



CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

GWA RESOLUTION NO. 20-FY2020

**RELATIVE TO APPROVAL OF CHANGE ORDER NO. 7 FOR THE ROUTE 1 “ASAN-
ADELUP-HAGATNA” SEWER DESIGN CONTRACT**

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities (“CCU”) has plenary authority over financial, contractual, and policy matters relative to the Guam Waterworks Authority (“GWA”); and

WHEREAS, the Guam Waterworks Authority (“GWA”) is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA has received a grant from USEPA under the State Revolving Fund program to improve the sewer collection system, which included over 13,300 linear feet of gravity sewer line along Route 1, from Asan “War in the Pacific” National Historic Park to the Agana Main Pump Station; and

WHEREAS, the gravity sewer line indicated is deteriorating and has experienced collapses in a number of locations causing SSOs and surcharging upstream; and

WHEREAS, GWA awarded a contract for the Engineering services in the amount of One Million Three Hundred Twenty Seven Thousand Four Hundred Forty Nine Dollars (\$1,327,449.00) with design service options related to additional Field Investigation Services and Construction Engineering Services in the amount of Two Hundred Ninety Five Thousand One Hundred Eighty Nine Dollars (\$295,189.00) should this service option be needed (see EXHIBIT A – Original Fee Proposal) which was approved via CCU Resolution 02-FY2016; and

WHEREAS, on May 12, 2017, GWA advertised the Invitation to Bid (IFB-06-ENG-2017) for the Asan-Adelup-Hagatna, Route 1 Sewer Line Rehabilitation and Replacement

1 soliciting bid proposals from experienced and responsive bidders to repair and/or replace
2 segments of gravity sewer lines and manholes in the villages of Asan and Hagatna, but ultimately
3 received no responsive and responsible bids; and
4

5 **WHEREAS**, on October 31, 2017, GWA advertised the Invitation to Re-Bid (IFB-11-
6 ENG-2017) for the Asan-Adelup-Hagatna, Route 1 Sewer Line Rehabilitation and Replacement
7 soliciting bid proposals from experienced and responsive bidders to repair and/or replace
8 segments of gravity sewer lines and manholes in the villages of Asan and Hagatna, but again
9 received no bids; and
10

11 **WHEREAS**, following the Invitation to Re-Bid, GWA decided to reduce the scope of
12 the construction project to obtain more interest in the project and to suit the available SRF
13 funding originally allocated to the project and directed the Engineer, HDR (“Engineer”), to
14 develop a set of construction plans and specification to cover the work required only from Asan
15 to Adelup; and
16

17 **WHEREAS**, on May 4, 2018, GWA advertised the Invitation to Re-bid (IFB-05-ENG-
18 2018) for the Asan-Adelup-Hagatna, Route 1 Sewer Line Rehabilitation and Replacement
19 soliciting bid proposals from experienced and responsive bidders to repair and/or replace
20 segments of gravity sewer lines and manholes from Asan to Adelup; and
21

22 **WHEREAS**, following review and approval by GWA and the Engineer, GWA entered
23 into a contract with Infratech International, LLC (“Infratech”) for the Asan to Adelup Segment in
24 accordance with CCU Resolution 44-FY2018; and
25

26 **WHEREAS**, GWA has previously negotiated Change Orders with the Engineer that 1)
27 provide for perform engineering services for the Asan sewer break repair; 2) provide for perform
28 construction management (CM) services for the Asan sewer break repair and geotechnical survey
29 permit fees; 3) provide for funding for permitting and bidding coordination, additional CM
30 services associated with the Asan sewer break, and extending the contract time by 62 days; 4)
31 provided for additional funding for CM services and extending the contract time by 60 days
32 associated with the Asan sewer break; 5) provided for extending the contract time by 827 days

1 due to contract advertisement and award delays; and 6) adjusting the contract budget to raise the
2 construction services item amount.

3
4 **WHEREAS**, GWA has now decided to proceed with the remaining portion of the
5 originally planned scope for the section from Adelup to Hagatna (referred to as Phase 2 in
6 HDR's proposal), and has instructed the Engineer to provide a scope and fee proposal to cover
7 final completion of the Adelup-Hagatna Section, provide engineers services during the bidding
8 stage and to provide engineering services throughout the construction phase; and

9
10 **WHEREAS**, the scope of services for the Engineer for the Asan to Adelup segment has
11 also increased due to extensions to the original construction contract completion date and due to
12 the Department of Public Works restrictions on the construction hours which requires some work
13 to be completed at night; and

14
15 **WHEREAS**, GWA negotiated Change Order No. 7 (Exhibit B) to extend HDR's
16 contract for completion of the Asan-Adelup segment and to add services to complete the Adelup-
17 Hagatna Segment, and GWA Management seeks approval of the Change Order fee proposal
18 from HDR in the amount of Two Hundred Fourteen Thousand Three Hundred Forty-Five
19 Dollars (\$214,345.00); and

20
21 **WHEREAS**, the negotiated Change Order No. 7 (Exhibit B) extends the estimated time
22 to the construction completion of Asan-Adelup segment to July 2020, and allows for completion
23 of the Adelup-Hagatna segment 12 months after award of the Adelup-Hagatna construction
24 contract and increases HDR's total contract value to One Million Nine Hundred Ninety-Four
25 Thousand Five Hundred Fifty-Five Dollars (\$1,994,555.00); and

26
27 **WHEREAS**, funding for this project will be from the USEPA State Revolving Fund and,
28 if necessary, GWA Bond funds with an estimated project budget of One Million Nine Hundred
29 Ninety-Four Thousand Five Hundred Fifty-Five Dollars (\$1,994,555.00); and

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1 **NOW BE IT THEREFORE RESOLVED**, the Consolidated Commission on Utilities
2 does hereby approve the following:

- 3 1. The recitals set forth above hereby constitute the findings of the CCU.
4 2. The CCU hereby approves the funding increase for additional construction
5 support services for the current Asan to Adelup construction and for revisions to
6 the drawings and contract provisions for the Adelup to Hagatna section (noted as
7 Phase 2) and, additionally, for construction support services for the construction
8 of facilities from Adelup to Hagatna for the additional funding amount of Two
9 Hundred Fourteen Thousand Three Hundred Forty-Five Dollars (\$214,345.00).
10 3. The CCU hereby further approves the total funding authorization for the contract
11 with HDR, Inc to an amount of One Million Nine Hundred Ninety-Four Thousand
12 Five Hundred Fifty-Five Dollars (\$1,994,555.00).

13
14 **RESOLVED**, that the Chairman certified and the Board Secretary attests to the adoption
15 of this Resolution.

16
17 **DULY AND REGULARLY ADOPTED**, this 24th day of March, 2020.

18 Certified by:

18 Attested by:

19
20 

20 

21 **JOSEPH T. DUENAS**
22 Chairperson

21 **MICHAEL T. LIMTIACO**
22 Secretary

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SECRETARY'S CERTIFICATE

I, Michael T. Limtiaco, Board Secretary of the Consolidated Commission on Utilities as evidenced by my signature above do hereby certify as follows:

The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

AYES: 5
NAYS: 0
ABSTENTIONS: 0
ABSENT: 0



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EXHIBIT A



October 16, 2015

Mr. Thomas F. Cruz, PE
Chief Engineer
The Guam Waterworks Authority
Engineering Division
Gloria B. Nelson Public Service Building
688 Rt. 15
Mangilao, Guam 96913

SUBJECT: Asan-Adelup-Hagatna, Route 1 Sewer Line Rehabilitation and Replacement
GWA Project No. S15-002-EPA

Dear Mr. Cruz,

Thank you for selecting HDR Engineering, Inc. (HDR), to provide professional services for the subject project. In response to the Scope of Work attached to the Request for Proposal (RFP) and the scoping meeting held on July 24, 2015 with Brown and Caldwell, HDR and its subconsultants are submitting this proposal to accomplish the work as outlined herein for approximately 13,300 linear feet of gravity sewer mains.

