# PROPOSAL, SPECIFICATIONS, BOND AND AFFIDAVIT FOR THE CONSTRUCTION OF DOWNTOWN SEWER REHABILITATION, PHASE 2

**CIP No. I-69**

**B 2011-03**

**ELIZABETH OVERSTREET**
**ACTING CITY ENGINEER**
**December 2010**

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## SECTION A

## NOTICE INVITING BIDS

## CITY OF TORRANCE, CALIFORNIA

## NOTICE INVITING BIDS

Notice is hereby given that sealed bids for performing the following described work will be received at the Office of the City Clerk of the City of Torrance, California, **until 2:00 p.m. on Thursday, January 20, 2011,** after which time they will be publicly opened and read at 2:15 p.m. in the Council Chambers of said City:

**CONSTRUCTION OF**
**DOWNTOWN SEWER REHABILITATION, PHASE 2**
**CIP No. I-69**
**B 2011-03**

Plans, Bid Schedule and Specifications are available for viewing and printing by prospective bidders and subcontractors on the City's website at www.torranceca.gov/3239.htm.

Those who only view and/or print the Plans, Bid Schedule and Specifications from the City's website will not be added to the City's Plan Holder list for this project.

**The official and required form of Proposal must be obtained at the Office of the City Clerk (310) 618-2870, City Hall, 3031 Torrance Boulevard, Torrance, California. There is no cost if picked up at City Hall. A payment of $5 is required if requested by mail.** The amount includes tax and is not refundable. A prospective bidder must provide to the City Clerk the firm's name, address, telephone and fax numbers, a contact person and a valid email address. This will ensure that your firm is listed as a "Plan Holder" and that you will be informed of any and all information issued subsequent to obtaining the official form of Proposal. Addenda will be issued only by email and only to those that provide the required information to the City Clerk. Receipt of any Addendum must be acknowledged by a bidder in its submitted form of Proposal.

A bound Specifications booklet may also be obtained at the Office of the City Clerk (310) 618-2870, City Hall, 3031 Torrance Boulevard, Torrance, California upon payment of $10 if picked up at City Hall, or payment of $15 if requested by mail. Both amounts include tax. Neither amount is refundable. The payment includes a copy of the official form of Proposal.

If requesting any item(s) by mail, please send check to the following:

**CITY OF TORRANCE**
**OFFICE OF CITY CLERK**
**3031 TORRANCE BOULEVARD**
**TORRANCE, CA 90509-2970**
**ATTN: CIP No. I-69**

The Engineer's estimate of the contract total is $100,000. All work shall be completed within 60 working days from the date of the Notice to Proceed (NTP).

Per Division 2, Chapter 2 of the Torrance Municipal Code, the Torrance City Council may reject any and all bids, waive any informality or irregularity in such bids, and determine the lowest responsible bidder.

No facsimile bids shall be accepted by the City.

**All bidders shall submit the required Bidder's Liner Methodology Qualification package, the required Liner Materials package and DBE information with their bid.**

Substitution of securities for withheld funds is permitted per Section 22300 of the Public Contract Code.

The City has determined that a Class A Contractor's license is necessary to bid this project, but reserves the right to accept another Class at the sole discretion of either the Public Works Director or Engineer.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county, or counties, 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 for this project, available from the California Department of Industrial Relations' Internet web site at http://www.dir.ca.gov/DLSR/PWD. The Federal minimum wage rates for this project as predetermined by the United States Secretary of Labor are set forth in the Bid book and in copies of this book that may be examined at the offices described above where project plans, special provisions, and bid forms may be seen. Addenda to modify the Federal minimum wage rates, if necessary, will be issued to holders of Bid book. 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.

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 rigging, 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.

By order of the City Council of the City of Torrance, California.

For further information, please contact Joe Enzmann in the Public Works Department at (310) 618-3062 or via the Department office at (310) 781-6900.

## SECTION B

## INSTRUCTIONS TO BIDDERS

**CITY OF TORRANCE,**
**CALIFORNIA**

# INSTRUCTIONS TO BIDDERS

## A. QUALIFICATION OF BIDDERS

### 1. Competency of Bidders

The Bidder shall be thoroughly competent and capable of satisfactorily performing the Work covered by the Bid. As specified in the Bid Documents, the Bidder shall furnish statements of previous experience on similar work. When requested, the Bidder shall also furnish the plan of procedure proposed; the organization, machinery, plant and other equipment available for the Work; evidence of its financial condition and resources; and any other such documentation as may be required by the City to determine if the Bidder is responsible.

### 2. Contractor's License

At the time of submitting the Bid, the Bidder shall be licensed as a contractor in accordance with the provisions of Chapter 9, Division 3, of the California Business and Professions Code. The required prime contractor license class for the Work is shown in the project Notice Inviting Bids. However, the City reserves the right to award the Contract to a contractor with another class if the City determines that the license is proper for the work.

## B. BIDDER RESPONSIBILITY

A responsible Bidder is a Bidder who has demonstrated the attribute of trustworthiness, as well as ability, fitness, capacity and experience to satisfactorily perform the work.

Bidders are notified that, in accordance with Division 2, Chapter 2 of the Torrance Municipal Code, the City Council may determine whether the Bidder is responsible based on a review of the Bidder's performance on other contracts.

If, based on the provision and criteria in Division 2, Chapter 2 of the Torrance Municipal Code, the Public Works Director proposes not to recommend the award of contract to the apparent low bidder, the Director shall notify the Bidder in writing of its intention to recommend to the City Council that the Council award the contract to the 2nd lowest responsible bidder. If the Bidder presents evidence in rebuttal to the recommendation, the Director shall evaluate the merits of such evidence, and based on that evaluation, make a recommendation to the City Council.

C. ADDENDA TO THE CONTRACT DOCUMENTS

The City may issue Addenda to the Contract Documents during the period of advertising for any reason. The Bidder shall acknowledge the receipt of the Addenda in their Bid. Failure of the Bidder to do so may result in the rejection of the Bid as non-responsive.

D. PREPARATION OF THE BID

1. Examination of Site, Plans and Specifications

Prior to submitting a Bid, the Bidder shall examine the Plans and the Work sites, carefully read the Specifications, and satisfy itself that it has the abilities and resources to complete the Work. The Bidder agrees that if it is awarded the Contract, no claim will be made against the City based on ignorance or misunderstanding of the provisions of the Contract Documents, the nature and amount of the work, and the physical and climatic conditions of the work site.

The Contractor shall have included in the contract price a sufficient sum to cover all items, including labor, materials, tools, equipment and incidentals, that are implied or required for the complete improvements as contemplated by the drawings, specifications, and other contract documents, including, but not limited to:

a. Closed-Circuit Television (CCTV) DVDs: The City has existing CCTV DVDs, together with logs of said DVDs, of the sewers to be rehabilitated or replaced. The DVDs generally were made in 2010, and the City does not guarantee they accurately show existing conditions. These are available for inspection during normal business hours at the Public Works Department, subject to pre-arranging a time for said inspection. The existing CCTV DVDs do not relieve the Contractor of the responsibility to provide new pre-construction videos on DVDs.

b. Traffic Control: The Contractor shall be responsible to comply with the traffic control requirements included in the Contract Documents.

c. Bypass Pumping and Flow Control Plan: The Contractor shall be responsible to prepare and submit a bypass pumping and flow control plan in conformance with the requirements of Section 306-6 of the Standard Specifications, and Section 306-10 of the Special Provisions. The bypass pumping and flow control plan is to be submitted at least ten (10) working days prior to commencing work.

d. Construction Schedule: The Contractor shall be responsible to prepare and submit a construction schedule prior to beginning work, and to revise said schedule during the course of construction, in accordance with the Special Provisions.

2. Estimated Quantities

The quantities shown in the Bid are approximate only. The Contractor will be paid for the actual quantities of work installed based on field measurements. The City reserves the right to increase or decrease the amount of any item or portion of work to be performed or materials furnished, or to delete any item, in accordance with the Specifications.

3. Bid Instructions and Submissions

The Bid shall be submitted on the Bid Proposal forms included with the Specifications. All Bid Documents must be completed, executed and submitted with the Bid by the Bidder.

Required eleven (11) Bid Proposal Documents:

(1) Bidder's Proposal
(2) Addenda Acknowledgment
(3) Contractor's Affidavit
(4) Bid Bond (10%)
(5) List of Subcontractors
(6) References (2 pages)
(7) DBE Bidder's list
(8) Violations of Federal or State Law
(9) Disqualification or Debarment
(10) Bidder's Liner Methodology Qualification package
(11) Liner Materials package. [Note: The Bid submittal requirements supplement Section 500-1 of the Standard Specifications.]

All prices submitted will be considered as including any and all sales or use taxes.

In the case of discrepancy between unit bid price and total bid, the unit price shall prevail.

4. Disadvantaged Business Enterprise (DBE) Requirements

The City requires that Disadvantaged Business Enterprise (DBE) have the opportunity to participate in public works projects. To assist the City in establishing future DBE goals, all contractors are requested to submit a list of all subcontractors and suppliers, whether DBE or not, contacted

during preparation of the Bid. The City has established a citywide goal of 9% for DBE for FY 2010-2011. However, this Bid has no set goal, as it is a non-federal project.

E. BID BOND

The Bid must be accompanied by either cash, a certified or cashier's check or a surety bond (bid bond) payable to the City of Torrance. Bids must be submitted on the proposal forms furnished by the Public Works Department. The Bid Guaranty shall be in an amount equivalent to at least 10% of the Total Contract Bid Price.

F. NONRESPONSIVE BIDS AND BID REJECTION

1. A Bid in which the required eleven (11) proposal documents are not completed, executed and submitted may be considered non-responsive and be rejected.

2. A Bid in which the Contract Unit Prices are unbalanced, which is incomplete or which shows alteration of form or irregularities of any kind, or which contains any additions or conditional or alternate Bids that are not called for, may be considered non-responsive and be rejected.

G. AWARD OF CONTRACT

In accordance with Division 2, Chapter 2 of the Torrance Municipal Code, the City Council reserves the right to reject any and all bids received, to take all bids under advisement for a period not-to-exceed sixty (60) days after date of opening thereof, to waive any informality or irregularity in the Bid, and to be the sole judge of the merits of material included in the respective bids received.

H. EXECUTION OF CONTRACT

1. After the Contract is awarded, the awardee shall execute the following eight (8) documents:

    1. Performance Bond (100% of Bid)
    2. Labor and Material Bond (100% of Bid)
    3. Contract - Public Works Agreement
    4. Verification of Insurance Coverage (Certificates and Endorsements)
    5. Construction or Service Contract Endorsement
    6. Workers' Compensation Insurance Certificate
    7. Construction Permit Application Form
    8. Business License Application Form

2. Prior to the pre-construction conference, the awardee shall submit his general layout plan for the work per Section 500-1.1.2(3) of the Special Provisions.

I. APPRENTICESHIP EMPLOYMENT STANDARDS

The Contractor is directed to the provisions in Sections 1776, 1777.5 and 1777.6 of the California Labor Code concerning the employment of apprentices by the contractor or any subcontractor under them.

J. PERMITS, LICENSES AND PUBLIC WORKS AGREEMENT

The Contractor shall procure and execute all permits, licenses, pay all charges and fees, and give all notices necessary and incidental to the completion of the Work. The Contractor shall execute a Public Works Agreement. No fee is charged for a Construction-Excavation Permit issued by the City of Torrance for a public works project. The Contractor shall obtain a City of Torrance Business License.

K. INSURANCE

The Contractor shall maintain Automobile Liability, General Liability and Workers' Compensation Insurance as specified in the Public Works Agreement included in the Project Specifications.

L. PRE-BID INQUIRIES

A Bidder with a Pre-Bid Inquiry must email their question(s) in writing to Joe Enzmann of the Torrance Public Works Department at jenzmann@torranceca.gov, or fax to (310) 781-6902. Please indicate B 2011-03. All questions must be in writing and received no later than 5:00 p.m. on the Thursday prior to the opening of the bids. Questions received after this date will not be considered. For questions of a general nature, a bidder may call Mr. Enzmann directly at (310) 618-3062.

## SECTION C

## BID DOCUMENTS

## BIDDER'S PROPOSAL

Company: _____

**B 2011-03** Total Bid: _____

## PROPOSAL, SPECIFICATIONS, BOND AND AFFIDAVIT FOR THE CONSTRUCTION OF DOWNTOWN SEWER REHABILITATION, PHASE 2 CIP No. I-69

Honorable Mayor and Members
of the Torrance City Council
Torrance, California

Members of the Council:

In accordance with the Notice Inviting Bids pertaining to the receiving of sealed proposals by the City Clerk of the City of Torrance for the above titled improvement, the undersigned hereby proposes to furnish all Work to be performed in accordance with the Drawings (herewith in Appendix I), Plan No. ST-1024 (herewith in Appendix I), the Specifications, Standard Drawings, and the Contract Documents, for the unit price or lump sum set forth in the following schedule:

### DOWNTOWN SEWER REHABILITATION, PHASE 2

### BID SCHEDULE A

| Item No. | Approx. Qty | Unit | Description | Unit Price | Total Bid |
|---|---|---|---|---|---|
| 1. | 2,200 | LF | Clean and Pre-rehabilitation CCTV Inspection recorded to DVD: Clean and CCTV sewer pipe to be lined or containing proposed point repair or replacement, including root, debris and obstruction removal and disposal | | |
| 2. | 2,000 | LF | Post-rehabilitation CCTV inspection recorded to DVD prior to placing of permanent resurfacing | | |
| 3. | 1 | EA | Construct Point Repair on existing 8" VCP Sewer at 1746 Martina Avenue, shown on Drawing 1, complete in place (depth greater than 5'), replace grass lawn in-kind and protect in-place and/or restore irrigation system | | |
| 4. | 1 | EA | Construct Point Repair on existing 6" VCP Sewer including existing service lateral connection, complete in place (depth greater than 5') at 1434 Marcelina Avenue, shown on Drawing 2; coordinate schedule of work with the businesses, see Specifications Section 2-13.1 | | |
| 5. | 1 | EA | Construct Point Repair on existing 8" VCP Sewer, complete in place (depth greater than 5') located in the alley to the rear of 1628 Cravens Avenue, shown on Drawing 2 | | |

| Item No. | Approx. Qty | Unit | Description | Unit Price | Total Bid |
|---|---|---|---|---|---|
| 6. | 1 | EA | Construct Point Repair on existing 8" VCP Sewer including existing service lateral connection, complete in place (depth greater than 5') in the alley to the rear of 1624 Cravens Avenue, shown on Drawing 2 | | |
| 7. | 1 | EA | Construct Point Repair on existing drop pipe at Drop Sewer Manhole and encase pipe in concrete per Standard Plan 202-1 for Public Works Construction, complete in place (depth 8') at location shown on Drawing 2 | | |
| 8. | 1 | LS | Remove and replace approximately 12 LF of 8" VCP Sewer including five (5) service lateral connections in alley adjacent to 1620 Gramercy Avenue, shown on Drawing 2, complete in place (depth greater than 5') | | |
| 9. | 1 | LS | Remove and reconstruct alley per Plan No. ST-1024 from approximately-Station 2+30.5 to Station 2+48 including concrete swale per City of Torrance Standard No. T101 | | |
| 10. | 1 | LS | Construct Point Repair on existing 8" VCP Sewer including, if necessary, connection of new sewer pipe to existing Manhole No. 08, complete in place (depth greater than 5') in the alley to the rear of 1734 Cabrillo Avenue, shown on Drawing 3 | | |
| 11. | 1 | EA | Construct Point Repair on existing 8" VCP Sewer including two existing service lateral connections, complete in place (depth greater than 5') in the alley to the rear of 1834 Cabrillo Avenue, shown on Drawing 3 | | |
| 12. | 1 | LS | Construct Point Repair on existing drop tee pipe of Drop Manhole located in existing concrete driveway of an alley at Cravens Avenue north of Torrance Boulevard, shown on Drawing 4, complete in place (depth 11.5'); repair concrete driveway per City of Torrance Standard No. T105 | | |
| 13. | 250 | LF | Install liner in existing 8" VCP Sewer in Winlock Road, shown on Drawing 6, including post-installation video inspection recorded to DVD | | |
| 14. | 7 | EA | Reconnect existing sewer service lateral to lined sewer pipe by trenchless method in Winlock Road | | |
| 15. | 1 | LS | Construct Shallow Sewer Manhole per City of Torrance Standard No. T205 (depth less than 5') at 4815 Mayor Drive, shown on Drawing 5, including removal and disposal of existing 6" VCP encased in concrete and replacement of 6" VCP encased in concrete connections to new manhole; including restoration of surface features | | |

| Item No. | Approx. Qty | Unit | Description | Unit Price | Total Bid |
|---|---|---|---|---|---|
| 16. | 1 | EA | Remove and dispose of approximately 50-foot-tall palm tree from 4819 Mayor Drive including root removal | | |
| 17. | 1 | EA | Construct Shallow Sewer Manhole per City of Torrance Standard No. T205 (depth less than 5') at 4819 Mayor Drive, shown on Drawing 5, including removal and disposal of existing 6" VCP encased in concrete and replacement of 6" VCP encased in concrete connections to new manhole; including restoration of surface features | | |
| 18. | 10 | LF | Remove existing concrete curb, one-foot wide concrete gutter and minimum 1' wide AC pavement and reconstruct concrete curb, one-foot wide concrete gutter over 8" C.A.B. and construct minimum 1' wide, 2" thick AC pavement over 4" thick section of 2-sack cement and sand slurry mix over an 8-inch thick section of C.A.B. per Standard Plan No. 120-1 For Public Works Construction and City of Torrance Standard Nos. T102-2, T108 and T115, at 4819 Mayor Drive | | |
| 19. | 1 | LS | Traffic Control, including temporary markings and signs, restoration of permanent pavement markings and approved traffic control plans | | |
| 20. | 1 | LS | Shoring for the protection of life and limb | | |
| 21. | 1 | LS | Storm Water Pollution and Prevention Plan and Best Management Practices as required | | |
| 22. | 5 | EA | Construct Point Repair on existing 8" VCP Sewer, complete in place (depth greater than 5'), including pre-rehabilitation and post-rehabilitation video inspections recorded to DVD, as directed by the Engineer | | |
| 23. | 24 | LF | Remove and replace 8" VCP Sewer, complete in place (depth greater than 5'), including pre-rehabilitation and post-rehabilitation video inspections recorded to DVD, as directed by the Engineer | | |
| 24. | 30 | LF | Remove existing concrete curb and gutter and minimum 1' wide AC pavement and reconstruct concrete curb and gutter over 8" C.A.B. and construct minimum 1' wide, 2" thick AC pavement over 4" thick section of 2-sack cement and sand slurry mix over an 8-inch thick section of C.A.B. per Standard Plan No. 120-1 For Public Works Construction and City of Torrance Standard Nos. T102-2, T108 and T115, as directed by the Engineer | | |
| 25. | 64 | SF | Remove and reconstruct 3.5" thick, concrete sidewalk over 4" C.A.B. per City of Torrance Standard No. T102-2, as directed by the Engineer | | |

**TOTAL BID SCHEDULE A** (figures)*:

**TOTAL BID SCHEDULE A** (words)*:

***BID MAY BE REJECTED IF TOTAL IS NOT SHOWN IN FIGURES AND WORDS.**

The items below, listed in Schedule B, may be included in the contract awarded for this project, if funds are available. If funds are available, the City may choose to award the contract for Bid Schedule A, and from Bid Schedule B. If so, the lowest, responsible bidder would then be based on the total amount shown for Bid Schedule "A" plus the total amount for Bid Schedule "B". If funds are not available, the City reserves the right to award the contract for only Bid Schedule A to the lowest responsible bidder based on the amount shown only in Bid Schedule A.

## DOWNTOWN SEWER REHABILITATION, PHASE 2, BID SCHDEULE

## ADDITIVE BID ITEMS,

## SCHEDULE B

## FOR WORK AT 3320 REDONDO BEACH BOULEVARD

| Item No. | Approx. Qty | Unit | Description | Unit Price | Total Bid |
|---|---|---|---|---|---|
| **B1.** | 1 | EA | Lower existing sewer manhole frame-and-cover to match grade of newly-poured concrete driveway approach (Item No. B4 below) | | |
| **B2.** | 25 | LF | Remove existing 8" high concrete curb, 2'-0" wide concrete gutter and minimum 1' wide AC pavement and reconstruct 8" high concrete curb and 2'-0" wide concrete gutter over 8" C.A.B. and construct minimum 1' wide, 2" thick AC pavement over 4" thick section of 2-sack cement and sand slurry mix over an 8-inch thick section of C.A.B. per Standard Plan 120-1 for Public Works Construction and City of Torrance Standard Nos. T102-2, T105, T108, and T115 | | |
| **B3.** | 30 | LF | Remove and reconstruct 2'-0" wide concrete gutter over 8" C.A.B. and minimum 1' wide, 2" inch thick AC pavement over 4" thick section of 2-sack cement and sand slurry mix over an 8-inch thick section of C.A.B. in front of driveway approach per City of Torrance Standard Nos. T105, and T108 | | |
| **B4.** | 1 | LS | Remove existing, approximately 200 SF, concrete driveway approach and integral radius curbs and reconstruct 6" thick concrete driveway approach and integral radius curbs over 8" C.A.B. per Standard Plan 110-2, Type C of the "Standard Plans for Public Works Construction" and City of Torrance Standard Nos. T105 and T108 | | |
| **B5.** | 100 | SF | Remove existing, 4'-0" wide, concrete sidewalk and reconstruct 6" thick, 4'-0" wide, concrete sidewalk over 8" C.A.B. per City of Torrance Standard Nos. T105 and T108 | | |

| | | | | | |
|---|---|---|---|---|---|
| **B6.** | 86 | SF | Remove existing, 4'-0" wide, concrete sidewalk and reconstruct 3.5" thick, 4'-0" wide, concrete sidewalk over 4" C.A.B. per City of Torrance Standard No. T103-2 | | |
| **B7.** | 1 | EA | Replace property-line survey monumentation embedded in sidewalk (in Item No. B6) | | |
| **B8.** | 1 | LS | Traffic Control, approved traffic control plan including flashing arrow board, temporary markings, signs and restoration of permanent pavement markings, per City of Torrance Standard No. T1004 | | |

**TOTAL BID SCHEDULE B: $ _____**

**TOTAL BID SCHEDULE B** (figures)*: _____

**TOTAL BID SCHEDULE B** (words)*: _____

***BID MAY BE REJECTED IF TOTAL IS NOT SHOWN IN FIGURES AND WORDS.**

**TOTAL BID SCHEDULE A + B** (figures)*: _____

**TOTAL BID SCHEDULE A + B** (words)*: _____

***BID MAY BE REJECTED IF TOTAL IS NOT SHOWN IN FIGURES AND WORDS.**

The undersigned furthermore agrees to enter into and execute a contract, with necessary bonds, at the unit prices set forth herein and in case of default in executing such contract, with necessary bonds, the check or bond accompanying this bid and the money payable thereon shall be forfeited thereby to and remain the property of the City of Torrance.

