

Element 5:

DESIGN & PERFORMANCE PROVISIONS

This section of the SSMP discusses the District's sewer system design and performance standards. This section fulfills the Design and Performance Provisions SSMP requirement for the SWRCB.

5.1 Regulatory Requirements for Design & Performance Provisions

The requirements for the Design and Performance Provision element of the SSMP are summarized below.

SWRCB Requirement

The District must have design and construction standards and specifications for the installation of new sewer systems, lift stations and other appurtenances; and for the rehabilitation and repair of existing sewer systems. The District must also have procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

5.2 Element 5 Attachments

Supporting information for Element 5 is included in Attachment E-5. This attachment includes the following documents:

Attachment E5-A: Table of Contents of the District's Standards Manual for Water and Sewer Facilities along with the Table of Contents (subsections) for Sewer Related Facilities and Sewer Standard Drawings (June, 2011).

Attachment E5-B: Proposed Sewer CIPP Liner Specifications

Attachment E5-C: Preconstruction Conference and Notice To Proceed Documentation

5.3 Design & Construction Standards Discussion

The District is in the process of updating its Water and Sewer Facilities Standards Manual. The update is currently in draft format and is expected to be completed by this summer 2014. The previous update to the Standards Manual was in June, 2011.

Public sewer mains within the District are designed in accordance with Section IV of the District's Standards Manual. This section includes sewer system design criteria such as location of mains, flow rate computations, pipe sizing, manholes, pipe velocities, slopes, bedding, backflow valves, sewage injectors, lateral connections to mains, and industrial waste provisions.

Section V (subsections A, D and E) of the District's Standards Manual addresses sanitary sewer installation. These subsections include general specifications as well as specifications for pipes, manholes, cleanouts, sewer lateral materials and construction methods. Additionally, items such

as sewer line testing (exfiltration or air), acceptance, and final inspection by CCTV are included. These requirements should provide reasonable assurance that sewers constructed to these specifications will perform adequately with minimal infiltration or maintenance problems and will maintain their structural integrity for the duration of their intended useful lives. The following reference specifications are used to cover other items that may not be included in the District's Standards Manual:

1. State of California Department of Transportation, Standard Specifications (latest edition) [i.e. "Caltrans Specifications"]
2. "Standard Specifications for Public Works Construction" (latest edition) [i.e. "Green Book" Specifications]

Many of the specifications included in Sections IV and V of the District's Standards Manual would also apply to sewer pipeline rehabilitation and repair projects. Additional specifications related to sewer rehabilitation and repair will be added as needed when such projects are implemented by the District, or will be included in project-specific specifications. For example the District is currently working on a cured in place pipe (CIPP) project that will rehabilitate an existing ductile iron pipe gravity sewerline. The specifications developed for this project and future related projects are attached in Attachment E5-B.

Prior to the start of Construction, the District requires a Preconstruction Conference. As part of this conference the District provides training and information to contractors regarding the prevention and response requirements regarding SSO's. Documentation of the Preconstruction Conference may be found in Attachment E5-C.

The District currently operates ten (10) active lift stations and three (3) standby lift stations. Lift station plans and specifications are not included in the District's Standards Manual because they are designed to meet the specific circumstances of each location. Design standards and construction specifications for lift stations are developed as needed on a project-specific basis should any new lift stations or lift station rehabilitation projects be required.

Attachment E5-A:

Table of Contents of the District's
Standards Manuel for Water and Sewer
Facilities along with the Table of Contents
(subsections) for Sewer Related Facilities
and Sewer Standard Drawings (June, 2011)



STANDARDS MANUAL

For

WATER AND SEWER FACILITIES

JUNE, 2011

A L B E R T A .

WEBB

A S S O C I A T E S

JURUPA COMMUNITY SERVICES DISTRICT STANDARDS MANUAL

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Each section is separated by dividers with a detailed table of contents under each section. Lettered divider tabs are provided under Sections V, VI & VII for sub-sections as indicated in Table of Contents for each of these sections.

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SECTION A

GENERAL SPECIFICATIONS

BASIC SPECIFICATION

SECTION A

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Attachment E5-B:

Proposed Sewer CIPP Liner Specifications

SECTION – 1 PRODUCTS AND MATERIALS

1. SITE INSPECTION

Contractors may obtain assistance in inspecting the project site (s) by contacting the Project Engineer. It shall be the Contractor's responsibility to make all examinations and field studies necessary for his own determination of the character of conditions that will be encountered in the work and to fully determine all related cost factors. Several of the locations may lie within easements across private property. It will be the Contractor's responsibility to assess and evaluate his requirements for points of access and make arrangements with the property owners for entry into the property. The District will assist the Contractor to the extent of the District's easement rights for ingress and egress. The Contractor shall be responsible for all notifications to private property owners concerning the schedule of work and securing permission for entry.

2. FINAL CLEANUP

After completion of all work on the project, and before making application for acceptance of the work, the Contractor shall clean the site areas affected by the Contractor's operations.