General Tasks and Approach

The general tasks proposed for this project are as follows:

- | | |
|--------|---------------------------------------|
| Task 1 | Project Management |
| Task 2 | Data Research and Agency Coordination |
| Task 3 | Field Investigations |
| Task 4 | Hydraulic Analysis |
| Task 5 | Preliminary Engineering Report |
| Task 6 | Design Documents |
| Task 7 | Bidding Process |
| Task 8 | Construction Services |

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The requested scope of services and preparation of this proposal were based on a preliminary look at the existing system, our inherent knowledge of the system, and initial conversations with the Guam Waterworks Authority (GWA) operations and maintenance staff on the condition of the sewer lines in the project area. Both the scope of the design, the anticipated construction schedule and the associated fees were based upon the following assumptions:

- The majority of the sewer mains in the Asan reach will be open cut replacement
- The majority of the sewer mains in Adelup and Hagatna reach will be rehabilitated in lieu of open cut replacement.
- To accommodate delivering design documents in a timely manner to provide sufficient time to construct the portion of the project being funded with SRF funds, the design documents will be delivered in two design packages. The first design package (Phase I), to be constructed with the SRF funds is proposed to be the design from manhole 1399Asan to manhole 17Asan or other mutually agreed up manhole. The second design package (Phase II) will include design from manhole 17Asan, or where Phase I ends, and extends to the Agana pump station wet well.

The actual scope of the design will be adjusted, as required, and the associated fees may be modified to reflect significant changes in the scope if the actual field conditions and resultant design differ from the assumptions listed above.

The requested services to be conducted in Tasks 1-7 and the Archaeological Fieldwork Data Analysis and Report to be conducted in Task 8, we are presenting to be performed on a lump sum basis, except for the following services in Task 3, which will be performed based upon conditions found in the field:

- Additional manhole inspections
- Miscellaneous field work, which includes smoke testing and dye testing
- Sewer pipe cleaning
- Archaeological monitoring during geotechnical drilling

HDR is proposing that these specific services listed above from Task 3, in addition to the services found in Task 8, be provided on a Time and Materials (T&M) basis with a Not to Exceed (NTE) fee.

Task 8 was based upon a preliminary construction schedule of twelve (12) months and was based upon the assumptions mentioned earlier, in addition to the following:

- The existing capacity of the sewer main is sufficient for the future peak flows.
- Time is for construction of only the design to be included in the Phase I design package.

Scope of Work and Detailed Task Descriptions

The following describes a detailed scope of work proposed for this project:

Task 1 - Project Management

- a) General Project Management – This task will involve general project management of the project from Notice to Proceed (NTP) through the end of Task 6 as presented below and is anticipated to last approximately eight (8) months only. This will also include all subconsultant coordination during this same time period.
- b) Project Management Plan – In accordance with GWA's Program Management Manual, a Project Management Plan will be developed and will include the following: Project description, project scope (from contract), project team including subconsultants, and the anticipated project work plan with schedule.
- c) The project schedule will be created in Microsoft Project and will outline the work plan with dates set for all critical milestones for the project. The schedule will be updated throughout the project and will be provided monthly at the bi-weekly meetings.
- d) Progress reports will be generated on a monthly basis and will be included with the monthly payment invoices.
- e) Bi-weekly progress meetings will be held with GWA Engineering personnel and GWA's PMO consultant at the GWA Engineering office, unless otherwise agreed upon, to provide updates on the status of the project.
- f) A kick-off meeting will be conducted within two (2) weeks of receipt of the NTP with GWA Engineering personnel, GWA Operations and Maintenance personnel, GWA's PMO and HDR. The meeting will outline the project goals, project timeline, to discuss pertinent items related to the project and provide a listing of requested items to be provided by GWA to HDR.
- g) Public notification will be coordinated with GWA's Public Information Officer to ensure that the public is aware of field activities which may impact the public (i.e. lane closures and smoke testing) as described in Task 3, below.

Task 2 - Data Research and Agency Coordination

- a) Research and review of the following items will be conducted for the gravity sewer main along the project reach in Asan from manhole 1399Asan to manhole 1398Asan and in Hagatna from manhole 13Asan to manhole 324Haga, including the Asan and Hagatna pump stations and any ancillary facilities:
 - Existing As-built Drawings
 - Maintenance and Repair History
 - Manhole and Pipeline Inspection
 - Pump Station Operation Data

- Existing Flow Monitoring Data
 - Existing Sewer Model
 - Future Flow Estimates
 - Existing and Proposed Land Use Data
- b) Existing pump station operational data and flow data for the Port Authority of Guam and the Piti pump stations to be utilized for the hydraulic model will be researched and reviewed.
- c) Interviews with GWA operations staff will be held to understand the system and to obtain any pertinent information that would be beneficial to the project.
- d) Initial coordination will be conducted with the following agencies to obtain pertinent information in relation to the project and their associated requirements, including permitting, to conduct work in and around their facilities or areas of interest:
- Department of Public Works (DPW) – Includes Building Permit office, Highway Encroachment Permit office and Highway Engineering Department.
 - Department of Land Management (DLM)
 - Guam Power Authority (GPA)
 - Guam Environmental Protection Agency (GEPA)
 - Guam Parks and Recreation
 - Guam Division of Aquatics and Wildlife Resources (DAWR)
 - United States National Park Service (NPS)
 - United States Army Corps of Engineers (USACE)
 - Asan Village Mayor's office
 - Hagatna Village Mayor's office
 - DZSP21
 - Guam Telephone Company (GTA)
 - Docomo Pacific
 - Tata Communications
 - Pacific Data Systems
 - IT&E
 - Verizon Business (CalPac)

Task 3 - Field Investigations

- a) **Flow Monitoring** – Three (3) flow monitors will be installed along the gravity sewer main to record existing flows and establish their respective diurnal patterns. The flow monitoring data will be used to develop and calibrate the hydraulic model. Flow

monitoring data will be collected and posted to the ADS FlowView Portal and will be made available to GWA and the PMO to access for viewing, exporting or printing in tabular, hydrograph or scattergraph formats. Monitoring will be conducted for 60 days only. Monitoring will be conducted for 60 days only. If substantial rainfall and significant wet-weather flows do not occur within the 60 day period, GWA would have the option of extending the monitoring period at an additional cost.

- b) **Rainfall Monitoring** – One (1) rainfall monitoring station, including a tipping bucket and a data logger, will be installed in a secure location to capture rainfall data to correlate with the flow monitoring data. Monitoring will be conducted for 60 days only. If substantial rainfall and significant wet-weather flows do not occur within the 60 day period, GWA would have the option of extending the monitoring period at an additional cost.
- c) **Manhole Inspections** – This task will involve conducting inspections, reviewing the data, rating the manholes and determining what recommended rehabilitation or replacement would be needed to be included in Preliminary Engineering Report as outlined in the Task 5 description below. This task will be conducted on twenty four (24) manholes along the Asan reach, from manhole 1399Asan to manhole 1398Asan, and will include the following:
- Inspections based on the National Association of Sewer Service Companies (NASSCO) Level 2 standards.
 - Observations will be reported on NASSCO Manhole Assessment Certification Program (MACP) forms for Level 2 inspections.
 - GPS coordinates will be collected for each manhole with a handheld GPS .
 - Digital photographs including area, upstream, downstream, the top and bottom of the manhole cover, downward view, the ring, rungs, and any visible defects from the surface will be provided.
 - Obtaining the DPW Highway Encroachment Permit.
 - Providing the necessary traffic control as approved through the DPW Highway Encroachment permit.
- d) **Additional Manhole Inspections** – This task will involve conducting up to six (6) additional manhole inspections, as needed, for any manholes that are not identified in the GIS system and are found in the field that are along the main sewer line. This task will also include reviewing the data, rating the manhole and determining what recommended rehabilitation or replacement would be needed to be included in the Preliminary Engineering Report as outlined in the Task 5 description below.

