

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

ADDENDUM NO. 1

FOR

SEWER INSPECTION AND REPAIR
AT DANIEL K. INOUE INTERNATIONAL AIRPORT
HONOLULU, OAHU, HAWAII
PROJECT NO. BO1427-73

October 31, 2023

This Addendum shall make the following amendments to the Bid Documents:

A. TABLE OF CONTENTS

Delete TABLE OF CONTENTS in its entirety and replace it with the attached TABLE OF CONTENTS dated r10/31/2023.

B. SECTION 02538c – CURED-IN PLACE PIPE LINING REPAIR OF SEWER SYSTEM

Delete SECTION 02538c – CURED-IN PLACE PIPE LINING REPAIR OF SEWER SYSTEM in its entirety and replace with the attached SECTION 02538c – CURED-IN PLACE PIPE LINING REPAIR OF SEWER SYSTEM dated r10/31/2023.

C. SECTION 02538d – CURED-IN PLACE PIPE FULL LENGTH REPAIR

Add and make a part of the specifications SECTION 02538d – CURED-IN PLACE PIPE FULL LENGTH REPAIR dated r10/31/2023.

D. PROPOSAL SCHEDULE (PAGES P-7 TO P-10)

Delete PROPOSAL SCHEDULE (PAGES P-7 TO P-10) in its entirety and replace with the attached PROPOSAL SCHEDULE (PAGES P-7 TO P-11) dated r10/31/2023.

The following is provided for information:

E. PRE-BID MEETING

Attached is the October 25, 2023, pre-bid meeting minutes and attendance sheet.

Please acknowledge receipt of this Addendum No. 1 by recording the date of its receipt in the space provided on page P-4 of the Proposal.

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MALCOM SMITH
Oahu District Manager

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SECTION 02538c - CURED-IN-PLACE PIPE LINING
REPAIR OF SEWER SYSTEM

PART 1 – GENERAL

1.01 DESCRIPTION

It is the intent of this section to provide for the rehabilitation of existing 6” to 30” diameter sewer lines by the installation of CIPP part-liner.

1.02 REFERENCED DOCUMENTS

This special provision references American Society for Testing and Materials (ASTM) F1216, F1743 and their reference standards, which are made a part hereof by such reference and shall be the latest edition and revision thereof. All work shall comply with the reference standard unless specifically stated otherwise in this Section.

1.03 SCOPE OF WORK

The rehabilitation will be accomplished by curing in place a section of pipe against and bonding to the host pipe. The composite shall use an epoxy resin reinforced with a non-woven fabric and woven fiberglass stitched together. The width of the textile shall be that of the required length of the repair or that which can be installed with a device capable of allowing wastewater to flow through during installation and curing. The finished composite shall have the physical properties satisfying the physical strength requirements specified herein. The laminate is vacuum impregnated on hand rollers designed for impregnation with the resin then placed around a carrying device and positioned in the existing pipe. When the carrying device is properly positioned a bladder on the device is inflated with air or water to compress and hold the composite in contact with the interior surface of the host pipe with sufficient pressure as to form a bond and seal out infiltration and exfiltration of water vapors that attract roots.

Basic procedure for the sewer line repair shall include an access shaft, which may involve the temporary removal of the upper half of a manhole, sewer flow control and bypassing, cleaning, pre- and post-rehabilitation television inspection, liner installation, and restoration. After completion, the CIPP part-liner shall provide a continuous, watertight, corrosion resistant conduit within the existing sewer line.

Prior to ordering sewer liner materials, the Contractor shall be responsible for inspecting and confirming the inside dimension, alignment, pipe material, and condition of the existing sewer pipe section to be lined with CIPP part-liner.

The Contractor shall be responsible for performing all CIPP part-liner and related work, including video inspection, excavations, and cleaning in accordance with applicable Federal, State, and City safety regulations, including current OSHA safety standards. Prior to entering manholes to perform sewer repair work, the Contractor shall evaluate

the atmosphere in and near the sewer to determine the presence of toxic or flammable vapors and shall ventilate the rehabilitation work area as necessary to render it safe.

The Contractor shall be responsible for odor and noise mitigation on this Contract in accordance with applicable Federal, State, and City regulations. The Contractor shall monitor the surrounding area and minimize any odors and noise that may occur due to his work activities.

PART 2 – PRODUCT

2.01 PRODUCT QUALIFICATION

CIPP part-liner product (combination of tube and resin) proposed for use shall have a history of successful commercial viability. Products not meeting the minimum requirements established by the State for successful commercial viability shall be rejected. The State shall be the sole judge as to whether the requirements have been met. For a proposed CIPP part-liner product to qualify as a commercially acceptable product for the Contract, the following requirements must be met:

A minimum of 25 successful wastewater collection system CIPP part-liner installations in the U.S. shall be documented, ranging in size from 6 to 24-inch in pipe diameter, for the proposed tube and resin used together as one product, to assure commercial viability of the materials and the process. In addition, the CIPP part-liner product shall have been in service within wastewater collection facilities in the United States for a minimum of three years, unless otherwise approved by the Project Manager.

The manufacturer(s) for both proposed resin and tube shall have successfully produced the material in the U.S. continuously for a minimum of **three years**, unless otherwise approved by the Project Manager.

The Contractor shall submit documentation that the proposed product meets the above minimum CIPP requirements. The documentation shall include for each project the name, address and reference telephone numbers of the owner of the pipeline system that was CIPP part-lined; date of owner acceptance of the completed product installation; length and number of CIPP part-liner(s) installed; diameter of host pipe; and installer name, address and reference telephone numbers. In addition, the Contractor shall submit documentation in the form of a notarized letter(s) from the manufacturer(s) verifying that the proposed resin and tube materials have been manufactured for a minimum of three years.

The above documentation of product qualification and notarized Manufacturer's letter(s) shall be provided to the Project Manager within 14 calendar days of contract execution.

2.02 PRODUCT TEST DATA

No product shall be allowed to be installed without submittal of test data supporting the product strength requirements specified under Subsection 2.05 - DESIGN PARAMETERS. The proposed liner material and resin to be used together shall have been previously tested in order to assure the product strength requirements will be similar to those proposed for use in the Contract. All test samples shall be prepared so as to simulate the conditions and procedures the product will experience during the Contract. All testing shall have been performed by an independent third party qualified to perform such testing.

- A. Chemical resistance - Tests shall be conducted for standard domestic sewage application in accordance with ASTM F1216 or F1743 and meet the minimum requirements listed therein.
- B. Flexural modulus and strength - In order to verify the proposed product's past performance, the Contractor shall submit detailed test results from a minimum of 5 previous successful installations of the proposed product. The test results of field samples from each of the 5 previous installations shall verify that the minimum requirements for short term flexural modulus and flexural strength specified in this special provision had been achieved.