3. BY-PASSING SEWAGE

When required for acceptable completion of the rehabilitation process, the Contractor shall provide for sewage flow bypass around the section or sections of pipe designated for the rehabilitation process. The bypass shall be made by plugging the line at an existing upstream manhole and pumping the flow into a downstream manhole or adjacent system as approved by the Engineer. The pump and bypass lines shall be of adequate capacity and size to handle the flow. The water levels at the upstream bypass manhole and operation of the bypass pump shall be monitored continuously during the bypass operation to preclude sewer overflows into adjoining properties. The rehabilitation process shall not begin until the Contractor has installed a sewage bypass system and all pumping facilities have been installed and tested under full operating conditions including bypass of the mainline and side sewer flows. The Contractor shall submit a detailed bypass pumping plan and design to handle peak flow as required by the District.

The Contractor shall be responsible for any and all damages that may be sustained by public and private property caused by spills, sewage overflows due to the sewage bypassing operations and installation/work activities.

4. SEWER PIPELINE REHABILITATION

The CIPP liner used for sewer rehabilitation shall conform to Section 500 of the SSPWC ("Green Book"), 2012 Edition and its supplements except as modified herein.

The Contractor shall install seamless, jointless, and continuous structurally sound tight-fitting liner able to withstand all imposed static and dynamic loads on a long term basis for the rehabilitation of existing sewer lines in accordance with Section 500-1.4 of the SSPWC, and the additions contained in this specification.

5. CLEANING OF SEWER LINES

Cleaning of sewer lines shall be performed prior to closed circuit television (CCTV) inspection and pipeline rehabilitation. The Contractor shall remove all internal debris from the pipe that interfere with the installation and the final product delivery of the CIPP as required by these specifications. The removal of debris includes, but is not limited to, rocks, sand, dirt, sludge, grease, and roots from the host pipeline as required for the sewer rehabilitation process. The method of cleaning shall be submitted to the Engineer and requires approval prior to commencement of work.

Prior to any cleaning, debris removal or root-cutting activity, the Contractor shall install a 'trap' at the downstream manhole to preclude plugging of the sewer mains downstream of the sections being cleaned. All rocks, sand dirt, root cutting and other debris shall be removed from the 'downstream' manhole. After debris removal, the trap shall then be removed from the downstream manhole and unimpeded flow restored through the system. Moving material from manhole section to manhole section will be prohibited. All solid debris and materials shall be removed from the system and disposed of properly by the Contractor.

Precaution shall be taken, by the Contractor when using cleaning equipment to avoid damage to the existing pipe. The repair of any damage to the existing pipe caused by cleaning equipment shall be the responsibility of the Contractor. The District will designate a site for disposal of all debris removed, from the District's system, as a direct result of the cleaning activities. The contractor shall dispose of all debris at no charge. Should any dumping fees apply, the Contractor shall be compensated at the respective bid unit price in the proposal for cleaning of sewer lines.

500-1.1.4 Cleaning and Preliminary Inspection

Add the following paragraphs at the end of Subsection 500-1.1.4 of the *Green Book*:

The Contractor shall assume that the pipes require normal cleaning (2 to 3 passes of a jet cleaner) unless it is noted in the Special Requirements. The method of cleaning shall be submitted to the Engineer and requires approval prior to commencement of work.

6. CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION

The CCTV system shall be designed and constructed for sewer inspection and shall be approved by the Engineer prior to the work being performed. Only color camera systems with rotating or pan and tilt lenses for lateral inspections will be accepted.

CCTV inspection shall be performed prior to pipeline rehabilitation to document the condition of the host pipeline and to determine the adequacy of debris removal. The interior of the pipe shall be carefully inspected to determine the location of any holes and/or voids or conditions that may prevent proper installation of the rehabilitation method. The pre-lining video inspection shall document each lateral location; the camera shall stop at each lateral and the camera head rotated to look at the lateral to identify if it is active, plugged or has roots that could interfere with the complete lateral reinstatement.

The Contractor shall provide a visual record (video) in DVD format of the post-cleaning/pre-installation inspection and a suitable log documenting the existing host pipe conditions prior to the liner installation. The Contractor is required to provide pre-installation inspection log and visual records (video) to the District. The log and the visual records shall become the property of the District. Alternative data storage medium that are 'readable' using readily available computer graphics or image-display programs are also acceptable, **subject to prior approval by the District.**

The Contractor is required to perform post-installation CCTV inspection of the sewer line after lining to document conditions of the rehabilitation method and to serve as a condition for final acceptance of his work. The post-installation inspection shall start at the manhole (beginning of sewer segment) and end at the next manhole (or end of sewer segment). During post-installation inspection, the camera shall stop at each lateral location, the camera head shall be rotated to look up the lateral and verify that the resin has not run up the lateral and combined with any roots to plug up the lateral. Any such obstruction will need to be cleared by the Contractor.

The pre-installation and post-installation video inspection will be performed while the flows are bypassed. The sewer line shall be dry except for flows from the laterals in the section being video-inspected. The Contractor shall provide to the District, visual records of the pre-installation and post-installation inspections and a suitable log. The pre-installation and post-installation CCTV inspection video shall be unedited. The pre-installation visual records must be accompanied by the post-installation visual records for each sewer segment (i.e. sequential order pre and then post, on the same DVD). The permanent visual records shall be in DVD digital format, compatible with computer-based video programs and acceptable to the District.

500-1.1.7 Miscellaneous

Add the following paragraphs at the end of Subsection 500-1.1.7 a Service Connections of the Green Book:

Protruding laterals – The Contractor shall assume that there are no protruding laterals unless noted in the Special Provisions, CCTV logs or videotapes made available to the Contractor before the bid opening. If there are protruding laterals, the Contractor shall cut-off interfering identified protruding laterals as close to flush with the pipe as practicable, prior to insertion of the liner.