- e) **Sewer Line Cleaning** – This task will involve cleaning approximately 6,800 LF of sewer main lines to facilitate CCTV collection and is broken down according to the following:
- Cleaning the existing pipes from manhole 1399Asan to the Asan Pump Station wet well (approximately 4,510 LF).
 - Cleaning the existing pipes from manhole 13Asan to manhole 17Asan (approximately 1,100 LF).
 - Cleaning the existing pipes from manhole 348Asan to manhole 350CHaga (approximately 410 LF).
 - Cleaning the existing pipe from manhole 342Haga to manhole 343Haga (approximately 210 LF).
 - Cleaning of the existing pipes from manhole 326Haga to manhole 326AHaga (approximately 130 LF).
 - Cleaning the existing pipes from manhole 323Haga to the Agana Pump Station wet well (approximately 440 LF).
 - Payment for water at a location provided by GWA. GWA shall provide a meter.
 - Transport and disposal of sewage or debris at the Northern Wastewater Treatment Plant, including payment of \$25 per load.
 - Decanting water back into the sewer lines.
 - Providing the necessary traffic control as approved through the DPW Highway Encroachment permit.

If it is determined that the pipe is in danger of collapsing due to the cleaning work, the level of cleaning may not fully comply with PACP requirements. Cleaning may be limited to allow passage of the CCTV camera only. Repair of collapsed pipes and other conditions that may prevent passage of the CCTV camera is not included in this scope.

- f) **Closed Circuit Television (CCTV) Inspections** – This task will involve collecting CCTV inspections using NASSCO Pipeline Assessment Certification Program (PACP) standards on approximately 6,800 LF of sewer main and is broken down according to the following:
- Sewer main from manhole 1399Asan to the Asan Pump Station wet well (approximately 4,510 LF).
 - Sewer main from manhole 13Asan to manhole 17Asan (approximately 1,100 LF).
 - Sewer main from manhole 348Asan to manhole 350CHaga (approximately 410 LF).
 - Sewer main from manhole 342Haga to manhole 343Haga (approximately 210 LF).

- Sewer main from manhole 326Haga to manhole 326AHaga (approximately 130 LF).
 - Sewer main from manhole 323Haga to the Agana Pump Station wet well (approximately 440 LF).
 - Providing the necessary traffic control as approved through the DPW Highway Encroachment permit.
- g) **Miscellaneous Field Work** – This task includes any reconnaissance that will be needed as part of the field investigations that is outside of the flow monitoring, manhole inspections and CCTV inspections scopes and will also include the deployment of any necessary smoke testing or dye testing. It is currently unknown if the area within the stretch of the Route 1 gravity sewer line in front of the National Park Service's Asan Beach Unit has laterals connected to the Asan Beach Unit from when this area served as a Navy Camp, Hospital and Refugee Camp. This area could possibly have illicit connections allowing stormwater to enter the system, therefore smoke testing or dye testing will be deployed to confirm if these connections exist.
- h) **Topographical Survey** – A topographical survey will be conducted along the sewer main line from manhole 1399Asan to the Asan pump station and from the manhole 13Asan to the Hagatna pump station. The topographical survey will also include the following:
- Research of Route 1 (Marine Corps Drive) right of way documents and sewer line easements along the projects subject sewer main line from 1399Asan to the Asan Pump Station and from manhole 13Asan to the Hagatna Pump Station. This information will be required to be provided as part of the permitting process with DPW.
 - Establish horizontal and vertical control referenced from the 1993 Guam Geodetic Network (GGN93) grid.
 - Conduct topographical survey along the sewer main line which will include road pavement (2 lanes and center lane depending on location) and 20 feet swath from the edge of the pavement. Survey will include locating all visible utilities and other structures. Conduct 100 feet wide swath for all lines that cross the roadway perpendicular to the direction of travel.
 - Invert and/or top elevations of pipes will be collected for any visible storm drainage crossings, water lines in manhole vaults and or electrical/communication lines that cross the main sewer line.
 - Structure finished floor elevations and cleanout locations will be obtained for up to 14 structures located in areas that have had previous sewage backup spills and currently have backflow valves installed on the sewer laterals.
 - Survey to be provided in both a PDF and CAD format.
 - Obtaining the DPW Highway Encroachment Permit.

- Providing the necessary traffic control as approved through the DPW Highway Encroachment permit.
- i) **Geotechnical Survey** – A geotechnical investigation will be conducted to determine the conditions of the soil and to provide recommendations for both the design and construction of this project. The investigation will include the following:
- Exploration of subsurface conditions by eight (8) test borings drilled twenty (20) feet below the existing ground surface within the project site along Route 1 (Marine Corps Drive).
 - Laboratory testing on the samples obtained during the drilling explorations to provide pertinent soils data. Testing will include moisture and density determinations, sieve analyses, Atterberg Limits, Modified Proctor, laboratory California Bearing Ratio (CBR) tests and corrosivity tests.
 - Engineering analyses using the field and laboratory information will be conducted to provide design and construction recommendations, to include recommendations for pavement repairs.
 - Preparation of a written report summarizing the results of the findings.
 - DPW Highway Encroachment Permit Fees
 - Providing the necessary traffic control as approved through the DPW Highway Encroachment permit.
 - DZSP21 Utility Clearances and fees.
 - GEPA Test Boring Application and fee.

The geotechnical survey scope is based upon the following conditions:

- Standby time for any archaeological recovery during time of field investigations is included in the proposal fee only up to 24 hours.
 - Costs above \$500 each for either the DPW Highway Encroachment Permit or the DZSP21 utility permits or clearance fees are not included in the proposal fee.
 - Field Investigations will only be conducted between the hours of 0900 and 1530 during weekdays.
 - Minimum restoration of the test boring holes will be performed, as practical.
- j) **Archaeological Monitoring during Geotechnical drilling** – Archaeological monitoring will be provided during test borings as required by the Guam Historical Preservation Office on a time and materials basis and is currently estimated to be no more than 32 hours.

Task 4 - Hydraulic Analysis

- a) A hydraulic sewer model will be generated utilizing Innovyze's InfoSWMM to model the gravity sewer line main from manhole 1399Asan downstream to the Agana Pump Station. The model will also include the modeling of the Asan Pump Station and force main based upon as-built drawings. The sewer model will also be provided in EPA SWMM for implementation into GWA's sewer model, as needed.
- b) Land use data will be researched and collected for both the existing and proposed future land uses. Peak flows will be generated from available land use and field data, and inputted into the model.
- c) A hydraulic analysis will be performed using the calibrated model to determine if the existing capacity of the sewer line is sufficient to handle the planned future flows and that the proposed rehabilitation or replacement will not have negative consequences. It is our understanding that the existing line currently experiences surcharging during wet weather events, therefore the model will account for these peaking factors to the extent known and will be checked that no overflows would exist, however system design capacity will not necessarily be increased to accommodate these additional flows outside of normal accepted inflow and infiltration.
- d) Findings from the analysis will be included as a chapter within the Preliminary Engineering Report as part of Task 5.

Task 5 - Preliminary Engineering Report

- a) A Preliminary Engineering Report will be generated to summarize the findings from Tasks 2-5 and will include the following:
 - An archeological assessment of project impact will be assessed and a report will be prepared outlining the anticipated scope and impacts the project could encounter with any archeological or cultural sensitive areas.
 - The recommended repair or replacement design for the sewer main from 1399Asan to the Asan pump station wet well and from 13Asan to the Hagatna pump station wet well.
 - A Class 4 (AACE) cost estimate will be provided for the recommendations.
 - A preliminary geotechnical report
- b) Four (4) hard copies and an electronic copy of this report will be submitted to GWA for review and approval before proceeding with any design documents.

