EL PASO WATER UTILITIES PUBLIC SERVICE BOARD

ADDENDUM NO. 2

MAY 12TH, 2017

DESIGN AND CONSTRUCTION OF CANAL WTP TRANSMISSION WATERLINE TUNNEL PROJECT

RFQ 15-17

Rose M. Guevara
Sr. Purchasing Agent
El Paso Water Utilities

*The Purchasing Agent's signature certifies only that the document shall become part of the Contract Documents for the referenced project. Her signature is not a representation that the content of this document is technically correct.

Attention of all bidders is directed to the following Addendum to this RFQ:

RFQ QUESTIONS AND ANSWERS

RFQ Submission deadline has been extended to

Wednesday May 17th 2017 at 2:00 PM.

2.01 QUESTION: Item #2 on page 6 requests our Safety EMR – do you only need last year's EMR?

ANSWER: Company's EMR is required for the three most recent years. EP Water's Section 003001 Contractor Prequalification Form located in EP Water's website will be included in the RFP.

2.02 QUESTION: Item #2 on page 6 requests our Safety Program. Typical safety program documents can be quite numerous in pages and we're limited to only 10 pages for this RFQ. Can we just submit the Table of Contents, or, if you would like to see the whole document, can we submit as an Appendix?

ANSWER: Please provide executive summary description highlighting your company's safety program.

2.03 QUESTION: For Item #4 on page 6, can we submit a USB video showing a time-lapsed video of a box tunnel underneath a live railroad with similar scheduling challenges as this project?

ANSWER: For the purposes of this RFQ, No. Please adhere to the indicated number of pages and deliverables.

2.04 QUESTION: The scoring criteria on page 6 doesn't seem to align with the available scoring for Items 1-5

ANSWER: The SOQ score will be the summation of earned points per component.
Sample calculation:
Team B's evaluation score is 72, for component #3) Equipment Availability.
72/100 x 20 available points = 14.4 points earned

The other scoring component results will be calculated similarly and summed for the total point score.

2.05 QUESTION: Can we submit additional info as necessary in an Appendix?

ANSWER: No, please adhere to the prescribed number of pages.

2.06 QUESTION: On page 5 of 7 of the RFQ under the MINIMUN QUALIFICATION section, "Team shall provide a complete Safety Record and the Following: Team must have an EMR greater that 1.25" should the EMRT Rating be greater than 1.25 or should it read less than 1.25?

ANSWER: The bidder shall be deemed not responsible if the bidder reports an EMR greater than 1.25.

2.07 QUESTION: On page 4 of 7 1st paragraph reads "Substantial completion is expected by March 2018 then under project goals and key objectives, the 5th bullet reads "Achieve Substantial Completion of the tunnel & carrier installation by June 2018" Please clarify the Substantial and Final Completion time frames.

ANSWER: Substantial completion is expected to be June 2018. RFP will include an anticipated schedule.

2.08 QUESTION: Are as-built plans available for all utilities along proposed corridor?

ANSWER: As-Built plans have not been located. All relevant as-built plans at the time of publication will be attached to the RFP.

2.09 QUESTION: RFQ shows a work area at STA 12+00. Is work area only limited as shown?

ANSWER: Work area is not specific in RFQ. Contractor will need to coordinate with BNSF about work space. BNSF may need review and approve new design.

2.10 QUESTION: May 48" tie-ins be performed at any date during the year?

ANSWER: Tie-ins may have to be postponed during the peak summer season and will require coordination with EP Water between the months of October and June.

2.11 QUESTION: Is tunnel casing restricted to Tunnel Liner Plate or Steel Casing?

ANSWER: BNSF permit dictates steel casing in order to achieve a water-tight installation. Selected Design-Build Team will need to allocate resources and time to request a variance from BNSF. This may involve demonstrating to BNSF what extra measures will be taken to ensure a watertight installation.

2.12 QUESTION: May tunnel installation start points, end points and driven directions be selected by the Contractor?

ANSWER: Contractor may not select start points and end points. The start and end points indicated in the current drawings were dictated by BNSF during the permitting process to ensure minimal disruption to the railyard operations.

