, materials and equipment to comply with Best Management Practices (BMP) Implementation, Erosion Control/SWPPP requirements of local Regional Water Quality Control Board including, but not limited to preparation, submittal, and establishment of erosion control plan and reporting procedures, development of SWPPP, placement of erosion control measures, monitoring, reporting, payment of fines due to Contractor's negligence, and any

appurtenant Work in accordance with warranty requirements as required by Contract Documents. Payment for this item will be made at lump sum price named in Bid Schedule.

3. Bid Item No. 3 - Temporary Bypass Pumping and Site Restoration. Work to be paid under this item shall include all costs for temporary bypass pumping to facilitate cleaning, CCTV inspection, pipe repairs, and site restoration. Work shall also include furnishing bypass plan for approval and shall include all labor, materials and equipment to provide the diversion of existing sewage flows during construction including, but not limited to, temporary traffic control, pumps, temporary hoses or piping, pump trucks, protection of above ground piping, plugs and any other appurtenant work required to divert existing sewage flow. Bypass pumping, plugging or blocking of sewer flow shall be considered part of the Work and shall not be considered separate payment. Payment for this item will be made at lump sum price named in Bid Schedule.
4. Bid Item No. 4 - Traffic Control. Work under this item shall include furnishing all labor, materials and equipment to:
  - (a) Provide the traffic control required by the project including, preparation of California Engineer stamped traffic control plans meeting governing agency requirements, and installation and removal of , signs, cones, barricades, flashing arrow boards and changeable message signs, K-rail, temporary striping, and flag persons, temporary delineators, enclosures, and traffic control devices as required by Contract Documents and public agency permits;
  - (b) Deliver all required notifications and temporary parking permits, posting signs, and covering conflicting existing signs.
  - (c) Traffic control shall comply with the MUTCD WATCH Manual.

Payment for this item will be made at lump sum price listed in the Bid Schedule.

5. Bid Item No. 5 – Potholing. Work under this item shall include furnishing all labor, materials and equipment to pothole utilities as shown on the plans and marked by USA and the respective agencies, during trench excavation, locating underground utilities, and all other work necessary, complete in place. Work shall include all labor, materials and equipment for protection of existing utilities, establishing elevations by survey, saw cutting of existing pavement, excavation, shoring and bracing, backfill compacted in place, surface restoration, cleanup, and any appurtenant Work as required by Contract Documents. Payment shall be at the lump sum price listed in the Bid Schedule.
6. Bid Item No. 6 - Pre-Installation Cleaning & CCTV Inspection. Work under this item shall include furnishing all labor, materials and equipment to clean the existing pipe, including root removal, and perform a CCTV inspection prior to construction per Section 500-3 of the SSPWC, with documentation formatting per National Association of Sewer Service Companies (NASSCO), and all other work items as required to complete the work in place. Contractor to provide videos and documentation of pre-construction CCTV on USB drive to both Engineer and City. Work includes marking stations of active sewer laterals on pavement prior to construction, to ensure successful reconnection or re-opening of all lateral connections. Payment for this item will be based on linear footage of pipe inspected.
7. Bid Item No. 7 - Post-Installation CCTV Inspection. Work under this item shall include furnishing all labor, materials and equipment to perform a CCTV inspection post-construction per Section 503-3.4 of the SSPWC with documentation formatting per NASSCO, and all other work items as required to complete the work in place, including pipeline testing. Contractor to provide videos and documentation of pre-construction

CCTV on USB drive to both Engineer and City. Payment for this item will be based on linear footage of pipe inspected.

8. Bid Item No. 8, 9 and No. 10 – Spot Repair of Existing 6”, 8”, and 10” Sewer Pipe By Removing and Replacing Pipe (Per Hermosa Beach Std. Dwg. 117). Work under this item shall include furnishing all labor, materials and equipment for performing sewer pipe point repairs as shown on the Construction Drawings. The work includes determining the exact location of required excavations, establishing pipeline invert elevations to be maintained, cutting out and disposing of existing pipe, installation of new sewer pipe, connection to existing sewer pipe, maintenance hole connections, including maintenance of sewer service during tie-in, protection of existing utilities, abandonment of existing utilities, trench excavation, trench shoring, sheeting and bracing, temporary trench steel plating, tunneling under existing utility lines or miscellaneous structures, preparation of old surface to mate with new pipe, coring existing maintenance hole, rechanneling invert to accommodate new maintenance hole entrance, bedding, pipe, fittings, wyes, spools, joints, gaskets, couplings, annular seals, restraints, saddles, laterals, backfill, compaction, surface restoration, and any appurtenant Work as required by Contract Documents. Payment shall be at the unit price bid per lineal foot of 6-inch, 8-inch, and 10-inch sewer rehabilitated in place. Gravity sewers to slopes of 0.1000 or less shall be measured in horizontal plane along centerline of Work between ends as laid. Pipe installed to slopes equal to or exceeding 0.1000 shall be measured along longitudinal access between ends as laid. Linear measurement for gravity sewers shall not include inside dimensions of maintenance holes or structures.
9. Bid Item No. 11 – Construct 8” SDR-35 PVC Sewer Pipe (Per Hermosa Beach Std. Dwg. 117). Work under this item shall include furnishing all labor, materials and equipment to demolish existing sewer pipe, construct new sewer pipe, maintenance hole connections, including maintenance of sewer service during tie-in, protection of existing utilities, abandonment of existing utilities, abandonment of existing sewer pipe with slurry, trench excavation, trench shoring, sheeting and bracing, temporary trench steel plating, tunneling under existing utility lines or miscellaneous structures, asphalt and concrete pavement removal and replacement, exposing, sawcutting, removing, hauling to an approved disposal site the existing sewer pipe and all trash located in the work area, as well as any associated fees, coring existing maintenance hole, rechanneling invert to accommodate new maintenance hole entrance, bedding, pipe, fittings, wyes, spools, joints, gaskets, couplings, annular seals, restraints, saddles, backfill, compaction and any appurtenant Work as required by Contract Documents. Measurement shall be at the unit price bid per lineal foot of 8-inch sewer rehabilitated in place. Gravity sewers to slopes of 0.1000 or less shall be measured in horizontal plane along centerline of Work between ends as laid. Pipe installed to slopes equal to or exceeding 0.1000 shall be measured along longitudinal access between ends as laid. Linear measurement for gravity sewers shall not include inside dimensions of maintenance holes or structures.
10. Bid Item No. 12 – Reconnect Existing Sewer Lateral to New Sewer Main After Point Repairs and Pipe Replacement in Place. Work to be paid for under this item shall include all labor, materials, coordination, equipment, and incidentals for performing all work involved in restoration of existing laterals as shown on the plans for sewer segments being replaced in place, including determining the exact location of required excavations, establishing pipeline invert elevations to be maintained, cutting out and disposing of existing pipe, installation of new sewer pipe, connection to existing sewer pipe, including maintenance of sewer service during restoration, protection of existing utilities, trench excavation, trench shoring, sheeting and bracing, temporary trench steel plating, tunneling under existing utility lines or miscellaneous structures, preparation of old surface to mate with new pipe, bedding, pipe, fittings, spools, joints, gaskets, couplings, annular seals, restraints, saddles, laterals, backfill, compaction, surface restoration, and any appurtenant Work as required by Contract Documents. Sewer lateral shall be connected with a wye. Payment shall be at the unit price per each sewer lateral restored, complete in place.



11. Bid Item No. 13A, 13B – Extend and Reconnect Existing Sewer Lateral to New Sewer Main After Pipe Relocation. Work to be paid for under this item shall include all labor, materials, coordination, equipment, and incidentals for performing all work involved in restoration of existing laterals as shown on the plans for sewer segments relocated to a new horizontal and vertical alignment, including determining the exact location of required excavations, establishing pipeline invert elevations to be maintained, cutting out and disposing of existing pipe, installation of new sewer pipe and fittings as necessary to reach new alignment, connection to existing sewer pipe, including maintenance of sewer service during restoration, protection of existing utilities, trench excavation, trench shoring, sheeting and bracing, temporary trench steel plating, tunneling under existing utility lines or miscellaneous structures, preparation of old surface to mate with new pipe, bedding, pipe, fittings, spools, joints, gaskets, couplings, annular seals, restraints, saddles, laterals, backfill, compaction, and any appurtenant Work as required by Contract Documents. Sewer lateral shall be connected with a wye. Payment shall be at the unit price per each sewer lateral restored, extended, and complete in place.
12. Bid Item No. 14 – Installation of Full Depth Spray-On Polyurethane Maintenance Hole Liner in Existing Maintenance Holes Up to 15' Depth. Work under this item shall include furnishing all labor, materials and equipment to install full depth polyurethane spray on liner, including, but not limited to, protection of existing maintenance hole during cleaning and installation, rebuilding interior of brick maintenance holes with cementitious mortar prior to installing liner, equipment necessary for cleaning, maintenance of sewer service, cleanup, and any appurtenant work in accordance with these contract documents. Maintenance hole liner not to be installed in the maintenance hole bench or channel. Payment shall be at the unit price bid per each maintenance hole lined, complete and in place.
13. Bid Item No. 15 – Reconstruction of Existing Maintenance Hole Bench and Channel. Work under this item shall include, but not be limited to, reconstruction of maintenance hole bench and channel with specified concrete mix, No. 3 rebar, epoxy glue, and adhesive mortar mix. The shelf must be 2 inches above the crown of the sewer line. Contractor shall submit a concrete mix design for the specified concrete to the City of Hermosa Beach for approval prior to installation. Most existing sanitary sewer maintenance holes have 27-inch to 36-inch base diameter. Payment shall be per the unit price bid per each maintenance hole with bench and channel reconstruction.
14. Bid Item No. 16 – Raise Existing Maintenance Hole Frame and Cover to Grade. Work under this item shall include, but not be limited to, locating existing buried maintenance hole frame and cover, adjusting existing maintenance hole frame and cover to grade, and restoring surface to existing condition. Payment shall be per the unit price bid per each maintenance hole raised to grade.
15. Bid Item No. 17 – Installation of New Maintenance Hole Frame and Cover. Work under this item shall include furnishing all labor, materials, and equipment to install new maintenance hole locking frame and cover, including, but not limited to, protection of existing maintenance hole during cleaning and construction, pavement removal and replacement, raising frame and cover to match existing grade, installation of new locking frame and cover, cleanup, and any appurtenant work in accordance with these contract documents. New maintenance hole frame shall be constructed at same size as existing frame, and with maintenance hole cover style approved by the City of Hermosa Beach. New maintenance hole covers shall be furnished by the contractor. Payment shall be at the unit price bid per each frame and cover installed, complete and in place.
16. Bid Item No. 18 – Construct 48" I.D. Precast Reinforced Concrete Maintenance Hole with Polyurethane Liner. Work under this item shall include furnishing all labor, materials and equipment to install a maintenance hole including, but not limited to pavement replacement, concrete base, precast maintenance hole rings, maintenance hole frame and cover, new maintenance hole, maintenance hole coating and lining, connection to new and existing sewer pipe as shown on the Plans, backfill, compaction, protection of

nearby existing utilities or improvements, temporary and permanent support of utilities, disposal of excess excavation materials and all other work items as required to complete the work in place. Payment will be based on number of maintenance holes furnished and installed.

17. Bid Item No. 19 – Construct 48” I.D. Precast Reinforced Concrete Drop Maintenance Hole with Polyurethane Liner. Work under this item shall include furnishing all labor, materials and equipment to install a drop maintenance hole including, but not limited to pavement replacement, concrete base, precast maintenance hole rings, maintenance hole frame and cover, new maintenance hole, maintenance hole coating and lining, installation of spray on liner by qualified installer, connection to new and existing sewer pipe as shown on the Plans, backfill, compaction, protection of nearby existing utilities or improvements, temporary and permanent support of utilities, disposal of excess excavation materials and all other work items as required to complete the work in place. Payment shall be at the unit bid price per each maintenance hole furnished and installed.
18. Bid Item No. 20 – Construct 48” I.D. Precast Reinforced Concrete Shallow Maintenance Hole with Polyurethane Liner. Work under this item shall include furnishing all labor, materials and equipment to install a concentric shallow maintenance hole including, but not limited to pavement replacement, concrete base, precast maintenance hole rings, maintenance hole frame and cover, new maintenance hole, maintenance hole coating and lining, installation of spray on liner by qualified installer, connection to new and existing sewer pipe as shown on the Plans, backfill, compaction, protection of nearby existing utilities or improvements, temporary and permanent support of utilities, disposal of excess excavation materials and all other work items as required to complete the work in place. Payment shall be at the unit bid price per each maintenance hole furnished and installed .
19. Bid Item No. 21 – Construct 60” I.D. Precast Reinforced Concrete Maintenance Hole with Polyurethane Liner. Work under this item shall include furnishing all labor, materials and equipment to install a maintenance hole including, but not limited to pavement replacement, concrete base, precast maintenance hole rings, maintenance hole frame and cover, new maintenance hole, maintenance hole coating and lining, connection to new and existing sewer pipe as shown on the Plans, backfill, compaction, protection of nearby existing utilities or improvements, temporary and permanent support of utilities, disposal of excess excavation materials and all other work items as required to complete the work in place. Payment shall be at the unit bid price per each maintenance hole furnished and installed.
20. Bid Item No. 22 – Remove and Dispose of Existing Maintenance Hole and Base. Work under this item shall include furnishing all labor, materials and equipment to remove existing maintenance hole base, including, but not limited to, frame, rings, cover, pavement removal, excavation, removal of maintenance hole and base, protection of existing utilities or improvements, temporary and permanent support of utilities, disposal of maintenance hole and excess excavation materials and all other work items as required to complete the work in place. Payment shall be at the unit bid price per each maintenance hole removed and disposed.
21. Bid Item No. 23 – Abandon in Place Existing Maintenance Hole. Work under this item shall include furnishing all labor, materials and equipment to abandon existing buried maintenance hole, including, but not limited to, removal of top two feet of maintenance hole chimney, slurry fill of remaining structure, protection of existing utilities or improvements, temporary and permanent support of utilities, disposal of excess excavation materials, restoration of surface above buried maintenance hole, and all other work items as required to complete the work in place. Payment shall be at the unit bid price per each maintenance hole abandoned.

22. Bid Item No. 24 – Grind AC and Place Final Asphalt Pavement Overlay. Work under this item shall include furnishing all labor, materials, and equipment to grind and cap AC pavement per City of Hermosa Beach Std. Plan No. 117, including T-cut a 2-inch grind and overlay two feet beyond the open trench. All removed striping to be replaced in kind. Payment shall be at the unit price per square foot of asphalt section installed, measured in horizontal plane.
23. Bid Item No. 25 – Remove and Reconstruct Concrete Longitudinal Gutter (Per SPPWC Standard Plan No. 122-3). Work under this item shall include furnishing all labor, material and equipment to remove and reconstruct cross gutter, including, but not limited to, sawcutting at the nearest joint, excavation, backfill, compaction, disposal of excess material, and removal and replacement of cross gutter in kind to the nearest joint. Measurement will be based on the square feet of cross gutter removed and replaced, measured in horizontal plane.
24. Bid Item No. 26 – Remove and Reconstruct Concrete Pavement. Work under this item shall include furnishing all labor, material and equipment to remove and reconstruct concrete pavement, including, but not limited to, sawcutting at the nearest joint, excavation, backfill, compaction, disposal of excess material, and removal and replacement of concrete pavement in kind to the nearest joint. For road and street concrete pavement, installation of 1' long #5 dowel bars 24"o.c. staggered with 6" embedment and epoxy bond. Measurement will be based on the square yards of concrete pavement removed and replaced, measured in horizontal plane.
25. Bid Item No. 27 – Reconstruct Driveway Approach (Per Hermosa Beach Std. Dwg. 102). Work under this item shall include furnishing all labor, material and equipment to remove and reconstruct driveway approach, including, but not limited to, excavation, backfill, compaction, disposal of excess material, and removal and replacement of driveway in kind per applicable standards. Payment shall be at the unit price per each driveway replaced.
26. Bid Item No. 28 – Remove and Reconstruct Sidewalk (Per City of Hermosa Beach Std. Dwg. 106). Work under this item shall include furnishing all labor, material and equipment to restore sidewalk as necessary, to the nearest joint. Payment shall be at the unit price per square foot of sidewalk restoration along pipeline alignment.
27. Bid Item No. 29 – Changeable Message Signs. Contractor shall provide two (2) portable Electronic Changeable Message Signs (CMS) and shall place the CMS at least 7 days in advance of any construction, at locations designated by the Engineer or the City, where traffic enters the project limits. The CMS shall be at least six feet by nine feet (6' X 9') and each character shall consist of at least 35 disks in a 7' by 5' matrix. Each pixel shall contain at least 2 LED's for low light conditions. Each character shall be at least 18" high. Photocell control brightness of the LED's and automatic type dimming from 10 to 100 percent. CMS shall be legible from 1,200 feet. CMS manufactured by ADDCO, DH1000 DOT, or approved equal shall be used. CMS shall be solar and include any batteries required. These CMS units and the actual working of messages must be approved by the City prior to placement. Payment shall be at the unit bid price per each changeable message sign furnished and installed, whether rented or purchased.
28. Bid Item No. 30 – Public Noticing. Work under this item shall include furnishing all labor and materials necessary to provide public notice to residents and businesses nearby the project construction areas. Notices should be given out 1 week ahead any mobilization or work on the public right-of-way. Multiple rounds of noticing will be required. Contractor to submit sample notice/door hanger for the City's review and approval prior to noticing. Payment for this item will be made at a lump sum price listed in Bid Schedule

29. Bid Item No. 31 – Provide As-Built Drawings. Work under this item shall include furnishing labor and materials necessary to prepare and provide as-built drawings. These drawings must be kept up to date during construction and submitted to the Engineer for review prior to request for payment. Payment for this item will be made at lump sum price listed in Bid Schedule.

## **PART 2 – PRODUCTS (NOT APPLICABLE)**

## **PART 3 – EXECUTION**

### **3.1 Sequence of Construction**

A. General sequence of Work shall be as follows:

#### Preparation

1. Obtain required permits, licenses and construction easements. Submit proposed schedule of Work, insurance and bonds. Take preconstruction photographs.
2. Verify utility locations, field dimensions and pipe diameters. If discrepancies or conflicts are found, bring these to attention of Owner's Representative.
3. Submit shop drawings and other submittals.
4. Begin manufacturing and shipping materials and equipment after receiving approved submittals.
5. Complete construction of above-ground piping and buried bypass according to proposed Work schedule.
6. Perform pre-construction CCTV.
7. Perform cleaning and root removal.
8. Research and verify existing utilities using Underground Service Alert or other utility locating service.
9. Construct point repairs, pipe removal and replacement, and lateral re-connections.
10. Perform post-construction CCTV.
11. Demonstrate satisfactory installation and operation of installed work, including performing vendor and system functional tests.

#### Closeout

12. Provide record drawings.
13. Clean up and restore construction areas.
14. Provide warranty as specified.

**END OF SECTION**

**SECTION 03 10 00  
CONCRETE FORMING**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Materials, testing, erection and removal of concrete formwork including formwork, bracing, shoring, supports, falsework, and all appurtenant work.
- B. Setting of embedded bolts, anchors, pipe sleeves, conduit sleeves, conduit and similar work under direction of respective trades.

**1.2 Related Work**

- A. Section 03 30 00: Cast-in-Place Concrete

**1.3 System Description**

- A. Furnish and install concrete formwork including appurtenant structural, or mechanical mountings or connections required for compliance with applicable building codes and standards.
- B. Forms, shoring and falsework shall:
  - 1. Confine concrete ingredients including water, sand and cement while placing concrete,
  - 2. Confine concrete to required lines, grades and construction tolerances.
  - 3. Provide safe working environment in accordance with OSHA regulations.
  - 4. Support all dead loads and live loads plus superimposed construction loads including equipment, stored materials, personnel, impact loads from falling concrete or other materials, foundation pressures repetitive stress loads from vibrating concrete, and all other vertical and lateral loads during construction.
  - 5. Be of sufficient number and area to allow construction to proceed on schedule.
  - 6. Upon removal, leave concrete with nontoxic, clean, dry surface, free from ridges, fins, offsets, deflection marks, or similar defects. Surface shall be in condition that can be finished by Contractor as required by Contract Documents.
- C. It shall be Contractor's responsibility to design, construct and maintain safe forms, shoring and falsework at all times in accordance with applicable OSHA regulations.
- D. If adequate foundation for shores cannot be secured, provide truss supports.
- E. Forms, shoring and falsework failing to provide all above functions shall be removed from jobsite immediately at no additional cost to Owner.
- F. Cap protruding reinforcement bars for worker protection in accordance with applicable safety codes.

#### 1.4 **Quality Assurance**

- A. Use adequate numbers of skilled workmen trained and experienced in necessary trades and crafts and completely familiar with specified requirements and methods for proper performance of Work of this section.
- B. Design of structures shown on drawings includes no allowance for imposed construction loads. Provide forms, shoring and falsework adequate for dead loads and live loads plus imposed loads during construction.
- C. Formwork shall comply with ACI 347, except as exceeded by requirements of other regulatory agencies or as otherwise shown.
- D. Tolerances of formwork shall comply with ACI 117. Failure of finished concrete work to meet specified tolerances shall be remedied at Contractor's expense.

#### 1.5 **References**

- A. ACI 117 Standard Tolerances for Concrete Construction and Materials
- B. ACI 318 Building Code Requirements for Reinforced Concrete
- C. ACI 347 Recommended Practice for Concrete Formwork
- D. California Building Code (CBC)
- E. California Division of Occupational Health and Safety Construction Safety Orders
- F. PS1 U.S. Product Standard Code for Concrete Forms, Class 1
- G. PS20 American Softwood Lumber Standard

#### 1.6 **Submittals**

- A. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Shop Drawings	Required for construction and expansion joints placement and for sequence of forming and concrete placing operations per structural shop drawing requirements.
	Required for falsework, formwork, and vertical shoring per structural shop drawing requirements.
	Required for embedments, conduit, piping and other wall penetrations per structural Shop Drawing requirements.
Catalog Data	Required for form ties, taper tie plugs (if used), form gaskets related work per catalog data requirements.
	Required for form liners. Include dimensional data and photograph of finished appearance
Engineering Calculations	Required for falsework, formwork and vertical shoring per engineering calculations requirements. Calculations shall include statement from preparing engineer certifying falsework, formwork and vertical shoring design meets or exceeds design requirements of Cal OSHA Construction Safety Orders including Article 29 §1717, "Falsework and Vertical Shoring."