All costs for any required for cutting any protruding laterals shall be paid for as under additive work as a change order at unit costs to be negotiated for such additive work.

7. PHYSICAL PROPERTY REQUIREMENTS

The rehabilitation methods shall meet the following minimum physical property requirements:

The CIPP shall be designated per ASTM standards and assume no bonding to the original pipe wall. Cured-in-place pipe methods shall conform to ASTM F1216 or F1743, and meet physical property requirements as detailed in ASTM F1216, per Table 500-1.4.2 (A) in the SSPWC, CIPP Initial Structural Properties. In addition, CIPP methods shall meet a minimum long-term (50 years) flexural modulus of 125,000 psi for design calculations, with test data to support the long-term flexural modulus of materials proposed included with the bid as outlined in these specifications. The physical property values shall be as verified by the third Party independent laboratory testing submittals, under the Mandatory Pre-qualification requirement, to include long-term flexural modulus testing per ASTM D2990.

All test data to support the physical properties of the products used for the pipe liner shall be submitted as part of the pre-qualification process.

8. PERFORMANCE TESTING

The Contractor shall have an independent testing laboratory analyze the finished liner. Field samples shall be prepared and tested for the following physical properties:

- a. Thickness – the liner thickness, when determined in accordance with ASTM D5813-95 shall meet or exceed the design thickness for the specific installation.

CURED IN PLACE PIPE LINER (CIPP)

- b. Flexural Strength – when tested in accordance with ASTM D790 shall meet or exceed the flexural strength used in the liner design or the minimum prescribed in ASTM F1216 whichever is higher.
- c. Modulus Strength – when tested in accordance with ASTM D790 shall meet or exceed the flexural modulus used in the liner design or the minimum prescribed in ASTM F1216 whichever is higher.

The tests shall be performed at an independent, third party laboratory experienced with CIPP testing, which has been approved by the Engineer. Third party laboratory/testing facility is defined as ASTM accredited materials testing firm with no financial or directorial link to liner manufacturer or Contractor.

- 1. Contractor shall be responsible for all shipping and handling costs associated with sending samples to be tested to the independent testing laboratory. The cost of testing shall be paid by the Contractor at the unit bid price noted in the bid schedule.
- 2. One (1) sample shall be taken from the first segment of CIPP liner material installed.
- 3. For each 3,000 LF of installation length, a minimum one field sample shall be prepared and tested.
- 4. The Contractor shall determine sampling location and procedures to ensure representative samples are obtained from the finished liner, subject to approval by the Engineer. The Engineer must be notified 48 hours prior to field sample collection. The Engineer or other District representative must be on-site when field sample is collected. The District reserves the right to make alterations, deviations, additions to or omissions from the performance testing.
- 5. The Contractor shall furnish removable sizing sleeves to collect liner samples which accurately replicate the host pipe diameter.
- 6. Test results shall be sent directly to the Engineer from the testing laboratory within fourteen (14) days or less of the field sample date. Contractor is responsible for cost associated with laboratory sending results directly to the Engineer.

CURED IN PLACE PIPE LINER (CIPP)

If the results of testing do not meet the latest published specifications of the manufacturer, or the physical property values listed on the Bidders Information and Qualification Sheet, the District will choose one of the following options for remediation:

1. Payment for that length will be reduced by an equal percentage of the 50-year useful life that has not been achieved, as shown by the test results.
2. The District shall require the Contractor to replace the material with the material which was stated on the pre-qualification submittals, and retest to verify compliance.
3. The District shall reserve the right to require the Contractor to dig up the sewer line and replace it with new PVC sewer line.

The District shall reserve the right to require the Contractor to meet their stated qualifications using the method that best serves the District.

9. INSTALLATION REQUIREMENTS

Cured-in-place liner pipe shall be installed per ASTM F1216 or F1743 of the polyester resin impregnated felt tube into the existing sewer pipe under hydrostatic water or air pressure. Pull-in CIPP methods shall be accepted provided methods meet the pre-qualification requirements outlined in the specifications. Curing shall be as outlined in the specifications. Curing shall be accomplished by circulating hot water or steam. When cured, the CIPP shall extend over the length of the inversion in a continuous tight-fitting water tight lining. CIPP methods shall conform to ASTM F1216 or F1743 and installation procedures per Standard Specifications for Public Works Construction (Green Book Section 500-1 Pipeline Rehabilitation), unless otherwise pre-approved by the Engineer.

10. SERVICE LATERAL RECONNECTIONS

After the liner pipe has been installed, the Contractor shall re-establish all existing services and other connections unless otherwise instructed by the Engineer. This shall be done without excavation and from the interior of the sewer pipe by means of a CCTV with rotating head or lens, and a remotely operated cutting device.

Due to past re-connection problems with solid cookie (round) cuts at the service lateral connections; all service re-establishments shall adhere to the following:

- a. A remote cutting device shall re-establish each service connection by cutting strips. Solid cookie cuts are prohibited for re-establishing active service connections.
- b. The opening shall not be more than 100% of the service connection opening.
- c. The edges of the service connection opening shall not have any pipe or liner fragments, which may obstruct flow or snag debris.