2.13 QUESTION: Is water pipe in railroad crossing only restricted to Steel, Ductile Iron, Steel Cylinder Concrete Bar Wrapped?

ANSWER: Carrier pipe material installed shall be one of the presented options: ductile iron pipe, or steel. (Steel Cylinder Concrete Bar Wrapped will be removed from the list in the RFP).

2.14 QUESTION: Is General Contractor allowed to joint venture for construction of the tunneling project?

ANSWER: Yes, General Contractor is allowed to form a joint venture as along as its members are not participants in other Design-Build Teams submitting for this procurement.

2.15 QUESTION: Are insurance requirements standard since project being a Design-Build?

ANSWER: Specific Design-Build Team insurance requirements will be provided in the RFP.

2.16 QUESTION: Will El Paso Water Utilities consider a recommendation in delaying the submission for the Statement of Qualifications at least 1-week to May 23, 2017 to allow Teams additional time to assemble based on the qualifications detailed in Addendum No. 1 Q&A? Additional time may be further warranted to review responses to written requests for clarification and Industry Review Workshop outcomes.

ANSWER: RFQ Submission deadline has been extended to Wednesday May 17th 2017 at 2:00 PM.

2.17 QUESTION: Will the Design Build Team have full and unrestricted access to all data files, plans, specifications, project contacts, and project related correspondence that was previously generated as a deliverable to El Paso Water Utilities or used to facilitate design of this project?

ANSWER: PDF versions of all CDM Smith deliverables prepared for EPW as well as CAD base files will be available to the successful Design-Build Team upon contract award by the PSB Board.

2.18 QUESTION: Please confirm the pipe type of the existing 48" WL at the connection within the intersection of San Antonio St. & Anthony St. Reference Plan Sheet C-3 indicates "AWWA C303 Steel Water Line."

ANSWER: As-built data is not available as of this writing. Selected Design-Build Team will need to explore existing installations and determine the pipe material as well as joint locations.

2.19 QUESTION: Where is the nearest 48" valve beyond the tie-in location to the existing WL?

ANSWER: As-built data is not available as of this writing. Selected Design-Build Team will need to explore existing installations and determine the systems in place. Additional technical information may be provided within the subsequent RFP's appendices.

2.20 QUESTION: Please confirm the type of cathodic protection system currently in-place on the existing 48" WL.

ANSWER: As-built data is not available as of this writing. Selected Design-Build Team will need to explore existing installations and determine the systems in place. Additional technical information may be provided within the subsequent RFP's appendices.

2.21 QUESTION: What types of cathodic protection systems will be considered under this contract for the proposed WL?

ANSWER: A cathodic protection system as determined necessary by the Design-Build Team engineer of record shall be supplied. Additional technical information may be provided within the subsequent RFP's appendices.

2.22 QUESTION: According to Paragraph 12.2 of the Pipeline License agreement between BNSF Railway Company ("Licensor") and El Paso Water Utilities – Public Service Board ("Licensee"), "...all bores greater than 26-inch diameter and at a depth less than 10.0 feet below bottom of rail, a soil investigation must be performed by Licensee and reviewed by Licensor prior to construction. This study is to determine if granular material is present, and to prevent subsidence during the installation process. If the investigation determines in Licensor's reasonable opinion that granular material is present, Licensor may select a new location for Licensee's us or may require Licensee to furnish for Licensor's review and approval, in Licensor's sole discretion, a remedial plan in writing, Licensee shall, at Licensee's sole cost and expense, carry out the approved plan in accordance with all terms thereof and hereof." Please confirm that BNSF Railway Company ("Licensor") approved the location and alignment of the proposed trenchless crossing as currently proposed on Reference Plan Sheet C-1 and C-2. Is the alignment subject to change? Will the BNSF Utility Crossing Permit (to be secured by Design Build Team) be based on the documents already proposed by others? Please clarify.