- B. Maintain at least one copy of accepted shop drawings on site throughout concrete placing operations.

#### 1.7 **Delivery, Storage and Handling**

- A. Refer to SSPWC (latest version) for delivery, storage, and handling requirements.
- B. Manufacturer's instruction and warranty requirements for delivery, storage and handling of concrete formwork shall be strictly followed.

**1.8 Unit Prices**

A. Payment for Work in this section shall be included as part unit-price bid amount for appurtenant bid items #18 through #21 and #25 through #28.

**PART 2 - PRODUCTS**

**2.1 Acceptable Manufacturers**

A. Acceptable Manufacturers include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Form Ties	Burke Company (Penta-Tie System)	San Mateo, CA
	Dywidag Systems International	Munich, GE
	Richmond Screw Anchor Company (Snap Tys)	Fort Worth, TX
	Accepted equal	
Reusable and Wash-off Forms for Site Concrete	Labrado – wash off	
	L.M. Scofield (Lascolite) - reusable	
	Accepted equal	
Form Coatings	Grace Construction Matierials (Formfilm)	
	Sika Chemical Corporation (Antisot)	Lyndhurst, NJ
	Sonneborn Building Products, Inc. (Form-Saver)	
	Accepted equal	

**2.2 Materials**

- A. Refer to SSPWC (latest version) for basic requirements for products and materials.
- B. Unless expressly accepted by Owner’s Representative, all lumber brought onto jobsite for use as forms, shoring, or bracing shall be new material of grade shown on accepted shop drawings. Form surfaces shall be smooth.
- C. Form materials that remain or leave residues on or in concrete must be classified as acceptable for potable water use by Environmental Protection Agency within 30 days of application or use. Concrete formwork containing arsenic or other toxic materials shall be removed from jobsite and disposed of off site.

D. Formwork shall be constructed of the following materials:

ITEM	MATERIAL	SPECIFICATION
All Other Forms	Steel Panels or Tongue-and-Groove Lumber	ACI 347 Provide rubber grommets where ties pass through steel forms to prevent loss of cement paste.
	Plywood	ACI 347, PS1 Class 1 edge-sealed Douglas Fir or Southern Yellow Pine plywood 5/8" minimum thickness Stud spacing close enough to prevent deflection marks.
Lumber for Falsework	Douglas Fir or Southern Yellow Pine	PS 20 Construction Grade or better
Plywood Forms for Surfaces to be Painted	Plywood	Medium Density Overlaid Plywood, MDO Ext. Grade
Form Ties	Plastic	Plastic removable cone type with integral water stops. Do not use wire form ties. Do not use snap ties which cause spalling of concrete upon form stripping or tie removal.

E. The following product design criteria, options and accessories are required:

ITEM	DESCRIPTION	
Forms and Falsework Strength Design	Design Load	Design for total dead load plus live load of 50 psf.
	Minimum Vertical Design Load	100 psf. Design of structures shown on drawings includes no allowance for imposed construction loads. Provide forms, shoring and falsework adequate for dead loads and live loads plus all imposed vertical and lateral loads during construction.
Chamfers and Fillets	Chamfers	Provide 3/4" chamfer on exterior corners except where otherwise shown.
	Fillets	Do not provide fillets on reentrant corners except where shown.
Form Ties – Water Retaining Structures or Structures in Contact with Groundwater	Maximum Diameter of Removable Cone	1 1/2"
	Holes	Form ties shall leave holes of regular shape for reaming.
	Design	Provide with plastic cone or other means of forming conical hole to ensure form tie may be broken off back of concrete face.
	Removable Taper Ties	May be used if accepted by Owner's Representative. Insert preformed neoprene or polyurethane tapered plug (sized to seat at wall center) in hole left by taper tie removal.
Form Coating	Acceptable Materials	Non-grainraising, nonstaining resin or polymer type coating
	Unacceptable Materials	Coatings leaving residual matter on concrete surface. Coatings adversely affecting concrete bonding to paint, plaster, mortar, protective coatings, waterproofing or other applied materials. Coatings containing mineral oils, paraffins, waxes or other nondrying ingredients.
	Unacceptable Materials against Surfaces Contacting Potable Water	Any toxic or partially toxic materials
Form Joint Sealers	Design	Resilient foam rubber strips, non-hardening plastic type caulking compound free of oil.
	Alternate Design	Waterproof pressure sensitive plastic tape of minimum 8-mil thickness and 2" width.
	Form Tie Hole Filling	Use rubber plugs, plastic caulking compound or equal

## PART 3 - EXECUTION

### 3.1 Preparation

- A. Make field measurements needed to install concrete formwork before submitting shop drawings or ordering. Make minor changes in dimensions and alignments as needed to avoid utilities or structural conflicts.
- B. Install plumb and string lines before placing concrete and maintain throughout concrete placement.
- C. Set pipe stubs, wall sleeves, anchor bolts and other embedded work in forms where required before placing concrete. Use templates to maintain anchor bolts in position during concrete placing.
- D. Embedded items shall be subject to the following constraints.
  1. Locate embedded items so as not to reduce strength of construction.



2. No embedded item (parallel to surface) shall have an outside diameter greater than  $\frac{1}{3}$  of slab or wall thickness.
  3. Embedded items parallel to surface shall be placed between top or interior reinforcing steel and bottom or exterior reinforcing steel.
  4. Embedded items shall not be spaced closer than 3 diameters on center. Diameter shall be taken as largest outside diameter of embedded item.
  5. Embedded items shall be supported independently from reinforcing steel in manner preventing metallic contact and electrolytic deterioration.
  6. Walls or slabs  $4\frac{1}{2}$ " or less in thickness shall have no embedded items (parallel to surface) other than conduit.
  7. For corrosion protection, place embedded metallic items so at least 2" clearance is provided between any embedded metallic item and any part of concrete reinforcement. Do not secure embedded items in place by wiring or welding to reinforcement.
  8. Supplemental reinforcing shall be placed around openings as required.
- E. Thoroughly clean forms and embedments before placing concrete.
1. Remove any encrusted dirt, concrete, mortar or grout from forms or embedments.
  2. Treat form surfaces with lubricant acceptable to Owner's Representative at least 2 weeks before using forms.
  3. Remove any excess lubricant before placing concrete.
  4. Take care to keep lubricant off surfaces of steel reinforcement and embedded items.

### **3.2 Installation**

- A. Refer to SSPWC (latest version) for basic execution and installation requirements.
- B. Furnish and install concrete formwork at locations shown on Plans and Submittals.
- C. The following installation standards shall be followed:
  1. Manufacturer's installation and warranty requirements
  2. Applicable OSHA and Cal OSHA regulations
  3. Applicable building code requirements
- D. Refer variances between above documents and Contract Documents to Owner's Representative.
- E. Install concrete formwork to tolerances recommended by Manufacturer and as described below to meet tolerances shown under "Field Quality Control." Unless otherwise shown, install concrete formwork true, plumb and level using precision gauges and levels.
- F. Form all vertical surfaces except where concrete placement against earth is shown.

- G. For members of comparatively limited height, where character of ground is such it can be trimmed to required lines and stand securely without caving or sloughing throughout concrete placement, Owner's Representative may permit placing concrete against earth at Contractor's risk. Should ground fail during concrete placement for any reason, including weather, or other natural or manmade causes, Contractor shall remove concrete in areas of earth failure and reconstruct with forms and new concrete at Contractor's sole expense.
- H. Where concrete is permitted to be placed against trimmed ground in lieu of forms, add at least 1" thickness of additional concrete to face of concrete being formed against earth.
- I. Where taper ties are approved for use, larger end of taper tie shall be on wet side of walls in structures retaining water or groundwater
- J. Secure gaskets at bottom of wall forms before placing concrete.
- K. Provide adequate cleanout holes at bottom of each lift of forms.
- L. Provide form windows where concrete cannot be placed from top of wall in manner that meets contract document requirements.
- M. Quantity and dimensions of cleanout holes and form windows shall be subject to approval by Owner's Representative.
- N. Concrete construction joints shall only be made where shown on Contract Documents and accepted shop drawings or approved in writing by Owner's Representative. When second lift is placed on hardened concrete, Contractor shall take care to ensure quantities, locations, and tightness of form ties prevents unsatisfactory effects on finished concrete.

**3.3 Field Quality Control**

- A. Monitor plumb and string line positions continually throughout concrete placement and correct deficiencies immediately.
- B. Special inspection and field testing required by Chapter 17 of CBC (Table 1704.4) shall be completed by an ICC-certified special inspector selected by Owner and shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Concrete Formwork	Shape, Location and Dimensions of Item Being Formed	ACI 318 6.1.1, and paragraph C below	Periodic per CBC Table 1704.4	Owner	Contractor to reimburse Owner for costs of first deputy inspector if re-inspection is required

- C. Additional field testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Formwork and Finished Concrete	Tolerance of Finished Concrete Work	As described below and ACI 117  Manometer survey may be required for horizontal slabs to demonstrate compliance	Inspection at Owner's discretion (may occur after concrete is in place)	Owner	Owner

D. Tolerances of finished concrete shall be as follows:

ITEM	TOLERANCE
Variation of Constructed Linear Outline from Established Position in Plan	$\frac{1}{4}$ " maximum in 10' $\frac{1}{2}$ " maximum in 20' or more
Variation from Level or from Grades Shown	$\frac{1}{4}$ " maximum in 10' $\frac{1}{2}$ " maximum in 20' $\frac{3}{4}$ " maximum over entire structure
Variation from Plumb	$\frac{1}{4}$ " maximum in 10' $\frac{1}{2}$ " maximum in 20' or more
Variation in Thickness of Slabs and Walls	Minus $\frac{1}{4}$ " Plus $\frac{1}{2}$ "
Variation in Locations and Sizes of Slabs and Wall Openings	$\pm\frac{1}{4}$ "

### 3.4 Adjusting and Cleaning

A. Remove forms being careful not to damage concrete. Contractor shall remedy damage from improper or premature form removal at his sole expense.

1. No heavy loading on green concrete will be permitted.
2. Time required to reach 90% of specified 28-day compressive strength shall be established by Owner's Representative based on test cylinders taken for this purpose.
3. Forms for all items of work not specifically mentioned herein shall remain in place for time periods determined by Owner's Representative.
4. Immediately after removing forms, wet concrete surfaces and keep surface moist until curing procedures begin.
5. Do not apply construction, equipment or permanent loads on columns, supported slabs or supported beams until all concrete in load path to foundation has attained 28-day design compressive strength.

B. Form tie removal shall proceed as follows:

1. No form-tying device or part thereof other than metal shall be left embedded in concrete.
2. Do not remove ties in such manner as to leave hole extending through interior of concrete members.
3. Where metal rods extend through concrete to support or strengthen forms, rods shall remain embedded and shall terminate at least 1" back from formed face or faces of concrete,
4. Where taper ties are removed, ream holes left by removal of form tie cones with suitably toothed reamers. Finished surface of holes shall be clean and roughened for bond before being filled with mortar.
5. A precast neoprene or polyurethane tapered plug shall be placed at wall centerline. Hole shall then be completely filled with non-shrink or regular cement grout for above grade walls that are dry on both sides.

6. Exposed faces of walls and ceilings, and floors shall have outer 2" of exposed face filled with cement grout matching color and texture of surrounding wall surface.
- C. Forms may be reused only if in good condition and only if acceptable to Owner's Representative.
1. Light sanding between uses will be required wherever necessary to obtain uniform surface texture on all exposed concrete surfaces.
  2. Fill residual tie rod holes with metal caps or other methods accepted by Owner's Representative.
  3. Thoroughly clean form before reuse.

**END OF SECTION**

**SECTION 03 30 00  
CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Materials, testing, and installation of concrete for buried and above-ground cast-in-place structures, flatwork and paving.
- B. Refer to Section 03 10 00 for concrete forming.
- C. In accordance with CALGreen Code Section A5.405.5, cement and concrete shall be made with recycled products such as fly ash or pozzolan, and shall comply with requirements of Section CALGreen Code Section A5.405.5.

**1.2 Related Work**

- A. Section 03 10 00: Concrete Forming
- B. Section 07 92 00: Joint Sealants
- C. Section 33 39 13: Precast Concrete Manholes

**1.3 System Description**

- A. Furnish and install complete concrete structural system including appurtenant structural, manhole components required for compliance with Manufacturer's installation requirements of other trades and compliance with applicable installation standards.

**1.4 Quality Assurance**

- A. Use adequate numbers of skilled workmen trained and experienced in necessary trades and crafts and completely familiar with specified requirements and methods for proper performance of Work of this section.
- B. Proportion mixes either by laboratory trial batch or field experience methods, using specified materials acceptable for each type of concrete required, and complying with ACI 211.1.

C. Factory (batch plant) testing of aggregate shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Aggregate	Ratio of Silica Released to Reduction in Alkalinity	ASTM C33	As directed	Owner	Contractor
	Loss with Sodium Sulfate	ASTM C33	As directed	Owner	Contractor
	Sieve Analysis	ASTM C136	1 each trial batch	Owner	Contractor
Coarse Aggregate	Abrasion Loss	ASTM C33	As directed	Owner	Contractor
Fine Aggregate	Sand Equivalent	ASTM D2419	As directed	Owner	Contractor
	Organic Impurities	ASTM C40	As directed	Owner	Contractor
	Color of Supernatant on Washing	ASTM C33	As directed	Owner	Contractor

D. Plant testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Concrete	Certification of Mix Design	ACI 301 certified by independent testing laboratory	1 per mix	Contractor	Contractor
Ready-Mix Concrete Materials	Materials Inspection	See Paragraph 2.2 below	As directed	Owner	Owner

## 1.5 References

- A. ACI 117 Standard Tolerances for Concrete Construction Materials
- B. ACI 211.1 Selecting Proportions for Normal, Heavyweight, and Mass Concrete
- C. ACI 214 Evaluation of Strength Test Results for Concrete
- D. ACI 301 Structural Concrete for Buildings
- E. ACI 304 Measuring, Mixing, Transporting, and Placing Concrete
- F. ACI 305 Hot Weather Concreting
- G. ACI 309 Consolidation of Concrete
- H. ACI 315 Details and Detailing of Concrete Reinforcement
- I. ACI 318 Building Code Requirements for Reinforced Concrete
- J. ACI 350 Environmental Engineering Concrete Structures
- K. ASTM C31 Making and Curing Concrete Test Specimens in Field
- L. ASTM C33 Concrete Aggregates
- M. ASTM C39 Compressive Strength of Cylindrical Concrete Specimens
- N. ASTM C40 Organic Impurities in Fine Aggregates for Concrete
- O. ASTM C42 Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
- P. ASTM C78 Flexural Strength of Concrete Using Simple Beam with Third Point Loading
- Q. ASTM C88 Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
- R. ASTM C94 Ready-Mixed Concrete
- S. ASTM C117 Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing
- T. ASTM C136 Sieve Analysis of Fine and Coarse Aggregates

- U. ASTM C138 Unit Weight, Yield, and Air Content (Gravimetric) of Concrete
- V. ASTM C143 Slump of Hydraulic Cement Concrete
- W. ASTM C150 Portland Cement
- X. ASTM C156 Water Retention by Concrete Curing Materials
- Y. ASTM C157 Length Change of Hardened Hydraulic Cement Mortar and Concrete
- Z. ASTM C172 Sampling Freshly Mixed Concrete
- AA. ASTM C173 Air Content of Freshly Mixed Concrete by Volumetric Method
- BB. ASTM C191 Time of Setting of Hydraulic Cement by Vicat Needle
- CC. ASTM C192 Making and Curing Concrete Test Specimens in Laboratory
- DD. ASTM C231 Air Content of Freshly Mixed Concrete by Pressure Method
- EE. ASTM C266 Time of Setting of Hydraulic Cement Paste by Gillmore Needlesw
- FF. ASTM C289 Potential Alkali-Silica Reactivity of Aggregates (Chemical Method)
- GG. ASTM C309 Liquid Membrane-Forming Compounds for Curing Concrete
- HH. ASTM C494 Chemical Admixtures for Concrete
- II. ASTM C881 Epoxy-Resin-Base Bonding Systems for Concrete
- JJ. ASTM C932 Surface-Applied Bonding Compounds for Exterior Plastering
- KK. ASTM C1077 Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
- LL. ASTM D1751 Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
- MM. ASTM D2419 Sand Equivalent Value of Soils and Fine Aggregate
- NN. ASTM E119 Fire Tests of Building Construction and Materials
- OO. California Building Code (CBC)
- PP. California Green Building Standards Code (CALGreen Code)
- QQ. Caltrans Standard Specifications – Section 90 Portland Cement Concrete
- RR. California Test Method 214 Soundness of Aggregates
- SS. California Test Method 227 Cleanness Value
- TT. California Test Method 229 Durability
- UU. California Test Method 515 Relative Mortar Strength of Portland Cement Concrete Sand
- VV. California Test Method 530 Effect of Water-Reducing and Set-Retarding Admixtures on Drying Shrinkage of Concrete
- WW. Fed Spec UU-B-790A Building Paper, Vegetable Fiber (Kraft, Waterproofed, Water Repellent and Fire Resistant
- XX. SSPWC Standard Specifications for Public Works Construction (Greenbook) Section 201 “Concrete, Mortar, and Related Materials
- YY. SSPWC Standard Specifications for Public Works Construction (Greenbook) Section 303 “Concrete and Masonry Construction.”

**1.6 Submittals**

- A. Furnish the following submittals in accordance with ACI 301 and California Building Code.

SUBMITTAL	DESCRIPTION
CBC Chapter 17 Special Inspection Required Contractor Statement of Responsibility	As required in CBC Section 1704
Shop Drawings	Required per structural shop drawing requirements. In addition to requirements listed under steel reinforcement, show construction joints and placement schedule.
Catalog Data	Required for admixtures and curing compounds per catalog data requirements.
Installation Instructions	Required for admixtures per installation instruction requirements.
	Submit materials and methods for curing per installation instruction requirements.

SUBMITTAL	DESCRIPTION
Certificate of Compliance	Submit certification from independent testing laboratory mix design complies with these specifications.
	Submit mill test certification including fineness for each shipment of cement per ACI 301.
	Submit aggregate gradation and certification per ACI 301.
	Submit admixture certification including chloride ion content per ACI 301.
	At least 24 hours before placing concrete, submit certification from each trade having embedded items in concrete to be placed stating embedded items for each trade are properly located, placed and braced and equipment pads are properly sized.
	Submit certification concrete furnished complies with requirements of CALGreen Code Section 5.405.5
Engineering Calculations (Mix Design)	Required for concrete mix design per engineering calculations requirements sealed by California-licensed Civil Engineer.
	In addition to original mix design, provide new mix design if change in brand or type of cement or change in source or gradation of aggregates is permitted or if defective concrete occurs.
Brand and Type of Cement/Source of Aggregate	Submit brand and type of cement and source of aggregates to allow sampling and testing by Owner's Representative.
Welder Qualification Certificates	Required for all welders performing reinforcement welding
Delivery Tickets	<p>Required for ready-mix concrete as needed to document delivery quantities. In accordance with ASTM C94 Sections 16.1 and 16.2, each ticket shall show</p> <ul style="list-style-type: none"> <li>• Name of ready-mix batch plant,</li> <li>• Serial number of ticket,</li> <li>• State certified equipment used in preparing mix,</li> <li>• Truck number.</li> <li>• Name of purchaser &amp; name &amp; location of job</li> <li>• Mix number,</li> <li>• Quantities by weight of cement, sand, each class of aggregate, admixtures and water added in batching plant,</li> <li>• Type and brand of cement &amp; admixtures,</li> <li>• Source &amp; identification of aggregates,</li> <li>• Amount of water allowed to be added at site for specified mix,</li> <li>• Total yield in cubic yards,</li> <li>• Date &amp; time of day to nearest minute corresponding to time batch was dispatched, time batch left plant, time batch arrived on site, time unloading began and time unloading was completed.</li> <li>• Reading of revolution counter at first addition of water</li> </ul> <p>Certificates shall be from public weighmaster. Owner's Representative will not accept concrete in absence of certificate.</p>
Warranty	Furnish one-year warranty from date of final acceptance

### 1.7 **Delivery, Storage and Handling**

- A. Manufacturer's instruction and warranty requirements for delivery, storage and handling of concrete admixtures and curing compounds shall be strictly followed.
- B. Refer to SSPWC (latest version) for delivery, storage, and handling requirements.
- C. Store materials to prevent damage by moisture or breakage.
- D. Store sacked cement in manner permitting access for inspection and sampling.
- E. Use cement in sequence of receipt of shipments.



- F. Coarse aggregate with maximum size greater than ¾” shall be prepared, stored, and handled in 2 or more size groups. When aggregates are proportioned for each batch of concrete, the 2 size groups shall be combined.
- G. Do not use any aluminum materials for handling concrete.

**1.8 Unit Prices**

- A. Payment for Work in this section shall be included as part unit-price bid amount for appurtenant bid items #15, #18 through #21, and #25 through #28.