The above unit prices include all work appurtenant to the various items as outlined in the Specifications and all work or expense required for the satisfactory completion of said items. In case of discrepancies between unit prices and totals, the unit prices shall govern.

The undersigned declares that it has carefully examined the Plans, Specifications, and Contract Documents, and has investigated the site of the work and is familiar with the conditions thereon.

_____
Contractor

Date: _____ By: _____

Contractor's State License Address: _____

No. _____ _____

Class _____ Phone: _____

**B 2011-03**

## ACKNOWLEDGEMENT OF ADDENDA RECEIVED

The Bidder shall acknowledge the receipt of addenda by placing an "X" by each addendum received.

Addendum No. 1 ____

Addendum No. 2 ____

Addendum No. 3 ____

Addendum No. 4 ____

Addendum No. 5 ____

Addendum No. 6 ____

Addendum No. 7 ____

Addendum No. 8 ____

If an addendum or addenda have been issued by the City and not noted above as being received by the Bidder, the Bid Proposal may be rejected.

Bidder's Signature Date

STATE OF CALIFORNIA }
}
COUNTY OF _____}

**CONTRACTOR'S AFFIDAVIT**

**B 2011-03**

_____, being first duly sworn, deposes and says:

1. That he is the _____
Title

of _____
**(Name of Partnership, Corporation, or Sole Proprietorship)**

hereinafter called "Contractor," who has submitted to the City of Torrance a proposal for the Construction of DOWNTOWN SEWER REHABILITATION, PHASE 2 (C.I.P. # I-69), B 2011-03;

2. That said proposal is genuine; that the same is not sham; that all statement of facts therein are true;

3. That such proposal was not made in the interest or behalf of any person, partnership, company, association, organization or corporation not named or disclosed;

4. That the Contractor did not, directly or indirectly, induce, solicit or agree with anyone else to submit a false or sham bid, to refrain from bidding, or to withdraw the bid, to raise or fix the bid price of the Contractor or anyone else, or to raise or fix any overhead, profit or cost element of the Contractor's price or the price of anyone else; and did not attempt to induce action prejudicial to the interest of the City of Torrance, or of any other bidder, or anyone else interested in the proposed contract;

5. That the Contractor has not in any manner sought by collusion to secure for itself an advantage over any other bidder or to induce action prejudicial to the interests of the City of Torrance, or of any other bidder or of anyone else interested in the proposed contract;

6. That the Contractor has not accepted any bid from any subcontractor or materialman through any bid depository, the bylaws, rules or regulations of which prohibit or prevent the Contractor from considering any bid from any subcontractor or materialman, which is not processed through said bid depository, or which prevent any subcontractor or materialman from bidding to any contractor who does not use the facilities of or accept bids from or through such bid depository;

**CONTRACTOR'S AFFIDAVIT (CONTINUED)**

7. That the Contractor did not, directly or indirectly, submit the Contractor's bid price or any breakdown thereof, or the contents thereof, or divulge information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, or to any individual or group of Individuals, except to the City of Torrance, or to any person or persons who have a partnership or other financial interest with said Contractor in its business.

Dated this _____ day of _____, 20__

Subscribed and Sworn to
before me this _____ day
of _____, 20__

_____
(Contractor)

_____
(Title)

_____
Notary Public in and for said
County and State.
(Seal)

**BID BOND**

**B 2011-03**

**KNOW ALL MEN BY THESE PRESENTS:** That we, _____

_____

as principal, and _____

as sureties, are held and firmly bound unto the City of Torrance, State of California, in the penal sum of _____ dollars ($_____), for the payment whereof we hereby bind ourselves, our successors, heirs, executors or administrators jointly and severally, firmly by these presents.

The condition of this obligation is such that, whereas the above bounded principal is about to file with and submit to the City of Torrance a bid or proposal for the performance of certain work as required in the City of Torrance, Project No. B 2011-03, said work being: the Construction of DOWNTOWN SEWER REHABILITATION, PHASE 2 (C.I.P. No. I-69), and in compliance with the Specifications therefor under an invitation of said City contained in a notice or advertisement for bids or proposals; now if the bid or proposal of the said principal shall be accepted and if the said work be thereupon awarded to the principal by said City and if the said principal shall enter into a contract with the said City in accordance with said bid or proposal, or if the bid or proposal of the said principal is rejected, then this bond shall be void and of no effect and otherwise in full force and effect.

**WITNESS** our hands this _____ day of _____, 20__.

_____
Principal

_____
Surety/Attorney-in-Fact

_____
Signature

Name: _____
Local Address: _____
_____
Phone No.: _____
Fax No.: _____

## LIST OF SUBCONTRACTORS

The Bidder is required to fill in the following blanks in accordance with the provisions of the Subletting and Subcontracting Fair Practices Act (Chapter 2 of Division 5, Title 1 of the Government Code of the State of California) and should familiarize itself with Section 2-3 of the Standard Specifications.

Name Under Which Subcontractor is Licensed: _____

_____

License Number: _____
Address of Office, Mill or Shop: _____

Specific Description of Sub-Contract: _____

_____

Name Under Which Subcontractor is Licensed: _____

_____

License Number: _____
Address of Office, Mill or Shop: _____

Specific Description of Sub-Contract: _____

_____

Name Under Which Subcontractor is Licensed: _____

_____

License Number: _____
Address of Office, Mill or Shop: _____

Specific Description of Sub-Contract: _____

_____

Name Under Which Subcontractor is Licensed: _____

_____

License Number: _____
Address of Office, Mill or Shop: _____

Specific Description of Sub-Contract: _____

_____

Subcontractors listed in accordance with the provisions of Section 2-3 must be properly licensed under the laws of the State of California for the type of work which they are to perform. Do not list alternate subcontractors for the same work.

# REFERENCES

(Work similar in magnitude and degree of difficulty completed by Contractor within the past three [3] years.)

1. Name (Firm/Agency): _____

   Address: _____

   Contact Person: _____ Telephone No.: _____

   Title of Project: _____

   Project Location: _____

   Date of Completion: _____ Contract Amount: $_____

2. Name (Firm/Agency): _____

   Address: _____

   Contact Person: _____ Telephone No.: _____

   Title of Project: _____

   Project Location: _____

   Date of Completion: _____ Contract Amount: $_____

3. Name (Firm/Agency): _____

   Address: _____

   Contact Person: _____ Telephone No.: _____

   Title of Project: _____

   Project Location: _____

   Date of Completion: _____ Contract Amount: $_____

4. Name (Firm/Agency): _____

   Address: _____

   Contact Person: _____ Telephone No.: _____

   Title of Project: _____

   Project Location: _____

   Date of Completion: _____ Contract Amount: $_____

## REFERENCES

If Contractor has not performed work for the City of Torrance within the last five (5) years, list all work done within said five years (attach additional sheets if necessary). Note if work was done as subcontractor [include only subcontract amount]:

| Work Description & Contract Amount | Agency | Date Completed |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Contractor's License No.: _____ Class: _____

a. Date first obtained: _____ Expiration _____

b. Has License ever been suspended or revoked? _____

If yes, describe when and why: _____

c. Any current claims against License or Bond? _____

If yes, describe claims: _____

Principals in Company (List all – attach additional sheets if necessary):

| NAME | TITLE | LICENSE NO. (If Applicable) |
|---|---|---|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

**DBE**

## DBE BIDDERS LIST
## B 2011-03

All bidders are requested to provide the following information for all DBE and non-DBE contractors or consultants, who provided a proposal, bid, quote, or were contacted by the proposed prime. This information is also requested from the proposed prime contractor and must be submitted with their bid. The City of Torrance will use this information to maintain and update a "Bidders" List to assist in the overall annual DBE goal-setting process.

**Firm Name:** _____ **Phone:** _____

**Address:** _____ **Fax:** _____

**Contact Person:** _____ **No. of years in business:** _____

**Is the firm currently certified as a DBE under 49 CFR Part 26? YES:** ___ **NO:** ___

**Type of work/services/materials provided by firm:** _____

_____

**What were your firm's gross annual receipts for last year?**

**Less than $1 Million**
**Less than $5 Million**
**Less than $10 Million**
**Less than $15 Million**
**More than $15 Million**

This form can be duplicated if necessary to report all bidders (DBEs and non-DBEs) information.

## VIOLATIONS OF FEDERAL, STATE OR LOCAL LAWS

1. Has your firm or its officers been assessed any penalties by an agency for noncompliance or violations of Federal, State or Local labor laws and/or business or licensing regulations within the past five (5) years relating to your construction projects?

Yes/No: _____ Federal/State: _____

If "yes," identify and describe, (including agency and status): _____

_____

_____

_____

Have the penalties been paid? Yes/No: _____

2. Does your firm or its officers have any ongoing investigations by any public agency regarding violations of the State Labor Code, California Business and Professions Code or State Licensing Laws?

Yes/No: _____ Code/Laws: _____ Section/Article: _____

If "yes," identify and describe, (including agency and status): _____

_____

_____

_____

## DISQUALIFICATION OR DEBARMENT

Has your firm, any officer of your firm, or any employee who has a proprietary interest in your firm ever been disqualified, removed, or otherwise prevented from bidding on, performing work on, or completing a federal, state or local project because of a violation of law or a safety regulation? Yes/No: _____. If yes, provide the following information (if more than once, use separate sheets):

Date: _____ Entity: _____

Location: _____

Reason: _____

_____

_____

_____

_____

Provide Status and any Supplemental Statement: _____

_____

_____

_____

_____

Has your firm been reinstated by this entity? Yes/No: _____

## SECTION D

## DOCUMENTS TO BE COMPLETED AND DELIVERED TO CITY PRIOR TO AWARD OF CONTRACT

## PERFORMANCE BOND

**KNOW ALL MEN BY THESE PRESENTS:**

That we, _____as Principal(s) and _____a corporation, incorporated, organized, and existing under the laws of the State of _____, and authorized to execute bonds and undertakings and to do a general surety business in the State of California, as Surety, are jointly and severally held and firmly bound unto the City of Torrance, a municipal corporation, located in the County of Los Angeles, State of California, in the full and just 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 and our respective heirs, executors, administrators, representative, successors and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH,** that: **WHEREAS,** said Principal(s) have/has entered into, or are/is about to enter into, a certain written contract or agreement, dated as of the_____ day of _____, 2010, with the said City of Torrance for the Construction of DOWNTOWN SEWER REHABILITATION, PHASE 2 (C.I.P. No. I-69), B 2011-03, all as is more specifically set forth in said contract or agreement, a full, true and correct copy of which is hereunto attached, and hereby referred to and by this reference incorporated herein and made a part hereof;

**NOW, THEREFORE,** if the said Principal(s) shall faithfully and well and truly do, perform and complete, or cause to be done, performed and complete, each and all of the covenants, terms, conditions, requirements, obligations, acts and things, to be met, done or performed by said Principal(s), including any guarantee period as set forth in, or required by, said contract or agreement, all at and within the time or times, and in the manner as therein specified and contemplated, then this bond and obligation shall be null and void; otherwise it shall be and remain in full force, virtue and effect.

The said Surety, for value received, hereby stipulates and agrees that no amendment, change, extension of time, alteration or addition to said contract or agreement, or of any feature or item or items of performance required therein or thereunder, shall in any manner affect its obligations on or under this bond; and said Surety does hereby waive notice of any such amendment, change, extension of time, alteration, or addition to said contract or agreement, and of any feature or item or items of performance required therein or thereunder.

**PERFORMANCE BOND (CONTINUED)**

In the event any suit, action or proceedings is instituted to recover on this bond or obligation, said Surety will pay, and does hereby agree to pay, as attorney's fees for said City, such sum as the Court in any such suit, action or proceeding may adjudge reasonable.

**EXECUTED, SEALED AND DATED** this _____ day of _____, 20__

CORPORATE SEAL

PRINCIPAL(S):

BY _____

BY _____

CORPORATE SEAL

SURETY:

BY _____

## LABOR AND MATERIAL BOND

**KNOW ALL MEN BY THESE PRESENTS:**

That we,_____
As Principal(s) and
_____ a corporation,
incorporated, organized, and existing under the laws of the State of _____,
and authorized to execute bonds and undertakings and to do a general surety business in the State of California, as Surety, are jointly and severally held and firmly bound unto:

(a) The State of California for the use and benefit of the State Treasurer, as ex-officio Treasurer and custodian of the Unemployment Fund of said State; and

(b) The City of Torrance, California; and

(c) Any and all persons who do or perform or who did or performed work or labor upon or in connection with the work or improvement referred to in the contract or agreement hereinafter mentioned; and

(d) Any and all materialmen, persons, companies, firms, association, or corporations, supplying or furnishing any materials, provisions, provender, transportation, appliances or power, or other supplies used in, upon, for or about or in connection with the performance of the work or improvement contracted to be executed, done, made or performed under said contract or agreement; and

(e) Any and all persons, companies, firms, associations, or corporations furnishing, renting, or hiring teams, equipment, implements or machinery for, in connection with, or contributing to, said work to be done or improvement to be made under said contract or agreement; and

(f) Any and all persons, companies, firms, associations, or corporations who supply both work and materials;

and whose claim has not been paid by said Principal(s), in full and just sum of _____ Dollars ($_____), lawful money of the United States of America, for the payment of which will and truly to be made, said Principal(s) and said Surety do hereby bind themselves and their respective heirs, executors, administrators, representatives, successors and assigns, jointly and severally, firmly by these presents.

**LABOR AND MATERIAL BOND (CONTINUED)**

**THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, THAT: WHEREAS,** said Principal(s) have/has entered into or are/is about to enter into a certain written contract or agreement, dated as of the _____ day of _____20__, with the City of Torrance for the Construction of DOWNTOWN SEWER REHABILITATION, PHASE 2, C.I.P. No. I-69, B 2011-03, all as is more specifically set forth in said contract or agreement, a full, true and correct copy of which is hereunto attached, and hereby referred to and by this reference incorporated herein and made a part hereof;

**NOW, THEREFORE,** if the said Principal(s) (or any of his/her, its, or their subcontractors) under said contract or agreement fails or fail to pay:

(1) For any materials, provisions, provender, transportation, appliances, or power, or other supplies; or

(2) For the hire of any teams, equipment, implements, or machinery; or

(3) For any work or labor; supplies, furnished, provided, used, done or performed in, upon, for or about or in connection with the said work or improvement; or

(4) For amounts due under the Unemployment Insurance Act of the State of California with respect to such work or improvement;

the Surety on this bond will pay the same in an amount not exceeding the sum hereinabove specified in this bond; and, also, in case suit is brought upon this bond, said Surety will (and does hereby agree to) pay a reasonable attorney's fee, to be fixed and taxed as costs, and included in the judgment therein rendered.

This bond shall (and it is hereby made to) inure to the benefit of any and all persons entitled to file claims under Section 1192.1 of the Code of Civil Procedure of the State of California, so as to give a right of action to them or their assigns in any suit brought upon this bond, all as contemplated under the provisions of Section 4205 of the Government Code, and of Chapter 1 of Title 4 of Part 3 of the Code of Civil Procedure, of the State of California.

This bond is executed and filed in connection with said contract or agreement hereunto attached to comply with each and all of the provisions of the laws of the State of California above mentioned or referred to, and of all amendments thereto, and the obligors so intend and do hereby bind themselves accordingly.

**LABOR AND MATERIAL BOND (CONTINUED)**

The said Surety, for value received, hereby stipulates and agrees that no amendment, change, extension of time, alteration, or addition to said contract or agreement, or of any feature or item or items of performance required therein or thereunder, shall in any manner affect its obligations on or under this bond; and said Surety does hereby waive notice of any such amendment, change, extension of time, alteration, or addition to said contract or agreement, and of any feature or item or items of performance required therein or thereunder.

**EXECUTED, SEALED AND DATED** this _____ day of _____, 20__

CORPORATE SEAL

PRINCIPAL:

BY_____

CORPORATE SEAL

SURETY:

BY_____

## *PUBLIC WORKS AGREEMENT*

This PUBLIC WORKS AGREEMENT ("Agreement") is made and entered into as of _____, 20___ (the "Effective Date"), by and between the CITY OF TORRANCE, a municipal corporation ("CITY"), and _____ ("CONTRACTOR").

**RECITALS:**

A. The CITY wishes to retain the services of an experienced and qualified CONTRACTOR to construct Downtown Sewer Rehabilitation, Phase 2, CIP No. I-69, B 2011-03;

B. In order to obtain the desired services, The CITY has circulated a Notice Inviting Bids for the construction of DOWNTOWN SEWER REHABILITATION, PHASE 2, CIP No. I-69, Notice Inviting Bids No. B 2011-03 (the "NIB"), and

C. CONTRACTOR has submitted a Bid (the "Bid") in response to the NIB. CONTRACTOR represents that it is qualified to perform those services requested in the Plans and Specifications. Based upon its review of all Bids submitted in response to the NIB, The CITY is willing to award the contract to CONTRACTOR.

**AGREEMENT:**

**1. SERVICES TO BE PERFORMED BY CONTRACTOR**

CONTRACTOR will provide the services and install those materials listed in the Plans and Specifications, which are on file in the Public Works Department. The NIB and the Plans and Specifications are made a part of this Agreement. A copy of the Bid is attached as Exhibit A.

**2. TERM**

Unless earlier terminated in accordance with Paragraph 4 below, this Agreement will continue in full force and effect for one year from the Effective Date.

**3. COMPENSATION**

A. CONTRACTOR's Fee.

For services rendered pursuant to this Agreement, CONTRACTOR will be paid in accordance with CONTRACTOR's Bid; provided, however, that in no event will the total amount of money paid the CONTRACTOR, for services initially contemplated by this Agreement, exceed the sum of $_____ ("Agreement Sum"), unless otherwise first approved in writing by the CITY.

B. Schedule of Payment.

Provided that the CONTRACTOR is not in default under the terms of this Agreement, upon presentation of an invoice, CONTRACTOR will be paid monthly, within 30 days after the date of the monthly invoice.

## 4. TERMINATION OF AGREEMENT

A. Termination by CITY for Convenience.

1. CITY may, at any time, terminate the Agreement for CITY's convenience and without cause.

2. Upon receipt of written notice from CITY of such termination for CITY's convenience, CONTRACTOR will:

   a) cease operations as directed by CITY in the notice;
   b) take actions necessary, or that CITY may direct, for the protection preservation of the work; and
   c) except for work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

3. In case of such termination for CITY's convenience, CONTRACTOR will be entitled to receive payment for work executed; and costs incurred by reason of such termination, along with reasonable overhead and profit on the work not executed.

B. Termination for Cause.

1. If either party fails to perform any term, covenant or condition in this Agreement and that failure continues for 15 calendar days after the nondefaulting party gives the defaulting party notice of the failure to perform, this Agreement may be terminated for cause; provided, however, that if during the notice period the defaulting party has promptly commenced and continues diligent efforts to remedy the default, the defaulting party will have such additional time as is reasonably necessary to remedy the default.

2. In the event this Agreement is terminated for cause by the default of the CONTRACTOR, the CITY may, at the expense of the CONTRACTOR and its surety, complete this Agreement or cause it to be completed. Any check or bond delivered to the CITY in connection with this Agreement, and the money payable thereon, will be forfeited to and remain the property of the CITY. All moneys due the CONTRACTOR under the terms of this Agreement will be retained by the CITY, but the retention will not release the CONTRACTOR and its surety from liability

for the default. Under these circumstances, however, the CONTRACTOR and its surety will be credited with the amount of money retained, toward any amount by which the cost of completion exceeds the Agreement Sum and any amount authorized for extra services.

3. Termination for cause will not affect or terminate any of the rights of the CITY as against the CONTRACTOR or its surety then existing, or which may thereafter accrue because of the default; this provision is in addition to all other rights and remedies available to the CITY under law.

C. Termination for Breach of Law.

In the event the CONTRACTOR or any of its officers, directors, shareholders, employees, agents, subsidiaries or affiliates is convicted (i) of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of a contract or subcontract; (ii) under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty which currently, seriously, and directly affects responsibility as a public consultant or contractor; (iii) under state or federal antitrust statutes arising out of the submission of bids or proposals; or (iv) of violation of Paragraph 19 of this Agreement; or for any other cause the CITY determines to be so serious and compelling as to affect CONTRACTOR's responsibility as a public consultant or contractor, including but not limited to, debarment by another governmental agency, then the CITY reserves the unilateral right to terminate this Agreement or to impose such other sanctions (which may include financial sanctions, temporary suspensions or any other condition deemed appropriate short of termination) as it deems proper. The CITY will not take action until CONTRACTOR has been given notice and an opportunity to present evidence in mitigation.