2.03 SUBMITTALS

Provide sufficient detail to allow the Project Manager to judge whether or not the proposed materials, equipment, and procedures will meet the Contract requirements. No materials shall be manufactured prior to approval of the submittals by the Project Manager.

A. Design Analysis

The CIPP part-liner shall be designed per ASTM F1216 or ASTM F1743, Fully Deteriorated Gravity Pipe Condition. The design used for the product shall be submitted for review and approval. Physical properties used in design equations shall be validated by independent testing.

B. Manufacturing and Quality Control

- 1. Engineering design guides and detailed quality control procedures for rehabilitation materials, manufacturing and installation shall be submitted for review. This shall include inspection requirements, testing procedures and allowable manufacturing tolerance levels.
- 2. The Contractor shall submit certification provided by the product Manufacturer as to the country of manufacture of all major components to be used to produce the final installed work.

C. Installation

1. The Contractor shall submit to the Project Manager documentation provided by the Manufacturer that the Contractor is qualified to properly install the proposed product. The documentation shall consist of evidence of Contractor training, testing and/or certification of being trained to install the Manufacturer's product.
2. An itemized list detailing the installation procedures to be used shall be submitted. This shall include estimated times for each task, the number of required excavations, and any other items unique to each process.
3. All related ASTM standards or any nationally recognized standards for installation of the product shall be submitted.
4. Detailed procedures shall be submitted for repairing the product in the event of failure or future damage.

2.04 MATERIAL

The reinforcement textile shall be multiple layers of woven fiberglass stitched together with non-woven fabric and/or woven fiberglass stitched together non-woven fiberglass laminate reinforcement. Laminates required to be greater than 3/16" thick may include a flexible needled felt in the middle with equally thick layers of fiberglass material on both sides. The textile shall be continuous in length and the wall thickness shall be uniform except at the overlap. The design wall thickness is a function of many factors including, but not limited to, product materials and condition of the existing sewer line. The materials used shall have the capability to address variations in the existing pipe conditions (i.e. circumferences, deterioration, etc.) and design considerations for a fully deteriorated host pipe.

Overlapping sections shall have at least 1-inch overlap in the length of the part-liner. The laminate will be capable of conforming to offset joints less than 25% of the pipe diameter, bells, and disfigured pipe sections. The textile tube shall be compatible with the epoxy resin system used. The textile tube shall be fabricated to a size that, when installed, will fit the internal circumference of the existing pipe. The Contractor shall verify the length and inside dimension of the existing sewer section before the textile tube fabrication.

The resin shall be epoxy containing no styrene. Each installation shall have a design report documenting the design criteria for a fully deteriorated pipe section, relative to the hydrostatic pressures, depth of soil cover, and type of soil.

2.05 DESIGN PARAMETERS

Minimum CIPP Resin Requirements:

Flexural Modulus (short term)	400,000 psi
Flexural Modulus (long term)*	200,000 psi
Flexural Strength	8,000 psi

* The long term flexural modulus is defined as fifty years as determined by ASTM D2990 Test Method

PART 3 – EXECUTION

3.01 INSTALLATION OF LINER

- A. The Contractor shall clean and CCTV inspect the entire sewer line section, from nearest upstream or downstream manhole, immediately prior to lining, utilizing a pan/tilt camera capable of verifying active or inactive service connections and the overall structural condition of the pipeline. All roots, debris, and protruding service connections will be removed prior to lining. The current condition of the pipe will be compared to the original designed condition to verify that design parameters have not changed.
- B. The tube shall be free of any tears and frayed sections. The tube shall be impregnated with resin using a process approved by the Project Manager. All air in the tube shall be removed allowing the resin to thoroughly impregnate the tube. All resin shall be contained to ensure no public property or persons are exposed to the liquid resin.
- C. During installation of the CIPP part-liner, flows within the pipe upstream of the section to be lined shall not become surcharged (full flow condition) at any time. Should a surcharged condition occur or should the Contractor anticipate a surcharged condition will occur while performing his work, a temporary bypass pumping system shall be implemented. The bypass pumping system shall be sufficiently sized as determined by the Contractor.
- D. While the tube is being pulled into the pipe, no resin shall be lost by contact with manhole walls or the pipe. The resin should not be contaminated or diluted by exposure to dirt, debris, or water during the pull. The resin that provides a structural seal shall not contact the pipe until positioned at the point of repair.
- E. The Contractor shall be capable of viewing the entire liner contacting the host pipe from the beginning to the end of the liner verifying the entire damaged section has been covered by the liner. The tube shall be held tightly in place against the wall of the host pipe until the cure is complete.
- F. When the curing process is complete, the pressure will be released. The bladder

packer device shall be removed from the host pipe. No barriers, coatings, or any material other than the cured tube/resin composite, specifically designed for desirable physical and chemical resistance properties, shall be left in the host pipe. Any materials used in the installation other than the cured tube/resin composite are to be removed from the pipe by the Contractor.

- G. Any service lateral or chimney connection covered by the part-liner repair is to be reinstated using a hydraulic or pneumatic powered robotic cutting device specifically designed for cutting cured-in-place pipe made from these materials.”

3.02 INSPECTION AND WORKMANSHIP

Inspection - The finished installation shall be inspected by the Contractor by closed-circuit television camera in the presence of the Project Manager or Project Inspector, or unless otherwise directed by the Project Manager. Variations from true line and grade will only be acceptable if proven by the Contractor that the variations existed under the original conditions of the existing sewer lines.

Workmanship - The finished part-liner shall be free of such defects as holidays, foreign inclusions, dry spots, lifts, delamination, buckling, wrinkles in excess of 1/8” height, and other deformities. If defects are present, the Contractor shall remove and replace the liner, using a method approved by the Project Manager, at no cost to the State.

3.03 CLEAN-UP

Upon acceptance of the CIPP part-liner installation, the Contractor shall restore the Project area to original conditions or as directed by the Project Manager.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Measurement: The quantity for which payment will be made for sewer line rehabilitation shall be the actual length of CIPP part-liner installed, measured in linear feet.

4.02 Cured-In Place Pipe Lining (6” to 12” Pipe): Payment for CIPP part liner rehabilitation work shall be based on the unit price bid per Lineal Feet as listed in the Proposal Schedule. This payment shall include full compensation for all labor, materials, supplies, equipment, tools, and incidentals for the complete installation of the part liner, removal and restoration of sewer manhole cone (if required for access), necessary bypass pumping, and for all other related work covered by this special provision.