**PART 2 - PRODUCTS**

**2.1 Acceptable Manufacturers**

- A. Acceptable Manufacturers include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Admixtures – Set Retarding (Use when air temperature exceeds 80°F)	Grace Concrete Products “Daratard”	Cambridge, MA
	Master Builders Inc. “Pozzolith 300R”	Cleveland, OH
	Sika Corporation “Plastocrete”	Lyndhurst, NJ
	Accepted equal	
Admixtures – Water Reducing (Normal Range)	Grace Concrete Products “WRDA 79”	Cambridge, MA
	Master Builders Inc. “Pozzolith 322-N”	Cleveland, OH
	Sika Corporation “Plastocrete 161”	Lyndhurst, NJ
	Accepted equal	
Admixtures – Water Reducing (High Range)	Grace Concrete Products “WRDA 19 or Duracem 100”	Cambridge, MA
	Master Builders Inc. “Rheobuild 716 or Rheobuild 1000”	Cleveland, OH
	Sika Corporation “Sikament FF or Sikament 86”	Lyndhurst, NJ
	Accepted equal	
Bonding Agent (Hardened Concrete to Fresh Concrete)	Edoco “BurkEpoxy MV”	Kansas City, KS
	Concresive Div BASF 1001 LPL	Freeport, TX
	Epoxtile 2391	
	Euco Epoxy 463	
	Master Builders Inc. “Concresive Liquid LPL”	Cleveland, OH
	Pecora Corporation “Dynapoxy EP420”	Harleysville, PA
	Sika Corporation “Sikadur 32 Hi-Mod” or “Sikadur 32 Hi-Mod (LPL)” Epoxy Adhesive	Lyndhurst, NJ
	Accepted equal	
Epoxy Bonding Adhesive for Rebar	Edoco “BurkEpoxy NS”	Kansas City, KS
	Master Builders Inc. “Concresive Paste LPL”	Cleveland, OH
	Pecora Corporation “Dynapoxy EP430 Fast”	Harleysville, PA
	Sika Corporation “Sikadur 31 Hi-Mod Gel” (vertical or overhead applications)	Lyndhurst, NJ
	Sika Concrete Restoration Systems SikaDur 32, Hi-Mod LPL	Lyndhurst, NJ
	Simpson Strong Tie Co.	Dublin, CA
	Accepted equal	
	Accepted equal	
Dampproofing Agent	Euclid Chemical Company	Cleveland, OH
	W. R. Meadows Inc. “Sealmastic”	Hampshire, IL
	Sonneborn Div. Chemrex Inc. “Hydrocide 600”	Shakopee, MN
	Accepted equal	
Evaporation Retardant for Curing	Euclid Chemical Company “Eucobarl”	Cleveland, OH
	Master Builders Inc. (Confilm)	Cleveland, OH
	Accepted equal	

- B. Use only one brand of cement.
- C. All admixtures shall be compatible and by one Manufacturer capable of providing qualified field service representation.

**2.2 Materials**

- A. Refer to SSPWC (latest version) for basic requirements for products and materials.
- B. Concrete structural systems shall be constructed of the following materials:

ITEM	MATERIAL	SPECIFICATION
Cement	Standard Brand Portland Cement	ASTM C150 Type II/V Modified Low Alkali/Sulfate Resisting Also meet Table 2 optional requirements At least 85% of cement by weight shall pass 325 screen.
	Supplementary Cementitious Materials	ASTM C595 and California Green Building Standards Code Section A5.405.5 (See below)
Water	Clean, Clear Potable Water	TDS<1000 mg/l
Coarse Aggregate	Specification	Meet ASTM C33 requirements Gravel, crushed gravel, crushed rock or combination From pits acceptable to Owner's Representative
	Cleaness Value per California Test Method 227	75 minimum
	Percentage Wear per ASTM C131	Abrasion loss < 10.5% after 100 revolutions
		Abrasion loss < 42% after 500 revolutions
	Specific Gravity per ASTM C127	2.58 minimum
Ratio of Silica Released to Reduction in Alkalinity	1.0 maximum	
Fine Aggregate	Specification	Meet ASTM C33 requirements Nonreactive clean, hard durable washed material From pits acceptable to Owner's Representative
	Organic Impurities per ASTM C40	Satisfactory Resultant color of testing solution shall not be darker than ASTM C40 standard
	Mortar Strength Relative to Ottawa Sand per California Test Method 515	100% minimum
	Sand Equivalent	>75% average for 3 samples >70% for any one sample
	Percent Clay, Silt, Loam per ASTM C117	<3%
	Soundness per California Test Method 214	<10% Soundness requirement will be waived if durability index $D_r > 60$ per California Test Method 229.
		Ratio of silica released to reduction in alkalinity <1.0 Lightweight sand not permitted
Surface-Applied Bonding Agent	Surface-Applied Bonding Compound	ASTM C932
Epoxy Bonding Agent	Epoxy Resin	ASTM C881

ITEM	MATERIAL	SPECIFICATION
Curing Blankets	Polyethylene Sheet	White 10-mil nominal PE thickness Loss of moisture per ASTM C156<0.055 grams/cm <sup>2</sup>
	Polyethylene-Coated Burlap	White opaque polyethylene film impregnated or extruded onto one side of burlap 4-mil nominal PE thickness Burlap weight 9oz/sy or greater Loss of moisture per ASTM C156<0.055 grams/cm <sup>2</sup>
	Polyethylene-Coated Waterproof Paper Sheeting	White polyethylene sheeting 2- mil nominal PE thickness Permanently bond to waterproof paper per Fed Spec UU-B-790A Loss of moisture per ASTM C156<0.055 grams/cm <sup>2</sup>
Curing Compounds		ASTM C309 White pigmented, resin based Do not use sodium silicate compounds.
Curing Mats	Heavy Shag Rugs, Carpets or Cotton Mats Quilted at 4" on center	Minimum dry weight of 12 oz/sy
Dampproofing	Coal Tar	Two coats of single-component self-priming heavy duty material.
Grout for Smooth Concrete Finish		1 part Portland cement (½ gray & ½ white Portland cement) White Portland cement to be Atlas white or equal. 1 part fine sand passing No. 16 sieve Calcium chloride (add amount equal to 5% of cement by volume.) Sufficient water to provide consistency of thick paint.
Ready-Mix Concrete		ASTM C94
Repair Mortar	Two-Component Cement Based Product	Low shrinkage. Designed for repairing damaged concrete surfaces. Use medium slump repair mortar on horizontal surfaces. Use non-sag low-slump repair mortar on vertical or overhead surfaces.

- C. Concrete aggregate will be designated by letter per Standard Specifications for Public Works (Greenbook) Section 201 and shall conform to the following gradations:

PERCENTAGE PASSING SIEVES BY WEIGHT					
SIEVE SIZE	GRADING A (For concrete street paving not integral with curb)	GRADING B (For concrete channel and box inverts)	GRADING C (For Class AA, A, A2 or B concrete not used for paving or channel or box inverts. May be used for Class C Concrete)	GRADING D (May be used for Class B extruded curbs and gutters or for gunite)	GRADING E (For trench backfill, slurry and masonry grout May be used for Class C concrete.)
2"	100%	100%			
1½"	95-100%	95-100%	100%		
1"	64-80%	80-96%	95-100%		
¾"	55-71%	64-80%	77-93%	100%	100%
⅜"	37-53%	40-52%	50-70%	92-100%	90-100%
No. 4	32-42%	35-46%	39-51%	42-60%	60-80%
No. 8	25-35%	28-38%	31-41%	33-47%	50-70%
No. 16	18-28%	21-31%	22-32%	22-38%	33-53%
No. 30	10-18%	10-20%	12-22%	17-25%	19-35%
No. 50	3-9%	3-10%	3-15%	6-15%	5-15%
No 100	0-4%	0-4%	0-5%	1-6%	2-7%
No. 200	0-2%	0-2%	0-2%	0-3%	0-4%

- D. Concrete mix shall be designed to meet properties and proportions specified. In general, mix shall be designed to minimize shrinkage, surface flaws, honeycombing and rock pockets around steel reinforcing. Limiting parameters specified are not intended to be a mix

design. Additional cement or water reducing agent may be required to achieve workability demanded by Contractor's methods and aggregates. Contractor is responsible for any costs associated with furnishing concrete with required workability, density and strength.

E. Admixtures shall consist of the following materials:

ITEM	MATERIAL	SPECIFICATION
Admixtures	General Requirements	Do not use to reduce cement requirement Shall be free from thiocyanates Chloride ion <0.05%
Coloring Agents	Commercially Pure Mineral Pigments	Weight of pigments < 10% of cement content Color selected by Owner's representative
Fly Ash and other SCM's		Not permitted
Plasticizing Agents		ASTM C1017
Set Retarding Agents (Use when air temperature exceeds 80°F)		ASTM C494 Type B
Water Reducing Agents (High Range)		ASTM C494 Type F or G Only one water-reducing admixture shall be used
Water Reducing Agents (Normal Range)		ASTM C494 Type A Only one water-reducing admixture shall be used
Water Reducing and Set Accelerating Agents		ASTM C494 Type E Only one water-reducing admixture shall be used
Water Reducing and Set Retarding Agents		ASTM C494 Type D Only one water-reducing admixture shall be used

F. The following product design criteria, options and accessories are required:

ITEM	DESCRIPTION	
Class A2 "Structural – No Special Inspection" Concrete Greenbook 600-C-2500 (Use for pads and minor structures where Owner elects to waive CBC Special Inspection requirements.)	$f_c$	2500 psi per ASTM C39
	Cement Content	600 lb cement per cubic yard minimum but ≤700 lb cement per cubic yard
	Maximum Water/Cement Ratio	0.45 by weight
	Aggregate	SSPWC Greenbook Grading C
	Maximum Aggregate Size	1½"
	Slump	4" maximum per ASTM C143
	Water Reducing Admixture	Optional
	Maximum Transit Time	60 minutes (250 revolutions maximum)
Class B "Street Paving" Concrete (Use for street pavement not integral with curb and gutter.) Greenbook 520-A-2500	$f_c$	2500 psi per ASTM C39
	Cement Content	520 lb cement per cubic yard minimum but ≤700 lb cement per cubic yard
	Maximum Water/Cement Ratio	0.55 by weight
	Aggregate	SSPWC Greenbook Grading A
	Maximum Aggregate Size	2"
	Slump	3" maximum per ASTM C143
	Water Reducing Admixture	Optional
	Maximum Transit Time	90 minutes
Class C "Site Paving" Concrete (Use for curbs, gutters, sidewalks, and non-vehicular paving.) Greenbook 520-C-2500	$f_c$	2500 psi per ASTM C39
	Cement Content	520 lb cement per cubic yard minimum but ≤700 lb cement per cubic yard
	Maximum Water/Cement Ratio	0.55 by weight
	Aggregate	SSPWC Greenbook Grading C
	Maximum Aggregate Size	2"
	Slump	4" maximum per ASTM C143
	Water Reducing Admixture	Optional
	Maximum Transit Time	90 minutes
Class E <sub>s</sub> "Severe Sulfate Exposure" (Use for concrete exposed to >2.00% water soluble SO <sub>3</sub> in soil samples or >10,000ppm in water samples whichever requires mix of	$f_c$	5000 psi per ASTM C39
	Cement Content	750 lb per cubic yard 80% Type II/V cement +20% Class F Fly Ash
	Maximum Water/Cement Ratio	0.40 by weight
	Aggregate	1½"

ITEM	DESCRIPTION	
most severe exposure) Greenbook 750-CSE-5000	Maximum Aggregate Size	SSPWC Greenbook No 3 Coarse Aggregate / SSPWC Greenbook Grading C
	Slump	4" maximum per ASTM C143
	Water Reducing Admixture	Required
	Calcium Chloride Admixtures	Prohibited
	Maximum Transit Time	90 minutes

- G. With addition of high range water reducer, slump shall be 7" +/- 2".
- H. All materials furnished for Work shall comply with requirements of Sections 201 and 203, of ACI 301 as applicable.
- I. Cement shall be clean and free from contaminants. Do not use cement reclaimed from cleaning bags or leaking containers. Do not use lumpy cement.
- J. All materials furnished for Work must be classified by Environmental Protection Agency as acceptable for potable water use within 30 days of application.

### 2.3 Mixes

- A. Proportioning shall meet requirements of ACI 301 Chapter 3 "Proportioning."
- B. Quantity of water shall be just sufficient to produce workable batches of concrete which can be worked into place without segregation or other flaws and compacted using vibratory methods to provide desired density, impermeability, and smoothness of surface. Adjust water quantity added if needed to adjust for variations in moisture content of aggregate while providing uniform consistency between batches. Determine consistency of batches by slump testing as described below.
- C. Mixing shall meet requirements of ACI 301 Chapter 7 "Mixing."
- D. Apply admixtures according to Manufacturer's installation and warranty requirements.
- E. Set controlling and water reducing admixtures shall be applied as follows:
  1. Use or addition of admixtures shall be at Contractor's option to increase workability and shall result in no increase in cost to Owner.
  2. Use or addition of admixtures shall be subject to approval by Owner's Representative.
  3. Concrete containing admixture shall be first placed at location determined by Owner's Representative.
  4. High range water reducing admixtures shall be added to concrete on site after all other ingredients have been mixed and initial slump has been verified. Do not use more than 14 ounces of water reducer per sack of cement. Water reducer shall be considered as part of mixing water when calculating water cement ratio.
  5. If high-range water reducer is added to concrete on site, it may be used in conjunction with same water reducer added at batch plant. Concrete shall have slump of 3" ± 1/2" before adding high range water reducing admixture at job site.

1. High-range water-reducing admixture shall be accurately measured and pressure injected into mixer as single dose by experienced technician. Standby system shall be provided and tested before each day's operation of job site system.
  2. Mix concrete at mixing speed for at least 30 mixer revolutions after adding high-range water reducer.
- F. Retempering of partially hardened concrete or mortar will not be permitted.
- G. Trial batch testing shall proceed as follows:
1. Before placing any concrete, testing laboratory designated by Owner's Representative shall prepare trial batch of each class of "structural" or "premium" concrete based on preliminary concrete mixes submitted by Contractor and using aggregates, cement and admixtures proposed.
  2. During trial batch, testing laboratory may adjust aggregate proportions to obtain required properties. Such adjustments shall be considered refinements to mix design and shall not justify extra compensation to Contractor.
  3. All concrete shall meet specified requirements whether aggregate proportions are from Contractor's preliminary mix design, or whether proportions have been adjusted during trial batch process.
  4. Trial batch materials shall be sufficient to yield 3 drying shrinkage and 10 compression test specimens from each batch.
  5. Test 5 cylinders at 7 days to establish 7-day average compressive strength.
  6. Test remaining 5 cylinders no more than 28 days after molding.
  7. Required average compressive strengths shall be as follows:
- | SPECIFIED<br>COMPRESSIVE<br>STRENGTH ( $f_c$ ) | 28-DAY LABORATORY TRIAL BATCH<br>COMPRESSIVE STRENGTH MINIMUM TEST<br>RESULTS |                 | 28-DAY FIELD TEST<br>COMPRESSIVE STRENGTH<br>MINIMUM TEST RESULTS |
|--|---|-----------------|---|
|  | 5-CYLINDER<br>AVERAGE   | ANY SINGLE TEST | 5-CYLINDER AVERAGE  |
| $0 < f_c < 3000$ psi                           | $f_c + 1000$ psi  | $f_c$           | $f_c + 600$ psi   |
| $3000 \text{ psi} \leq f_c < 5000$ psi         | $f_c + 1200$ psi  | $f_c$           | $f_c + 600$ psi   |
| $5000 \leq f_c$                                | $f_c + 1400$ psi  | $f_c$           | $f_c + 600$ psi   |
8. Do not place "structural" or "premium" concrete until mix design has been qualified under test criteria above. Should source of materials or established procedures change, Owner may require new trial batch testing.
  9. Field trial batches may be placed in Work at designated locations accepted by Owner's Representative where concrete of lower quality is required. For payment purposes, concrete so placed will be considered to be type of concrete specified at that location.
- H. Measure cement and aggregate for mixing concrete using direct weighing equipment accessible to Owner's Representative.

- I. Tolerances of measurement equipment shall be as follows:
  1. Cement: Use weighing equipment accurate to  $\pm 1\%$  of total weight
  2. Aggregate: Use weighing equipment accurate to  $\pm 3\%$  of total weight
  3. Admixtures: Use weighing equipment accurate to  $\pm 3\%$  of total weight
  4. Water: Use metering equipment accurate to  $\pm 3\%$  of total volume
  
- J. Water feed control mechanism shall be capable of being locked in position to deliver constant flow of water to each batch of concrete. Use positive quick-acting valve for cut-off in water line to mixer. Operating mechanism shall not allow leakage to occur when valves are closed.
  
- K. Ready mixed concrete shall meet ASTM C94 and requirements below.
  1. Materials used in ready-mixed concrete shall be subject to continuous inspection at batching plant by Owner's Representative.
  2. Transport and deliver all ready-mixed concrete to site using agitating equipment. Do not use non-agitating equipment or combination truck and trailer equipment to transport or deliver ready-mixed concrete.
  3. Deliver ready-mixed concrete to site and complete discharge within "maximum travel time" specified above after addition of cement to aggregates. Also, deliver mixed concrete to site and complete discharge before drum has been revolved specified maximum number of revolutions.
  4. Truck mixers shall have electrically actuated counters to record number of revolutions of drum or blades. Counter shall be resettable recording type, and shall be mounted in driver's cab. Counters shall be actuated at time of starting mixers at mixing speeds.
  5. Completely empty mixer of any previously mixed load before adding new concrete.
  6. Each batch of concrete shall be mixed in truck mixer for at least 70 revolutions of drum or blades at rotation rate designated by equipment manufacturer. Additional mixing, if any, shall be at agitating speed designated by equipment manufacturer. All materials, including mixing water shall be in mixer drum before actuating counter to count rotations.
  7. Truck mixers and their operation shall ensure concrete throughout mixed batch is discharged within acceptable limits of uniformity of consistency, mix and grading.
  8. Slump tests taken at approximately  $\frac{1}{4}$  point and  $\frac{3}{4}$  points of load during discharge shall give slumps within 2" of each other. Mixers failing to meet this requirement shall not be used on job until causing condition is corrected and satisfactory performance is verified on-site using additional slump tests. All mechanical parts of failing mixer, including water measurement and discharge apparatus, blades, rotation speed and drum clearances shall be serviced and checked before further attempt to use equipment.
  9. Each delivery of ready-mixed concrete shall be accompanied by delivery ticket furnished to Owner's Representative as described in Paragraph 1.6 above.

## PART 3 - EXECUTION

### 3.1 Preparation

- A. Make field measurements needed to install Concrete structural systems before submitting Shop Drawings or ordering. Make minor changes in dimensions and alignments as needed to avoid utilities or structural conflicts.
- B. Before placing concrete within forms, each trade having embedded items, including water stops within forms and affected by pour shall certify all items are properly located, placed and braced.
- C. Thoroughly wet earth surfaces by sprinkling before placing concrete. At time of concrete placement, ground surface shall be moist, but free from standing water, mud and debris.
- D. Cold joints in concrete shall be deemed to occur whenever placement of concrete is interrupted for any reason so new concrete is neither incorporated integrally with previously placed concrete in opinion of Owner's Representative nor keyed in place with preformed construction joint shown on Contract Documents or accepted Shop Drawings. Prepare horizontal surfaces of cold joints as follows:
  - 1. Compacting and roughen horizontal with minimum ¼" amplitude profile for good bond.
  - 2. Clean tooled joint surface of all laitance, loose or defective concrete and foreign matter by hydroblasting or sandblasting to expose aggregate.
  - 3. Thoroughly wash hydro-blasted or sandblasted surface with clean water.
  - 4. Remove all ponded water from surface of construction joints.
  - 5. Coat joint surface with epoxy-bonding agent unless otherwise shown.
- E. Construction joints shown on Contract Documents and accepted Shop Drawings may be made as shown with provision of keys or other locking shapes to secure proper union with subsequent work.
- F. Before placing concrete, verify location of embedded items with affected trades. Accuracy of placement of embedded items is Contractor's responsibility.
- G. Before placing concrete, secure inspection of steel reinforcement and obtain acceptance by Owner's Representative at least 4 hours before placing concrete.
- H. Before placing concrete, provide dewatering, runoff diversion and protection as needed to ensure proper and water-free environment suitable for concrete hardening and curing. Do not place concrete underwater or in spaces where standing water is present. Protect uncured concrete from exposure to rain, runoff or groundwater.
- I. Notify Owner's Representative in writing at least 24 hours before placing any concrete. Do not place concrete except when Owner's Representative or his duly authorized representative is present.
- J. Order of placement of concrete shall be acceptable to Owner's Representative. To minimize shrinkage effects, place concrete in units bounded by construction joints shown in Shop Drawings. Placement shall occur such that each unit shall cure at least 7 days for hydraulic structures and 3 days for all other structures before contiguous units are placed,



except corner sections of vertical walls shall not be placed until the 2 adjacent wall panels have cured at least 14 days for hydraulic structures and 7 days for all other structures.

- K. Provide sufficient illumination in interior of all forms so concrete at places of deposit is visible from deck or runway.
- L. Schedule concrete placement during evening or morning hours or provide ice or pre-cooled aggregate as needed to maintain temperature of concrete within the following ranges immediately before placement.
  - 1. Concrete less than 12" thick: 55°F to 90°F
  - 2. All other concrete: 50°F to 90°F
  - 3. When concrete temperature exceeds 80°F, only set retarding admixtures shall be used.
  - 4. When concrete temperature exceeds 85°F, time between introducing cement to aggregates and discharge shall not exceed 45 minutes.
  - 5. No additional compensation will be made to contractor for measures used to maintain concrete temperature within specified limits.
- M. Hot weather placement shall proceed as follows:
  - 1. Comply with ACI 305.
  - 2. From initial placement through curing, protect concrete from adverse effects of high temperature, low humidity and wind.
- N. All ends of chutes, hopper gates, and all other points of concrete discharge shall be arranged so concrete passing from them will flow continuously into receiving vessel without separation. Conveyor belts, if used, shall be wiped clean by device operated so mortar adhering to belt is not wasted and shall be of type acceptable to Owner's Representative. Chutes shall be no longer than 50' long. Slopes of chutes shall permit free and continuous flow of concrete being placed.