Task 6 - Design Documents

Upon approval of the recommendations for design presented in the preliminary engineering report by GWA and EPA, design documents will begin to be prepared. The following scope will be provided as part of this task:

- a) **Archaeological Monitoring and Discovery Plan (AMDP)** – One AMDP will be developed to cover both the Phase I and Phase II design packages. The AMDP will be based upon consultation with the Guam Historic Preservation Office (GHPO) and the requirements given based upon the scope of the Route 1 sewer design. One (1) hard copy of this plan will be submitted.
- b) **30% Design Plans, Specifications and Cost Estimates** – Design plans, specifications and cost estimate will be prepared according to the following:
 - Design plans will be produced on half size 11"x17" sheets and will include, but not limited to sewer plans and profiles.
 - Design plans will be produced and provided utilizing Autocad Civil 3D 2014.
 - Specifications will be generated to include only an outline and key sections and will be coordinated with GWA's front end documents, Sections A, B and C.
 - Construction cost estimate will be Class 2 (AACE).
 - Five (5) hard copy sets of the design plans, specifications and construction cost estimate will be submitted.
- c) **90% Design Plans, Specifications and Cost Estimates**
 - Design plans will be produced on half size 11"x17" sheets and will include, but not limited to sewer plans and profiles, details, bypass pumping and traffic control plans.
 - Design plans will be produced and provided utilizing Autocad Civil 3D 2014.
 - Specifications will be generated in coordination with GWA's front end documents, Sections A, B and C.
 - Construction cost estimate will be Class 2 (AACE).
 - Five (5) hard copy sets of the design plans, specifications and construction cost estimate will be submitted.
- d) **100% Design Plans and Specifications**
 - Design plans will be produced on full size 22"x34" sheets and will include, but not limited to sewer plans and profiles, bypass pumping and traffic control.
 - Design plans will be produced and provided utilizing Autocad Civil 3D 2014.
 - Specifications will be generated in coordination with GWA's front end documents, Sections A, B and C.

- Five (5) hard copy sets of the design plans, specifications and construction cost estimate will be submitted.
 - Five (5) sets of electronic copies will submitted on DVD's.
- e) **Permits** - The following permits are anticipated for this project and the permit applications will be started and ready for the construction contractor at the time of bidding and all associated reviews with the agencies will be conducted at the 30%, 90% and 100% design document levels:
- Department of Public Works Building Permit
 - Department of Public Works Highway Encroachment Permit
 - Guam Environmental Protection Agency Clearing and Grading Permit
 - Guam Environmental Protection Agency Sewer Construction Permit
 - Guam Environmental Protection Agency Dewatering Permit
 - Guam Environmental Protection Agency Erosion Control Permit
- f) **Permit Agency Coordination** - Permit clearances will be conducted and obtained from the following agencies in relation to obtaining the various permits listed above.
- Department of Public Works (DPW) –Highway Engineering Department
 - Department of Land Management (DLM)
 - Guam Power Authority (GPA)
 - Guam Environmental Protection Agency (GEPA)
 - Guam Parks and Recreation
 - Guam Division of Aquatics and Wildlife Resources (DAWR)
 - United States National Park Service (NPS)
 - United States Army Corps of Engineers (USACE)
 - Asan Village Mayor's office
 - Hagatna Village Mayor's office
 - DZSP21
 - Guam Telephone Company (GTA)
 - Docomo Pacific
 - Tata Communications
 - Pacific Data Systems
 - IT&E
 - Verizon Business (CalPac)

Task 7 - Bidding Process

- a) A pre-bid meeting will be conducted with GWA, the PMO and interested bidding contractors. A meeting agenda and sign in sheets will be prepared and made available

during the meeting. Meeting minutes will be prepared from this meeting and will be provided to GWA for review and incorporated into the bid documents.

- b) Requests for clarification will be compiled with appropriate responses in coordination with GWA and addenda will be prepared as needed.
- c) HDR will attend the bid evaluation conference.
- d) HDR will review, evaluate and certify the bid tabulations.
- e) HDR will prepare a letter recommendation for the construction contract award.

Task 8 - Construction Services

As mentioned earlier in this scoping letter, HDR anticipates that a majority of the Asan sewer main line will require open cut replacement and a majority of the Hagatna sewer main line will require rehabilitation. Based upon these two conditions and the existing sewer capacity is sufficient for future peak flows, it is anticipated that construction on the Phase I design will require a total of approximately twelve (12) months and the Phase II design package will require another twelve (12) months, for a total of approximately twenty four (24) months of construction to complete both phases. Task 8 construction services only cover services to be performed for the Phase I construction. Construction services for Phase II can be performed for an additional charge. A Not to Exceed (NTE) fee has been prepared and includes the following services to be performed:

- a) Final 100% "Issued for Construction" conformed plans and specifications incorporating addenda, change orders and changes during the bid phase will be prepared. Five (5) sets of hard copy plans, specifications and cost estimate will be provided and five (5) sets of electronic documents on DVD will be provided.
- b) Weekly construction progress meetings will be attended at the request of GWA.
- c) Performing field observations as required and submit field reports documenting any findings. Field observations are estimated to be required on a weekly basis.
- d) Archaeological monitoring services will be provided as required by GHPO and are estimated at 480 hours. Data collection will be based upon recording and collecting small samples of artifacts, with no more than ten (10) artifacts being collected, processed, analyzed and temporarily curated. Archaeological monitoring investigations will be conducted at the rates specified per hour and all sites and features will be recorded and evaluated to the extent that can be accomplished by a single archaeological monitor and in the case the work is too much for one monitor, an additional monitor can be added upon the written approval of GWA at the same hourly rate presented in the proposal.
- e) HDR will review contractor submittals, RFI's, Change Orders and schedule and provide responses/comments as necessary.
- f) HDR will perform a final inspection and submit a punch list of items to GWA.

Compensation

HDR proposes to perform the services as outlined according to the following:

Tasks 1-7, except those listed in Task 3 to be performed on T&M basis and the Archaeological Fieldwork Data Analysis and Report.	Lump Sum of \$1,327,449
Task 3 T&M services and Task 8	NTE Sum of \$295,189
Total HDR NTE Fee	\$1,622,638

A summary of the fee in the requested GWA format is attached for both the lump sum fee and the time and materials fee. Also included is the proposed schedule of rates.

Delivery Schedule

HDR proposes to complete Tasks 1-6 as presented in this proposal within 8 months, after a signed contract and Notice to Proceed (NTP) are received by HDR. Task 7 is assumed to follow and be completed within 30 days from GWA's receipt of Phase I, 100% design plans and specs. Task 8 will be delivered over a period of 12 months from the time the construction contractor receives a contract and NTP.

Proposal Assumptions, Exclusions and Limitations

Only the services described in our proposal are included. The following assumptions, exclusions and limitations were made in preparation of this scope and fee proposal:

- USACE Section 401 Permitting – It is assumed that no major exterior rehab or reconstruction work will be performed at the stream crossings, therefore no permitting will be required and is not included in the scope and fee.
- From the scoping meeting held on July 24, 2015 with Brown and Caldwell, it is unknown if an environmental assessment has previously been done for this project and we understand that the US EPA has provided a categorical exclusion for approximately 1,000 linear feet on Route 1 in Adelup, located across from the Governor's complex. It is unknown if the remaining area of the project has also been given a categorical exclusion, therefore any fees for conducting an environmental assessment have been excluded at this time.
- Uncovering buried or paved over manholes to conduct manhole inspections is not included in the scope and fee. GWA will be required to uncover these manholes for inspections to be conducted.
- GWA shall assist with obtaining permission for accessing manholes on private property, if required.
- The scope and fee does not include repaving uncovered or buried manholes

- Plugging the sewer line for flow control for either smoke testing or dye testing is not included in the fee.
- Smoke testing or dye testing are only to confirm if any illicit stormwater connections exist from the Asan Beach Unit to the sewer main. Any connections found will be reported to GWA. The scope and fee does not include designing any of these reconnections to a stormwater system.
- The proposal fee assumes that no human skeletal remains or features of significance requiring data recovery, analysis, and reporting will be discovered during the archaeological monitoring investigations.