If service connections are over-cut service; openings greater than 100% of the service connection opening, the Contractor shall install a CIPP type repair sufficiently sized to completely cover the over-cut service connection. No additional compensation will be allowed for over-cut service connections.

Services shall be re-opened to 100% capacity, with the cuts being smooth and conforming to the diameter of the lateral pipe. It is the Contractor's responsibility to make sure that all active connections are re-established.

The Contractor shall pay the cost of excavation and installation of new "saddle" lateral connections for any service connections improperly re-opened, or failure to re-open any service connections.

No sewer lateral shall be out of service for more than 24 hours. If the Contractor fails to meet this deadline, he will be subject to a \$1,000 penalty for each lateral not reconnected and any damages claimed by the resident/business owner.

11. DROP MANHOLE CONNECTIONS

After the liner pipe has been installed, the Contractor shall re-establish all existing drop manhole connections. Due to past re-connect problems with drop manholes, the work includes re-connections in drop manholes from previously lined areas.

12. END SEALS

After installation the ends of the liner shall be cut-off in the maintenance manhole. The cuts shall be smooth and parallel with the walls of the manhole. The finished liner shall not protrude into the manhole by more than 2-inches.

If the manhole trough has been lined through, the top half of the liner may be cut off flush and even with the top of the shelf, leaving the channel lined. When required by the Engineer, the beginning and end of the rehabilitation method shall be sealed to the existing pipeline or manhole. The seal process shall be compatible with the rehabilitation process.

13. LOCATIONS

See Appendix “A” for CIPP Liner Installation locations

See Appendix “A1” for CCTV Inspection for Future Rehabilitation locations

See Appendix “A2” for approximate location of laterals

SECTION – 2 DEFINITION OF BID ITEMS

The unit prices and lump sum amounts to be paid for the Items listed in the Proposal shall include full compensation for furnishing all labor, materials, tools, time, equipment and incidentals necessary to the completed work and for performing all work contemplated and embraced under the Contract, in accordance with the Plans and Specifications. This shall include the Contractor’s costs involved with bonding, insurance, worker’s compensation, overhead, financing, obtaining required permits and permit fees, mobilization, traffic control, public convenience and safety, protective barricading, sanitary facilities, storage of equipment and materials, security against theft and vandalism, project site maintenance, dust and runoff control, clean-up and all other items incidental to the work.

Payment for Unit Price work shall be made for the actual quantities of Contract Items removed, constructed, or disposed of in accordance with the Plans and these Specifications. Measurement of Unit Price work shall be as specified in Section 9-1, “Measurement of Quantities for Unit Price Work,” of the SSPWC. Payment for Lump Sum work shall be paid for at the price indicated in the Bid, in accordance with Section 9-2, “Lump Sum Work”, of the SSPWC.

BASIC BID:

Each respective bid item and bid schedule as shown on the proposal form shall comply with all respective sections of the 2009 Edition of the Standard Specifications for Public Works Construction (Green Book), its supplements, and any other publications as specified, except as modified herein. If there is a conflict between these inclusions and the Standard Specifications, these inclusions shall have precedence.

1. Traffic Control, Public Convenience & Safety

This Item shall include all work, materials, and equipment necessary to comply with the requirements of Subsection 7-10, “Public Convenience and Safety,” of the Standard Specifications for Public Works Construction (SSPWC), the Caltrans’ Manual of Traffic Controls in Construction and Maintenance zones (latest edition), the standards contained in the “Work Area Traffic Control Handbook” (WATCH) published by Building News, Inc.; (latest edition); Section “Traffic Control,” of these Special Provisions; and if provided, the Traffic Control Plan, except as modified and supplemented herein. In the case of a conflict, the highest standard shall prevail.

No full street closure allowed, all trucks for the construction shall follow the truck routes to and from the project site.

The Contractor shall conduct his operations so as to offer the least possible obstruction and inconvenience to the public, and shall have under construction, no greater length or amount of work than can be prosecuted properly with due regard to the rights of the public. The Contractor shall furnish and maintain all construction signs, channelizing devices, barricades, temporary traffic striping and pavement markings, lighting devices, etc., to safely guide the traffic through the project limits, as described herein, and as directed by the Engineer. Flashing Arrow Signs (sequential arrow boards) shall be utilized for all closures of through travel lanes on streets affected by the construction, as designated by the Engineer.

During construction, the Contractor shall provide access to all businesses and residents at all times, except during the reconstruction of the driveway, and during placement of the asphalt surfacing when it becomes necessary to block access to driveways for a short period of time. Contractor shall facilitate work in front of driveways so that they may be reopened for use as soon as the pavement is ready to carry traffic load.

Unless otherwise approved by the Engineer, concrete driveways shall be constructed one-half at a time, or at the option of the Contractor and upon approval by the Engineer, "high early" strength concrete may be used, so that 3 hours after its pour, the new driveway, with steel plates covering, shall be capable to withstand the imposed load without damage. The Contractor shall notify the affected properly owners/occupants in advance of such driveway closure and provide the District with evidence of such notification.

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

Pedestrians – A minimum walkway of 48 inches in width must be maintained at all times for safe pedestrian passage through all parkway work areas. Crosswalks shall remain unobstructed at all times. Obstructions within the walkway areas shall be illuminated during hours of darkness and marked with Type II barricades with flashing warning lights.

