

SPECIAL PROVISIONS

FOR

Sierra Nevada Street

Sanitary Sewer Line Rehabilitation

City of Stockton Project No.: UW18029

Prepared for
City of Stockton

Dated October 2021

CITY PROJECT NO. UW18029

The special provisions contained herein have been prepared by or under the direction of the following Registered Person.



10/7/21

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Expires 6/30/2022

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DIVISION I GENERAL PROVISIONS

SECTION 1 - SPECIFICATIONS AND PLANS

1-1.01 Specifications

The work described herein shall be done in accordance with the current City of Stockton, Department of Public Works Standard Specifications and Plans, and the latest Editions of the State of California, Department of Transportation Standard Specifications and Standard Plans, California MUTCD, as referenced therein, and in accordance with the following Special Provisions. To the extent the California Department of Transportation Standard Specifications implement the STATE CONTRACT ACT, (or certain provisions of the Public Contracts code which are inapplicable to charter cities) they shall not be applicable.

In case of conflict or discrepancy between any of the Contract Documents, the order of documents listed below shall be the order of precedence, with the first item listed having the highest precedence.

1. Contract Change Order (changes last in time are first in precedence)
2. Addenda to Contract Agreement
3. Contract Agreement
4. Permits
5. Notice Inviting Bids and Instructions to Bidders
6. Addenda and Letters of Clarification
7. Special Provisions
8. Project Drawings
9. City of Stockton Standard Specifications
10. City of Stockton Standard Drawings
11. Caltrans Standard Specifications
12. Caltrans Standard Plans

Should it appear that the work to be done or any of the matters relative thereto are not sufficiently detailed or explained in these specifications, the special provisions, or the plans, the contractor shall apply to the Engineer in writing for such further explanations as may be necessary and shall conform to them as part of the contract. In the event of any doubt or question arising respecting the true meaning of these specifications, the special provisions or the plans, reference shall be made to the Engineer, whose decision thereon shall be final.

1-1.02 Plans

The bidder's attention is directed to the provisions in Section 1-1.03 "Definitions", of the Standard Specifications and Section 1-1.07 "Definitions", of the Caltrans Specifications.

1-1.03 Terms and Definitions

Wherever in the Standard Specifications, Special Provisions, Notice to Contractors, Proposal, Contract, or other contract documents the following terms are used, the intent and meaning shall be interpreted as follows:

City or Owner -	City of Stockton
Director -	Director of Public Works, City of Stockton
Standard Specifications -	Current City of Stockton, Standard Plans and Specifications, inclusive of all current revisions, and amendments, unless otherwise stated.
Caltrans Specifications -	State of California, Department of Transportation, Current Standard Plans and Specifications, inclusive of all current revisions, and amendments, unless otherwise stated.
Laboratory -	City of Stockton Department of Public Works Laboratory or consultant's laboratory
Department -	Department of Public Works, City of Stockton
Engineer -	City Engineer, City of Stockton, acting either directly or through properly authorized Engineer agents and consultants
California MUTCD	Latest edition of California Manual on Uniform Traffic Control Devices (MUTCD), and any amendments and revisions thereto.
Working Day	defined as any eight-hour day, except as follows: Saturday, Sunday, and City-recognized holidays.

SECTION 2 – BIDDING AND BID PROTESTS

2-1.01 General

The bidder's attention is directed to the "Notice to Bidder's" for the date, time and location of the mandatory pre-bid meeting, if applicable. Refer to the City of Stockton's Bid Flash webpage: <http://www.stocktongov.com/services/business/bidflash/default.html>

The bidder's attention is directed to the provisions in Section 2, "Bidding," of the Standard Specifications and these special provisions for the requirements and conditions which the bidder must observe in the preparation of the proposal form and the submission of the bid.

In conformance with Public Contract Code Section 7106, a Non-Collusion Affidavit is included in the Proposal. Signing the Proposal shall also constitute signature of the Non-Collusion Affidavit.

2-1.02 Bid Protests

In case of Bid protests, attention is directed to the provisions in Section 2-1.51, "Bid Protests" of the Standard Specifications. The party filing the protest must have submitted a bid for the work. A subcontractor of a bidder may not submit a bid protest.

A copy of bid protests shall be sent to the following address:

Attention: Ray Deyto
City of Stockton
Public Works Department
22 E. Weber Avenue, Room 301
Stockton, CA 95202

2-1.04 Contract Bonds

The bidder's attention is directed to the provisions in Section 1-1.03, "Definitions" of the Standard Specifications and Plans.

SECTION 3 – CONTRACT AWARD AND EXECUTION

3-1.01 Contract Bonds

Contract Bonds shall conform to the requirements set forth in Section 3-1.05, "Contract Bonds", of the Standard Specifications, except for the second paragraph which shall be replaced with the following:

"The Faithful Performance bond will be retained by the City of Stockton for twelve (12) months following recordation of the Notice of Completion (or partial completion) to guarantee correction of failure attributed to workmanship and materials. Upon recordation of the Notice of Completion (or partial completion), the amount of the Faithful Performance bond may be reduced to ten percent (10%) of the actual cost of the constructed improvements".

3-1.02 Contract Execution

The contract shall be executed by the successful bidder and shall be returned, together with the contract bonds, to the Agency so that it is received within 10 days, not including Saturdays, Sundays and legal holidays, after the bidder has received the contract for execution. Failure to do so shall be just cause for forfeiture of the proposal guaranty. The executed contract documents shall be delivered to:

City of Stockton
Public Works Department
Attn: Ray Deyto
22 E. Weber Avenue, Room 301
Stockton, CA 95202

The bidder's attention is directed to the provisions in Section 3, "Contract Award and Execution," of the Standard Specifications and these Special Provisions.

Bidders and subcontractors are required to be available the day of bid opening to answer questions.

The award of the contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed.

If the City awards the Contract, the award is made to the lowest responsible bidder within 90 days after the day of the bid opening.

SECTION 4 – SCOPE OF WORK

Attention is directed to the provisions in Section 4, “Scope of Work” of the Caltrans Specifications, Standard Specification, and these Special Provisions.

At no time shall construction begin without receiving notice that the contract has been approved by the City Attorney or an authorized representative. The Contractor shall follow the sequence of construction and progress of work as specified in Section 10-1.01, "Order of Work", of these Special Provisions.

The Contractor shall diligently prosecute all work items to completion.

Full compensation for any additional costs occasioned by compliance with the provisions in this section shall be considered as included in the prices paid for the various contract items of work, and no additional work compensation will be allowed therefore.

Bidders will be required to carefully examine these special provisions and attachments to judge for themselves as to the nature of the work to be done and the general conditions relative thereto and the submission of a proposal hereunder shall be considered prima-facie evidence that the bidder has made the necessary investigation and is satisfied with respect to the conditions to be encountered, the character, quantity and quality of the work performed. For work to be completed, contractors are advised to visit and review the job site prior to the submission of their bid. Bids not presented on the City forms shall be cause for considering the bid as non-responsive.

Bidders must be thoroughly competent and capable of satisfactorily performing the work covered by the proposal, and when requested shall furnish such statements relative to previous experience on similar work, the plan or procedure proposed, and the organization and the equipment available for the contemplated work, and any other as may be deemed necessary by the City Engineer in determining such competence and capability.

It shall be understood that the Contractor shall be required to perform and complete the proposed work in a thorough and diligent manner, and to furnish and provide in connection therewith all necessary labor, tools, implements, equipment, materials and supplies. The Contractor is responsible to take all necessary precautions and use best practices in the industry to perform all work require completing the project.

4-1.01 Differing Site Conditions (23 CFR 635.109)

Attention is directed to the provisions in Section 4-1.06, "Differing Site Conditions," of the Caltrans Specifications and the Standard Specifications. Contractor shall notify the Engineer if he/she finds physical conditions differing materially from contract documents.

4-1.02 Changes and Extra Work

Attention is directed to the provisions in Section 4-1.05A “Changes and Extra Work” of the Standard Specifications, and these Special Provisions.

SECTION 5 – CONTROL OF WORK

Attention is directed to the Instruction to Bidders, provisions in Section 5 “Control Work” of the Caltrans Specifications, Standard Specification and these special provisions.

5-1.01 Contract Components

Attention is directed to the provisions in Section 5-1.02, “Contract Components” of the Standard Specifications. If a discrepancy found or confusion arises, submit a Request for Information (RFI).

5-1.02 Subcontracting

Attention is directed to the provisions in Section 5-1.13A, “Subcontracting,” of the Standard Specifications, and Caltrans Specifications.

Pursuant to the provisions of Section 1777.1 of the Labor Code, the Labor Commissioner publishes and distributes a list of contractors ineligible to perform work as a subcontractor on a public works project. This list of debarred contractors is available from the Department of Industrial Relations web site at: <http://www.dir.ca.gov/DLSE/Debar.html>

5-1.04 Coordination with Other Entities

5-1.04a Permits

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work. The Environmental Quality Act (Public Resources Code, Sections 21000 to 21176, inclusive) may be applicable to permits, licenses and other authorizations which the Contractor must obtain from local agencies in connection with performing the work of the contract. The Contractor shall comply with the provisions of those statutes in obtaining the permits, licenses and other authorizations and they shall be obtained in sufficient time to prevent delays to the work. In the event that the City has obtained permits, licenses or other authorizations, applicable to the work, in conformance with the requirements in the Environmental Quality Act, the Contractor shall comply with the provisions of those permits, licenses and other authorizations. The following is a non-inclusive list of the required permits and/or licenses:

- Contractor’s License. At a minimum the Contractor shall possess at the time of bid and maintain throughout the duration of the contract, a valid California Class A Contractor License.
- Business License. Contractor shall possess prior to the execution of the contract and maintain throughout the duration of the contract, a valid City of Stockton business license.
- City of Stockton Encroachment Permit (no fee)
- State’s Water Resources Control Board Stormwater Construction General Permit: This project is exempt from the General Permit. However, contractor shall be responsible for submitting a Water Pollution Prevention Control Plan for review and approval, and for implementing all best management practices

(BMPs) necessary for stormwater pollution prevention. See Section 13, Water Pollution Control.

- Construction Notification, dust control – The Contractor is responsible for the preparation and submittal of the San Joaquin Valley Air Pollution Control District Construction Notification Form. More information can be found at the following web site: <http://www.valleyair.org>.
- Construction Water – The Contractor is responsible for obtaining a permit and paying all fees for water from California Water Service, as applicable, for construction water obtained from a fire hydrant. This permit and locations of hydrant meters shall be approved by the City of Stockton Fire Department.
- Wastewater Treatment Plant Notifications – Contractor must notify the City's Project Manager two weeks prior to discharging cured-in-place pipe (CIPP) liner cure water to the sanitary sewer system.
- BNSF Railroad: No formal permit is required, but Contractor must comply with BNSF's requirements including arrange to have a flagman during critical operations, for shoring near the railroad if the nearby structure is replaced, and other requirements detailed in Appendix A.
- Note Stockton Municipal Utilities Department Right-of-Entry Permit is NOT required.

Full compensation for conforming to the provisions in this section including applicable permit fees, shall be considered as included in the prices paid for Bid Item No. 1 on Base Bid Schedule unless specifically included in another Bid item, and no additional compensation will be allowed therefore.

5-1.05 Submittals

The following is a list of anticipated submittals for the project. The list is provided to aid the Contractor in determining the scope of work, but is not intended to be all inclusive and additional submittals may be required:

- 1) Baseline Progress Schedule (Critical Path Method)
- 2) Pre-construction survey
- 3) Traffic Control Plan (includes Pedestrian Detour Plan, if necessary)
- 4) Contractor Safety Plan
- 5) Portland Cement Concrete Mix Design
- 6) Staging Agreement with private property owners (if applicable)
- 7) City of Stockton Encroachment Permit
- 8) Sewage Bypass Pumping Plan
- 9) City's Construction and Demolition Debris Recycling Report
- 10) List and Schedule of Submittals
- 11) Product Submittals and Shop Drawings
- 12) CIPP Product and Installation Plan
- 13) Maintenance Hole Installation and Replacement
- 14) PVC Sewer Pipe
- 15) Earthwork Materials

- 16) Asphalt Paving Materials
- 17) A Schedule of Values for Lump Sum Bid Items
- 18) Stormwater Management Plan
- 19) Sheeting/Shoring Design

The Contractor shall transmit each submittal to the Engineer for review and approval with the submittal form approved by the Engineer. Submittals shall be sequentially numbered on the submittal form. Resubmittals shall be identified with the original number and a sequential resubmittal suffix letter. The original submittal shall be numbered X. The first resubmittal shall be numbered X-a and so on. Identify on the form the date of the submittal, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and/or special provision number, as appropriate. The Contractor shall sign the form certifying that review, approval, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and contract documents. Any incomplete submittals will be returned for resubmittal.

Schedule submittals to expedite the Project, and deliver to Engineer at the Engineer's office, see Section 10-1.01, "Order of Work," of these Special Provisions.

For each submittal for review, allow the City 15 calendar days excluding delivery time to and from the Contractor.

Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.

When revised for resubmission, identify all changes made since previous submission.

Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

Submittals not requested either in the Contract Documents or in writing from the Engineer will not be recognized or processed.

Within 10 calendar days after Notice of Award submit a complete list of all submittals to be submitted and the dates when they will be submitted. **All submittals shall be submitted within 30 calendar days from the date the Notice of Award; otherwise project working days will commence, with or without issuance of the Notice to Proceed.**

Wherever called for in the Contract Documents, or where required by the Engineer, the Contractor shall furnish to the Engineer for review, 1 set, plus one reproducible copy, of each shop drawing submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication and installation drawings, erection drawings, list, graphs, catalog sheets, data sheets, and similar items. Whenever the Contractor is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the appropriate branch and in the state of California, unless otherwise directed.

Normally, a separate submittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates review of the group or package as a whole. A multi-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the Engineer.

Except as may otherwise be indicated herein, the Engineer will return prints of each submittal to the Contractor with their comments noted on the submittal. The Contractor shall make complete and acceptable submittals to the Engineer by the second submission of a submittal item. The City reserves the right to withhold monies due to the Contractor to cover additional costs of the Engineer's review beyond the second submittal.

If a submittal is returned to the Contractor marked "NO EXCEPTIONS TAKEN", formal revision and resubmission of said submittal will not be required.

If a submittal is returned to the Contractor marked "MAKE CORRECTIONS NOTED", formal revision and resubmission of said submittal will not be required.

Full compensation for conforming to the provisions in this section shall be considered as included in the prices paid for the various contract items of work involved, and no additional compensation will be allowed therefore.

5-1.06 Job Site Appearance

Attention is directed to Section 4-1.13 "Cleanup" of the Caltrans Specifications, Section 5-1.31 "Job Site Appearance" of the Standard Specifications, and these Special Provisions.

The Contractor shall maintain a neat appearance to the work.

The Contractor shall conduct and cause all working forces at the site to maintain the site in a neat orderly manner throughout the construction operations. The work shall be conducted in a manner that will control the dust. When ordered to provide dust control, the Contractor shall use water to reduce the dusty conditions all to the satisfaction of the Engineer. During construction, the Contractor shall remove all rubbish and debris as it is generated. Upon completion of the work, the Contractor shall remove all equipment, debris, and shall leave the site in a neat, clean condition all to the satisfaction of the Engineer.

Broken concrete and debris developed during clearing and grubbing shall be disposed of concurrently with its removal. Contractor shall pay to the City of Stockton the sum of Two Hundred Fifty Dollars (\$250) for every calendar day where debris has remained on the job site overnight.

Full compensation for conforming to the provisions in this section shall be considered as included in the prices paid for the various contract items of work involved, and no additional compensation will be allowed therefore.

5-1.07 Staging Area

Attention is directed to Section 5-1.36E, "Use of Private property," of the Standard Specification and these Special Provisions. The street right-of-way shall be used only for activities that are necessary to perform the required work. The Contractor shall not occupy the right-of-way or allow others to occupy the right-of-way for material storage or other purposes that are not necessary to perform the required work. Contractor shall secure, at its own expense, any area required for storage of equipment and materials (no staging area is provided under the contract).

5-1.08 Construction Staking

Section 5-1.26, "Construction Surveys", of the Standard Specifications is deleted, and replaced with the following:

1. The Contractor shall be responsible for all construction survey stakes necessary to construct the project in accordance to the lines, grades, sections, stage construction/traffic handling, and traffic signalization, pavement delineation plan described in the plans and specifications.
2. Contractor shall be responsible referencing all existing monumentation within the limits of the project prior to removal of any existing monuments. Monument referencing shall be reviewed and approved by the engineer prior to commencing of the work.
3. The Contractor shall employ a Land Surveyor registered in the State of California or an appropriately registered Civil Engineer to perform such survey work. All stakes and marks set by the Contractor's Land Surveyor or Civil Engineer shall be carefully preserved by the Contractor. In case such stakes and marks are destroyed or damaged, they will be promptly replaced, at the direction of the Engineer at no additional cost to the City. Copies of all field notes and cut sheets shall be provided to the City at no additional cost to the City.

Full compensation for conforming to the provisions in this section shall be considered as included in prices paid for the various contract items of work involved, and no additional compensation will be allowed therefore.

5-1.9 Increased or Decreased Quantities

The City reserves the right to make such alterations, deviations, additions to, or omissions from the plans and specifications, including the right to increase or decrease the quantity of any item or portion of the work or to omit any item or portion of the work, as may be deemed by the Engineer to be necessary or advisable and to require such extra work as may be determined by the Engineer to be required for the proper completion or construction of the whole work contemplated, without adjustment in the unit price as bid.

Attention is directed to Section 4-1.02, "Changes and Extra Work," of these Special Provisions. Any such changes will be set forth in a contract change order, which will specify the work to be done in connection with the change made, adjustment of contract

time, if any, and the basis of compensation for such work. A contract change order will not become effective until approved by the City Manager and / or City Council.

5-1.10 Stop Notice Withholds

Section 9-1.16E(4) "Stop Notice Withholds" of the Caltrans Specifications is amended to read as follows:

"The City of Stockton, by and through the Department of Public Works, may at its option and at any time retain out of any amounts due the Contractor, sums sufficient to cover claims, filed pursuant to Section 3179 et seq. of the Code of Civil Procedures."

5-1.11 Rights in Land

All work, equipment parking, or any other activity associated with the project shall be confined to the project limits within the street rights-of-way. The Contractor's use of any other property exclusively in connection with this project shall be by a written agreement between the property owner and the Contractor. A certified copy of any such agreement shall be furnished to the Engineer prior to the use of such property by the Contractor.

Full compensation for conforming to the provisions in this section shall be considered as included in prices paid for the various contract items of work involved, and no additional compensation will be allowed therefore.

5-1.12 As-Built/Record Drawings

The Contractor shall maintain a complete set of drawings on-site for the purpose of keeping up to date all field modifications. This plan set shall be available for review by the project Inspector and the Engineer. These plans shall be provided to the Inspector after the completion of construction at the Post-Construction Meeting and prior to the final payment. All revisions, modifications, and/or changes shall be marked clearly. Notes and dimensions shall be in red and be clear and legible. These plans will be used by the Engineer to mark up the original plan sheets with the revisions made during construction.

A list shall be maintained of any trees removed during the course of construction by the Contractor or his Subcontractor, identifying the location, size, and species (common name). This list shall be submitted at the Post-Construction Meeting.

Full compensation for furnishing the As-Built/Record Drawings shall be considered included in the prices paid for the various bid items of work, and no additional compensation will be considered therefore.

5-1.13 Notice of Potential Claim

The Contractor shall not be entitled to the payment of any additional compensation for any cause, or for the happening of any event, thing, or occurrence, including any act or failure to act, by the Engineer, unless he has given the Engineer due written notice of potential claim as hereinafter specified. However, compliance with this section shall not be a prerequisite for matters within the scope of the protest provisions under "Changes" or "Time of Completion" or within the notice provisions in "Liquidated Damages". The written notice of potential claim shall set forth the items and reasons which the Contractor

believes to be eligible for additional compensation, the description of work, the nature of the additional costs and the total amount of the potential claim. If based on an act or failure to act by the Engineer, written notice for potential claim must be given to the Engineer prior to the Contractor commencing work. In all other cases, written notice for potential claims must be given to the Engineer within 15 days after the happening of the event, thing or occurrence giving rise to the potential claim.

It is the intention of this Section that potential differences between the parties of this Contract be brought to the attention of the Engineer at the earliest possible time so that appropriate action may be taken and settlement may be reached. The Contractor hereby agrees that he shall have no right to additional compensation for any claim that may be based on any act or failure to act by the Engineer or any event, thing or occurrence for which no written notice of potential claim was filed.

5-1.14 Records

The Contractor shall maintain cost accounting records for the contract pertaining to, and in such a manner as to provide a clear distinction between, the following 6 categories of costs of work during the life of the contract:

- A. Direct costs of contract item work.
- B. Direct costs of changes in character in conformance with Sections 4-1.05B and 9-1.15, "Work-Character Changes," of the Caltrans Specifications.
- C. Direct costs of extra work in conformance with Section 4-1.02, "Changes and Extra Work," of these Special Provisions.
- D. Direct costs of work not required by the contract and performed for others.
- E. Direct costs of work performed under a notice of potential claim in conformance with the provisions in Section 5-1.43, "Potential Claims and Dispute Resolution," of the Caltrans Specifications.
- F. Indirect costs of overhead.

Cost accounting records shall include the information specified for daily extra work reports in Section 5-1.27, "Records," of the Caltrans Specifications. The requirements for furnishing the Engineer completed daily extra work reports shall only apply to work paid for on a force account basis.

The cost accounting records for the contract shall be maintained separately from other contracts, during the life of the contract, and for a period of not less than 3 years after the date of acceptance of the contract. If the Contractor intends to file claims against the Department, the Contractor shall keep the cost accounting records specified above until complete resolution of all claims has been reached.

5-1.15 Noncompliant and Unauthorized Work

Attention is directed to Section 5-1.30, "Noncompliant and Unauthorized Work," of Caltrans Specifications.

5-1.16 Property and Facility Preservation

Attention is directed to Section 5-1.36, "Property and Facility Preservation," of Caltrans Specifications and these Special Provisions. Due care shall be exercised to avoid injury

to existing highway improvements or facilities, utility facilities, adjacent property, and roadside trees shrubs and other plants that are not to be removed. Roadside trees, shrubs and other plants that are not to be removed, and pole lines, fences, signs, markers and monuments, buildings and structures, conduits, pipelines under or above ground, sewer and water lines, all highway facilities and any other improvements or facilities within or adjacent to the highway shall be protected from injury or damage, and if ordered by the Engineer, the Contractor shall provide and install suitable safeguards, approved by the Engineer, to protect the objects from injury or damage. If the objects are injured or damaged by reason of the Contractor's operations, the objects shall be replaced or restored at the Contractor's expense.