ANSWER: BNSF has approved the location and alignment as referenced in sheet C-1 & C-2. The Design-Build Team may seek the approval of BNSF for variances utilizing the documents prepared by others for EPW's use or furnish the results of their own investigation at their sole expense.

2.23 QUESTION: What are the proposed limits of construction within the BNSF Railway? Reference Plan Sheet C-2 depicts an "approximate shaft" location. Is this all the working room a Contractor will have?

ANSWER: The current work area presented & approved by BNSF is as depicted in the provided exhibits.

2.24 QUESTION: What are the limits of the permanent easement secured by El Paso Water Utilities for this project?

ANSWER: The installation is not being constructed under a permanent easement but rather utility license permit and agreement with TxDOT and BNSF, respectively.

2.25 QUESTION: The June 2018 substantial completion date could be difficult to achieve depending on the level of due diligence required by the Team's design engineer. What future work (if any) will be contingent on the delivery of this project?

ANSWER: Improvements at the Canal Water Treatment Plant will be scheduled for a later date under separate contracts. The RFP will provide an anticipated project schedule, sample contract and liquidated damages rates and provisions.

2.26 QUESTION: Is El Paso Water Utilities funding the proposed project in its entirety or are there other funding sources (i.e. Texas Water Development Board)?

ANSWER: El Paso Water Utilities will be funding proposed project solely.

2.27 QUESTION: It is our understanding that there may be a future "Arena or similar" built in the immediate vicinity of the proposed project. What working constraints are foreseen to be of impact to the construction of the proposed WL, Connection, Etc.?

ANSWER: Selected Design-Build Team will be required to maintain a current Traffic Control Permit with the City of El Paso and communicate anticipated impacts to the traveling public through EPW's Public Information Officer two weeks in advance. To our knowledge, the construction schedule for the Arena has not been published but it is anticipated this work will conclude before the start of the Arena project.

2.28 QUESTION: It is our understanding that there are many on-going road and bridge projects within the immediate vicinity of the proposed project. Are there any future plans for a bridge overpass or other roadway that may impact a shaft location or proposed WL alignment?

ANSWER: The Border Highway West currently under construction crossed the BNSF railroad tracks and US85 Paisano Dr. west of this project's limits. This project's trenchless installation is expected to cause minimum disruption to both the railroad tracks and US 85 Paisano Dr. The Design-Build Team may be required to coordinate traffic control setup with other contractors on adjacent projects as typically required in urban construction.

2.29 QUESTION: Is the Team unrestricted to make the tie-in connection within the specified timeline proposed by El Paso Water Utilities? Please confirm no demobilization will be required.

ANSWER: The tie-in connection must occur outside peak demand season. An estimated schedule detailing expected peak demand periods will be provided with the RFP. Selected Design-Build Team will be required to furnish and maintain a construction schedule and will be solely responsible for planned demobilizations and demobilizations caused by non-compensable delays.

2.30 QUESTION: Addendum 1 indicates that the specialist shall have experience using the instrumentation specified "herein". However, we did not receive the specification. Can that specification be released as an addendum so we can verify our team members meet the required qualifications?

ANSWER: Please find Specification Section 02470 attached to this Addendum.

SECTION 02470

INSTRUMENTATION AND MONITORING

PART 1: GENERAL

1.01 SCOPE OF WORK

A. Furnish the required equipment and materials for installation, monitoring, and removal of geotechnical instrumentation for monitoring of ground movements within and around tunnel and shaft excavations, as well as movement of various utilities and structures. The following instruments are to be installed, maintained, and removed: surface monitoring points, structural monitoring points, and extensometers.

B. The Contractor will monitor and survey surface monitoring points, structural monitoring points, and extensometers.

1.02 RELATED WORK

A. Section 02410: Tunnel Access Shafts

B. Section 02420: Tunnel Excavation by Microtunnel Boring Machine

C. Section 02430: Tunnel Excavation

D. Section 02460: Groundwater Control

1.03 DEFINITIONS

A. See Definitions as provided in Section 01070, Definitions

1.04 QUALIFICATIONS

A. Qualifications for Instrumentation Specialist: Employ a Texas Licensed Professional Engineer specialized in geotechnical engineering with experience in the installation and maintenance of tunnel and/or shaft geotechnical instrumentation similar to that specified herein, to supervise and direct instrument installation technicians and to be responsible for the instrument installation. The Instrumentation Specialist shall supervise installation of all instrumentation.