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

Contractor shall keep the areas adjacent to the project site clear of any objects that may be hazardous to pedestrians and motorists. Provisions to reroute pedestrians, including disabled, around the work area must be clearly delineated and maintained. If the contractor's operations require the closure of a walkway, then another walkway shall be provided nearby, off the

traveled roadway, along the general path of travel. **All temporary walkways shall be ADA compliant.**

Payment for this item shall be made at the Contract lump sum price, and shall include handing out of construction notices to residents and businesses as described under Section 9.0 of these Special Provisions.

The above payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and installing the signs as specified herein. Progress payments shall be pro-rated in proportion to the total value of work completed to date as a function of the total awarded contract amount.

2. Mobilization and Demobilization

Mobilization and demobilization shall include, contract execution (including insurance certificates and bonds), all submittals (materials, installation plan, traffic plan, emergency plan, and others), public notifications, permits, and mobilization and demobilization of labor, equipment and materials to the project site.

The District will pay 50% of this Bid Item at 1st payment, 25% at 50% complete and 25% at final payment. Each payment will be less the required 5% retention. Contractor shall bid a lump sum price not to exceed 5% of the total amount bid.

3. Storm Water Pollution Prevention/Erosion Control

This item shall include all work involved in compliance with the requirements of Section 32.0, "NPDES Requirements," including Subsections 32.1 thru 32.3 of the General Requirements of these Special Provisions.

Payment for this bid item shall be made at the contract lump sum price bid, and shall be considered as full compensation for preparing and implementing a SWPPP, complying with the BMP's and the requirements of the National Pollution Discharge Elimination System (NPDES) and these Special Provisions, and for furnishing all labor, materials, tools, equipment, time, and incidentals for doing all work involved in construction of this item, and no additional compensation will be allowed or paid for. Payment shall be based on progress of work completed at the District's sole and complete discretion.

4. Pipe Cleaning for CIPP Installation, CCTV Pre-Inspection, CCTV Post-Inspection

The Contractor shall assume that the pipes require normal cleaning (2 to 3 passes of a jet cleaner) unless it is noted in these specifications. Pipe cleaning shall include all cutting and removing of roots that intrude into the pipe interior (to ensure that the line is free of debris and obstruction), and cleaning, removal and proper disposal of all debris that could interfere with the liner installation. A suitable trap shall be installed at the manhole downstream of the section of

CURED IN PLACE PIPE LINER (CIPP)

sewer main being cleaned. All roots, debris, and other materials that are not normally found in sewage that may be removed during cleaning shall be collected and properly disposed of other than through the sewers and at the Contractor's expense.

Line Obstructions/Point Repair – It shall be the responsibility of the Contractor to clear the line of roots and other obstructions that will prevent the insertion of the liner. If inspections reveal an obstruction that cannot be removed by conventional sewer cleaning equipment, the Contractor shall notify the District of the presence of the obstruction. No point repairs or excavations shall be done without prior authorization from the Engineer.

CCTV Pre-Inspection

Pre-inspection shall include the inspection by closed circuit television camera of the interior of the pipeline (after cleaning), to determine the condition of the sewer, identify root removal locations, and to determine the locations of sewer wyes, laterals, and service connections prior to lining activities. It shall also include inspections to determine the location of any condition, which may prevent proper installation of the liner into the pipelines, and it shall be noted so that these conditions can be corrected. The Contractor shall provide an unedited visual record (video) in DVD format of the pre-installation inspection and a suitable log to the District for reference of the pre-installation condition of the pipe. All videos and logs provided shall become the property of the District.

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel. Contractor shall submit the certifications to the District part of the submittals for the employee(s) performing inspection.

CCTV Post-Inspection

Post-inspection shall include the post lining inspection by closed circuit television camera of the interior of the pipeline, for submission to the District. The Contractor shall provide an unedited visual record (video) in DVD format of the post-installation inspection and a log suitable to the District for reference of the post lining condition of the pipe. All videos and logs provided shall become the property of the District.

Payment for this Bid item shall be per linear foot of actual pipe cleaned, pre-inspected, post inspected, and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, disposal of debris, video records, time and incidentals necessary to complete the work, and no additional compensation will be allowed or paid for.

5. Sewage By-Pass

The Contractor shall provide all materials, labor, equipment, time and services necessary for bypass pumping and/or diversion of sewage flows for the entire project, including costs of subcontracted sewer by-pass services. The sewage by-pass pumping and/or diversion of sewage

flows shall comply with the requirements in Section 500 1.2.4 of the Green Book and shall be satisfactory to the District Engineer before the Contractor shall be allowed to commence sewage bypass pumping and/or diversion of sewage flows.

Sewage by-pass pumping and/or diversion of sewer flows shall be done in such a manner which will not damage public or private property, keep noise to minimum, or create a nuisance or health menace. After the work has been completed, flows shall be restored to normal.

Payment for this Item at the lump sum price bid for this work shall be considered as full compensation for furnishing all labor, installation, pump operations, plugs, conduits, materials, tools, equipment, time and incidentals necessary to complete the work, and no additional compensation will be allowed or paid for.

6. CIPP (Cured-in-Place-Pipe) Liner Installation 8-inch Diameter

The rehabilitation methods shall meet the minimum physical property requirement, as listed in the pre-qualifications and Section 1.7 Physical Properties of these Special Provisions as well as the SSPWC. The minimum thickness of the lining materials shall meet or exceed the minimum design thickness for the specified installation. The minimum thickness will be SDR 35.