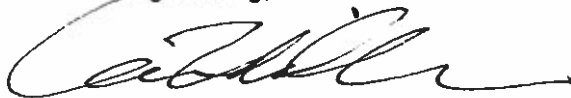
GWA and the PMO will be responsible for providing the following in addition to items identified in Task 2:

- Latest GIS information to include both water and wastewater infrastructure.
- Request and deliver the latest existing and proposed land use and zoning maps in GIS from the Bureau of Statistics and Plans and from the Department of Land Management
- Request and deliver the latest parcel map in GIS from the Department of Land Management.
- Latest GWA sewer model for the project area.
- Providing a water meter and source for filling a Vactor truck.
- Providing a disposal site at the Northern District Wastewater Treatment Plant for any sewage and debris collected from the sewer lines.
- Providing access to pump stations for field investigation work.
- Providing GWA standard details.
- Providing GWA standard upfront Sections A, B, C of specification documents.

We are again thankful for the opportunity to serve GWA again on this very important project. If there are any questions, please feel free to call Nick Manley in our Guam office at 671-989-5558.

Sincerely,

HDR Engineering, Inc.



Aaron Meilleur
Vice-President



Design Services to Asan-Adelup-Hagalns, Route 1 Sewer Rehabilitation and Replacement
 GWA Project No. S15-002-EPA
 Route 1 Lump Sum Fee Worksheet

Task Number	Task Description	HDR										Subconsultants					Sum Total
		Principal Engineer	Project Manager	Technical Advisor - QA/QC	Senior Engineer	Project Engineer	GIS Analyst	CAD	Accounting	Clerical	USI	PSET	Pineda	Search	RLE		
	Hourly Labor Rates/Unit Prices	\$250	\$190	\$250	\$190	\$140	\$125	\$135	\$95	\$70							
1.0	Project Management																
1.0.1	General Project Management (Task 1-7)	30	100	6	0	0	0	0	16	6					\$29,540		
1.0.2	Develop Project Management Plan	0	8	0	16	0	0	0	0	0					\$4,560		
1.0.3	Develop Project Schedule and Updates	0	16	0	8	0	0	0	0	0					\$4,560		
1.0.4	Develop Monthly Progress Reports	0	16	0	0	0	0	0	0	0					\$3,040		
1.0.5	Bi-weekly Meetings with GWA	4	40	0	16	0	0	0	0	0					\$11,640		
1.0.6	Project Kick-off Meeting	2	6	2	4	2	0	0	0	0					\$3,180		
1.0.7	Public Outreach	0	8	0	0	0	0	0	0	0					\$1,520		
	SUBTOTAL	36	194	8	44	2	0	0	16	6	0	0	0	0	\$58,440		
2.0	Data Research and Agency Coordination																
2.0.1	Obtain and Review Record Drawings	0	8	0	8	20	0	0	0	0					\$5,840		
2.0.2	Obtain and Review Maintenance and Repair History	0	4	0	4	4	0	0	0	0					\$2,080		
2.0.3	Obtain and Review Manhole and CCTV Inspection Data	0	2	0	2	4	0	0	0	0					\$1,320		
2.0.4	Obtain and Review Pump station operation data	0	8	0	16	8	0	0	0	0					\$5,680		
2.0.5	Obtain and Review Existing Flow monitoring data	0	8	0	24	0	0	0	0	0					\$6,080		
2.0.6	Obtain and Review Future Flow estimates and Sewer Model from B&C	0	4	0	12	0	0	0	0	0					\$3,040		
2.0.7	Interview GWA operations staff	0	4	2	4	2	0	0	0	0					\$2,300		
2.0.8	Initial Coordination with DPW, DLM, GFA, GEPFA, GPR, DAWR, NPS, USACE, Mayors, DZSP21, GTA, Docomo, Tata, PDS, IT&E, CalPac	0	60	0	0	0	0	0	0	0					\$11,400		
	SUBTOTAL	0	98	2	70	38	0	0	0	0	0	0	0	0	\$37,740		
3.0	Field Investigation																
3.0.1	Conduct, Obtain and Review Rainfall & Flow Monitoring Data (4 Meters/60 days)	0	10	0	40	20	0	0	0	0	\$60,000				\$72,300		
3.0.1a	USI Mobilization (Personnel, Monitoring Equipment and Installation Equipment)										\$25,000				\$25,000		
3.0.2	Conduct, Obtain and Review Manhole Inspection Data	0	4	0	30	160	0	0	0	0	\$10,800				\$31,260		
3.0.3	Conduct, Obtain and Review CCTV Data	0	8	1	20	60	0	0	0	0	\$25,840				\$39,610		
3.0.3a	USI Mobilization (CCTV Truck)										\$60,000				\$60,000		
3.0.4	Conduct, Obtain and Review Survey	0	4	1	4	8	0	0	0	0		\$67,600			\$70,490		
3.0.5	Conduct, Obtain and Review Geotechnical Investigations	0	4	1	4	8	0	0	0	0		\$37,500			\$40,390		
	SUBTOTAL	0	30	3	96	196	0	0	0	0	\$181,640	\$37,500	\$67,600	\$0	\$338,260		

Last Updated: 9/22/2015



Design Services to Asan-Adelup-Hagarua, Route 1 Sewer Rehabilitation and Replacement
GWA Project No. S15-002-EPA
Route 1 Lump Sum Fee Worksheet

4.0 Hydraulic Analysis																
4.0.1	Obtain GIS Land Use Data	0	8	0	0	0	8	0	0	0						\$2,520
4.0.2	Manipulate GIS Land Use Data to Develop Flows	0	8	0	60	0	90	0	0	0						\$24,170
4.0.3	Develop Hydraulic Sewer Model	0	8	0	100	0	0	0	0	0						\$25,520
4.0.4	Analyze Results of Hydraulic Sewer Model	0	10	0	60	20	0	0	0	0						\$18,100
SUBTOTAL		0	34	0	220	20	98	0	0	0						\$63,310
5.0 Preliminary Engineering Report																
5.0.1	Develop Final PER Report	0	20	16	100	120	70	0	0	16						\$53,470
5.0.2	Archaeological Assessment of Project Impact	-	-	-	-	-	-	-	-	-			\$2,669			\$2,669
5.0.3	Class 4 (AAEC) Cost Estimate for PER Report	-	-	-	-	-	-	-	-	-			\$8,000			\$8,000
SUBTOTAL		0	20	16	100	120	70	0	0	16	\$0	\$0	\$0	\$2,669	\$8,000	\$64,139
6.0 Design Documents																
6.0.1	Archaeological Monitoring and Discovery Plan														\$3,352	
6.0.2	Prepare 30% Plans	0	60	40	150	200	0	300	0	0						\$118,400
6.0.3	Prepare 30% Specs	0	4	8	40	40	0	0	0	20						\$17,360
6.0.4	Prepare 30% Class 2 (AAEC) Cost Estimate	0	4	0	8	10	0	0	0	0			\$3,000			\$3,880
6.0.5	30% Permitting	0	50	0	15	20	0	0	0	0						\$15,190
6.0.6	Prepare 90% Plans	0	160	100	300	500	0	760	0	0						\$285,000
6.0.7	Prepare 90% Specs	0	20	12	80	100	0	0	0	40						\$38,800
6.0.8	Prepare 90% Class 1 (AAEC) Cost Estimate	0	8	0	16	20	0	0	0	0			\$6,000			\$7,360
6.0.9	90% Permitting	0	80	5	20	40	0	0	0	0						\$34,600
6.0.10	Prepare 100% Issue to Bid Plans	0	40	20	80	140	0	200	0	0						\$74,400
6.0.11	Prepare 100% Issue to Bid Specs	0	2	4	10	20	0	0	0	20						\$7,480
6.0.12	100% Permitting	0	50	0	10	20	0	0	0	0						\$14,200
6.0.13	Prepare Building Permit and Other Permit Applications	0	30	0	0	2	0	0	0	0						\$5,980
SUBTOTAL		0	508	184	729	1112	0	1260	0	80	\$0	\$0	\$0	\$3,352	\$9,000	\$612,410
7.0 Bidding Process																
7.0.1	Pre-Bid Meeting	0	4	0	2	2	0	0	0	0						\$1,420
7.0.2	Compile requests for clarification	0	16	8	20	20	0	0	0	0						\$11,840
7.0.3	Prepare addenda	0	18	0	20	20	0	0	0	0						\$9,640
7.0.4	Bid Evaluation Conference	0	4	0	0	0	0	0	0	0						\$760
7.0.5	Review and Tabulate Bid Tabulations	0	4	0	4	20	0	0	0	0						\$4,320
7.0.6	Prepare Recommendation for Award Letter	0	4	0	0	8	0	0	0	0						\$1,880
SUBTOTAL		0	48	8	46	70	0	0	0	0						\$29,660
8.0 Construction Services																
8.0.1	Fieldwork Data Analysis and Report	0	0	0	0	0	0	0	0	0					\$12,910	\$12,910
SUBTOTAL		0	0	0	0	0	0	0	0	0	0	0	0	0	\$12,910	\$12,910