## 5. FORCE MAJEURE

If any party fails to perform its obligations because of strikes, lockouts, labor disputes, embargoes, acts of God, inability to obtain labor or materials or reasonable substitutes for labor or materials, governmental restrictions, governmental regulations, governmental controls, judicial orders, enemy or hostile governmental action, civil commotion, fire or other casualty, or other causes beyond the reasonable control of the party obligated to perform, then that party's performance shall be excused for a period equal to the period of such cause for failure to perform.

## 6. RETENTION OF FUNDS

CONTRACTOR authorizes the CITY to deduct from any amount payable to CONTRACTOR (whether or not arising out of this Agreement) any amounts the payment of which may be in dispute or that are necessary to compensate the

CITY for any losses, costs, liabilities, or damages suffered by the CITY, and all amounts for which the CITY may be liable to third parties, by reason of CONTRACTOR's negligent acts or omissions or willful misconduct in performing or failing to perform CONTRACTOR's obligations under this Agreement. In the event that any claim is made by a third party, the amount or validity of which is disputed by CONTRACTOR, or any indebtedness exists that appears to be the basis for a claim of lien, the CITY may withhold from any payment due, without liability for interest because of the withholding, an amount sufficient to cover the claim. The failure of the CITY to exercise the right to deduct or to withhold will not, however, affect the obligations of CONTRACTOR to insure, indemnify, and protect the CITY as elsewhere provided in this Agreement.

## 7. THE CITY'S REPRESENTATIVE

The Public Works Director is designated as the "City Representative," authorized to act in its behalf with respect to the work and services specified in this Agreement and to make all decisions in connection with this Agreement. Whenever approval, directions, or other actions are required by the CITY under this Agreement, those actions will be taken by the City Representative, unless otherwise stated. The City Manager has the right to designate another City Representative at any time, by providing notice to CONTRACTOR.

## 8. CONTRACTOR REPRESENTATIVE(S)

The following principal(s) of CONTRACTOR are designated as being the principal(s) and representative(s) of CONTRACTOR authorized to act in its behalf with respect to the work specified in this Agreement and make all decisions in connection with this Agreement:

_____

_____

_____

## 9. INDEPENDENT CONTRACTOR

The CONTRACTOR is, and at all times will remain as to the CITY, a wholly independent contractor. Neither the CITY nor any of its agents will have control over the conduct of the CONTRACTOR or any of the CONTRACTOR's employees, except as otherwise set forth in this Agreement. The CONTRACTOR may 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 the CITY.

## 10. BUSINESS LICENSE

The CONTRACTOR must obtain a City business license prior to the start of work under this Agreement, unless CONTRACTOR is qualified for an exemption.

## 11. OTHER LICENSES AND PERMITS

CONTRACTOR warrants that it has all professional, contracting and other permits and licenses required to undertake the work contemplated by this Agreement.

## 12. FAMILIARITY WITH WORK

By executing this Agreement, CONTRACTOR warrants that CONTRACTOR (a) has thoroughly investigated and considered the scope of services to be performed, (b) has carefully considered how the services should be performed, and (c) fully understands the facilities, difficulties and restrictions attending performance of the services under this Agreement. If the services involve work upon any site, CONTRACTOR warrants that CONTRACTOR has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services set forth in this Agreement. Should CONTRACTOR discover any latent or unknown conditions that will materially affect the performance of the services set forth in this Agreement, CONTRACTOR must immediately inform the CITY of that fact and may not proceed except at CONTRACTOR's risk until written instructions are received from the CITY.

## 13. CARE OF WORK

CONTRACTOR must adopt reasonable methods during the life of the Agreement to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies and other components to prevent losses or damages, and will be responsible for all damages, to persons or property, until acceptance of the work by the CITY, except those losses or damages as may be caused by the CITY's own negligence.

## 14. CONTRACTOR'S ACCOUNTING RECORDS; OTHER PROJECT RECORDS

Records of the CONTRACTOR's time pertaining to the project, and records of accounts between the CITY and the CONTRACTOR, will be kept on a generally recognized accounting basis. CONTRACTOR will also maintain all other records, including without limitation specifications, drawings, progress reports and the like, relating to the project. All records will be available to the CITY during normal working hours. CONTRACTOR will maintain these records for three years after final payment.

## 15. INDEMNIFICATION

CONTRACTOR will indemnify, defend, and hold harmless CITY, the Redevelopment Agency of the City of Torrance, the City Council, each member thereof, present and future, members of boards and commissions, its officers, agents, employees and volunteers from and against any and all liability, expenses, including defense costs and legal fees, and claims for damages

whatsoever, including, but not limited to, those arising from breach of contract, bodily injury, death, personal injury, property damage, loss of use, or property loss however the same may be caused and regardless of the responsibility for negligence. The obligation to indemnify, defend and hold harmless includes, but is not limited to, any liability or expense, including defense costs and legal fees, arising from the negligent acts or omissions, or willful misconduct of CONTRACTOR, its officers, employees, agents, subcontractors or vendors. It is further agreed, CONTRACTOR's obligations to indemnify, defend and hold harmless will apply even in the event of concurrent negligence on the part of CITY, the City Council, each member thereof, present and future, or its officers, agents and employees, except for liability resulting solely from the negligence or willful misconduct of CITY, its officers, employees or agents. Payment by CITY is not a condition precedent to enforcement of this indemnity. In the event of any dispute between CONTRACTOR and CITY, as to whether liability arises from the sole negligence of the CITY or its officers, employees, agents, subcontractors or vendors, CONTRACTOR will be obligated to pay for CITY's defense until such time as a final judgment has been entered adjudicating the CITY as solely negligent. CONTRACTOR will not be entitled in the event of such a determination to any reimbursement of defense costs including but not limited to attorney's fees, expert fees and costs of litigation.

## 16. NON-LIABILITY OF THE CITY'S OFFICERS AND EMPLOYEES

No officer or employee of the CITY will be personally liable to CONTRACTOR, in the event of any default or breach by the CITY or for any amount that may become due to CONTRACTOR.

## 17. INSURANCE

A. CONTRACTOR must maintain at its sole expense the following insurance, which will be full coverage not subject to self insurance provisions:

1. Automobile Liability, including owned, non-owned and hired vehicles, with at least the following limits of liability:

   a. Combined single limits of $2,000,000 per occurrence.

2. General Liability including coverage for premises, products and completed operations, independent contractors, personal injury and contractual obligations with combined single limits of coverage of at least $3,000,000 per occurrence, with an annual aggregate of no less than $5,000,000.

3. Workers' Compensation with limits as required by the State of California and Employers Liability with limits of at least $1,000,000.

B. The insurance provided by CONTRACTOR will be primary and non-contributory.

C. The CITY ("City of Torrance"), the Redevelopment Agency of the City of Torrance, the City Council and each member thereof, members of boards and commissions, every officer, agent, official, employee and volunteer must be named as additional insureds under the automobile and general liability policies.

D. CONTRACTOR must provide certificates of insurance and/or endorsements to the City Clerk of the City of Torrance before the commencement of work.

E. Each insurance policy required by this Paragraph must contain a provision that no termination, cancellation or change of coverage can be made without thirty days notice to the CITY.

F. CONTRACTOR must include all subcontractors as insureds under its policies or must furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors will be subject to all of the requirements of this Paragraph 17.

## 18. SUFFICIENCY OF INSURERS

Insurance required by this Agreement will be satisfactory only if issued by companies admitted to do business in California, rated "B+" or better in the most recent edition of Best's Key Rating Guide, and only if they are of a financial category Class VII or better, unless these requirements are waived by the Risk Manager of the CITY ("Risk Manager") due to unique circumstances. In the event the Risk Manager determines that the work or services to be performed under this Agreement creates an increased or decreased risk of loss to the CITY, the CONTRACTOR agrees that the minimum limits of any insurance policies and/or the performance bond required by this Agreement may be changed accordingly upon receipt of written notice from the Risk Manager; provided that CONTRACTOR will have the right to appeal a determination of increased coverage by the Risk Manager to the City Council of the CITY within 10 days of receipt of notice from the Risk Manager.

## 19. CONFLICT OF INTEREST

A. No officer or employee of the CITY may have any financial interest, direct or indirect, in this Agreement, nor may any officer or employee participate in any decision relating to the Agreement that effects the officer or employee's financial interest or the financial interest of any corporation, partnership or association in which the officer or employee is, directly or indirectly interested, in violation of any law, rule or regulation.

B. No person may offer, give, or agree to give any officer or employee or former officer or employee, nor may any officer or employee solicit, demand, accept, or agree to accept from another person, a gratuity or an

offer of employment in connection with any decision, approval, disapproval, recommendation, preparation or any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any way pertaining to any program requirement, contract or subcontract, or to any solicitation or proposal.

## 20. NOTICE

A. All notices, requests, demands, or other communications under this Agreement will be in writing. Notice will be sufficiently given for all purposes as follows:

1. Personal delivery. When personally delivered to the recipient: notice is effective on delivery.

2. First Class mail. When mailed first class to the last address of the recipient known to the party giving notice: notice is effective three mail delivery days after deposit in an United States Postal Service office or mailbox.

3. Certified mail. When mailed certified mail, return receipt requested: notice is effective on receipt, if delivery is confirmed by a return receipt.

4. Overnight delivery. When delivered by an overnight delivery service, charges prepaid or charged to the sender's account: notice is effective on delivery, if delivery is confirmed by the delivery service.

5. Facsimile transmission. When sent by fax to the last fax number of the recipient known to the party giving notice: notice is effective on receipt. Any notice given by fax will be deemed received on the next business day if it is received after 5:00 p.m. (recipient's time) or on a non-business day.

6. Addresses for purpose of giving notice are as follows:

CONTRACTOR: _____
_____
_____
_____
Fax: _____

CITY: City Clerk
City of Torrance
3031 Torrance Boulevard
Torrance, CA 90509-2970
Fax: (310) 618-2931

B. Any correctly addressed notice that is refused, unclaimed, or undeliverable because of an act or omission of the party to be notified, will be deemed effective as of the first date the notice was refused, unclaimed or deemed undeliverable by the postal authorities, messenger or overnight delivery service.

C. Either party may change its address or fax number by giving the other party notice of the change in any manner permitted by this Agreement.

## 21. PROHIBITION AGAINST ASSIGNMENT AND SUBCONTRACTING

This Agreement and all exhibits are binding on the heirs, successors, and assigns of the parties. The Agreement may not be assigned or subcontracted by either the CITY or CONTRACTOR without the prior written consent of the other.

## 22. INTEGRATION; AMENDMENT

This Agreement represents the entire understanding of the CITY and CONTRACTOR as to those matters contained in it. No prior oral or written understanding will be of any force or effect with respect to the terms of this Agreement. The Agreement may not be modified or altered except in writing signed by both parties.

## 23. INTERPRETATION

The terms of this Agreement should be construed in accordance with the meaning of the language used and should not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction that might otherwise apply.

## 24. SEVERABILITY

If any part of this Agreement is found to be in conflict with applicable laws, that part will be inoperative, null and void insofar as it is in conflict with any applicable laws, but the remainder of the Agreement will remain in full force and effect.

## 25. TIME OF ESSENCE

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

## 26. GOVERNING LAW; JURISDICTION

This Agreement will be administered and interpreted under the laws of the State of California. Jurisdiction of any litigation arising from the Agreement will be in Los Angeles County, California.

## 27. COMPLIANCE WITH STATUTES AND REGULATIONS

CONTRACTOR will be knowledgeable of and will comply with all applicable federal, state, county and city statutes, rules, regulations, ordinances and orders.

## 28. WAIVER OF BREACH

No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default will impair the right or remedy or be construed as a waiver. A party's consent or approval of any act by the other party requiring the party's consent or approval will not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing and will not be a waiver of any other default concerning the same or any other provision of this Agreement.

## 29. ATTORNEY'S FEES

Except as provided for in Paragraph 15, in any dispute, litigation, arbitration, or other proceeding by which one party either seeks to enforce its rights under this Agreement (whether in contract, tort or both) or seeks a declaration of any rights or obligations under this Agreement, the prevailing party will be awarded reasonable attorney's fees, together with any costs and expenses, to resolve the dispute and to enforce any judgment.

## 30. EXHIBITS

All exhibits identified in this Agreement are incorporated into the Agreement by this reference.

## 31. CONTRACTOR'S AUTHORITY TO EXECUTE

The persons executing this Agreement on behalf of the CONTRACTOR warrant that (i) the CONTRACTOR is duly organized and existing; (ii) they are duly authorized to execute this Agreement on behalf of the CONTRACTOR; (iii) by so executing this Agreement, the CONTRACTOR is formally bound to the provisions of this Agreement; and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which the CONTRACTOR is bound.

CITY OF TORRANCE,
a Municipal Corporation

_____

_____

_____ By: _____

Frank Scotto, Mayor

ATTEST:

_____

Sue Herbers, City Clerk

APPROVED AS TO FORM:

JOHN L. FELLOWS III
City Attorney

By: _____
(Name)
Deputy City Attorney

Attachments: Exhibit A: Bid

**EXHIBIT A**

**Bid**

**[To be attached]**

## CITY OF TORRANCE
## CONSTRUCTION OR SERVICE CONTRACT ENDORSEMENT

To be attached to and made a part of all policies insuring the liability of any person, firm or corporation performing services under contract for the City of Torrance.

Not withstanding any inconsistent expression in the policy to which this endorsement is attached, or in any other endorsement now or hereafter attached thereto, or made a part thereof, the protection afforded by said policy shall:

1. Include the City of Torrance as an additional insured. (To include the elected officials, appointed officials, and employees.)

2. Indemnify and save harmless the City of Torrance against any and all claims resulting from the undertaking specified in the contract known as:

**PROPOSAL, SPECIFICATIONS, BOND AND AFFIDAVIT FOR THE CONSTRUCTION OF DOWNTOWN SEWER REHABILITATION, PHASE 2, (C.I.P. No. I-69) B 2011-03**

This hold harmless assumption on the part of the underwriters shall include all costs of investigation and defense, including claims based on damage to substructures not shown, not located on the plans, or shown incorrectly.

3. Not be cancelled except by notice to the City Attorney of the City of Torrance at least thirty (30) days prior to the date of cancellation.

4. Provide single limit for Bodily Injury Liability and Property Damage Liability combined, $3,000,000 each Occurrence, and $5,000,000 Aggregate.

5. Limited classifications, restricting endorsements, exclusions or other special provisions contained in the policy shall not act to limit the benefits of coverage as they shall apply to the City of Torrance as enumerated in this endorsement. However, nothing herein contained shall affect any rights of the insurer against the insured.

6. It is further expressly agreed by and between the parties hereto that the following two provisions, (a) and (b), are a part of this contract:

   (a) That the Contractor specifically agrees to comply with applicable provisions of Section 1777.5 of the Labor Code relating to the employment by contractor or subcontractor under it, of journeyman or apprentices, or workmen, in any apprenticeable craft or trade.

(b) By my signature hereunder, as Contractor, I certify that I am 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 I will comply with such provisions before commencing the performance of the work of this contract.

The limits of liability as stated in this endorsement apply to the insurance afforded by this endorsement notwithstanding that the policy may have lower limits of liability applying elsewhere in the policy.

_____
Duly Authorized Agent

Attached to and forming part of
Policy No. _____
of the _____

Date: _____
Expiration Date: _____

## WORKERS' COMPENSATION INSURANCE CERTIFICATION

In compliance with Section 7-4 of the Standard Specifications, the Contractor shall complete and submit the following certification with a Certificate of Insurance before execution of the contract.

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.

_____

CONTRACTOR

By: _____

Title: _____

## SECTION E

## SPECIAL PROVISIONS

The following Special Provisions supplement and amend the Standard Specifications for Public Works Construction (2006 edition), as noted herein. These Special Provisions have been arranged into a format which parallels the Standard Specifications for Public Works Construction.

# SECTION E - SPECIAL PROVISIONS

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# PART 1 - GENERAL PROVISIONS

## SECTION 1 - TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

**1-2 DEFINITIONS.** Add or redefine the following:

**Agency** – The City of Torrance, herein referred to as CITY.

**Board** – The City Council of the City of Torrance herein referred to as City Council.

**Engineer** – The Public Works Director of the City of Torrance, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

**Claim** - A separate demand by the Contractor for (A) a time extension, (B) payment of money or damages arising from work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the Agency.

**Pipe installation** - Pipe installation shall include sanitary sewer point repairs.

**1-3 ABBREVIATIONS**

**1-3.2 Common Usage:**

Add the following abbreviations:

| | |
|---|---|
| Approx | Approximate |
| DVD | Digital Video Disc |
| Exist. | Existing |
| Med. | Median |
| M.L. | Main Line |
| OH | Overhead |
| Ped. | Pedestrian |
| Reconst. | Reconstruct |
| Temp. | Temporary |
| Theo. | Theoretical |
| UV | Ultraviolet Light |
| VF | Vertical Foot or Vertical Feet |

## SECTION 2 - SCOPE AND CONTROL OF THE WORK

**2-1 AWARD AND EXECUTION OF CONTRACT.** Replace the entire subsection with the following:

Within ten (10) working days after the date of the CITY'S award of contract, the Contractor shall execute and return all Contract Documents required by the CITY. The CITY reserves the right to terminate the award if the above requirement is not met. Such termination will result in the forfeiture of the Proposal Guaranty.

The Contract shall not be considered binding upon the CITY until executed by the authorized CITY officials.

**2-3 SUBCONTRACTS.**

**2-3.2 Additional Responsibility.** Revise the second sentence of the second paragraph to read as follows:

"Specialty Items" shall include "Clean and CCTV Inspection", "Construct Sewer Manhole" and "Traffic Control".

**2-4 CONTRACT BONDS.** Revise the second sentence of the fourth paragraph to read as follows:

The "Performance Bond" shall remain in effect for one year following the date specified in the Notice of Completion or, if no Notice of Completion is recorded, for one year following the date of final acceptance by the Engineer.

**2-5 PLANS AND SPECIFICATIONS.**

**2-5.1 General.** Add the following sentence to the first paragraph to read as follows:

The Contractor shall maintain a control set of Plans and Specifications on the Work site at all times to be reviewed by the Inspector at the end of each week. All final locations determined in the field, and any deviations from the Plans and Specifications, shall be marked in red on this control set to show as-built conditions. Upon completion of the Work, the Contractor shall submit the control set to the Engineer for approval. Final payment will not be made until this requirement is met.

Add the following subsections:

**2-5.1.1 Plans.** Included as part of the Contract Documents are the following, which show the location, character, dimensions or details of the Work:

1) Project Plans (herewith in Appendix I)

The sanitary sewer plans and data provided with the Contract Documents are based on existing sanitary sewer plans and documents. The plans and data are provided for information only. The City does not guarantee their accuracy and correctness. If the Bidder in preparing the Bid Proposal uses this information, the Bidder assumes all risks resulting from conditions differing from the information shown. The Bidder, in consideration for the information being provided, hereby releases the City from any responsibility of obligation as to the accuracy of such information or for any additional compensation for work performed due to assumptions based on the use of such information.

2) Standard Plans

   a. City of Torrance Standard Plans, latest edition.

   b. Standard Plans for Public Works Construction, latest edition, promulgated by Public Works Standards, Inc.

Applicable Standard Plans for this project are included in Appendices III and IV of these Specifications.

**2-5.1.2 Specifications.** The Work shall be performed or executed in accordance with these Special Provisions and the following:

1) Standard Specifications for Public Works Construction, 2006 Edition and supplements thereto, hereinafter referred to as the Standard Specifications, as written and promulgated by Public Works Standards, Inc. The Standard Specifications are published by BNi Building News, Inc., 1612 South Clementine Street, Anaheim, CA 92802, Phone: (800) 873-6397.

**2-5.2 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 precedence shall control. The order of precedence shall be as follows:

1) Permits issued by other agencies
2) Change Orders (including Plans and Specifications attached thereto)
3) Public Works Agreement
4) Addenda
5) Special and General Provisions
6) Plans
7) Standard Plans
8) Standard Specifications for Public Works Construction
9) Referenced Standard Specifications

With reference to the Plans, the order of precedence is as follows:

1) Change Order plans govern over Addenda and Contract plans
2) Addenda plans govern over Contract plans
3) Contract plans govern over standard plans
4) Detail plans govern over general plans
5) Figures govern over scaled dimensions

Within the Specifications, the order of precedence is as follows:

1) Change Orders
2) Permits from other agencies/Supplemental Agreements
3) Special Provisions
4) Instructions to Bidders
5) Referenced Standard Plans
6) Referenced Standard Specifications

If the Contractor, in the course of the Work, becomes aware of any claimed errors or omissions in the Contract Documents or in the CITY'S fieldwork, the Contractor shall immediately inform the Engineer. The Engineer shall promptly review the matter, and if the Engineer finds an error or omission has been made the Engineer shall determine the corrective actions and advise the Contractor accordingly. If the corrective work associated with an error or omission increases or decreases the amount of work called for in the Contract, the CITY shall issue an appropriate Change Order in accordance with 3-3. After discovery of an error or omission by the Contractor, any related work performed by the Contractor shall be done at the Contractor's risk unless authorized by the Engineer.

### 2-5.3 Submittals

**2-5.3.2 Working Drawings.** Add the following:

In addition to the working drawings required per Table 2-5.3.2(A) of the Standard Specifications, the following working drawings are required:

| Item | Subsection Number | Title | Subject |
|---|---|---|---|
| 18 | 7-8.4, 7-8.6.3, 306-3.3, 306-10 | Sewer Bypass Plan | Sewer Bypasses |
| 19 | 7-9.4 | Shoring and Support Plan | Support |
| 20 | 300-1 | Recycling Summary | |
| 21 | 7-10.3 | Traffic Control Plan | |

Revise the fourth paragraph of the Standard Specifications to read as follows:

Working drawings listed in Table 2-5.3.2(A) and above as Items **18 and 19** shall be prepared, wet stamped, and signed by a Civil or Structural Engineer registered by the State of California.