4.03 Deleted



-- END OF SECTION --

SECTION 02538d - CURED-IN-PLACE PIPE
FULL LENGTH REPAIR

PART 1 – GENERAL

1.01 DESCRIPTION

It is the intent of this special provision to provide for the rehabilitation of existing main line sewers by the installation of water and/or steam cured-in-place pipe (CIPP). The CIPP shall be formed by inserting a resin-impregnated flexible felt tube into an existing sewer line, expanding the tube to fit against the existing sewer line walls, and then curing the resin using heated water or steam. The finished product shall be a continuous, jointless structural pipe that is formed to the existing sewer line and shall provide a minimum of 100 percent of the existing sewer line's original design capacity.

1.02 REFERENCED DOCUMENTS

This special provision references American Society for Testing and Materials (ASTM) and National Association of Sewer Service Companies (NASSCO) standards which are made part hereof by such reference and shall be the latest edition and revision thereof. CIPP provisions, methods, tests, materials, etc., not addressed by this special provision shall be governed by ASTM F1216 or F1743, and D5813. In the event there is a conflict between the aforementioned references and this special provision, this special provision shall govern.

1.03 GENERAL

- A. Basic procedure for the sewer rehabilitation shall include an access shaft which may involve the temporary removal of the upper half of a manhole, sewer flow control and bypassing, cleaning, pre- and post-rehabilitation television inspection, liner installation, testing, reconstruction, and restoration. After completion of the rehabilitation, the CIPP liner shall provide a continuous, watertight, corrosion resistant conduit within the existing sewer line.
- B. Prior to ordering sewer rehabilitation materials, the Contractor shall be responsible for inspecting and confirming the inside dimension, alignment, pipe material, and condition of the existing sewer pipe segments to be lined with CIPP.
- C. The Contractor shall be responsible for performing all CIPP and related work, including video inspection, excavations and cleaning in accordance with applicable Federal, State, and City safety regulations, including current OSHA safety standards. Prior to entering manholes to perform sewer rehabilitation work, the Contractor shall evaluate the atmosphere in and near the sewer to

determine the presence of toxic or flammable vapors and shall ventilate the rehabilitation work area as necessary to render it safe.

- D. The Contractor shall be responsible for odor and noise mitigation under this contract in accordance with applicable Federal, State, and City regulations. The Contractor shall monitor the surrounding area and minimize any odors and noise that may occur due to his work activities.
- E. Pipeline rehabilitation products that require bonding to the existing pipe wall for structural strength will not be allowed since the present structural conditions of the existing pipe walls are unknown and may vary considerably. No CIPP product shall be accepted unless vacuum resin impregnation techniques are used. The finished CIPP wall shall be homogenous throughout, except for the exterior coating (i.e., no intermediate impermeable layers).
- F. The Contractor shall test all materials for compliance with the Contract Documents prior to delivery. Materials shall not be more than six (6) months old from the date of manufacture to the time of installation.

PART 2 – PRODUCT

2.01 PRODUCT QUALIFICATION

In order for a CIPP product (combination of tube and resin) to qualify for use under this contract, a history of successful commercial viability shall be shown. For a proposed CIPP product to qualify as a commercially acceptable product for this contract, the following requirements must be met:

- A. A minimum of 50,000 linear feet of successful wastewater collection system installations in the U.S. shall be documented, for the proposed tube and resin used together as one product, to assure commercial viability of the materials and the process. In addition, the CIPP product shall have been in service within wastewater collection facilities in the United States for a minimum of three years, unless otherwise approved by the Project Manager. Installations of the proposed resin and tube used independently from each other may not be used to qualify the product for the linear footage and years of service requirements.
- B. The manufacturer(s) for both proposed resin and tube shall have successfully produced the material in the U.S. continuously for a minimum of three years.

The Contractor shall submit documentation to the Project Manager that the proposed product meets the above minimum linear footage and years of service requirements. The documentation shall be submitted within 14 calendar days of the contract execution, and shall include for each project the name, address and reference telephone numbers of the owner of the pipeline system that was CIPP lined; date of owner acceptance of the completed product installation; length of CIPP installed; diameter of host pipe; and

installer name, address and reference telephone numbers. In addition, the Contractor shall submit documentation in the form of a notarized letter(s) from the manufacturer(s) verifying that the proposed resin and tube materials have been manufactured for a minimum of three years or the project's linear footage does not exceed three percent (3%) of the total footage of the product (at time of bid) that has been successfully installed in the U.S.

2.02 INSTALLER QUALIFICATION

Installation of the product must be performed by a work force that is experienced in such installation work. At minimum, the Contractor's CIPP work force shall include a CIPP work supervisor and a work crew member experienced in liner wet-out and insertion, and a remote cutter operator. Qualified work force members must directly provide the specific work for which they have been qualified until such work has been completed and accepted.

- A. All phases of the CIPP work shall be performed under the direct supervision of an experienced Work Supervisor who has field experience on at least four (4) successfully completed projects performed in the United States in which he had direct supervision over CIPP lining installation work.
- B. Besides the Work Supervisor, at least one other Work Crew Member shall have direct experience installing CIPP liner. The Work Crew Member shall have field experience on a minimum of two (2) successfully completed CIPP liner projects performed in the United States. The Work Crew Member shall have directly participated in liner wet-out and insertion on the two qualifying projects.
- C. The Remote Cutter Operator shall have directly performed a minimum of 50 successful lateral or drop manhole connection reinstatements by remote cutter on CIPP liner projects performed in the United States.

The Contractor shall submit documentation of meeting these requirements within 14 calendar days of contract execution.

2.03 PRODUCT TEST DATA

No product shall be allowed to be installed without submittal of test data supporting the product performance requirements listed below. Materials tested in order to provide the required test data shall be similar to those proposed for use in this contract. Unless test data is required below to be obtained from field samples, all test samples shall be prepared so as to simulate the conditions and procedures the product will experience during this contract. All testing shall have been performed by an independent third party qualified to perform such testing.

- A. Chemical resistance - Tests shall be conducted for standard domestic sewage application in accordance with ASTM F1216, Appendix X2, or F1743, Section 7.2, and meet the minimum requirements listed therein.
- B. Hydraulic capacity - Calculations shall be submitted which support that the finished in-place flexible fabric tube shall be able to provide a minimum of 100 percent of the existing sewer line's original design capacity. The original design capacity of the existing sewer line shall be calculated using a roughness coefficient “n” of 0.015 for pipes up to and including 18 inches in diameter and 0.013 for pipes larger than 18 inches in diameter. The typical roughness coefficient “n” to be used for the proposed flexible fabric tube shall be verified by independent third party (hired by the manufacturer) test data, but shall not be less than 0.011, unless otherwise approved by the Officer-in-Charge.
- C. Flexural modulus and strength - In order to verify the proposed product's past performance, the Contractor shall submit detailed test results from a minimum of 10 previous successful installations of the proposed product. An installation shall be defined as the sewer segment between adjacent manholes. The test results of field samples from each of the 10 previous installations shall verify that the minimum requirements for short term flexural modulus and flexural strength specified in this special provision had been achieved.