The facilities shall be replaced or restored to a condition as good as when the Contractor entered upon the work, or as good as required by the specifications accompanying the contract, if any of the objects are a part of the work being performed under the contract. The Engineer may make or cause to be made those temporary repairs that are necessary to restore to service any damaged highway facility. The cost of the repairs shall be borne by the Contractor and may be deducted from any moneys due or to become due to the Contractor under the contract. The fact that any underground facility is not shown upon the plans shall not relieve the Contractor of the responsibility under this Section of these Special Provisions. It shall be the Contractor's responsibility, pursuant thereto, to ascertain the location of those underground improvements or facilities which may be subject to damage by reason of the Contractor's operations.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in protecting or repairing property as specified in this Section shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

With the exception of locating existing and new maintenance holes, there is no construction staking required of the Contractor for this project.

5-1.17 Pre-Construction Survey

Attention is directed to Section 5-1.36D, "Survey Monuments" of the Caltrans Specifications and these Special Provisions. The Contractor shall perform a pre-construction survey of all existing structures, pavements, and other aboveground facilities within the project limits prior to beginning any work, noting their condition by means of photographs and video tapes supplemented by written documentation, where applicable.

Color photographs shall be taken with a digital camera at locations that are appropriate to show pre-existing conditions. Each photograph shall show the date and time the photograph was taken and clearly labeled showing the location, viewing direction, and any special features noted. Digital files of each photograph and a copy of videotapes shall be submitted to the Engineer.

Preserving and Perpetuating Survey Monuments

The contractor shall exercise due caution and shall carefully preserve bench marks, control points, reference points and all survey monuments, and shall bear all expenses

for replacement and/or error caused by his/her unnecessary loss or disturbance. The contractor shall consult with a licensed land surveyor or civil engineer licensed to practice land surveying in California prior to beginning construction to ensure that any preconstruction corner records, as required by the State of California Professional Land Surveyor' ACT have been filed with the County Surveyor, pursuant to Section 8771(a-f) of the California Business and Profession Code.

Action by:	Action:
<i>Contractor's Land Surveyor</i>	<ol style="list-style-type: none"> 1. Identifies existing survey monuments. 2. Lists all existing survey monuments. 3. Ties out / performs construction staking of survey monuments. 4. Indicates survey monuments on construction plans. 5. Files all pre-construction Corner Records or Records of Survey with San Joaquin County. The Corner Records or Record of Survey will show monuments within the area of construction reasonably subject to removal or disturbance not shown on a recent record document (recent record document is a filed survey map or corner record document completed with acceptable modern survey methods that includes survey ties from monuments within the construction area to monuments outside of the construction area). 6. Submits copies of pre-construction Corner Records or Records of Survey filed with San Joaquin County to City Engineer/Project Manager
<i>Contractor</i>	<ol style="list-style-type: none"> 7. Preserves/perpetuates all survey monumentation during construction, including, but not limited to, those listed. 8. Restores survey monuments disturbed by construction.
<i>Contractor's Land Surveyor,</i>	<ol style="list-style-type: none"> 9. Files all post-construction Corner Records and Records of Survey with San Joaquin County for all monuments disturbed during construction 10. Submits copies of Corner Records or Records of Survey filed with San Joaquin County to City Engineer/Project Manager. 11. Completes, signs, and submits the "Acknowledgement of Monument Preservation".

The "Acknowledgement of Monument Preservation" is found at [http://www.stocktongov.com/files/Survey Monument Preservation Forms.pdf](http://www.stocktongov.com/files/Survey_Monument_Preservation_Forms.pdf)

Monuments set shall be sufficient in number and durability and efficiently placed so as not to be readily disturbed, to assure, together with monuments already existing, the perpetuation or facile reestablishment of any point or line of the survey.

When monuments exist that control the location of subdivisions, tracts, boundaries, roads, streets, or highways, or provide horizontal or vertical survey control, the monuments shall be located and referenced by or under the direction of a licensed land surveyor or registered civil engineer prior to the time when any streets, highways, other rights-of-way, or easements are improved, constructed, reconstructed, maintained, resurfaced, or relocated, and a corner record or record of survey of the references shall be filed with the county surveyor. They shall be reset in the surface of the new construction, a suitable monument box placed thereon, or permanent witness monuments set to perpetuate their location if any monument could be destroyed, damaged, covered, or otherwise obliterated, and a corner record or record of survey filed with the county surveyor prior to the recording of a certificate of completion for the project. Sufficient controlling monuments shall be retained or replaced in their original positions to enable property, right-of-way and easement lines, property corners, and subdivision and tract boundaries to be reestablished without devious surveys necessarily originating on monuments differing from those that currently control the area. It shall be the responsibility of the governmental agency or others performing construction work to provide for the monumentation required by this section. It shall be the duty of every land surveyor or civil engineer to cooperate with the governmental agency in matters of maps, field notes, and other pertinent records. Monuments set to mark the limiting lines of highways, roads, streets or right-of-way or easement lines shall not be deemed adequate for this purpose unless specifically noted on the corner record or record of survey of the improvement works with direct ties in bearing or azimuth and distance between these and other monuments of record.

The decision to file either the required corner record or a record of survey pursuant to subdivision shall be at the election of the licensed land surveyor or registered civil engineer submitting the document.

Full compensation for pre-construction survey shall be included in the contract price for the various items of work involved, and no additional compensation will be allowed therefore.

5-1.18 Cooperation

Should construction be under way by other forces or by other contractors within or adjacent to the limits of the work specified or should work of any other nature be under way by other forces within or adjacent to those limits, the Contractor shall cooperate with all the other contractors or other forces to the end that any delay or hindrance to their work will be avoided. The right is reserved to perform other or additional work at or near the site (including material sources) at any time, by the use of other forces. When 2 or more contractors are employed on related or adjacent work, or obtain materials from the same material source, as provided in Section 6, "Control of Materials" of the Caltrans Specifications, each shall conduct their operations in such a manner as not to cause any unnecessary delay or hindrance to the other. Each contractor shall be responsible to the other for all damage to work, to persons or property caused to the other by their operations, and for loss caused the other due to unnecessary delays or failure to finish the work within the time specified for completion.

The Contractor shall protect from damage any utility facilities that are to remain in place,

be installed, relocated, adjusted, or otherwise rearranged.

The Contractor should note that the following utility companies and other agencies maintain facilities within the project area and may have forces in the project area or adjacent thereto:

- PG&E
- AT&T and other phone companies
- City of Stockton Municipal Utilities Department
- Comcast Cable Company
- California Water Service Company
- BNSF Railroad Company

The Contractor shall verify the horizontal and vertical locations of all existing utilities prior to start of construction. The Contractor shall be responsible for the repair and replacement of these or any other facilities damaged during construction. A minimum of forty-eight (48) hours or two (2) working days prior to beginning construction, the Contractor shall notify Underground Services Alert (USA), telephone (800) 227-2600, to have existing facilities marked in the field.

Installation and/or relocation of the aforementioned utilities and other agencies' facilities will require coordination with the Contractor's operations. The Contractor shall make necessary arrangements with the utility company and other agencies through the Engineer, and shall submit a schedule of work, verified by a representative of the utility company or other agency, to the Engineer. The Contractor shall notify the Engineer in writing one (1) month and again one (1) week prior to preparing the site for the utility relocation work or work to be done by other agencies.

The Contractor shall take care to avoid working in any area of the project, which may conflict with the work underway by the utility companies. The Contractor's construction schedule shall be prepared to avoid utility work.

The Contractor shall cooperate completely with all utility companies having facilities within the project area.

Attention is directed to the possible existence of underground facilities not known to the City or in a location different from that which is shown on the plans or in these Special Provisions. The Contractor shall take steps to ascertain the exact location of all underground facilities prior to doing work that may damage such facilities or interfere with their service.

Payment for complying with this Special Provision shall be included in the various items of work, and no additional compensation will be allowed therefore.

5-1.19 Surface Restoration

Surface restoration shall consist of restoring all areas within the limits of work to their original existing condition prior to construction.

The Contractor shall restore all areas (paved and unpaved) per City of Stockton standards and specifications where appropriate, including deep lift patch as described on the plans, such as driveways, sidewalks, curb and gutter, roadway surfaces, ditches, landscaped areas, etc., and all other improvements disturbed or damaged by his operations.

Payment for the restoration of damaged areas, for which specific bid items are not provided, shall be included in the contract prices paid on the Base Bid Schedule, and no additional compensation will be allowed therefore.

SECTION 6 – CONTROL OF MATERIALS

Attention is directed to the provisions in Section 6, "Control of Materials," of the Standard Specifications, and these Special Provisions.

6-1-01 BLANK

6-1-02 Furnished Materials

There are no City Furnished Materials for this project.

6-1-03 BLANK

6-1.05 Quality Assurance Program

Refer to Instruction to Bidders.

6-1.06 Testing

Testing of materials and work shall conform to the provisions in Section 6, "Control of Materials" of the Caltrans Specifications and these special provisions. Whenever the provisions of Section 6 of the Caltrans Standard Specifications refer to tests or testing, it shall mean tests to assure the quality and to determine the acceptability of the materials and work. Contractor's attention is directed to the City's Quality Assurance Program in Instructions to Bidder Package.

The Engineer will deduct the costs for testing of materials and work found to be unacceptable, as determined by the tests performed by the City and the costs for testing of material sources identified by the Contractor which are not used for the work, from moneys due or to become due to the Contractor. The amount deducted will be determined by the engineer.

Contractor shall hire a certified, independent from contractor's company, laboratory to conduct compaction and material testing. Testing includes, but is not necessarily limited to, compaction testing and material testing. A relative compaction of 95% is expected on AC overlay, roadway sub grade and sidewalk areas.

Compaction testing will be required for subsoil and AB (backfill of maintenance hole excavations and pipe trenches, including those for bypass pumping for both subsoil and AB), and hot mix asphalt. For AB, sieve analysis, cleanliness value, and R value may be provided by the vendor if the source is consistent.

For asphalt concrete, certificate of compliance, one sieve analysis, and one oil content per day is required from supplier.

For concrete, certificate of compliance for Curb Gutter/Sidewalk, driveway, and ADA ramp or ASTM C39 compaction test, 4 cylinders per day, with a required 28-day strength of 3,000 psi is required.

Full compensation for performing the work in these specifications shall be included in the prices paid for the various contract items of work, and no additional compensation will be allowed therefore.

SECTION 7 – LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

7-1.01 General

Attention is directed to Section 7 “Legal Relations and Responsibility to the Public” of the Caltrans Specifications, Standard Specifications, and these Special Provisions.

7-1.02 Maintaining Public Convenience and Safety

Attention is directed to Sections 7-1.03, "Public Convenience", 7-1.04, "Public Safety", and Section 12, "Temporary Traffic Control", of the Caltrans Specifications. Attention is also directed to Part 6 of the California MUTCD and Sections 7-1.03, "Public Convenience", 7-1.04, "Public Safety", of Standard Specifications, and Section 12-1.01, “Maintaining Traffic” of these Special Provisions. Nothing in these Special Provisions shall be construed as relieving the Contractor from his responsibility as provided in said sections and Part 6 of the California MUTCD.

7-1.03 Excavation Safety

Attention is directed to Sections 7-1.02K(6)(b), "Excavation Safety” of the Standard Specifications and these Special Provisions.

If required, the Contractor shall furnish all labor, equipment, and materials required to design, construct, and remove all shoring, lagging, cribbing, piling, and/or other types of support for the wall of any open excavation required for the construction of this project.

In making excavations for the project, the Contractor shall be fully responsible for providing and installing adequate sheeting, shoring, and bracing, as may be necessary as a precaution against slides or cave-ins and to fully protect all existing improvements of any kind from damage.

The Contractor shall be solely responsible for any damages which may result from his failure to provide adequate shoring to support the excavations under any or all of the conditions of loading which may exist or which may arise during the construction project. Nothing herein shall be deemed to allow the use of shoring, sloping, or protective system less effective than that required by the Construction Safety Orders of the Division of Industrial Safety.

Contractor shall have sheeting/shoring designed and stamped by a civil engineer registered in the State of California.

Full compensation for conforming to the provisions in this section shall be included in the prices paid for various bid items, and no additional compensation will be made therefore.

7-1.04 Public Convenience

Contractor's attention is directed to the Section 12-1.01 "Maintaining Traffic" of these Special Provisions, Section 7-1.03 "Public Convenience" of the Standard Specifications, and these Special Provisions.

The Contractor shall notify San Joaquin Regional Transit District (SJRTD) a minimum of five (5) working days prior to beginning work. The Contractor shall coordinate with SJRTD if any bus stops and bus routes are affected.

The Contractor shall inform the City Fire Department, City Police Department, City Traffic Department, Municipal Utilities Department (MUD), and all affected utilities no later than three (3) working days before work is to begin.

The Contractor shall provide the City with the name and telephone number (business, home and mobile) of three (3) representatives available at all times during the duration of the contract. Said names and telephone numbers shall be provided to the City of Stockton Public Works, Fire, and Police Departments.

The Contractor shall circulate printed form letters, approved by the Engineer, explaining the project to be done and the length of time inconvenience will be caused by the project and deliver same to the residents and businesses to be affected at least 72 hours before work is to commence on their street. In addition, the Contractor shall provide temporary "No Parking" signs posted three (3) working days in advance of the work. Such signs shall be placed no further than fifty (50) feet apart. The additional "No Parking" signs shall be removed upon completion of the work and the opening of the street to traffic. It shall be the Contractor's responsibility to remove any vehicles obstructing his operations.

Full compensation for conforming to the provisions in this section shall be included in the prices paid for various bid items, and no additional compensation will be made therefore.

7-1.05 Public Safety

Contractor's attention is directed to the Section 12-1.01 "Maintaining Traffic" of these Special Provisions, Section 7-1.04 "Public Safety" of the Standard Specifications, and these Special Provisions. Nothing in the specifications voids the contractor's public safety responsibilities.

All safety devices, their maintenance, and use shall conform to the latest requirements of OSHA and shall conform to the applicable provisions of the Part 6 "Temporary Traffic Control", of the **California MUTCD**. It shall be the complete responsibility of the Contractor to protect persons from injury and to avoid property damage. Adequate barricades, construction signs, flashers, and other such safety devices, as required, shall be placed and maintained during the progress of the construction work, until the project is completed. Whenever required, flaggers shall be provided to control traffic.

The Contractor shall provide for the proper routing of vehicles and pedestrian traffic in a

manner that will hold congestion and delay of such traffic to practicable minimum by furnishing, installing, and maintaining all necessary temporary signs, barricades, and other devices and facilities, as approved by the City Traffic Engineer. As the work progresses, the Contractor shall relocate, subject to the City Traffic Engineer's approval, such devices and facilities as necessary to maintain proper routing. The Contractor shall notify the City Traffic Engineer a minimum of three (3) working days prior to the relocation of any traffic control devices.

When work is not in progress on a trench or other excavation that requires closure of an adjacent lane, the traffic cones or portable delineators used for the lane closure shall be placed off of and adjacent to the edge of the traveled way. The spacing of the cones or delineators shall be not more than the spacing used for the lane closure.

Full compensation for furnishing, installing, moving, and removing of all necessary traffic control devices including, but not limited to, signing, striping, barricades, and flagging shall be included in the bid item for "Traffic Control System", as shown on the bid schedule, and no additional compensation will be allowed therefor.

7-1.06 Indemnification and Insurance

Attention is directed to Section 7-1.05 "Indemnification" and Section 7-1.06, "Insurance" of the Standard Specifications, and Instruction to Bidders for this project.

Indemnification and Insurance shall conform to an Exhibit, which is attached to this project bid package and incorporated by this reference.

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved, and no additional compensation will be allowed therefore.

7-1.07 Lead Compliance Plan

All yellow striping shall be presumed to contain lead unless confirmed otherwise in advance by the City. If grinding of any yellow striping is to be performed, the Contractor shall test the paint and if found to contain lead, shall submit a Lead Compliance Plan that satisfies all regulatory requirements and shall implement the plan into its work. The cost for compliance shall be considered as included as incidental to all other work and no additional compensation will be allowed therefor.

SECTION 8 – PROSECUTION AND PROGRESS

Attention is directed to the provisions in Section 8 of the Standard Specifications, and these Special Provisions.

8-1.01 Time of Completion

Attention is directed to the provisions in Sections 8-1.05A, "Time", and 8-1.07, "Delay" of the Standard Specifications, and these Special Provisions.

The contract for the performance of the work and the furnishing of materials shall be

executed within ten (10) days after the approval thereof by the City Attorney. The City will issue the Notice to Proceed following execution of the contract.

Submittals shall be delivered to the Engineer within thirty (30) calendar days of execution of contract. Contract shall not start any work on the job site until the Engineer approves the submittals. Refer to section 5-1.05, "Submittals" of these Special Provisions. The Contractor shall only enter the jobsite prior to approval of the above submittals for purposes of measuring field dimensions and locating utilities.

The Contractor shall diligently prosecute the contract work to substantial completion within one hundred twenty (120) working days; all work associated with the sewer operation, including punch list, are included in this milestone.

The contract substantial completion time includes installation of Alternative Bid items and no extension of time will be granted for their implementation; Contractor shall allow implementation of Alternative Bid Items in its schedule until such time the City may inform Contractor which will not be implemented. Notice to Proceed will not be issued until all complete submittals have been reviewed at least once and Contractor shall not plan for Notice to be issued before May 16, 2022 such that work is performed during the dry season. Correction indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the contract requirements. The Engineer's review of Contractor Shop Drawing submittals shall not relieve the contractor of the entire responsibility for the correctness of details and dimensions. The Contractor shall assume all responsibility and risk for any misfits due to error in Contractor submittals. The Contractor shall be responsible for the dimension and the design of adequate connections and details.

Should the Contractor choose to work on a Saturday, Sunday, or on a holiday recognized by the labor unions, the Contractor shall reimburse the City of Stockton the actual cost of engineering, inspection, testing, superintendent, and/or other overhead expenses, which are directly chargeable to the contract. Should such work be undertaken at the request of the City, reimbursement will not be required.

8-1.02 Liquidated Damages

Attention is directed to the provisions in Section 8-1.10, "Liquidated Damages", of the Caltrans Specifications, Standard Specifications, and these Special Provisions.

The Contractor shall pay liquidated damages to the City of Stockton in the amount of \$4,500 (four thousand dollars) per day for each and every calendar day that the work, with the exception of the maintenance period, remains incomplete after the expiration of the contract working days specified in these Special Provisions.

Full compensation for any costs required to comply with the provisions in this section shall be considered to be included in the prices paid for the various contract items of work, and no additional compensation will be allowed therefore.

8-1.03 Progress Schedule

GENERAL

Summary

Comply with Section 8-1.02, "Schedule," of the Caltrans Specifications, except Contractor must:

1. Use computer software to prepare the schedule
2. Furnish compatible software for the Engineer's exclusive possession and use

The Contractor is responsible for assuring that all activity sequences are logical and that each schedule shows a coordinated plan for complete performance of the work.

Definitions

contract completion date: The current extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer as specified in Section 8-1.05, "Time," of the Caltrans Specifications.

data date: The day after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "planned."

float: The difference between the earliest and latest allowable start or finish times for an activity.

milestone: An event activity that has zero duration and is typically used to represent the beginning or end of a certain stage of the project.

near critical path: A chain of activities with total float exceeding that of the critical path but having no more than 10 working days of total float.

time-scaled network diagram: A graphic depiction of a Critical Path Method (CPM) schedule comprised of activity bars with relationships for each activity represented by arrows. The tail of each arrow connects to the activity bar for the predecessor and points to the successor.

total float: The amount of time that an activity or chain of activities can be delayed before extending the scheduled completion date.

Submittals

General Requirements

Submit to the Engineer baseline, monthly updated, and final updated schedules, each consistent in all respects with the time and order of work requirements of the contract. Perform work in the sequence indicated on the current accepted schedule.

Each schedule must show:

1. Calculations using critical path method to determine controlling activities.
2. Duration activities less than 20 working days.
3. Each required constraint. Constraints other than those required by the special provisions may be included only if authorized.

The Engineer's review and acceptance of schedules does not waive any contract requirements and does not relieve the Contractor of any obligation or responsibility for submitting complete and accurate information. Correct rejected schedules and resubmit them within 7 days of notification by the Engineer, at which time a new review period of 7 days will begin.

Errors or omissions on schedules do not relieve the Contractor from finishing all work within the time limit specified for completion of the contract. If, after a schedule has been accepted by the Engineer, either you or the Engineer discovers that any aspect of the schedule has an error or omission, the Contractor must correct it on the next updated schedule.

Baseline Schedule

Submit to the Engineer a baseline schedule within 20 days of approval of the contract. Allow 20 days for the Engineer's review after the baseline schedule and all support data are submitted. Beginning the week the baseline schedule is first submitted, meet with the Engineer weekly to discuss and resolve schedule issues until the baseline schedule is accepted. The baseline schedule must include the entire scope of work and must show how the Contractor plans to complete all work contemplated. Multiple critical paths and near-critical paths must be kept to a minimum. A total of not more than 50 percent of the baseline schedule activities must be critical or near critical, unless otherwise authorized by the Engineer. The baseline schedule must not extend beyond the number of working days originally provided in these special provisions.

Updated Schedule

Submit an updated schedule and meet with the Engineer to review contract progress on or before the 1st day of each month, beginning one month after the baseline schedule is accepted. Allow 15 days for the Engineer's review after the updated schedule and all support data are submitted, except that the review period will not start until any previous month's required schedule is accepted. Updated schedules that are not accepted or rejected within the review period are considered accepted by the Engineer.

The updated schedule must show:

1. Data date of the 21st day of the month or other date established by the Engineer
2. Changes from approved revised schedules

Final Updated Schedule

Submit a final updated schedule with actual start and finish dates for the activities within 30 days after completion of contract work. Provide a written certificate with this submittal signed by the Contractor's project manager or an officer of the company stating, "To my knowledge and belief, the enclosed final updated schedule reflects the actual start and finish dates of the actual activities for the project contained herein." An officer of the company may delegate in writing the authority to sign the certificate to a responsible manager.

8-1.05 Pre-Construction Meeting

The City of Stockton Public Works Department will schedule a pre-construction meeting with the Contractor following award of the contract and prior to commencing work (Contact 209-937-8869). The City will issue the Notice to Proceed following execution of the Contract. This meeting will be held in the City of Stockton, Public Works Department.

8-1.06 Post-Construction Meeting

The Contractor shall attend a post-construction meeting that will be arranged by the Public Works Department (Contact 209-937-8869) after completion of work and prior to acceptance and final payment. The project Design Engineer and the project Inspector will also attend this meeting. The purpose of the meeting will be to discuss the project and any related issues that can help improve future Public Works construction projects. This meeting will be held in the City of Stockton, Public Works Department.

SECTION 9 – PAYMENT

All measurements and payments for this work shall conform to all applicable provisions on Section 9, "Measurement and Payment" of the Standard Specifications, Instructions to Bidders, and these Special Provisions.