### **3.2 Installation/Application**

- A. Refer to SSPWC (latest version) for basic execution and installation requirements.
- B. Furnish and install concrete at locations shown on Plans and Submittals.
- C. The following installation standards shall be followed:
  - 1. Manufacturer's installation and warranty requirements
  - 2. Applicable OSHA and Cal OSHA regulations
  - 3. California Building Code Chapter 19 "Concrete"
  - 4. Other applicable building and CalGreen code requirements
  - 5. ACI 301 Structural Concrete for Buildings Chapter 8.
  - 6. ACI 318 Building Code Requirements for Reinforced Concrete

7. Standard Specifications for Public Works Construction Section 303 "Concrete and Masonry Construction."
- D. Where hydrophobic waterproofing admixtures are added, admixture Manufacturer's installation and warranty requirements shall also be followed.
  - E. Refer variances between above documents and Contract Documents to Owner's Representative.
  - F. Pumping of concrete will only be permitted if satisfactory end results are obtained.
    1. For redundancy, provide standby pump on site or provide pumping equipment with two cylinders, designed to operate with one cylinder only.
    2. Replace pumping equipment or hoses that fail to function properly.
    3. Minimum diameter of hose and conduits shall be in accordance with ACI 304
    4. Do not use aluminum conduits to convey concrete.
    5. Concrete samples for slump, air content and test cylinders will be taken at placement (discharge) end of line.
  - G. Do not drop concrete through reinforcing steel or into any deep form, nor place concrete in any form in manner permitting accumulation of mortar on surfaces above placed concrete. If necessary, use hoppers or vertical ducts of canvas, rubber or metal to convey concrete to place of final deposit without separation or splashing. Free fall shall not exceed 4' below ends of ducts, chutes or buggies except in column forms. In no case shall concrete be displaced horizontally in forms by more than 6' after depositing. Deposit concrete in uniform horizontal layers not deeper than 2'. Avoid inclined layers or inclined construction joints except where required for sloping members. Place each layer while previous layer is still soft. Rate of placement in forms shall not exceed 5 vertical feet of rise per hour.
  - H. Thrust blocks shall be placed behind all non-welded, non-flanged or non-restrained valves, fittings, reducers, tees, crosses, bends and dead ends. Place thrust blocks as follows:
    1. Wrap fittings and valves, leaving stainless steel bolts exposed. Do not allow concrete to contact flanges or bolts.
    2. Owner's Representative shall inspect formwork and be present throughout placement of concrete.
    3. Unless otherwise shown on Plans, provide bearing surface not less than 3 times pipe diameter in all directions.
    4. Thrust block shall bear against undisturbed soil.
    5. In soft or disturbed soil, increase bearing surface as directed by Owner's Representative.
  - I. Concrete in ramps and sloping slabs shall be placed uniformly from bottom to top for full width of placement. As work progresses, vibrate concrete and carefully work it around reinforcement. Screenshot ramp surface in an up-slope direction.

- J. Thoroughly settle, compact and consolidate concrete in forms or excavations throughout entire depth of concrete layer being placed.
1. Consolidate concrete into dense, homogeneous mass, filling all corners and angles, thoroughly embedding reinforcement and embedments, eliminating all rock pockets and bringing only a slight excess of water to exposed concrete surface during placement.
  2. Vibrators shall be Group 3 per ACI 309. Use high-speed power vibrators (8,000 rpm to 12,000 rpm) of immersion type in sufficient number and with (at least one) standby units as required to accomplish specified results within 15 minutes after concrete is deposited. Group 2 vibrators may be used only at specific locations when accepted by Owner's Representative.
  3. When placing concrete around waterstops, carefully rod and vibrate concrete to eliminate all air and rock pockets. Where flat-strip waterstops are placed horizontally, work concrete under waterstops by hand, making sure all air and rock pockets are eliminated. Concrete surrounding waterstops shall receive additional vibration over and above that used for adjacent concrete to assure complete embedment of waterstops in concrete.
  4. Concrete in walls shall be internally vibrated and at same time, rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills forms or excavations and closes snugly against all surfaces. Do not place subsequent layers of concrete until previously placed layers have been worked thoroughly as specified. Keep vibrating head from contact with form surfaces.
  5. Do not vibrate concrete excessively or work it in any manner causing segregation of its constituents.
- K. Horizontal surfaces of concrete shall be level whenever run of concrete is stopped. To ensure level, straight joint on exposed surfaces of walls, tack wood strip at least  $\frac{3}{4}$ " thick to forms on these surfaces. Carry concrete about  $\frac{1}{2}$ " above underside of strip. About one hour after concrete is placed, remove wood strip. Using trowel, remove irregularities in edge formed by strip, and remove all laitance.
- L. Concrete finishing shall proceed as follows:
1. As soon as forms are removed, examine all exposed surfaces and rub or grind all fins, bulges or ridges in satisfactory method to provide smooth, uniform and continuous surface.
  2. Do not plaster or coat surfaces to be smoothed.
  3. Do not use aluminum finishing tools.
  4. Finished surfaces shall present finished, smooth, continuous hard surface.
  5. Tolerances of finished concrete shall be as shown in Section 03 10 00.
  6. Owner's Representative will inspect finished surface for voids, holes, honeycombing, rock pockets or similar depression defects. Damage shall be repaired as specified.
  7. Repair surface defects within 2 hours of form removal.

8. Surface defect repairs that cannot be made within 2 hours following form removal shall be delayed until after curing compound has been applied. In such case, area involved shall then be wet sandblasted to remove curing compound following which repairs shall be made as specified, and curing compound shall be reapplied over repaired area.

M. Repair defective work at Contractor's expense as follows:

<b>SURFACE DEFECTS</b>	
<b>DEFECT</b>	<b>REPAIR METHOD</b>
Tie Rod Cone Holes	Ream circular holes with suitable toothed reamers to leave surfaces of holes clean and rough. Do not ream rectangular holes or holes deeper than their least surface dimension. Repair holes in approved manner with dry-packed cement grout.
Minor Voids, Holes or Honeycombing	Cut back from true line at least 1/2" over entire area. Use chipping and cutting tools as needed. Do not feather edges. Remove 1/32" of surface film from hardened and cured portions by wet sandblast. Remove all laitance or soft material before bonding. Moisten exposed surface but do not wet it enough to overcome suction needed for bond. Mix for repair shall be 1 sack cement to 3 cubic feet sand with Atlas white Portland cement added as needed on interior walls to make patch match finish. Apply bonding agent if required. Apply repair mix.
<b>HOLES EXTENDING THROUGH CONCRETE</b>	
<b>DEFECT</b>	<b>REPAIR METHOD</b>
Small Holes less than 12" in least dimension	Fill hole with non-shrink grout. Where face of repaired surface is exposed to view, hold grout back 2" from finished surface. Patch remaining 2" as described above for "Minor Voids, Holes or Honeycombing." For water bearing structures, apply bentonite or other accepted waterstop material around perimeter of hole.
Large Holes greater than 12" in least dimension	Chip keyway into edge of opening. Repair keyed opening as described above for "Small Holes."
Large Holes greater than 24" in least dimension	Chip keyway into edge of opening If reinforcing is not present, dowel and epoxy reinforcing of size matching reinforcing in existing wall across opening in both directions. Repair keyed and reinforced opening as described above for "Small Holes."

- N. Perform all repairs using approved methods that do not disturb bond or cause sagging or horizontal fractures. Finished surfaces shall be cured using methods and duration similar to that for adjacent concrete.

O. Concrete finishing of unformed surfaces shall proceed as follows:

1. After proper and adequate vibration and tamping, bring unformed surfaces of slabs, floors, walls and curbs to uniform surface with suitable tools.
2. Screed concrete and then immediately treat with liquid evaporation retardant. Reuse retardant as needed after each operation to prevent drying shrinkage cracks.

3. Classes of unformed surfaces shall be as follows:

FINISH	LOCATION	DESCRIPTION
U1 (screeded finish)	Grade slabs and foundations to be covered with concrete or fill material	Sufficient leveling and screeding to produce even, uniform surface with surface irregularities not exceeding 3/8". No further special finish.
U4 (hairbroom finish)	Non water-bearing slabs Water bearing slabs with slopes >10%	After completing steel trowel finish U3, add light hairbroom finish with brooming perpendicular to drainage unless otherwise shown. Resulting surface shall be rough enough to provide nonskid finish.

P. Do not backfill against walls until concrete has obtained 100% of specified 28-day compressive strength.

Q. Concrete curing shall proceed as follows:

SURFACE	DESCRIPTION
Unstripped Forms	Method 1: Wet wood forms completely after concrete has been placed, and keep wet with water until forms are removed. For steel forms, keep exposed concrete surfaces continuously wet until forms are removed. If forms are removed within 14 days of placing concrete, continue curing as described for surfaces with forms removed
Concrete Surfaces not Described Elsewhere	Method 4: As soon as concrete hardens enough to prevent marring on unformed surfaces, and within 2 hours after form removal, spray surface with liquid curing compound in accordance with Manufacturer's application instructions. Cover no more than 200 square feet of surface per gallon with uniform film that seals thoroughly. Do not damage seal during curing. If seal is damaged or broken, apply additional curing compound over damaged portion. Where curing compound is accidentally applied to surfaces against which concrete is to be subsequently placed, remove curing compound by wet sandblasting just before placing new concrete. Where concrete is placed adjacent to panel coated with curing compound, apply curing compound to all previously coated panel areas within 6' of joint and apply to any other location where curing membrane is disturbed. Following curing, remove all visible traces of curing compound in such manner that surface finish is not damaged.
Surfaces with Forms Removed & Slabs not on Grade	Keep concrete continuously wet by applying water for at least 14 consecutive days beginning immediately after concrete reaches final set or after forms are removed. Before curing medium is applied, keep entire surface damp using nozzles that atomize flow so surface is not marred or washed. Use heavy curing mats secured in place with weights along all edges to continuously retain moisture during curing period. Use sprinklers or other means to maintain moist surface condition during and after normal working hours. At end of curing period, remove curing medium. Rewet any dry spots and apply curing compound in accordance with Method 4 above.

R. Excess curing water shall be disposed of in manner that avoids damage to Work.

S. Concrete finishing of formed surfaces shall proceed as follows:

1. Repair surface defects.
2. Immediately after stripping forms, inspect concrete surface. Repair all poor joints, voids, rock pockets and other defective areas.
3. Fill form tie holes as directed in Section 03 10 00.
4. Allow concrete to cure at least 14 days before applying architectural finishes.
5. All architectural finishes shall conform to accepted sample required herein in texture, color and quality. Sample for smooth concrete finish shall be 200 square foot panel

prepared as described below. Sample for sandblasted finish shall be 3-square foot sample.

### 3.3 Field Quality Control

- A. Field testing and inspection of formwork shall be per Section 03 10 00.
- B. CBC Chapter 17 special inspection shall only be required for Class AA “premium” concrete, Class A “structural” concrete and concrete having specified compressive strength  $f_c$  exceeding 2500 psi.
- C. Maintain placing record on-site showing time and date of placement of all concrete having specified compressive strength  $f_c$  exceeding 2500 psi as required in CBC Section 1704.4.2.
- D. Special inspection and field testing of Class AA and Class A concrete required by Chapter 17 of CBC (Table 1704.4) shall be completed by ICBO-certified special inspector selected by Owner and shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Class AA Concrete, Class A Concrete and Concrete having $f_c$ exceeding 2500 psi	Design Mix Verification	ACI 318, Ch 4 & 5.2-5.4, CBC 1904.25.25, 1913.2, & 1913.3	Periodic per CBC Table 1704.4	Owner	Contractor to reimburse Owner for costs of first deputy inspector if re-inspection is required
	Slump	ACI 318 Sec. 5.6& 5.8, ASTM C31, ASTM C172 & CBC 1913.10 Slump per ASTM C143	Continuous per CBC Table 1704.4 taken at at ¼ point and ¾ point of batch and at time fresh concrete is sampled to fabricate cylinders for strength tests		
	Air Content	ACI 318 Sec. 5.6& 5.8, ASTM C31, ASTM C172 & CBC 1913.10 Air content per ASTM C173 or C231			
	Temperature	ACI 318 Sec. 5.6& 5.8, ASTM C31, ASTM C172 & CBC 1913.10			
	Proper Placement of Concrete	ACI 318 Sec. 5.9-5.10, CBC 1913.6, 1913.7,& 1913.8	Continuous per CBC Table 1704.4		
	Verification of in-situ Concrete Strength Prior to Removal of Shores and Forms	ACI 318, Sec. 6.2 See below for concrete strength test requirements	Periodic per CBC Table 1704.4		
	Curing Temperature and Techniques	ACI 318, Sec. 5.11-5.13, & CBC 1913.9	Periodic per CBC Table 1704.4		

E. Additional field testing of concrete shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY	
Concrete Compressive Strength $f_c$	Trial Batch	1 <sup>st</sup> 3 cylinder tests at 7 days 2 <sup>nd</sup> 3 cylinder tests at 28 days average compressive strength at 28 days shall exceed 125% of specified compressive strength $f_c$	3 drying shrinkage samples and 6 compression test cylinders for each class or mix of concrete used	Contractor	Contractor	
	Cylinder Sampling	ASTM C172	Sample each 100 cy concrete and each separate mix design placed on any day	Contractor	Contractor	
	Cylinder Testing of Compressive Strength $f_c$	Field Cylinders per ASTM C31 Section 9.2	Testing per ASTM C39 Average of two cylinders  Evaluation per ACI 214 & ACI 318 Chapter 5 "Concrete Quality"  Standard deviation of test results shall not exceed 640 psi.	Make six 6" diameter x 12" high cylinders per 100 cy concrete and separate mix design placed on any day  1 <sup>st</sup> test at 7 days 2 <sup>nd</sup> test at 28 days  Save remaining cylinders to verify test results as directed.	Owner	Contractor
		Laboratory Cylinders per ASTM C192				
		Test Core Testing of Compressive Strength $f_c$				
Concrete	Flexural Strength	ASTM C78	As directed	Contractor	Contractor	
	Unit Weight Yield	ASTM C138	As directed	Contractor	Contractor	
	Drying Shrinkage	California Test 530	As directed	Contractor	Contractor	
Mortar	Setting of Mortar	ASTM C191 or C266	As directed	Contractor	Contractor	
	Mortar Cube Test	California Test 515	As directed	Contractor	Contractor	
Concrete Finishing	Dimensional Tolerance	ACI 117 and Section 03 10 00	Inspection at Owner's discretion	Owner	Owner	
	Surface Defects	Holes larger than 1/2" diameter or greater than 1/4" deep are defined as surface defects. More stringent requirements exist for some specified finishes.	As directed	Owner	Owner	
	Cracking in Flatwork and Non-Water-bearing Structures	No cracks wide enough to stick a dime in except at expansion or contraction joints.	As directed	Owner	Owner	
Concrete	11-month Warranty Inspection	Demonstrate compliance to Contract Documents and Manufacturer's printed literature	1 test	Owner	Contractor	

- F. Concrete samples for batch testing shall be furnished in steel drums at no cost to Owner.
- G. In lieu of trial batch testing, Contractor may submit previously designed, tested and successfully used concrete mixes using materials similar to those intended for this project, together with at least 3 certified test reports of 28-day strength of proposed concrete mix.
- H. Laboratory used for field testing shall meet or exceed requirements of ASTM C1077.
- I. Contractor shall provide concrete for testing at no charge to Owner, and shall assist Owner's Representative and laboratory personnel in obtaining samples, and disposal and cleanup of excess material.
- J. Statistical analysis of compression test results will be performed according to ACI 214. Standard deviation of test results shall not exceed 640 psi when ordered at equivalent water content as estimated by slump. When said standard deviation exceeds 640 psi, increase average strength for which mix is designed as needed to satisfy statistical requirement that
  - 1. Probability of any test being more than 500 psi below specified strength < 1%.
  - 2. Probability of average of any 3 consecutive tests being below specified strength <1%.Required average strength shall be calculated using Criterion Number 3 of ACI 214 using actual standard deviation.
- K. All concrete which fails to meet ACI requirements and these Specifications is subject to removal and replacement at no increase in cost to Owner.
- L. In lieu of removing and replacing slightly deficient concrete having 85% or more of specified strength, Owner may, at their sole discretion, elect to reduce payment due to Contractor for substandard concrete as described in Caltrans Standard Specification Section 90-9 "Compressive Strength."

### **3.4 Cleaning**

- A. Wash out chutes, shovels, finishing trowels and all other equipment that has been in contact with wet concrete at a designated concrete washout area.
- B. Do not discharge or deposit wet concrete, debris, or other concrete washout effluent on bare ground, on area tributary to storm drain or natural channel or in any storm drain facility.
- C. Dispose of concrete and concrete waste in accordance with all pollution prevention laws and regulations.

### **3.5 Protection**

- A. Protect all concrete against injury until final acceptance by Owner.
- B. Fresh concrete shall be protected from damage due to impact, overstress, vandalism and weather, including precipitation or extremes in temperature or humidity until final acceptance.



- C. Any new concrete not complying with these specifications shall be repaired or removed and replaced prior to final acceptance except where Owner agrees to reduce payment as described above.

**END OF SECTION**

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**SECTION 07 92 00  
JOINT SEALANTS**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Materials, testing, and installation of joint sealants.

**1.2 System Description**

- A. Where required throughout Work to provide positive barrier against passage of moisture and air, furnish and install complete operating joint sealant system in conformance with Manufacturer's installation requirements and compliance with applicable building, fire, mechanical, and plumbing codes and standards.
- B. Caulking, if noted shall be synonymous with sealant.

**1.3 References**

- A. ASTM C834 Latex Sealants
- B. ASTM C920 Elastomeric Joint Sealants
- C. ASTM C990
- D. ASTM D994 Preformed Expansion Joint Filler for Concrete (Bituminous Type)
- E. ASTM D1751 Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
- F. ASTM D1752 Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction
- G. California Green Building Standards Code (CALGreen Code)
- H. Federal Specification SS-S-210 Sealing Compound, Preformed Plastic for Expansion Joints and Pipe Joints
- I. Federal Specification TT-S-01543A
- J. Federal Specification TT-S-00230-C
- K. SSPWC Standard Specifications for Public Works Construction (Greenbook) Section 201-3 "Expansion Joint Filler and Joint Sealants"

**1.4 Submittals**

- A. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Catalog Data	Required per catalog data requirements.
Installation Instructions	Required per installation or application instruction requirements. Include Manufacturer's recommendations for primer, joint cleaner and bond breaker.
Certificate of Compliance	Submit sealant system certification per certificate of compliance requirements.
Material and Color Samples	Required.
Color Charts	Submit Manufacturer's standard color charts to allow owner to select color to match adjacent work.
Warranty	Furnish one-year warranty from date of final acceptance

**1.5 Delivery, Storage and Handling**

- A. Manufacturer's instruction and warranty requirements for delivery, storage and handling of joint sealants shall be strictly followed.

- B. Do not retain any material at job site which has exceeded shelf life recommended by Manufacturer.
- C. Do not retain any mixed sealant material at job site which has exceeded pot life recommended by Manufacturer.

**1.6 Unit Prices**

- A. Payment for Work in this section shall be included as part unit-price bid amount for appurtenant bid items #25 through #28.

**PART 2 - PRODUCTS**

**2.1 Acceptable Manufacturers**

- A. Acceptable sealant Manufacturers include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Sealant Type A Two-Part Polyurethane Self Leveling for Horizontal Surfaces	AEP Span	
	Atas International. Inc. Monarch	
	Pecora Corporation Traffic Grade Polyurethane	Harleysville, PA
	Roadware Incorporated "Flexible Cement II"	South Saint Paul, MN
	Accepted equal	
Sealant Type B Non Sag for Vertical Surfaces	AEP Span	
	Atas International. Inc. Monarch	
	Chem Link "Nova Link"	Schoolcraft, MI
	Accepted equal	
Sealant Type C Silicone	AEP Span	
	Atas International. Inc. Monarch	
	Pecora Corporation 800 Series	Harleysville, PA
	Accepted equal	
Sealant Type D Acrylic Latex	AEP Span	
	Atas International. Inc. Monarch	
	Pecora Corporation 900 Series	Harleysville, PA
	Accepted equal	
Sealant Type E Acoustical Sealant	Pecora Corporation AIS 919	Harleysville, PA
	Accepted equal	
Sealant Type F Polysulfide for Prolonged Submersion	Pecora Corporation Synthacalk GC2+	Harleysville, PA
	Accepted equal	
Mastic Premolded Plastic Gasket	Conseal International, Inc.	Tipp City, OH
	RAM-NEK Division Henry Company	Houston, TX
	Accepted equal	

**2.2 Materials**

- A. Refer to SSPWC (latest version) for basic requirements for products and materials.
- B. Adhesives, sealants and caulks used on Work shall comply with VOC limits set forth in Section 5.504.4.1 of CALGreen Code.

- C. Joint sealants shall be constructed of the following materials:

ITEM	MATERIAL	SPECIFICATION
Sealant Type A Two-Part Polyurethane Self Leveling for Horizontal Surfaces	Pour Grade Urethane	ASTM C920 Grade P Class 25
Primer		Nonstaining type recommended by sealant Manufacturer
Joint Cleaner		Noncorrosive and nonstaining type recommended by sealant Manufacturer, compatible with joint compounds
Bond Breaker	Pressure Sensitive Tape	Recommended by sealant Manufacturer to suit application.
Rope Yarn	Rope Fiber or Cotton Wicking	Use raveled strands.

- D. The following product design criteria, options and accessories are required:

ITEM	DESCRIPTION
Design Criteria	No leakage in plant quality control test at 10 psi for 1 hour minimum Temperature range 30°F to 120°F
Color	Owner will select from standard colors available from Manufacturer

- E. Do not use non-elastic putty-type compounds.
- F. Sealant compounds shall be of proper consistency to be readily worked and not be affected by vibration or by long exposure to outside climate and temperature.
- G. Sealant compounds shall form a thin, tough, elastic film on surface, but remain permanently plastic underneath.
- H. Sealant compounds shall contain no acid nor ingredients which will stain stone, corrode metal or have an injurious effect on painting.
- I. Sealant compounds shall be colored to match adjacent work.
- J. Special sealants called for elsewhere shall be provided and installed as directed by Manufacturer.

## PART 3 - EXECUTION

### 3.1 Preparation

- A. Make field measurements needed to install joint sealants before submitting catalog data or ordering. Make minor changes in dimensions and alignments as needed to avoid utilities or structural conflicts.
- B. Verify surfaces are ready to receive work and joint measurements and surface conditions are as recommended by sealant Manufacturer.
- C. Remove loose materials and foreign matter which may affect adhesion of sealant.
- D. Joints and spaces to be sealed shall be clean, free from dust, and dry.
- E. Joints more than  $\frac{3}{4}$ " deep and joints where suitable backstop has not been provided shall be packed with rope yarn to within  $\frac{1}{2}$ " of surface before applying and sealing.