2.04 SUBMITTALS

Provide sufficient detail to allow the Project Manager to judge whether or not the proposed materials, equipment, and procedures will meet the Contract requirements. All design calculations and shop drawings shall be prepared and stamped by a Civil Engineer licensed in the State of Hawaii. No materials shall be manufactured prior to approval of the submittals by the Project Manager.

The Contractor shall have the option of submitting electronic files of the submittals in Adobe pdf format. If hard copies are submitted, the Contractor shall submit three (3) sets of each submittal.

A. Design Analysis

The CIPP shall be designed per ASTM F1216-09. The design used for the product shall be submitted for review and approval. Physical properties used in design equations shall be validated by independent testing.

B. Manufacturing and Quality Control

- 1) Engineering design guides and detailed quality control procedures for rehabilitation materials, manufacturing and installation shall be submitted for review. This shall include inspection requirements, testing procedures and allowable manufacturing tolerance levels.
- 2) The Contractor shall submit certification provided by the product Manufacturer as to the country of manufacture of all major components to be used to produce the final installed work.

C. Installation

- 1) The Contractor shall submit documentation to the Project Manager, provided by the Manufacturer, that the Contractor is qualified to properly install the proposed product. The documentation shall be submitted within 14 calendar days from the contract notice to proceed date, and shall consist of evidence of Contractor training, testing and/or certification of being trained to install the Manufacturer's product.
- 2) An itemized list detailing the installation procedures to be used shall be submitted. This shall include estimated times for each task, the number of required excavations, temperature and time required for proper curing of the resin, installation pressures, and any other items unique to each process.
- 3) All related ASTM standards or any nationally recognized standards for installation of the product shall be submitted.
- 4) Detailed procedures for the construction of manhole transition sections along with description and physical properties of the concrete bonding agent to be used shall be submitted for the Project Manager's approval.
- 5) Confirmation letter stating that the product is compatible with products used for the lateral lining as specified in SPECIAL PROVISION Section 224, "Cured-in-Place Pipe (CIPP) for Laterals and Service Connection Liners."

2.05 MATERIALS

All materials and components, including resin, tube, and outside layer of tube, shall be compatible and suitable for providing a finished CIPP product which meets the requirements of the Contract Documents. The Contractor shall submit documentation within 14 calendar days of issuance of the Notice to Proceed date that the resin, tube, and outside layer of tube are compatible.

The design thickness of the CIPP wall is a function of multiple factors including, but not limited to, product materials and the condition of the existing sewer line. The materials used shall have the capability to vary wall thicknesses in order to address variations in existing pipe conditions (i.e., circumferences, deterioration, alignment due to pipe bends) and design considerations for a fully deteriorated host pipe.

- A. Tube - The material shall meet the requirements of ASTM F1216, Section 5.1, or F1743, Section 5.2.1. The tube shall be compatible with the resin system used. The tube shall be fabricated to a size that, when installed, will fit the internal circumference and the length of the existing pipe. Allowance shall be made for circumferential and longitudinal stretch during installation. The minimum length of each section shall be the distance from the manhole to the next manhole. The Contractor shall verify the section lengths and inside dimensions of the existing sewer section before tube fabrication. Sewing or connecting tubes in order to attain the required length is prohibited.

The outside layer of the flexible tube (before inversion) shall be plastic coated with a transparent flexible material that is compatible with the resin system used. The plastic coating shall not delaminate after the flexible tube has cured.

The flexible tube shall contain no intermediate or encapsulated elastomeric layers. No material shall be included in the tube that can be subject to delamination in the cured flexible tube.

- B. Resin - The resin system shall meet the requirements of ASTM F1216, Section 5.2, F1743, Section 5.2.3, or these Special Provisions, whichever is more stringent.

The resin shall be of suitable, visible color to show that the felt liner is completely and uniformly impregnated. The color used shall not interfere with visual and/or closed circuit television (CCTV) inspection of the liner or its required properties.

2.06 DESIGN PARAMETERS

The **MINIMUM FINISHED** (cured) CIPP liner thickness shall be determined by a City approved CIPP Design Thickness Program. The program must reference the ASTM sections indicated in this Special Provision. The design parameters shall meet or exceed the following requirements:

Minimum CIPP Resin Requirements:

Flexural Modulus (short term)	400,000 psi
Flexural Modulus (long term)*	200,000 psi
Flexural Strength	4,500 psi

* The long term flexural modulus is defined as fifty years as determined by ASTM D2990 Test Method

MINIMUM FINISHED CIPP Wall Thickness Requirements (regardless of calculated thicknesses based on ASTM standards identified in this Special Provision)

For 6-inch Diameter Host Pipe 4.5 mm
(0.18-inch) For 8-inch Diameter Host Pipe 6.0 mm (0.24-inch)

For 10-inch through 48-inch diameter host pipes the Officer-in-Charge shall review and approve the proposed **MINIMUM FINISHED** thicknesses submitted by the Contractor.

Other Design Parameters to be used in determining **MINIMUM FINISHED** liner thickness:

Fully deteriorated host pipe

H-20 truck live load = 16,000 lbs. (assume live load in non-paved areas for maintenance vehicles)

Groundwater depth above the bottom of the pipe = depth to ground surface (to reflect saturated soil conditions after a heavy rain)

Pipe ovality = 3 percent (unless otherwise directed by the Project Manager)

Soil density = 120 lbs/ c.u. ft.

Soil modulus = 500 psi

Safety factor = 2.3 minimum

2.07 STRUCTURAL REQUIREMENTS

The flexible tube shall be designed as per ASTM F1216-09, Appendix X1, with the following additional requirements:

- A. The tube design shall assume no bonding to the existing pipe wall.
- B. With regards to external buckling and because the structural conditions of the existing sewer pipe walls are unknown, the flexible tube shall be designed to act as a stand alone pipe within the existing pipe.

Acceptable third party testing and verification of the design analysis techniques (ASTM F1216, Appendix X1.2.2 for all installation methods) shall be submitted for City review prior to installation of the liner.