No partial payment will be made for any materials that are furnished on hand, but not yet installed or incorporated in the work. The work to be performed consists of furnishing all labor, materials, tools, transportation, supplies, equipment, appurtenances, fuel, and power, unless specifically excepted, that is necessary or required to rehabilitate the sewer, including new sewers or appurtenances, as further delineated on the plans and described in these Special Provisions.

All other work as may be necessary as indicated on the plans, in the specifications, and as required by the Engineer.

Upon completion of all of the work included herein, including approved contract change orders as appropriate, the Contractor may request that the Engineer file a Notice of Completion for the purposes of relief of maintenance and release of retention.

All materials designated to be removed shall become the property of the Contractor, unless otherwise noted, and shall be disposed in accordance with local, State, and Federal laws and ordinances.

Full compensation for disposal of materials and performing the work in these Special Provisions shall be included in the prices paid for the various contract items of work, and no additional compensation will be allowed therefore.

9-1.01 Schedule of Values

Submit a schedule of values within 15 days after Contract approval. Value schedules for each lump sum bid item shall be prepared and submitted to the Engineer as set forth in Section 9-1, "Lump Sum Contracts", of the Standard Specifications and Section 9-1.16B, "Schedule of Values," of the Caltrans Specifications. Unless otherwise approved by the Engineer, materials on hand, but not incorporated into the work, shall not be included for measurement or for purposes of payment.

9-1.02 Description of Work and Payment

The work to be performed consists of furnishing all labor, materials, tools, transportation, supplies, equipment, appurtenances, fuel, and power, unless specifically excepted, necessary, or required to install the sewer rehabilitation, as further delineated on the plans and described in these Special Provisions.

The work shall include, but not be limited to, the following bid items as described:

1. Mobilization and Demobilization
 - a. Includes all costs associated with mobilization and demobilization of Contractor's operations as described in the project plans and these special provisions. Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project, including obtaining a laydown and staging area; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site.
2. Sheeting, Shoring, and Bracing
 - a. All costs for providing shoring to support trench and other excavations conforming to applicable safety orders and as Contractor determines necessary to ensure safe earthwork operations. Includes all subsurface investigations; preparing and submitting shoring designs, labor, tools, materials, and equipment, power/fuel for all work, complete as specified and indicated on the drawings, are included in the lump sum price.
3. Cured-in-place Pipe Lining Rehabilitation of 36" Concrete Sewer – Sierra Nevada Street
 - a. All costs associated with installing CIPP liner to restore the structural integrity and hydraulic function of the existing 36-inch sanitary sewer from station 1+00 to 12+01 as shown on the plans, including measure pipe to obtain accurate dimensions, design of CIPP by Professional Engineer, install and cure CIPP and dispose of materials, complete and in-place, are included in the unit price. The unit price includes up to 5 days of BNSF flagmen during CIPP operations paid for by the City; the Contractor shall reimburse the City for any charges for flagmen in excess of 5 days via a deductive change order.
4. Cured-in-place Pipe Lining Rehabilitation of 36" Concrete Sewer with Preliner – Hazelton Ave
 - a. All costs associated with installing CIPP liner to restore the structural integrity and hydraulic function of the existing 36-inch sanitary sewer from station 12+01 to 16+42 as shown on the plans, including identify sewer location with transponder or other method, measure pipe to obtain accurate dimensions, design CIPP by Professional Engineer, install a preliner, install and cure CIPP and dispose of materials, complete and

in-place, are included in the unit price.

5. Rehabilitation of Existing Type 2 Maintenance Hole – Sierra Nevada and Hazelton
 - a. All costs to rehabilitate the maintenance hole at station 12+01 including initial safe entry to evaluate for rehabilitation versus replacement, clean, repair and protect rebar, repair concrete, apply repair mortar, and epoxy line, consistent with these Special Provisions.
6. Removal and Replacement of Existing Type 2 Maintenance Hole with Stubout – Sierra Nevada and Worth
 - a. All costs to remove and replace existing maintenance hole at station 1+00, including excavate for removal of the base and sawcut existing pipe, recast the base including closure pours to re-establish the channel, install new 30" PVC stubout and reconnect to the Mormon Slough Sewer with specially fabricated fitting, and install new manhole barrels, cone, grade rings, and frame and cover, and epoxy coat, and backfill of the excavation, consistent with City Standard Detail S-12, complete and in-place, are included in the lump sum price.
7. Rehabilitation of Existing Type 2 Maintenance Hole – near BNSF Railroad
 - a. All costs to rehabilitate the maintenance hole at station 4+45 including locate buried frame and cover, initial safe entry to evaluate for rehabilitation versus replacement, clean, repair and protect rebar, repair concrete, apply repair mortar, and epoxy line, and raise the frame and cover to existing pavement grade, consistent with these Special Provisions and City Standard Details.
8. Installation of New Type 2 Maintenance Hole with Internal Drop
 - a. All costs to install MH at station 8+41 including: excavate, sawcut existing pipe and cast a new base including closure pours to re-establish the channel, connect to the existing 6" PVC pipe and install a 6" internal drop similar to City Standard Detail S-6, install new manhole barrels, cone, grade rings, and frame and cover, epoxy coat, and backfill of the excavation, consistent with City Standard Detail S-12, complete and in-place, are included in the unit price.
9. Installation of New Type 2 Maintenance Hole
 - a. All costs for station 15+25 MH including: excavate, cast a new base and sawcut existing pipe, including closure pours to re-establish the channel, and installation of new manhole barrels, cone, grade rings, and frame and cover, epoxy coat, and backfill of the excavation, consistent with City Standard Detail S-12, complete and in-place, are included in the unit price. Maintenance holes under this Bid Item have no other special features such as drops or additional pipes routing through or into the structure.
10. Clean and CCTV of Sanitary Sewer Lines
 - a. All costs to clean the lines in preparation for CIPP and to perform a pre-

(on rehabilitated) and post- install CCTV of the full length of sewer lines rehabilitated by CIPP and the new sewers on the Scotts Avenue Reroute, are included in the lump sum price.

11. Upstream Plug Installation

- a. All costs for confined space entry, installation, and maintenance of the upstream plug at SSMH-34P109 to prevent flow and hazardous gases from entering the sewer to be rehabilitated, are included in the lump sum price.

12. Downstream Bypass Pumping

- a. All costs to route the flows indicated on the drawings from the existing 24" Mormon Slough Sewer from the south into SSMH-34P068 through the SSMH to prevent backup and facilitate rehabilitation of the sewer pipelines and provide a plug on the downstream end of SSMH-34-P068 to prevent backwater, are included in the lump sum price. Item may include other plugging depending upon contractor-chosen sequencing.

13. Scotts Ave Reroute

- a. Includes all costs to install the reroute including: installation of the internal drop in existing Type 1 SSMH, creating penetration and creation of new channel for new pipe entering from the south, on the existing SSMH at station 8+41, 8' east,; installation of 75 lineal feet of new 6" PVC sewer pipe, rerouting existing 6" (one potentially 8") laterals; installation of a new Type 1 SSMH connecting two new 6" PVC sewer laterals at station 7+66, 8' east; potholing of all crossing utilities prior to new sewer installation, removal of SSMH-34P062; grout abandonment of the portion of the sewer lateral inactivated by abandonment of SSMH-34P062 and the new 6" sewer lines and laterals; backfill of all excavations, and bypass pumping, complete and in-place, are included in this lump sum price. The work is primarily shown on Drawing 7.

14. Traffic Staging System

- a. Includes all labor, materials to provide in accordance with Section 12, "Temporary Traffic Control" of the Caltrans Specifications and California Manual on Uniform Traffic Control Devices (CA MUTCD), latest editions, for the entirety the project. Includes designing, furnishing, installing and maintaining traffic control as indicated on the plans and described in these Special Provisions. Includes any and all pedestrian detouring. Also includes flagging costs, materials (including signs, cones, project information signs, portable delineators, portable changeable message signs, flashing arrows, and barricades and all other items shown on the traffic handling plans for which there is not a contract item in the estimate), tools, equipment, and incidentals (including overhead lighting, cellular phones and radios), and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing and disposing of the components of the traffic control system shown on the plans, and other items approved for construction, as specified in the Standard Specifications and these special provisions,

and as directed by the Engineer, including, but not limited to, temporary pavement markings (paint), temporary markers, temporary traffic striping (paint), and channelizers (surface mounted); erecting, maintaining, and disposing of any temporary Fence (Type CI-6), chain link fence (Type BW or WM, wood or metal posts) in Section 80, of the Caltrans Specifications and CA MUTCD, or other materials and devices for performing the work as indicated on the plans and described in these Special Provisions, are included in the lump sum price. Payment shall be by lump sum and in accordance with accepted schedule of values.

15. Pavement Restoration

- a. For asphalt concrete deeplift indicated on plans, and as necessary to complete the work, includes supplying and placing asphalt binder, supplying, placing, and compacting asphalt concrete in the Base Bid Schedule that is removed or damaged during construction operations. Price also includes all traffic stripes and markings removed or damaged during construction

16. Stormwater Handling and Erosion Control

- a. Includes all costs to implement and maintain Best Management Practices to reduce surface water pollution and minimize erosion associated with stormwater and construction discharges, including preparation by a qualified person, for the entire project.

17. Site Restoration

- a. Includes all other costs to restore the sites to pre-construction condition before demobilization, excluding pavement restoration.

The Contractor shall also bid upon the following alternative bid items. Alternative bid items may be implemented instead of the corresponding same-numbered bid schedule items at the City's option. For example, if Bid Item 5 is implemented, Alternative Bid Item 5A will not be implemented, and vice versa. The City reserves the right to determine which bid items or alternative bid item(s) it wishes to implement during construction.

5A. Removal and Replacement of Existing Type 2 Maintenance Hole – Sierra Nevada and Hazelton

- a. All costs to remove and replace existing maintenance hole at station 12+01, including initial safe entry to evaluate for rehabilitation versus replacement, excavate to include removal of the base and sawcut existing pipe, recasting of the base including closure pours to re-establish the channel, and install new manhole barrels, grade rings, and frame and cover, epoxy coating, backfill, and asphalt deep lift repaving of the excavation, consistent with City Standard Detail S-12, complete and in-place, are included in the unit price. Maintenance holes under this Bid Item have no other special features such as drops or additional pipes routing through or into the structure.

7A. Removal and Replacement of Existing Type 2 Maintenance Hole – near BNSF Railroad

- a. All costs remove and replace the existing maintenance hole at station 4+45, including coordination to comply with BNSF requirements, a one-hour meeting with BNSF and Engineer prior to submitting shoring submittals, specially prepared shoring submittals, shoring designed per BNSF requirements, locate the buried frame and cover, initial safe entry to evaluate for rehabilitation versus replacement, excavate, sawcut existing pipe and remove the base, recast the base with closure pours to re-establish the channel, install new manhole barrels, cone, grade rings, and frame and cover, epoxy coat, backfill, and asphalt deep lift repaving of the excavation, consistent with City Standard Detail S-12, complete and in-place, are included in the lump sum price. The lump sum price includes up to 20 days of BNSF flagmen paid for by the City; the Contractor shall reimburse the City for via a deductive change order for any charges for flagmen in excess of 5 days via a deductive change order.

18A. Point Repair of Deteriorated Sewer Pipeline in Advance of CIPP

- a. All work to be performed during night hours. Includes all costs to: prepare and implement traffic staging, coordinate traffic signals with City, shore and excavate, cover excavation with plates during day hours, remove and replace of up to 10 feet of significantly deteriorated pipe with 36" SDR 35 PVC with couplings to prevent soil collapsing into the pipe, and other incidental work necessary to prepare this portion for CIPP lining, plus backfill and asphalt deep lift repaving of the trench. All tasks necessary for repair are contained in this Alternative Bid Item; costs in the Base Bid for traffic staging system, stormwater and erosion control, paving restoration, and site restoration, and any other Base Bid Item work are excluded.

9-1.03 Quantities

The **following** estimate of the quantities of work to be done and materials to be furnished are **approximate only**, and are intended as a basis for the comparison of bids. The City does not expressly or by implications agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work without increase or decrease in the unit price bid or to omit portions of the work that may be deemed necessary or expedient by the Engineer.

BASE PROJECT BID ITEMS

Item	Description	Unit	Quantity	Unit price	Total Price
1	Mobilization and Demobilization	LS	1		
2	Sheeting, Shoring, & Bracing	LS	1		
3	Cured-in-place-Pipe Rehabilitation of 36” Concrete Sewer – Sierra Nevada Street	LF	1,101		
4	Cured-in-Place-Pipe Rehabilitation of 36” Concrete Sewer with Preliner – Hazelton	LF	441		
5	Rehabilitation of Maintenance Hole - Sierra Nevada & Hazelton	LS	1		
6	Removal and Replacement of Existing Type 2 Maintenance Hole with Stubout – Sierra Nevada & Worth	LS	1		
7	Rehabilitation of Maintenance Hole - near BNSF Railroad	LS	1		
8	Installation of New Type 2 Maintenance Hole with Internal Drop	EA	1		
9	Installation of New Type 2 Maintenance	EA	1		
10	Clean and CCTV of Sanitary Sewer Lines	LS	1		
11	Upstream Plug Installation	LS	1		
12	Downstream Bypass Pumping	LS	1		
13	Scotts Ave Reroute	LS	1		
14	Traffic Staging System	LS	1		
15	Pavement Restoration	LS	1		
16	Stormwater Handling and Erosion Control	LS	1		
17	Site Restoration	LS	1		

ALTERNATIVE BID ITEMS

Item	Description	Unit	Quantity	Unit price	Total Price
5A	Removal and Replacement of existing Type 2 Maintenance Hole – Sierra Nevada & Hazelton	LS	1		
7A	Removal and Replacement of Existing Type 2 Maintenance Hole - near BNSF Railroad	LS	1		
18A	Point Repair of Deteriorated Sewer Pipeline in Advance of CIPP	LS	1		

Each bidder shall bid each item on the Base Bid Schedule and the Alternative Bid Schedule. Failure to bid an item shall be just cause for considering the bid as non-responsive. Line item costs should include all Contractor's overhead and profit and indirect costs. Bids not presented on City forms shall be cause for considering the bid as non-responsive. The basis of contract award will be the lower bidder for the Base Bid. It is the City's sole discretion to add, or not add, the Alternative Bid(s) to the Base Bid contract. The City reserves the right to include or delete any Item or portion thereof, or to reject all bids.

Official bid documents, including plans and specifications are available online at http://www.stocktongov.com/services/business/bidflash/pw.html?dept=Public_Works.

All bids submitted for this project, must conform to the requirements of the official bid documents, including plans and specifications.

9-1.04 Unsatisfactory Progress

If the number of working days charged to the contract exceeds 75 percent of the working days in the current time of completion and the percent working days elapsed exceeds the percent work completed by more than 15 percentage points, the City will withhold 10 percent of the amount due on the current monthly estimate.

The percent working days elapsed will be determined from the number of working days charged to the contract divided by the number of contract working days in the current time of completion, expressed as a percentage. The number of contract working days in the current time of completion shall consist of the original contract working days increased or decreased by time adjustments approved by the Engineer.

The percent work completed will be determined by the Engineer from the sum of payments made to date plus the amount due on the current monthly estimate, divided by the current total estimated value of the work, expressed as a percentage.

When the percent of working days elapsed minus the percent of work completed is less than or equal to 15 percentage points, the funds withheld shall be returned to the Contractor with the next monthly progress payment.

Funds kept or withheld from payment, due to the failure of the Contractor to comply with the provisions of the contract, will not be subject to the requirements of Public Contract Code 7107 or to the payment of interest pursuant to Public Contract Code Section 10261.5.

9-1.05 Mobilization

Full compensation for mobilization shall be considered as included in the lump sum price paid for "Mobilization and Demobilization", and no additional compensation will be allowed therefore.

DIVISION II GENERAL CONSTRUCTION

SECTION 10 – GENERAL CONSTRUCTION

10-1.01 Order of Work

The order of work shall conform to the Contractor's approved project schedule described in Section 8-1.03, "Progress Schedule", of these Special Provisions.

Contractor's attention is directed to the Public Safety, Public Convenience, and Maintaining Traffic sections of these Special Provisions. Nothing in this section shall be construed as to relieve the Contractor of his/her responsibility to stage the work in a manner which complies with the requirements of these sections.

All permits and approvals as may be required for this project shall be secured or ordered immediately after award of the contract or their acquisition timing determined, such that the same is not a cause for delay. The cost of the permits shall be included in the total bid costs.

At those locations exposed to public traffic where guard railings or barriers are to be constructed, reconstructed, or removed and replaced, the Contractor shall schedule operations so that at the end of each working day there shall be no post holes open nor shall there be any railing or barrier posts installed without the blocks and rail elements assembled and mounted thereon.

Before obliterating any pavement delineation (traffic stripes, pavement markings, and pavement markers) that is to be replaced on the same alignment and location, as determined by the Engineer, the pavement delineation shall be referenced by the Contractor, with a sufficient number of control points to reestablish the alignment and location of the new pavement delineation. The references shall include the limits or changes in striping pattern, including one- and 2-way barrier lines, limit lines, crosswalks and other pavement markings.

The Contractor shall stage and sequence the work as follows:

1. The contractor orders all items required, after all submittals are approved by the Engineer, for this project which may have long lead times to assure that their acquisition is not the cause for any delays. These items may include, but are not limited to, confined space entry equipment; maintenance hole precast sections, frame, and covers; concrete reinforcing; resin , equipment, and other materials for CIPP; new gravity sewer pipe; traffic signal equipment; street lighting, and related appurtenances. The Contractor shall furnish the Engineer with statements from the vendors that the orders for said equipment has been received and accepted by said vendors. These statements shall be furnished within ten (10) working days of the Notice to Proceed date.
2. Obtain all necessary permits, concurrently with long lead time submittals.

3. Prior to the start of construction, the Contractor shall submit to the Engineer for approval a detailed "Traffic Control Plan" which also addresses pedestrian detours. The Traffic Control Plan shall be prepared in accordance with the provisions in Section 12-1.01, "Maintaining Traffic" of these special provisions.
4. Prior to the start of construction, the Contractor shall verify the location and depth of all existing utilities and underground facilities within the project limits. This includes all potholing operations. The Contractor shall notify the Engineer of any discrepancies between the conditions in the field and the plans.
5. Portions of existing concrete curbs, gutters and sidewalks that are removed shall be replaced within 10 working days after removal.
6. Street lighting, traffic signals, including fiber system shall be maintained at all times.
7. The Contractor shall develop and implement Best Management Practices (BMPs) that will prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off site into receiving waters. The Contractor shall inspect and maintain all BMPs.
8. Upon award of the Construction Contract by Stockton's City Council (Notice of Award) the Contractor shall prepare all project submittals for City review as set forth in Section 5-1.05, "Submittals" of these Special Provisions.
9. Refer to the plans for additional staging requirements.

At the end of each working day if a difference in excess of 2 inches exists between the elevation of the existing pavement and the elevation of excavations within 4 feet of the traveled way, material shall be placed and compacted against the vertical cuts adjacent to the traveled way.

Minor deviations from these requirements may be allowed by the Engineer, if in the opinion of the Engineer, the prosecution of the contract will be better served and the work expedited. Any Contractor request for such deviations shall not be adopted without the Engineer's prior written approval.

Full compensation for conforming to such requirements will be considered as included in the prices paid for the various contract items of work, and no additional compensation will be allowed therefore.

10-1.02 Alternative Equipment

The City reserves the right to order discontinuance of any equipment in use. This will be determined at the discretion of the Engineer on the basis that the use of said equipment would prohibit obtaining the best possible end result.

Additional installation equipment may be requested by the Engineer for the above reason. Failure to comply with the Engineer's request concerning equipment use or removal will be deemed sufficient cause for shutting down all work until the requirements are met. Days lost for this type of shutdown will be charged as working days.

10-1.03 Inspections

All work under this contract shall be under the control and inspection of the City Engineer or his appointed representative. The Contractor shall notify of the Public Works Department, at (209) 937-8381, three (3) working days in advance of any construction.

10-1.04 Obstructions

Attention is directed to Section 5-1.36, "Property and Facility Preservation" of Caltrans Specifications, Sections 7-1.05, "Indemnification" and Section 7-1.06, "Insurance", of the Standard Specifications and Section 15, "Existing Facilities", of the Caltrans Specifications and these Special Provisions.

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety, and welfare of workers and of the public. Facilities requiring special precautions include, but are not limited to, conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases, natural gas in pipelines six (6) inches or greater in diameter, or pipelines operating at pressures greater than 415 KPa (gage); underground electric supply system conductors or cables with potential to ground of more than 300 V, either directly buried or in duct or conduit, which do not have concentric grounded or other effectively grounded metal shields on sheaths.

The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installations at least two (2) working days, but not more than fourteen (14) calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire, or other structure. Regional notification centers include, but are not limited to, the following:

Notification Center	Telephone Number
Underground Service Alert – Northern California (USA)	(811) 227-2600 (800) 227-2600

Relocations or repairs necessitated because of existing facilities, which are not shown on the plans or are shown at substantially different locations than existing, may be paid as extra work in accordance with Section 4-1.02, "Changes and Extra Work", of the these Special Provisions, but only if the Engineer rules that the Contractor exercised due diligence in his operation. Due diligence may be determined by the Engineer by reviewing surface and subsurface conditions that were existing prior to exposing the facility and determining the absence of any signs sufficient to warn a diligent Contractor of the possible existence of a facility in the area.

Immediately upon encountering unknown existing facilities, the Contractor shall notify the

Engineer in writing of the situation, request coverage of the work as extra work, and aid the Engineer in determining due diligence. Failure to do so may result in forfeiture of any rights to receive extra work compensation under Section 8-1.07, "Delay", of the Standard Specifications. Should the Contractor stop work, no compensation will be made for any "down time" prior to written notifications being received by the Engineer or his representative.

Delays due to encountering unexpected facilities shall be determined and compensated in accordance with the provisions of Section 8-1.07, "Delay", of the Standard Specifications, and as herein modified. Delays due to encountering unexpected facilities shall be compensated as additional contract working days to the contractor. Contractor shall submit a written request to the Engineer requesting time extension due to the delay. No other compensation is allowed.

Payment for complying with this Special Provision shall be included in the various items of work, and no additional compensation will be allowed therefore.

10-1.05 System Outage Request, City of Stockton Facilities

Note that system outages, except for the blockage of the 36" pipeline to be rehabilitated and overnight tie-in of the laterals on Scotts Avenue, are not anticipated for this project and it is incumbent upon the contractor to demonstrate the need for any outage.

Modifications to existing facilities, the construction of new facilities, and the connection of new to existing facilities may require the temporary outage or bypass of treatment processes, equipment, utilities, or other facilities. In addition to the Construction Schedule required under these Special Provisions, the Contractor shall submit a System Outage Request (SOR) and a detailed outage plan and time schedule for all construction activities, which will make it necessary to remove a tank, pipeline, channel, electrical circuit, control circuit, equipment, structure, road, or other facilities from service.