### 3.2 Application

- A. Refer to SSPWC (latest version) for basic execution and installation requirements.
- B. Furnish and apply joint sealants at locations shown on Plans and Submittals.
- C. The following installation standards shall be followed:
  - 1. Manufacturer's installation and warranty requirements
  - 2. Applicable OSHA and Cal OSHA regulations
  - 3. Applicable building, fire, plumbing, mechanical and electrical code requirements
- D. Refer variances between above documents and Contract Documents to Owner's Representative.
- E. Install joint sealants to tolerances and within temperature ranges recommended by Manufacturer.
- F. Tool joints concave unless otherwise shown.
- G. Joints in stone and precast work shall be slightly convex.
- H. Seal joints before final coat of paint is applied to adjacent work.
- I. Apply compound with a pressure gun having proper size nozzle or with knife as required.
- J. Use sufficient pressure to fill all voids and joints solid. Superficial painting of joints with a skin head will not be accepted.
- K. Remove excessive sealant and leave surfaces neat and clean. Upon completion, sealant shall have a smooth, even finish.
- L. All sealed joints shall be watertight.

### 3.3 Field Quality Control

- A. Field testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Joint Sealants	Installation & Leakage	Visual inspection of finished installation and water test at Owner's discretion	1 inspection	Owner	Owner
	Field Performance	Demonstrate compliance to Contract Documents and Manufacturer's printed literature	1 test	Contractor	Contractor
	11-month Warranty Inspection	Demonstrate compliance to Contract Documents and Manufacturer's printed literature	1 test	Owner	Contractor

**END OF SECTION**

**SECTION 31 05 50  
PROTECTING EXISTING UTILITIES**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Materials and procedures to protect existing underground utilities.
- B. Materials and procedures to connect to existing underground utilities.

**1.2 References**

- A. ASCE 38 Standard Guidelines for the Collection and Depiction of Existing Subsurface Data
- B. ASTM C143 Slump of Hydraulic Cement Concrete
- C. ASTM C425 Compression Joints for Vitrified Clay Pipe and Fittings
- D. ASTM C700 Vitrified Clay Pipe, Extra Strength, Standard Strength and Perforated
- E. California Administrative Code Title 22 Section 64572
- F. California Government Code Section 4215-4216

**1.3 Submittals**

- A. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Shop Drawings for Supporting Pipe and Utilities Crossing Trenches	Required when utilities to be supported exceed 16" diameter or any transverse dimension.
	Required when requested in writing by Owner's Representative
Engineering Calculations	Submit for pipe supports for existing utilities greater than 24" in any dimension. If concrete beams are used as supports, calculations shall take into account concrete strength based on days elapsing between placing concrete and trenching beneath concrete beams. Do not use 28-day strength unless concrete will be at least 28 days old when beam is placed in service.

**1.4 Project Conditions**

- A. Design Engineer has attempted to show approximate location of buried utilities on Plans pursuant to Utility Quality Level D (QLD) as defined in ASCE 38. These approximate locations are based on:
  - 1. Record maps requested and received during design from utilities identified through an inquiry to Underground Service Alert and utilities.
  - 2. Comments received from Utilities after their review of preliminary plans showing record drawing information.
  - 3. Field reconnaissance and plotting of approximate locations of readily visible surface features including manhole covers, valve covers, utility boxes, marking posts, pavement repair strips, and culvert end sections which might indicate presence of buried utilities.
  - 4. Design Engineer's professional judgment in correlating record map information to observed surface features.

- B. Where potholing has been done at spot locations to measure utility depths at those locations, pothole location and elevation is expressly noted on Plans, and shall be construed as accurate to within  $\pm 0.5'$  at point of potholing.
- C. Utility locations on Plans are based solely on the above. Plotted locations may not accurately reflect subsurface conditions.
- D. Prior to excavation, and prior to submittal of cut sheets for pre-engineered pipe, Contractor shall pothole and determine precise locations of all utilities which are:
  - 1. Shown on plans
  - 2. Identified by Underground Service Alert
  - 3. Evident from readily visible surface features including manhole covers, valve covers, utility boxes, marking posts, pavement repair strips, and culvert end sections which might indicate presence of buried utilities.
  - 4. Identified by Contractor by walking alignment using a reliable electronic pipe finder.
- E. Power trench excavating equipment may only be used when and where all the following conditions exist.
  - 1. Contractor has notified Underground Service Alert and all known Utility Owners at least 2 working days before excavating.
  - 2. Contractor has thoroughly searched entire excavation route using a reliable electronic pipe finder and has pre-marked horizontal locations of conflicts.
  - 3. Utilities shown on Plans have been potholed 1,300' in advance of excavation as needed to verify locations.
  - 4. No pipelines carrying gas, petroleum, explosives, hazardous materials, or other regulated contaminants are believed to be within 5' of area to be excavated.
  - 5. Owner's Representative is continuously present during excavation.
- F. Pursuant to 49 CFR Part 192, Contractor shall coordinate with operators of high-pressure gas lines who are required by law to have a representative on-site at all times during excavation in the vicinity of their pipelines.
- G. Power equipment specifically designed and manufactured for potholing existing utilities is exempt from the above restrictions.
- H. Hand excavation shall be used
  - 1. In areas where buried gas, petroleum, explosives or hazardous material piping is known to be present
  - 2. In areas where electrical, fiber optic or communications conduit is known to be present.
  - 3. In first 5' below existing grade where drilling or auguring equipment is used.
- I. Pursuant to Section 4215 of California Government Code,



1. Owner will be responsible *“for timely removal, relocation, or protection of existing main or trunk line utility facilities located on the site”* if such utilities are not identified by Owner in Contract Documents.
  2. Owner will compensate Contractor for documented *“costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and specifications with reasonable accuracy, and for equipment on the project necessarily idled during such work.”*
  3. *“Contractor shall not be assessed liquidated damages for delay in completion of the project when such delay was caused by the failure of the public agency or the owner of the utility to provide for removal or relocation of such utility facilities.”*
- J. Pursuant to Section 4216 of California Government Code, Owner’s liability shall be limited to reimbursement of costs due to utility facilities either not shown on Contract Documents, or shown on Contract Documents at locations more than 2’ vertically or 5’ horizontally in error from field locations, except where location of said utilities are evident from surface features or staked correctly by Underground Service Alert.
- K. Owner will not indicate presence of existing service laterals or appurtenances when presence of utilities on Project site can be inferred from presence of other visible facilities, such as buildings, meters and junction boxes, on or adjacent to Work site. Owner will identify main or trunk lines in Contract Documents. Contractor shall make their own investigations, including exploratory investigations, to determine or verify locations and type of existing service laterals or appurtenances when their presence can be inferred from presence of other visible facilities.
- L. Immediately notify Owner and Utility in writing if Contractor discovers:
1. Utility facilities not shown on Plans
  2. Utility facilities in field locations different than shown on plans.
- M. Pursuant to California Administrative Code Title 22 Section 64572 and intent of Plans, separations shall be maintained between new and existing utilities as follows:

<b>REQUIRED WALL-TO-WALL SEPARATIONS FOR PARALLEL PIPELINES</b>			
<b>NEW UTILITY</b>	<b>SEPARATION FROM EXISTING</b>	<b>HORIZONTAL SEPARATION</b>	<b>VERTICAL SEPARATION (not required if horizontal separation &gt; 10’)</b>
Sewers or Nonpotable Pipelines	Potable or Raw Water Mains at pressures < 5 psi	≥ 25’ horizontal	New soffit 12” below pipe invert
	Potable or Raw Water Mains	≥ 10’ horizontal	New soffit 12” below pipe invert
	Recycled Water Mains (Secondary Treatment + Disinfection)	≥ 10’ horizontal	New soffit 12” below pipe invert
	Recycled Water Mains (Tertiary Treatment + Disinfection)	≥ 4’ horizontal	New soffit 12” below pipe invert
	Storm Drains	≥ 4’ horizontal	New soffit 12” below pipe invert
<b>REQUIRED WALL-TO-WALL SEPARATIONS FOR WATER MAINS CROSSING BELOW PIPES</b>			
Sewers or Nonpotable Pipelines	Potable Water Mains	No joints on 8’ either side	≥ 12” vertical separation
<b>REQUIRED WALL-TO-WALL SEPARATIONS FOR WATER MAINS CROSSING ABOVE PIPES</b>			
Sewers or Nonpotable Pipelines	Potable Water Mains	No joints on 8’ either side	≥ 12” vertical separation

- N. Lesser separations may be used under California Administrative Code Title 22 Section 64551(c) when Separations required under Section 64572 are not feasible, when inverts of potable water mains are above soffits of parallel sewers and nonpotable pipelines, and when:
1. Sewers or storm drains are not under pressure or used as force mains, and are constructed of :
    - a. ASTM F894 spirally-reinforced HDPE pipe with gasketed joints,
    - b. ASTM C700 VCP sewer with compression joints
    - c. ASTM C428 ACP sewer pipe Class 4000 Type II with rubber gasket joints
    - d. ASTM D3064 PVC sewer pipe with rubber gasket joints
    - e. AWWA C151 DIP pipe with compression joints
    - f. AWWA C302 RCP pipe with compression joints or
    - g. AWWA C906 fusion-bonded HDPE pipe with fusion-welded joints,
- O. Costs, and Work to be done by Contractor in locating, removing, relocating, protecting or temporarily maintaining such utility facilities shall be covered by written change order conforming to provisions herein pertaining to changes in Work. Owner may make changes in alignment and grade of Work to obviate need to remove, relocate, protect or temporarily maintain utility facilities or to reduce costs of Work involved in removing, relocating, protecting or temporarily maintaining such utility facilities. Changes in alignment and grade will be ordered in accordance with provisions pertaining to changes in Work.
- P. Damage to underground utilities, pipelines or other facilities shown on Plans or identified by field staking or markings shall be immediately brought to attention of Owner's Representative and affected Utility, and repaired at Contractor's expense. Exact determination of location of these utilities, pipelines or other facilities shall be Contractor's responsibility. Contractor shall be solely and directly responsible for damage, injury, expense, loss, inconvenience, delay, suits, actions or damage that may result from Contractor's failure to verify or locate utilities whose existence is indicated. Costs incurred for protection of these lines or costs incurred due to presence of lines, whether or not they lie within trench prism, shall be borne in full by Contractor.
- Q. When it is necessary to remove, relocate, protect or temporarily maintain a utility other than
1. existing mains or trunk-line facilities not originally shown on Plans with sufficient accuracy to allow Work to proceed according to Contract Documents or;
  2. existing service laterals or appurtenances whose presence cannot be inferred from presence of other visible facilities, such as buildings, meters and junction boxes, on or adjacent to Work site;

Contractor shall bear all expenses incidental to Work on utility or damage thereto. Work on utility shall be done in manner satisfactory to Utility Owner. Utility Owner will have option of doing such Work with their own forces, or permitting Work to be done by Contractor.

- R. No representations are made that obligations to remove, relocate, protect or temporarily maintain a utility and to pay cost thereof is not required to be borne by utility. Contractor shall investigate, to find out whether or not said cost is required to be borne by Utility Owner.
- S. Liquidated damages will not be assessed for damages in delay in completion of Work, when such delay was caused by failure of Owner, Owner's Representative, Design Engineer and Utility Owner to provide for removal or relocation of utility facilities. Right is reserved to governmental agencies and to Utility Owners to enter at any time upon any

street, alley, right of way or easement for purpose of making changes in their property made necessary by Work and to maintain and make repairs to their property.

**1.5 Unit Prices**

- A. Payment for locating, potholing, exposing, and protecting existing utilities shall be included as part unit-price bid amount for appurtenant bid items #5 , #8 through #13 and #16 through #23.
- B. Payment for abandoning or removing existing utilities shall be included as part unit-price bid amount for appurtenant bid items #5, #8 through #14, and #16 through #23.

**PART 2 - PRODUCTS**

**2.1 Replacement Materials**

- A. Unless otherwise shown or specifically authorized in writing by Owner’s Representative, reconstruct damaged utilities with new materials of same size, type and quality as that removed.
- B. Vitrified clay pipe sewer crossings 8” in diameter and under shall be constructed of the following materials:

ITEM	MATERIAL	SPECIFICATION
Replacement of Vitrified Clay Sewer Pipe 8” Diameter or Less	Plain-End VCP	ASTM C700 (At least two lengths of sewer pipe shall be used to cross trench section.)
Replacement of Vitrified Clay Sewer Pipe Couplings 8” Diameter or Less	Compression Coupling	ASTM C425; Band seal couplings or accepted equal

**PART 3 – EXECUTION**

**3.1 Preparation**

- A. Refer to SSPWC (latest version) for basic execution and utility protection requirements.
- B. Section 4216 of California Government Code states Contractors *“planning to conduct any excavation shall contact the appropriate regional notification center at least two working days but not more than 14 calendar days, prior to commencing excavation.”*
- C. In Southern California, the appropriate regional notification center is Underground Service Alert of Southern California (DigAlert) (1-800-422-4133) or 811.
- D. Contractor shall be responsible for damage done to public or private property shown on Plans or marked or staked in field.
- E. Construction Plans will be provided to Utilities by Owner.
- F. Construction schedule shall be provided to Utilities by Contractor. Coordinate construction schedule with Utility Owner's requirements.
- G. Notify Utility Owner 2 working days in advance of utility crossing construction. Coordinate construction schedule with utility service requirements.

- H. Expose all utilities 1,300' ahead of pipe and conduit laying operations to allow for adjustment in alignment or grade line, to verify pipe and utility location and depths, types materials, conditions and sizes for ordering proper transition and/or tie-in fittings, and so Owner's Representative may verify that no buried utilities interfere with proposed construction. Identify true location and depth, type, material, condition and size of utilities and service connections. Where potholing or exposure is not done, repair or replacement of damaged utilities and necessary horizontal and vertical realignments shall be paid for entirely by Contractor.
- I. Electrical utilities may maintain energized underground electrical power lines in immediate vicinity of Work. These power lines represent an extreme hazard from electrical shock to construction personnel or equipment coming in contact with them. State law requires parties planning excavations in public right of way to contact Utilities for locations of their underground facilities. Contractors, their employees, and other personnel working near underground power lines must be warned to take adequate protective measures. (See: OSHA Std. 1926-651(A)). Notify electrical Utility to arrange, if possible, to have these lines de-energized when Work reaches their immediate vicinity. Cost of such temporary arrangements shall be borne by Contractor.
- J. Electrical utility companies may maintain energized aerial electrical power lines in immediate vicinity of Work. Do not consider these lines to be insulated. Construction personnel working near these lines are exposed to an extreme hazard from electrical shock. Contractors, their employees and construction personnel working on this project must be warned of the danger and instructed to take adequate protective measures, including maintaining a minimum of 10' clearance between lines and construction equipment and personnel. (See OSHA Std. 1926.550(A)15). As an additional safety precaution, call electrical utility company to arrange, if possible, to have these lines de-energized or relocated when Work reaches their immediate vicinity. Cost of such temporary arrangements shall be borne by Contractor.
- K. It shall not be the responsibility of either Owner or their Representative to verify need for electrical Utility shutdowns, nor to verify shutdowns have taken place.

### **3.2 Protection**

- A. Protect existing active services and utilities in place against damage from construction.
- B. Maintain existing services and utilities in service. Do not shut down active services or utilities except where previous written authorization has been obtained from Owner's Representative and Utility.
- C. Use pipe and duct supports as needed to protect utilities.
- D. Notify Utilities in writing at least 3 working days before authorized shutdown.
- E. Unauthorized shutdowns shall only be made where necessary, as an emergency measure, to protect property or human life until proper authorization can be obtained.

### **3.3 Removal and Reconstruction**

- A. Utilities relocated or rebuilt for Contractor's convenience, shall be relocated or rebuilt at Contractor's expense. Repair, replacement or relocation of buried utilities shall be completed at Contractor's expense by either Utility's forces, or by a contractor accepted by Utility in writing and properly licensed to perform Work.
- B. Utility relocation or reconstruction shall conform to applicable Standard Details and Specifications. Provide temporary service for disconnected Utility.

- C. Replace damaged or removed utilities in kind, except as otherwise shown or authorized by Owner's Representative. Reconstruct utilities with new material of same size, type and quality as that removed.

**3.4 Backfill and Compaction**

- A. Backfill and compact under and around utilities so no voids are left.
- B. Before replacing a utility, backfill trench and compact to elevation 1 foot above top of ends of utility. Excavate cross trench of proper width for utility.
- C. Sand-cement slurry may be used as backfill to ease compaction. Sand-cement slurry shall consist of one sack (94 pounds) Portland cement per cubic yard of slurry. Add sufficient moisture for workability without exceeding 6" slump. Submit specific methods and procedures to Owner's Representative prior to construction.

**3.5 Abandoned Utility Lines**

- A. Remove and dispose of abandoned utilities within trench per SSPWC Section 5-3.

**3.6 Servicing Electrical Utilities**

- A. Electrical utilities may maintain energized underground electrical power lines in immediate vicinity of Work. These power lines represent an extreme hazard from electrical shock to construction personnel or equipment coming in contact with them. State law requires parties planning excavations in public right of way to contact Utilities for locations of their underground facilities. Contractors, their employees, and other personnel working near underground power lines must be warned to take adequate protective measures. (See: OSHA Std. 1926-651(A)). Notify electrical Utility to arrange, if possible, to have these lines de-energized when Work reaches their immediate vicinity. Cost of such temporary arrangements shall be borne by contractor.
- B. It shall not be the responsibility of either DISTRICT or their Representative to verify need for electrical Utility shutdowns, nor to verify shutdowns have taken place.

**3.7 Field Quality Control**

- A. Field testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Cement-Sand Slurry Backfill	Slump (6" Maximum)	ASTM C143	1 each batch	Owner	Contractor

**END OF SECTION**

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**SECTION 33 01 30  
SEWAGE BYPASSING**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Temporary bypassing of wastewater flows around cleaning, video inspection, rehabilitation and construction Work.
- B. Minimum flow depths in sewers during bypassing shall be:

OPERATION	MINIMUM (UPSTREAM) DEPTH
Heavy-Duty Mechanical Cleaning	2 inches
Video Inspection – Post Cleaning	0 inches (dry)
Liner Installation	0 inches (dry)
Manhole Rehabilitation, Sewer Construction, Lift Station Rehabilitation	0 inches (dry)
Video Inspection – Post Lining	0 inches (dry)

- C. Equipment furnished shall be capable of bypassing sewage flows at any flow rates above.

**1.2 Related Work**

- A. Section 01 01 00: Summary of Work

**1.3 System Description**

- A. Provide labor, materials and supervision to temporarily bypass flow around Work.
- B. Notify Owner's Representative before bypassing sewage flow.
- C. Notify customers whose service will be disrupted in writing before bypassing sewer service.
- D. Entire bypassing system shall be in place and tested before bypassing any sewage.
- E. Notify Owner's Representative immediately in event of sewage spill.

**1.4 Quality Assurance**

- A. Use adequate numbers of skilled workmen trained and experienced in necessary trades and crafts and completely familiar with specified requirements and methods for proper performance of Work of this section.
- B. Provide temporary pumps, conduits, and other equipment to bypass sewage flow. Furnish necessary labor and supervision to set up, maintain and operate pumping and bypass system.
- C. Engine-driven pumps may be used only for bypassing 8-inch and larger mains, and shall be equipped with mufflers or enclosed to keep noise level below 60db or 10db above ambient noise levels when measured at property lines closest to noise source.
- D. Sewer lateral bypass pumps shall be electric-driven and comply with same noise requirements as engine-driven pumps. Pumps and bypass lines shall be of adequate capacity and size to handle flows.

- E. Maintain on-site sufficient equipment and materials to ensure continuous and successful operation of bypass and dewatering systems. Standby pumps shall be fueled and operational at all times. Maintain on site sufficient valves, tees, elbows, connections, tools, sewer plugs, piping, and other parts or system hardware to ensure immediate repair or modification of any part of system.
- F. Design all piping, joints and accessories to withstand at least twice maximum system pressure, or 50 psi, whichever is greater.
- G. Where flows are bypassed, all bypass flow shall be discharged as accepted by Owner's Representative. Do not discharge to ground surface, receiving waters, storm drains, or locations which may result in groundwater contamination or potential health hazards.
- H. Do not shut down bypassing system between shifts, on holidays or weekends, or during work stoppages without written permission from Owner's Representative. Notify all parties whose service laterals will be out of service, and advise against water usage until main line is back in service. Do not remove bypass without informing Owner's Representative.

**1.5 References**

- A. California Building Code (CBC)
- B. California Electrical Code (CEC)
- C. California Fire Code (CFC)
- D. California Plumbing Code (CPC)

**1.6 Submittals**

- A. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Shop Drawings	Required per pipeline equipment shop drawing requirements.
	Show location of temporary sewer plugs diversion points and bypass discharge lines.
	Show expected high water level behind plugs and diversions.
	Show capacities of pumps, prime movers and standby equipment.
	Show standby power source.
	Show materials proposed for temporary surfacing over bypass pipes.
	Show materials proposed for permanent surface replacement over bypass pipe trenches.
	Show methods for security and protection of bypass system.
Description of Proposed Equipment	Show suction and discharge pipe diameters, materials and bury depths
	Show size and model of pumps including pump curve, horsepower, speed, voltage and phase or fuel type and fuel consumption as applicable.
	Show make, model, horsepower, kW and kVA ratings, speed, voltage, phase, fuel type and fuel consumption of standby generator if used.
	Show standby equipment provided on-site in case of emergency.
Staffing Plan and Schedule	Provide staffing plan for maintaining equipment for 24-hour continuous reliable operation including weekends and holidays.
	Show anticipated times of flow interruption and/or flow diversion
Traffic Control Plan	Required
Noise Control Plan	Required. Include noise rating for all equipment.
Spill Contingency Plan	Detail precautions to be implemented to prevent sewage spills, including specific responses and control measures to follow during overflow resulting from breakage or blockage and maintenance and inspection schedules to detect potential problems and mitigate potential release resulting from overflows, bypass pipe ruptures, pipe ruptures, blockages and backups.
Engineering Calculations	Provide design calculations, including system head curve analysis showing adequacy of system and selected equipment.