**2-5.3.4 Supporting Information:** Add the following:

Submittals are required for the following:

9) Sewer pipe, manhole and flow handling

10) Pipe rehabilitation method

In addition to the above, submittals may be required for any product, manufactured item, or system not specifically listed above.

Note: See "Instruction to Bidders" for additional submittal requirements.

**2-6 WORK TO BE DONE.** Add the following:

The Work generally consists of the rehabilitation or replacement of existing sanitary sewers, sanitary sewer point repairs and new manholes as shown in the Appendices of these Specifications.

**2-9 SURVEYING.**

**2-9.2 Survey Service.** Replace the entire subsection with the following:

All construction surveying necessary to complete the Work shown on the Plans and provided in these Contract Documents shall be accomplished by or under the direction of a Registered Land Surveyor or Registered Civil Engineer authorized to practice land surveying in the State of California, retained or provided by the Contractor. The CITY reserves the right to direct additional construction survey to be performed at no additional cost when it feels it is required to adequately construct the Work.

The Contractor shall notify the City in writing at least 2 working days prior to the actual survey and shall provide a written report of all survey monuments found and affected by the work, and shall notify the Engineer prior to disturbing any monument. The Contractor shall provide the traffic control necessary for construction surveying.

All costs for construction survey including locating, protecting and/or re-establishing survey monuments and ties, construction staking, professional services, office calculations, furnishing all labor, materials, equipment, tools and incidentals, and for doing all work involved shall be considered as included in the price for which such work is appurtenant thereto, and no additional costs shall be paid, except as noted below.

It is anticipated there will be fewer than six (6) survey monuments impacted by the work. If more than 6 monuments are required to be re-established, the re-establishment of additional monuments shall be considered extra work pursuant to Section 3-3 of the Standard Specifications.

**2-10 AUTHORITY OF BOARD AND ENGINEER.** Add the following:

Failure of the Contractor to comply with the requirements of the Contract Documents, or to follow the directions of the Engineer, and/or to immediately remedy such noncompliance or to follow directions, may, upon notice from the Engineer, result in the suspension of the Contract monthly progress payments. Any monthly progress payments so suspended may remain in suspension until the Contractor is in compliance with the Contract Documents and the directions of the Engineer, as determined by the Engineer.

**2-11 INSPECTION.** Replace the entire subsection with the following:

The Work is subject to inspection and approval by the Engineer. The Contractor shall notify the Engineer a minimum of 48 hours in advance of the required inspection.

The Engineer will make, or have made, such inspections and tests, as he deems necessary to see that the Work is in conformance with the Contract Documents. In the event such inspections or tests reveal noncompliance with the Contract Documents, the Contractor shall bear the cost of such corrective measures as deemed necessary by the Engineer, as well as the cost of subsequent re-inspection and re-testing.

Work done in the absence of inspection by the Engineer may be required to be removed and replaced under the inspection of the Engineer, and the entire cost of removal and replacement, including the cost of all materials which may be furnished by the CITY and used in the work thus removed, shall be borne by the Contractor, regardless of whether the work removed is found to be defective or not. Work covered without the approval of the Engineer shall, if so directed by the Engineer, be uncovered to the extent required by the Engineer, and the Contractor shall similarly bear the entire cost of performing all the work and furnishing all the materials necessary for the removal of the covering and its subsequent replacement, including all costs for additional inspection.

The Engineer and any authorized representatives shall at all times have access to the Work during its construction at shops and yards as well as the Work site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with the Contract Documents.

Inspection of the Work shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract.

Add the following subsections:

**2-11.1 Special Inspection Fees.** If the Contractor elects to work under this Contract more than 8 hours/day or more than 40 hours/week, Saturday, Sunday, or CITY holidays, the Contractor shall arrange with the Engineer for the required inspection service and pay the Special Inspection Fees which will be charged at the following rates:

| | | |
|---|---|---|
| Mondays through Fridays | - | $ 100.00/hour |
| Saturdays, Sundays, Holidays | - | $1,000.00/day |

Fees may be deducted from payments due to the Contractor at the discretion of the Engineer.

If the Contractor works under this contract at times other than within the allowed working hours without permission from or prior arrangement with the Engineer, the Contractor will be charged a lump sum amount of $500.00 for each occurrence, in addition to the above fees. The amount will be deducted from a Progress Payment.

**2-11.2 Material Inspection/Testing and other City Expenses.**

If a subcontractor hired by the CITY to perform material inspection and/or testing is required to work additional time to perform inspection and/or testing as a result of an action or delay caused by the Contractor, except for specific work allowed by the Engineer, the subcontractor may charge the CITY an additional fee. The Engineer may deduct the additional fee for said inspection and testing from a Progress Payment or retention to the Contractor. The Engineer also may deduct the cost to perform additional testing when an initial test fails to meet the requirements of this Contract. The typical rates for material testing and inspection are available upon request from the Public Works Department.

If the Contractor does not comply with a requirement of these Special Provisions or if it does not respond, after being informed, to a request by the Engineer to amend a site condition that jeopardizes the public health, safety or welfare, the Engineer may direct CITY crews to perform the work. For each occurrence, the CITY may charge the Contractor a base charge in the amount of $750 in addition to all costs incurred by CITY crews for labor, equipment and materials. The standard rates for CITY crews are available upon request from the Public Works Department.

For each sign, drum, barricade, warning device, flagger or other type of required traffic control device that is not provided in accordance with the approved Traffic Control Plans, unless otherwise authorized by the Engineer, the Engineer may deduct $50 per day from a Progress Payment for each missing device. The deduction does not apply to a device that is fraudulently removed by non-construction personnel.

Temporary lane closures maintained prior to 8:30 A.M. and/or after 3:30 P.M. may have a negative economic effect on the local residential, commercial or industrial community. Night time temporary lane closures between the hours of 9:00 p.m. to 6:00 a.m. may be allowed with the approval of the Public Works Director. Unless a temporary lane closure is otherwise authorized, the Engineer may deduct a fee from a Progress Payment for each temporary lane closure maintained prior to 8:30 A.M. or after 3:30 P.M. The fee will be assessed at a rate of $700 per each travel lane per each thirty (30) minute interval, or fraction thereof.

**2-12 CCTV DVDs.** Add a subsection as follows:

In 2010, CCTV inspections were performed by the City of Torrance for the sewer lines to be replaced or rehabilitated under this contract. The CCTV DVDs, together with logs of the results, are available at the Public Works Department of the City of Torrance, located at 20500 Madrona Avenue. Prospective Bidders may contact Joe Enzmann at (310) 618-3062 during normal business hours and schedule an appointment to check out these DVDs for a maximum period of 24 hours. A $250.00 deposit (check made payable to City of Torrance) will be required to check out these DVDs. This deposit is refundable provided the DVDs are returned in usable condition within 24 hours from date and time of receipt.

The DVDs and logs are solely for information. The CITY does not guarantee their accuracy and correctness, and in no event is such information to be considered to be a part of the Contract Documents. If the Bidder in preparing the Bid Proposal uses this information, the Bidder hereby assumes all risks resulting from conditions differing from the information shown. The Bidder, in consideration of the opportunity to review the information, hereby releases the CITY from any responsibility or obligation as to the accuracy or completeness of such information, or for any additional compensation for work performed due to assumptions based on the use of such information. The availability of said DVDs does not relieve the Contractor of its responsibility to perform a new video inspection.

**2-13 COORDINATION AND NOTIFICATIONS TO RESIDENTS AND BUSINESSES.** Add a subsection as follows:

Prior to entering private property, contractor shall provide a written notice to each resident or business affected by the work. Any written communication to residents and/or businesses requires advance approval from the CITY. Contractor is to notify each resident or business of the proposed start of work date and estimated duration of work affecting said resident or business. In addition, Contractor shall be responsible to notify each resident or business of anticipated noise, odors and access restrictions and shall coordinate with each resident or business to maintain access and security of the work site. Initial contact with private property owners shall be with the presence of the Inspector or Engineer.

## 2-13.1 COORDINATION OF POINT REPAIR AT 1434 MARCELINA AVENUE

Add a subsection as follows:

Contractor shall coordinate the scheduling of work of the Point Repair at 1434 Marcelina Avenue with the owner of Keegan's Pub, Sean Willett (310) 328-3750, (310) 721-9934. This Point Repair is located under an existing raised patio deck of the business. The Contractor shall give the business a minimum of two weeks lead time notice for the business to remove that portion of the raised patio deck and fencing to allow access to the location of the Point Repair.

## SECTION 3 – CHANGES IN WORK

### 3-3 EXTRA WORK

**3-3.1 General.** Add the following:

**Payment for additional work and all expenditures in excess of the Contract Price must be authorized in writing by the Engineer. Such authorization shall be obtained by the Contractor prior to engaging in additional work.** It shall be the Contractor's sole responsibility to obtain written approval from the Engineer for any change(s) in material or in the work proposed by suppliers or subcontractors. No payment shall be made to the Contractor for additional work which has not been approved in writing, and the Contractor hereby agrees that it shall have no right to additional compensation for any work not so authorized.

The Contractor shall be responsible to provide all data and to obtain all approvals required by the Specifications, including submittal of Daily Extra Work Reports. No claims or extras shall be approved by the Engineer unless all work was done under the direction of and subject to the approval of the Engineer. Disputed work claims shall comply with Subsection 3-3 as modified herein.

**3-3.2.2 Basis for Establishing Costs.** Replace the second paragraph of part (c) with the following:

The Contractor will be paid for the use of equipment at the lower of the actual rental rates paid by the Contractor or the rental rates listed for such equipment in the California Department of Transportation publication entitled "Labor Surcharge and Equipment Rates" available at the Caltrans web site, www.dot.ca.gov/hq/eqsc/inforesources.htm , which is in effect on the date upon which the work is accomplished, and that hereby is made a part of the Contract, regardless of ownership or any rental or other agreement, if such may exist, for the use of such equipment entered into by the Contractor. If it is deemed necessary by the Engineer to use equipment not listed in the said publication, a suitable rental rate will be established by the Engineer. The Contractor may furnish any cost data that might assist the Engineer in the establishment of such rental rate.

**3-3.2.3 Markup.** Replace the entire subsection with the following:

The markups mentioned hereinafter shall include, but are not limited to, all costs for the services of superintendents, project managers, timekeepers and other personnel not working directly on the change order, and pickup or yard trucks used by the above personnel. These costs shall not be reported as labor or equipment elsewhere except when actually performing work directly on the change order and then shall only be reported at the labor classification of the work performed.

**(a) Work by Contractor.** The following percentages shall be added to the Contractor's costs and shall constitute the mark-up for all overhead and profit, which

shall be deemed to include all items of expense not specifically designated as cost or equipment rental in Subsections 3-3.2.2(a), 3-3.2.2(b), and 3-3.2.2(c).

| | |
|---|---|
| Labor | 20 |
| Materials | 15 |
| Equipment Rental | 15 |
| Other Expenditures | 15 |

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

**(b) Work by Subcontractor.** When any part of the extra work is performed by a subcontractor, the markup established in Subsection 3-3.2.3(a) shall be applied to the subcontractor's actual cost of such work. A markup of ten (10) percent on the first $5,000 of the subcontracted portion of the extra work and a mark-up of 5 percent on work added in excess of $5,000 of the subcontracted portion of the extra work may be added by the Contractor.

The markups specified in parts (a) and (b) above shall be considered as including, but not limited to, the Contractor's labor costs for personnel not working directly on the extra work, including the cost of any tools and equipment that they may use. Such costs shall not be reported as labor or equipment costs elsewhere except when they are actually used in the performance of the extra work. Labor costs shall in that case be reported for the labor classification corresponding to the type and nature of extra work performed.

### 3-4 CHANGED CONDITIONS.

Add the following:

This subsection does not apply to utilities.

## SECTION 4 – CONTROL OF MATERIALS

### 4-1 MATERIAL AND WORKMANSHIP.

#### 4-1.1 General.

Add the following paragraph after the second paragraph:

If the work, or any portion thereof, shall be damaged in any way, or if any defective materials or faulty workmanship shall be discovered at any time prior to the final payment, the Contractor shall forthwith, at its own cost and expense, repair said damage, or replace such defective materials, or remedy such faulty workmanship in a manner satisfactory to the Engineer.

### 4-1.2 Protection of Work and Materials.

Add the following:

The Contractor shall assume all risks and expense of interference and delay in his operations, and the protection from or the repair of damage to improvements being built under the contract, as may be caused by water of whatever quantity from floods, storms, industrial waste, irrigation, underground or other sources. However, the Contractor shall be entitled to an extension of time in accordance with the provisions of Subsection 6-6. The Contractor shall also assume full responsibility and expense of protecting, or removing and returning to the site of Work, all equipment or materials under his care endangered by any action of the elements.

Furthermore, the Contractor shall indemnify and hold the CITY harmless from all claims or suits for damages arising from his operations in sewer bypass or dewatering the Work and control of water.

## SECTION 5 – UTILITIES

**5-1 LOCATION.** Add the following:

The Contractor shall provide coordination with all the utility companies involved and shall provide protection from damage to their facilities. The Contractor shall be responsible for repair or replacement to said facilities made necessary by its failure to provide required protection. The Contractor is required to include utility requirements in the Construction Schedule per Section 6-1.

The Contractor shall be solely responsible to check all utility record maps, books, and/or other data in the possession of the CITY, other agencies, and/or all utility companies, and no allowance shall be made for any failure to have done so.

The Contractor shall utilize the services of "Underground Service Alert - Southern California" for utility locating in all public right-of-ways by calling 1-800-227-2600 at least 48 hours prior to any excavation.

Underground lines that are potentially hazardous such as oil company lines, natural gas mains, and electrical conduits will be carefully located by the owner as provided in the Standard Specifications. The Contractor shall take special precautions in determining the precise location and depth of these structures to insure that they will not be damaged by its operations.

Substitute the following for the last paragraph:

Prior to starting construction, the Contractor shall be responsible to determine the location and depth of all utilities which have been marked by the respective owners and which may affect or be affected by its operations. The Contractor also shall determine the location and depth of each service connection, whether or not marked. Full compensation for such work shall be considered as included in the prices bid for other items or work. If a utility which was marked or a service connection is found to interfere with the work after construction has commenced, the Contractor shall be solely responsible for all costs of any delay and for any costs which could have been avoided if the Contractor had located the utility prior to start of construction.

**5-2 PROTECTION.** Add the following:

If, in the course of construction, the Contractor damages a sewer lateral or water lateral, unless otherwise included in the Special Provisions, the Contractor shall be responsible to completely expose said lateral from the main line to the point of connection at private property to verify integrity of all joints to the satisfaction of the Engineer. This shall not be considered to be extra work and no extra costs shall be allowed.

Sewers, including lateral repairs, shall be constructed of Vitrified Clay Pipe, unless otherwise approved in writing by the Engineer.

Due to the nature of the work involving pipe liners, utility companies may not have marked utilities adjacent to pipelines not shown to require excavations. If, in the course of construction, the Contractor needs to perform additional excavations to provide access or to make repairs, including repairs to laterals, the Contractor shall be responsible to determine the locations of all adjacent facilities.

Add the following after the final paragraph:

As noted in Subsections 5-2.1, 5-2.2 and 5-2.3 utilities are classified and are to be handled in one of three ways by the Contractor in the course of performing the contract.

### 5-2.1 Noninterfering Utilities

Utilities that are not abandoned by the owner and do not physically interfere with the permanent work in its final location shall be supported, protected and maintained in place by the Contractor, and the Contractor shall be solely responsible for any damage, loss or injury, or death resulting from his/her failure to do so and the Contractor shall indemnify and hold harmless the CITY from any and all such consequences. Noninterfering utilities may, with the permission of the owner and the Public Works Director, be relocated still farther from the permanent work in its final locations, but the Contractor shall not so consider, in submitting his bid, unless the relocation is shown on the plans.

### 5-2.2 Abandoned Utilities

Abandoned utilities are those portions of any utility which are no longer needed or desired by the owner and whose destruction is consented to by the owner, and/or is permitted by notation on the plans. Abandoned utilities which physically interfere with the permanent work or with the construction thereof shall be removed by the Contractor and the Contractor shall be solely responsible for any damage, loss or injury, or death resulting from the removal and the Contractor shall indemnify and hold harmless the CITY from any and all such consequences.

### 5-2.3 Interfering Utilities

Any utility shall be deemed an interfering utility (1) which physically occupies any part of the space to be occupied by the permanent work in its final locations, or (2) whose length within the theoretical width of excavation for the permanent work exceeds five times the width of said theoretical excavation whether or not the utility physically interferes with the permanent work. Interfering utilities that are not abandoned by the owner shall be relocated so as not to interfere with the permanent work in its final location. Such relocation will be performed by the owner or the CITY unless otherwise shown on the plans.

The Contractor shall exercise caution to prevent damage to or movement of the utilities while constructing the permanent work along and adjacent to the utilities.

Should any manhole extend within a trench excavation, the Contractor shall choose one

of the following methods of construction and shall assume all responsibilities thereof:

1) Support and maintain the manholes in place during the construction of the permanent work in open cut.

2) Remove the shaft and maintain the base of the manhole in place until the backfill is placed and compacted; then reconstruct the manhole shaft.

3) Use another method of construction which has been submitted to and approved by the Engineer. All costs for the work pertaining to the manholes that might be found to extend partially within the excavation limits or any protective measures required due to the proximity of the manholes and the permanent work at these locations shall be absorbed in the prices bid for the various items of work.

**5-2.4 Protection of Underground Hazardous Utilities.** This Subsection shall apply to projects where there are underground utilities within the Work area which may be potentially hazardous if damaged. A hazardous substance shall be defined as one having the potential for an immediate disaster such as, but not limited to, gasoline, electricity, fuel oil, butane, propane, natural gas, chlorine or other chemicals.

Abandoned or inoperative utilities designed to carry hazardous substances and unidentified or unknown utilities shall be considered hazardous until determined otherwise. Whenever the Contractor is directed by the Engineer to tap these lines, the Contractor shall provide personnel specialized in this work and payment therefore will be considered as extra work per 3-3 of these Special Provisions.

The Contractor shall comply with the following requirements when working around underground hazardous utilities:

1) The Contractor shall not trench or excavate within the area where a utility known to carry a hazardous substance exists until its location has been determined by excavation or other proven methods acceptable to the Engineer. The intervals between exploratory excavations or location points shall be sufficient to determine the exact location of the line. Unless otherwise directed by the Engineer, excavation for underground hazardous utilities shall be performed by the Contractor and paid for as specified per 5-1 of these Special Provisions.

2) If it is determined that the horizontal or vertical clearance between the utility known to carry hazardous substances and the construction limit is less than 300 mm (12 inches) (450mm (18 inches) if scarifying), the Contractor shall confer with its owner. Unless the owner elects to relocate the line or take it out of service, the Contractor shall not excavate until the line has been completely exposed within the limits of construction.

3) Once the physical location of the utility known to carry hazardous substances has been determined, the Contractor, in cooperation with and with the

concurrence of the utility owner, shall determine how to protect and/or support the utility from damage before proceeding with the Work.

4) During all excavation and trenching operations, the Contractor shall exercise extreme caution and protect the utilities from damage.

5) The Contractor shall notify the Engineer, the public agency maintaining records for the jurisdiction in which the Project is located and the owner, if known, whenever previously unidentified or unknown underground utilities are encountered so that the location can be accurately established and made a part of permanent substructure records.

Full compensation for protecting underground hazardous utilities as specified or noted on the Plans shall be considered as included in the prices bid for the various items of work.

## 5-3 REMOVAL.

Add the following:

It shall be the Contractor's responsibility irrespective of the notations on the plans to confirm or determine that a utility is to be abandoned before treating the same as an abandoned utility and shall assume all risks in so determining.

## 5-4 RELOCATION.

Substitute the following for the last paragraph:

For the purpose of these specifications, service connections shall be construed to mean all, or any portion of, the pipe, conduit, cable, or duct which connects a utility main distribution line to the property line of the individual user, and further, shall include such portions of said pipe, conduit, cable or duct on the user's side which affect the contract work or its prosecution.

The CITY will arrange for the alteration or permanent relocation of only such service connections, except sewer house connections and water laterals, that interfere with the permanent work in its final location, and such alteration or permanent relocation will be performed by others at no expense to the Contractor. The Contractor shall be responsible for the alteration or permanent relocation of sewer connections and water laterals, unless otherwise approved by the Engineer.

Service connections which do not interfere with the project structures shall be maintained in place by the Contractor. The cost of such work shall be absorbed in the unit prices or included in the lump sum amounts bid for the various items of work.

## 5-5 DELAYS

Substitute the following:

The Contractor is responsible for notifying the CITY in time to prevent delays attributable to utility relocations or alterations. The Contractor shall not be entitled to damage or additional payment, nor shall it be entitled to standby time for men if such delay does occur. The Engineer will determine the extent of the delay attributable to such interferences, the affect of the delay on the project as a whole, and any commensurate extension of time.

Any failure of the CITY and/or utility company to accomplish relocations in a reasonable manner in light of the Contractor's operations (to the extent such operations would otherwise be feasible and in accordance with the contract and as disclosed to the CITY prior to the Contractor encountering any such utility) shall entitle the Contractor to an extension of contract time to the extent that, in the judgment of the Engineer, the Contractor's completion of the overall contract work has been delayed. However, the Contractor shall be entitled to no other remedy and, in submitting its bid, thereby waives such other remedies, if any, unless the relocation delay is the result of arbitrary, capricious or malicious conduct by the CITY.

# SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK

**6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK.** Replace the entire subsection with the following:

**6-1.1 General.** Within ten (10) working days after the date of the CITY's execution of the Contract, the Contractor shall submit a proposed construction schedule to the Engineer for approval. The construction schedule shall be in accordance with Subsections 6-1.2 and 6-1.3 and shall be in sufficient detail to show chronological relationship of all activities of the Work. These include, but are not limited to: estimated starting and completion dates of various activities, submittal of working drawings to the Engineer for approval, procurement of materials and scheduling of equipment.