The SOR and outage plan shall be submitted to the Engineer and other affected utilities for review and acceptance a minimum of two (2) weeks in advance of the time that such outage is needed. The outage plan shall be coordinated with the construction schedule specified in these Special Provisions and shall meet the restrictions and conditions specified in this section. The detailed plan shall describe the Contractor's method for preventing bypassing of other facilities; the length of time required to complete said operation; any necessary temporary power, controls, instrumentation, or alarms required to maintain control, monitoring, and alarms for the affected facilities; and the labor, plant, and equipment which the Contractor shall provide in order to ensure proper operation.

In addition, the outage plan shall describe the Contractor's contingency plan that shall be initiated in the event that his temporary facilities fail, or it becomes apparent that the time constraints described in the approved outage plan cannot be met. The contingency plan shall conform to all specified outage requirements. All costs for preparing and implementing both the outage and contingency plans shall be borne by the Contractor with no additional compensation therefore.

The Contractor shall provide, Monday through Friday, at least three (3) working days prior

to the actual shutdown, written confirmation of the shutdown date and time, or written notification that the schedule for performing the work has changed, or revisions to the outage plan are required.

Operations of the City's facilities and utilities are critical to the public health and safety of the citizens of Stockton. Sufficient facilities to serve the needs and demands of the City shall remain in service at all times. The City and/or affected utility owner shall be the sole judge of its needs and the facilities that must remain in service to provide adequate service.

The Contractor shall coordinate and cooperate with the City and utilities to establish the Contractor's schedule for work at the entire project facilities. The approved project schedule shall be subject to change, as it pertains to site work and shutdowns, when required by the City/utilities to accommodate unforeseen or emergency situations in the operation of the affected facilities.

Payment for complying with this Special Provision shall be included in the various other items of work, and no additional compensation will be allowed therefore.

10-1.07 Sheeting and Shoring

Attention is directed to the Section 10-1.02E, "Excavation" of the Caltrans Specifications. Excavations shall be adequately shored and braced so that the earth will not slide, move, or settle, and so that all existing improvements of any kind will be fully protected from damage.

Attention is called to Article 6 of "Construction Safety Orders" of the California Division of Industrial Safety, which applies to all open excavations made in the earth's surface, including trenches.

Trenches over five (5) feet in depth requires a permit from California Division of Industrial Safety and shall be evaluated for stability prior to personnel entering the trench. Where trenches are deeper than five (5) feet, the Contractor shall comply with the California Occupational Safety and Health Administration (CAL OSHA) requirements pertaining to trench safety.

The Contractor shall furnish, install, and maintain such sheet piling, timbering, lagging, and bracing as indicated on the standard drawings or any additional precautions not specifically set forth as necessary to support the sides of the trench. The protection of adjacent structures from movement of the ground and the elimination of the element of danger to life, property, or to existing improvements is the intent of this requirement.

Additional supports requested by the Engineer shall in no way relieve the Contractor of his responsibility for the sufficiency of his precautions.

All such piling, timbering, lagging, and bracing shall, unless otherwise required by the Engineer, be removed during backfilling in such a manner as to prevent any movement of the ground or damage to the piping or other structures.

Full compensation for sheeting and shoring shall be considered as included in the lump sum price paid for "Sheeting, Shoring and Bracing", and no additional compensation will be allowed therefore.

10-1.08 Surface Restoration

Surface restoration shall consist of restoring all areas within the limits of work to their original existing condition prior to construction or to the condition shown on the plans or specified in the Specifications.

The Contractor shall restore all paved areas, such as driveways, curb and gutter, sidewalk, roadway surfaces, ditches, etc., landscaped areas, and all other improvements disturbed or damaged by his operations.

Payment for the restoration of damaged areas, for which specific bid items are not provided, shall be included in the prices paid for various items of work and no additional compensation will be allowed therefore.

SECTION 11 – BLANK

SECTION 12 – TEMPORARY TRAFFIC CONTROL

Attention is directed to Part 6 of the California MUTCD, and Sections 12, "Temporary Traffic Control", of the Caltrans Specifications, Standard Specifications, and these Special Provisions.

12-1.01 Maintaining Traffic

Attention is directed to Part 6 of the California MUTCD, Sections 7-1.03, "Public Convenience", 7-1.04, "Public Safety", Section 12-4 "Maintaining Traffic", of the Caltrans Specifications, and Section 10-1.01, "Order of Work", of these Special Provisions. Nothing in these Special Provisions shall be construed as relieving the Contractor from the responsibilities specified in these sections.

The Contractor shall furnish, and maintain in good working order, all barricades and flashers, and provide flaggers as necessary to protect pedestrians, bicyclists, and vehicular traffic. The Contractor shall furnish and maintain all barricades, flashers, and any detour signs twenty-four (24) hours a day, including covering or removing signs during non-construction hours.

The Contractor shall provide adequate and continuous ingress and egress for all adjacent properties; except for the limited period of time it is necessary to perform work at a specific property. The Contractor shall diligently prosecute all work directly impacting businesses to completion. The Contractor shall coordinate limited closures with tenants or owners, as required by these Special Provisions, and as directed by the Engineer. The Contractor shall cover signal heads with traffic jackets, signs and other traffic control devices that may conflict with any detours.

The Contractor shall submit to the City Engineer a detailed "Traffic Control Plan" for review and approval. The "Traffic Control Plan" shall be submitted no later than ten (10) working days following the Notice to Proceed date and at least 3 working days prior to

commencing any work which requires implementation of any component of the "Traffic Control Plan". The plan shall be approved by the Engineer prior to its implementation by the Contractor.

The "Traffic Control Plan" shall conform to the typical traffic control details included in the Caltrans Standard Plans, Part 6 of the California MUTCD, and the requirements of Section 12-1.02, "Traffic Control System for Lane Closure", of these Special Provisions. The Traffic Control Plan shall include, but not be limited to, detailed requirements for the following:

- ◆ Traffic control devices, including signs and markings.
- ◆ Construction routes, phasing and/or staging of both the roadway and sidewalk areas.
- ◆ Employee, Customer, and Business/Delivery access to adjacent property.
- ◆ Emergency vehicles access.
- ◆ Bus, refuse collection, and mail delivery access.
- ◆ Any parking zones to be removed on a temporary basis.
- ◆ Pedestrian and bicyclist access.

The Traffic Control Plan shall consider the impacts of changes in traffic volumes and capacities related to the construction activities, and their impact on vehicular and bicycle traffic and pedestrian operations, on roadway pavements, including provisions to restore construction-damaged pavements.

Traffic Lane and Sidewalk Closures

Lanes and sidewalks may be closed only as indicated in the Section 12, of these Special Provisions or as shown on the drawings. Except for work required under Section 7-1.03 "Public Convenience" and Section 7-1.04, "Public Safety" of the Standard Specifications, work that interferes with public traffic shall be performed only as indicated. Traffic lane and sidewalk closures shall conform to the following requirements:

Lane closure, a maximum of one lane in each direction of travel, not less than twelve (12) feet wide, shall be permitted only between the hours of 9:00 a.m. and 3:30 p.m. and only if shown on the Traffic Staging Plans; flaggers may be required for such closures. Any lane closures other than specified shall be approved by the Engineer.

Standard working hours shall be 9:00 a.m. to 5:00 p.m. Any extended working hours require the approval of the Engineer. It is noted that the lateral tie-ins on Scotts Avenue require extended working hours and Contractor shall submit a plan to execute said work during the required hours one week prior.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders, including any section closed to public traffic.

Adequate ingress and egress shall be maintained throughout the project limits for fire, police, and other emergency vehicles. The Contractor shall provide adequate ingress and egress for residences, property owners, and abutting business owners to their respective properties except when performing work at their specific locations.

Also, the Contractor shall provide adequate signing, barricades and flashers or portable flashing beacons, flaggers, and other equipment and personnel necessary to adequately control and direct traffic in a safe manner. The Contractor shall maintain all barricades, flashers and detour signs twenty-four (24) hours a day, including covering signs during non-construction hours. The Contractor shall also provide the City with the names and telephone numbers of three (3) representatives available at all times.

Except as otherwise allowed by the Engineer, "long term" and temporary closures shall be removed and the full width of the traveled way shall be open for use by public traffic when construction operations are not actively in progress during the working period or successive working periods.

The contractor shall provide for pedestrian and wheelchair access to at least one (1) intersection corner within each block and the abutting sidewalk facilities along each block, at all times. Simultaneous closure of both intersection corners to pedestrian traffic within the same block is not allowed.

The contractor shall maintain at least one (1) north/south crosswalk and one (1) east/west crosswalk open to pedestrian and wheelchair access, where exists, at each intersection at all times.

Whenever Contractor's vehicles or equipment are parked within six (6) feet of a traffic lane, the area shall be closed with fluorescent traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the traffic lane at twenty-five (25) foot intervals to a point not less than twenty-five (25) feet past the last vehicle or piece of equipment. A minimum of nine (9) cones or portable delineators shall be used for the taper. A W20-1 (Road Work Ahead) sign shall be mounted on a portable sign stand with flags. The sign shall be placed where directed by the Engineer.

Temporary Pedestrian Access Routes

Attention is directed to Section 12-4.04, "Temporary Pedestrian Access Routes" of the updated Caltrans Specification and these Special Provisions.

When a pedestrian circulation path is temporarily closed by construction, alterations, maintenance operations, or other conditions, contractor shall submit a work plan for a temporary pedestrian access route complying with Caltrans Specification Section 12-4.04A(3) and sections 6D.01, 6D.02, and 6G.05 of the MUTCD, and State Standard plans T30, T31, T32, T33, and T34 shall be provided. The work plan must be sealed and signed by an engineer who is registered as a civil engineer in the State

Whenever possible work should be done in a manner that does not create a need to detour pedestrians from existing pedestrian routes. Extra distance and additional pedestrian street crossings add complexity to a trip and increase exposure of risk to accidents. The alternate pedestrian routes shall be accessible and detectable, including warning pedestrians who are blind or have low vision about sidewalk closures. Proximity-actuated audible signs are a preferred means to warn pedestrians who are blind or have low vision about sidewalk closures.

The surface shall be skid-resistant and free of irregularities. Pedestrian walkways shall be maintained in good condition, and shall be suitable for wheelchair use. Walkways shall be kept clear of obstructions.

The Contractor shall cause the least possible disruption to the affected properties and restore suitable pedestrian access immediately following completion of the active work in progress.

At least one (1) continuous walkway along one (1) side of the street shall be available at all times. At locations where work is actively in progress, the pedestrian walkway within a single block may be temporarily closed at one (1) end of the block along one (1) side of the street. Pedestrians shall be rerouted to the walkway on the opposite side of the street.

Minor deviations from the requirements of this section, which do not significantly change the cost of the work, may be permitted upon the written request of the Contractor if, in the opinion of the Engineer, public traffic will be better served and the work expedited. These deviations shall not be adopted by the Contractor until the Engineer has approved them in writing. All other modifications will be made by contract change order.

12-1.02 Traffic Control System for Lane Closure

A traffic control system shall consist of closing traffic lanes in accordance with the details shown on the plans, the provisions of Section 12, "Temporary Traffic Control", of the Caltrans Specifications, and Standard Specifications, and these Special Provisions.

The provisions in this section will not relieve the Contractor from the responsibility to provide additional devices or take the measures that may be necessary to comply with the provisions in Section 7-1.04, "Public Safety", of the Standard Specifications and these Special Provisions.

During traffic striping operations and pavement marker placement operations using bituminous adhesive, traffic shall be controlled, at the option of the Contractor, with either stationary or moving type lane closures. During all other operations, traffic shall be controlled with stationary type lane closures. The Contractor's attention is directed to the provisions in Sections 84-2.03, "Construction", of the Caltrans Specifications.

If any component in the traffic control system is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair the component to its original condition or replace the component, and shall restore the component to its original location.

When lane closures are made for work periods only, at the end of each work period, all components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way shall be removed from the traveled way and shoulder. If the Contractor so elects, the components may be stored at selected central locations, approved by the Engineer, within the limits of the highway right-of-way.

Each vehicle used to place, maintain, and remove components of a traffic control system shall be equipped with a Type II flashing arrow sign, which shall be in operation when the

vehicle is being used for placing, maintaining, or removing the components. Vehicles equipped with Type II flashing arrow signs not involved in placing, maintaining, or removing the components when operated within a stationary type lane closure shall only display the caution display mode. The sign shall be controllable by the operator of the vehicle while the vehicle is in motion. The flashing arrow sign shown on the plans shall not be used on the vehicles which are doing the placing, maintaining, and removing of components of a traffic control system, and shall be in place before a lane closure requiring its use is completed.

The Contractor shall pay fully the cost of furnishing all flaggers, including transporting flaggers, to provide for passage of public traffic.

Attention is directed to Part 6 of the California MUTCD. Nothing in these Special Provisions shall be construed as relieving the Contractor from his responsibility as provided in Part 6 of California MUTCD.

Full compensation for furnishing all labor (including flagging costs), materials (including signs), tools, equipment, and incidentals, and for doing all the work involved in lane closures, including placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the traffic control system, as shown on the plans, as specified in the Caltrans Specifications and these Special Provisions, and as directed by the Engineer, shall be included in the lump sum price paid for "Traffic Control System", and no additional work compensation will be allowed therefor.

Adjustments in compensation for traffic control system will be made only for increased or decreased traffic control system required by changes ordered by the Engineer and will be made on the basis of the cost of the increased or decreased traffic control necessary.

12-1.03 Type K Temporary Railing

The Contractor shall install temporary railing (Type K) between a lane open to public traffic and an excavation, obstacle, or storage area when the following conditions exist:

- A. Excavations - the near edge of the excavation is twelve (12) feet or less from the edge of the lane, except:
 - 1. Excavations covered with sheet steel or concrete covers of adequate thickness to prevent accidental entry by traffic or the public.
 - 2. Excavations less than one (1) foot deep.
 - 3. Trenches less than one (1) foot wide for irrigation pipe or electrical conduit, or excavations less than one (1) foot in diameter.
 - 4. Excavations parallel to the lane for the purpose of pavement widening or reconstruction.
 - 5. Excavations in side slopes, where the slope is steeper than 1:4 (vertical:horizontal).
 - 6. Excavations protected by existing barrier or railing.
- B. Temporarily Unprotected Permanent Obstacles - the work includes the installation of a fixed obstacle together with a protective system, such as a sign structure

together with protective railing, and the Contractor elects to install the obstacle prior to installing the protective system; or the Contractor, for the Contractor's convenience and with permission of the Engineer, removes a portion of an existing protective railing at an obstacle and does not replace such railing complete in place during the same day.

- C. Storage Areas - material or equipment is stored within twelve (12) feet of the lane and the storage is not otherwise prohibited by the provisions of the Standard Specifications and these Special Provisions.

The approach end of temporary railing, installed in conformance with the provisions in this section, "Public Safety", and in Section 7-1.04, "Public Safety", of the Caltrans Specification, shall be offset a minimum of fifteen (15) feet from the edge of an open traffic lane. The temporary railing shall be installed on a skew toward the edge of the traffic lane of not more than one (1) foot transversely to ten (10) feet longitudinally with respect to the edge of the traffic lane.

If the fifteen (15) feet minimum offset cannot be achieved, the temporary railing shall be installed on the 10 to 1 skew to obtain the maximum available offset between the approach end of the railing and the edge of the traffic lane, and an array of temporary crash cushion modules shall be installed at the approach end of the temporary railing.

Temporary Railing shall conform to the provisions in Section 12-3.20, "Type K Temporary Railing", of the Caltrans Specifications. Temporary Railing, conforming to the details shown on Caltrans Standard Plan T3A and T3B, may be used.

12-1.04 Temporary Pavement Delineation

Temporary pavement delineation shall be furnished, placed, maintained, and removed in conformance with the provisions in Section 12-6 "Temporary Pavement Delineation" of the Caltrans Specifications and these Special Provisions. Nothing in these Special Provisions shall be construed as reducing the minimum standards specified in the California MUTCD or as relieving the contractor from the responsibilities specified in Section 7-1.04, "Public Safety", of the Caltrans Specifications, Standard Specifications, and these Special Provisions. Whenever the work causes obliteration of existing pavement delineation, temporary or permanent pavement delineation shall be in place prior to opening the traveled way to public traffic. Laneline or centerline pavement delineation shall be provided at all times for traveled ways open to public traffic.

The Contractor shall perform the work necessary to establish the alignment of temporary pavement delineation, including required lines or marks. Surfaces to receive temporary pavement delineation shall be dry and free of dirt and loose material. Temporary pavement delineation shall not be applied over existing pavement delineation or other temporary pavement delineation. Temporary pavement delineation shall be maintained until superseded or replaced with a new pattern of temporary pavement delineation or permanent pavement delineation.

Temporary pavement markers, including underlying adhesive and removable traffic tapes which are applied to the final layer of surfacing or existing pavement to remain in place

or which conflicts with a subsequent or new traffic pattern for the area, shall be removed when no longer required for the direction of public traffic, as determined by the Engineer.

12-1.05 Construction Area and Informational Signs

Construction area and informational signs shall be furnished, installed, maintained, and removed when no longer required in accordance with the provisions in Section 12, "Temporary Traffic Control", of the Caltrans Specifications, Standard Specifications, and these Special Provisions.

The Contractor shall at least; install four (4) project informational signs; 4'W x 3'H in size with 3" minimum height letters at each approach to the construction area (one at each approach). Letters on the Informational signs shall be black on white background. Location of the signs shall be determined by the City Inspector.

The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least two (2) working days, but not more than fourteen (14) calendar days, prior to commencing any excavation for all the sign posts.

All excavations required to install all the signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes. The post hole diameter, if backfilled with Portland cement concrete shall be at least 4 inches greater than the longer dimension of the post cross section.

Sign substrates for stationary mounted construction informational signs may be fabricated from fiberglass reinforced plastic, as specified under "Pre-qualified and Tested Signing and Delineation Materials" elsewhere in these Special Provisions.

Type IV reflective sheeting for sign panels for portable signs shall conform to the requirements specified under "Pre-qualified and Tested Signing and Delineation Materials" elsewhere in these Special Provisions.

The Contractor shall maintain accurate information on the signs. Signs that are no longer required shall be immediately covered and removed. Signs that convey inaccurate information shall be immediately replaced or the information shall be corrected. Covers shall be replaced when they no longer cover the signs properly. The Contractor shall immediately restore to the original position and location any sign that is displaced or overturned, from any cause during the progress of work.

12-1.06 Maintaining Existing and Temporary Electrical Systems

Maintaining existing electrical systems and communication systems shall conform to the provisions of Section 87, "Electrical Systems," of the Caltrans Specifications and these Special Provisions. Existing traffic signal systems and communication systems shall be kept in effective operation for the benefit of the traveling public during the progress of the work, except when shut down is permitted. The traffic signal shutdowns shall be limited to the hours of 9:00 a.m. to 3:30 p.m., and shall be permitted only during the switch over from existing to new controller operation, unless prior approval is obtained from the Engineer. Contractor required to obtain authorization at least three (3) working days

before interrupting communication between an existing system and the traffic management center (TMC).

Temporary standards with signal equipment may be required during the construction of the new installation. The Contractor shall provide temporary equipment if deemed necessary by the Contractor or Engineer. The cost of the temporary systems shall be included in the lump sum price paid for the various contract items of work involved and no additional compensation shall be allowed therefor.

12-1.07 Barricades and Channelizers

Barricades shall be furnished, placed and maintained at the locations shown on the approved Traffic Control Plan (TCP), specified in Part 6 of the California MUTCD, in the Standard Specifications or in these Special Provisions or where designated by the Engineer. Barricades shall conform to the provisions in Section 12, "Temporary Traffic Control," of the Standard Specifications and these Special Provisions.

Attention is directed to Section 6-1.07 "Pre-qualified and Tested Signing and Delineation Material" of these special provisions regarding retroreflective sheeting for barricades.

Construction area sign and marker panels conforming to the provisions in Part 6 of the California MUTCD and Section 12, "Temporary Traffic Control," of the Caltrans Specifications, Standard Specifications, and these Special Provisions shall be installed on barricades in a manner determined by the Engineer at the locations shown on the plans and the TCP. Where provided, pedestrian barricades and channelizing devices shall comply with sections 6F.63, 6F.68, and 6F.71 of the MUTCD.

Channelizers shall conform to the provisions in Section 12, "Temporary Traffic Control," of the Caltrans Specifications, Standard Specifications, and these special provisions.

Channelizers shall conform to the provisions in Section 6-1.07 "Pre-qualified and Tested Signing and Delineation Material" of these Special Provisions.

At the time of completion of the project, certain channelizers shall be left in place as determined by the Engineer.

When no longer required for the work as determined by the Engineer, channelizers (except channelizers to be left in place) and underlying adhesive used to cement the channelizer bases to the pavement shall be removed. Removed channelizers and adhesive shall become the property of the Contractor and shall be removed from the site of work.

12-1.08 Payment

Full compensation for all work under Section 12, "Temporary Traffic Control", shall be considered as included in the lump sum price paid for "Traffic Control System", and no additional work compensation will be allowed therefore.

SECTION 13 – WATER POLLUTION CONTROL

13-1.01 General

Attention is directed to Sections 13, "Water Pollution Control", of the Caltrans Specifications, these Special Provisions, and as directed by the Engineer.

The Contractor shall develop and implement Best Management Practices (BMPs) that will prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off site into receiving waters. The Contractor shall inspect and maintain all BMPs.

Full compensation for water pollution control shall be considered as included in the prices paid for various items of work, and no additional compensation will be allowed therefore.

SECTION 14 – ENVIRONMENTAL STEWARDSHIP

Attention is directed to Sections 14, "Environmental Stewardship", of the Caltrans Specifications, these Special Provisions, and as directed by the Engineer.

14-1.01 Construction Site Waste Materials Management

Removal of existing traffic stripes and marking shall be per Caltrans Specifications Section 84-9, "Existing Markings".

Where grinding or other methods approved by the Engineer are used to remove thermoplastic traffic stripes and pavement markings, the removed residue, including dust, shall be tested for lead and chromium content. If the thermoplastic grindings are found to be hazardous, the materials shall be disposed of at a Class 1 facility. Refer to Section 7-1.07 for potential Lead Compliance Plan requirements.

14-1.02 Air Pollution Control

Attention is directed to Section 14-9.02 "Air Pollution Control" of the Caltrans Specifications.

Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the contract, including air pollution control rules, regulations, ordinances, and statutes provided in government code 11017 (Pub Cont Code 10231).

Do not burn material to be disposed of.

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved, and no additional compensation will be allowed therefor.

14-1.03 Dust Control, Apply Water, Site Maintenance, and Cleanup

Dust control shall conform to any requirements set forth in the San Joaquin Valley Air Pollution Control District Construction Notification Form, the provisions in Section 14-9, "Air Quality" of the Caltrans Specifications, and these Special Provisions. Use of water except for recycled, reclaimed, or other non-potable water for the purpose of dust control or other construction uses unless for health or safety purposes is prohibited. All dust control operations shall be performed by the Contractor at the time, location and in the amount ordered by the Engineer. The application of either water or dust palliative shall

be under the control of the Engineer at all times." Watering shall conform to the provisions of Section 13 "Water Pollution Control" of the Caltrans Specifications and these Special Provisions. Attention is also directed to Section 18 "Dust Palliatives" of the Caltrans Specifications and these Special Provisions.