SUBMITTAL	DESCRIPTION
Warranty	If water levels are raised more than 18 inches above sewer soffit at any point in upstream sewer, provide statement accepting full responsibility and liability for damage to upstream properties due to backflow during bypassing.

**1.7 Unit Prices**

- A. Payment for Work in this section shall be included as part unit-price bid amount for bid item #3.

**PART 2 – PRODUCTS (Not applicable)**

**PART 3 - EXECUTION**

**3.1 Preparation**

- A. Make field measurements needed to install sewage bypass equipment before submitting shop drawings or ordering. Make minor changes in dimensions and alignments as needed to avoid utilities or structural conflicts.
- B. Examine areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of Work.
- C. Bypass pumps shall be self-priming, designed, for raw sewage applications, resistant to ragging and capable of passing a minimum 3-inch solid sphere. Pumping system shall be equipped with sound attenuation to limit noise to meet local noise ordinances Back-up pumps providing 100% redundancy shall be on-site and connected at all times. In multi-pump applications, back-up pump shall be equal in capacity under same pumping conditions as largest duty pump. Provide pumps capable of pumping over full range of flows for each set-up.
- D. Temporary piping may be placed above ground only if it will be in service no more than one calendar day or is within areas protected by approved traffic control plans. Place all other temporary piping in recessed trench. At all street crossings, temporary resurfacing of recessed trenches shall be flush with existing grade. When temporary pipeline crosses a wheelchair ramp or sidewalk, install pipeline within recessed trench or provide asphalt mound ramped at a slope not greater than 1:12.
- E. Fully test bypass system (all equipment) prior to commencing bypass operation including:
  - 1. Pressure testing piping at test pressure specified above with potable water prior to introducing sewage to line.
  - 2. Inspecting piping for leaks and repair or replace leaking sections and joints.
  - 3. Testing pumping system, including back-up pumps.
- F. All material and equipment identified in spill contingency plan, including control measures in event of spill shall be on-site prior to commencing bypass operation.

### 3.2 Bypass Pumping Procedures

- A. The following installation standards shall be followed:
  - 1. Applicable OSHA and Cal OSHA regulations
  - 2. Applicable Regional Water Quality Control Standards.
  - 3. Other applicable building, fire, and plumbing code requirements.
- B. Refer variances between above documents and Contract Documents to Owner's Representative.
- C. Bypass sewage as follows:
  - 1. Where appropriate, keep rehabilitated Work free from water during rehabilitation. Disposal of water shall not damage property nor create a public nuisance. Maintain pumping equipment and machinery in good working condition on hand for emergencies. Have workmen available for operation of said equipment.
  - 2. During bypass pumping, sewage shall not be leaked, dumped or spilled onto any area outside sewer system. When bypass pumping operations are complete, drain all piping into sanitary sewer prior to disassembly. In the event sewage accidentally drains into storm drainage system or street, immediately stop overflow, notify Owner and Owner's Representative, and take necessary action to clean up and disinfect spillage to Owner's satisfaction. If sewage is spilled onto public or private property, wash down, clean up, and disinfect spillage to satisfaction of Owner, property owner, Owner's Representative, and applicable Regional Water Quality Control Boards.
  - 3. Bypass system shall only be operated when weather forecasts indicate no rain is predicted for at least 5 days. Immediately remove all pipes and equipment within manholes when rain is predicted within 24 hours.
  - 4. Take all necessary precautions, including constant monitoring of bypass pumping to prevent sewage spills due to back-up and/or overflow resulting from breakage or blockage of bypass system. Provide experienced personnel knowledgeable in bypass equipment operation to monitor each bypass when installed and operating. At no time shall bypass system be left unattended during operation by designated personnel. Contractor shall be liable for all cleanup, damages, and resultant fines in event of a spill.
  - 5. Protect pumps and piping from damage, vandalism, and/or theft to maximum extent possible and as shown on Plans.
  - 6. After Work is completed, remove temporary bypass system. Return surrounding area, including all hardscape and landscape to pre-construction condition.
  - 7. Contractor shall be responsible for all labor, materials, equipment, and incidentals associated with temporary controls and diversions required to maintain uninterrupted flow in all existing sewer lines associated with this project.
- D. Contractor shall repair without cost to Owner any damage resulting from Contractor's negligence, inadequate or improper installation, maintenance and operation of bypassing and a dewatering system including mechanical or electrical failures.

**3.3 Field Quality Control**

A. Field testing shall include:

<b>ITEM</b>	<b>TEST FOR</b>	<b>TEST STANDARD (ASTM OR OTHER TEST STANDARD)</b>	<b>FREQUENCY</b>	<b>FIRST TEST PAID FOR BY</b>	<b>RETESTS PAID FOR BY</b>
Bypass System	No Spills	Comply with NPDES Permit Requirements	1 inspection	Contractor	Contractor

**END OF SECTION**

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**SECTION 33 01 38  
MANHOLE REHABILITATION**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Materials, testing, and installation of concrete restoration and coating systems.

**1.2 Related Work**

- A. Section 03 30 00: Cast-in-Place Concrete
- B. Section 33 01 30: Sewage Bypassing
- C. Section 33 39 13: Precast Concrete Manholes

**1.3 System Description**

- A. Furnish and install complete operating concrete restoration and coating system in compliance with Manufacturer's installation requirements and applicable building codes and standards.

**1.4 Quality Assurance**

- A. Use adequate numbers of skilled workmen trained and experienced in necessary trades and crafts and completely familiar with specified requirements and methods for proper performance of Work of this section.
- B. Engage experienced applicator to perform Work of this Section who has specialized in installing materials required for this Project; who is approved, authorized, or licensed by coating system Manufacturer to install Manufacturer's product; and who is eligible to receive standard Manufacturer's warranty.

**1.5 References**

- A. ASTM D4541 Pull-Off Strength of Coatings Using Portable Adhesion Testers
- B. Standard Specifications for Public Works Construction (Greenbook) Section 211-2 "Chemical Resistance (Pickle Jar ) Test"
- C. Standard Specifications for Public Works Construction (Greenbook) Section 500-2 "Manhole and Structure Rehabilitation"

**1.6 Submittals**

- A. Furnish the following submittals with bid or within 72 hours following bid opening. Failure to submit required information on time will cause bid to be considered non-responsive and rejected.

SUBMITTAL	DESCRIPTION
Subcontractor Qualifications	Submit company history stating years in service
	Submit letter from Manufacturer certifying installers are factory-trained and have completed 3 successful projects in previous 3 years.
	Submit evidence of factory authorization or licensing by Manufacturer of lining system to install product
	Submit documentation of employees' cognizance and ability to comply with all Federal and State OSHA regulations regarding confined space entry.

- B. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Flow Control Plan	For each manhole to be rehabilitated, submit plan for bypassing sewage around structure during Work.
Debris Containment Plan	Submit plan for removing and disposing of all debris from cleaning operations
Catalog Data	Required per catalog data requirements. Submit Manufacturer's product data including physical properties.
Application Instructions	Required per installation or application instruction requirements.
Certificate of Compliance	Submit coating system and application certification per certificate of compliance requirements. Submit certification or letter from Manufacturer stating all repair, patching, priming, and relining materials are compatible. Submit documentation of materials passing chemical resistance (pickle jar) test described in SSPWC Standard Specifications for Public Works Construction Section 211-2.
Material Samples	Required.
Warranty	Furnish 3-year warranty from date of final acceptance Warranty shall state: "The complete manhole pipeline rehabilitation was performed properly. We (the Contractor and Manufacturer) warrant all material and workmanship for 3 years starting from day of Owner's final acceptance. Contractor and Manufacturer promise to provide prompt field response to Owner's request regarding any defect in manhole rehabilitation."

- C. Refer to SSPWC (latest version) for definition of requirements for catalog data, application instructions, certificates of compliance, and material samples.

## 1.7 Delivery, Storage and Handling

- A. Refer to SSPWC (latest version) for delivery, storage, and handling requirements.
- B. Manufacturer's instruction and warranty requirements for delivery, storage and handling of concrete restoration and coating systems shall be strictly followed.

## 1.8 Unit Prices

- A. Payment for Work in this section shall be included as part unit-price bid amount for appurtenant bid items #14.

## PART 2 - PRODUCTS

### 2.1 Acceptable Manufacturers

- A. Acceptable manufacturers for lining and patching products include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Structural Patching Material	Cretex Fast-Grout 52	Waukesha, WI
	Emaco Div Chemrex S Series	Shakopee MN
	Sauereisen Sewer Seal F170	Pittsburgh, PA
	Accepted equal	
Mortar Lining and Rendering Material	ThorRoc Div Chemrex SP15 Spray Mortar	Shakopee MN
	Accepted equal	
Rigid Lining Systems – Epoxy-Based	Raven 405	Tulsa, OK
	Sancon 300	Huntington Beach, CA
	Sauereisen SewerGard 210	Pittsburgh, PA
	Sherwin Williams DuraPlate 6100	Cleveland, OH
	Warren Environmental, Inc. 301 Series	Carver, MA
	Accepted equal	

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Rigid Lining Systems – Urethane-Based	Sancon 100	Huntington Beach, CA
	Sherflex S	Cleveland, OH
	Zebtron Corporation	Newport Beach, CA
	Accepted equal	
Primer for Flexible Polyurethane-Based System	ThorRoc Div Chemrex PSW IC 2000 Wet Prime	Shakopee, MN
	Accepted equal	
Flexible Coating Systems – Polyurethane-Based	ThorRoc Div Chemrex IC2480 125 mil	Shakopee, MN
	Utilithane 1600 Polyurethane Coating 125 mil	Tustin, CA
	Accepted equal	

B. Acceptable manufacturers for manhole ring and joint rehabilitation products include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Chimney Seal - External	Cretex Specialty Products	Waukesha, WI
	Accepted equal	
Chimney Seal - Internal	Cretex Specialty Products	Waukesha, WI
	Accepted equal	
Manhole Infiltration Dishes	Cretex Specialty Products	Waukesha, WI
	Parson Environmental	Reading, PA
	Pollard Water	New Hyde Park, NY
	Sealing Systems, Inc.	Loretto, MN
Manhole Lid Plugs and Sealing Gaskets	Cretex Specialty Products	Waukesha, WI
	Accepted equal	
Polypropylene Manhole Adjustment Ring	Cretex Specialty Products Pro-Ring	Waukesha, WI
	Accepted equal	
Wrap Collars	Cretex Specialty Products	Waukesha, WI
	Accepted equal	

C. Acceptable manufacturers shall manufacture all components of complete repair and coating system used.

## 2.2 **Materials**

A. Refer to SSPWC (latest version) for basic requirements for products and materials.

B. Concrete restoration and coating systems shall be constructed of the following materials:

ITEM	MATERIAL	SPECIFICATION
Structural Patching Material	Low-Viscosity Urethane Injection Resin	
Portland Cement Concrete	Class A2 "Premium Non-Structural" Concrete Greenbook 600-C-2500	See Section 03 30 00

C. The following product design criteria, options and accessories are required for polyurethane lining systems :

ITEM	DESCRIPTION

ITEM	DESCRIPTION	
Epoxy Primer for Polyurethane-Based System	Description	Moisture-tolerant epoxy material capable of spray application to at least 5 mils thickness in one coat.
	Thickness	5 mils in one spray coat.
	Tensile Strength	6000 psi
	Elongation at Break	5%
	Wear Resistance	100 mg weight loss
	Hardness	75 Shore D
	Peel Strength	7 pli
	Weight Change	±1.5%
Rigid Lining Systems – Polyurethane-Based	Description	100% solid polyurethane material capable of spray application.
	Thickness	125 mils in one spray coat.
	Tensile Strength	2000 psi
	Elongation at Break	40%
	Wear Resistance	60 mg weight loss
	Hardness	55 Shore D
	Tear Resistance	150 ppi
	Weight Change	±1.5%

- D. The following product design criteria, options and accessories are required for epoxy lining systems :

ITEM	DESCRIPTION	
Rigid Lining Systems – Epoxy-Based	Description	Solvent-free high-build epoxy resin capable of spray application to at least 125 mils thickness in one coat.
	Thickness	125 mils in one spray coat.
	Tensile Strength	3000 psi
	Elongation at Break	0.9%
	Wear Resistance	115 mg weight loss
	Hardness	80 Shore D
	Weight Change	±1.5%

## PART 3 - EXECUTION

### 3.1 Preparation

- A. Examine areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of Work.
- B. Before using product, investigate its compatibility with surfaces, fillers and joints sealants.
- C. Use only compatible materials.
- D. Implement sewage bypassing as necessary in accordance with Section 33 01 30. Flow control shall be Contractor's responsibility.
- E. Furnish and install any necessary temporary debris containment devices while maintaining sewage flow.
- F. Concrete preparation and installation of coating shall be performed under supervision of factory-authorized Manufacturer's representative.
- G. Clean surface to be lined as follows:
  1. Inspect host structure for damage and leaks.



2. Remove any protrusions on host structure surface that might interfere with installing lining system.
    - a. Remove damaged manhole steps or manhole steps scheduled for removal prior to rehabilitating manhole, using such methods that will minimize damage to structure surface.
    - b. Grind anchor bolts, pull rings and lifting eyebolts that are damaged or scheduled for removal down to ½" below surface and patch flush.
    - c. Promptly repair any damage to manhole structure caused by removal of protrusions, using methods acceptable to Owner and Manufacturer.
  3. Clean cracked or soft areas with wire brush.
  4. If reinforcing steel is exposed, remove rust particles on steel through thorough cleaning. Allow Owner's Representative to inspect rebar and accept it as clean. Then immediately coat bare steel with protective coating recommended by Manufacturer of manhole lining system.
  5. Report any leaks or damage to Owner's Representative.
  6. Clean all surfaces to be rehabilitated using one of the following methods:
    - a. Water blast manhole interior to remove deteriorated concrete, oil, grease, or existing coating. Water blast equipment shall use of a minimum pressure of 5,000 psi and shall not use detergent or other chemical cleaning solvents.
    - b. Abrasive blast.
    - c. Another method recommended by Manufacturer and documented in installation instructions.
    - d. Another method submitted to and accepted by Owner's Representative.
    - e. For manholes or structures less than one year old Owner's Representative may or partially waive cleaning requirements if manhole or structure is in good condition.
  7. Protect host structure from damage by cleaning equipment, pressure and air pressure.
  8. Remove and dispose of all debris collected from cleaning operations. Do not allow debris to enter sewer system.
- H. Interior surface preparation of manholes shall proceed as follows:
1. After cleaning and before concrete repair, eliminate all active structure infiltration prior to liner application. Infiltration control will be treated as extra work. Method of stopping these leaks shall be by chemical grout injection as accepted by Owner's Representative and in accordance with NASSCO Specifications, and/or application of hydraulic cement conforming to Section 201-1.2 of Greenbook. For manholes less than one year old, skip this procedure.

2. Air-placed concrete gunite application shall conform to Section 303-2 of Greenbook. Before guniting, insert containment devices accepted by Owner's Representative into manholes as needed to prevent rebound (nonadhering gunite) from entering sewer. Apply gunite to a thickness (minimum 1" thickness) which will restore original manhole surface. Apply gunite in minimum ½" continuous lifts. After guniting, remove containment devices and reinstall manhole cover to provide moist curing environment. Allow gunite to cure 24 hours prior to lining application. For manholes less than one year old, skip this procedure.
3. Prior to installation, repair all irregularities, voids, and deteriorated surfaces to uniform surface using rapid setting repair mortar compatible with lining system.
4. Return manhole channel and shelf areas to original dimensions using concrete repair mortar. Hand trowel shelves to provide smooth and uniform surface. Allow concrete to cure for 7 days prior to coating.
5. Manufacturer's factory-authorized representative shall field-inspect manhole prior to primer coating and provide written statement that manholes have been prepared properly and is ready for primer coat.
- 6.

### **3.2 Installation**

- A. Refer to SSPWC (latest version) for basic execution and installation requirements.
- B. Furnish and install materials at locations shown on Plans and Submittals.
- C. The following installation standards shall be followed:
  1. Manufacturer's installation and warranty requirements
  2. Applicable OSHA and Cal OSHA regulations
  3. Applicable building code requirements
- D. Refer variances between above documents and Contract Documents to Owner's Representative.
- E. Polyurethane and epoxy liner application shall proceed as follows:
  1. Apply lining through plural-component equipment specifically designed and approved by lining material Manufacturer. Equipment shall be in good working order to ensure correct proportioning and mixing of components.
  2. Prior to application of polyurethane lining, all surfaces shall receive a 5-mil thickness (in one continuous coat) epoxy primer.
  3. Following primer application, lining application shall be performed only by workmen trained and experienced with specified material.
  4. Lining termination points shall be keyed by mechanically scoring a minimum ¼" x ¼" keyway.
  5. Apply lining to thickness of 125 mils (½") in one continuous coat, without seams, free from any holes or defects immediately prior to epoxy primer becoming tack-free.

6. Terminate manhole lining at flow line. Do not coat manhole channels.
7. During lining application, take wet gauge thickness readings as required to ensure correct lining thickness.
8. Application of lining shall not take place when exposed to rain or high winds. Contractor shall protect Work from above mentioned conditions.

F. Epoxy liner application shall proceed as follows:

1. Apply lining through plural-component equipment specifically designed and approved by lining material Manufacturer. Equipment shall be in good working order to ensure correct proportioning and mixing of components.
2. Lining termination points shall be keyed by mechanically scoring a minimum ¼" x ¼" keyway.
3. Apply lining to thickness of 125 mils (½") in one continuous coat, without seams, free from any holes or defects immediately prior to epoxy primer becoming tack-free.
4. Terminate manhole lining at flow line. Do not coat manhole channels.
5. During lining application, take wet gauge thickness readings as required to ensure correct lining thickness.
6. Application of lining shall not take place when exposed to rain or high winds. Contractor shall protect Work from above mentioned conditions.

### 3.3 Field Quality Control

A. Field testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Manhole Repairs	Manufacturer's Inspection of Interior Surface Preparation	Visual inspection of manhole surface by Manufacturer's factory-authorized representative before receiving finish coat.	1 inspection	Contractor	Contractor
	Owner's Representative's Inspection of Interior Surface Preparation	Visual inspection of manhole surface before receiving finish coat. Provide safe access for inspection and notify Owner's Representative 2 days in advance of inspection.	1 inspection	Owner	Owner
	Installation & Leakage	Visual inspection of finished installation. Installed material shall be uniform in color, fully cured, free of holidays, surface imperfections, blisters, and sags and securely adhered to subsurface.	1 inspection	Owner	Owner
	Holiday Test (Spark Test)	Spark test witnessed by Owner's Representative upon completion of lining installation and visual inspection. Use Tinker & Rasor Model AP-W high voltage holiday detector or equivalent specified by coating Manufacturer. Set at 15,000V or 100V per mil of lining thickness, whichever is greater. Mark identified holidays without contaminating lining surface.	1 inspection	Contractor	Contractor

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
		Repair all imperfections found with materials-in-kind and repeat test until no holidays are found			
	Coating Thickness	Mil gauge test to verify minimum thickness is achieved.	1 test	Contractor	Contractor
	Adhesion Testing	ASTM D4541 after system has cured. See test description below.	1 test	Contractor	Contractor
	Field Performance	Demonstrate compliance to Contract Documents and Manufacturer's printed literature	1 test	Contractor	Contractor
	11-month Warranty Inspection	Demonstrate compliance to Contract Documents and Manufacturer's printed literature	1 test	Owner	Contractor

B. Adhesion testing shall proceed as follows:

1. Affix one ¾" dolly to lined surface at upper cone section, midsection and bottom. Adhesive used to attach dollies to liner shall be rapid setting with tensile strength in excess of liner material and permitted to cure in accordance with Manufacturer's specifications.
2. Prior to pull test, tester shall use scoring device to cut through coating until substrate is reached. Failure due to improper dolly adhesive or scoring will require retesting at no additional cost to Owner.
3. Pull tests in each area shall exceed 200 psi and include substrate adhered to back of dolly or leave no visual signs of coating material in test hole.
4. Pull tests with results between 150 psi and 200 psi may be acceptable if more than 50% of substrate adhered to back of dolly.
5. If any tests fail, test at least 3 additional locations in failure section, as directed by Owner's Representative. If any retests fail, remove entire liner and replace at Contractor's expense. If host structure fails adhesion test, test 10% of initial number of host structures but no less than one host structure as directed by Owner's Representative.

C. Repairs shall proceed as follows:

1. Finished lining shall be fully cured and free from holidays, bubbles, surface imperfections, blisters, sags or pinholes and uniform in color. Lining shall be adequately adhered to host surface.
2. Remove, rework and patch all areas in question to at least 1" beyond limits of damaged area.
3. All repairs shall be at least ¼" thick.
4. Prime holidays, and recoat to an additional thickness of 30 mils.

5. Completely remove blisters, uncured lining and surface imperfections. Recoat with appropriate lining material to minimum thickness of 100 mils.
6. Complete additional spark testing after all repairs have been completed, reinspected, and approved.

**END OF SECTION**

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**SECTION 33 05 26  
UTILITY IDENTIFICATION**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Materials, testing, and installation of buried utility identification systems including markers, warning tape, and trace wires.

**1.2 System Description**

- A. Furnish and install complete utility identification products required for compliance with Manufacturer's installation requirements and compliance with applicable building, fire, electrical, plumbing, and mechanical codes and standards.

**1.3 Quality Assurance**

- A. Use adequate numbers of skilled workmen trained and experienced in necessary trades and crafts and completely familiar with specified requirements and methods for proper performance of Work of this section.

**1.4 References**

- A. California Fire Code (CFC)
- B. California Mechanical Code (CMC)
- C. California Plumbing Code (CPC)
- D. NFPA 70 National Electric Code (NEC)

**1.5 Submittals**

- A. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Catalog Data	Required per catalog data requirements.
Installation Instructions	Required per installation or application instruction requirements.
Material Samples	Required
Warranty	Furnish one-year warranty from date of final acceptance

- B. Refer to SSPWC (latest version) for definition of requirements for catalog data, installation instructions, and material samples.

**1.6 Delivery, Storage and Handling**

- A. Refer to SSPWC (latest version) for delivery, storage, and handling requirements.
- B. Manufacturer's instruction and warranty requirements for delivery, storage and handling of utility identification products shall be strictly followed.