Prior to issuing the Notice to Proceed, the Engineer will schedule a Pre-Construction Meeting with the Contractor to review the proposed construction schedule and delivery dates, arrange utility coordination and clarify inspection procedures.

Prior to starting any Work, the Contractor may be required to attend a Community Meeting to be scheduled by the Engineer. There shall be no additional payment to attend said meeting. The meeting, to be held on a weekday evening, will address the residents' questions and concerns regarding the Work, what can be expected during construction, and vehicular and pedestrian access that may be temporarily restricted during construction.

Notwithstanding any other provisions of the Contract, the Contractor shall not be obligated to perform any work and the CITY shall not be obligated to accept or pay for any work performed by the Contractor prior to delivery of a Notice to Proceed. The CITY's knowledge of work being performed prior to delivery of the Notice to Proceed shall not obligate the CITY to accept or pay for such work. The Contractor shall provide all required Contract bonds and evidences of insurance prior to commencing work at the site.

**6-1.2 Criteria.** The construction schedule shall conform to the following criteria:

1) The schedule shall be prepared using the latest version of Primavera Microsoft Project or approved equal.

2) Work activities shall be based on the items of work per Subsection 2-6, and the following:

   a) Contract Unit Price items shall be subdivided into those portions to be constructed during each stage or phase of construction.

   b) Lump sum items shall be subdivided into those portions to be constructed during each stage or phase of construction.

3) Utility relocations in coordination with the Contractor per Subsection 5-4 of these Special Provisions shall be considered as activities.

4) Required submittals and working drawings shall be included as activities.

5) The procurement of construction materials and equipment with long lead times for deliveries shall be included as activities.

6) Work to be performed by subcontractors shall be identified and shown as work activities.

7) Start and completion dates of each activity shall be illustrated.

8) Completion of all Work under the Contract shall be within the time specified in Subsection 6-7 of these Special Provisions and in accordance with the Plans and Specifications.

**6-1.3 Requirements.** In preparing the construction schedule, the following items shall be considered:

1) Sequence of Construction - The Contractor shall sequence the Work in a manner to expeditiously complete the project with a minimum of inconvenience to the adjacent owners and to conform to the following:

2) PCC construction - Construction of PCC walks, driveways, ramps, curbs, and gutters shall be formed and poured within 5 working days following removal of the concrete at any location, unless otherwise approved by the Engineer.

3) Irrigation systems - Irrigation systems disrupted by the Contractor shall not be left inoperable for more than three working days. It shall be the Contractor's responsibility to test irrigation systems prior to and following construction.

4) All work shall only be performed between the hours of 8:00 a.m. and 4:00 p.m. unless otherwise approved by the Engineer.

5) Subsection 307-1.3 regarding the ordering of materials.

6) A move-in period of 10 calendar days will be allowed starting on the date in the Notice to Proceed.

7) Survey (Subsection 2-9.2 of these Special Provisions)

8) Trash collection - the Contractor must schedule its work so as not to impact trash collection.

Should the Contractor fail to meet Requirements 2 and/or 3, the Engineer reserves the right to prohibit the Contractor from making further removals until the clean up, construction, or rehabilitation of sprinklers is in conformance with the aforementioned requirements. Furthermore, if after notice is given to the Contractor to perform work to meet these requirements, and the Contractor refuses or for any reason fails to perform sufficiently to meet these schedules, the CITY may perform said work and charge the Contractor for all costs incurred.

**6-1.4 Updates.** The Contractor shall submit 2 paper copies of the updated construction schedule to the Engineer on the first working day of each month.

If the Contractor decides to make a major change in the method of operations after commencing construction, or if the schedule fails to reflect the actual progress, the Contractor shall submit to the Engineer a revised construction schedule in advance of beginning revised operations.

## 6-7 TIME OF COMPLETION.

**6-7.1 General.** Replace the first sentence with the following:

Time shall be of the essence in the Contract. The Contractor shall begin Work after the mailing by the Engineer to the Contractor, first class mail, postage prepaid, a Notice to Proceed and shall diligently prosecute the same to completion within Sixty (60) working days from the start date specified in the Notice to Proceed.

**6-8 COMPLETIONS, ACCEPTANCE AND WARRANTY.** Replace the second paragraph with the following:

If, in the Engineer's judgment, the Work has been completed and is ready for acceptance, the Engineer will so certify and will determine the date when the Work was completed. This will be the date when the Contractor is relieved from responsibility to protect the Work. The Engineer may cause a Notice of Completion to be filed and recorded with the Los Angeles County Recorder's Office. At the Engineer's option, the Engineer may certify acceptance to the City Council who may then cause a Notice of Completion to be filed and recorded with the Los Angeles County Recorder's Office.

Add the following subsection:

**6-8.1 Manufacturer's Warranties.** Manufacturer's warranties shall not relieve the Contractor of liability under these Specifications. Such warranties only shall supplement the Contractor's responsibility.

The Engineer may, at his option, require a manufacturer's warranty on any product offered for use.

**6-9 LIQUIDATED DAMAGES.** In each of the two paragraphs, substitute "$600" in place of "$250" as the amount of the liquidated damages per each consecutive calendar day.

## SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

**7-3 LIABILITY INSURANCE.** Replace the second sentence of the second paragraph with the following:

The Contractor must maintain at its sole expense the following insurance, which will be full coverage not subject to self-insurance provisions:

1) Automobile Liability, including owned, non-owned and hired vehicles, with at least the following limits of liability:

   Combined single limits of $2,000,000 per occurrence.

2) General Liability including coverage for premises, products and completed operations, independent contractors, personal injury and contractual obligations with combined single limits of coverage of at least $3,000,000 per occurrence, with an annual aggregate of no less than $5,000,000.

Add the following:

The City of Torrance, the City Council and each member thereof, members of boards and commissions, and every officer, agent, official, employee and volunteer, must be

named as additional insureds under the automobile and general liability policies, and included in the indemnification by the Contractor.

The Contractor must include all subcontractors as insured's under its policies or must furnish separate certificates and endorsements for each subcontractor.

**7-4 WORKER'S COMPENSATION INSURANCE.** Add the following after the first sentence of the second paragraph:

Worker's Compensation Insurance shall be with limits as required by the State of California and Employer's Liability with limits of at least $1,000,000 per accident.

**7-5 PERMITS.** Replace the second paragraph with the following:

The Contractor shall obtain a City of Torrance Business License from the Finance Department (310) 618-5923 and a no-fee Construction Excavation Permit from the Community Development Department before commencing construction.

Full compensation for complying with permit requirements shall be included in the price for the various items of work.

**7-6 THE CONTRACTOR'S REPRESENTATIVE**

Add a third paragraph to the section stating the following:

Before starting work, the CITY shall have the authority to not approve the Contractor's proposed representative and/or alternate representative. The CITY shall inform the Contractor in writing and request a replacement representative and/or alternate representative. The CITY shall have the authority to require the Contractor to remove its representative and/or alternate representative at any time without cause and at no cost to the CITY.

**7-8 PROJECT SITE MAINTENANCE.**

**7-8.1 Cleanups and Dust Control.** The second paragraph is amended to read:

Unless directed otherwise by the Engineer, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day to keep paved areas acceptably clean to the Engineer whenever construction, including restoration, is incomplete.

**7-8.5 Temporary Light, Power, and Water.** Add the following:

The Contractor shall obtain a construction water meter from the CITY with payment of a deposit, refundable upon return of the meter in good working condition. The Contractor shall pay for the water used at the CITY's current water rates.

**7-8.6 Water Pollution Control.** Add the following subsections:

**7-8.6.1 Best Management Practices (BMPs).** Best Management Practices shall be defined as any program, technology, process, siting criteria, operating method, measure, or device, which controls, prevents, removes, or reduces pollution. The Contractor shall obtain and refer to the California Storm Water Best Management Practice Handbooks, Volume, 3 Construction BMP Handbook and the Los Angeles County Department of Public Works Best Management Practices Handbook for Construction Activities. These publications are available from:

Los Angeles County
Department of Public Works
Cashier's Office
900 S. Fremont Avenue
Alhambra, CA 91803
Telephone (626) 458-6959

The Contractor shall have a minimum of two (2) readily accessible copies of each publication on the Work site at all times.

The CITY may assess the Contractor a penalty of $1,000 for each calendar day that the Contractor has not fully implemented the appropriate BMPs and/or is otherwise in noncompliance with these provisions. In addition, the CITY will deduct, from the final payment due the Contractor, the total amount of any fines levied on the CITY, plus legal and staff costs, as a result of the Contractor's lack of compliance with these provisions and/or less than complete implementation of the appropriate BMPs.

Full compensation for the implementation of BMPs, including the construction, removal, and the furnishing of all necessary labor, equipment, and materials, shall be considered as included in the price bid for the various items of work.

**7-8.6.3 Sewage Spillage Prevention.** The Contractor's attention is directed to any sewer bypass required during the construction of this Contract.

The Contractor shall make arrangements for an emergency response unit comprised of emergency response equipment and trained personnel to be immediately dispatched to the Work site in the event of a sewage spill. Prior to commencing any Work under the Contract, and subject to review and approval by the Engineer, the Contractor shall prepare and implement a written emergency response plan and procedure, to include response teams, access routes, required materials, equipment, clothing and tools, and an emergency response roster with telephone numbers and arrangements for backup

personnel and equipment. This plan and emergency response roster shall be provided to the Engineer.

The Contractor shall be fully responsible for containing any sewage spillage, preventing any sewage from reaching a watercourse, recovery and legal disposal of any spilled sewage, any fines or penalties associated with the sewage spill imposed upon the Agency and/or the Contractor by other jurisdictional agencies, and any other expenses or liabilities created or generated as a result of the sewage spillage.

Should a sewage spill occur, the Contractor shall immediately notify the Engineer.

All costs for work required to comply with the requirements of this subsection shall be considered as included in the price bid for the various items of work.

Add the following subsections:

**7-8.8 Contractor's Storage Yard.** If deemed necessary, the Contractor shall be responsible for obtaining a storage yard for the duration of the Work. If the proposed location of the yard is located within the boundaries of the CITY, the Contractor shall obtain prior approval from the Engineer.

**7-8.9 Graffiti Removal.** The Contractor shall maintain the Work, all of its equipment, and all traffic control devices, including signage, free of graffiti throughout the duration of the Contract. The Contractor shall respond to any request from the Engineer to remove graffiti within 4 hours of notification. Should the Contractor fail to respond to such request, the CITY reserves the right to make other arrangements for the requested graffiti removal and deduct the cost from any monies due the Contractor.

## 7-9 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

Add the following paragraphs:
The Contractor shall be responsible to protect all new concrete work from being etched, scratched or otherwise marked or having wet slough material deposited thereon. If new concrete work is marked, the Contractor shall replace it at its expense in accordance with 303-5.7 of these special provisions.

The Contractor shall perform all private lawn, hardscape, and parkway restorations (not included in the project plans), including restoration of irrigation systems and existing curb drains within five (5) days after the adjacent improvements have been constructed at his own expense. The Contractor shall not delay restorations for tree plantings.

## 7-10 PUBLIC CONVENIENCE AND SAFETY

**7-10.1 Traffic and Access.** Add the following before the last paragraph:

The Contractor shall be responsible to provide at least 48 hours (2 Work Days) written notice to each affected property before closing or partially closing any alley, driveway, garage access or pedestrian access.

When a residential driveway or garage access is excavated, the Contractor shall provide access within four (4) hours after excavation and not later than the end of the same work day, unless otherwise approved by the Engineer. Unless the Contractor makes other arrangements satisfactory to the owners, the Contractor shall provide and maintain safe, adequate vehicular access to places of business and public gatherings as stated herein below:

1) For each establishment (such as, but not limited to, gas stations, markets, and other "drive-in" business) on the corner of an intersection, which has a driveway or access on each intersecting street or alley, the Contractor shall provide vehicular access to at least one driveway or access insofar as the access is affected by the Contractor's operations.

2) For each establishment (such as, but not limited to, motels, parking lots and garages), which has a one-way traffic pattern with the appropriate entrance driveway and exit driveway, the Contractor shall provide vehicular access to the entrance driveway and the exit driveway insofar as the access is affected by the Contractor's operations.

3) The Contractor shall provide vehicular access to all schools and parking lots including, but not limited to, apartment building parking lots.

4) The Contractor shall provide vehicular access to all establishments requiring such access for receiving or delivering materials or supplies.

5) The Contractor shall make every reasonable effort to provide maximum access to churches on their Sabbath days. In addition, the Contractor shall not park or store equipment at the site of a church on its Sabbath days.

6) At least two (2) Work Days prior to starting work in any location, the contractor shall distribute notices, written or approved by the Engineer, to all homeowners, residents, and businesses that will be impacted by the work. Said notices shall describe anticipated noise, odors, dust and access restrictions.

Should any change in these requirements be necessitated by extraordinary occurrences or requirements during the execution of the Work, the Contractor shall obtain prior written approval of the Engineer.

Add the following subsections:

**7-10.1.1 Minimum Requirements for Maintaining Traffic Flow.** The Contractor shall observe the following minimum requirements:

1) All streets, excluding alleys, shall remain open to traffic at all times.

2) At a minimum, the Contractor shall maintain one (1) eleven (11) foot-wide lane on each street, excluding alleys, during work hours. Two (2) lanes shall be kept open all other times, excluding alleys.

3) Contractor, after proper notification to each affected property, may close an alley during working hours. Alley must be re-opened during non-working hours or have at least one (1) eleven (11) foot-wide lane. Contractor may be required to install steel plates to provide and maintain access across a longitudinal gutter per Subsection 7-10.1. If an alley intersection is closed, the other end of the alley must remain open.

4) Traffic signs, flaggers, warning devices, safety traffic devices and, on select streets, electronic arrow boards for diverting and directing traffic shall be furnished, installed and maintained by the Contractor throughout the project.

5) The Contractor must provide access through the work zone during non-working hours by means of temporary ramps. Open trenches shall either be covered by steel plates, or ramped with aggregate base. No drop-off at either transverse or longitudinal joints shall be allowed at any time. Temporary ramps also shall be provided across water supply and sewer by-pass hoses. Temporary ramps shall be constructed with aggregate or temporary asphalt, as appropriate, with a minimum of 1" to 12" slope in both longitudinal and transverse directions.

All costs for the above requirements shall be included in the Unit Bid Price for Traffic Control.

**7-10.1.2 Temporary "No Parking" Signs.** The Contractor is responsible to post temporary "No Parking" signs at least forty-eight (48) hours (two work days) in advance of the first date of enforcement. Each sign must include the beginning and end dates and the hours in effect (if not 24 hours/day), if applicable "Tow-Away" and "City of Torrance" must be written on the sign face.

Signs shall be professionally made of moisture-resistant, heavy duty cardboard or other approved material. All signs shall be maintained by the Contractor and kept free of graffiti. Any sign that becomes illegible or is removed shall be replaced within twenty-four (24) hours. The Contractor shall only be permitted to restrict parking for the minimum time necessary to complete on-going work and shall be responsible to remove and repost "Temporary No Parking" signs if and when parking can be restored for more than five (5) consecutive days, unless otherwise approved by the Engineer.

The Contractor shall obtain approval for the signs and the placement thereof from the Engineer. Immediately after this approval and posting, the Contractor shall notify Torrance Police Department, Traffic Division, at (310) 618-5557 for review and enforcement.

Full compensation for furnishing, placing, maintaining and removing temporary signs shall be considered as included in the Unit Bid Price for Traffic Control.

**7-10.1.4 Trash Pick-Up.** Trash pick up days are established and will not be changed. Consult the Engineer regarding trash pick up schedule. The Contractor shall ensure streets and alleys affected by the work are accessible to the CITY's automated trash trucks on designated pick up days. In alleys, Contractor shall be responsible to provide and maintain access to large trash containers during the course of the work.

**7-10.3 Street Closures, Detours, Barricades.**

Add the following paragraph after the first paragraph:

In addition to the requirements of this subsection, the Contractor shall conform to the requirements for street closures, detours, and barricades as stipulated in the Special Provisions. However, deviations from the requirements stipulated in the Special Provisions may be permitted upon written approval of the Public Works Director when such deviations are in the best interest of the CITY.

Replace the second paragraph with the following:

The Contractor shall notify the Engineer at least ten (10) working days in advance of closing or partially closing any street or alley and comply with the Engineer's requirements. In addition, the Contractor shall notify the Torrance Police Department at (310) 328-3456 and Torrance Fire Department at (310) 781-7040 at least two (2) working days in advance of such closing.

It shall be the Contractor's responsibility to allow passage of the Torrance Transit System coaches through the construction area at all times. The Contractor shall notify the Torrance Transit Department at (310) 618-6927 at least 48 hours prior to construction affecting bus stop zones to allow said Transit System to temporarily abandon and relocate bus stop zones within the construction area.

The Contractor shall immediately notify the above parties upon completion of the construction work and opening or reopening of any street or alley.

Add the following:

The Contractor shall install, maintain, and remove all temporary delineators, barricades, lights, warning signs and other facilities necessary to control vehicular and pedestrian traffic as specified either in the Manual of Uniform Traffic Control Devices and 2010 California Supplement or in the Work Area Traffic Control Handbook (WATCH Manual). Materials for a temporary facility may be provided from new or used materials. If used materials are provided, they shall be sound, in good condition and otherwise meet the requirements of new materials. All traffic control devices shall be free of graffiti, and the Contractor shall be responsible to immediately clean and/or replace any device to the satisfaction of the Engineer. All barricades used as warning and guiding devices shall bear the name of the Contractor in legible letters. A flashing arrow board shall be provided by the Contractor for all lane closures on select streets as determined by the Engineer.

Full compensation for furnishing, installing, maintaining and removing the above traffic control devices shall be considered as included in the Unit Bid Price for Traffic Control.

Where streets or alleys in which improvements are being constructed are specified hereinafter to be closed to through traffic, it shall be understood that such closures shall apply only to the portions of such streets where construction is actually in progress.

Substitute the following for the first sentence of the third paragraph:

The Contractor shall submit to the Engineer detailed plans prepared by a Registered Civil Engineer of all temporary bridges proposed for use on this project. This includes bridges, which may have been used on previous projects. The Contractor shall allow 15 days for approval by the Engineer. The drawings shall indicate specific locations where the bridge is to be used. Bridges shall not be installed until such time as written approval is obtained from, and the bridge is inspected by the Engineer.

Revise the final sentence of the third paragraph to include:

..., except as modified hereinafter or within the Special Provisions.

Add the following paragraph after the third paragraph:

The Contractor shall conform to the Work Area Traffic Control Handbook (WATCH Manual), latest edition, and to Section 74.6.8 of the Torrance Municipal Code. In addition, the Contractor shall comply with directions from the Engineer to provide protection at excavations, trenches and/or other potentially hazardous construction areas. The Contractor shall be required to erect temporary railing five-foot high chain link fences, or equivalent protection, to completely enclose all open excavations over three feet (3') in depth. Fencing shall be approved by the Engineer, and provide adequate security. Fencing may be removed during working hours to the extent necessary to provide access and working room, in which case the Contractor shall provide equivalent security, to the satisfaction of the Engineer, during said periods. Any excavation not secured to the satisfaction of the Engineer shall be completely backfilled prior to the end of each day's construction activities. The Engineer may require additional security devices, lighting or other protection in addition to said fencing. Full compensation for furnishing, placing and removing temporary protection shall be considered as included in the price for the various items of work.

## SECTION 9 - MEASUREMENT AND PAYMENT

**9-1 MEASUREMENT AND PAYMENT.** Add the following Subsections:

### 9-1.2.1 Payment for Labor and Materials.

The Contractor shall pay and cause the subcontractors to pay any and all accounts for labor, including Worker's Compensation premiums, State Unemployment and Federal Social Security payments and all other wage and salary deductions required by law. The Contractor also shall pay and cause the subcontractors to pay any and all accounts for services, equipment and materials used by it and the subcontractors during the performance of work under this contract. All such accounts shall be paid as they become due and payable. If requested by the Engineer, the Contractor shall immediately furnish the CITY with proof of payment of such accounts.

### 9-1.2.2 Measurement and Payment

Payment of each item will include full compensation for furnishing all labor, materials, tools, equipment and backup equipment; transportation and technical competence for performing all work necessary to complete each item as indicated on the plans and as specified in these Contract Documents, including but not limited to obtaining all applicable certifications necessary for specialty personnel and major equipment in conformance with Subsection 7-5, and all other applicable permits; securing a storage yard to store all equipment and materials to be used on the job, disposal of waste materials, restoration of the site, etc. The storage yard may also be used as a temporary storage for excavated materials, and traffic control items. No separate payment will be made for mobilization and demobilization. Costs for mobilization/demobilization shall be included in the unit prices bid for each work item.

### 9-1.2.3 Additional Work

The Public Works Director must authorize payment for additional work and all expenditures in excess of the bid amount in writing. The Contractor shall obtain such authorization prior to engaging in additional work. It shall be the Contractor's sole responsibility to obtain written approval from the Public Works Director for any change(s) in material or in the work proposed by suppliers or subcontractors. No payment shall be made to the Contractor for additional work, which has not been approved in writing, and the Contractor hereby agrees that it shall have no right to additional compensation for any work not so authorized.

**9-2 LUMP SUM WORK.** Replace the second paragraph with the following:

The Contractor shall, within five (5) working days of receipt of a request from the Engineer, submit a complete breakdown of lump sum bid prices showing the value assigned to each part of the work, including an allowance for profit and overhead. In submitting the breakdown, the Contractor certifies that it is not unbalanced and that the value assigned to each part of the work represents its estimate of the actual cost,

including profit and overhead, of performing that part of the work. The breakdown shall be sufficiently detailed to permit its use by the Engineer as one of the bases for evaluating requests for payment. No extra costs shall be allowed for providing these breakdowns.