During construction, the Contractor shall remove all rubbish and debris as it is generated. Upon completion of the work, the Contractor shall remove all equipment, debris, and shall leave the site in a neat, clean condition all to the satisfaction of the Engineer. A permit shall be obtained from California Water Service, as applicable, for construction water obtained from City hydrants. This permit shall be approved by the City of Stockton Fire Department.

The Contractor shall conduct and cause all working forces at the site to maintain the site in a neat, orderly manner throughout the construction operations. The work shall be conducted in a manner that will control the dust. When ordered to provide dust control, the Contractor shall use water to reduce the dusty conditions all to the satisfaction of the Engineer. During construction, the Contractor shall remove all rubbish and debris as it is generated. The Contractor shall pay to the City of Stockton the sum of Two Hundred Fifty Dollars (**\$250**) for every calendar day where debris has remained on the job site overnight. Upon completion of the work, the Contractor shall remove all equipment and debris, and shall leave the site in a neat, clean condition all to the satisfaction of the Engineer.

14-1.04 Sound Control Requirements

The Contractor's attention is directed to Section 14-8.02 "Noise Control" of the Caltrans Specifications and the project specific equipment noise control measures listed in Table 8.1 below. Nothing in the Caltrans Specifications or these Special Provisions voids the Contractor's public safety responsibilities or relieves the Contractor from the responsibility to comply with other ordinances regulating noise level.

The Contractor shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the contract. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without the muffler.

To minimize the construction impacts to residents, the Contractor is encouraged to select the bore method (directional drilling) over conventional trenching to install new conduits.

The noise level requirement shall apply to the equipment on the job or related to the job, including, but not limited to, trucks, transit mixers, or transient equipment that may or may not be owned by the Contractor. All equipment shall have sound-control devices that are no less effective than those provided on the original equipment. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

Project Specific Equipment Noise Control

Table 8-1 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. The noise levels generated by the boring machine would be lower than any equipment listed in the table.

Table 8-1. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration 1995.

Further, implementing the following measures would minimize the temporary noise impacts from construction:

All equipment shall have sound-control devices that are no less effective than those provided on the original equipment. No equipment shall have an unmuffled exhaust.

As directed by the Engineer, the contractor shall implement appropriate additional noise mitigation measures as warranted. These could include, but are not specifically limited to, changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources. Furthermore, construction activities shall be limited to the time period between 9:00 a.m. and 5:00 p.m.

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved, and no additional compensation will be allowed therefore.

14-1.06 Cultural Resources

If cultural materials are discovered during construction, including human remains, do not disturb the resources and immediately stop all work within a 60-foot radius of the discovery and within any nearby area suspected to overlie the discovery. Immediately notify all appropriate parties including the Caltrans District 10 Local Assistance archaeologist, the Local Assistance Engineer (DLAE), and the County Coroner if human remains are found. Do not move cultural materials or take them from the job site. Do not resume work within the discovery area until authorized. Additional protocols for human remains are given in the State Health and Safety Code Section §7050.5 and §5097.98.

Full compensation for doing all the work involved in trench excavation, water control and

dewatering, bedding and backfilling, placement of temporary paving, and cultural resources shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be made therefore.

SECTION 15 – EXISTING FACILITIES

15-1.01 Existing Facilities

Contractor attention is directed to requirements of Section 5-1.16, "Property and Facility Preservation" of these Special provisions, and 7-1.05, "Indemnification" and 7-1.06 "Insurance", of the Caltrans Specifications.

The work shall be performed in connection with various existing highway facilities (i.e., traffic signals and streetlights, storm drain pipe, catch basins, sidewalk drains, roadway pavement, roadside signs, utility boxes, trees, fences, etc.) shall conform to the provisions in Section 15, "Existing Facilities", of the Caltrans Specifications and these Special Provisions.

All traffic control signs shall be maintained. If relocation is necessary to facilitate the construction, the Contractor shall notify the Public Works Department, at (209) 937-8381, three (3) working days prior to said relocation, and request for approval as to where sign is to be temporarily relocated. Full compensation for performing such removal and reinstallation shall be considered as included in the various items of work and no additional compensation will be allowed therefore.

Fire hydrants, water valves, curb-stop boxes, and other utility facilities shall be unobstructed and accessible during the construction period.

Should the Contractor desire to have any alterations made in any utility or other improvement for Contractor's own convenience in order to facilitate Contractor's construction operations and for Contractor's sole benefit, Contractor shall make all necessary arrangements with the owners and bear all expense in connection therewith.

Removed highway facilities that are not to be salvaged shall become the property of the Contractor and shall be disposed of according to these special provisions, Section 15 "Existing Facilities" of Caltrans specifications, and as indicated on the plans.

Items of work under this section, "Existing Facilities", for which specific bid items are not provided, shall be considered as included in the prices paid for the various items of work of the bid schedule, and no additional compensation will be provided therefore.

Any contract adjustment that may be warranted due to differing site conditions will be made in accordance with the provisions of Section 4-1.02, "Changes and Extra Work", of these Special Provision.

Relocations or repairs necessitated because of existing facilities which are not shown on the plans, or are shown at substantially different locations than shown may be paid as extra work in accordance with Section 4-1.02, "Changes and Extra Work", of these Special Provisions, but only if the Engineer rules that the Contractor exercised due

diligence in his operation. Due diligence may be determined by the Engineer by reviewing surface and subsurface conditions that were existing prior to exposing the facility, and determining the absence of any signs sufficient to warn a diligent Contractor of the possible existence of a facility in the area.

Utility Facilities

Attention is directed to the possible existence of underground utilities not known to the City or in a location different from that which is shown on the plans or in these Special Provisions. The Contractor shall take steps to ascertain the exact location of such facilities prior to doing any work that may damage such facilities or interfere with their service.

Remove Existing Concrete

Existing concrete sidewalk, gutter, curb and gutter, driveways, wheelchair ramps, and other concrete surfacing, where shown on the plans to be removed, shall be removed and disposed of. Concrete removal includes removal of any steel embedded in the concrete. Sawcut concrete ramps, walks, curbs, and gutters to be removed at the nearest joint or scoreline, at the locations indicated on the plans, and as designated by the Engineer.

Remove Existing Pavement

Asphalt concrete pavement and aggregate base shall be removed by saw-cutting and excavation or cold planing to the lines, depths, and dimensions indicated on the plans and/or as directed by the Engineer.

Roadside Signs

Unless otherwise shown on the plans, the Contractor shall maintain existing roadside signs in place. The Contractor shall replace or repair all signs damaged by his operations and under this contract by using new material. Such material shall be a replacement of the original in regards to type of sign, posts, and construction. Relocation of the existing signs shall be done the same day the sign is removed from its original location.

At the Contractor's option, existing signs may be temporarily removed in order to facilitate the Contractor's construction of other improvements included under this contract. Any sign which is removed or damaged by the Contractor's shall be reinstalled at its original location using new unistrut posts in conformance with the Standard Specifications. Existing steel pipe sign posts shall be salvaged as directed by the Engineer. Each roadside sign shall be reinstalled on the same day that the sign is removed.

All new non-mast arm mounted signs shall have High Intensity Prismatic (HIP) reflective sheeting (reflectivity; ASTM type III) and covered with anti-graffiti film. The anti-graffiti film shall be transparent overlay for use on signs. The reflective sheeting and anti-graffiti film shall be from same manufacturer and guaranteed for the same number years.

Full compensation for any temporary removal and reinstallation of roadside signs and removing existing concrete and pavement shall be considered included in the lump sum price paid for "Traffic Control System", and no additional compensation will be allowed therefor.

SECTION 16 – BLANK

DIVISION III EARTHWORK AND LANDSCAPE

SECTION 17 – GENERAL

17-1.01 Clearing And Grubbing

Clearing and Grubbing shall conform to the requirements of Section 16, "Clearing and Grubbing", of the Standard Specifications, Section 17-2, "Clearing and Grubbing", of the Caltrans Specifications, and these Special Provisions.

All materials removed shall be off hauled and disposed of by the Contractor.

Attention is directed to Section 19-1.03D, "Buried Man-Made Objects", of the Caltrans Specifications.

Existing underground structures, trash, debris, loose fill, tree roots, tree remains, organic surficial soil, and other rubbish shall be removed or otherwise disposed of so as to leave the areas that have been disturbed with a neat and finished appearance, free from debris. Depressions left from any removals shall be properly filled and compacted in accordance with these Special Provisions, and as directed by the Engineer.

The methods for removal of subsurface irrigation and utility lines will depend on the depth and location of the line in relation to planned improvement. Unless otherwise specified, remove the pipe and compact the soil in the trench according to the applicable portions of these Special Provisions.

Where loose, uncompacted fill occurs at the surface of the site, the materials shall be excavated to expose firm natural ground or previously compacted fill. The exposed surface shall then be prepared to receive fill in accordance with the applicable portions of these Special Provisions.

Nothing herein shall be construed as relieving the Contractor of his responsibility for final cleanup of the highway as provided in Section 4-1.13, "Cleanup", of the Caltrans Specifications.

Full compensation for clearing and grubbing shall be considered incidental to the other items of work in the Contract (included in various items of work), and no additional compensation will be allowed. All the work involved in clearing and grubbing, shall include the removal and disposal of all the existing materials as shown on the plans, as specified in the Standard Specifications, these Special Provisions, and as directed by the Engineer. Where it is required the contractor shall test the materials, according to Federal and State guidelines and regulations, before disposal.

SECTION 18 – BLANK

SECTION 19 – EARTHWORK

19-1.01 Roadway Excavation

Roadway excavation shall conform to the requirements of Section 19, "Earthwork", of the Standard Specifications, Caltrans Specifications, and these Special Provisions. Wherever relative compaction is specified, it shall be determined by ASTM D1557.

Surplus excavated material shall become the property of the Contractor and shall be disposed of outside the highway right-of-way in accordance with the provisions in Section 19-2.03B, "Surplus Material", of the Caltrans Specifications. All excavated material shall be loaded for off-haul from the site as it is generated. Material will not be allowed to accumulate within the right-of-way. If excavation exceeds 15 feet, water sampling will be required.

Full compensation for Roadway Excavation shall be considered included in the contract prices paid for the various items of work requiring "Earthwork" and no additional compensation will be allowed.

19-1.02 Trench Excavation And Backfill

Trench excavation, pipe bedding, and backfill shall conform to the requirements of Section 71, "Sanitary Sewer and Storm Sewers", of the Standard Specifications and City of Stockton Standard Plan Nos. R36 through R43, and any amendment and revisions, these Special Provisions, and as specified on the plans. Controlled Density Fill (CDF) shall be mandatory for trenches 8" wide or less for portions below pavement.

Water control shall conform to the provisions of Section 19-3.03B(5) "Water Control and Foundation Treatment" of the Caltrans Specifications and these Special Provisions. The Contractor shall construct and maintain all necessary ditches, cofferdams, channels, drains, sumps, and temporary protective works, and shall furnish, install, and maintain all necessary pumping and other equipment for controlling flows, including ground water in the pipe trenches and structure excavations, so that no foundation will contain any free water. Groundwater is to be discharged to the nearest available sanitary sewer maintenance hole. Full compensation for water control shall be included in the contract prices paid for various items of work, and no additional compensation will be made therefore.

The Contractor shall do all excavation of whatever substance is encountered to the lines and grades shown on the plans. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, the void remaining after the removal of the boulders shall be backfilled with suitable material and density, as approved by the Engineer. The Contractor shall do such grading as is necessary to prevent surface water from entering the excavation. The Contractor shall remove and dispose of all water entering the excavation. Disposal of water shall be done in a manner to prevent damage or nuisance to adjacent properties.

Due to width limitations, proximity of existing utilities, structures, and access requirements, the Contractor may be required to provide a vertical, open trench, shoring system for portions of this project. Shoring of all trench excavations shall conform to the

Sheeting and Shoring Section of these Special Provisions.

The amount of open trench or plated trench permitted at any one time shall not exceed fifty (50) feet or as allowed by the Engineer. Trench excavation shall be closed and all lanes shall be restored to traffic at the end of each workday. The Contractor shall furnish and install non-skid steel plates to span trench sections, which have not been backfilled. Non-skid trench plates shall have a manufactured surface with a coefficient of friction that equals or exceeds zero point thirty-five (0.35).

Approach and ending plates shall be attached to the roadway by a minimum of two (2) dowels predrilled into the corner of the plate and drilled a minimum of two (2) inches into the pavement. Interior plates are to be butted together. Fine graded asphalt concrete shall be compacted to form ramps with a maximum slope of eight and one-half percent (8.5%) with a minimum twelve- (12) inch taper to cover all exterior edges of the plates. When the plates are removed, the dowel holes in the pavement shall be backfilled with graded fines of asphalt concrete mix. A concrete slurry or equivalent slurry mix may be substituted with the approval of the Engineer.

All operations shall be carried out in an orderly fashion. Backfilling, compacting, and clean-up work shall be accomplished as the work is approved and traffic through the work shall be impeded or obstructed as little as possible.

The trench bottom shall be free of bumps or hollows and graded to provide uniform support along the length of pipe.

Excess excavated material shall become the property of the Contractor and shall be removed and disposed of away from the job site at the Contractor's expense. Full compensation for the removal and disposal of excess or unsuitable material shall be considered included in the contract unit prices paid for the various items of work and no additional compensation will be allowed therefore.

Pipe bedding and backfill shall be placed above and below the pipe to the lines and grades shown on the City of Stockton Standard Plans Nos. R36 through R43, as shown on the plans, and as specified in these Special Provisions.

Delete Section 19-3.03E, "Structure Backfill", of the Caltrans Specifications and substitute the following:

"Pipe bedding, envelope, and trench backfill material shall consist of imported material, free from vegetable matter and other deleterious substances and shall form a firm, stable base when compacted. The percentage composition weight by weight shall conform to the following grading found in the City Standard Drawing R-36. In no case shall native excavated material be used as pipe bedding, envelope, and trench backfill."

Bedding material shall be placed to approximately the same elevation on both sides of pipe to prevent unequal loading and displacement of the pipe. The difference in elevation of the bedding backfill on either side of pipe shall not exceed six (6) inches at any time.

Trench backfill shall consist of the trench area from the top of the pipe bedding to the ground surface, or if within a roadway, to the bottom of the roadway subgrade.

Backfill shall be compacted by impact, vibration, or by a combination of these methods, as approved by the Engineer. However, impact type compactors shall not be used around or over PVC pipe until backfill over the top of the pipe will permit compaction of the backfill material without deflecting or damaging the pipe. Jetting will not be permitted.

All backfill shall be placed in maximum eight (8) inch uncompacted lifts.

Compaction shall be determined by ASTM D1557.

The Contractor shall place temporary surfacing promptly after backfilling and shall maintain such surfacing until permanent paving work can be installed.

Temporary paving shall consist of asphalt cutback rolled to provide a smoother surface. All edges shall be contoured to provide a smooth transition between the existing grade and the cutback surface. The Contractor shall maintain the surface free of depressions, bumps, loose pieces, and other defects at all times. During wet weather, the Contractor shall provide a solid, non-skid surface over temporary pavement to protect the surface from damage by traffic.

Temporary pavement shall be replaced with permanent pavement, as soon as is practical after the trench is backfilled and as allowed by the Engineer.

Until the permanent pavement is placed, the base rock and temporary asphalt plant mix at the surface of the trench shall be maintained at all times. Continuous inspection and maintenance of the trench area will be required.

Any excavation shall also conform to the provisions in Section 100, "Street Opening and Pavement Restoration Regulations" of the Standard Specifications.

Full compensation for doing all the work involved in trench excavation, water control and dewatering, bedding and backfilling, and placement of temporary paving shall be considered as included in the contract prices paid for the various items of work requiring "Earthwork" and no additional compensation will be made therefore.

19-1.03 Dewatering

Attention is directed to Section 19-3.03B, "Structure Excavation", of the Caltrans Specifications and these Special Provisions.

Contractor shall comply with SWRCB requirements for discharging water from any dewatering operation, including obtaining all necessary permits, testing, and/or monitoring.

Dewater the excavation if ground water is encountered. Continue dewatering before and during subsequent excavation to prevent damage to the work. Foundation must be free of water when footing concrete or pipes are placed.

The contractor shall dispose of the water so as not to cause damage to the public or private property, or to cause a nuisance or menace to the public or violate the law. Dewatering shall be installed and operated so that the groundwater level outside the excavation is not reduced to the extent which would cause damage or endanger adjacent structures or property. The static water level shall be drawn down a minimum of 1 foot below the bottom to excavations to maintain the undisturbed state of natural soils and allow the placement of any fill to the specified density. The control of groundwater shall be such that softening of the bottom of excavations, or formation of "quick" conditions or "Boils", does not occur.

Full compensation for doing all the work involved in dewatering, water control and bedding and backfilling, and placement of temporary paving shall be considered as included in the contract prices paid for the various items of work requiring "Dewatering" and no additional compensation will be made therefore.

SECTION 20 – LANDSCAPE

20-1.01 Planting And Irrigation

Existing plants shall be maintained as directed by the Engineer. Payment for maintaining existing plants shall be considered as included in the various items of work and no additional compensation shall be allowed therefore.

20-1.02 Tree Removal And Pruning And Root Trimming

Pruning shall be performed only by a certified arborist and with prior City approval. No pruning of new or existing trees shall be done without prior City Arborist approval. No hooks or any other climbing devices that might damage or puncture tree bark shall be used. The Contractor shall be responsible to report to the City Arborist in writing, any hazardous trees, dead structural limbs, or cavities so corrective action may be taken.

If in the opinion of the Engineer or City Arborist a tree not approved for removal has been damaged due to the Contractor's operation and cannot be saved, the Contractor shall, when so ordered by the Engineer, remove the tree in its entirety and replant with a 48" box container size tree of the same kind, or as designated by the City Arborist, at the Contractor's expense.

Trees removed for the construction of this project, whether shown or not shown on the plans, shall be considered included in the contract prices paid for various items of work, and no additional compensation will be made therefore.

Should any direct or indirect damage or injury result to any public or private property by or on account of any act, omission, neglect, or misconduct in the execution of work, or as a consequence of the non-execution thereof on the part of the Contractor or any of his employees or agents, such property shall be restored at the expense of the Contractor to a condition equivalent to that existing before the damage or injury occurred by repairing or rebuilding the same, or by otherwise making restitution in an acceptable manner for such damage or injury.

The Contractor shall be required to provide and maintain barriers, guards, and lights when and where it may be necessary in order to effectively guard the public from the work being done. This includes open excavations resulting from tree removals. The Contractor shall also be required to post proper signage and traffic control for the public regarding detours and the condition of the work under construction, all in accordance with applicable provisions in Part 6 of the California MUTCD.

Material

All removed tree material, including debris, shall become the property of the Contractor who shall be responsible for its proper disposal. The Contractor shall not leave debris, including removed concrete, at the site overnight.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in tree removal and pruning and root Trimming, including the maintenance period, shall be considered as included in the prices paid for the various items of work requiring "Tree Removal" and no additional compensation will be allowed therefore.

SECTION 21 – EROSION CONTROL

Attention is directed to the provisions in Section 21, "Erosion Control" of the Caltrans Specifications.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in erosion control, including the maintenance period, shall be considered as included in the prices paid for the various items of work requiring "Erosion Control" and no additional compensation will be allowed therefore.

DIVISION IV SUBBASES AND BASES

SECTION 26 – AGGREGATE BASE

26-1.01 Aggregate Base

Unless otherwise indicated in these Special Provisions or indicated on the plans, aggregate base shall conform to the requirements of Section 26, "Aggregate Bases", of the Caltrans Specifications for Class 2 aggregate base.

Aggregate base shall be placed in lifts no greater than eight (8) inches in loose thickness and in a manner that avoids segregation, moisture conditioned as necessary, and compacted to at least ninety-five percent (95%) relative compaction.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in construction of the various depths of aggregate base, complete in place, will be considered as included in the contract prices paid for various items of work requiring aggregate base, and other items of work, and no additional compensation will be allowed therefore.

DIVISION V SUBSURFACE AND PAYMENT

SECTION 39 – ASPHALT CONCRETE

39-1.01 Asphalt Concrete

Attention is directed to the provisions of Section 39-2, "Hot Mix Asphalt", of the Caltrans Specifications, and Section 39 of the Standard Specifications.

If requested by the Engineer, the Contractor shall provide a ski on the paving machine.

If poor quality paving joints show deterioration or open areas that allow water through the paving within one (1) year of paving, the Contractor will be required to fog seal for the full joint length for a minimum six (6) foot wide pass. All costs for seal will be at no additional cost to the City of Stockton.

Asphalt concrete shall not be placed adjacent to the curb and gutter until the area behind the curb and gutter is fully backfilled and compacted. It shall be the Contractor's responsibility, based on weather predictions, to schedule his paving operations to avoid paving in the rain or fog. If the day's operations are canceled because of predicted rain or fog, a non-working day will be allowed regardless of actual working conditions. The Engineer will determine whether the day's operation shall be canceled due to predicted rain or fog.

Asphalt concrete shall not be placed on any surface, which contains ponded water or excessive moisture in the opinion of the City Engineer.

If paving operations are in progress and rain or fog forces a shut down, loaded trucks in transit shall return to the plant, and no compensation will be allowed therefore.

The Contractor shall furnish and use canvas tarpaulins to cover all loads of asphalt from the time that the mixture is loaded until it is discharged from the delivery vehicle, unless otherwise directed in writing by the Engineer.

The area to which paint binder has been applied shall be closed to public traffic. Care shall be taken to avoid tracking binder material onto existing pavement surfaces beyond the limits of construction.

No traffic shall be allowed on to the area to which paint binder has been applied with the exception of vehicles unloading asphalt concrete. All vehicles involved with the Contractor's operations shall turn around within the road right-of-way. Driveways and other private property shall not be used without prior written consent of the involved property owner, a dated copy of which shall be delivered to the Engineer prior to the use thereof.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing asphalt concrete, complete in place, shall be considered as included in the prices paid for the various items of work requiring "Asphalt Concrete" and no additional compensation will be allowed therefore.

DIVISIONS VI STRUCTURES

SECTION 52 – REINFORCEMENT

52-1.01 Reinforcement

Reinforcing steel reinforcement shall conform to the provisions in Section 52, "Reinforcement", of the Caltrans Specifications. All rebar shall be Grade 60.

Full compensation for furnishing and installing bar reinforcing steel and mesh reinforcement shall be considered as included in the contract price paid for the various contract items requiring bar reinforcing or mesh reinforcement, and no additional compensation will be allowed therefore.