**1.7 Unit Prices**

Payment for locating, identifying, and protecting existing utilities shall be included as part unit-price bid amount for appurtenant bid items #5 , #8 through #13 and #16 through #23.

**PART 2 - PRODUCTS**

**2.1 Acceptable Manufacturers**

A. Acceptable Manufacturers include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Detectable Warning Tape for Installation within 12" of Surface	Calpico, Inc. "Type II"	South San Francisco, CA
	T Christy Enterprises (714) 507-3300	Anaheim, CA
	Terra Tape Division Reef Industries	Houston, TX
	Accepted equal	
Nondetectable Warning Tape	Calpico, Inc. "Type I"	South San Francisco, CA
	T Christy Enterprises (714) 507-3300	Anaheim, CA
	Terra Tape Division Reef Industries	Houston, TX
	Accepted equal	

**2.2 Materials**

A. Refer to SSPWC (latest version) for basic requirements for products and materials.

B. Utility identification products shall identify:

FLUID
Wastewater

C. Utility identification products shall be constructed of the following materials:

ITEM	MATERIAL	SPECIFICATION
Identification Tape	Polyethylene	
Warning Tape	Polyethylene	

D. The following product design criteria, options and accessories are required:

ITEM	DESCRIPTION	
Identification Tape	Type	Nondetectable
	Width	6"
	Thickness	4 mils minimum
	Imprint	See Pipe or Utility Specifications
	Location	Attach to pipe
Warning Tape	Type	Nondetectable
	Width	12"
	Thickness	4 mils minimum
	Imprint	See Pipe or Utility Specifications
	Location	18" above pipe

**PART 3 - EXECUTION**

**3.1 Preparation**

A. Examine areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of Work.

**3.2 Installation**

A. Refer to SSPWC (latest version) for basic execution and installation requirements.

B. Furnish and install utility identification products at locations shown on Plans and Submittals.



C. The following installation standards shall be followed:

1. Manufacturer's installation and warranty requirements
2. Applicable OSHA and Cal OSHA regulations
3. Other applicable fire, plumbing, mechanical and electrical code requirements

D. Refer variances between above documents and Contract Documents to Owner's Representative.

E. Install utility identification products to tolerances recommended by Manufacturer.

**3.3 Field Quality Control**

A. Field testing shall include:

<b>ITEM</b>	<b>TEST FOR</b>	<b>TEST STANDARD (ASTM OR OTHER TEST STANDARD)</b>	<b>FREQUENCY</b>	<b>FIRST TEST PAID FOR BY</b>	<b>RETESTS PAID FOR BY</b>
Utility Identification Products	Installation	Visual inspection of finished installation	1 inspection	Owner	Owner

**END OF SECTION**

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**SECTION 33 08 31  
LEAKAGE AND INFILTRATION TESTING OF GRAVITY SEWER LINES**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Materials and labor for field leakage and infiltration testing of all gravity sanitary sewers intended for conveyance of wastewater under gravity flow. Furnish all labor, materials, tools, and equipment necessary to provide and complete field pressure testing and infiltration testing as specified.
- B. Plan construction activities to allow and facilitate testing of all sections of gravity sanitary sewers.
- C. Leakage tests shall be made on completed pipelines as follows:

PIPE	TEST REQUIREMENT
Gravity Sanitary Sewers 24" diameter or less where difference in elevation between inverts of adjacent manholes <10 feet	Water infiltration test or water exfiltration test as directed by Owner's Representative
Gravity Sanitary Sewers 24" diameter or less where difference in elevation between inverts of adjacent manholes >10 feet	Air test or water infiltration test as directed by Owner's Representative
Gravity Sanitary Sewers in service with no bypass available	CCTV inspection. See Section 33 01 31

**1.2 Related Work**

- A. Section 33 30 31: Polyvinyl Chloride Gravity Sewer Pipe

**1.3 System Description**

- A. Complete leakage testing and infiltration testing of gravity sewers in compliance with these specifications.

**1.4 Quality Assurance**

- A. Use adequate numbers of skilled workmen trained and experienced in necessary trades and crafts and completely familiar with specified requirements and methods for proper performance of Work of this section.

**1.5 References**

- A. ASTM F1417 Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
- B. Standard Specifications for Public Works Construction (Greenbook)

**1.6 Submittals**

- A. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Testing Plan	On Owner's request, submit detailed plan showing how Contractor intends to pressure test sewer.

**1.7 Unit Prices**

- A. Payment for Work in this section shall be included as part unit-price bid amount for appurtenant bid items #8 through #11.

**PART 2 - PRODUCTS**

**2.1 Materials**

- A. Refer to SSPWC (latest version) for basic requirements for products and materials.
- B. Furnish all labor, materials, and equipment necessary to complete pressure testing of gravity sewers. Deliver equipment to project site in good working order and ready for use.

**PART 3 - EXECUTION**

**3.1 Preparation**

- A. Test each section of sewer between two successive manholes or structures for leakage or, at option of Owner's Representative, test for infiltration, or both. Test for leakage on all sections of sewer. Infiltration test shall also be made where groundwater is encountered.
- B. Even though a section may have previously passed leakage or infiltration tests, should compacting equipment weighing over 1000 pounds be used on backfill subsequent to tests or should any operations of Contractor or others may have damaged or affected required water-tight integrity of pipe, structure, and appurtenances. test each sewer section subsequent to last backfill compacting operation in connection therewith, wherein,

**3.2 Field Quality Control**

- A. Field testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Pipe	Leakage	ASTM F1417 or as shown below	1 test per pipe	Contractor	Contractor
	Infiltration	ASTM F1417 or as shown below	1 test per pipe as requested by Owner	Contractor	Contractor
Manholes	Leakage or Infiltration	Shall not exceed 0.1 gallons per hour per vertical foot for manholes	1 test per manhole	Contractor	Contractor

- B. Perform leakage and infiltration tests after placement and compaction of backfill, installation of utilities, and prior to mandrel test and placing of permanent paving. Correct all deficiencies found during leakage and infiltration test at no additional cost to Owner.
- C. Complete tests in presence of Owner's Representative. Owner's Representative will record results.
- F. Conduct infiltration testing as follows for sewer segments located in natural groundwater table:

1. If groundwater is encountered in construction of section of sewer between structures, close end of sewer at upper structure sufficiently to prevent entrance of water.
  2. Discontinue pumping of groundwater for at least 3 days, and then test section for infiltration.
  3. Where any infiltration exceeding amounts allowed below is discovered before completion and acceptance of sewer, immediately uncover sewer and perform all Work necessary to reduce infiltration to within specified amount at no expense to Owner. Contractor shall stop any individual leaks that may be observed, even if those leaks are in a quantity less than specified limits for acceptance.
  4. Where sewer is not located in natural groundwater table, exfiltration tests or low-pressure air tests shall be used to indicate sewer tightness.
- G. Conduct exfiltration (leakage) testing as follows for sewer segments located above natural groundwater table:
1. Plug sewer at lower end of section to be tested with stopper.
  2. Plug highest end of sewer to be tested with stopper. Stopper plug shall have suitable air vent to allow trapped air removal.
  3. Fill pipe and manhole with water to elevation 4 feet above sewer invert at upper manhole. If groundwater is present, fill pipe and manhole to a point 4 feet above average adjacent groundwater level.
  4. Check system for leaks in hoses, plugs, calibrated containers, etc. while filling through positive shutoff valve.
  5. After filling sewer, allow one hour for absorption of water.
  6. Refill sewer to test elevation.
  7. Close input valve and begin test.
  8. Record elapsed time to empty container of water and calibrate loss rate in gallons per hour.
  9. Where any exfiltration or infiltration exceeding amounts allowed below is discovered before completion and acceptance of sewer, immediately uncover sewer and perform all Work necessary to reduce exfiltration to within specified amount at no expense to Owner. Repair pipe joints or, if necessary, remove and reinstall pipe at Contractor's expense. Sewer will not be accepted until exfiltration and/or infiltration rate, as determined by test, is less than allowable leakage.
- F. Allowable exfiltration or infiltration shall not exceed 50 gallons per inch of internal diameter per mile per day, which equates to the following:

PIPE DIAMETER (Inches)	ALLOWABLE EXFILTRATION OR INFILTRATION (Gal/hr/100-ft)
6"	0.24 gal/hr/100'
8"	0.32 gal/hr/100'
10"	0.39 gal/hr/100'

H. Air testing shall only be done where Owner's Representative determines exfiltration or infiltration testing is impractical. Where directed by Owner's Representative, air testing shall proceed as follows:

1. Conduct air leakage test on all gravity sewers not tested by infiltration or exfiltration testing. Test each section of sewer between two successive manholes or structures.
2. Clean and wet line to be tested.
3. Plug all pipe outlets with suitable test plugs and securely brace each plug.
4. Compressor used to add air to pipe shall have blowoff valve set at 5 psig to ensure internal pipe pressure cannot exceed 5 psig.
5. Constantly monitor pressure in pipeline using gage and hose arrangement separate from hose used to fill sewer with air.
6. Add air slowly to portion of pipe installation under test until internal air pressure reaches 3.0 psig.
7. After 3.0-psig internal pressure is reached, maintain air pressure between 2.5 psig and 3.5 psig for at least 2 minutes to allow air temperature to reach equilibrium with pipe wall temperature. Add only enough air to maintain pressure.
8. Check exposed pipe and plugs for leakage by coating with soap solution. If any failures are observed, bleed off air and make necessary repairs.
9. After 2-minute period, disconnect air supply.
10. When pressure decreases to 2.5 psig, start timing with stopwatch or sweep-second-hand watch.
11. Determine time lapse required for air pressure to drop to 1.5 psig gage pressure.
12. If pressure drop from 2.5 psig to 1.5 psig occurs in less time than values tabulated below, pipe shall be overhauled and, if necessary, replaced and reinstalled until joints and pipe pass air test.

**END OF SECTION**

**SECTION 33 30 31**  
**POLYVINYL CHLORIDE GRAVITY SEWER PIPE**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. Materials, testing, and installation of polyvinyl chloride (PVC) gravity sewer pipe and fittings.
- B. Do not use PVC gravity sewer pipe under any of the following circumstances:
  - 1. For force mains or pipelines where working pressure exceeds 10 psi.
  - 2. For applications with ketones, chlorinated hydrocarbons or aromatic solvents.
  - 3. For pipelines buried in soils containing organic solvents or petroleum products
  - 4. For exterior piping exposed to sunlight unless expressly designed for such exposure and advertised as such in Manufacturer's product literature.
  - 5. For pipe smaller than 4" diameter.
  - 6. For exterior piping exposed to sunlight.
  - 7. For pipeline exposed to changes in temperature where  $\frac{3}{8}$ " per 100-ft per 10°F thermal expansion of PVC pipe cannot be accommodated.

**1.2 Related Work**

- A. Section 03 30 00: Cast-in-Place Concrete
- B. Section 31 05 50: Protecting Existing Utilities
- C. Section 33 05 26: Utility Identification
- D. Section 33 08 31: Leakage and Infiltration Testing of Gravity Sewer Pipelines
- E. Section 33 39 13: Precast Concrete Manholes

**1.3 System Description**

- A. Furnish and install complete sewer pipe to limits shown on Plans including appurtenant connections in conformance with Manufacturer's installation requirements and compliance with applicable construction safety codes and standards.

**1.4 Quality Assurance**

- A. Use adequate numbers of skilled workmen trained and experienced in necessary trades and crafts and completely familiar with specified requirements and methods for proper performance of Work of this section.
- B. Pipe and fittings shall be produced by same Manufacturer.
- C. Manufacturer of pipe and fittings shall employ manufacturing methods and material formulations in use for at least 5 years.
- D. Owner or Owner's Representative shall be entitled to inspect pipes and witness manufacturing process.

**1.5 References**

- A. ASTM C1460 Shielded Transition Couplings for Use With Dissimilar DWV Pipe and Fittings Above Ground
- B. ASTM D1599 Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing and Fittings

- C. ASTM D1784 Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
- D. ASTM D1785 Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
- E. ASTM D2241 2241 Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe SDR Series
- F. ASTM D2321 Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
- G. ASTM D2412 Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
- H. ASTM D2564 Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
- I. ASTM D2665 Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste and Vent Pipe and Fittings
- J. ASTM D2680 Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping
- K. ASTM D2729 Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
- L. ASTM D3034 Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings (4"-15")
- M. ASTM D3212 Joints for Drain and Sewer Plastic Pipe Using Elastomeric Seals
- N. ASTM D4396 Rigid Poly(Vinyl Chloride) (PVC) and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Nonpressure Applications
- O. ASTM F477 Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- P. ASTM F656 Primers for Buried PVC Pipe and Fittings
- Q. ASTM F794 Poly(Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter
- R. ASTM F891 Coextruded Poly(Vinyl Chloride) (PVC) Plastic Pipe With a Cellular Core
- S. ASTM F949 Poly(Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings
- T. ASTM F1417 Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
- U. ASTM F1488 Coextruded Composite Pipe
- V. ASTM F1866 Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings
- W. California Green Building Standards Code (CALGreen Code)
- X. NSF/ANSI 14 Plastic Piping Components and Related Materials
- Y. SSPWC Standard Specifications for Public Works Construction (Greenbook)
- Z. UNI-B-5 Uni-Bell Recommended Practice for the Installation of PVC Sewer Pipe

**1.6 Submittals**

- A. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Qualifications of Fusion-Bonding Subcontractor	Submit evidence of factory authorization or licensing by Manufacturer of lining system to install product
Catalog Data	Required per catalog data requirements.
Installation Instructions	Required per installation instruction requirements.
Certificate of Compliance (Schedule 40 / 80 DWV Pipe)	Deliver with pipe affidavit from pipe Manufacturer certifying compliance with requirements of ASTM D1785 and Contract Documents and copy of test data results.
Certificate of Compliance Type PSM Pipe	Deliver with pipe affidavit from pipe Manufacturer certifying compliance with requirements of ASTM D3034 or ASTM F679 and Contract Documents and copy of test data results.
Warranty	Furnish one-year warranty from date of final acceptance

- B. For fusion-bonded PVC pipe, furnish the following additional submittals.

SUBMITTAL	DESCRIPTION
Qualifications of Fusion-Bonding Subcontractor	Submit evidence of factory authorization or licensing by Manufacturer of lining system to install product



SUBMITTAL	DESCRIPTION
Installation Instructions	Submit Manufacturer's published instructions for installation of fusion-bonded PVC pipe including recommended minimum bending radius, recommended maximum safe pull force and instructions for proper handling, storage, installation, tapping and testing of fusion-bonded PVC pipe.
Warranty	Furnish one-year warranty from date of final acceptance

### 1.7 Delivery, Storage and Handling

- A. Refer to SSPWC (latest version) for delivery, storage, and handling requirements.
- B. Manufacturer's instruction and warranty requirements for delivery, storage and handling of PVC gravity sewer pipe and fittings shall be strictly followed.

### 1.8 Unit Prices

- A. Payment for Work in this section shall be included as part unit-price bid amount for appurtenant bid items #8 through #13.

## PART 2 - PRODUCTS

### 2.1 Acceptable Manufacturers

- A. Acceptable Manufacturers include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
PVC Sewer Pipe, Fittings, Couplings, and Gaskets 4"-15" (ASTM D3034)	Carlson Div Lamson & Session Co	Beachwood, OH
	Charlotte Pipe and Foundry Company "DWV"	Charlotte, NC
	Diamond Plastics Corporation	Grand Island NB
	J.M. Eagle Manufacturing Company	Los Angeles, CA
	North American Specialty Products, LLC	Lodi, CA
	Pacific Plastics	Brea, CA
	Pacific Western Extruded Plastics Company	Perris, CA
	Vinyltech Corp.	Phoenix, AZ
Accepted equal		
Neoprene Stoppers	Gladding McBean, Inc.	South Gate, CA
	Mission Rubber Company "T-Cone"	Corona, CA
	Pacific Clay Pipe	Corona, CA
	Accepted equal	
Transition Couplings for Laterals 4"-8"	Gladding McBean, Inc.	South Gate, CA
	Mission Rubber Company "Band-Seal"	Corona, CA
	Accepted equal	
Transition Couplings for Sewers 4"-27"	Mission Rubber Company "MR02"	Corona, CA
	Accepted equal	
Sewer Saddles	Mission Rubber Company "T-Flex"	Corona, CA
	Accepted equal	
Epoxy Resin for Saddle Connections or Repair Work	Furane Plastics, Incorporated "Epibond 157"	Glendale, CA
	Shell Chemical Corporation "Epon 828"	Norco, CA
	Wyndham Chemicals Incorporated "WR633 A&B"	Parsippany, NJ
	Accepted equal	
Buried Pipe Identification Tape	Calpico, Inc.	South San Francisco, CA
	Terra Tape Division Reef Industries	Houston, TX
	Accepted equal	

## 2.2 Materials

A. Refer to SSPWC (latest version) for basic requirements for products and materials.

B. The following is being conveyed:

FLUID	VISCOSITY (77°F)	SPECIFIC GRAVITY	TEMP	FREEZING POINT	BOILING POINT	VAPOR PRESS (77°F)	pH	SOLIDS CONTENT
Wastewater	0.894cP	1.01	33-90°F	32°F	212°F	0.46 psia	6.5- 8.5	<1.0%

C. Adhesives and solvent welding materials used on Work shall comply with VOC limits set forth in Section 5.504.4.1 of CALGreen Code.

D. PVC profile gravity sewer pipe for storm drain, fittings, couplings, and gaskets may be used to temperatures of 140°F and shall be constructed of the following materials:

MATERIAL/ COMPONENT	STANDARDS/ CHARACTERISTICS	SPECIFICATION/REQUIREMENT	
Pipe	Standards	Pipe sizes 8"-27" = ASTM F794, AASHTO M304	
	Material	ASTM D1784 Cell Class 12454, 13364-A, or 13364-B Virgin rigid PVC Conform to NSF 14	
	Marking		Mark pipe at 5' maximum intervals.
			Mark ASTM standard complied with
			Show nominal pipe diameter.
			Show SDR
			Show material, and PVC cell classification
			Show coded number identifying Manufacturer, plant, machine, date and shift on which pipe was extruded.
		Mark pipe with home mark on spigot to indicate proper penetration when joint is made	
	Size	As shown on plans.	
	Wall Thickness		Pipe sizes 4"-15" = SDR-35, unless otherwise specified.
			Pipe sizes 18"-27" = T-1, unless otherwise specified.
	Standard Lengths		20' and 12½' with option to supply up to 15% of pipe delivery in random lengths
Pipe Stiffness		46 psi per ASTM D2412	
Type of Construction		Profiled (ribbed) exterior wall with smooth interior surfaces	
Joints	Type	Integral bell gasketed joint meeting ASTM D3212	
	Gasket		Synthetic elastomer per ASTM F477
			Factory installed in belled end of pipe and fittings
Fittings and Couplings	Standards	Bells and spigots shall be compatible with pipe	
	Material	ASTM D1784 Cell Class 12454-B, 12454-C, or 13343-C Virgin rigid PVC Conform to NSF 14	
	Markings		Show nominal pipe diameter
			Show material, and PVC cell classification
			Show coded number identifying Manufacturer, plant, machine, date and shift on which pipe was extruded.
		Show service designation or legend	

E. Provide identification for buried PVC gravity pipe in the following manner:

PIPE CONTENTS	IDENTIFICATION/ WARNING/ LOCATING	TYPE	MATERIALS/METHOD	
Sewage	Pipe Contents Identification	Pipe color	Green	
		AND		
		Stenciling	Green stenciling marked on pipe stating "SEWER"	
			5/8"-high letters	
			Repeated at 1' intervals	
		OR		
		Identification Tape	2"-high letters reading "CAUTION: SEWER"	
		Color = green with white letters		
		Attached to top of pipe with adhesive tape		
		Specification – See Section 33 05 26		
	Pipe Warning and Locating	Warning and Locating Tape	2"-high letters reading "CAUTION: SEWER BURIED BELOW"	
			Color = green with white letters	
			Place in pipe trench 18" above pipe	
			Specification – See Section 33 05 26	
Locating Wire		In lieu of installing metallic warning tape; non-metallic warning tape and 10-gauge copper wire attached to top of pipe may be used.		

F. Socket and spigot configurations for fittings and couplings shall be compatible to those used for pipe.

G. Pipe not installed within 120 calendar days of latest certification test shall not be used without prior approval from Owner's Representative.

### PART 3 - EXECUTION

#### 3.1 Preparation

A. Make field measurements needed to install PVC gravity sewer pipe before submitting shop drawings or ordering materials. Make minor changes in dimensions and alignments as needed to avoid utilities or structural conflicts.

B. Grade trench bottom to line and grade to which pipe is to be laid, with allowance for pipe thickness. Dig bell holes or coupling holes of ample dimension in trench bottom at locations of each joint to facilitate joining. Remove hard spots that would prevent uniform bedding thickness. Before laying each pipe section, check grade with straight-edge and correct any irregularities found. Trench bottom shall form continuous and uniform bearing and support for pipe at every point between bell or coupling holes, except grade may be disturbed for removal of lifting tackle.

C. At each joint location dig bell (joint) holes in trench bottom and at sides to permit visual inspection of entire joint.

- D. Provide and maintain means and devices at all times to remove and dispose of all water entering trench during pipe-laying operations. Keep trench dry until pipe-laying and jointing are completed.