- C. The bond between the flexible tube layers shall be strong and uniform. All layers shall form one homogeneous structural pipe wall with no part of the flexible tube left unsaturated by the resin after curing.

2.08 PRELIMINARY INVESTIGATION OF HOST SEWER PIPE

Prior to ordering rehabilitation materials, the Contractor shall be responsible for inspecting and confirming the inside diameter, pipe material, and alignment of the host sewer pipe, and determining the condition of each manhole-to-manhole segment to be lined. The Contractor shall use the data and information collected from this inspection to finalize the liner size, refine the liner design, and refine the installation techniques. If unknown physical conditions in the work area are encountered during the investigation that materially differ from those ordinarily encountered, the Contractor shall notify the Project Manager.

PART 3 - EXECUTION

3.01 INSTALLATION OF LINER

Liner installation shall be in accordance with ASTM F1216, Section 7, or F1743, Section 6, and with the following requirements:

- A. Cleaning and Inspection

The sewer line shall be cleaned and televised prior to CIPP installation. Cleaning and video inspection shall be approved by the Project Manager before beginning the CIPP installation work.

- B. Resin Impregnation

- 1) The tube shall be impregnated with resin (wet-out) in accordance with ASTM F1216, Section 7.2, or F1743, Section 6.2. A vacuum impregnation process shall be used. A roller system shall be used to uniformly distribute the resin throughout the tube.

- 2) The installer shall arrange for a location where the liner will be vacuum-impregnated prior to installation. The installer shall allow the Project Manager to inspect the materials and procedures used to vacuum-impregnate the tube.
- 3) Should the liner material (fiberglass layers and interior plastic coating) be cut to pump/vacuum resin into the liner, all layers of the fiberglass shall be sewn closed and the plastic coating sealed watertight, per manufacturer's recommended procedures.

C. Bypassing

The Contractor shall be responsible for set-up, operation and maintenance of bypass lines required for the work.

D. Insertion of Liner

- 1) Insertion shall be in accordance with ASTM F1216, Section 7.4, or F1743, Section 6.4.
- 2) Tube insertion forces or pressures shall be limited so as not to stretch the tube longitudinally by more than 5 percent of the original length.
- 3) Before the insertion begins, the tube manufacturer shall provide values for the minimum pressure required to hold the tube tight against the existing conduit and the maximum allowable pressure so as not to damage the tube. Once the insertion has started, the pressure shall be maintained between the minimum and maximum pressures until the insertion has been completed. Should the pressure deviate from the required, the installed tube shall be removed from the host conduit at the Contractor's expense. The Contractor shall provide the Project Manager with a continuous log of pressure during cure.
- 4) Segments of liner that have been resin impregnated and placed in the host conduit and then are found to be too short, shall be removed without curing and properly discarded at the Contractor's expense. Removal of the uncured, resin impregnated liner shall be accomplished in such a way as to minimize the amount of resin allowed to escape. The Contractor shall be responsible for cleanup of all escaped resin and any odors that may result. The Contractor shall submit a plan to remove any odors and resin impregnated, uncured liner from the host conduit including protection of the host system from escaping resin to the Project Manager for approval a minimum of three weeks prior to the first installation process.
- 5) The existing sewer line shall be dewatered for any liner insertion that does

not use an inversion method to expand the tube against the pipe wall.

- 6) If significant groundwater infiltration is present in the existing sewer line, the Contractor may install a preliner tube, CIPP part liner, or chemical grout to seal defective pipe joints, holes, or other sources of the infiltration to control resin loss, preserve liner thickness, and prevent reduction in physical properties and contamination of the resin by water or other contaminants. The Contractor may also perform open trench point repair(s) to replace the defective piping.

The preliner tube shall be a reinforced plastic sheet formed to fit the host pipe being lined and shall be continuous from manhole to manhole. The preliner tube shall be a rated gas barrier for styrene. Installation of the preliner tube shall be done in the presence of the Project Manager.

Chemical grouting work shall be performed per SPECIAL PROVISION Section 230 "Sanitary Sewer Chemical Sealing."

The Contractor shall obtain approval from the Project Manager prior to installing the preliner tube or chemical grout to seal sources of infiltration.

- 7) The use of a lubricant during inversion is recommended to reduce friction. This lubricant should be poured into the water in the downtube or applied directly to the tube or inflation bladder. Lubricant shall not be used in processes where impregnated coatings are performed prior to tube installation. The lubricant used shall be a non-toxic, oil-based product that has no detrimental effects on the tube or roller and pump system, and will not support bacterial growth or adversely affect sewage treatment processes.
- 8) The tube shall not be exposed to ultraviolet light.
- 9) The tube shall not experience excessive bubbling or wrinkling during insertion.

E. Curing

After insertion of the wetted out tube is complete, the Contractor shall use a suitable heat source and distribution equipment to circulate heated water or steam uniformly throughout the section for a consistent cure of the resin. The curing temperatures shall comply with submittals and manufacturer's recommendations.

The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing water supply or steam. Another such gauge shall be

placed between the impregnated liner tube and the invert of the host pipe at the termination manhole, and any intermediate manholes, to determine the temperatures during the resin cure process. The Contractor shall provide the Project Manager with a continuous log of temperatures at all gauges during curing.

Initial cure may be considered completed when the exposed portions of the felt tube appear to be hard and the termination manhole temperature sensor indicates the temperature to be adequate to realize an exotherm or cure in the resin as recommended by the resin manufacturer and approved by the Project Manager. Curing temperatures and duration shall comply with previously submitted data and information.

Curing shall be in accordance with ASTM F1216, Section 7.6, or F1743, Section 6.6.

Any hot water or steam used during the curing process shall be free of any pollutants and shall be properly disposed of at ambient temperatures in an environmentally safe manner in accordance with applicable Federal, State, and City rules and regulations. Contractor shall be responsible for obtaining the applicable permits.

F. Cool-Down

The Contractor shall cool the hardened pipe to a temperature below 100 degrees F before relieving the water column (pressure) or 113 degrees F before relieving the internal pressure. Cool-down may be accomplished by the introduction of cool water into the inversion standpipe to replace water or mixture of air and steam being drained from a small hole made at the downstream end. Care shall be taken in the release of the water column or air pressure so that a vacuum will not be developed that could damage the newly installed CIPP. Coupon samples shall be obtained for testing.

Cool-down shall be in accordance with ASTM F1216, Section 7.7, or F1743, Section 6.7.

G. Workmanship

- 1) The finished CIPP shall be continuous over the entire length of each installation run and be free of such defects not limited to holidays, foreign inclusions, dry spots, lifts, delamination, buckling, creases, and seepage of groundwater through the liner material.
- 2) Wrinkles in the finished CIPP liner shall be repaired as indicated in the following table.