Design Services to Asan-Adelup-Hagatna, Route 1 Sewer Rehabilitation and Replacement
GWA Project No. S15-002-EPA
Route 1 Lump Sum Fee Worksheet

	Technology Charge	\$20,720
	Mileage Reimbursement	\$1,000
	Printing, Scanning and Binding	\$2,500
HDR SUBTOTAL		\$919,399
Total Subcontractor Subtotal		\$322,690
Subconsultant Markup (10%)		\$32,268
Total Subtotal Fee		\$1,274,347
GUAM GRY TAX (4.167%)		\$53,102
TOTAL LUMP SUM FEE		\$1,327,449



Design Services for Asan-Adekup-Hagaina, Route 1 Sewer Rehabilitation and Replacement
 GWA Project No. S15-002-EPA
 Time and Materials Fee Worksheet

Task Number	Task Description	HDR										Subconsultants					Sum Total											
		Principal Engineer	Project Manager	Technical Advisor - QA/QC	Senior Engineer	Project Engineer	GIS Analyst	CAD	Accounting	Clerical	USI	PSET	Pineda	Search	RLB													
3.0	Field Investigations																											
	Hourly Labor Rates/Unit Prices	\$250	\$190	\$250	\$190	\$140	\$125	\$135	\$95	\$70																		
3.0.1	Conduct, Obtain and Review Additional Manhole Inspection Data	0	2	0	6	24	0	0	0	0	\$2,700						\$7,580											
3.0.2	Sewer Pipe Clearing (Est. at \$3,000/day for 30 days) Misc. Fieldwork (Inclusive of smoke testing and dye testing) (Est. at \$425/hr for 20 hours)										\$90,000						\$90,000											
3.0.3	Geotechnical Standby Time for any Archaeological Work (Est. at \$415/hr for 24 hours)										\$8,500						\$8,500											
3.0.4												\$9,960					\$9,960											
SUBTOTAL		0	2	0	6	24	0	0	0	0	\$101,200	\$9,960	\$0	\$0	\$0		\$116,040											
8.0	Construction Services																											
8.0.2	General Project Management	20	50	8	8	0	0	0	15	0							\$19,445											
8.0.3	Prepare "Issued for Construction" conformance plans and specs	0	10	8	10	20	0	20	0	0							\$11,300											
8.0.4	Review Submittals, RFIs, Change Orders and Contractor's Schedule, Attend Construction Contractor's Progress Meetings, and perform Field Observations	0	228	0	40	0	0	0	0	0							\$50,920											
8.0.5	Perform Final Inspection and Punch List	0	8	0	0	0	0	0	0	0							\$1,520											
8.0.6	Archaeological Monitoring (Geotech and Construction) (Min. 4 hour per visit)													\$62,750			\$62,750											
SUBTOTAL		20	296	16	58	20	0	20	15	0	\$0	\$0	\$0	\$62,750	\$0		\$145,935											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;"></td> <td style="width: 5%;">Technology Charge</td> <td style="width: 15%;"></td> <td style="width: 10%; text-align: right;">\$1,765</td> </tr> <tr> <td></td> <td>Mileage Reimbursement</td> <td></td> <td style="text-align: right;">\$650</td> </tr> <tr> <td></td> <td>Printing, Scanning and Binding</td> <td></td> <td style="text-align: right;">\$1,600</td> </tr> </table>																		Technology Charge		\$1,765		Mileage Reimbursement		\$650		Printing, Scanning and Binding		\$1,600
	Technology Charge		\$1,765																									
	Mileage Reimbursement		\$650																									
	Printing, Scanning and Binding		\$1,600																									
HDR SUBTOTAL																												
\$32,060																												
Total Subcontractor Subtotal																												
\$173,910																												
Subconsultant Markup (10%)																												
\$17,391																												
Total Subtotal Fee																												
\$263,381																												
GUAM GRT TAX (4.167%)																												
\$11,808																												
TOTAL TIME AND MATERIALS FEE																												
\$275,189																												
TOTAL LUMP SUM FEE (FROM PAGE 3)																												
\$1,327,449																												
GRAND TOTAL FEE																												
\$1,622,638																												



**Design Services for Asan-Adelup-Hagatna,
Route 1 Sewer Rehabilitation and Replacement
GWA Project No. S15-002-EPA
Rate Schedule for Professional Services**

Category	Assigned Hourly Rate
Principal Engineer	\$250
Technical Advisor	\$250
Project Manager	\$190
Senior Engineer	\$190
Project Engineer	\$140
GIS Analyst	\$125
CAD Designer	\$135
Accounting	\$95
Administration	\$70

Reimbursable Expenses:

Printing

22"x34" Large Format Print

\$1/sheet

Scanning

22"x34" Large Format Scan

\$1/sheet

Mileage

Reimbursed at the effective IRS allowable rate (Currently \$0.575/mile)

Compensation for services shall be at the hourly billing rates identified in the schedule above. If additional labor categories are used on the project, they and their billing rates will be submitted to GWA for approval. Billing rates are subject to annual adjustments for changes in salary. In addition to compensation for labor, the CONSULTANT shall be reimbursed for subcontractor costs and other direct costs associated with the project.

Notes:

1. Subconsultants are charged at cost plus ten percent (10%).
2. A technology charge of \$3.70 will be billed for every hour charged.
3. The Guam Revenue Tax (GRT) in effect at the time of billing will be applied to each monthly invoice total for work.

EXHIBIT B



March 13, 2020

Mr. Thomas F. Cruz, PE
Chief Engineer
The Guam Waterworks Authority
Engineering Division
Gloria B. Nelson Public Service Building
688 Rt. 15
Mangilao, Guam 96913

SUBJECT: Route 1 Sewer Line Rehabilitation and Replacement (Asan-Adelup-Hagatna, GWA Project No. S15-002-EPA; Change Order No. 7 – Additional Fee for Construction Services for Phase I and Additional Fee for Phase II design package and bidding services.

Dear Mr. Cruz,

HDR Engineering, Inc. (HDR) is pleased to present this proposal for additional services to be performed during the remainder of the current construction contract for Phase I by Infratech International, LLC. (ITI).

Additionally, we understand that GWA desires to repackage the remainder of this project that was not included within the Phase I construction contract as a Phase II design construction package and is requesting additional services in support of the bidding and construction phase. The additional services for Phase I and Phase II are described below in more detail:

Phase I Additional Construction Services

HDR understands that the existing construction contract with ITI is proposed to be extended from their original construction contract end date by an additional 127 working days. Our proposed services are estimated to be extended based upon that same timeframe or an equivalent of 7 months.

HDR also understands that the Guam Department of Public Works (DPW) is requiring that ITI perform construction work across Route 1 at night for the sewer line replacement between manholes 1397Asan and 1398Asan. This requirement will require archaeological monitoring to be performed during these night time hours, which is outside of our originally agreed upon contract working hours. We understand that this change is still being worked out in full details with ITI on

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how they plan to perform the work, so our proposal is based upon the following information that has been provided to us:

1. ITI plans to perform work at night for 12 hours a night.
2. ITI plans to perform sheet piling for excavation protection. This is assumed to require initial monitoring for excavation prior to sheet piling, and continued monitoring after sheet piling has been installed.
3. ITI plans to require two (2) months to perform the work.