## 9-3 PAYMENT.

**9-3.2 Partial and Final Payment.** Add the following:

The Contractor shall submit all requests for payment on a Progress Payment Invoice to be provided by the CITY.

Prior to submittal of said Invoice, all items for which payment is requested shall be checked and approved in writing by the Engineer. No payments will be made unless all back-up data is submitted with the payment request and the Progress Payment Invoice is signed by both Contractor and Engineer.

Delete the third paragraph in its entirety and replace with:

For each progress estimate, 10 percent will be deducted and retained by the CITY, and the remainder, less the amount of all previous payments, will be paid. In addition, 125% of the amount of outstanding "Stop Notices" shall be withheld.

**9-3.4 Mobilization.** Replace the entire subsection with the following:

Mobilization shall include the provisions of the Construction Schedule, Best Management Practices and Storm Water Pollution Prevention Plan; Sewage Spillage Prevention Emergency Response Plans; site review; obtaining all permits, insurance, and bonds; moving onto the site all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities, and removal of same at completion of the Work; and all other work; all as required for the proper performance and completion of the Work.

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

1) Submittal and modification, as required, of the Construction Schedule, working drawings and Storm Water Pollution Prevention Plan.

2) Moving on to the site of all Contractor's plant and equipment required for the first month's operations.

3) Installing temporary construction power and wiring.

4) Establishing fire protection system.

5) Developing construction water supply.

6) Providing on-site sanitary facilities and portable water facilities, as required.

7) Arranging for and erection of Contractor's work and storage yard.

8) Submittal of all required insurance certificates and bonds, including subcontractors.

9) Obtaining all required permits.

10) Posting all OSHA required notices and establishment of safety programs.

11) Having the Contractor's Superintendent present at the job site full time.

12) Removal, cleanup and restoration.

There shall be no separate payment for mobilization. Payment for such costs shall be considered as included in the other items of work.

Add the following subsection:

**9-3.5 Noncompliance with Plans and Specifications.** Add the following Subsection:

Failure of the Contractor to comply with any requirement of the Plans and Specifications, and/or to immediately remedy any such noncompliance upon notice from the Engineer, may result in suspension of Contract Progress Payments. Any Progress Payments so suspended shall remain in suspension until the Contractor's operations and/or submittals are brought into compliance to the satisfaction of the Engineer. No additional compensation shall be allowed as a result of suspension of Progress Payments due to noncompliance with the plans or specifications. The Contractor shall not be permitted to stop work due to said suspension of Progress Payments.

**9-4 CLAIMS.**

The Contractor shall not be entitled to the payment of any additional compensation for any cause, including any act, or failure to act, by the CITY, or the happening of any event, thing or occurrence, unless the Contractor shall have given the CITY due written notice of potential claim as hereinafter specified.

The written notice of potential claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential claim. Said notice shall be submitted on a form approved by the CITY at least forty-eight (48) hours (two working days) in advance of performing said work, unless the work is of an emergency nature, in which case the Contractor shall notify and obtain approval from the Engineer prior to commencing the work. The Engineer may require the Contractor to delay construction involving the claim, but no other work shall be delayed, and the Contractor shall not be allowed additional costs for any said delay but may be allowed an extension of time if the Engineer agrees that the work delayed is a controlling element of the Construction

Schedule. The Contractor shall be required to submit any supporting data (or a detailed written explanation justifying further delay) within five (5) work days of a request from the Engineer and shall be responsible for all costs associated with any delays resulting from late and/or incomplete submittals. By submitting a Bid, the Contractor hereby agrees that this subsection shall supersede Subsections 6-6.3 and 6-6.4 of the Standard Specifications.

It is the intention of this subsection that differences between the parties arising under and by virtue of the Contract be brought to the attention of the Engineer at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that it shall have no right to additional compensation for any claim that may be based on any such act, failure to act, event, thing or occurrence for which no written notice of potential claim as herein required was timely filed.

# PART 2 - CONSTRUCTION MATERIALS

## SECTION 200 – ROCK MATERIALS

### 200-2 UNTREATED BASE MATERIALS

**200-2.1 General.** Replace the entire subsection with the following:

Untreated base for pavement, curb, gutter, sidewalk, alley intersections and point repairs and other improvements shall be Crushed Aggregate Base conforming to Subsection 200-2.2.

## SECTION 203 – BITUMINOUS MATERIALS

### 203-6 ASPHALT CONCRETE.

**203-6.1 General.**

Asphalt Concrete shall be Type Class C2 (AR-4000) unless otherwise shown.

## SECTION 208 – PIPE JOINT TYPES AND MATERIALS

### 208-2 JOINTS FOR CLAY PIPE

**208-2.1 General.** Add the following:

Joints shall be Type "G" Joints (Polyurethane), unless otherwise shown.

Add the following section:

### SECTION 215 – PRE-CAST CONCRETE MANHOLES

**215-1 Pre-cast Concrete Manholes.** Pre-cast concrete manhole materials shall be in accordance with Standard Plans for Public Works Construction, Standard Plan 201-1, and the Standard Specifications, as follows:

| | |
|---|---|
| Concrete | Section 201 |
| Gray Iron Castings | Subsection 206-3 |

Manhole steps shall not be fabricated with the manhole shaft nor installed.

# PART 3 - CONSTRUCTION METHODS

## SECTION 300 EARTHWORK

### 300-1 CLEARING AND GRUBBING

**300-1.3.2 Requirements.** Add the following:

**(c) Miscellaneous Removals and Relocations.** This work shall include all removals not specifically listed in the Bidders Proposal or otherwise covered by these Specifications, and all necessary relocations and restorations of walls, fences, plants, hardscape, signs, pavement markings and other items, whether shown on the Plans or not, as necessary to complete the improvements.

**300-1.3.2 Requirements.**

a) **Bituminous Pavement.** Replace the first and second sentences with the following: Bituminous pavement shall be removed to neatly sawed edges.

Add subparagraphs (d) and (e):

(d) **Trees.** The City maintains a tree conservation policy. Unless otherwise shown, all trees are to be protected in place. Demolition and destruction of trees and tree parts, including trunks, branches and foliage, shall be limited to tree removals as shown on the Plans. Root pruning and removals shall be limited to the minimum required to construct new improvements where trees are to be conserved.

The Engineer shall place a visible removable "tag" on each tree proposed to be removed at least five (5) work days and no earlier than ten (10) work days prior to removal. Said "tag" is intended to give adjacent residents proof of trees to be removed or saved. Tags shall be on the sidewalk side of trees and located at least five feet (5') above ground.

The Contractor shall remove only trees that have been marked by the Engineer for removal. Trees shall be removed in a workmanlike manner so as not to injure other standing trees, plants, and improvements which are to be preserved.

Stumps shall be ground down three feet (3') below ground surface within five (5) feet of the center of the stump. All surface roots shall be removed within the parkway.

The Contractor shall conform to the following requirements:

1) The cutting down or removal of trees is prohibited after the

prescribed working hours unless permission is granted by the Engineer.

2) All debris from pruning or removing a tree shall be cleaned up and hauled away from the Work site on the same day that the tree is cut or pruned. Firewood-size logs may be left neatly piled for residents to pick up for no longer than three (3) days.

3) All holes created from removal of tree stumps shall be backfilled and graded to finish level by the end of the workday.

4) Sprinkler systems disrupted by the Contractor shall be capped or restored by the end of the workday. Capped systems shall be restored to original working condition within three (3) days.

(e) **Miscellaneous Removals and Relocations.** This work shall include all removals not specifically listed in the Proposal or otherwise covered by these Specifications, and all necessary relocations and restorations of walls, fences, plants, hardscape, signs and other items, whether shown on the Plans or not, and as necessary to complete the improvements.

Add the following the Subsection:

**300-1.3.3 Construction and Demolition Debris Recycling**

**General.** Consistent with the Agency's efforts to comply with the California Integrated Waste Management Act of 1989 (AB 939), the Contractor shall reduce, reuse, and/or recycle to the maximum extent feasible, the construction and demolition debris (debris) generated by this Contract hereby diverting the debris from disposal facilities, saving landfill space, and conserving virgin materials and natural resources.

**DEFINITIONS**

**"Construction and Demolition Debris or Debris"** means materials resulting from building, construction or demolition-related activities such as excavation, grading, land clearing, renovation, repair, road work and site cleanup and are considered solid waste pursuant to Section 40191 of the California Public Resources Code. The materials include, but are not limited to, asphalt, brick, cardboard, carpet, cinder block, concrete, concrete with reinforcement bars, drywall, excavated materials, fixtures and fittings, glass, gravel, green waste, metal, mixed rubble, packaging materials, paper, plastics, porcelain, road work materials, roofing materials, rock, sand, site clearance materials, soil, trees, tree stumps and other vegetative matter, stones and wood waste.

**"Deconstruction"** means the process of carefully dismantling a structure, piece by piece prior to or instead of conventional demolition, to maximize the recovery of building materials for reuse and/or recycling.

**"Delivery Site"** means recycling facility as defined in Subsection E.14 and recycling or reuse site as defined in Subsection E.15 or any place, including a transfer station as defined in Subsection E.20 where the debris is delivered for the sole purpose of reuse and/or recycling in a manner acceptable to the Director/Designee.

**"Disposal"** means the process of disposing of debris at a Disposal Facility.

**"Disposal Facility"** means a Landfill or any location where the debris is taken for Transformation as defined.

**"Generation"** means the quantity of debris produced by the Work before the debris is reused and/or recycled.

**"Green Waste"** means all vegetative cuttings, shrubs, stumps, logs, brush, tree trimmings, grass, and related materials which have been separated from other solid waste.

**"Landfill"** means a solid waste disposal facility that accepts solid waste for land disposal and is operating under a current Solid Waste Facility Permit issued by a local enforcement agency as defined in Section 40130 of the California Public Resources Code and concurred upon by the California Integrated Waste Management Board.

**"Recyclable"** means material that still has useful physical or chemical properties after serving its original purpose and that can be reused or re-manufactured into additional products.

**"Recycle or Recycling"** means the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste and returning them to the economic mainstream in the form of raw materials for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace, and in a manner acceptable to the Agency. "Recycle" or "Recycling" does not include Transformation.

**"Recycling Facility"** means any facility (except a transformation facility) whose principal function is to receive, store, convert, separate, or transfer recyclable materials for processing.

**"Recycling or Reuse Site"** means any place other than a recycling facility acceptable to the Agency for recycling and/or reuse of debris.

**"Reduce"** means any action which causes a net reduction in the generation and/or disposal of solid waste.

**"Reuse"** means the use, in the form as it was produced, and in a manner acceptable to the Agency of materials which might otherwise be discarded into a Disposal Facility.

**"Site Clearance Material"** means materials such as trees, brush, earth, mixed concrete, rubble, sand, steel, extraneous paper, plastics, and other waste materials generated from site clearance.

**"Source Separation"** means the segregation, by the generator, of materials designated for separate collection for materials recovery or special handling.

**"Transfer Station"** means a facility utilized to receive solid wastes and to temporarily store, separate, convert, or otherwise process the materials in the solid wastes, and/or to transfer the solid wastes directly from smaller to larger vehicles or railroad trains for transport.

**"Transformation"** means incineration, pyrolysis, distillation, gasification, or biological conversion other than composting.

**"Wood Waste"** means solid waste consisting of wood pieces or particles which are generated from the manufacturing or production of wood products, harvesting, processing or storage of raw wood materials, or construction or demolition activities.

**RECYCLING SUMMARY**

The Contractor shall prepare and submit a Recycling Summary report using the form included as Appendix V summarizing the disposal, reuse, and/or recycling activities which occurred throughout the Contract duration. This report shall be submitted by the Contractor to the Agency, before or with its request for the final Progress Payment for said Contract.

Failure of the Contractor to submit the Recycling Summary within the time specified will result in damages being sustained by the Agency. Such damages are, and will continue to be, impracticable and extremely difficult to determine. For failure to submit the Recycling Summary, as required, the Contractor shall pay to the Agency, or have withheld from monies due it, the sum of $10,000 for a contract of $500,000 or more. The Contractor shall pay to the Agency, or have withheld from monies due it, 2% of the total contract amount for a contract of $499,999 or less.

Execution of the Contract shall constitute agreement by the Agency and Contractor that $10,000 (2% for contracts $499,999 or less) is the minimum value of the costs and actual damage caused by the failure of the Contractor to submit the Recycling Summary within the time specified. Such sum is liquidated damages and shall not be construed as a penalty, and may be deducted from payments due the Contractor.

**PAYMENT**

The cost of construction and demolition debris recycling and completing the Recycling Summary report shall be considered as included in the Unit Bid Prices for the various items to which recycling is appurtenant, and no other costs shall be allowed. The quantities reported will be used for information gathering purposes and not for purposes of payment to the Contractor.

**300-1.4 Payment.** Replace the entire subsection with the following:

There shall be no separate payment for Clearing and Grubbing or Miscellaneous Removals and Relocations, and all costs thereof shall be included in the unit prices bid for the items of work requiring said removals and relocations, and no extra costs shall be allowed.

## 300-2 UNCLASSIFIED EXCAVATION.

### 300-2.2 Unsuitable Material.

**300-2.2.1 General.** Replace the first paragraph with the following:

While performing point repairs or manhole or pipeline construction, if unsuitable material is found, the Contractor shall remove said material to the limits determined by the Engineer and replace said material with select fill or base material, as to be determined by the Engineer. Payment for removal and replacement shall be made as Extra Work pursuant to Subsection 3-3. Prior approval is required in accordance with Subsection 9-1.2.3 of these Special Provisions.

# SECTION 306 – UNDERGROUND CONDUIT CONSTRUCTION

## 306-1 OPEN TRENCH OPERATIONS

### 306-1.1 Trench Excavation

**306-1.1.1 General.** Add the following:

For point repairs or pipe replacements, all trenches shall be sawcut to the bottom of the existing concrete or asphalt section to minimize damage to adjacent pavement. The bottom of the trench shall be excavated uniformly to the grade required by the plans or the CITY Standard Plans. The pipe bedding under the pipe shall be given a final trim using a string line for establishing grade, such that each pipe section when first laid will be continually in contact with the bedding along the bottom of the pipe.

Payment for this work shall be included in the Unit Bid Prices for construction of point repairs.

**306-1.1.2 Maximum Length of Open Trench.** Replace the first paragraph with the following:

For point repairs, where the work zone is created by daily lane closures, the total length of the work area shall include all elements of the Contractor's operation (including exploratory excavations, pavement cutting, pipe installation, and placement of base paving) and shall be the minimum distance necessary to accommodate the amount of work within the permitted work hours. The distance is the collective length at any location, including open excavation, pipe laying and appurtenant construction and backfill which has not been temporarily resurfaced.

The Contractor shall either install plates or place compacted backfill, temporary or base pavement flush to the adjacent surface at the end of each work day so all travel lanes will be open to traffic. The last twenty (20) feet of each trench may be open provided that this length is covered with traffic rated plating. Steel plates shall be non-skid and shall be tacked down or spiked and placed flush with the surrounding pavement. The Contractor shall be required to place temporary AC at the edges of the steel plates.

The above requirements for backfilling or use of steel plates will be waived in cases where the trench is located further than 100 feet from any traveled roadway or occupied structure. In such cases, however, barricades and warning lights satisfactory to the Engineer shall be provided and maintained.

**306-1.1.3 Maximum and Minimum Width of Trench.** Add the following:

For point repairs, the bottom of the trench shall have a minimum width equal to the outside diameter of the pipe plus 12 inches and a maximum width equal to the outside diameter of the pipe plus 16 inches, unless otherwise shown on the Plans.

Add the following subsections:

**306-1.1.7 Trench Over-Excavation.** Trenches shall be over-excavated beyond the depth shown when ordered by the Engineer. Such over-excavation shall be to the depth ordered. The trench shall be refilled to the grade of the bottom of the pipe with either selected granular material obtained from the excavation, sand or crushed rock, at the option of the Engineer. When crushed rock is ordered, the material shall be a well-graded material of 1-1/2 inch maximum size.

Bedding material shall be placed in layers brought to optimum moisture content, and compacted to 95 percent of maximum density where the pipeline trench passes under structures and 90 percent elsewhere. All work specified in this subsection shall be performed by the Contractor and paid in accordance with Subsection 3-3 of these Special Provisions.

Any over-excavation carried below the specified grade and not ordered by the Engineer, specified or shown on the Plans shall be refilled to the required grade with suitable selected granular material. Such material shall be moistened as required and compacted to 95 percent of maximum density under structures and 90 percent elsewhere. Such work shall be performed by the Contractor at its own expense.

**306-1.1.8 Excavation in Lawn Areas and Parkways.** Where pipeline excavation occurs in lawn areas, the sod shall be carefully removed and stockpiled to preserve it for replacement. Excavated material from the trench may be placed on the lawn provided a drop cloth or other suitable method is employed to protect the lawn from damage. The lawn shall not remain covered for more than seventy-two (72) hours. Immediately after completion of backfilling and testing of the pipeline, the sod shall be replaced in a manner so as to restore the lawn as nearly as possible to its original condition. If the removed sod or the existing lawn covered with the removed sod has been damaged, Contractor shall be responsible to provide new sod that matches the existing sod. Contractor shall be responsible to maintain the replaced or new sod for a minimum of 30 days, unless otherwise relieved of this duty, in writing, by the property owner.

Where excavation occurs in parkways, the Contractor shall restore the parkways to the existing conditions prior to excavation, including replacing irrigation systems, bricks and other flat work, unless otherwise approved by the Engineer. All affected parkways shall be graded to comply with City of Torrance Standard No. T102-2, modified if required to join existing improvements. All utility boxes, vaults and manholes shall be adjusted to grade.

Except where trees are shown on the Plans to be removed, trees shall be protected from injury during construction operations. No tree roots over 2 inches in diameter shall be cut without express permission of the Engineer. Trees shall be supported during excavation as may be directed by the Engineer.

All costs to protect and restore lawn areas and parkways shall be included in the Unit Bid Prices for the work to which it is appurtenant, and no extra costs shall be allowed.

**306-1.1.9 Excavation in Concrete Areas (Sidewalk and Alley Intersections)** Where pipeline excavation occurs in concrete areas, the Contractor shall be required to remove and restore the concrete improvements to match existing improvements to remain. If the edge of trench is less than thirty inches (30") from an existing edge of concrete or a joint, the concrete removals shall be extended to said edge or joint at no additional cost to the City. If a trench extends through an existing access ramp, the Contractor shall remove the affected portions of the ramp, including curb and gutter, if applicable, to the nearest joints. New sidewalk shall conform to City of Torrance Standard Plan No. T102-2 (Base is required), and access ramp and alley construction shall conform to Standard Plans for Public Works Construction 111-3 and 130-1, on 6" Base, modified as necessary to join existing improvements. All utility boxes, vaults and manholes shall be adjusted to grade.

All costs to remove and restore concrete improvements, including, but not limited to, sawcutting, excavation, removals, compaction, base, grading, surface treatment and installation of joints, shall be included in the Unit Bid Prices for the work to which it is appurtenant, and no extra costs shall be allowed.

## 306-1.2 INSTALLATION OF PIPE

### 306-1.2.1 Bedding.

(A) **General.** Replace the second sentence of the third paragraph with the following:

For point repairs, there shall be 4 inches minimum of bedding below the pipe barrel of sewer.

Add the following to the fifth paragraph:

Bedding for sewer pipes shall conform to City of Torrance Standard Plan No. T204, and shall consist of washed, well-graded crushed rock with a maximum particle size of 3/8-inch and a sand equivalent of at least 30.

**306-1.2.2 Pipe Laying.** Add the following:

At all times when the work of installing sewer is not in progress, all openings into the pipe and the ends of the pipe in the trenches or structure shall be kept tightly closed to prevent entrance of animals and foreign materials. The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damage due to this cause and shall, at no cost to the CITY, restore and replace the pipe to its specified condition and grade if it is displaced due to floating. The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by the Engineer.

Add the following Subsection:

### 306-1.2.14 Point Repairs and Pipe Repairs

A Point Repair shall be defined to include any repair that is less than or equal to 6' in length. However, the Contractor, at his option, may elect to repair or replace a larger section of pipe at no extra cost to the City.

Where a pipe repair is being made pursuant to a Bid Item for Removal and Construction of VCP to permit installation of a liner, the Contractor may be permitted to use a different pipe material than VCP if there is no sewer service lateral on the section of pipe to be replaced. The pipe material, joints, and joins to existing pipes or structures, shall be subject to the approval of the Engineer and at no extra cost to the City. The Engineer shall have the sole authority to determine if the material(s) and method(s) of construction are acceptable for use. Pipe that is not to be lined or that contains an existing service lateral shall be VCP only.

The Contractor shall not remove a section of pipe to be replaced until the Engineer has approved the limits of the removals in the field. The approved limits of removal and construction shall be used as the basis of payment. The Contractor, at his option, may elect to remove and construct additional pipe at no extra cost to the City.

### 306-1.3 Backfill and Densification.

**306-1.3.1 General.** Delete the seventh through the eleventh paragraphs and replace with the following:

For point repairs, where trench is less than two feet wide, the trench shall be backfilled per City of Torrance Standard Plan No. T116-2, with trench slurry backfill per Subsection 201-1 or Controlled Low Strength Material (CLSM) per Subsection 201-6 to 1 inch below the existing pavement subgrade thickness, unless otherwise approved by the Engineer.

Where trench is greater than or equal to two feet wide, the trench shall be backfilled per City of Torrance Standard Plan No. T116-2, with suitable imported material having a sand equivalent value of not less than 30, and shall be select granular material free from organic matter. Imported backfill shall be in accordance with Subsection 306-1.3.7. Backfill material shall be moistened to optimum moisture content and compacted to 95 percent of maximum density in the upper 3 feet and 90 percent below the upper 3 feet.