Location of Wrinkle	Height of Wrinkle	Repair Method and tolerance
Below springline or d_n , whichever is higher	Greater than 2 percent of the pipe diameter or 1/4", whichever is greater	Grind to 2 percent of the pipe diameter or 1/4", whichever is greater
Above springline or d_n , whichever is higher	Greater than 4 percent of the pipe diameter or 1/2", whichever is greater	Grind to 4 percent of the pipe diameter or 1/2", whichever is greater

**Project Manager shall determine if repairing the wrinkle is necessary*

Should the liner be inadvertently perforated during the grinding procedure, the Contractor shall repair or replace the liner by a method approved by the Project Manager.

If other critical defects are present, the Contractor shall remove and replace the liner in these areas, using a method approved by the Project Manager, at the Contractor's sole expense.

- 3) If the liner does not fit tightly against the original pipe at its termination point(s), the space between the pipes shall be sealed by filling with a high strength, structural, epoxy paste adhesive. The epoxy adhesive shall be Sikadur 31 Hi-Mod Gel or an approved equal.

3.02 TRANSITION SECTIONS

- A. Transition sections shall be constructed to channelize the sewage flow and minimize entrance and exit losses as the flow passes through the existing manhole structures affected by the CIPP work. For the situation where a CIPP liner terminates at both upstream and downstream manhole pipe openings and the cured liner inside diameter is 18-inches or greater, the transition grout within the channel shall have a uniform thickness equal to the liner thickness throughout the length of the channel. For cured liner inside diameters equal to or less than 18-inches nominal or for cured liner inside diameters greater than 18-inches nominal with the liner in only one pipe opening, the transition grout shall be equal to the liner thickness at the manhole wall and taper towards the center of the manhole at a ratio of 1:10 (V:H).

When the pipe liner is placed through manholes, the Contractor shall cut away the top of the pipe liner to conform to the existing manhole walls.

Existing benches and channels shall be built up with grout as needed to match the CIPP liner elevations. Smooth transitions shall be formed between the existing surfaces and the CIPP.

- B. Prior to applying new concrete, the existing surfaces shall be adequately cleaned, scraped of loose concrete, and roughened. An approved concrete bonding agent shall be applied prior to the construction of the new channels, benches and/or transition sections. The bonding agent shall meet ASTM C-881 requirements for Type 1, Grade 3, epoxy resin adhesive. The bonding agent shall be Sikadur 31 Hi-Mod Gel or an approved equal.
- C. Any new channels, benches, and transition sections shall be formed using a quick setting, high strength Portland Cement based repair mortar. The mortar shall be SikaTop 122 Plus, Sauereisen Substrate Resurfacer No. F-121 or an approved equal. The mortar shall have the following minimum properties:

	<u>SikaTop 122 Plus</u>	Sauereisen Substrate Resurfacer <u>No. F-121</u>
Flexural Strength:	2000 psi 28-days (ASTM C293)	1500 psi 7-days (ASTM C580)
Tensile Strength:	750 psi 28-days (ASTM C496)	822 psi 7-days (ASTM C307)
Bond Strength:	2200 psi 28-days (ASTM C882)	2200 psi 7-days (ASTM C882)
Compressive Strength:	7000 psi 28-days (ASTM C109)	7000 psi 28-days (ASTM C109)

- D. At all manholes apply Sikadur 31 Hi-Mod Gel or an approved equal between the CIPP liner and the existing pipe. The material shall be applied around the entire circumference of the pipe to fully seal the annular space to prevent infiltration of groundwater, root intrusion, and exfiltration of sewage and sewer gases. Where CIPP liner is placed through the manholes, the material shall be applied where the top of the liner has been cut away.

3.03 LATERAL AND MANHOLE DROP CONNECTIONS

- A. Verification. The Contractor shall verify the exact location and number of lateral and manhole drop connections shown on the Work Order Request drawing during his pre-rehabilitation television inspection (Section 218 – TELEVISION INSPECTION) or from other methods approved by the Project Manager.
- B. Reinstatement. After the CIPP liner has been cured in place, the existing lateral and manhole drop connections shall be reinstated using a remote cutter. The reinstated opening shall be cut neat, and its edges finished smooth, without any hanging fibers, or loose or abraded materials. The invert of the reinstated

opening shall match the invert of the original connection. Additionally, the opening shall be reinstated to 90 – 95 percent of the original opening. The remote cutter shall be capable of traversing through pipe openings as small as 4-1/2". The Contractor shall have a minimum of two operable remote cutters or one operable remote cutter and backup parts, including but not limited to a motor and cutting head, on site. In the event that the remote cutter malfunctions, the second unit shall be immediately available or the remote cutter shall be repaired promptly to complete the reinstatements and to prevent delays to the project.

- C. Chemical grouting or service connection lateral liners shall be used to seal the annulus between the CIPP rehabilitated main line and the host pipe around the reinstated lateral openings when specified on the Work Order. Chemical grouting work shall be performed per SPECIAL PROVISION Section 230 "Sanitary Sewer Chemical Sealing." Service connection lateral liners shall be installed per SPECIAL PROVISION Section 224 "CIPP for Laterals and Service Connection Liners."
- D. All services shall be reinstated within 24 hours after the liner has been cured to minimize disturbance to private residents. If connections cannot be reinstated within this period of time, the Contractor shall obtain approval from the Project Manager prior to any extension to allow additional bypass/diversion pumping.

3.04 TESTING

For each inversion length of CIPP liner installed, the Contractor shall perform the tests listed below.

Where testing is performed on CIPP samples, the Contractor shall be responsible for providing the necessary samples and for hiring a qualified, independent third party to perform the required tests. The report shall outline test procedures, present data, provide diagrams as required, and summarize test results for each length of CIPP installed. The report shall provide all information labeled on the samples. Sample labeling requirements are provided in the following paragraph. Copies of the report shall be sent from the laboratory simultaneously to both the Contractor and the Project Manager immediately upon completion of the sample testing. Two (2) copies of the detailed report on the testing shall be sent to the Project Manager.

Cured CIPP samples shall be taken and labeled in the presence of the Project Manager. The labeling on the sample shall consist of the sample number, Project Name, City Job Number, Contractor company name, name(s) of Contractor's personnel that extracted the sample, the date/time that the sample was taken and the name of the Project Manager present during sampling. The labeling shall be made with a permanent marking device that will not smudge or fade on the sample. In addition, Contractor shall maintain a Cured Sample Testing Record. The Cured Sample Testing Record shall be current and shall be available for immediate review by the Project Manager.