A more detailed description of the continued construction support is provided below:

Scope of Work and Detailed Task Descriptions

The following describes a detailed scope of work proposed for this project:

Task 8 - Construction Services

As mentioned earlier, it is our understanding that ITI's contract is being extend an additional 127 days. These additional services include the following:

- a) Bi-weekly construction progress meetings will be attended at the request of GWA.
- b) Performing field observations as required and submit field reports documenting any findings. Field observations are estimated to be required on a bi-weekly basis.
- c) Archaeological monitoring services were provided and have exceeded our original contract for 480 hours. From 11/27/2019 to 1/8/2020 an additional 33.5 hours were expended in excess of our original contract as follows:

Date	Personnel	Hours	4 Hour Minimum (Yes or No)	Total Cumulative Hours
11/27/2019	Flores, Lisa	4	No	4
12/30/2019	Flores, Lisa	7	No	11
1/6/2020	Flores, Lisa	7.5	No	18.5
1/7/2020	Flores, Lisa	7.5	No	26
1/8/2020	Flores, Lisa	7.5	No	33.5

- d) Continued archaeological monitoring services will be provided as required by GHPO and have been estimated based upon the CCTV review and recommendations provided by HDR on 11/13/19. Each spot repair has been estimated to only require a limited amount of monitoring service and is based upon 16 hours for each anticipated

spot repair. Each location will be evaluated individually by the project archaeologist and determined if full time or limited monitoring is required.

Additionally, an estimated 512 hours has been estimated to cover a two (2) month construction period for the sewer line replacement that will occur during night time hours.

A detailed estimate of archaeological monitoring services is shown below:

Estimate of Archaeological Monitoring Hours				
US MH	DS MH	Repair (Spot or Full)	# of Hours	Notes
1399	1400	Full	40	-
20A	20AA	Spot (Assumed)	16	Need Additional CCTV to assess fully
20AA	1368	Spot (Assumed)	16	Need Additional CCTV to assess fully
1368	1369	Spot (Assumed)	16	Need Additional CCTV to assess fully
1369	1390	-	-	No Spot Repair Needed
1390	1391	Spot	16	-
1391	1392	Spot	16	-
1392	1387	-	-	No Spot Repair Needed; Other work required before CIPP
1387	10293	-	-	No Spot Repair Needed; Other work required before CIPP
10293	1393	-	-	No Spot Repair Needed; Other work required before CIPP
1393	1394	-	-	Possible Sag; Need further CCTV
1394	1395	Spot (Assumed)	16	CCTV Review is not conclusive as this pipe may have a sag present.
1395	1396	-	-	Replaced under Previous Contract
1396	1396A	-	-	Need CCTV (Predicted to not need repair)
1396A	1397	Full	160	(8 Hr/Day x 5 days/week x 4 weeks)
1397	1398	Full	*512	(12 Hr/Day x 5 days/week x 8 weeks) + (8 Hr/Day x 2 days/trip x 2 trips)

**Hours shown are just reflective of the estimation of the total hours required to complete the monitoring based upon the 12 hours/night shift for 60 days at a normal M-F schedule and additional 8 hour/day for travel days for 2 trips. This number does not reflect how this work will be billed, which is explained further below in this proposal and on the rate schedule.*

Continued data collection will be based upon the original proposal of recording and collecting small samples of artifacts, with no more than ten (10) artifacts being collected, processed, analyzed and temporarily curated.

Archaeological monitoring investigations during the day will be conducted at the rates specified per hour and all sites and features will be recorded and evaluated to the extent that can be accomplished by a single archaeological monitor and in the case the work is too much for one monitor, an additional monitor can be added upon the written approval of GWA at the same hourly rate presented in the proposal.

Archaeological monitoring investigations during the night, will be required to bring an additional monitor dedicated to this project from off island to perform these investigations. Appropriate travel and expense costs have been included in this proposal for a proposed duration of no more than 60 days. This work will be delivered at a daily rate of \$1,500 plus applicable daily expenses.

Phase II Additional Services

The requested scope of services is to repackage the remaining construction drawings that were not included as part of the Phase I construction package and prepare a revised construction bid set for a Phase II portion of this project.

Additionally, GWA desires for continued bidding and construction services support to be provided throughout the bidding and construction phase of this Phase II project.

Contrary to the Phase I construction services, it is our understanding that GWA desires that the successful bidding Contractor be required to provide the archaeological monitoring services throughout their construction as required by the Guam State Historical Preservation Office (SHPO), therefore is not included within this proposal.

More detailed description of the tasks and services is provided below:

Scope of Work and Detailed Task Descriptions

The following describes a detailed scope of work proposed for this project:

Task 9 - Phase II Design Documents

- a) Repackage Design Plans and Specifications into a Phase II Bid Package. Appropriate updates to the documents will be made to place archaeological monitoring service requirements onto the Contractor to perform. Additional "lessons learned" from the

Phase I construction will be implemented to the current design to improve on the construction documents.

- b) Repackaging design plans and specifications will be provided according to the following:
 - Updates to the design construction plans and specifications will be made and electronic PDF copy of changes will be delivered for review by GWA.
 - Design plans will be produced on full size 22"x34" sheets.
 - Five (5) hard copy sets of the design plans and specifications will be submitted.

Task 10 - Phase II Bidding Process

- a) A pre-bid meeting will be conducted with GWA, the PMO and interested bidding contractors. A meeting agenda and sign in sheets will be prepared and made available during the meeting. Meeting minutes will be prepared from this meeting and will be provided to GWA for review and incorporated into the bid documents.
- b) Requests for clarification will be compiled with appropriate responses in coordination with GWA and addenda will be prepared as needed.
- c) HDR will attend the bid evaluation conference.
- d) HDR will review, evaluate and certify the bid tabulations.
- e) HDR will prepare a letter recommendation for the construction contract award.

Task 11 - Phase II Construction Services

HDR anticipates that a majority of the Hagatna sewer main line will require rehabilitation. It is anticipated that construction on the Phase II design package will require twelve (12) months to complete. A Not to Exceed (NTE) fee has been prepared and includes the following services to be performed:

- e) Final 100% "Issued for Construction" conformed plans and specifications incorporating addenda, change orders and changes during the bid phase will be prepared. Five (5) sets of hard copy plans, specifications and cost estimate will be provided and five (5) sets of electronic documents on DVD will be provided.
- f) Weekly construction progress meetings will be attended at the request of GWA.
- g) Performing field observations as required and submit field reports documenting any findings. Field observations are estimated to be required on a weekly basis.
- h) HDR will review contractor submittals, RFI's, Change Orders and schedule and provide responses/comments as necessary.
- i) HDR will perform a final inspection and submit a punch list of items to GWA.

Compensation

HDR proposes to perform the services as outlined according to the following:

To Date Total HDR Fee (through CO#6)	\$1,780,210
Tasks 9-10 on a Lump Sum basis.	Lump Sum of \$19,447
Task 8 and 11 on a T&M, NTE basis	NTE Sum of \$194,898
Total HDR CO #7 NTE Fee	\$214,345
Total HDR NTE Fee	\$1,994,555

A summary of the fee in the requested GWA format is attached for both the lump sum fee and the time and materials fee. Also included is the proposed schedule of rates.

Delivery Schedule

HDR will continue to provide services under Task 8 on the current construction contract with ITI and proposes to complete Task 9 as presented in this proposal within 1 month, after a signed contract and Notice to Proceed (NTP) are received by HDR from GWA. Task 10 is assumed to follow and be completed within 30 days from GWA's receipt of the Phase II, 100% design plans and specs. Task 11 will be delivered over a period of 12 months from the time the construction contractor receives a contract and NTP and is assumed to follow shortly after completion of the bidding process.

Proposal Assumptions, Exclusions and Limitations

Only the services described in our proposal are included. The following assumptions, exclusions and limitations were made in preparation of this scope and fee proposal:

- No permitting support is included in this proposal.
- The proposal fee assumes that no human skeletal remains or features of significance requiring data recovery, analysis, and reporting will be discovered during the archaeological monitoring investigations.
- Off island archaeological monitoring travel will include both labor (up to 8 hours) and daily expenses for one (1) travel day before and after the time on Guam.
- Night archaeological monitoring investigations are based upon no more than 12 hours per day being worked.