DIVISION VII DRAINAGE FACILITIES – NOT USED

DIVISION VIII – MISCELLANEOUS CONSTRUCTION

SECTION 70 - MAINTENANCE HOLE CONSTRUCTION

Replace section 70-4 of Caltrans Standard Specifications:

70-4 – Maintenance Hole Construction

70-4.01 Materials

A. Precast Concrete Sections

1. Maintenance holes, drainage inlets, and other precast concrete structures, shall be constructed of precast concrete sections and conform to ASTM C478.
2. Precast concrete sections shall be manufactured by a process that will produce a dense, homogeneous concrete of first quality.
3. The sections shall be steel reinforced and have a minimum wall thickness of four (4) inches.
4. Cement used in manufacturing the sections shall be Type V, Portland cement, as specified in ASTM C150.
5. Precast concrete sections, cones, and grade rings shall be joined using preformed joint sealant only.
6. Use of mortar will not be allowed.
7. Maintenance holes shall have cast-in-place concrete bases and formed channels with inverts to match the adjoining pipes. Precast maintenance hole base-blocks will not be allowed. Maintenance holes bases shall be cast and cured prior to CIPP rehabilitation.

70-4.02 Design Loads

- A. Vertical Loads: Design all precast maintenance hole rings and accessories to support an AASHTO H-20 truck loading, in addition to soil weight above sloping ring sections and the dead load of all material supported above.

70-4.03 Workmanship

A. General

1. Maintenance holes or special structures shall be sound watertight structures, constructed as shown on the Plans. The type of maintenance hole and its location is to be as shown on the Plans. The maintenance hole shall be constructed to the rim elevations shown on the Plans. In paved areas, the Contractor shall set the maintenance hole rim after backfill and site settlement to match the proposed finish pavement elevation based on pavement restoration and pavement overlay requirements, if applicable.

B. Maintenance Hole Protection

1. Particular care must be taken to protect new and existing maintenance holes from damage and to keep rock, dirt, or debris from entering the sewer.
2. On new maintenance holes, or maintenance holes that have had frame and cover removed, a steel cover of adequate strength, close fitted and well secured, shall be installed over the maintenance hole opening until the frame and cover are permanently installed.
3. Ground or surface water shall not be allowed to drain into or be discharged to existing sewers. Temporary watertight plugs shall be installed by the Contractor to effect this protection.

C. Precast Maintenance Hole Shaft

1. The maintenance hole shaft shall be composed of precast concrete sections. These sections shall be installed plumb.
2. Precast concrete sections for maintenance holes shall be in accordance with the Plans and shall conform to the requirements of ASTM C478 except that Type V Portland cement shall be used. The cone section shall be concentric.
3. Joints between precast concrete sections shall have a "Ram-Nek" flexible plastic gasket installed between the tongue and groove joint to make a watertight joint. "Ram-Nek" sections shall be overlapped a minimum of 3 inches. After the shaft is in place, the joint shall be trimmed smooth with a sharp tool on the inside of the maintenance hole.

D. Linings and Coatings

1. Linings and coatings maintenance holes shall be lined or coated in accordance with Standard Specification Section 71-1.09A. Epoxy coat shall be a minimum 125 mils.

E. Maintenance Hole Castings

1. The maintenance hole frame and cover shall be permanently set when so authorized by the Engineer. The frame shall be centered on the maintenance hole shaft and laid on mortar to final grade. The mortar shall be neatly struck.

F. Maintenance Hole Collar

1. Unpaved Areas:

- a. Reinforced concrete pad per City Standard Specifications as shown on the drawings shall be poured around the frame and shaft so as to securely anchor the frame to the shaft.
2. In Paved Areas:
 - a. Concrete shall be poured around the maintenance hole frame and shaft to a point 1-1/2 inches below the rim per City Standard Drawing S-10.

G. Connections

1. Connections to manufactured, precast items shall be made by casting sections of pipe into the items, using nonshrink grout, and/or using an approved resilient connector.

70-4.04 Payment

Full compensation for installation of maintenance holes shall be considered as included in the various bid items specific to maintenance holes and other portions of the work, and no additional compensation will be allowed therefore.

Replace section 70-8 of Caltrans Standard Specifications:

70-8 – Maintenance Hole Rehabilitation

70-8-1.01 General

A. Summary

1. This specification includes all work, materials and equipment required for the structural maintenance hole rehabilitation. The purpose is to eliminate infiltration, repair voids, restore structural integrity and provide corrosion protection by the application of a spray-applied monolithic coating to the wall surfaces of concrete structures produced with any other masonry construction material. These structures include but are not limited to maintenance holes, including those that form junctions between sewers. It is the Contractor's responsibility to stop all leaks in accordance with the lining of the maintenance hole interiors.

70-8-1.02 Quality Assurance

- A. Follow National Standards and as specified herein.
- B. Contractor's (or subcontractor's) personnel involved in the handling and installation of materials and products must be certified by manufacturer that they have successfully completed training in handling, applying and finishing of materials used.
- C. The Contractor (or subcontractor) and the product applicators must have a minimum of three (3) years' experience using the proposed product in at least 50 maintenance holes. All Contractors' employees, subcontractors, and/or product applicators performing the work on the maintenance hole rehabilitation must be certified by the maintenance hole rehabilitation system supplier as qualified to perform the work with the proposed product.
- D. The Contractor (or subcontractor) must have successfully completed at least two (2) projects in the last 5 years, similar in scope, to the requirements of maintenance hole rehabilitation as set forth in these bid documents, where at least 20

maintenance holes were completed between the two projects. This shall be submitted with bid forms.

70-8-1.03 Submittals

- A. Documentation certifying that Contractor's employees, subcontractors and/or product applicators performing the work on the maintenance hole have a minimum of three (3) years' experience using the proposed product.
- B. Shop drawings, product data, including physical properties, surface preparation, application instructions and curing instructions.
- C. Safety Plan.
- D. Manufacturer's recommendations for handling, storage, application, repair, and testing.
- E. Product manufacturer information, including contact information.
- F. MSDS Sheets.
- G. Set-up and curing requirements.
- H. Clean-up requirements.
- I. Manufacturer's test reports of in-place testing performed by an independent testing agency, including but not limited to, the County Sanitation Districts of Los Angeles County.
- J. Certification by the manufacturer that the applicator is trained and approved in the application of the specified products.
- K. The Contractor shall provide for adequate flow control including, but not limited to, required pumping and bypassing.
- L. Copies of confined space entry permits.

70-8-1.04 Delivery, Storage, and Handling

- A. Transport, handle, and store material as recommended by manufacturer.
- B. Keep containers sealed until ready for use.
- C. Deliver, store and handle other materials as required to prevent damage.

70-8-1.05 Safety

- A. Extra attention shall be given to safety equipment and procedures on the job site.
- B. Prior to entering access area an evaluation of the atmosphere to determine the presence of toxic or flammable vapors or lack of oxygen must be undertaken in accordance with local, state and federal safety regulations. Safety shall be in strict accordance with all applicable OSHA standards.
- C. All appropriate personal protective equipment must be worn at all times by all personnel (i.e. OSHA approved gloves, safety glasses, hard hats, masks, face shields, hearing protection, safety vests). All personnel must be trained in confined space entry, gas detectors and harnesses (currently calibrated) and man winch retrieval with back-up fall arrest protection.
- D. Confined space entry permits must be filled out prior to any entrance.
- E. Sewer pipelines and maintenance holes shall be fully cleaned and ventilated prior to maintenance hole rehabilitation activities.
- F. Contractor shall be responsible for any damage or injuries resulting from Contractor's operation and/or materials and equipment stored in the staging areas. The City is not responsible for securing the Contractor's equipment and work sites.

- G. Open excavations (if any) shall be covered with steel plates during non-working hours.

70-8-1.06 Products

- A. General: The work consists of spray applying an epoxy-mortar coating based material to all maintenance holes, including bench, resulting in a monolithic coating as determined by the manufacturer for the specific depth and water table. The applicator, approved and trained, shall furnish all labor, equipment and materials for installing the lining over pre-cast concrete, concrete block, and brick maintenance holes using approved equipment. The installation shall be in accordance with the following Contract Specifications along with manufacturer's recommendations.
- B. Materials:
 - 1. A proprietary epoxy-mortar based material specifically designed for maintenance hole applications. The following materials have been approved by the City and/or have successfully passed the County of Sanitation District of Los Angeles County testing (Redner Test): Raven 405 (Raven Lining Systems); Mainstay DS-4 (Madewell Products Corporation); Hydro-Pox 204 (Con-Tech of California Inc.); SprayWall (SprayRoq, Inc.); SewerGard 210 (Sauereisen); NPR-5305 (NeoPoxy LLC) or approved equal. The product shall be corrosion resistant to the ingredients of the sanitary sewer environment and shall be designed to bond to wet surfaces.
 - 2. Any water used shall be clean and potable.
 - 3. No material shall be used with or added to mixture without prior approval by the City and/or manufacturer.
- C. Properties: If epoxy mortar is not on City's approved list, City reserves the right to reject proposed product. Products that have not been approved by the City must meet the following requirements to be considered:
 - 1. Product shall have documented useful life extension of at least 50 years.
 - 2. Coating Thickness: 125 mils for the maintenance hole applications.
 - 3. Structural Design: A minimum application of 500 mils of mortar.
 - 4. 100% solids with 0% volatile organic compounds
 - 5. 6,000 psi minimum compressive strength
 - 6. 6,000 psi minimum tensile strength
 - 7. 1.5% minimum elongation
 - 8. 4,000 psi minimum flexural strength
 - 9. 80 minimum hardness

70-8-1.07 Execution

- A. Examination:
 - 1. Examination shall be performed at the beginning of the project so that the City may determine whether replacement is warranted prior to CIPP rehabilitation. Examine surfaces to receive restoration. This includes examining wall thickness of existing maintenance hole walls. Contractor to select 3 locations within each maintenance hole to scrape or remove all latent material to reveal

solid substrate. Notify the City inspector if surfaces are not acceptable. Providing equipment and personnel, facilitate the City representative's entrance to and egress to evaluate the structure. Do not begin surface preparation or application until approval is granted by the City. Notify the City if exposed rebar is found.

2. Provide the City Inspector with a minimum of 3 days advance notice of completion of surface preparation and start of application.
3. Before application of each material, surfaces to be coated will be inspected by the City Inspector. Correct structural defects or voids before application of subsequent material.
4. Inspection or the waiver of inspection by City Inspector of any portion of the work shall not relieve the Contractor of responsibility to perform the work as specified.

B. Surface Preparation:

1. Prepare surfaces in accordance with manufacturer's recommendation and/or instructions.
2. All foreign materials shall be removed from the maintenance hole walls using high- pressure water blasting (minimum 3,500 psi), hand or power tools as required to remove all unsound concrete, contaminants, dirt, debris and/or deteriorated reinforcing steel. All non-leaking voids shall be filled with cement-based material containing hydraulic cement or in accordance with manufacturer's recommendation.
3. Surface shall be cleaned to achieve an ASTM D-4259 Standard.
4. Active leaks shall be stopped using products specifically for that purpose and according to manufacturer's recommendation.
5. Excessively leaking maintenance holes shall be drilled through the maintenance hole wall and injected with grout sealant only after the event that normal leak stoppage methods are not effective and it is approved by the owner or manufacturer's recommendation. If leaking cannot be stopped, Contractor shall notify the City.
6. All loose material shall be removed following the completion of preparation work.
7. Maintenance hole inverts shall be protected during rehabilitation application. Contractor to properly seal pipes penetrating vertical walls.

C. Maintenance Hole Existing Condition:

1. If Contractor encounters a maintenance hole that has deteriorated beyond rehabilitation, Contractor shall notify the City prior to doing any work.

2. If maintenance hole is too far deteriorated, it will be replaced using the applicable alternative bid item. Contractor shall perform any other required scope under the alternative bid item.

D. Maintenance Hole Walls:

1. If examination of maintenance hole wall thickness deterioration is determined to be greater than ½" but less than 1", Contractor shall use an approved mortar to build the surface to 1" thickness. If more than 1" is required, Contractor shall notify the City prior to doing any work. Mortar to be applied evenly.

E. Spraying:

1. Coating shall be limited within the vertical walls of the maintenance hole from the top of the bench to the frame seal (does not include box structures or horizontal bench). Report any submerged vertical walls to the City. If the application of coating system to a vertical wall of a maintenance hole is unattainable, the unit price of the specific maintenance hole shall be adjusted, and payment shall be decreased to reflect only the area coated.
2. The surface prior to spraying shall be saturated thoroughly with clean water. Material shall be spray applied to a minimum uniform thickness of not less than 125 mils.
3. The application of the product shall provide a monolithic coating of the minimum thickness. The coating shall be applied to the wall and shall all be equal in thickness.
4. Follow manufacturer's instructions and recommendation for minimum application during hot and cold weather temperatures.
5. Follow product and manufacturer's recommendation for cure time.

F. Maintenance Hole Frame Seal:

1. The frame shall be set flush with existing pavement prior to final sealing, with additional grades rings if necessary, prior to rehabilitating this section.
2. The contact surfaces shall be clean, reasonably smooth and circular, and free of excessive voids and/or corrosion.
3. Remove all loose rust and any restoration mortar or epoxy corrosion barrier coating overspray on maintenance hole frame. Surface shall be clean and dry before application of maintenance hole frame seal material.
4. Apply a seal between the frame and cover, and chimney of the maintenance hole.
5. The seal shall be designed to prevent leakage of water into the maintenance hole. The seal shall remain flexible, allowing repeated vertical movements of the frame due to frost lift, ground movement, heavy traffic loadings and other causes.

6. An applied seal is one that is achieved by applying a product, approved by the Engineer, either between the precast adjusting rings of the chimney and under the frame or to either the inside or outside surface of the chimney and frame to provide a seal.
 7. The sealing material shall extend far enough onto the frame to ensure bonding and cover enough of the chimney to ensure sealing.
- G. Field Testing:
1. Inspect the coated surfaces for cracks, voids, holes, uncured spots, dry spots, delamination and any defect which might affect the testing performance.
 2. The City will only be responsible for the cost associated with the first test. If test fails, the Contractor will be responsible for re-test. If the test fails, the Contractor at its own expense will replace the defects.
 3. Test the entire coated surface for holidays at 125 volts/mil but may be adjusted as necessary to detect the induced holiday. All detected holidays shall be marked and repaired by abrading the coating surface with grit disk paper or other hand tooling method or per manufacturer's recommendation. After cleaning, additional protective coating material can be hand applied to the repair area or per manufacturer's recommendation.
- H. Acceptance/Documentation:
1. Contractor will keep record copy (documentation) of maintenance holes being rehabilitated, depths, and wall thickness condition.
 2. Documentation of the observed defects during the inspection shall be documented with the use of a digital camera and in writing.

SECTION 72 - CLEANING AND CCTV INSPECTIONS OF SANITARY SEWER MAINS

72-1.01 General

- A. Summary
4. Closed Circuit Television (CCTV) inspection is required for the following:
 - a. Document the existing condition of the host pipe.
 - b. Verify pipe diameter, length, grade and bends.
 - c. Determine if spot repairs are required.
 - d. Ensure that the pipeline is properly cleaned following any required spot repairs and immediately prior to installing the liner.
 - e. Ensure proper liner installation.
 - f. Verify size and location of all lateral connections.
 - g. Ensure proper lateral reinstatement.
- E. Prior to each television inspection, all sewage flow shall be bypassed from the pipeline sections to be cleaned and inspected, and the sewer shall be thoroughly cleaned as required by these specifications.
- F. This section is intended to provide the Contractor with general guidelines. It is the Contractor's responsibility to supply all labor, materials, equipment and apparatus

not specifically mentioned herein or noted on the Plans, but which are incidental and necessary to complete the specified work.

G. Refer to and comply with Section 10-1.02 "Jobsite Safety" of these Special Provisions.

72-1.02 Submittals

A. Provide the following submittals:

1. Written documentation for arrangements of legal disposal of all liquids and materials removed from pipelines and maintenance holes during cleaning.
2. Weight tickets for hauling and disposing of hazardous material.
3. Submit description of cleaning equipment and methods.
4. Submit description at CCTV inspection equipment, sample CCTV inspection logs, and recordings (CD or DVD).
5. Provide to the Engineer pre-installation and post-installation video recording and suitable log for each sewer line (maintenance hole to maintenance hole). All video inspection shall utilize CD, DVD, or external hard drive for documentation. Unedited video recordings and a suitable log of the inspection shall be provided to the Engineer five working days prior to lining (pre-installation) and within five working days after the liner installation is complete and cured (post-installation). If post-installation inspection recordings are not submitted within three working days of the liner installation, the Engineer may, at their discretion, suspend any further installation of liner until the post-installation recordings are submitted. As a result of this suspension, no additional working days will be added to the contract, nor will any adjustment be made for increase in cost.
6. The Contractor shall provide CCTV video inspection and reporting shall be submitted in a NASSCO-PACP version format on POSM software. Any software substitution must be fully compatible with POSM. Substitute software must demonstrate flawless integration into POSM. All software will be tested for compatibility with COS/MUD systems prior to acceptance.
7. Pre-installation inspection log: Submitted with each pre-installation video recording. The log shall identify the sewer line by maintenance hole numbers, street location, and plan sheet number. The log shall include:
 - a. The cleaning and inspection dates.
 - b. Location and alignment length.
 - c. Location of all laterals.
 - d. Pipeline sags: length and depth.
 - e. Documentation and detailed description of defects and any repairs necessary prior to lining including distance from nearest maintenance hole and conformance to cleaning requirements.

8. Post-installation inspection log: Submitted with each post-installation video recording. The log shall identify the sewer line by maintenance hole numbers, street location, and plan sheet number. The log shall include:
 - a. The inspection dates.
 - b. Location and alignment length.
 - c. Location and description of all debris in the lined sewer.
 - d. Defects in the liner, including, but not limited to, gouges, cracks, bumps, wrinkles, or bulges.
 - e. Location and inspection of lateral reinstatements, and connection to maintenance holes.

72-1.03 Previous Inspection Video Recordings

Video recordings of the sewers to be lined are available for viewing upon request. The Contractor is to provide a flash drive to facilitate the video file transfer. The Owner makes no express or implied guarantee as to the accuracy or the completeness of the information contained on the video recordings. The Contractor must make their own judgment as to the condition of the sewers and the quantity of cleaning necessary and must not rely on the description provided on the video recordings, except that the quantity of debris requiring removal is listed in Special Provision 72. The Contractor may base its bid on the conditions represented in the video, however the Contractor shall be prepared to work in conditions adverse to those shown in the video. The Contractor will not be entitled to additional compensation for failure to review the videos.

72-1.04 CCTV Camera

- A. Shall be 360-degree radial view, color image camera capable of rotating to look directly up tee and wye connections.
- B. Lines shall be ventilated to remove potential buildup of flammable gases during CCTV. Camera shall be operative in 100 percent humid conditions.
- C. Lighting intensity shall be remotely controlled and shall be adjusted to minimize reflective glare.
- D. Lighting and camera quality shall provide a clear, in-focus picture of the entire inside periphery of the sewer.

72-1.05 Camera Accessories

- A. Camera shall be mounted on a truck such that the lens is located at the spring line of the sewer being televised.
- B. Lighting equipment shall be properly sized for the pipe diameter being televised.
- C. Recordings that are determined by the Engineer to be too dark shall be re-televised with better lighting.

72-1.06 Recording

- A. High quality color CD or DVD.

- B. Audio portions shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of oral report. The Contractor shall give oral commentary on pipeline location, MH numbers, direction of inspection, and at all structural features including, but not limited to, defects, debris build-up, lateral connections, and all features as directed by the Engineer.
- C. The footage counter shall be accurate to one foot per each pipeline segment for measurements of distance traveled by camera within the pipeline.
- D. The camera advancement through the pipeline shall be at a speed that allows a clear picture of the pipeline and allows for thorough investigation of all structural features of the pipeline. The speed shall be adjusted based on direction from the Engineer.

72-1.07 Cleaning of Existing Host Pipe

Prior to conducting closed circuit television inspection, it shall be the responsibility of the Contractor to plug and/or bypass sewer flows, including plugging to prevent backwater from other portions of the sewer system, around the work and to thoroughly clean the host pipe. The word 'clean' in this specification is defined as the removal of all accumulations including sludge, dirt, sand, rocks, asphalt, concrete, grease, roots, and any other solid or semisolid material in the pipe down to the parent material with 100 percent debris removal.

- A. It will be the Contractor's responsibility to make as many cleaning passes as necessary to meet the above definition of "clean". Acceptance of the cleaning, as determined by the Engineer, shall be based upon the subsequent video inspection of the sewer and the lining manufacturer's cleaning requirements.
- B. Contractor shall assume that pipe is approximately 10% full of debris.
- C. Tree and plant roots shall be removed from within the sewers. Special attention should be used during the cleaning operation to assure removal of roots from the joints and laterals. Procedures may include the use of mechanical equipment such as rodding machines, root cutters, porcupines, and high-velocity jet cleaners.
- D. Water Usage: The Contractor may use fire hydrants with temporary meters obtained from California Water Service Company.
- E. Cleaning Equipment: Sewer line cleaning shall be performed with high-velocity jet equipment. When using a high-velocity jet machine, it shall not remain stationary while cleaning the sewer line. Selection of equipment shall be based on field condition such as access to maintenance holes, quantity of debris, quality of pipe, size of sewer, presence of coal tar epoxy lining, and proposed pipe lining activities. The equipment shall be capable of removing dirt, grease, rocks, sand, and other materials and obstructions from the sewer lines and maintenance holes. During sewer cleaning operations, precautions shall be taken by the Contractor in the use of cleaning equipment to avoid any damage to the pipe.

F. Contractor shall have its own hydro-vacuum truck to remove all debris and spoils. City will not supply any equipment, materials or labor for the execution of the work or intent of the project. However, Contractor will be allowed to dispose of all debris and spoils generated during cleaning activities at the City of Stockton Regional Wastewater Control Facility located at 2500 Navy Drive, Stockton, CA. Liner and/or coating materials will not be allowed to be disposed of at the City of Stockton Facility. Contractor to coordinate with City Inspector.

G. Removal and Disposal of Material:

1. Sludge, dirt, sand, rocks, grease, and other solids or semi-solid material resulting from the cleaning operation shall be removed at the downstream maintenance hole of the section being cleaned. Passing materials to downstream sewer reaches is not permitted.
2. Trucks hauling solids or semi-solids from the site shall be watertight so that no leakage or spillage will occur. Under no circumstances shall sewage or solids be dumped onto the ground surface, streets, in the sewer system, catch basins, or within storm drains.
3. Material removed from the sewers during the cleaning operation shall be disposed of legally by the Contractor at the Stockton Wastewater Treatment Plant. All debris and containers shall be removed from the right-of-way at the end of each work day. The Contractor shall be responsible for paying all disposal costs and for any required permits. If testing determines that the material is hazardous as specified by the California Department of Toxics and Substance Control, the material shall be legally hauled and disposed of at a hazardous waste landfill.
4. It is the Contractor's responsibility to determine the quantity of debris and solids to be removed during cleaning. However, Contractor shall anticipate that lines are approximately 10% full of debris. Video recordings of a previous sewer inspection will be made available for the Contractor to examine. To obtain existing video, Contractor shall provide external hard drive to City; allow 3 working days for videos to be placed on hard drive. Contractor is to pick up the external hard drive from City offices. The Contractor is to make its own judgment as to the condition of the sewers and the degree of cleaning necessary to collect and remove the anticipated quantity of debris. The videos are for information only and the Owner does not guarantee the descriptions on the video are accurate or that the conditions shown are representative of current conditions.