### **3.2 Installation**

- A. Refer to SSPWC (latest version) for basic execution and installation requirements.
- B. The following installation standards shall be followed:
  - 1. Manufacturer's installation and warranty requirements
  - 2. Applicable OSHA and Cal OSHA regulations
  - 3. Applicable building, fire and plumbing code requirements
  - 4. ASTM D2321 Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
  - 5. ASTM F1668 Construction Procedures for Buried Plastic Pipe
  - 6. UNI-B-5 Uni-Bell Recommended Practice for the Installation of PVC Sewer Pipe
- C. Refer variances between Manufacturer's installation instructions, published installation standards and Contract Documents to Owner's Representative.
- D. Protect water and recycled water systems by constructing sewers with separations and materials described in Section 31 05 50.
- E. Install PVC gravity sewer pipe as follows:
  - 1. Install PVC gravity sewer pipe and fittings per ASTM D2321 and Uni-Bell Recommended Practice for the Installation of PVC Sewer Pipe and as herein specified.
  - 2. Inspect each pipe and fitting before lowering pipe or fitting into trench.
  - 3. Use proper care to prevent damage in handling, moving, and placing pipe. Hoist pipe with forklift, crane, backhoe or other handling equipment to prevent damage or reduction of pipe service life. Use cloth belt sling or continuous fiber rope to prevent scratching pipe. Lower (do not drop) pipe from truck. Dropped pipe will be rejected.
  - 4. Install PVC gravity sewer pipe and fittings to tolerances recommended by Manufacturer. Unless otherwise shown, install PVC gravity sewer pipe and fittings at locations and grades shown on Plans using precision gauges and levels.
  - 5. No longitudinal bending shall be allowed in installation of PVC gravity sewer pipe. Install all deflections at sewer manholes or by using joints and fittings specifically designed for use with PVC pipe of specified SDR.
  - 6. Install pipe without break, upgrade from structure to structure, with bell ends of pipe upgrade. Install pipe to line and grade given so as to form close concentric joint with adjoining pipe and prevent sudden offsets of flow line.

7. Clean interior of pipe and fittings of all dirt and superfluous materials of all description immediately prior to installing pipe. Wipe joints clean of all dirt and foreign matter and apply accepted lubricant to mating surfaces of pipe to be joined.
8. Insert spigot end to proper depth of socket as indicated by home mark on pipe. Spigot end shall slide into bell end without displacement of rubber gasket.
9. Close open end of pipe with tight-fitting cap or plug to prevent entrance of foreign matter into pipe at all times when pipe installation is not in progress. These provisions shall apply during noon hour as well as overnight.
10. Do not use pipeline to drain water that has infiltrated into trench. Maintain inside of pipe free from foreign materials and in clean and sanitary condition until its acceptance by Owner.
11. After joint assembly. Bring bedding material up to pipe spring line. Place bedding material on each side of pipe. Do not drop rock or crushed gravel directly onto pipe. Walk and tamp bedding material into final position at pipe spring line and continue to top of pipe.
12. Then place bedding material to top of pipe zone and compact to specified pipe zone compaction.

F. Install wyes and saddles as follows:

1. Unless otherwise specified, incline branch of wye fittings upward at angle  $\leq 45^\circ$  from horizontal. Place no wye closer than 5' in downstream side to centerline of any structure. Do not install wyes or tees back to back. There shall be  $\geq 4'$  between each branch fitting. Place support of crushed rock or gravel under every wye branch when installed.
2. All wyes shall be  $\geq 6"$  diameter. If existing laterals  $\leq 4"$  are encountered, or if existing VCP other non-PVC laterals are encountered, install appropriate reducers or transition hardware to connect to new 6" PVC wye.
3. Install all saddle connections into existing sewer lines with a wye saddle. Sewer to be saddled shall be scored to approximate shape of wye or tee and cut by mechanical hole cutters, or by keyhole or sabre saw. Cleanly machine tap holes and complete work by hand to provide true and neat opening for wye or tee saddle. Replace or repair any pipe damaged during operation.
4. Mount saddles on pipe using solvent cement in conformance with requirements of ASTM D2564 or by gaskets with all stainless steel straps. If solvent-welded saddle is used, secure saddle to main with stainless steel straps or with saddle clamps. After connection has set long enough for solvent cement to cure, encase fitting with Class B portland cement concrete.
5. Keep all chips, dirt, solvent cement, mortar and concrete out of sewer being saddled. Flush, clean, and ball reach of sewer main saddle if so directed by Owner's Representative.
6. In lieu of saddle connection, wye connection may be made in existing sewer by cutting sewer and installing wye and 2 sewer clamps with stainless steel bands.

G. Connect PVC sewer pipe to manholes using gasketed plastic manhole coupling to provide watertight connection.

H. Install service laterals as follows:

1. Join laterals to wye using 1/8 bends.
2. Plug laterals with stopper in socket of last joint of lateral. Seal stopper securely in place to withstand internal pressure from leakage tests but also in such manner to allow removal without damaging socket.
3. Mark location of lateral at upper end as directed by Owner's Representative. Unless otherwise directed, chisel letter "S" 1 1/2" high on top of curb. If curb improvements do not exist, furnish and install 2"x2"x36" wood stake at end of service lateral. Paint top of stake white.
4. Restore curbs, gutters, paving, driveways, lawns, shrubs, fences, retaining walls, sprinklers landscaping and other improvements damaged by Contractor's operations in accordance to preconstruction conditions.
5. For sewer replacement projects, reconnect all active or functional laterals as required by Owner.

**3.3 Field Quality Control**

A. Field testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Pipe	Horizontal Alignment	1" maximum horizontal deviation from plan alignment	Mirror each straight section of pipe	Contractor	Contractor
	Vertical Alignment	1/4" maximum horizontal deviation from plan grades	Mirror each straight section of pipe	Contractor	Contractor
	Pipe Separations	Section 31 05 50.	All new pipe	Contractor	Contractor
	Pressure Test for Leakage and Infiltration	Section 33 08 31	1 test per run of pipe	Contractor	Contractor
	Mandrel Test for Obstructions and Pipe Deflections	SSPWC Section 306-1.2.12 (See Below)	1 test per run of pipe	Contractor	Contractor
	Video Inspection	Video entire new alignment. Submit copy of video to Owner	All new pipe	Contractor	Contractor
Laterals	Horizontal Alignment	1" maximum horizontal deviation from plan alignment	Survey location of each lateral	Contractor	Contractor
	Vertical Alignment	1/4" maximum horizontal deviation from plan grades	Survey location of each lateral	Contractor	Contractor
Sewer System	Field Performance	Demonstrate compliance to Contract Documents and Manufacturer's printed Literature	1 test	Contractor	Contractor
	11-month Warranty Inspection	Demonstrate compliance to Contract Documents and Manufacturer's printed literature	1 test	Owner	Contractor

- B. Perform mandrel test after placement and compaction of backfill, installation of utilities, pipe testing, and prior to placing of permanent paving. Correct all obstructions encountered during mandrel test at no additional cost to Owner

### **3.4 Cleaning**

- A. Prior to testing, thoroughly clean sewers from structure to structure with hydro-flush equipment or sewer scrubbing ball. Remove all debris and trash from each structure. Disinfection of sewer is not required.

**END OF SECTION**

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**SECTION 33 39 13  
PRE-CAST CONCRETE MANHOLES**

**PART 1 - GENERAL**

**1.1 Work Included**

- A. This section includes materials, testing, and installation of pre-cast concrete manholes.

**1.2 System Description**

- A. Furnish and install complete pre-cast concrete manholes including cast-in-place concrete bases, and appurtenant structural and mechanical mountings or connections required for compliance with Manufacturer's installation requirements and compliance with applicable building codes and standards.
- B. Manhole dimensions shown on plans are interior dimensions.

**1.3 Quality Assurance**

- A. Use adequate numbers of skilled workmen trained and experienced in necessary trades and crafts and completely familiar with specified requirements and methods for proper performance of Work of this section.
- B. Factory testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Manhole	Watertightness	Visual inspection and leakage test	Once per manhole section	Contractor	Contractor

**1.4 References**

- A. ASTM A48 Gray Iron Castings
- B. ASTM C478 Pre-cast Reinforced Concrete Manhole Sections
- C. ASTM C478 (AASHTO M199) Precast Reinforced Concrete Manhole Sections
- D. ASTM C923 Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
- E. California Construction Safety Orders Article 4, Section 1532, Confined Spaces
- F. Standard Specifications for Public Works Construction (SSPWC), Latest Version

**1.5 Submittals**

- A. Furnish the following submittals.

SUBMITTAL	DESCRIPTION
Shop Drawings	Required per shop drawing requirements.
Catalog Data	Required per catalog data requirements.
Installation Instructions	Required per installation instruction requirements.
Certificate of Compliance	Submit coating and/or lining system and application certification per certificate of compliance requirements.
Test Record Transcripts	Submit for factory tests per test record transcript requirements.
Warranty	Furnish one-year warranty from date of final acceptance

- B. Refer to SSPWC (latest version) for definition of requirements for shop drawings, catalog data, certificates of compliance, and installation instructions.

**1.6 Delivery, Storage and Handling**

- A. Refer to SSPWC (latest version) for delivery storage and handling requirements.
- B. Manufacturer’s instruction and warranty requirements for delivery, storage and handling of pre-cast concrete manholes shall be strictly followed.

**1.7 Unit Prices**

- A. Payment for Work in this section shall be included as part unit-price bid amount for appurtenant bid items #17 through #23.

**PART 2 - PRODUCTS**

**2.1 Acceptable Manufacturers**

- A. Acceptable Manufacturers include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Pre-Cast Concrete Manhole Sections	Ameron	Rancho Cucamonga, CA
	Associated Concrete Products, Inc.	Santa Ana, CA
	Jensen Precast	Sparks, NV
	Olson Precast Company	Rialto, CA
	Oldcastle Precast	Perris, CA (951) 657-6093
	Southwest Concrete Products	Ontario, CA
	Accepted equal	
Dampproofing Agent	Euclid Chemical Company	Cleveland, OH
	W. R. Meadows Inc. (Sealmastic)	Hampshire, IL
	Sonneborn Div. Chemrex Inc. (Hydrocide 600)	Shakopee, MN
	Utilithane	Tustin, CA
	Accepted equal	
Manhole Covers – Cast Iron	Alhambra Foundry Company Ltd.	Alhambra, CA
	Long Beach Iron Works, Inc.	Long Beach, CA
	Neenah Foundry	Neenah, WI
	Pont-à -Mousson	Pont-à-Mousson FR
	South Bay Foundry	National City, CA
	U S Foundry and Manufacturing Corp	Medley, FL
	Accepted equal	
Polypropylene Manhole Steps	M A Industries, Inc.	Peachtree City, GA
	Parson Environmental	Reading, PA
	Accepted equal	
Manhole Coating (Interior)	Manhole Builders	Riverside, CA
	Raven Lining Systems, Inc.	Broken Arrow, OK
	Sancon Engineering, Inc.	Huntington Beach, CA
	Zebron	Anaheim, CA
	Accepted Equal	

- B. Acceptable manufacturers for manhole ring and joint sealing products include:

ITEM	MANUFACTURER	MANUFACTURER LOCATION
Chimney Seal - External	Cretex Specialty Products	Waukesha, WI
	Accepted equal	
Chimney Seal - Internal	Cretex Specialty Products	Waukesha, WI
	Accepted equal	
Manhole Infiltration Dishes	Cretex Specialty Products	Waukesha, WI
	Parson Environmental	Reading, PA
	Pollard Water	New Hyde Park, NY
	Sealing Systems, Inc.	Loretto, MN
Manhole Lid Plugs and Sealing Gaskets	Cretex Specialty Products	Waukesha, WI
	Accepted equal	
Polypropylene Manhole Adjustment Ring	Cretex Specialty Products Pro-Ring	Waukesha, WI
	Accepted equal	
Wrap Collars	Cretex Specialty Products	Waukesha, WI
	Accepted equal	

## 2.2 Materials

- A. Refer to SSPWC (latest version) for basic requirements for products and materials.

- B. The following is being conveyed:

FLUID	VISCOSITY (77°F)	SPECIFIC GRAVITY	TEMP	FREEZING POINT	BOILING POINT	VAPOR PRESS (77°F)	pH	SOLIDS CONTENT
Wastewater	0.894cP	1.01	33-90°F	32°F	212°F	0.46 psia	6.5-8.5	<1.0%

- C. Pre-cast concrete manholes shall be constructed of the following materials:

ITEM	MATERIAL	SPECIFICATION
Pre-Cast Concrete Manhole Sections	Pre-Cast concrete	ASTM C478, class A concrete
	Steel Reinforcement	ASTM A615
Manhole Frames and Covers	Gray Cast Iron	See SSPWC Standard Plan 210-3
Manhole Base	Cast-in-Place Concrete	Class A2 (premium non-structural) concrete except slump shall not exceed 2" and aggregate shall not exceed ¾" Base shall extend at least 10" below bottom of lowest pipe and 6" above top of largest pipe.
Pipe Penetrations	Watertight Flexible Pipe Connector or Ring-Type Seal	Incorporate watertight flexible pipe connector or ring-type seal per ASTM C923 Precast manholes shall use either integrally cast embedded pipe connector, or boot-type connector installed in circular block-out opening per ASTM C 923. Connections to existing manholes shall use boot-type connector per ASTM C 923 installed in cored opening. Cast-in-place base shall incorporate ring-type seal on pipe to be embedded in concrete.
Manhole Frames and Covers	Gray Cast Iron	ASTM A48 Class 30 or 35 Design for H-20 highway wheel loading Incorporate pick-hole for lifting purposes Castings with blisters, blowholes and shrinkage are not permitted. Clean all castings. Grind and finish cover to fit in frame without rocking.
	Coating	Dip twice in asphalt or coal tar and oil mixture at temperature between 290°F and 310°F to form firm and tenacious coating

ITEM	MATERIAL	SPECIFICATION
Manhole Infiltration Inserts	High-Density Polyethylene	ASTM D1248, Type III, Class A, Category 5,
Insert Lift Strap	Woven Polypropylene Web	
Gasket	Neoprene Rubber	Closed Cell
Manhole Steps	Polypropylene with Grade 60 Steel Reinforcement	ASTM D4101
Manhole Steps (cont.)	Galvanized Steel	
	Not required	
Joint Sealant	Asphalt Rubber Strip	

D. The following product design criteria, options and accessories are required:

ITEM	DESCRIPTION	
Pre-Cast Concrete Manhole Sections	Minimum Diameter	60"
	Design Surcharge and Lateral Earth Pressure	AASHTO H-20 Loading
	Minimum 28-day Compressive Strength $f_c$	4500 psi
	Steel Reinforcing Yield Strength $f_y$	60 ksi
Reinforcing of "Non-reinforced Manholes"	Cast minimum #4 wire hoops into each unit at adequate places as precautionary measure for handling	
Manhole Wall Section	Minimum nominal shell thickness shall be $\frac{1}{8}$ x internal diameter of riser or largest cone section. Fabricate eccentric taper sections and standard cylinder units of proper internal diameter.	
Damp-Proofing	Damp-proofing Requirement	Apply damp-proofing material to manhole exterior and as directed by Owner's Representative on manholes with base at or below water table or where moisture or seepage is evident in trench.
Field-Applied Lining	Flexible Coating Systems – Polyurethane-Based	See SSPWC Section 500-2.
Manhole Frames and Covers	Loading	AASHTO H-20 Loading
	Manhole Cover Marking	Cast the word "SEWER"
Manhole Infiltration Inserts	Minimum Dish Thickness	$\frac{1}{8}$ "
	Lift Strap	Required
	Vent Hole or Valve	$\frac{1}{8}$ " located on side of bowl
	Gasket	Minimum $\frac{1}{2}$ "-wide $\frac{1}{8}$ "-thick envelope type
Drop Manholes	Line with epoxy per SSPWC Section 500-2.7	

## PART 3 - EXECUTION

### 3.1 Preparation

- A. Make field measurements needed to install pre-cast concrete manhole before submitting shop drawings or ordering. Many locations are fixed and cannot be moved to accommodate pipe manufacturing or laying. If necessary, special lengths shall be provided to meet manhole location requirements. If possible, make minor changes in dimensions, alignments, and locations as approved by Owner to avoid utilities or structural conflicts.

### 3.2 Installation

- A. Refer to SSPWC (latest version) for basic execution and installation requirements.

- B. Refer to Section SSPWC Section 306 for open trench requirements.
- C. Furnish and install precast concrete manholes at locations shown on Plans and Submittals.
- D. The following installation standards shall be followed:
  - 1. Manufacturer's installation and warranty requirements
  - 2. Applicable OSHA and Cal OSHA regulations including confined space requirements
  - 3. Applicable building code requirements
- E. Refer variances between above documents and Contract Documents to Owner's Representative.
- F. Install pre-cast concrete manholes to tolerances recommended by Manufacturer. Unless otherwise shown, install pre-cast concrete manholes true, plumb, and level using precision gauges and levels.
- G. Do not undertake any Work inside an existing manhole that is part of a sewage system in service until all tests and safety provisions of Article 4, Section 1532 "Confined Spaces" State of California Construction Safety Orders have been made.
- H. Core drill new connections through walls and base of existing manholes where stubs have not been provided.
- I. Manhole base construction shall occur as follows:
  - 1. Excavate area large enough to accommodate structure, permit grouting of opening, and accommodate backfilling and compaction.
  - 2. Place manhole base concrete against undisturbed soil.
  - 3. Locate and set manhole stubs and sewer main of sizes shown on Plans prior to placing base concrete. Invert elevations of connecting sewers may vary depending on pipe sizes. Set crown elevations of all pipes level with crown elevation of largest pipe unless otherwise indicated on Plans.
  - 4. Set manhole stubs and sewer main before placing manhole base.
  - 5. Recheck for alignment and grade before concrete hardens.
  - 6. Extend manhole base minimum of 12" below bottom of lowest pipe.
  - 7. Handwork invert to provide smooth and accurately-shaped channels conforming in size and shape to lower portions of inlets and outlets. Channels may be formed in base or may consist of half-sewer tile laid in base. Channel diameter shall not exceed outside pipe diameter.
  - 8. Vary channel uniformly in size and shape from inlet to outlet. Construct channel higher than pipe as shown on Plans.
  - 9. Construct all transitions smoothly and of proper radius to give uninterrupted transition of flow. Shape concrete base with wooden float and finish with hard-steel trowel prior to concrete setting.

10. Allow bases to set at least 24 hours before manhole construction is continued. In certain critical situations setting time may be reduced upon Owner's Representative's approval.
  11. If additional mortar is required in manhole base after initial set has taken place, prime surface to receive mortar and mix mortar with concrete adhesive in amounts and proportions recommended by Manufacturer and as directed by Owner's Representative to secure as chip-proof a result as possible.
- J. Pipe stubs, stoppers and bulkheads shall be constructed as follows:
1. Furnish and install sewer pipe and stubs at locations shown on Plans.
  2. Plug stubs five feet or less in length with stoppers.
  3. Plug stubs from inside an active manhole prior to beginning new construction of sewer main from existing manhole. Plug shall remain in place until new Work has been completed and tested.
  4. Seal inlet to existing tie-in manholes with plug to prevent accidental use of new sewer prior to completion and acceptance. Remove plug at time of final acceptance or as directed by Owner's Representative.
  5. Install brick and mortar bulkheads at upstream end of all unused stub channels over 5 feet in length to prevent creation of septic condition from ponding of sewage and debris in unused channels, until such time as stub is connected and normal sewage flow can occur.
- K. Manhole wall sections, cones and grade rings shall be constructed as follows:
1. Do not set wall sections until inverts have been formed and finished, and bases have cured for specified time.
  2. Set each manhole wall section, cone, or grade ring in a minimum ½" thick bed of mortar to make a watertight joint.
  3. Set wall sections and cones perfectly plumb.
  4. Neatly point mortar on inside of manhole
  5. Use various heights of grade rings to bring top of manhole to finish grade as shown on Plans or as directed in field by Owner's Representative.
  6. Limit maximum height of grade rings to 18" unless otherwise directed by Owner's Representative.
- L. Apply joint sealants as follows:
1. Band joints inside and out when applying mortar mix
  2. When groundwater is encountered or in "dry" conditions with Owner's Representative's permission, install pre-formed, cold-applied, ready-to-use plastic sealant uniformly along joint without allowing gaps in sealing compound "rope".

M. Install select backfill around manholes consisting of clean sand and consolidate backfill to 95% relative density per SSPWC Section 306 unless otherwise shown on Plans.

N. Apply manhole frames and covers as follows:

1. In existing pavement or traveled way of existing road shoulder, place flush with existing surface.
2. Outside limits of traveled shoulder, but not in roadside ditch, place 0.10' above existing ground surface.
3. In existing roadside ditch or "offsite" easement, place approximately 18" above existing ground surface or as directed by Owner's Representative.
4. If directed by Owner's Representative, place manhole sections below finished grade in travelways and landscape areas so as not to interfere with construction, set permanent cover below grade to seal manhole, then after finish surfacing is completed, add grade rings to raise manhole cover to finish grade.
5. Secure frames to top pre-cast manhole shaft or grade ring with cement-mortar bed and fillet.
6. Install covers following all necessary cleaning and scraping of foreign materials from frames and covers to ensure satisfactory fit.
7. After final paving or grading, construct Class A concrete ring around manhole frames that are flush with surface as shown on Plans.

### 3.3 Field Quality Control

- A. Manholes and appurtenances shall be watertight and free from infiltration.
- B. Plug all inlets and outlets with acceptable stoppers or plugs and fill manhole with water to limits shown above. Repair all leakage to satisfaction of Owner's Representative.
- C. Stop any manhole leaks that may be observed, even if leakage is less than amount specified above.
- D. Field testing shall include:

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUENCY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Ready-Mix Concrete	Slump	ASTM C143	1 minimum each batch	Owner	Contractor
Sewer Main and Stubs	Alignment and grade	Survey	1 test prior to placing concrete	Contractor	Contractor

ITEM	TEST FOR	TEST STANDARD (ASTM OR OTHER TEST STANDARD)	FREQUEN CY	FIRST TEST PAID FOR BY	RETESTS PAID FOR BY
Manhole Assembly	Installation & Leakage (may be tested in conjunction with sewer pipe tests or individually upon completion of manhole construction)	Visual inspection of finished installation and leakage test as follows:  1. Fill manhole with water to an elevation 1 foot below start of cone section (minimum depth of 4 feet and maximum of 20 feet). 2. Allow water to stand in manhole for 1 hour to allow manhole material to reach maximum absorption. 3. After one hour, refill manhole with water to original depth. 4. Record drop in water surface after 15-60 minutes, as directed by Owner's Representative. 5. Maximum allowable drop in water surface shall be ½" for each 15-minute test period.	1 inspection	Owner	Owner
	Field Performance	Demonstrate compliance to Contract Documents and Manufacturer's printed literature	1 test	Contractor	Contractor
	11-month Warranty Inspection	Demonstrate compliance to Contract Documents and Manufacturer's printed literature	1 test	Owner	Contractor

**END OF SECTION**