The Cost for the construction of this item shall cover all work necessary to complete this item and no additional compensation will be allowed. Quantities of sewer line rehabilitated shall be the actual linear footage of the liner installed in place from the entry (starting) manhole to the exit (terminating manhole), paid at the unit bid prices.

Payment for this item shall be for Trenchless Rehabilitation per linear foot of 8-inch diameter sewer and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, time and incidentals necessary to complete the work, and no additional compensation will be allowed or paid for.

7. Restore Service Connections, Re-Open all Laterals

Restoring service connections shall include the re-opening of all lateral connections, existing, confirmed active, and any other connections including all capped connections. Restoring service connections consists of cutting a hole through the liner materials at precisely designated locations corresponding to the opening of the laterals or service connections. This shall be done without excavation from the interior of the pipeline by means of a closed circuit television camera and a remotely controlled robotic cutting device. All lateral connections shall be cut to match the existing pipe diameter. Each opening shall be a clean cut without ragged edges. The Contractor shall provide the District with video (visual record) showing the completed work including the re-established service connections.

All live laterals must be opened with a preliminary cut as described in Section 10 – Service Laterals, Reconnection of these Special Provisions, within the same day as the installation.

All costs for required point repairs or excavation made for service connections which are found plugged by the rehabilitation process, particularly with the CIPP process where resins run up the lateral, gluing up roots into a mass and cause obstruction, shall be paid for by the Contractor.

Approximate locations of laterals are attached for information purposes only in Appendix “A2”, the District is not liable for the accuracy and quantities of the laterals shown on the record drawings attached.

The cost for the construction of this item shall cover all work necessary to complete this item and no additional compensation will be allowed. Quantities of service lateral shall be paid at the Lump sum Bid Price.

8. Performance Testing of Finished Installed CIPP (Cured-in-Place-Pipe) Liner

Performance Testing of finished CIPP liner is required for first segment installed and **each 3,000 LF** installed. Performance Testing shall be performed at an independent laboratory experienced with CIPP testing and ASTM accredited in materials testing. The performance test analysis/results report shall be sent by the laboratory directly to the Project manager within fourteen (14) days or less of the field sample. The Contractor is responsible for all shipping, handling, sampling, labor, equipment, materials, and any other costs associated with performance testing.

Payment for this Item at the lump sum price bid for performance tests of the finished installed CIPP liner and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, time and incidentals necessary to complete the work, and no additional compensation will be allowed or paid for.

9. CCTV Inspection of 12-inch Diameter VCP Sewer Line for Future Rehabilitation

Pipe Cleaning

The Contractor shall assume that the pipes require normal cleaning (2 to 3 passes of a jet cleaner) unless it is noted in these specifications to facilitate the travel of the CCTV equipment and to inspect the internal conditions of the sewer pipe. Pipe cleaning shall not include cutting and removing of roots that intrude into the pipe interior. A suitable trap should be installed at the downstream manhole of the section of sewer pipe being cleaned. All debris and other materials that are not normally found in sewage that may be removed during cleaning shall be collected in the trap and disposed of properly by the Contractor.

CCTV Inspection of the interior of the pipeline, to determine the condition of the sewer, identify location of any roots, cracks, sags, holes, material defects, and/or voids. Document the locations of sewer wyes, laterals, and service connections. The Contractor shall provide a visual record (video) in DVD format of the inspection and a suitable log to the City for reference of the condition of the sewer pipe. All videos and logs provided shall become the property of the District.

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel.

CCTV Inspection

CCTV inspection of the interior of the pipeline, to determine the condition of the sewer, identify location of any roots, cracks, sags, holes, material defects, and/or voids. Document the locations of sewer wyes, laterals, and service connections. The Contractor shall provide a visual record (video) in DVD format of the inspection and a suitable log to the District for reference of the condition of the sewer pipe. All videos and logs provided shall become the property of the District.

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel.

Payment for this item shall be per linear foot of pipe actually inspected and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, disposal of debris, video records, time and incidentals necessary to complete the work, and no additional compensation will be allowed or paid for.

10. CCTV Inspection of 15-Inch Diameter VCP Sewer Line for *Future Rehabilitation*

Pipe Cleaning

The Contractor shall assume that the pipes require normal cleaning (2 to 3 passes of a jet cleaner) unless it is noted in these specifications to facilitate the travel of the CCTV equipment and to inspect the internal conditions of the sewer pipe. Pipe cleaning shall not include cutting and removing of roots that intrude into the pipe interior. A suitable trap should be installed at the downstream manhole of the section of sewer pipe being cleaned. All debris and other materials that are not normally found in sewage that may be removed during cleaning shall be collected in the trap and disposed of properly by the Contractor.

CCTV Inspection of the interior of the pipeline, to determine the condition of the sewer, identify location of any roots, cracks, sags, holes, material defects, and/or voids. Document the locations of sewer wyes, laterals, and service connections. The Contractor shall provide a visual record (video) in DVD format of the inspection and a suitable log to the District for reference of

the condition of the sewer pipe. All videos and logs provided shall become the property of the District.

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel.