B. Qualifications for Surveyor: Surveying, as required to support the instrumentation program, shall be performed by a Land Surveyor licensed in the State of Texas with previous similar experience surveying for the detection of structural or surface deformations.

1.05 QUALITY ASSURANCE AND CONTROL

A. All instrumentation shall be installed no later than 14 days prior to the applicable construction activity.

B. A notice shall be provided to the Engineer not less than 24 hours before installing geotechnical instrumentation.

C. Instrumentation Supplier: Each instrument specified herein shall be the product of an acceptable manufacturer currently engaged in manufacturing instrumentation hardware of the specified types.

D. Factory Calibration: A factory calibration shall be conducted on all instruments prior to shipment. Certification shall be provided to indicate that the test equipment used for this purpose is calibrated and maintained in accordance with the test equipment manufacturer's calibration requirements and that, where applicable, calibrations are traceable to the National Institute of Standards and Technology.

E. Instrument Installation: Install all instruments within three feet of the horizontal location shown on the drawings or as approved or directed by the Engineer. Install to within six inches of the bottom elevation indicated or shown. Install Probe Extensometer casings within two degrees of vertical for the entire length of the casing.

F. Should actual field conditions prevent installation of instruments at the location and elevations shown on the drawings or specified herein, obtain prior acceptance from the Engineer for new instrument location and elevation.

1.06 SUBMITTALS

A. For submittal procedures refer to Section 01300: Submittals.

B. Pre-construction for Instrumentation and Monitoring: Submit to the Engineer the following a minimum of eight weeks before the scheduled start of the applicable activity.

1. Qualifications: Submit Instrumentation Specialist and Surveyor qualifications, and all instrument supplier qualifications.
2. Description of methods and materials for installing and protecting the instruments.
3. For all instrumentation installed in borings, submit proposed schedule for installing instruments, detailed step-by-step procedures for installation, including post-installation acceptance test, together with a sample installation record sheet. The installation procedures shall include:

    a. The method to be used for cleaning the inside of casing or augers.
    b. Specifications for proposed grout mixes, including commercial names, proportions of admixtures and water, mixing sequence, mixing methods and duration, pumping methods and tremie pipe type, size and quantity.
    c. Drill casing or auger type and size.
    d. Depth increments for backfilling boreholes with sand and granular bentonite.
    e. Method for overcoming buoyancy of instrumentation components during grouting.
    f. Method of sealing joints in pipes and casing to prevent ingress of grout.
4. Product Data Samples: Submit all applicable manufacturer's literature describing operation and maintenance procedures for the instrumentation, including probes. Provide manufacturer's brochures on each product. Provide product description and drawings, along with samples where applicable.
5. Certificates: For each instrument to be installed, submit, as applicable, a certificate issued by the instrument's manufacturer stating that the manufacturer has inspected and tested each instrument before it leaves the factory to see that the instrument is working correctly and has no defects or missing parts.
6. Draft of all proposed instrumentation forms for recording, reducing and presenting instrumentation readings and results, including both manual and/or computerized data reduction methods.

C. Construction Submittals: Submit to the Engineer the following items within the time restrictions specified:

1. Data: Provide reports of monitoring surface and structural control point data to the Engineer within four hours after collection of the data or no later than the end of the shift, whichever is sooner. Provide extensometer data within 5 calendar days.
2. Installation Records: Within five days of installation of each instrument, the Instrumentation Specialist shall submit drawings showing the installed location, the instrument identification number, the instrument type, the installation date and time, established elevations, initial elevations, offset and stationing, initial coordinates, boring logs, and the anchor to tip elevation and instrument length, when applicable. The Instrumentation Specialist shall also furnish details of installed instruments showing all dimensions and materials used, a separate statement describing installation procedures for each instrument, and as-built drawings of each instrument including depths, lengths, elevations and dimensions of key elements.
3. Field Calibration: Within five working days of performing a field calibration, submit results of the calibration to the Engineer.
4. Results of initial baseline readings for all instruments.