72-1.08 CCTV Inspection of Pre- and Post-Installation Sewers

- A. Perform television inspection immediately after cleaning of the host and lined sewers to document the condition of the host sewer or liner, identify active laterals, to provide quality assurance of the liner installation, and to verify the lines were cleaned. Inspect the lines by using a 360-degree radial view color image camera capable of rotating to look directly up tees and wyes.

- B. Video inspection shall be done on one sewer section at a time. CCTV inspection shall be performed after sewage plugging and flow diversion, removal of residual backwater, and control/bypass pumping is started.
- C. Sewage flow control shall be conducted from the upstream maintenance hole in accordance with Section 74 of these Special Provisions.
- D. The Contractor shall be responsible for cleanup, repair and property damage costs and claims should the Contractor's operation cause any backups or overflows. The Contractor shall also reimburse the Owner the full cost of any and all fines the Owner is required to pay as a result of a backup or overflow.
- E. Should the camera get stuck in the sewer, the Contractor shall be responsible for all costs in extracting it. Costs related to difficulties encountered during internal video inspection are incidental to the contract, and claims will not be considered.
- F. Inspection shall be performed in the presence of the Engineer or his/her representative, by experienced personnel trained in locating breaks, obstacles, defects and side sewers by closed circuit television.
- G. Note the locations of side sewers and obstructions which may prevent proper installation of the pipe liner into the pipelines.
- H. The Contractor shall immediately notify the City if any new potentially active connections are found. While beyond the Contractor's scope, due to the depth of flow during CCTV for project design it is possible that connections exist that were not previously visible.

72-1.09 Payment

Full compensation for cleaning and CCTV inspection of sanitary sewer mains shall be considered as included in the lump sum price paid for "Clean and CCTV of Sanitary Sewer Lines", and no additional compensation will be allowed therefore.

SECTION 73 – CONCRETE CURBS AND SIDEWALKS

73-1.01 Concrete Curbs, Sidewalks, and Wheelchair Ramps

Concrete curb, gutter, sidewalk, curb returns, including wheelchair ramps, grooving, driveways, and flat work, shall be in accordance with the provisions of Sections 73, "Concrete Curbs and Sidewalks", and 90, "Concrete", of the Caltrans Standard Specifications, these Special Provisions, and as shown on the plans.

Portland cement concrete shall conform to Section 90-2, "Minor Concrete," of the Caltrans Specifications and shall contain not less than 505 pounds of cementitious material per cubic yard for all uses. Certification of the concrete shall be received from the vendor and delivered to the City Inspector at the time the concrete is poured.

The Contractor shall sawcut all existing concrete curb, gutter and sidewalks, driveways, and other concrete improvements that will be matched with new improvements at the

locations indicated on the plans and where directed by the Engineer.

Expansion joints shall be constructed wherever required by the Standard Specifications, at the locations indicated on the plans, and where directed by the Engineer. Expansion joints shall be filled with 3/8"-thick premolded expansion joint filler conforming to ASTM D-1751.

Concrete shall be cured using the curing compound method for curb, sidewalks, and gutters. The curing compound shall be the clear or translucent type conforming to the specifications of AASHTO Designation: M148, Type 1, except that the loss of water in the water retention test shall not exceed 0.040 gram per square centimeter or surface. The curing compound shall contain a fugitive dye and shall be applied at the approximate rate of one (1) gallon per one hundred fifty (150) square feet of area. The curing compound shall be applied in a manner that will provide a complete coating of all exposed faces of the concrete surface. Alternate curing methods shall be submitted to the Engineer for approval before use.

Reinforcing steel, where required, shall conform to Section 52, "Reinforcement", of the Caltrans Specifications and these Special Provisions. All rebar shall be Grade 60.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals for concrete sidewalks, including ramps, including all grading necessary for installation of concrete sidewalk or concrete ramps, to finished grade, disposal of all excess material, all sawcuts, reinforcements where required, grading under concrete, providing and grading aggregate base subbase, backfill, compaction, watering, expansion joint filler, concrete and curing compound, grooving, and for doing all the work involved in furnishing and placing concrete sidewalks, or ramps, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer shall be included in the prices paid for the various contract items of work, and no additional work compensation will be allowed therefor. Where sidewalk, or driveway is adjacent to curb or curb and gutter, the six (6) inch dimension from face of curb to back of curb shall not be counted.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals for concrete curb and gutter, including all aggregate subbase, reinforcement, sawcuttings, backfill, compaction, watering, expansion joint filler, and concrete curing compound, and for doing all the work involved in furnishing and placing concrete curb and gutter, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer shall be included in the prices paid for the various contract items of work, and no additional work compensation will be allowed therefor.

Broken pieces of concrete shall be immediately removed from the job site and disposed. No portions of broken concrete shall remain on the job site overnight. Contractor shall pay to the City of Stockton the sum of Two Hundred Fifty Dollars (\$250) for every calendar day where debris has remained on the job site overnight.

Reinforcing steel reinforcement shall conform to the provisions in Section 52, "Reinforcement", of the Caltrans Specifications. All rebar shall be Grade 60.

Full compensation for furnishing and installing bar reinforcing steel and mesh reinforcement shall be considered as included in the contract price paid for the various contract items requiring bar reinforcing or mesh reinforcement, and no additional compensation will be allowed therefore.

Replace Section 74 of Caltrans Standard Specifications with:

SECTION 74 - BYPASS PUMPING

74-1.01 Summary

- A. Flow control of existing sewer flows is required for the method of rehabilitation specified.
- B. To the extent possible, Contractor shall schedule work so that all sewer flow control is performed during dry weather periods. Bypass pumping during rain storms will not be allowed unless already initiated and maintaining the bypass is necessary to accomplish the work.
- C. There are no other trunk sewers (24" diameter and greater) identified to which flow may be diverted; notify the City if other sewers are identified.
- D. The Contractor shall furnish, install and operate pumps, plugs, conduits, and other equipment to divert the flow of wastewater around the pipeline reach in which work is to be performed and to maintain service to all properties connected to the sewer being rehabilitated. Plugs shall be so designed that all or any portion of the wastewater can be released. Plugs shall be provided with a tag line. The pumping system shall be of sufficient capacity to manage flows indicated on the plans. If pumping is required outside normal working hours, engines shall be equipped and/or shielded in a manner to keep noise to a minimum. Noise level shall conform to the requirements set forth in Section 14-1.03 of these Special Provisions.
- E. Bypass pumping shall be done in such a manner as will not damage private or public property, or create a nuisance or public health menace. The pumped wastewater shall be in an enclosed hose or pipe that is adequately protected from traffic, and shall be redirected into the sanitary sewer system. Dumping or free flow of wastewater on private property, gutters, trenches, streets, sidewalks, or into storm sewers is prohibited. The Contractor shall be liable for all damages associated with this work. After the work is completed, flow shall be restored to original conditions and temporary facilities removed.

74-1.02 Submittals

- A. Provide the following submittals:
- B. A bypass pumping plan for sewage flow control in accordance with these Specifications and Drawings. This plan shall be submitted for City review and approval within three (3) weeks of Award and shall include:

1. An overall bypass plan showing each bypass stage, suction & discharge locations, side sewer control, and anticipated order of operations.
 2. Specific site plans for each bypass installation showing the size and layout of pumps, valves, and temporary pipelines. Layout shall show how temporary pumping facilities will be protected during use. Bypass equipment layout including all pipe holders, pipe ramps, pipe bridges, and vehicle and pedestrian ramps, shall be included in traffic control plans, see Section 12 of these Special Provisions.
 3. Drawings indicating the location of temporary bulkheads, plugs, bypass discharge lines including diameter and size, discharge points and all locations where flow control pipelines will be buried, placed above grade, or protected with ramps and all provisions required to maintain access.
 4. Methods of controlling trunk main and side sewer pipeline flow, including location where sewage is to be diverted, type of pipe to be used for bypass.
 5. List of maintenance holes to be monitored as part of system check for sewer flow control system.
 6. Catalog data showing capacities of pumps and standby equipment.
 7. Catalog data for portable generators when electric pumps are used.
 8. Catalog data on pump controls and audible alarms.
 9. Catalog data of temporary bulkheads.
 10. Catalog data on pipe ramps, pipe holders, or other pipe materials proposed for protecting pipe from traffic.
 11. Design calculations prepared, sealed and signed by an Engineer licensed in the State of California proving adequacies of the bypassing system and selected equipment, and temporary bridges or structures.
 12. The sewage bypass pumping plan shall include an emergency response plan to be followed in the event of a failure of the bypass pumping system, or a sewage spill or leak.
- C. The bypass pumping plan shall be approved prior to the start of construction of the bypass system.

74-1.03 Sewage Flow Volume

- A. Capacity (sewage flow rate) to be used for design of each bypass system is provided on the Plans.

- B. It is the Contractor's responsibility to provide bypassing system adequate to bypass all flows during dry and wet weather flow conditions around the work site. If construction extends into the wet season, Contractor shall provide capacity as provided by Engineer.
- C. Diameters of side sewers connected laterals and associated volume of sewage flow is unknown. The Contractor shall control all possible sewage flow in side sewers and laterals around work site.
- D. The City is not responsible for any deviations in quantity or quality of the sewage flow at any time during the work.

74-1.04 Primary Flow Control Pumps and Generators

- A. The Contractor shall provide suitable "trash-type" primary sewage pump capable of bypassing all flows around the worksite.
- B. Keep all generators fueled at all times.

74-1.05 Sewage Flow Control Piping

- A. The sewage flow control piping shall be completely leak free. Any drips or leaks shall be repaired by the Contractor immediately.
- B. Leak-proof flexible hose may be used for bypassing local sewers 12-inches in diameter and smaller. Bypass lines for sewers 15-inches diameter and larger shall be fusion welded high density polyethylene (HDPE), except that piping that does not extend greater than 3 feet above pipe crown and is below the ground surface may also be leak-proof flexible hose.
- C. The discharge velocity for bypass piping shall be no more than 12 feet per second.

74-1.06 Temporary Bulkheads and Plugs

- A. Design and provide bulkheads and plugs to withstand anticipated upstream differential head without leakage or displacement.
- B. A watertight seal is required to prevent sewage from entering the work area.
- C. The Contractor shall provide double bulkheads and plugs, both able to withstand upstream head, upstream of locations where persons will be entering the sewer and at all flow diversions. Coordinate installation and removal of bulkheads and plugs with the Engineer.
- D. Backwater up the 36" rehabilitated by CIPP from the 36" pipe downstream of and the 24" Mormon Slough Sewer coming into SSMH-34P088 are the expected condition and contractor shall install plugs to prevent this effect during all work.

74-1.07 Standby Equipment

- A. The Contractor shall have available on site sufficient equipment and materials to ensure continuous and successful leak-free operation of the sewage flow control system.
- B. A sufficient number of valves, tees, elbows, connections, tools, sewer bulkheads for different pipe sizes as needed, piping and other parts of system hardware to ensure immediate repair or modifications of any part of the system as necessary.
- C. For each pumping setup, the Contractor shall have on site one standby pump with capacity equal to or greater than the largest primary pump. If any pump is electric, a standby generator shall be provided on site. For bypassing sewers 15-inches or larger and any pump setup that operates on a 24-hour basis, the standby pump shall be connected to the discharge lines, shall be operational, and shall be connected to the bypass piping system to allow immediate standby service at all times.
- D. Generator shall be fueled at all times.
- E. If vacuum trucks are used as primary bypass control, one standby vacuum truck shall be onsite at all times

74-1.08 Environmental Protection

- A. All bypass pumps and generators shall be placed on spill guards.

74-1.09 Pipe Protection Equipment

- A. Pipe ramps shall be suitable for the anticipated speed of traffic.
- B. All pipe protection materials shall be rated for H20 loads.
- C. Contractor shall submit drawings of pipe ramp installations for review and approval by City.
- D. Pedestrian ramps over pipelines shall be ADA compliant.

74-1.10 Monitoring and Supervision of Sewage Flow Control System

- A. The Contractor shall take all necessary precautions including constant monitoring (requires 24 hours per day, 7 days per week continuous monitoring by on-site Contractor personnel while sewage flow control system is in place) of sewage flow control pumping and diversion plug or bulkhead to ensure that there are no sewage spills and no private properties are subjected to a sewage backup. The person responsible for system monitoring shall have no other job or responsibility except for the monitoring and maintaining of the bypass system.
- B. The Contractor shall not shut down sewage flow control systems between shifts, on holidays or weekends, or during work stoppages without written permission from the Engineer.

- C. Contractor shall monitor the group of maintenance holes as provided on the submitted maintenance hole monitoring plan that will constitute flow control and diversion system check. The Contractor personnel responsible for monitoring the flow control and diversion shall inspect each maintenance hole a minimum of once per 4 hours.

74-1.11 Noise Control

- A. The Contractor is required to minimize to the extent possible all noise associated with this work to meet noise requirements as specified in Section 14-1.03 of these Special Provisions.
- B. All pumps, generators, and motors shall include integrated noise attenuation.

74-1.12 Odor Control

- A. The Contractor is required to minimize to the extent possible all odor associated with this work. The Engineer may request additional odor reducing measures if complaints about odor are received.
- B. The Contractor is made aware that odor reducing measures requested by the Engineer shall be provided at no additional cost to the City.

74-1.13 Pedestrian and Vehicular Access

- A. The flow control pumping system shall be adequately protected from traffic and shall be located to minimize disruption to vehicle and pedestrian traffic.
- B. At locations where sewage flow control piping crosses driveway entrances, cross streets, or pedestrian crosswalks, the piping shall be placed in trenches constructed by the Contractor and backfilled or plated to allow traffic to cross unimpeded. Contractor shall install sewage flow control within trenches along rights-of-way as indicated on the Plans. At locations where trenching is prohibited, the Contractor may, with approval from the City, install ramps to maintain access for pedestrians and vehicles. Separate ramps shall be provided for each direction of traffic and also separate ramps shall be provided at each sidewalk. Contractor shall submit drawings for ramp installations with bypass pumping plans and traffic control plans to the City for review and approval.
- C. Where bridging structures are required for bypass pipes to cross creeks, channels, or railroads, Contractor shall provide design and installation details for review by the City and agency having jurisdiction. All bridging structures shall be fenced to prohibit pedestrian access.
- D. All flow control piping on private property shall not interfere with parking, access, or movement of supplies and materials.
- E. Details for pipe trenching, plating and ramp requirements are provided in the Plans.

- F. Unless a right of way has been provided by the City, it is the Contractor's responsibility to contact, coordinate, and acquire written permission from the private property owner for use of private property for location of flow control piping. The Contractor shall provide signed agreements to the City prior to any work on the private property.

74-1.14 Sewage Flow Control and Diversion

- A. Contractor shall pressure test the bypass system using potable water. All visible leaks shall be repaired and pressure shall hold within 1 psi after 30 minutes prior to commencement of the bypass run test.
- B. The Contractor shall set up and test the sewage flow bypassing system for a minimum period of 6 hours (6 o'clock am to 12 o'clock pm on weekdays) or as directed by the Engineer, not more than 24-hours prior to removing the sewer from service for the start of the rehabilitation work. The Contractor shall correct any deficiencies in the system as required to provide a leak-free bypass that will not cause overflows, backups or spills as specified.
- C. The Contractor shall provide continuous sewage flow control pumping and/or diversion of sewage for acceptable completion of the sewer main rehabilitation operations. Where bypassing is required, the sewage shall be redirected from a minimum of one maintenance hole upstream of the start of the alignment to be rehabilitated into the sanitary sewer system downstream of the work area.
- D. The Contractor may divert and bypass local flows upstream of the sewer rehabilitation. The Contractor shall be responsible for the installation and maintenance of all flow diversions including bulkhead or plugs. The Contractor shall notify the Engineer in writing 48 hours prior to installing bulkhead or plug and diverting flows and prior to removal of bulkhead or plug. After installation of bulkhead or plug, the Contractor shall test the sewage diversion system for a period of 72 hours, or for a period as directed by the Engineer, immediately prior to removing the sewer from service for the start of the rehabilitation work. The Contractor shall monitor the diversion and the bypass pipeline as specified. The Contractor shall correct any deficiencies in the system as required to provide a leak-free bypass and diversions that will not cause overflows, back-ups, or spills as specified.
- E. The Contractor can discharge bypassed wastewater flow to other trunk sewers, but bypassed wastewater flows shall not be discharged to local sewers, unless indicated on Drawings. It is the Contractor's responsibility to determine the allowable flows that can be discharged to the trunk sewers. The bypassed flows shall not cause overflows, deterioration or any adverse conditions on the existing system.
- F. Dumping or free flow of sewage on private property, gutters, streets, into storm sewer, creeks, or flood control channels is prohibited. Bypassing to receiving waters, the ground surface, or any circumstance that results in groundwater contamination or potential health hazards is prohibited.

- G. The Contractor shall be liable for all clean up damages, and resultant fines in the event of a spill.
- H. After the work is completed, all temporary connections and piping installed by Contractor shall be thoroughly flushed with clean water (prior to dismantling), removed, and all affected improvements shall be restored to original condition, or better, and flow shall be restored to normal.
- I. Contractor shall backfill trench and restore pavement in accordance with City of Stockton Standard Specifications and Standard Drawing R-37 within City limits.

74-1.15 Payment

Full compensation for bypass pumping of sanitary sewer mains shall be considered as included in the various associated bid items as described, and no additional compensation will be allowed therefore.

SECTION 75 – MISCELLANEOUS METALS

75-1 Miscellaneous Iron And Steel

This work shall consist of furnishing and installing metal frames and covers or frames and grates for use in minor structures and shall conform to the provisions in Section 75, "Miscellaneous Metal", of the Standard Specifications.

Full compensation for furnishing and installing miscellaneous iron and steel, including metal frames and covers or frames and grates, shall be considered as included in the contract prices paid for the various contract items, and no additional compensation will be allowed therefore.

SECTION 77– LOCAL STRUCTURE

77-1 – Signal and Lighting Systems

Furnishing and installing traffic signals shall conform to Sections 86, "Electrical Work," and 87, "Electrical Systems," of the Caltrans Specifications, Section 86, "Electrical System" of the Standard Specifications, California MUTCD, and these Special Provisions.

77-1.10 Colored Controlled Density Fill (CDF)

The controlled density fill for the installations of all conduits shall be a red color to distinguish the concrete backfill from other concrete and soil. The concrete shall be pigmented by the addition of commercial quality cement pigment to the concrete mix.

The red concrete pigment shall be LM Scofield Company; Orange Chromix Colorant; or Davis Colors; or accepted equivalent. A minimum of 5 lbs. of red tint pigment shall be used per cubic yard of the CDF mix.

Replace Section 79 of the Caltrans Specifications with the following:

SECTION 79 - SANITARY SEWER MAIN REHABILITATION USING CURED-IN-PLACE PIPE METHOD

79-1.01 Section Includes

- A. Rehabilitation of pipe by the cured-in-place pipe (CIPP) method.

79-1.02 System Description

- A. Rehabilitate existing pipes by inserting a resin-impregnated flexible tube through the host pipe, inflating it to the inside diameter of the host pipe using low-head hydrostatic or air pressure, and curing the tube using heated water or steam. Ultraviolet (UV) cure will be considered if the supplier can meet the minimum requirements, design calculations demonstrate product equivalency, and the Contractor can demonstrate sufficient experience with the methods for all aspects as described in this section.
- B. This section provides general guidelines. Nothing contained herein shall relieve the Contractor from completing the CIPP pipe rehabilitation in the most feasible, efficient, highest quality, and safe manner, using required materials to the lines and grades of the sewers to be rehabilitated and to the requirements of this specification.
- C. Contractor shall supply all labor, materials, equipment and apparatus not specifically mentioned herewith or noted on the Plans, but which are incidental and necessary to complete the specified work.

79-1.03 Experience Requirements

A. CIPP Manufacturer:

- 1. Minimum of 40,000 linear feet of CIPP installed in the U.S of at least 24 inches diameter.

B. Installation Contractor:

- 1. A minimum of five (5) years of active experience in the commercial installation of CIPP.
- 2. Minimum of three successfully completed projects totaling at least 20,000 linear feet of CIPP installation with a minimum pipe diameter of 24 inches.
- 3. Each of the referenced lining projects shall have been in service in the owner's system for at least one year.
- 4. Referenced project experience must be specific experience of the Installation Contractor. The prior experience of individuals within the organization that was gained through employment with other companies will not be accepted.

5. Licensed by manufacturer.

C. Field Superintendent:

1. Shall supervise all pipe rehabilitation operations.
2. Cured-in-place pipe supervisory field experience on a minimum of three successfully completed projects.
3. Qualifying experience for three reference projects submitted shall include:
 - a. Length: At least 10,000 linear feet CIPP total length.
 - b. Minimum Pipe Diameter: 24-inches in diameter.
 - c. Sewage Flow Control: At least one year of sewage flow control supervisory field experience.
 - d. Tenure with Installation Contractor: Minimum of one year.
 - e. Maintenance Hole: Experience installing and/or replacing at least 50 maintenance holes 20 feet deep or greater, or provide a separate superintendent for maintenance hole construction operations.

D. Installation Crew:

1. At least three persons from the CIPP installation crew shall have a minimum of two years of CIPP experience, have at least one year of tenure with bidding Contractor, and be on the project site at all times.

E. Lateral Reinstatement Technician:

1. Shall have a minimum of two years of experience manually cutting liner for reinstatement of laterals, or if applicable, two years of experience operating the remote cutting equipment.

F. Boiler Technician:

1. Provide the name and information for the boiler technician who will perform the actual work.
2. Shall be certified and approved as operators by the rehabilitation system manufacturer or an independent testing agency.

G. The final decision to accept or reject the product, manufacturer, and/or installer lies solely with the Owner. The named Manufacturer, Field Superintendent, CIPP Installer, Lateral Cutter, and Boiler Technician must be utilized to perform the work under this project, unless changes are specifically authorized by the Owner.

79-1.04 Submittals

Contractor shall submit the following:

A. Experience:

1. Submit documentation demonstrating compliance with specified experience requirements as detailed in this Section.

B. Product Data:

1. Information on CIPP materials, including lining material, resins, and enhancers.
2. CIPP Manufacturer's recommended storage procedures, resin application, curing process details and cure schedules (including heat up, hold and cool down cycles and temperature control for each diameter and CIPP thickness).
3. Preliner material and manufacturer's recommended installation instructions
4. Continuous temperature sensor and monitoring equipment including manufacturer's recommended instructions for installation and use.
5. Upon approval of the City, the manufacturer's recommendations shall become the basis for acceptance or rejection of actual methods of installation used in the work.