CCTV Inspection

CCTV inspection of the interior of the pipeline, to determine the condition of the sewer, identify location of any roots, cracks, sags, holes, material defects, and/or voids. Document the locations of sewer wyes, laterals, and service connections. The Contractor shall provide a visual record (video) in DVD format of the inspection and a suitable log to the District for reference of the condition of the sewer pipe. All videos and logs provided shall become the property of the District.

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel.

Payment for this item shall be per linear foot of pipe actually inspected and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, disposal of debris, video records, time and incidentals necessary to complete the work, and no additional compensation will be allowed or paid for.

11. CCTV Inspection of 18-Inch Diameter VCP Sewer Line for Future Rehabilitation

The Contractor shall assume that the pipes require normal cleaning (2 to 3 passes of a jet cleaner) unless it is noted in these specifications to facilitate the travel of the CCTV equipment and to inspect the internal conditions of the sewer pipe. Pipe cleaning shall not include cutting and removing of roots that intrude into the pipe interior. A suitable trap should be installed at the downstream manhole of the section of sewer pipe being cleaned. All debris and other materials that are not normally found in sewage that may be removed during cleaning shall be collected in the trap and disposed of properly by the Contractor.

CCTV Inspection of the interior of the pipeline, to determine the condition of the sewer, identify location of any roots, cracks, sags, holes, material defects, and/or voids. Document the locations of sewer wyes, laterals, and service connections. The Contractor shall provide a visual record (video) in DVD format of the inspection and a suitable log to the District for reference of the condition of the sewer pipe. All videos and logs provided shall become the property of the District.

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel.

CCTV Inspection

CCTV inspection of the interior of the pipeline, to determine the condition of the sewer, identify location of any roots, cracks, sags, holes, material defects, and/or voids. Document the locations of sewer wyes, laterals, and service connections. The Contractor shall provide a visual record (video) in DVD format of the inspection and a suitable log to the District for reference of the condition of the sewer pipe. All videos and logs provided shall become the property of the District.

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel.

Payment for this item shall be per linear foot of pipe actually inspected and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, disposal of debris, video records, time and incidentals necessary to complete the work, and no additional compensation will be allowed or paid for.

12. CCTV Inspection of 21-Inch Diameter VCP Sewer Line for Future Rehabilitation

The Contractor shall assume that the pipes require normal cleaning (2 to 3 passes of a jet cleaner) unless it is noted in these specifications to facilitate the travel of the CCTV equipment and to inspect the internal conditions of the sewer pipe. Pipe cleaning shall not include cutting and removing of roots that intrude into the pipe interior. A suitable trap should be installed at the downstream manhole of the section of sewer pipe being cleaned. All debris and other materials that are not normally found in sewage that may be removed during cleaning shall be collected in the trap and disposed of properly by the Contractor.

CCTV Inspection of the interior of the pipeline, to determine the condition of the sewer, identify location of any roots, cracks, sags, holes, material defects, and/or voids. Document the locations of sewer wyes, laterals, and service connections. The Contractor shall provide a visual record (video) in DVD format of the inspection and a suitable log to the District for reference of the condition of the sewer pipe. All videos and logs provided shall become the property of the District.

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel.

CCTV Inspection

CCTV inspection of the interior of the pipeline, to determine the condition of the sewer, identify location of any roots, cracks, sags, holes, material defects, and/or voids. Document the locations of sewer wyes, laterals, and service connections. The Contractor shall provide a visual record (video) in DVD format of the inspection and a suitable log to the District for reference of the condition of the sewer pipe. All videos and logs provided shall become the property of the District.

CURED IN PLACE PIPE LINER (CIPP)

All inspections will be performed by a Pipeline Assessment Certification Program (PACP) trained and certified personnel.

Payment for this item shall be per linear foot of pipe actually inspected and shall be considered as full compensation for furnishing all labor, materials, tools, equipment, disposal of debris, video records, time and incidentals necessary to complete the work, and no additional compensation will be allowed or paid for.

Attachment E5-C:

Preconstruction Conference and Notice to Proceed Documentation

06/20/2014

**JURUPA COMMUNITY SERVICES DISTRICT
DEVELOPMENT PROJECT
PRECONSTRUCTION CONFERENCE REQUIREMENTS**

All construction projects involving facilities that will be owned and operated by the Jurupa Community Services District shall require a preconstruction conference. A preconstruction conference shall always be held prior to issuance of a Notice to Proceed. Prior to the District scheduling a preconstruction conference, the District requires the following information:

1. Project Name _____
(Tract, P.M., P.P. #, etc.)

2. Developers Name _____
Address _____

Phone No. _____
License Type & No. _____
Contact's Name _____

3. Contractors Name _____
Address _____

Phone No. _____
License Type & No. _____
Contact's Name _____

Has the Contractor completed a Contractor Qualification Experience Questionnaire as provided in Appendix E of the District's Standards Manual? YES NO
(Circle One)

If No, it is necessary for the Contractor to complete the questionnaire and submit it to the District prior to scheduling the preconstruction conference.

4. Subcontractors Name(s) _____
 Address _____

 Phone No. _____
 License Type & No. _____

 Name _____
 Address _____

 Phone No. _____
 License Type & No. _____

5. Attach copies of all applicable permits (i.e. Encroachment Permits, OSHA, etc.)
6. Provide 3 sets of District Approved Plans.
7. Provide 3 sets of District Approved Submittals.
8. Provide 24 hr. emergency phone no. of the Contractor's responsible party.