1.07 REQUIREMENTS

A. The Contractor shall hire an independent Instrumentation Specialist to install instrumentation as specified herein and as shown on the Drawings. The Instrumentation Specialist shall be specialized in furnishing, installing calibrating and maintaining geotechnical instrumentation systems. The Contractor may serve as Instrumentation Specialist if he meets the requirements specified herein.

B. The Instrumentation Specialist shall be in charge of procurement installation, and removal of all instrumentation in accordance with the requirements herein.

C. The Contractor shall take initial readings of all instruments as specified herein and monitor surface monitoring points, structural monitoring points, and extensometers at the minimum frequencies shown in paragraph 3.03.B. Initial readings shall constitute the baseline values and shall consist of a minimum of 3 sets of readings, taken a minimum of a day apart and at least two weeks prior to the start of construction.

1.08 SAFETY

A. The method of construction shall ensure the safety of the work, project participants, the public, third parties, and adjacent property, whether public or private. All work shall conform to the requirements of all Federal, State, local laws and regulations, and safety regulations and procedures for the BNSF Railway. The Contractor is solely and completely responsible for maintaining safe work conditions at the site at all times.

B. For instruments located on the ground surface in, adjacent to, or near active traffic lanes, appropriate precautionary traffic control and/or diversion measures shall be taken during installation and monitoring to ensure a safe working environment.

C. For instruments located on the ground surface in, adjacent to, or near active rail lines, appropriate precautionary traffic control and/or diversion measures shall be taken during installation and monitoring to ensure a safe working environment.

PART 2: PRODUCTS AND MATERIALS

2.01 GENERAL

A. Instrument Manufacturer

1. Whenever any product is specified by brand name and model number, such specifications shall be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the product desired.
2. The term "acceptable equivalent" shall be understood to indicate that the "acceptable equivalent" product is the same or better than the product named in the Specifications in function, performance, reliability, quality, and general configuration. This procedure is not to be construed as eliminating from competition other suitable products of equal quality by other manufacturers.
3. The Contractor may submit complete comparative data to the Engineer for consideration of another product. Substitute products shall not be ordered, delivered to the site, or used in the work unless accepted by the Engineer in writing.

B. Any request from the Contractor for consideration of a substitution shall clearly state the nature of and the reason for the requested deviation from the product specified.

C. Specified readout units, together with associated calibration devices and software shall be furnished to the Engineer no later than one week before commencing installation of the first of each type of instrument. In addition to specified readout units for the Engineer's use when collecting data, the Contractor shall provide its own readout units as needed for making pre-installation and post-installation acceptance tests, and for taking any required readings during installation. Such readout units shall be identical to the specified readout units.

D. Surface protection shall be flush with the ground surface in paved or other areas. For all instruments except Extensometers, surface protection shall consist of a roadway box with a locking lid. Roadway boxes for Extensometers shall either have a diameter adequate to allow attachment of cable support assembly, or shall allow for attachment of an extensometer casing extension while readings are being taken.

E. For each instrument type, provide an instruction manual, which shall include the following:\

1. A description of the purpose of the instrument.
2. A theory of operation.
3. Step-by-step procedures for:

   a. Pre-installation acceptance test when instruments are received on site, to ensure the instruments are functioning correctly prior to installation.
   b. Calibration of readout units.

4. A list of calibration equipment required and recommended frequency of calibration.
5. Step-by-step instrument installation procedure including materials, tools, spare parts, and any borehole requirements and post-installation acceptance tests.
6. Maintenance procedure.
7. Step-by-step data collection procedure.
8. Data reduction, processing, and plotting procedures.