The Project Manager may take possession of a sample or samples at any time prior to the samples being shipped to the third party testing laboratory. The number of samples taken are at the discretion of the Project Manager. The Contractor shall not destroy any Cured Sample Testing Records and will transfer all Cured Sample Testing Records to the Project Manager immediately after final acceptance of the project.

Lengths of CIPP which fail any of the required tests may be required by the Officer-in-Charge to be removed and replaced at the Contractor's cost.

A. Samples

For pipes with a diameter of 18-inches or less, the sample shall be cut from a section of cured CIPP at the termination point that has been inverted through a pipe with the same inside diameter as the existing pipe and has been held in place by a suitable heat sink, such as sandbags. The sample shall be large enough to provide for all of the tests indicated below.

If a length of CIPP is installed through intermediate manholes, samples shall be taken at each intermediate manhole as well as at the termination point. Samples at intermediate manholes shall be obtained similarly to the method used to obtain the sample at the termination point. The samples taken at intermediate manholes shall be large enough to provide for all of the tests indicated below.

Prior to obtaining any sample, the Contractor shall mark the limits of the sample on the CIPP and obtain the approval of the Project Manager.

- B. CIPP wall thickness – Testing shall be in accordance with ASTM F1743, Section 8.1.6. A minimum of eight measurements at evenly spaced intervals around the circumference of the sample shall be taken to ensure that minimum and maximum thicknesses are determined. Deduct from the measured values the thickness of any plastic coatings or CIPP layers not included in the structural design of the CIPP. The average thickness shall be calculated using all measured values and shall meet or exceed the minimum finished thickness indicated in Section 2.06, Design Parameters, above. The minimum wall thickness at any point shall not be not less than 87.5% of the minimum finished thickness indicated in Section 2.06, Design Parameters, above. Ultrasonic testing of wall thickness is not allowed.
- C. Short-term flexural (bending) properties - Testing shall be in accordance with ASTM F1216, Section 8.1.3.1, or F1743, Section 8.1.4. Five specimens shall be tested.
- D. Delamination Test – Testing shall be in accordance with ASTM F1216, Section 8.4 or ASTM F1743, Section 8.4. Five specimens shall be tested.
- E. Peel or Stripping Strength Test - Testing shall be in accordance with ASTM

F1216, Section 8.5. The peel or stripping strength between any nonhomogeneous layers of CIPP laminate shall be a minimum of 10 lb/in. of width.

- F. Gravity pipe leakage testing – Testing shall be in accordance with ASTM F1216, F1743, and F2019. The cured liner material shall be impervious and not allow for **any** infiltration or exfiltration. As directed by the Officer-in-Charge, the Contractor shall conduct either an exfiltration, infiltration, or air test for each CIPP inversion for pipes with a nominal diameter of 36-inches or less. For pipes larger than nominal 36-inch, either an infiltration or exfiltration test shall be required (air testing shall not be performed due to the dangers associated with plugs used for these large pipe sizes). The Contractor shall notify the Officer-in-Charge as to the type of testing to be conducted prior to the testing. It shall be noted that the allowable leakage amounts indicated in the following paragraphs are to allow for imperfections that may be associated with the leakage test setup (Ex. slight leakage at the plugs, seepage through the downtube material, volumetric changes in the water or air inside the liner due to temperature changes, etc.). Leakage as a result of a pervious finished liner will not be accepted and will be considered defective requiring repair or replacement.

1) Exfiltration Test

An exfiltration test may be conducted after the CIPP has cooled to ambient temperature. The maximum amount of leakage for any section of CIPP being tested shall not exceed 50 gallons per inch of internal diameter per mile per day of pipe. During the exfiltration testing, the maximum internal pipe pressure at the lowest end shall not exceed 10 feet of water and the water level inside the inversion standpipe shall be two feet higher than the top of the pipe or two feet higher than the groundwater level, whichever is greater. The test should be conducted for a minimum of one hour.

When water is used to cure the CIPP, the exfiltration test shall be conducted at the completion of the curing process while the CIPP is under hydrostatic pressure. If steam is used to cure the CIPP, water tight plugs shall be installed at both ends and the CIPP filled with water. Laterals shall be reinstated after the leakage test is completed.

2) Infiltration Test

An infiltration test may be conducted if the groundwater is more than 2 feet above top of pipe for the entire section of sewer line. The maximum amount of infiltration for any CIPP section being tested shall not exceed the rate of 50 gallons per inch of internal diameter per mile per day of pipe.

3) Air Test (only for pipes 36-inch or less)

Low pressure air test shall be in accordance with ASTM F1417-11a. The Time-Pressure Drop Method, using 1.0 psig pressure drop, shall be used. Testing shall be conducted after the CIPP has cooled to ambient temperature and prior to reinstating any laterals.

The low pressure air test may be dangerous to personnel. It is extremely important that the various plugs be properly installed to prevent sudden expulsion of a poorly installed or partially inflated plug. The Contractor shall be responsible for providing all safety measures necessary to protect personnel from injury. No one shall be allowed in the manholes during testing.

For products in which the pipe wall is cured while not in direct contact with the pressurizing fluid (e.g. a removable inflation bladder is used), the pipe shall be leakage tested after the cure process is completed and the pressurizing fluid and apparatus have been removed.

3.05 INSPECTION AND ACCEPTANCE

The finished installation shall be inspected by the Contractor by closed-circuit television camera as specified in SPECIAL PROVISION Section 218 "Television Inspection", in the presence of the Project Manager, unless otherwise directed by the Officer-in-Charge. Variations from true line and grade will only be acceptable if proven by the Contractor that the variations existed under the original conditions of the existing sewer lines.

3.06 CLEAN-UP

Upon acceptance of the CIPP installation, the Contractor shall restore the work site area to original conditions.