Name of Contact _____

Phone No. _____

Relationship to Project (i.e. Contractor, Project Manager,
Superintendent, etc.) _____

- | | | | |
|----|--------------------------|-----------|-------|
| 9. | Geotechnical Consultants | Name | _____ |
| | | Address | _____ |
| | | | _____ |
| | | Phone No. | _____ |
| | | Contact | |

10. Provide all applicable information as delineated in Appendix H of the Standards Manual.

Subsequent to District review and approval of the required information, the District will contact the developer and inform him/her that a preconstruction conference may be scheduled at his/her convenience during normal District office hours.

PRECONSTRUCTION CONFERENCE AND NOTICE TO PROCEED

The following outlines the general requirements and the expectations of the Pre-construction Conference and Notice to Proceed and shall apply to all developer-paid water and/or sewer facility construction within the District's jurisdiction.

1. Sequence of Events: A Pre-construction Conference shall always be held prior to issuance of a Notice to Proceed. Prior to the Pre-construction Conference, the District must have the following applicable items indicated as complete and checked off:
 - a. WATER AND/OR SEWER PLANS: Drawings, complete, signed as approved by the District, and signed by the required officials of Riverside County (Health Department, Road Department, Fire Marshall, etc.).
 - b. Recorded Tract Map/Parcel Map and applicable street improvement plans and grading plans.
 - c. Applicable fees and deposits made to the District, Deposit Agreement signed, and appropriate Work Order Numbers opened and assigned.
 - d. Environmental Assessment completed.
 - e. A fully signed construction Agreement with signatures of the Developer, Contractor, and the District's General Manager.
 - f. Agreement for PARTICIPATION/REFUND WAIVER OR AGREEMENT for participation and refund SIGNED.
 - g. Streets shall have been constructed to final subgrade and Certification signed by the Developer that streets are to final subgrade.
 - h. Easements shall be properly obtained, if required, and dedicated to the District.
 - i. Property corners shall be surveyed and set by owner/developer's surveyor to identify lot lines which will assist in proper location of mains and appurtenances.
 - j. District certification of contractor for intended size job.
 - k. A copy of tentative Bid between contractor and developer shall be submitted to the District.
 - l. Necessary permits have been obtained.
 - m. Required 100% Performance Bond and 100% Labor & Materials Bond must be posted and District approved. (See Appendix D).
 - n. Required Insurance form naming District as additionally insured must be executed and on file with the District (See Appendix F).

2. Pre-construction Conference: A pre-construction conference shall be scheduled by the District prior to issuance of Notice to Proceed and commencement of work. The Pre-construction Conference shall allow all parties to present their views and requirements, and provide a forum for satisfactory solution to all anticipated problems.
 - a. Parties to be invited:
 - 1) District:
District Inspector
District Representative
 - 2) Developer (and owner if different)
 - 3) Developer's Engineer
 - 4) Contractor and Foreman
 - 5) County Construction Inspector
 - 6) Other affected agencies and utilities: (if their facilities are involved)
 - 7) Material Suppliers (If Required)
 - b. Items to be Discussed:
 - 1) Review of plans and fabrication drawings. Verify main footage and location of fittings and appurtenances.
 - 2) Material deliveries, quantities, and problems
 - 3) Construction schedule
 - 4) Connection to existing facilities
 - 5) Street grading. Verification for final subgrade elevations and satisfactory subgrade compaction
 - 6) Curb and gutter/berm placement
 - 7) Project phasing
 - 8) Temporary water services
 - 9) Other Public Agency requirements. Check compliance with standard requirements for other public agencies.
 - 10) Plans for testing and disinfection, bacterial samples
 - 11) Clearance of other utilities
 - 12) Blasting/rock removal
 - 13) Traffic control
 - 14) Dust control
 - 15) Safety and OSHA requirements. (Contractor's responsibility)

- 16) Review of possible field conflicts and method of solution
 - 17) Sanitary Sewer Overflow (SSO). Should the Contractor witness or cause an SSO, the attached procedures shall be followed. Contractors working on District sewers shall develop a sewage overflow emergency response plan (OERP) in accordance with the attached requirements.
 - 18) As-built dimensions and drawings
3. Notice to Proceed: If all the District requirements have been met and no outstanding problems exist, the District will issue a written Notice to Proceed to the Developer and Contractor with copy to District Inspector at the Pre-construction conference.

If any requirements remain to be completed or if there is any problem with the above-listed items, such problems shall be resolved by cognizant parties. When completed to District satisfaction, a written Notice to Proceed will be issued to the Developer and Contractor.

No water and/or sewer system construction shall commence until the written Notice to Proceed is issued. After the Notice to Proceed is issued, the Developer may then finalize bid requirements with contractor or sub-contractors, sign the acceptance of bid and forward a copy of the firm BID CONTRACT to the District.

06/20/2014

INSERT CONTRACTOR ORIENTATION

Contractors Working on District Sewer Facilities

All contractors working on District sewer facilities will be required to develop a project-specific sewage overflow Emergency Response Plan (OERP). All contractor personnel will be required to receive training in the Contractor's OERP and to follow that OERP in the event that they cause or observe an SSO. The OERP must be approved by the Sewer Operations Manager or designee prior to training of the Contractor's staff or subcontractors. The training requirements will include the same required data as per the attached.