F. All graduation shall be in US Customary Units (i.e., inches, pounds, etc.).

2.02 MATERIALS

A. Sand: Filter sand shall conform to ASTM C 788 for 20-40 sand.

B. Bentonite: Granular bentonite shall be Enviroplug Medium, as manufactured by Wyo-Ben, Inc., Billings, MT, or Holeplug, as manufactured by Baroid Division, Petroleum Services, Inc., Houston, TX, or acceptable equivalent.

C. Cement Grout: Shall be Type II Portland cement and water in accordance with ASTM C 150.

D. Utility Grout: Shall have a seven-day unconfined compressive strength not less than 100 psi and not greater than 300 psi.

2.03 PRODUCTS

A. Surface Monitoring Points and Surface Monitoring Point Arrays: Surface Monitoring Points shall consist of a stable non-destructive pin, nail, point, or other identifiable element with the locations clearly identified where the ground surface consists of sidewalk, roadway, curb, or other structure. Where the ground surface consists of soil or vegetation, the Surface Monitoring Point shall consist of a grouted rebar anchor. Each Surface Monitoring Point shall have a tag or marking indicating the identification number, tunnel station, and offset from centerline.

B. Structural Monitoring Points and Structural Monitoring Point Arrays: The Structural Monitoring Points shall consist of non-destructive and stable element firmly attached to structures. Each Structural Monitoring Point shall have a tag or marking indicating the identification number, tunnel station, and offset from centerline.

PART 3: EXECUTION

3.01 GENERAL

A. Instrumentation Installation. Instrumentation shall be installed at the locations shown on the Drawings, or as directed or approved by the Engineer. Instruments shall be installed in accordance with the approved installation schedule. All instrumentation within 100 feet of tunnel alignment and shafts shall be installed, and three initial baseline readings obtained, a minimum of two weeks prior to start of excavation.

B. Access. Provide and facilitate safe access to the instruments at all times for the Engineer. The Contractor shall allow and facilitate instrument monitoring by the Engineer, for up to a maximum of 30 minutes of interruption per eight hour shift.

C. Existing Conditions: Locate conduits and underground utilities in all areas where subsurface geotechnical instrumentation is to be drilled and installed. Call "One Call" prior to any drilling. Subsurface geotechnical instrumentation locations shall be modified, as approved by the Engineer, to avoid interference with existing conduits, utilities, and foundation elements. Repair damage to existing utilities resulting from instrument installations at no additional cost to the Owner.

D. Identification: All instruments shall be clearly marked, labeled, and protected to avoid being obstructed or otherwise damaged by construction operations or the general public. Both protective housing and box or vault covers shall be marked.

E. Instrument Designation: A unique instrument identification number shall be assigned to each instrument and each point. The instrument identification number shall be clearly marked on each instrument in a permanent, legible, and nondestructive manner.

F. Surveying: Immediately following installation, the location of the top of all instruments shall be surveyed to provide horizontal and vertical coordinates. Data shall be provided to the Engineer. Re-surveying from control points shall be required monthly or more frequently to address potential disturbance or resolve conflicting data. Monitoring of all instruments and monitoring points shall be per the schedules in 3.03.B.1 and 3.03.B.2.

G. Drilling from the Ground Surface: Instrumentation holes drilled from the ground surface shall be subject to the same permitting and drilling requirements as those for geotechnical exploration boreholes. Obtain necessary permits for each such instrument and conform to the permit requirements during drilling, installation, monitoring, and abandonment.

3.02 INSTALLATION

A. Installation. A notice shall be provided to the Engineer not less than 24 hours before installing geotechnical instrumentation.

1. Instrumentation Supplier. Each instrument specified herein shall be the product of an acceptable manufacturer currently engaged in manufacturing instrumentation hardware of the specified types.
2. Factory Calibration. A factory calibration shall be conducted on all instruments prior to shipment. Certification shall be provided to indicate that the test equipment used for this purpose is calibrated and maintained in accordance with the test equipment manufacturer's calibration requirements and that, where applicable, calibrations are traceable to the National Institute of Standards and Technology.