**306-1.3.4 Backfilling Narrow Trenches.** Replace the first paragraph with the following:

Backfill for narrow trenches shall be per City of Torrance Standard Plan No. T116-2, with trench slurry backfill per Subsection 201-1 or CLSM per Subsection 201-6 to 1 inch below the existing pavement thickness, unless otherwise approved by the Engineer.

**306-1.3.5 Jetted Bedding and Backfill Compaction Requirements.** Replace the entire Subsection with the following:

Trench bedding and backfill densified through jetting shall be densified to a minimum relative compaction of 95 percent in the upper 3 feet of backfill and 90 percent below the upper 3 feet.

**306-1.3.6 Mechanical Compaction Requirements.** Replace the entire subsection with the following:

Mechanically compacted trench backfill shall be densified to a minimum relative compaction of 95 percent in the upper 3 feet of backfill and 90 percent below the upper 3 feet.

Add the following subsection:

**306-1.3.9 Compaction Tests.** Tests to determine soil compaction shall be made by a representative of the CITY, at the CITY's expense, except that all tests which fail to meet the requirements of these Special Provisions shall be paid for by the Contractor. Maximum density shall be determined in accordance with ASTM D1557 method, modified to use five layers. Field density tests shall be performed in accordance with the test procedure specified in ASTM D1556.

**306-1.5 Trench Resurfacing.**

**306-1.5.1 Temporary Resurfacing.** Delete the last two paragraphs and replace with the following:

For point repairs:

For concrete slurry backfill, a minimum of 24 hours shall elapse before temporary resurfacing will be allowed to be placed on the backfill. All temporary resurfacing shall be flush to adjacent surfaces. The Contractor shall be responsible to immediately repair or replace any damaged or settled resurfacing. The temporary resurfacing shall be replaced with permanent resurfacing not more than 15 calendar days after placement of temporary resurfacing.

There shall be no separate payment for temporary resurfacing. Full compensation for furnishing, placing, maintaining, removing, and disposing temporary resurfacing materials shall be included in the Contract Unit Price per lineal foot of pipe installed.

**306-1.5.2 Permanent Resurfacing.** Add the following:

Pavement removed or damaged in connection with performing the Work required under the Contract shall be replaced by the Contractor in accordance with these Special Provisions and City of Torrance Standard Plans. If a strip of existing pavement less than 3 feet wide is left between a trench and a gutter or edge of pavement, it shall be

removed, and new pavement placed in its stead. In cutting or breaking up street surfacing, the Contractor shall not use equipment which will damage the adjacent pavement. If the adjacent pavement is damaged, the Contractor shall be responsible for replacing the pavement with the same kind or better at its expense.

Add the following subsections:

**306-9 SANITARY SEWER MANHOLES.**

1) Manhole Construction

   a) Soil foundations for manhole bases shall be compacted to a density of 95 percent of the maximum density per ASTM D 1557. Compaction limits shall be 12-inches beyond the perimeter of the concrete base and shall be a minimum of 12-inches in depth below the base.

   b) Manholes shall be constructed in accordance with Standard Plans for Public Works Construction, Standard Plan 201-1, except omit manhole steps.

   c) All concrete used for poured foundations, mortar, fillets, grout and concrete shelf construction shall be in accordance with Standard Plans for Public Works Construction, Standard Plan 200-2 and Section 201 of the Standard Specifications.

   d) All concrete for formed-in-place foundations or bases, concrete shelves, and pipe supports shall be class 560-C-3250 per Section 201 of the Standard Specifications.

   e) Cement mortar used for sewer manhole channel repairs shall conform to Standard Plans for Public Works Construction, Standard Plan 208-1. Channel repairs shall include all work necessary to provide a smooth channel surface that conforms to the invert elevations of the adjacent sewer pipes, including liners where applicable.

2) Pre-cast Concrete Manholes

   a) The vertical sections of the manhole may be of different heights in order that manholes of various depths can be readily assembled.

   b) Vertical sections of the manhole shall conform to the requirements of ASTM C 478.

   c) The Contractor shall submit shop drawings of the precast sections and eccentric cone to the Engineer for review and approval.

d) Circular precast manhole sections shall be provided with mastic gasket to seal joints between sections, such as RAM-NEK, KENT SEAL, or approved equal.
e) All lifting holes, except in manhole covers, holes created by removal of manhole steps and gaps at joints shall be filled with a non-shrink grout.

3) Manhole Steps

a) Manhole steps are not required for manholes within the jurisdiction of the CITY. Manholes shall be fabricated without the manhole steps.

4) Manhole Frame and Cover. The manhole frame and cover shall conform to Section 206-3 of the Standard Specifications and Standard Plans for Public Works Construction, Standard Plan 632-2. "Torrance Sewer" shall be cast into the cover.

5) Testing Of Sewer Manholes

a) All sanitary sewer manholes shall be tested for leakage by plugging the inlet and outlet sewer pipes with tight plugs, filling the manhole with water to a depth of four feet above the top of the pipe or two feet above the existing ground water level, whichever is greater, and allowing one hour for saturation of the manhole material. After the one-hour saturation period, the manhole shall be refilled to the original level. Two hours after the refilling, the difference in water surface elevation from original to final level shall be measured and converted into gallons per hour lost through manhole leakage.

b) The allowable leakage for manholes shall be 0.75 gallon per hour per foot diameter of the manhole.

Payment. Payment for new sanitary sewer manholes shall be the Unit Bid price per each, complete in place. Bid price shall include locating existing sewers, all the manhole subbase, base, vertical sections, reducer rings, frame and cover, including all joints, protective coatings, testing and incidental items to complete the work, and no additional costs shall be allowed.

**306-9.1** Repair of drop sewer manhole shall be per Standard Plans for Public Works Construction, Standard Plan 202-1.

**306-9.2** Sewer manhole adjustment shall be per Standard Plans for Public Works Construction, Standard Plan 205-1.

## 306-10 SEWER BYPASS PUMPING.

1) Submittals

a) Where by-pass pumping is needed, the Contractor shall submit, for the Engineer's review, a written by-pass pumping plan, at least ten (10) working days prior to the beginning of any individual construction process. The plan shall contain a contingency plan in the event of pump(s) failure, the sequence of construction and a list of all piping and equipment to be used in by-pass pumping process, including the types and capacities of pumps to be used.

b) The Contractor shall submit the pump manufacturer's operation and maintenance procedures requirements and demonstrate its capability to provide any required service.

2) General

a) When by-pass pumping is required, the Contractor shall supply the pumps, conduits, and other equipment to divert the flow of sewage around the pipe section in which work is to be performed from manhole to manhole in which work is to be performed. The by-pass system shall be of sufficient capacity to handle the sewer flow for the pipe at full capacity plus additional flow that may occur during a rainstorm. The Contractor shall have on-site backup pumps capable of pumping 100% of the pipe capacity.

b) All pump drivers shall have noise suppresser exhaust systems to mitigate the noise levels to less than 50db or 10db above ambient noise levels when measured at the property lines closest to the noise source.

c) Sewage flow from house laterals shall be maintained during construction and handled in a manner so as not to create a public nuisance or health hazard. In the event that sewage backup occurs and enters dwellings or other structures the Contractor shall be solely responsible for cleanup, repair, property damage costs and all claims arising therefrom. All spills shall be contained and returned to the sewer system or properly disposed of at an approved facility.

d) The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate the pumping and bypassing system.

e) The Contractor shall provide reliable sewer service to the users of the sanitary sewer at all times to prevent backup and/or overflow into adjacent streets, ditches, storm drains, and waterways during rehabilitation of the sewer pipes, manhole construction and rehabilitation, and CCTV inspection.

There shall be no separate payment for sewer bypass, and all costs thereof shall be included in the items of work requiring sewer bypass, and no extra costs shall be allowed.

# PART 5 – SYSTEM REHABILITATION

## SECTION 500 – PIPELINE

### 500-1 PIPELINE REHABILITATION

### 500-1.1 Requirements.

**500-1.1.1 General Requirements.** Add the following Subsections:

1) Pipeline rehabilitation shall be performed only by the following methods.

| | |
|---|---|
| 500-1.4 | Cured-In-Place Pipe Liner (CIPP) |
| 500-1.10 | Folded and Reformed PVC Pipe Liner, Type A or Type B |
| 500-1.14 | UV Cured-In-Place Pipe Liner (UV-CIPP) |

2) Design Criteria. The thickness of all pipe liners shall be calculated by the Contractor for a fully deteriorated gravity pipe design condition. The formula computes the pipe liner wall thickness required to withstand the critical buckling pressure exerted by backfill, groundwater, live, and traffic loads. It also includes an ovality factor, C, and the consideration of the long-term effects of creep. The formula, as described in ASTM F 1216:

$$T = 0.721D\,[(Nq_t/C)^2 / (E_L\, R_w B'\, E'_s)]^{1/3}, \text{ (inches)}$$

Where: $q_t = 0.433H_w + wH_sR_w / 144 + W_s$
= total external pressure on pipe, (psi)

$H_w$ = height of water above top of pipe, (feet) (Contractor shall use $H_w = 2'$ unless otherwise approved by the Engineer)

$w$ = soil density, ($lb/ft^3$) = 120

$H_s$ = height of soil above top of pipe, (feet)

$R_w$ = water buoyancy factor = $1 - 0.33\,(H_w/H_s)$, minimum value = 0.67

$W_s$ = live and traffic loads, (psi) (Contractor shall use $W_s$ = H 20 loading, unless otherwise approved, and shall evaluate for each location)

$D$ = inside diameter of the host pipe, (inches)

$C$ = ovality factor = calculate all pipes for a minimum of 2% ovality in the circumference

$N$ = factor of safety = 2

$B' = 1/(1 + 4e^{-0.065 Hs})$

$= $ coefficient of elastic support

$E'_s$ = modulus of soil reaction, (psi) = 750

$E_L$ = long term modulus of elasticity for the pipe liner, (psi)

Anticipated design conditions may change after the Contractor is familiar with the job and all pre-video inspections and reports are completed. If conditions change after the original submittal has been approved, the Contractor shall submit case-by-case design calculations for the Engineer's review. CIPP shall use a minimum of 7% extra resin to compensate for a resin migration/seal factor to fill joints and cracked or deteriorated pipelines to assure installed thickness meets the design criteria.

Table 500-1.1.1.a. lists the minimum finished pipe liner wall thicknesses. The thickness proposed shall be derived from an upgraded safety factor of 2.0, to provide a thicker pipe liner than what may be required by the existing conditions. For Type A PVC the SDR shall be 35 and for Type B PVC the SDR shall be 32.5, unless otherwise approved by the Engineer. All selected pipe liner thickness must be approved by the Engineer. A thinner calculated thickness shall be defaulted to the minimum thickness specified below, unless otherwise approved by the Engineer.

Table 500-1.1.1.a Minimum Pipe Liner Thicknesses

| Material | C.I.P.P. | PVC Type A | PVC Type B |
|---|---|---|---|
| **Specification** | 500-1.4 | 500-1.10 | 500-1.10 |
| **Initial Flexural Modulus, (psi)[1]** | 250,000 | 280,000 | 145,000 |
| **Nom. I.D. (in.)** | Thickness | Thickness | Thickness |
| **6** | 0.19 | 0.23 | 0.23 |
| **8** | 0.19 | 0.23 | 0.31 |
| **10** | 0.19 | 0.29 | 0.31 |
| **12** | 0.22 | 0.34 | 0.37 |
| **14** | 0.30 | 0.40 | 0.43 |

[1] Initial Flexural Modulus is minimum per ASTM D790, Method I.

The minimum cured wall thicknesses specified above are calculated based on 50% retention of the initial flexural modulus and strength values for CIPP and 38% for PVC. The Contractor shall submit, as part of the bid, the results of long-term creep modulus testing per ASTM D2990. The long-term testing shall be done by an independent accredited testing laboratory. Test results of the same type of resin but with a different formulation from the resin system submitted are not acceptable. If the test results and regression analysis of the flexural properties of the resin system justify a wall thickness less than specified in the Table, the CITY will consider a reduction in wall thickness. In any event, the highest retention factor allowed shall not exceed 50%.

B. Testing Requirements: For all pipeline rehabilitation systems, in addition to the final CCTV inspection, a restrained sample shall be taken for each manhole-to-manhole lining. Each sample will be checked by the Inspector using ASTM D2122-90 for PVC or ASTM D5813 for CIPP to verify compliance with the minimum thickness per Table 500-1.1.1a. A minimum of one (1) structural test shall be performed on samples taken at six (6) randomly selected sites, as directed by the Engineer. Liner materials not meeting any specified minimum value listed in the APWA Greenbook, ASTM or these specifications for which tests are required shall be removed and replaced with liner material meeting these specifications.

Structural tests shall be in accordance with the following methods:

| Item | Description | ASTM Method |
|---|---|---|
| 1 (a) | ID Wall Thickness (PVC only) | ASTM D 2122-95 7 |
| 1 (b) | ID Wall Thickness (CIPP only) | ASTM D 5813 8.1.2 |
| 2 | Flexural Strength | ASTM D 790-96a |
| 3 | Flexural Modulus | ASTM D 790 |
| 4 | Extrusion Quality (PVC only) | ASTM D2152-95 or ASTM F 1057 |

C. There shall be no separate payment for the above described tests. Full compensation for furnishing all labor, materials, tools, equipment and incidentals for completing the tests shall be included in the contract Unit Price for Sewer Rehabilitation.

3) The Contractor shall verify the pipe diameter, ovality and length of each section of sewer prior to ordering liner material. Contractor shall immediately notify the Engineer of any discrepancies from the plans.

**500-1.1.2 Submittals.** To this subsection of the Standard Specifications add the following:

1) **The Contractor shall submit the following documentation as part of the Bidder's Proposal.**

a. Documentation that the Contractor or Subcontractor is certified and licensed for the lining process.

b. Documentation that the Contractor or Subcontractor has a minimum of 2 years installation experience and has installed a minimum of 10,000 linear feet of liner specified for this contract, using the Contractor's or Subcontractor's own forces, under the State Contractor's License as listed in the Bid Proposal or List of Subcontractors, as appropriate.

c. Documentation shall list agency, project name, date installed, agency contact person and phone number.
d. Documentation that the onsite foreman who will perform the installation has a minimum of 2 years' experience installing the liner product specified for this contract.
e. Documentation of their employees' cognizance and ability to comply with all Federal and State OSHA regulations regarding confined space entry.
f. Contractor's or Subcontractor's history stating years in service of installing liner products.

**The above information shall be submitted as the Bidder's Liner Methodology Qualifications package per the Instructions to Bidders.**

2) The Contractor shall submit the following documentation as part of the Bidder's Proposal:

a. Complete information on the material composition, including, as applicable, resin and catalyst (CIPP), cell classification (PVC), material safety data sheets and design calculations, including the information required per Subsection 500-1.1.1, to be used at each location.
b. Documentation that a minimum of 100,000 linear feet of the proposed liner product has been in successful service in the United States for a period of at least two (2) years.
c. Manufacturer's recommended temperature and pressure limits and methodologies.
d. Documentation of chemical resistance testing as required in Section 210-2.3.3 of the Standard Specifications or ASTM 5813 (10,000 hours minimum test time). In addition, for CIPP Contractor shall submit the manufacturer's certified Fourier Transform Infrared Spectroscopic scans of the proposed resin system.

**The above information shall be submitted as the Liner Materials package per the Instruction to Bidders.**

3) The successful Bidder shall submit, prior to the pre-construction conference, a general layout plan with sufficient detail to demonstrate familiarity with the project requirements, including pipeline accesses, equipment layout locations, sources from which construction water will be taken, and sewer bypass locations. This plan is intended to be conceptual only at the time of the pre-construction conference but is intended to be the basis of the detailed submittals required from the successful Bidder.

4) The Contractor shall submit certified test results on the specified structural characteristics of the rehabilitation systems for the Engineer's review.

**500-1.1.4 Cleaning and Preliminary Inspection.**

Add the following:

Satisfactory precautions shall be taken to protect the existing pipes from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or any tool which retards the flow of water in the existing pipes are used, precautions shall be taken to ensure that the water pressure created does not cause any damage or flooding to any public or private property being served by the pipe involved.

All sludge, dirt, sand, rocks, grease, and other solid or semi-solid material resulting from the cleaning operation shall be removed at the downstream end. When hydraulic cleaning equipment is used, a suitable sand trap, weir, or dam shall be constructed in the downstream end to trap solids. Under no circumstances shall solids removed from the structures be discharged onto streets, ditches, catch basins, or storm drains. The Contractor is responsible to collect and properly dispose of these materials at a legal location.

Special additional cleaning of heavy deposits, concrete, calcium, etc., not identified will be paid for on a time and material basis as approved by the Engineer.

Contractor shall provide location to dispose of debris from cleaning process.

**500-1.1.5 Television Inspection:** Substitute "DVD Format" in place of "VHS-format videotape". All reference to "VCR" shall mean "DVD".

**500-1.1.7 Miscellaneous.**

(a) **Service Connections.** Add the following Subsections:

1) Sewer Rehabilitation. Service connections (laterals) and cleanouts shall be reconnected in accordance with Standard Specifications Subsection 500-1.1.7 The Contractor shall be responsible for all costs for point repairs or excavations required for service connections or cleanouts that are broken or plugged by the rehabilitation process.

Add to the end of the second paragraph:

Laterals and cleanout opening cuts shall conform to the shape and size of the inside diameter of the existing connection. Connections shall not be made until the liner pipe has stabilized. The use of mechanical restraining devices (such as "red heads") that will restrict the pipe from completely stabilizing will not be allowed.

2) Sanitary Sewer Replacement. If required, service connections shall be constructed in accordance with Standard Specifications Section 306 and Standard Plans for Public Works Construction, Standard Plan 222-1.

3) Service Connection Locations. The plans do not accurately show service connections and shall not be used to determine the full scope of the work. The location and number of service connections shall be determined by the Contractor from the CCTV inspection and field inspection(s). It shall be the Contractor's sole responsibility to accurately field locate all existing service connections, including those to unoccupied or abandoned buildings, houses or vacant lots. The Contractor shall also verify if a connection for a cleanout is in use. The CITY shall review procedures used to determine live, inactive, stub-outs, and abandoned services. Each sewer service which is reconnected to the rehabilitated or new sewer pipe shall be documented on the plan with the exact distance from the service connection to the centerline of the nearest upstream manhole and include the address of the property served. Contractor also shall document locations of services that are plugged or removed and not reconnected.

4) Notification of Service Interruption. Sewage flow from house laterals shall be maintained during construction when possible. If a house lateral service must be shut down, it shall be for a period no longer than 7 hours. Service interruption will be permitted only during low flow periods between the hours of 9 a.m. and 4 p.m.

   a) When disruption of service is required a project general information letter shall be prepared by the Contractor and approved by the CITY for the Contractor's printing and distribution to all residents, business establishments, and institutions fronting on or otherwise directly affected by the project. The Contractor shall be responsible for the distribution of this information letter to all appropriate residences, business and buildings in the project area. Distribution shall be hand delivered and by the US Postal Service (USPS), except as noted below.

   b) A "Notice of Proposed Work" hand delivered and sent by the USPS at least ten (10) calendar days prior to work on site.

   c) A second and different "Two-Day Notice to Proposed Sewer Shutdown" shall be hand delivered by the Contractor two (2) work days prior to work at the affected site.

   d) If the proposed disruption schedule changes for any reason, the Contractor shall hand-deliver a revised notice prior to the original date advising the affected resident of the change.

   e) The contractor shall distribute a "Notice of Utility Operation Reinstatement" in addition to the ten (10) and two (2) day notices. This notice shall be hand delivered by the Contractor immediately after

reinstatement of the utility to a condition sufficient for safe and adequate usage.

5) Excavation for Reconnections.

   a) Wherever practical the existing connection shall be left in place until immediately before the new connection is made. Open excavations with exposed sewage will not be allowed unless, in the opinion of the Engineer, they are unavoidable due to the construction.

   b) Backfill of excavations shall not be made with standing sewage or water of any type. This applies to all backfill including, but not limited to, service-main connections, service-customer connections, insertion pits, point repairs, and open-cut replacement of mains or service lines. All water shall be removed by pumps if standing more than 24 hours. Once standing water is removed, a firm subbase is required before backfill can begin. The subbase may be stabilized by mixing cement with soil to absorb water; by adding 3/4" crushed rock; or by adding 2000-psi concrete. Sand shall not be placed in standing water.

6) External Service Reconnections For Sewer Rehabilitation

   a) If applicable, where an external service lateral reconnection must be made, an excavation shall be made down to the service line to be reconnected. The existing service line shall be removed only to the extent needed to complete the work. The new sewer main pipe or liner shall be cut out at the service opening to the sewer main. A prefabricated fitting (Inserta-Tee or approved equal) shall be installed in accordance with Los Angeles County Department of Public Works Standard Plan 2025-2, or in accordance with the manufacturer's specifications, so that a complete, watertight seal is accomplished when the installation is complete. The cement collar joint shall be used in locations where the sewer main is encased in concrete. The epoxy resin joint, or heat-fused joint, shall be used in all other locations. The new service line shall be connected to the existing service line with a flexible coupling and stainless steel bands, as approved by the Engineer.

   b) The coupling shall be secured to the existing service lateral, and new stub and/or stack, with stainless steel bands. The connection shall be visually inspected and approved by the Engineer before backfilling.

7) Payment. Payment for service lateral reconnections to a rehabilitated (lined) sewer shall be made at the Unit Bid Price included in the Bidders Proposal, complete in-place, including notifications, sealing, traffic control, sewer bypass, and incidental items, and no extra costs shall be allowed. Payment for service lateral connections to a new sewer pipe shall be included in the Unit Bid Prices to Remove and Construct Sewers included in the Bidders Proposal, complete in

place, and no extra costs shall be allowed. If a Point Repair includes a service lateral connection, all work necessary to restore the service lateral connection to the host pipe shall be included in the Unit Bid Prices for Point Repairs.