C. Construction Details:

1. Trimming and finishing at maintenance hole walls.
2. Lateral reinstatement methods.
3. Safety systems associated with the proposed heating equipment and boiler management operational safety systems for use with the cure process.
4. Methods, materials, equipment, and procedures employed to seal annular space between the CIPP and the host pipe at maintenance holes and, if required, at all internally reinstated lateral connections.
5. Documentation describing methods, equipment and materials used to cut the liner for lateral reinstatement, seal the connection between the rehabilitated sewer main and the reinstated service lateral to prevent sewage from getting between the liner and the host pipe, and seal leaking lateral connections.

- D. Engineering calculations for the design of the liner thickness. Design calculations shall be checked and approved by a Registered Civil Engineer in the State of California. Liner design calculations shall be supported by field analysis, technical assumptions, requirements of these Specifications and ASTM F1216. Basis of design shall be for fully deteriorated pipe as defined in Appendix XI of ASTM F1216.

- E. During the curing process, keep logs, charts and/or graphs of the liner temperatures at the specified locations to ensure that proper temperatures and cure times have been achieved.
- F. Certifications and Testing:
 - 1. Certification from the CIPP manufacturer that the resin/catalyst and tube material comply with the required application, meets the intended service condition and complies with the physical requirements.
 - 2. Literature and background information on the independent third-party testing laboratory proposed for testing the physical properties of the installed pipe.
 - 3. Manufacturer's certification that lining material is manufactured, sampled, tested and inspected in accordance with ASTM F1216 and F1743. Include the manufacturing date of the lining materials in the certification.
 - 4. Verification of product conformance by third party testing for the chemical resistance and physical testing requirements along with a report of test results.
- G. For each diameter and thickness to be installed on the project, provide volume of resin required per unit length (gal/foot or liters/meter) to fill the volume of air voids in the tube plus the additional allowance for polymerization shrinkage and to meet the finished liner strength requirements.
- H. After each impregnation of a tube for an installation, submit a process record that verifies that the resin impregnation yield matches the required quantity for the diameters and thicknesses.
- I. Written notification of any crew changes. Notification shall be a minimum of one week prior to date of actual change.
- J. Two DVDs individually for each reach of pipe lining and for both pre- and post-CCTV inspections, as specified in Section 72 of these Special Provisions.

79-1.05 Warranty

- A. Contractor shall provide a warranty to be in force and effect for a period of one year from the date of written final acceptance.
- B. The warranty shall require the repair or replacement of the liner due to failure resulting from faulty materials or installation as deemed necessary by the Owner.
- C. All required work, incidental or required, as part of the repair or replacement shall be provided by the Contractor at no additional cost to the Owner.

79-1.06 Products

- A. Materials provided and process variables used in the CIPP installation process are the responsibility of the Contractor.

- B. Materials, installation procedures and the final product shall equal or exceed the requirements of ASTM F1216 and F1743.
- C. The liner shall be fabricated from materials which, when cured, will be suitable for continuous service in sewage environments containing hydrogen sulfide, carbon monoxide, carbon dioxide, methane, dilute (10%) sulfuric acid at an average wastewater temperature of 80°F, dilute (10%) phosphoric acid, petroleum hydrocarbons, gasoline, vegetable oil, tap water (pH 6.5 - 9), up to 1 hour per day exposure to 5 percent sodium hydroxide up to a pH of 11, moisture saturation, and external exposure to soil bacteria and chemical attack which may be due to materials in the surrounding ground or sewage within.

79-1.07 Component Properties

A. Liner Tube:

- 1. One or more layers of flexible needle felt or an equivalent woven and/or non-woven material capable of carrying resin, withstanding installation pressures and curing temperatures, compatible with the resin system used, and having markings to determine elongated length during liner installation.

B. Resin:

1. Compatibility with Application:

- a. Liquid thermosetting resin that is compatible with the CIPP rehabilitation process used and designed for a wastewater environment.

2. Type:

- a. Polyester, vinyl ester, or epoxy meeting the service conditions specified for the tube system and the applicable sections of ASTM F1216 and F1743.

3. Resin Characteristics:

- a. Sufficiently thixotropic to obtain non-draining characteristics when impregnated into the fiber fabric.

C. Catalyst:

- 1. Compatible with the resin and other materials to be utilized in the rehabilitation process.
- 2. Select quantity and type of catalyst based on the curing conditions and recommendations of the resin manufacturer.

D. Continuous Temperature Monitoring and Collection:

1. Equipment shall provide discrete temperature readings at maximum 2-foot intervals for entire length of CIPP segment. Approved systems include Zia Systems and VeriCure.

79-1.08 Finished and Cured Liner Properties

A. Design Parameters

1. The liner material and thickness shall be calculated and designed for use in gravity sanitary sewers and must be in strict conformance with applicable sections of ASTM F1216, F1743 and D5813.

B. The design shall be based on the following pipe conditions, service requirements and physical conditions:

1. Deterioration design parameter: Fully Deteriorated.
2. Assume groundwater is at ground surface.
3. All pipes subject to soil load of 120 lb/cu.ft. and H-20 live load.
4. Ovality of host pipe is 2 percent.
5. Factor of safety (N) is 2.
6. Modulus of passive soil reaction is 500 psi.
7. External Buckling Design – Acceptable third-party testing and verification of the design analysis techniques (ASTM F1216, Section X1.2.2).
8. A minimum service life of 50 years.

C. The liner shall be homogeneous throughout free of cracks, kinking, flattening, holes, foreign materials, blisters, deleterious faults, or other injurious defects. The physical properties of the cured liner shall meet the minimum chemical resistance requirements of ASTM F1216 and F1743 and shall conform to the minimum structural standards listed in the following table:

D. Liner Color:

1. The inner wall shall be white, light blue, light green, light red (vitrified clay color), or natural.
2. Yellow, black, and light purple are not acceptable.

Structural Property	ASTM Standard	Minimum Value	
		Polyester Resin	Vinyl ester or Epoxy Resin
Wall Thickness	D2122	As calculated, but in no case less than 6mm	As calculated, but in no case less than 6mm
Flexural Strength	D790	4,500 psi	5,000 psi
Flexural Mod. Of Elasticity (short term)	D790	400,000 psi	400,000 psi
Flexural Mod. Of Elasticity (long term)	D790	200,000 psi, but not less than 50% of short term flexural modulus of elasticity	150,000 psi, but not less than 50% of short term flexural modulus of elasticity

E. Liner Tube Sizing:

1. Outside diameter of the liner tube being inserted shall be properly sized to allow for expansion so that the CIPP liner can fit tightly against the host pipe.
2. Shall be properly sized to the length to be rehabilitated and be able to stretch to fit irregular pipe sections and negotiate bends and curves with the minimum tube length necessary to effectively span the designated run between maintenance holes, unless otherwise specified.
3. Contractor shall verify the lengths of the pipelines to be rehabilitated in the field prior to impregnation of the tube with resin, to ensure that the tube will have sufficient length to extend the entire length of the run.
4. Contractor shall measure the inside diameter of the existing pipelines in the field so that the liner can be installed in a tight-fitted condition.

79-1.09 Liner Pipe Storage and Handling

- A. Properly store and handle liner to prevent damage in accordance with the manufacturer's recommendations and as approved by the Engineer.
- B. Damage includes, but is not limited to, gouging, abrasion, flattening, cutting, puncturing, or ultra-violet (UV) degradation.
- C. Promptly remove damaged materials and pipe rejected by the Engineer from the project site at no additional cost to Owner and disposed of in accordance with current applicable regulations.

79-1.10 Preparatory Work

- A. Provide temporary sewage flow control of the sanitary mains in accordance with Section 74 of these Special Provisions.
- B. Thoroughly clean the host pipe in accordance with Section 72 of these Special Provisions.
- C. Diameter and Length Verification: Verify internal diameter and length of existing sewer pipe prior to sizing and ordering liner.

D. Preliminary CCTV Inspection of Sewer Lines:

1. Perform internal CCTV inspection after cleaning of the sewer lines to document the condition of the host pipe, identify and locate any active service laterals, and verify the lines were cleaned in accordance with Section 72 of these Special Provisions and the liner manufacturer's requirements.

E. Spot Repairs:

1. Determine if spot repairs are required prior to proper installation of liner as required by lining manufacturer.
2. It shall be the Contractor's responsibility to remove all debris and to repair protruding laterals at no additional cost to the Owner.
3. Written notification shall be provided to the City a minimum of three days prior to all repairs that require excavation, such as collapsed pipe.
4. The Engineer will provide written approval prior to work that requires excavation.

79-1.11 Final Cleaning and Inspections

- A. The existing host pipe shall be cleaned again just prior to insertion of the liner.
- B. A maximum of one hour may elapse between this final cleaning pass and the insertion of the liner.
- C. After the cleaning is complete, a final camera pass shall be made to verify the cleanliness of the line.
- D. Bypass pumping: in accordance with Section 74 of these Special Provisions and shall exclude any sewage or other flow from entering the line during the inspection.
- E. Pipe invert shall be cleared of any standing water and continuously visible during the inspection.
- F. Prior to insertion of the liner, the sewer main must be accepted as 'clean' as defined in 72 of these Special Provisions by the Inspector.
- G. If only one cleaning is conducted prior to CCTV inspection, this inspection shall document the condition of the host pipe, identify and locate any active service laterals, and verify the lines were cleaned in accordance with Section 72 of these Special Provisions and the liner manufacturer's requirements. If the preliminary inspection was already completed, this final inspection does not need to be recorded but the Inspector must be present in the TV truck during the inspection to verify the cleanliness of the line.

79-1.12 Liner Installation

- A. Continuous temperature monitoring sensors shall be placed between the host pipe and the liner in the bottom of the host pipe (invert) throughout the reach to record the heating and cooling that takes place on the outside of the liner during processing. Contractor shall submit sensor locations to Engineer for approval prior to construction.
- B. Install the liner tube through the existing maintenance holes in accordance with the manufacturer's recommendations and procedures. Protect maintenance holes to withstand forces generated by equipment, water, or air pressures used while installing the liner tube.
- C. Transport the impregnated liner tube to the site and store in such a manner that it will not be damaged, exposed to heat and/or direct sunlight, or result in any public safety hazard. Materials shall be subject to inspection and review prior to installation. The impregnated liner tube must be installed prior to exceeding the resin pot life.
- D. The installed pipe liner shall be in strict accordance with the liner manufacturer's instructions and recommendations. The liner shall be inserted through an existing maintenance hole or other access approved by the City, by means of the installation process and the application of hydrostatic head, compressed air, or other means sufficient to fully expand and extend the liner to the next designated maintenance hole or termination point. The liner shall be installed at a rate not to exceed that needed to remove water from the sewer during installation process.
- E. Contractor may obtain water from California Water Service Company as described in Section 5 of these Special Provisions.

79-1.13 Curing

- A. Heating Source and Distribution Equipment:
 - 1. After liner placement is completed.
 - 2. Provide suitable heat source and distribution equipment to distribute or recirculate hot water or steam throughout the pipe.
 - 3. The equipment shall be capable of delivering hot water or other heating methods throughout the section to uniformly raise the temperature above the temperature required to cure the resin.
 - 4. This temperature shall be determined by the manufacturer based upon the resin/catalyst system employed.
 - 5. The curing of the CIPP must take into account the existing pipe material, the resin system, and ground conditions (temperature, moisture level, and thermal conductivity of the soil).

6. The heat source piping shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing water, steam, or air supply.
7. Continuous temperature monitoring sensors shall be placed along the invert for the full segment. Contractor shall submit sensor locations to Engineer for approval prior to construction.
8. Another such gauge shall be placed between the impregnated tube and the pipe invert at a minimum of five feet from the termination to determine the temperature during cure.
9. Water temperature during the cure period shall meet the requirements of the resin manufacturer as measured at the heat source inflow and outflow return lines.
10. Provide standby equipment to maintain supply of the heat source.

B. Cure Period

1. Shall be of duration recommended by the resin manufacturer during which time the recirculation of the water to maintain the temperature continuously takes place.
2. The initiation temperature for cure shall be as recommended by the resin manufacturer.
3. Temperature monitoring devices shall be installed at all exposed portions of the pipe (beginning and end of run) and continuously along the invert where shown on the Plans for each inversion or run of installed liner pipe between the host pipe and the CIPP liner.

79-1.14 Cool Down

- A. After the tube is cured, allow a cool-down period until the CIPP temperature drops below 100 degrees Fahrenheit prior to opening the downstream plug and returning normal flow back into the system.
- B. The CIPP shall be cooled to a temperature below 100 degrees Fahrenheit, or to a temperature as required by the Owner or as specified on the discharge permit before relieving the head in the inversion pipe.
- C. Cool-down may be accomplished by the introduction of cool water into the CIPP.
- D. Care shall be taken in the release of the static head so that a vacuum will not develop that could damage the newly installed liner.

79-1.15 Sampling and Laboratory Testing

- A. The physical properties of the installed CIPP:

1. Shall be verified through field sampling and laboratory testing.
 2. Materials testing shall be performed at the Contractor's expense and by an independent third-party laboratory recommended by the manufacturer and pre-approved by the Owner.
 3. Testing shall be in accordance with applicable ASTM test methods to confirm compliance with the requirements for minimum wall thickness, flexural strength, and short-term flexural modulus of elasticity specified in this Section.
- B. Testing short term properties of the CIPP liner material from the actual installed liner:
1. The initial tangent flexural modulus of elasticity and flexural stress should be measured for gravity pipe applications in accordance with ASTM Test Methods D 790 and should meet the requirements listed in the Table included in Section 79-1.08. Test results shall be certified.
 2. Testing shall be conducted at the following locations:
 - a. Tests shall be conducted at a minimum of one location per pipe size for each alignment.
 - b. Per each 1,000 linear feet of installed liner per each shot/inversion (there is only one diameter in each shot).
 - c. At a downstream maintenance hole.
 3. Sample Collection shall be conducted in accordance with ASTM F 1216:
 - a. Cut from a section of cured CIPP that has been inverted through a like diameter pipe which has been held in place by a suitable heat sink, such as sandbags.
 - b. The sample may be fabricated from material taken from the tube and the resin system used and cured in a clamped mold placed in the downtube.
- C. If required by the City, remove a sample from each pipe to be used to check the liner thickness, by core drilling 2-inch diameter test plugs at locations specified by the Engineer.
- D. The laboratory results shall identify the test sample location as referenced to the nearest maintenance hole and station. Final payment for the project shall be withheld pending receipt and approval of the test results. If properties tested do not meet minimum requirements, the CIPP shall be removed and replaced at no additional cost to the Owner.

79-1.16 Finished Pipe Liner

A. Finished Liner:

1. Shall be inner polyethylene layer and an outer polyester felt layer impregnated with a thermosetting resin to fit tightly against the existing inside pipe wall.
2. Shall be fabricated from materials that, when cured, shall be chemically resistant to withstand internal exposure to sewage gases containing quantities of hydrogen sulfide, carbon monoxide, methane, petroleum hydrocarbons, moisture saturation, and dilute sulfuric acid.
3. Shall be continuous over the length of pipe reconstructed.
4. Shall be free from dry spots, delamination, and lifts, remove and replace the CIPP if these conditions are present.
5. The layers of the cured CIPP shall be uniformly bonded. It shall not be possible to separate any two layers with a probe or point of a knife blade so that the layers separate cleanly or the probe or knife blade moves freely between the layers. If separation of the layers occurs during testing of field samples, new samples will be cut from the work. Any reoccurrence may cause rejection of the work.

B. Interior Surface:

1. Smooth interior surface that is considered wrinkle free.
2. No circumferential wrinkles, wrinkles greater than one-quarter inch in height, or wrinkles pointing against flow direction shall be allowed.
3. If wrinkles are detected in the installed liner, the Contractor shall provide photographs and dimensions of the wrinkle including height and direction.
4. The City will determine on a case by case basis if replacement or repair of CIPP liner is required.

C. Liner Terminations at Maintenance Holes:

1. The beginning and end of the CIPP shall be cut flush at the inlet and outlet points in the maintenance hole.
2. The ends shall be permanently sealed to the rehabilitated pipeline to prevent any infiltration between the CIPP and the host pipe.
3. Ends shall be sealed with a resin mixture that is recommended by the liner manufacturer.

D. Sealing:

1. Shall be compatible with the liner/resin system, provide a watertight seal and is approved by the Engineer prior to start of construction.
2. Hydraulic cements and quick-set cement products are not acceptable.
3. Acceptable materials shall be an approved epoxy type product that will bond, not crack, dry up, slough off, or shrink in time, and provide a good transition in the maintenance holes.
4. Sealing shall be performed at no additional cost to the Owner.

E. Defective Liner Assessment and Repair Guidelines:

1. Liners that do not meet the quality specified above shall be assessed by the City based on the guidelines shown in Table below:
2. Engineer's assessment and remedy shall be final. Repairs shall be performed by the Contractor at no additional cost.
3. Repairs shall meet the original specifications for finished liner.

Defect	Tolerance	Remedy
Wrinkles, Fins, or Folds along top of pipe (from 9 to 3 clock position)	Repair if exceeding 5% of inside diameter of liner	Trim to within 1/2" of liner wall
Wrinkles, Fins, or Folds along bottom of pipe (from 3 to 9 clock position)	Repair if exceeding 3% of inside diameter of liner	Trim to within 1/2" of liner wall
Bubbles, Blisters, Dimples, Lumps, Lifts, or Foreign Inclusions along top of pipe (from 9 to 3 clock position). Measurements shall be based on average circular diameter of liner as specified in ASTM D2122.	Repair if exceeding 5% of inside diameter of liner	Remove and patch with epoxy
Bubbles, Blisters, Dimples, Lumps, Lifts, or Foreign Inclusions along bottom of pipe (from 3 to 9 clock position). Measurements shall be based on average circular diameter of liner as specified in ASTM D2122.	Repair if exceeding 3% of inside diameter of liner	Remove and patch with epoxy
Cracked, Delaminated, Dry Spots, Burst, Collapsed, or Unraveled	Repair all	Remove and patch with epoxy

79-1.17 Reinstatement of Service Laterals

- A. Contractor shall, using robotic cutting equipment or manned entry, reinstate all laterals that are connected directly to the rehabilitated sewer main after the rehabilitation of each sewer is completed.
- B. Reinstatement using open-cut excavation shall not be allowed.
- C. Reinstatement of laterals shall be as recommended by the liner manufacturer.

- D. The opening in the liner for the lateral connection shall be one hundred percent and of the same configuration as the existing opening.
- E. All cut edges at the reinstated laterals shall be smooth and free of jagged edges that can hang up solids and shall not be cut to expose host pipe.
- F. Any over-cut lateral openings that exposes the host pipe shall be sealed, as recommended by the liner manufacturer and approved by the Engineer, as deemed necessary by the Engineer.
- G. The connection between the lateral and the rehabilitated sewer main shall not restrict flow from the lateral into the rehabilitated lateral.
- H. After laterals are cut with a router bit, finish brush laterals using a wire wheel mounted on the cutter.
- I. Any lateral reinstatement that has jagged edges or impedes the flow from the lateral shall be considered defective and shall be re-cut until the Engineer approves.
- J. Reinstatement of the laterals shall be performed in the presence of the Engineer or his/her representative.
- K. Reinstatement of laterals shall be performed immediately (within 4 hours) after approval of lining by Engineer.

79-1.18 Quality Control

- A. The Contractor shall clean and perform a closed-circuit television inspection after installation of the CIPP liner.
- B. For sewer mains 36-inch diameter or less, prior to reconnection of all connected service laterals perform an exfiltration test on the liner.
- C. Exfiltration test:
 - 1. Plug the upstream end using appropriately sized 90-degree elbow fittings, plastic standpipe and flexible watertight couplings.
 - 2. The standpipe shall be temporarily secured within the maintenance hole and shall extend up to or above the roadway elevation.
 - 3. After the CIPP has cooled down to ambient temperature, and prior to opening lateral connections, fill the standpipe and liner with water so that a head of 10 feet or 2 feet above ground surface, whichever is greater, is achieved at the lowest point in the segment being tested.
 - 4. The filled carrier pipe shall be allowed to stand for a 1-hour test period after air has been expelled from pipe.

5. The allowable water exfiltration for any length of pipe between termination points shall not exceed 50 U.S. gallons per inch of internal pipe diameter per mile per day.
6. If the lined pipe segment does not meet the requirements of the exfiltration test, repair or replace and retest the lined pipe segment so that it meets the requirements at no additional cost to the Owner.

79-1.19 Rebuild Maintenance Hole Sections Removed for Liner Installation

- A. Where maintenance hole frame, cover, and cone are removed for installation of CIPP, contractor shall reconstruct with all new materials at no additional cost to the Owner.

79-1.20 Payment

Full compensation for CIPP rehabilitation of sanitary sewer mains shall be considered as included in the price paid for "Cured-in-Place Pipe Rehabilitation of 36" Concrete Sewer", and no additional compensation will be allowed therefore.

DIVISION XI MATERIALS

SECTION 90 – CONCRETE

Attention is directed to the Section 90, "Concrete" of the Standard Specifications and these Special Provisions.

90-1.01 Minor Concrete

Section 90-2, "Minor Concrete", of the Caltrans Specifications is amended by adding the following:

Mineral admixture will be required in the manufacture of concrete containing aggregate that is determined to be "deleterious" or "potentially deleterious" when tested in accordance with ASTM Designation: C 289. The use of mineral admixture in such concrete shall conform to the requirements in Section 90-1.02 of the Caltrans Specifications, "Materials", except the use of Class C mineral admixture will not be permitted.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in placing minor concrete shall be including in the various item of work involving minor concrete work.

APPENDIX A – BNSF RAILROAD REQUIREMENTS AND STANDARDS

The Contractor is provided the following guidance for compliance with BNSF standards for work and excavation near SSMH-34P074 and performing cleaning and lining under and in the vicinity of the tracks north of SSMH-34P074. The Contractor is hereby notified that all reviews by BNSF, including review of resubmittals, require 30 calendar days. Should SSMH-34P074 be removed and replaced, the Contractor shall include time for review of two submittals of its shoring plan in its schedule so it may begin activities as soon as Notice to Proceed is issued. The Contractor shall also make arrangements through the City's Engineer for BNSF personnel to be on site for operations; BNSF will require a flagman during excavation for removal and replacement of SSMH-34P074 and during lining operations under the railroad tracks. The following documents are included in this Appendix:

- Figure 1: General Shoring Requirements
- Figure 2: Live Load Pressure Due to Cooper E80
- Utility Accommodation Policy

Any cost associated with the work in the BNSF right-of-way shall be included in the various bid items of work and no additional compensation therefor will be allowed.