PART 4 - MEASUREMENT AND PAYMENT

4.01 **Additive Alternate Work:** Payment for Cured-In-Place Pipe Full Length Repair shall be made under:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
16	24" Cured-in Place Pipe-Full Length Repair (approx. 106 LF)	Lump Sum
17	36" Cured-in Place Pipe – Full Length Repair (approx.. 535 LF)	Lump Sum

SEWER INSPECTION AND REPAIR
 AT DANIEL K. INOUE INTERNATIONAL AIRPORT
 HONOLULU, OAHU, HAWAII
 STATE PROJECT NO. BO1427-73

PROPOSAL SCHEDULE

Item No.	Description	Quantity (A)	Unit	Unit Price (B)	Amount (AxB)
1	Construction Site Runoff Control Program	1	LS	\$ _____	\$ _____
2	Lagoon Drive – Kalewa Street Area Sewer System Cleaning (Exhibit A-1)	1	Each	\$ _____/Each	\$ _____
3	Lagoon Drive – Iolana Place to Kapalulu Place Sewer System Cleaning (Exhibit A-2)	1	Each	\$ _____/Each	\$ _____
4	Lagoon Drive – Kapalulu Place to Mokuea Place Sewer System Cleaning (Exhibit A-3)	1	Each	\$ _____/Each	\$ _____
5	Lagoon Drive – Mokuea Place to Lauhoe Place Sewer System Cleaning (Exhibit A-4)	1	Each	\$ _____/Each	\$ _____
6	Lagoon Drive – Lauhoe Place to End of Lagoon Drive Sewer System Cleaning (Exhibit A-5)	1	Each	\$ _____/Each	\$ _____
7	Elliott Street Sewer System Cleaning (Exhibit A-6)	1	Each	\$ _____/Each	\$ _____
8	Elliott Street Sewer System Cleaning (Exhibit A-7)	1	Each	\$ _____/Each	\$ _____
9	Ewa Concourse Sewer System Cleaning (Exhibit A-8)	1	Each	\$ _____/Each	\$ _____
10	Central Concourse Sewer System Cleaning (Exhibit A-9)	1	Each	\$ _____/Each	\$ _____
11	Diamondhead Concourse Sewer System Cleaning (Exhibit A-10)	1	Each	\$ _____/Each	\$ _____

Item No.	Description	Quantity (A)	Unit	Unit Price (B)	Amount (AxB)
12	Aolele Street Sewer System Cleaning (Exhibit A-11 to A-13)	1	Each	\$_____/Each	\$_____
13	Cured-in Place Pipe Lining (6" to 12" Pipe)	200	LF	\$_____/LF	\$_____
14	Trouble Call / Repair	ALLOW.		ALLOW.	\$ 250,000.00
15	Management of Contaminated Medias	ALLOW.		ALLOW.	\$ 50,000.00
TOTAL BASE BID					\$_____

SEWER INSPECTION AND REPAIR
 AT DANIEL K. INOUE INTERNATIONAL AIRPORT
 HONOLULU, OAHU, HAWAII
 STATE PROJECT NO. BO1427-73

PROPOSAL SCHEDULE
 ADDITIVE ALTERNATE

Item No.	Description	Quantity (A)	Unit	Unit Price (B)	Amount (AxB)
24" AND 36" CURED-IN PLACE PIPE FULL LENGTH REPAIR (EXHIBIT B)					
16	24" Cured-in Place Pipe – Full Length Repair (approx. 106 LF)	1	LS	\$ _____	\$ _____
17	36" Cured-in Place Pipe – Full Length Repair (approx. 535 LF)	1	LS	\$ _____	\$ _____
TOTAL ADDITIVE ALTERNATE					\$ _____

SEWER INSPECTION AND REPAIR
DANIEL K. INOUE INTERNATIONAL AIRPORT
HONOLULU, HAWAII
STATE PROJECT NO. BO1427-73

BID SUMMARY

TOTAL BASE BID	\$ _____
TOTAL ADDITIVE ALTERNATE	\$ _____
TOTAL AMOUNT FOR COMPARISON OF BIDS	\$ _____

PROPOSAL SCHEDULE NOTES:

1. Bids shall include all Federal, State, County and other applicable taxes and fees.
2. The TOTAL AMOUNT FOR COMPARISON OF BIDS shall be used to determine the lowest responsible bidder.
3. Bidders shall complete all unit prices and amounts. Failure to do so may be grounds for rejection of bid.
4. If a discrepancy occurs between unit bid price and the bid price, the unit bid price shall govern.
5. **Bidders shall submit and upload the complete proposal to HIePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered.** Original (wet ink, hard copy) proposal documents are not required to be submitted. **Contract award shall be based on evaluation of proposals submitted and uploaded to HIePRO. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Do not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection.**

FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HIePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.

If there is a conflict between the specification document and the HIePRO solicitation, the specifications shall govern and control, unless otherwise specified.

6. Prior to opening bids, the State will announce the project control budget. All bids will be evaluated on the basis of the same alternate item.

The ADDITIVE ALTERNATE is added to the TOTAL BASE BID price. This sum is compared to the project control budget, and must be within the project control budget.

The bidder with the lowest aggregate amount, within the project control budget, for the TOTAL BASE BID plus TOTAL ADDITIVE ALTERNATE is the lowest responsible bidder.

Should the TOTAL BASE BID price exceed the project control budget, the State reserves the right to negotiate with the lowest responsible bidder as permitted under Section 103D-302, Hawaii Revised Statutes, to further reduce the scope of work and award a contract thereafter.

PRE-BID MEETING MINUTES

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION AIRPORTS

Project: Sewer Inspection and Repair
At Daniel K. Inouye International Airport
Project No. BO1427-73
Date: October 25, 2023 / 9:00 AM
Location: Terminal No. 2 - Admin. Tower - 5th Floor

1. Scope of Work
 - Sewer cleaning and inspection.
 - Sewer repair.
 - Subject to Chapter 104 HRS – Prevailing Wages and Certified Payroll
2. Special Provisions – Badging and Insurance Requirements
 - Bidding is on HiePRO, proposal is required to be uploaded for bid.
 - Personnel require badge for Airport Operation Area.
 - General Liability: \$1,000,000.00 coverage
 - Automotive Insurance: \$5,000,000.00 coverage
3. Description of Work
 - Sewer Cleaning and CCTV Inspection
 - Cure-In Place Part Lining Repair
 - Trouble call repair – force account
 - Additive Alternate: CIPP manhole to manhole lining of 24” and 36” Pipe per Exhibit B. (Addendum No. 1 to address requirements)
 - Traffic control
 - Run-off control (BMPs)
4. Site visit
 - Upon request/appointment.
5. Questions/Answers
 - HiePRO – Submit 14 calendar days before bid opening.

PRE-BID MEETING

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION**

Project: Sewer Inspection and Repair
At Daniel K. Inouye International Airport
Project No. BO1427-73
Date: October 25, 2023 / 9:00 AM

Name	Company	Phone / E-mail
Gary Kam	HDOT AIRPORTS	808-834-6091 gary.yt.kam@hawaii.gov
Angel Briones	Mocon Corp	661-309-0487 Angel@Moconcorp.com
Jeremy Coyne	Mocon Corp	808-763-7431 Jeremy@moconcorp.com
Steve Novak	Eckard Braudes	808-780-7911 steven@ebchi.com
CHUCK HIGBEE	ECKARD BRAUDES	CHUCKH@EBDHI.COM