**500-1.2 Pipeline Point Repair/Replacement.**

**500-1.2.1 General.** Add as follows:

Approximate locations of known required point repairs of the host pipe, to be made prior to rehabilitation, are identified on the Plans. The Contractor shall verify these locations, and, if applicable, identify additional locations that it recommends to be repaired during the preconstruction video inspection. The Contractor shall provide the Engineer a written notification of any discrepancies between the plans and information obtained in the field. The CITY shall determine what locations need repair. The Contractor is fully responsible for the adequate repair of the host pipe as necessary to ensure a successful lining installation, including reconnecting existing service laterals to the host pipe. Replacement pipe shall be no less than 3 feet long and shall use type "D" joints.

Additional work to repair any damage to the pipe lining system caused by host pipe defects, except at any location where the CITY elects not to have a recommended repair performed, or due to failure of the sewer flow bypass system, shall be the Contractor's responsibility and completed at no additional cost to the CITY

Add the following Subsection:

**500-1.2.7 Payment.** Sewer point repairs shall be paid at the Unit Bid Prices for Point Repairs, and shall include all work per Subsection 500-1.2.1 and all incidental work, except pre-construction video inspection shall be included in the Unit Bid Price for "Clean and CCTV Inspection", and no extra costs shall be allowed. Sewer pipe replacement, excluding point repairs, shall be per the Unit Bid Price per linear foot of pipe and shall include all work per Subsection 500-1.2.1 and all incidental work, and no extra costs shall be allowed.

**500-1.4 Cured-in-Place Pipe Liner (CIPP Liner)**

**500-1.4.1 General.** To this subsection of the Standard Specifications add as follows:

The CIPP liner shall extend the full length of the pipe reach to be rehabilitated and shall provide a structurally sound impermeable, seamless, joint-less, close-fitting pipe, that when cured, is mechanically bonded to the host pipe.

The Contractor shall obtain an Industrial Wastewater Permit from the CITY for the curing water disposal. The curing water must be cooled to meet the CITY's discharge standards before releasing the flow.

**500-1.4.2 Material Composition and Testing.** To this subsection of the Standard Specifications add as follows:

1) Tube: The tube shall be supplied by the system licensor to the licensed Contractor in accordance with Section 5.1 of ASTM 1216-89 and/or the latest revision thereof. The side of the liner exposed to the sewer flow after inversion is completed shall have a layer of polyurethane bonded to it with a minimum thickness of 0.01 inch and shall be pinhole free. All seams and patches in the polyurethane coating shall be inspected under a black light. The tube shall be placed under a vacuum at the factory and submerged in a die bath to verify that it is pinhole free. The Contractor shall provide proof to that effect. The felt tube shall be continuous and of sufficient length to extend the entire reach (from entry to end point) of the host pipe to be rehabilitated. No joints or laps will be permitted between manholes. The Contractor shall comply with all requirements specified by Subsection 500-1.1.1 and provide documentation to verify this compliance prior to installation.

2) One 18-inch long restrained and cured sample shall be taken from the downstream and any intermediate manholes, unless otherwise specified by the Engineer, and shall be checked by the inspector pursuant to Subsection 500-1.1.1 to verify the minimum wall thickness and conformance with the flexural properties listed in Table 500-1.1.1.

3) Resin: The Contractor shall furnish an epoxy or epoxy-vinyl-ester resin and a compatible catalyst system as specified by the resin manufacturer that has successfully passed all testing requirements included in the Specifications. The resin manufacturer shall provide the Contractor with the recommended curing cycle and shall submit the same to the Engineer. Certified copies of all test reports performed by the independent testing laboratory on the properties of the selected resin and on the properties of the field liner coupons, as specified in Subsections 4-1.4 and 500-1.1.1 shall be submitted to the Engineer.

**500-1.4.4 Chemical Resistance.** (Modify last sentence of the paragraph as follows):

Proof of having passed the Standard Specifications' chemical resistance test (Pickle Jar Test) requirement per Section 211-2 for each of the proposed lining materials shall be provided with the Bid.

**500-1.4.5 Installation.** To this subsection of the Standard Specifications add the following:

The installation procedures may vary with the methods of rehabilitation techniques/processes approved for the project. The Contractor shall, in his or her submittal, give information, essentially following the same format as in Subsections 500-1.4.5.1, 500-1.4.5.2, 500-1.4.6.1, and 500-1.4.6.2, or give detailed instructions, procedures, and the steps to be followed for the installation of the proposed CIPP liner. All such instructions and procedures shall be submitted for review by the Engineer and

shall be carefully followed. Materials, delivered to the jobsite, shall be accompanied by appropriate (individual) documentation listing physical properties, curing, and/or reforming temperatures and pressures.

Add subsections as follows:

**500-1.4.5.1 Wet Out.** The Contractor shall designate a location where the felt tube will be impregnated ("wetted out") with resin. The quantity of a resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowances for polymerization shrinkage and stretching during installation, and for the loss of resin through cracks and irregularities in the host pipe. The calculations for the quantity of resin required shall be submitted and approved by the Engineer prior to wetting out the liner. A roller system and vacuum shall be used to uniformly distribute the resin throughout the tube to thoroughly saturate the felt tube prior to its dispatch for installation. The gap in the roller shall be verified every 50 feet. The Contractor shall inform the Engineer at least four (4) calendar days in advance, to inspect the materials and the wet out procedure. A catalyst system or additive(s) compatible with the resin and tube may be used per the manufacturer's recommendation. They shall not impair or reduce the resin's quality to withstand the minimum chemical resistance criteria.

**500-1.4.5.2 Insertion.**

The wetted out tube shall be transported and kept in a refrigerated truck, until it is inserted through an existing manhole by the approved technique/process of the installer or the Contractor. The Contractor shall use either an end-stop or hold-back mechanism to prevent the felt tube from extending into conduits which are not to be rehabilitated. The Contractor shall protect the project site in accordance with Subsections 7-8 and 7-9 of the Standard Specifications and shall be responsible for repairing or replacement of all existing improvements within the project site which are damaged and/or removed as a result of the Contractor's operations, at no cost to the CITY.

**500-1.4.6 Curing.** Add as follows:

After the insertion is completed, the Contractor shall cure the liner in accordance with ASTM F1216 Section 7.6 Curing or ASTM F1743 Section 6.6 Curing.

1) All water used shall be from metered supply and paid for by the Contractor. If the Contractor is required to place water hoses in roadways or across driveways, Contractor shall provide temporary ramps to protect water hoses from traffic, to the satisfaction of the Inspector. The time required to cure, which is a function of the pipeline diameter, length, and curing temperature, shall be determined by the Contractor in accordance with the resin/catalyst system of the resin manufacturer. The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing water. It is also required that thermocouples be placed on the top and bottom of the impregnated tube and the host pipe at the upstream and downstream manhole(s), as well as in any intermediate manhole to determine the temperatures during the resin curing

process. Thermocouples shall be connected to a recording device at the heater truck to have a continuous measurement of the thermocouples on the tube as well as the intake and output water temperatures at the water heater. If a permanent recording device is not available, then a hand-held thermocouple recording device must be used to measure all temperature readings during the curing and cooling procedure. The recording device used to measure all temperatures shall be calibrated prior to use on the jobsite. The Contractor shall provide all calibration records for all equipment used on the job, upon request by the Engineer. Remotely located thermocouple readings and the temperature of the circulating water at the downstream end of the liner (away from the heater truck) should be recorded every 15 to 30 minutes. All readings, as well as recording charts, shall be described and attached to a Cure Summary Report. The initial cure may be considered completed when the exposed portions of the felt tube appear to be hard and the remote sensing device indicates the temperatures to be adequate, as recommended by the resin/catalyst system manufacturer and approved by the Engineer. However, the Contractor remains fully responsible for the accuracy of his or her work and for determining when curing has been completed to meet the specified properties. Care shall be taken during elevated temperature curing so as not to overstress the fiber liner. Curing temperatures and duration shall comply with data and information previously submitted.

2) The cured liner shall have a smooth finish inside. Any roughness that may affect the hydraulic conditions shall be removed by sanding or trimming the "fins" or folds. Such trimming shall not change the required thickness or structural strength of the liner. The Contractor may either apply a sealant compatible with the material to areas where sanding has taken place or replace the pipe liner from manhole to manhole, at no additional cost to the CITY.

Add subsections as follows:

**500-1.4.6.1 Cool Down.**

The Contractor shall cool the hardened pipe to a temperature below 38°C (100°F), before relieving the water column. Cool water may be added to the water column while draining hot water from a small hole at the opposite end of the CIPP, so that a constant water column height is maintained until cool-down is completed. Care shall be taken in the release of the water column so that a vacuum will not develop that would damage the newly installed pipe. Samples shall be obtained for testing as specified in Subsection 500-1.4.2 Material Composition and Testing. The cool down process may vary depending on the installation technique of the manufacturer/Contractor.

**500-1.4.6.2 Finished Pipe.**

1) The finished CIPP shall be continuous over the entire length from manhole to manhole and shall be free from visual defects such as foreign inclusions, dry spots, keel, boat hull, pinholes, wrinkles, and other deformities. The liner passing through or terminating in a manhole shall be carefully cut out. The cut shall be smooth and parallel with the manhole wall. The finished liner shall not protrude into the manhole over 2 inches. The area/annular space between the host pipe and the CIPP liner shall be sealed with the approved epoxy or other material that is compatible with the CIPP liner and shall provide a watertight seal. The sealant system and materials shall conform to Subsection 210-2.3.3. It shall also meet the leakage requirements of the pressure test specified in these Contract Documents. During the warranty period, any defect identified by the Engineer which will affect the integrity or strength of the pipe liner shall be repaired at the Contractor's expense.

2) Installations will not be considered complete until the lining is installed, all final cuts are finished, all channels and benches in the manholes are installed or refinished, all miscellaneous work described in the Contract Documents is complete, the final video inspection is performed, and as-built information is submitted to and accepted by the CITY.

**500-1.4.6.3 Process Limitations.**

1) Though the installation process may be licensed or proprietary in nature, the Contractor SHALL NOT change any material, thickness, design values, or procedural matters stated in the submittals without the Engineer's prior knowledge and pre-approval. The Contractor shall submit, in writing, full details about component materials, their properties, and installation procedures and abide by them fully during the entire course of the project.

2) The minimum required performance criteria, standards, physical/structural properties, chemical resistance tests, and the liner thickness as given in this specification shall be strictly complied with.

3) The CITY will not allow intermediate excavations for additional manholes not shown on the plans.

**500-1.4.7 Service Connections.** Add as follows:

After curing is complete, the Contractor shall re-establish all live service connections per Subsection 500-1.1.7(a). If the Contractor cannot re-establish a service connection as specified above within specified normal working hours, the following shall apply: The Contractor must open all live laterals with preliminary cuts to relieve the flow the same day of installation. The preliminary cut shall be a smooth round cut, with a minimum diameter of 3 inches. Final cuts shall be completed during normal working hours within

a week from the date of the liner installation, unless otherwise approved by the Engineer.

Add a subsection as follows:

**500-1.4.9 Payment.**

The Unit Bid Prices for installing liners to rehabilitate sewer mains in the manner described shall be full compensation for all materials, labor, tools, equipment, and incidentals required to insert the liner pipe within the host pipes. Payment for installing liner shall also include the cost of sealing the liner in the manholes, reworking the manhole inverts, benches, and shelves, etc. Payment will be for actual linear footage for liner installed in the field and shall be measured between the manholes from the wall, next to the insertion invert, to the invert wall of the downstream manhole, unless the liner extends through the manhole. Television inspection after rehabilitation (post-CCTV) shall be performed as specified and included in the liner installation cost. As-built information and all other relevant submittals shall be considered incidental to the rehabilitation.

The Contractor shall be responsible for making adequate and suitable arrangements for any bypass pumping that may become necessary to prevent any backflow onto private or public property between the time the liner is inserted and the service re-connections have been made, tested, and approved by the CITY. Bypass pumping shall be incidental to the cost of the sewer rehabilitation.

All costs for required point repairs in case of collapse of the pipe or failure of the new liner, and excavations made for service connections which are broken or found plugged by the rehabilitation process, shall be the responsibility of the Contractor, and no extra costs shall be allowed. No additional payment shall be made for work considered incidental or complementary to a Bid item. The Contractor shall clarify, for his or her own benefit, that all work required, incidental or otherwise, has been included in the items listed in Bidder's Proposal prior to submitting a Bid.

**Folded and Re-Formed PVC Pipe Liner**

**500-1.10.1 General.** Add as follows:

1) Folded and re-formed pipe liner shall extend the full length of the pipe reach to be rehabilitated and shall provide a structurally sound, impermeable, seamless, joint-less pipe which tightly fits the host pipe. Folded and re-formed PVC pipe lining consists of the reconstruction of the gravity sewer pipe by insertion of a preheated, folded PVC pipe which is then further heated and progressively unfolded and expanded against the interior surface of the host pipe. The finished PVC pipe liner, when installed and cool, shall extend over the installation length in a continuous, tight-fitting "pipe-within-a-pipe" manner. The minimum thickness of the pipe liner shall be in accordance with Subsection 500-1.1.1.

2) The factory test results to show compliance with ASTM D 1784 Cell Classification 13223-B and the requirements of Subsection 500-1.10.2 for Type A, or 12111-C and requirements of Subsection 500-1.10.3 for Type B for each coil of pipe shall be submitted to the Engineer before installation.

3) PVC pipe liner when installed and cool shall have the following minimum values when tested in accordance with ASTM standards by an independent testing laboratory approved by the Engineer.

| | Flexural Strength | Flexural Modulus | Tensile Strength | Impact Resistance |
|---|---|---|---|---|
| ASTM Test | D 790 | D 790 | D 638 | D 2444 |
| TYPE A | 2,200 psi | 280,000-320,000 psi | 5,000-6,000 psi | Pass/fail |
| TYPE B | 1,930 psi | 145,000-280,000 psi | 3,500-5,000 psi | Pass/fail |

4) Certified copies of all test reports performed by an independent testing laboratory, as specified in Subsections 500 4-1.4 and 500-1.1.5, shall be submitted to the Engineer.

**500-1.10.2 Type A Folded and Re-Formed PVC Pipe Liner.** To this subsection add and revise as follows:

(c) **Material and Equipment Acceptance.** Add as follows:

The Contractor shall submit factory test results and the date the PVC liner was manufactured for each coil of pipe prior to installation for approval. No pipe liner shall be installed later than six months from date of manufacture.

(f) **Installation and Field Inspection.** Add as follows:

8) The Contractor shall furnish and maintain in good condition all equipment necessary for the proper execution of the work as specified. The method of

installation shall be compatible with the manufacturer's recommended practices. Before installation, the pipe coils shall be checked by the inspector pursuant to Subsection 500-1.1.1 to verify compliance with the minimum wall thickness.

a) Insertion: The liner pipe shall be inserted into the existing sewer through existing manholes, without modification of the manholes.

b) Forming: If the liner fails to form, the Contractor shall remove the failed liner and replace it with a new liner. This work shall be performed without additional costs to the City. After the liner has been formed, the ends of the liner shall be cut away at both manholes.

c) Finish: The finished liner shall comply with Subsection 500-1.4.6.2. Any defect which will affect the integrity or strength of the liner pipe or cause a problem with the service connections, due to improper finishing or channels or benches, shall be repaired at the Contractor's expense.

**500-1.10.3 Type B Folded and Re-Formed PVC Pipe Liner.** To this subsection add and revise as follows:

The Contractor shall submit factory test results and the date the PVC liner was manufactured for each coil of pipe prior to installation for approval. No pipe liner shall be installed later than six months from the date of manufacture.

The Contractor shall furnish and maintain in good condition all equipment necessary for the proper execution of the work as specified. The method of installation shall be compatible with the manufacturer's recommended practices. Before installation, the pipe coils shall be checked by the inspector pursuant to Subsection 500-1.1.1 to verify compliance with the minimum wall thickness.

**500-1.10.5 Service Connections.** Delete this subsection replace with the following:

Service reconnection shall comply with Subsection 500-1.1.7(a).

Add the following subsection:

**500-1.14 Ultraviolet Cured–In-Place Pipe (UV-CIPP) Liner Rehabilitation**

**500-1.14.1 Description of Work**

This work shall include the furnishing of all materials, equipment, tools and labor required for the rehabilitation of existing pipes by the installation of a resin impregnated Ultra-Violet (UV) cured-in-place pipe (CIPP) lining system. The prefabricated seamless tube shall be constructed of fiberglass fabric entirely encapsulated in an inner and outer membrane and impregnated with resin as recommended by the manufacturer, prior to insertion in the host pipe. Upon UV-

curing, the resin-impregnated seamless tube shall form a structurally sound, watertight, tight-fitting pipe-within-a-pipe. The light-cured lining system shall be installed in accordance with the manufacturer's specifications.

### 500-1.14.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

**ASTM F 2019-03** Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)

**ASTM F 1216** Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of Resin-Impregnated Tube.

**ASTM D 543** Test Method for Resistance of Plastics to Chemical Reagents

**ASTM D 638** Standard Test Method for Tensile Properties of Plastics

**ASTM D 790** Test Methods for Flexural Properties of Un-reinforced and Reinforced Plastics, and Electrical Insulating Materials

### 500-1.14.3 SUBMITTALS

Materials proposed shall meet the requirements of the contract specifications and shall be submitted for review and approval by the CITY.

The UV-CIPP system technical literature shall be submitted for review by the CITY.

The Contractor installing the UV-CIPP must be an approved and trained applicator of the system being installed.

### 500-1.14.4 SAFETY

All work safety requirements of pertinent regulatory agencies shall be complied with. The site shall be secured for working conditions in compliance with the same. Signs and other devices shall be erect as are necessary for the safety of the workers at the work site.

All work shall be performed in accordance with applicable OSHA standards. Emphasis shall be placed upon the requirements for entering confined spaces and with the equipment being utilized for pipe lining.

**500-1.14.5 CURED-IN-PLACE PIPE MATERIALS:** The glass fiber tubing shall be seamless and spirally wound, including an exterior and interior film that protects and contains the approved resin used in the liner for this project. The exterior film will be provided with a UV light blocker foil.

1) Tube: The tube shall consist of a seamless, spirally wound glass fiber that is flexible and has strain values (expandable) of equal to eight (8) to ten (10) percent. The tube shall be constructed to withstand installation pressures and have sufficient strength to bridge missing pipe.

   The wet out tube shall have a uniform thickness that when compressed at installation pressures will meet or exceed the design thickness.

2) The tube shall be sized such that when installed, will tightly fit the internal circumference and length of the original pipe.

3) The glass fiber tube shall be saturated with the appropriate resin using a resin bath to allow for the lowest possible amount of air entrapment. The liner will then be formed into a spirally wound shape for the purpose of being seamless in its cured state. An inner and outer material will be added that are both impervious to airborne styrene, with the outer material also having UV blocking characteristics. The inner membrane will be removed after the installation and curing processes are completed.

4) The wall color of the interior pipe surface of UV-CIPP after installation shall be a light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made.

5) The liner should be seamless in its cured state to insure homogenous physical properties around the circumference of the cured liner.

6) The manufacturer will test the raw materials and liner materials at various stages of manufacturing on every liner, including taking samples of every finished liner and conducting tests for e-modulus, tensile, wall thickness and porosity.
   a) Resin – The resin system shall be SS approved by the engineer, with a catalyst system that when properly cured within the tube composite meets the physical properties of and adheres to ASTM 2019:

| | |
|---|---|
| Flexural Modulus | 1,100,000 psi |
| Flexural Strength | 21,800 psi |
| Long term E-modulus | 675,000 psi |
| Liner wall porosity | APS Standard |

   b) Chemical Resistance – The chemical corrosion resistance of the actual resin system used by the Contractor shall be tested by the resin manufacturer in accordance with ASTM F 1216.

## 500-1.14.6 INSTALLATION OF THE GLASS FIBER LINER

1) The approved system must utilize an outer and inner film to ensure that the liner remains intact during the insertion process and to protect the resin at all times during the installation and curing process from water and debris contamination, and resin migration which will lower the physical properties of any thermosetting cured liner. If there is any damage to the outer film, the film shall be repaired immediately with styrene-proof tape.

2) A constant tension shall be applied to pull the glass fiber liner into position in the pipe. Once inserted, end plugs shall be used to cap each end of the glass fiber liner to prepare for pressurizing the liner. The end plugs should be secured with straps to prevent them from being expelled due to pressure. As with all CIPP products, liner restraints should be used in manholes.

3) A slip sheet shall be installed on the bottom half of the pipe prior to liner insertion, for the purpose of smoothing out the bottom of the liner to increase flow characteristics.

4) The glass fiber liner shall be cured with UV light sources at a constant inner pressure. When inserting the curing equipment in the liner, care shall be taken to not damage the inner film material.

   The UV light sources shall be assembled according to the manufacturer's specifications for the liner diameter. For the liner to achieve the required water tightness and specified mechanical properties, the following parameters shall be controlled during the entire curing process, giving the Engineer a record of the curing parameters over every segment of the entire length of the liner. This demonstrates that the entire liner is cured properly. The recording shall include:

   Curing speed
   Light source working & wattage
   Inner air pressure
   Exothermic (curing) temperatures
   Date and time
   Length of liner

   This shall be accomplished using a computer and data base that are tamper-proof. During the curing process, infrared sensors shall be used to record curing data that shall be submitted to the Engineer with a post CCTV inspection on DVD.

The parameters for curing speed, inner air pressure and wattage are defined in the Quality Tracker UV curing protocol issued by the manufacturer.

The optimal curing speed, or travel speed of the energized UV light sources, is determined for each length of liner based on liner diameter, liner thickness, and exothermic reaction temperature.

5) The inner film material shall be removed and discarded after curing to provide optimal quality of the final product.