B. Installation Tolerances.

1. Instrument Installation: Install all instruments within three feet of the horizontal location shown on the drawings or as approved or directed by the Engineer. Install to within six inches of the bottom elevation indicated or shown. Install Extensometer, and Observation Well casings within two degrees of vertical for the entire length of the casing. Should actual field conditions prevent installation of instruments at the location and elevations shown on the drawings or specified herein, obtain prior acceptance from the Engineer for new instrument location and elevation.

C. Surface Monitoring Points and Surface Monitoring Point Arrays: Surface Monitoring Points shall be located as shown on the Drawings or as approved or directed by the Engineer.

D. Structural Monitoring Points and Structural Monitoring Point Arrays: Structural Points shall be installed on railroad tracks and structural foundation elements as shown on the Drawings or as approved or directed by the Engineer.

3.03 MONITORING

A. Initial Readings. The Contractor shall take three initial readings at least one day apart of all instruments to establish a baseline and provide the Engineer with this data, in accordance with the requirements specified herein.

B. Frequency.

1. The Contractor will monitor required instrumentation and provide the Engineer with the data. As a minimum, the Contractor will follow the following schedule:

Instrument Type	**Active Zone-within 10ft of Active Excavation or Tunnel Face**	**Outside Active Zone**
Surface Monitoring Points	Daily	Weekly
Structural Monitoring Points	Daily	Weekly
Extensometers	Daily for 3 consecutive days	Weekly

2. The Contractor shall perform additional monitoring as necessary to control construction and to ensure the safety of the work.

C. Reporting:

1. For all instrumentation and readings performed by the Contractor, whether required or not, the Contractor shall submit to the Engineer all monitoring data. Provide these data on the same time limits as for Owner-provided monitoring data. The data shall include, but are not limited to, the following:
   a. A copy of the data sheets containing a cumulative history of readings, including weather conditions, temperature, and proximity of the excavation to the instrument location itself, at the time of each reading.
   b. A copy of the plot of measured values versus time, including a time history of construction activity likely to influence such readings.

D. Interpretation. The Contractor shall make his/her own interpretations of monitoring data for his/her own purposes. Data or interpretations shall not be published or disclosed to other parties without advance written permission of the Engineer. The Engineer may make his/her interpretations of the data available to the Contractor at the Engineer's option.

3.04 MAINTENANCE

A. Damaged Installations: Protect the instruments from damage. Damaged installations shall be replaced as required prior to continuing tunneling, unless permitted otherwise by the Engineer.

B. Maintenance: Maintain the instruments by draining water and flushing debris from under protective covers and keeping covers locked and sealed at all times.

3.05 FINAL DISPOSITION

A. Surface Control Points: Remove all instruments during the cleanup and restoration work or as required by the Engineer.

3.06 RESPONSE VALUES. The Contractor shall abide by the following Response Values.

Instrument	Threshold Value	Shutdown Value
Surface Monitoring Point	0.125"	0.25"
Structural Monitoring Point (common structures)	0.25 H or V inches	0.50 H or V inches
Extensometer	2" V at a distance of 3' above tunnel crown 1" V at a distance of 6' and 12' above tunnel crown	4" V at a distance of 3' above tunnel crown 2" V at a distance of 6' and 12' above tunnel crown

When a given response value is reached, the Contractor shall respond in accordance with the following:

A. THRESHOLD VALUE: The Contractor shall meet immediately with the Engineer to discuss his/her means and method to determine what changes, if any, shall be made to better control movement.

B. SHUTDOWN VALUE: The Contractor shall stop all work immediately. The Contractor shall meet with the Engineer to develop a plan of action before work can be resumed.

PART 4: MEASUREMENT AND PAYMENT METHOD

A. The measurement for geotechnical instrumentation shall be Lump Sum quantity according to Bid Item Tunneling Instrumentation. The cost for the specified equipment and maintenance services shall be included in the bid item.

END OF SECTION

END OF ADDENDUM NO. 2

(This page intentionally left blank)