- The archaeological monitor scheduled to investigate during the night, will be billed at the nightly rate of \$1,500/night, plus expenses, from the scheduled start night and will continue for each normal business day and until Contractor's excavation work is completed or there is a scheduled break in construction warranting a demobilization and remobilization at a scheduled future date.
- Proposal includes one (1) demobilization and remobilization for the archaeological monitor to demobilize before the sheet piling installation and remobilize to continue monitoring investigations after the sheet piling is installed and excavation resumes.
- Archaeological monitoring investigations are only planned to be for the normal business weekdays and does not include any monitoring investigations to be provided on the weekends.
- The archaeological monitor scheduled to investigate during the night, will be subject to the availability of the monitor to come to Guam.
- To schedule the night work, a minimum notice of three (3) weeks is necessary for scheduling for the archaeological monitor to arrive to Guam.

We are again thankful for the opportunity to continue to serve GWA. If there are any questions, please feel free to Nick Manley at 671-989-5558.

Sincerely,

HDR Engineering, Inc.



Cliff Lum, P.E.

Water Business Group Manager



Design Services to Asan-Adelup-Hagatna, Route 1 Sewer Rehabilitation and Replacement
 GWA Project No. S15-002-EPA
 Change Order #7 - Lump Sum Fee Worksheet

Task Number	Task Description	HDR										Subconsultants				Sum Total		
		Principal Engineer	Project Manager	Technical Advisor - QAVQC	Senior Engineer	Project Engineer	GIS Analyst	CAD	Accounting	Clerical	USI	PSET	Pineda	Search	RLB			
9.0	Hourly Labor Rates/Unit Prices	\$255	\$195	\$255	\$195	\$145	\$125	\$145	\$125	\$75								
9.0.1	Phase II - Design Documents	0	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	\$12,695
	Update Plans and Specifications	0	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	\$12,695
	SUBTOTAL	0	45	4	0	0	0	0	0	0	0	0	0	0	0	0	0	\$12,695
10.0	Phase II - Bidding Process																	
10.0.1	Pre-Bid Meeting	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$390
10.0.2	Compile requests for clarification	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	\$2,070
10.0.3	Prepare addenda	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$780
10.0.4	Bid Evaluation Conference	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$390
10.0.5	Review and Tabulate Bid Tabulations	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$1,560
10.0.6	Prepare Recommendation for Award Letter	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$390
	SUBTOTAL	0	26	2	0	0	0	0	0	0	0	0	0	0	0	0	0	\$5,580
HDR SUBTOTAL																	\$0	
																	\$200	
																	\$18,475	
Total Subcontractor Subtotal																	\$0	
Subconsultant Markup (10%)																	\$0	
Total Subtotal Fee																	\$18,475	
GUAM GRT TAX (5.263%)																	\$972	
TOTAL LUMP SUM FEE																	\$19,447	
																	\$0	
																	\$0	
																	\$18,475	
																	\$972	
																	\$19,447	



Design Services for Asan-Adelup-Hagatna, Route 1 Sewer Rehabilitation and Replacement
 GWA Project No. S15-002-EPA
 Change Order #7 - Time and Materials Fee Worksheet

Task Number	Task Description	HDR										Subconsultants				Sum Total
		Principal Engineer	Project Manager	Technical Advisor - QA/QC	Senior Engineer	Project Engineer	GIS Analyst	CAD	Accounting	Clerical	USI	FSET	Pineda	Search	RLB	
	Hourly Labor Rates/Unit Prices	\$255	\$195	\$255	\$195	\$145	\$125	\$145	\$125	\$75						
8.0	Phase I - Construction Services															
8.0.1	General Project Management	2	12												\$3,725	
8.0.2	Attend Construction Contractor's Progress Meetings and Perform Field Observations		42												\$8,190	
8.0.3	Archaeological Monitoring Services														\$128,008	
	SUBTOTAL	2	54	0	0	0	0	0	0	0	0	0	0	0	\$139,923	
11.0	Phase II - Construction Services															
11.0.1	General Project Management	2	24												\$7,190	
11.0.2	Prepare "Issued for Construction" conformance plans and specs		4												\$3,100	
11.0.3	Review Submittals, RFIs, Change Orders and Contractor's Schedule, Attend Construction Contractor's Progress Meetings, and perform Field Observations		84		24										\$21,060	
11.0.4	Perform Final Inspection and Punch List		4												\$780	
	SUBTOTAL	2	116	0	24	0	0	0	0	0	0	0	0	0	\$32,130	
HDR SUBTOTAL																
Total Subcontractor Subtotal																
Subcontractor Markup (10%)																
Total Subtotal Fee																
GUAM GRT TAX (5.283%)																
TOTAL TIME AND MATERIALS FEE																
TOTAL LUMP SUM FEE (FROM PAGE 1)																
GRAND TOTAL FEE																
\$214,345																
Mileage Reimbursement																
Printing, Scanning and Binding																
\$100																
\$200																
\$128,008																
\$12,801																
\$185,153																
\$9,745																
\$194,898																
\$19,447																



**Design Services for Asan-Adelup-Hagatna,
Route 1 Sewer Rehabilitation and Replacement
GWA Project No. S15-002-EPA
Change Order #7 - Rate Schedule for Professional Services**

Category	Assigned Hourly Rate
Principal Engineer	\$255
Technical Advisor	\$255
Project Manager	\$195
Senior Engineer	\$195
Project Engineer	\$145
GIS Analyst	\$125
CAD Designer	\$145
Accounting	\$125
Administration	\$75
<hr/>	
Archaeological Monitor (SEARCH)(During Normal Business Hours)	\$125

Reimbursable Expenses:

Printing

22"x34" Large Format Print \$1/sheet

Scanning

22"x34" Large Format Scan \$1/sheet

Mileage

Reimbursed at the effective IRS allowable rate (Currently \$0.575/mile)

Airfare

Reimbursed at actual cost (Estimated at \$2,500 roundtrip)

Hotel

Reimbursed at actual cost (Estimated at \$180/night)

Car

Reimbursed at actual rental cost + fuel cost (Estimated at \$70/day)

Per Diem

\$50/day (Includes travel days)

Compensation for services shall be at the hourly billing rates identified in the schedule above. If additional labor categories are used on the project, they and their billing rates will be submitted to GWA for approval. Billing rates are subject to annual adjustments for changes in salary. In addition to compensation for labor, the CONSULTANT shall be reimbursed for subcontractor costs and other direct costs associated with the project.

Notes:

1. Subconsultants are charged at cost plus ten percent (10%).
2. The Guam Revenue Tax (GRT) in effect at the time of billing will be applied to each monthly invoice total for work.
3. Archaeological Monitors brought in from off island are subject to two (8 hour day equivalent) billing or \$1,000/travel day (8 hours x \$125/hr) for each trip to the island.
4. Archaeological monitoring brought from off island for the purpose of monitoring at night will be billed at the rate of \$1,500/night plus applicable reimbursable expenses as outlined in this proposal.

Exhibit B (continued)

Estimate of Remaining Archaeological Monitoring

US MH	DS MH	Repair (Spot or Full)	# of Hours	Notes
1399	1400	Full	40	(8 Hr/Day x 5 days/week x 1 week)
20A	20AA	Spot (Unsure)	16	Need Additional CCTV to assess fully
20AA	1368	Spot (Unsure)	16	Need Additional CCTV to assess fully
1368	1369	Spot (Unsure)	16	Need Additional CCTV to assess fully
1369	1390	-	-	No Spot Repair Needed
1390	1391	Spot	16	
1391	1392	Spot	16	
1392	1387	-	-	No Spot Repair Needed; Other work required before CIPP
1387	10293	-	-	No Spot Repair Needed; Other work required before CIPP
10293	1393	-	-	No Spot Repair Needed; Other work required before CIPP
1393	1394	-	-	Possible Sag; Need further CCTV
1394	1395	Spot (Unsure)	16	CCTV Review is not conclusive as this pipe may have a sag present.
1395	1396	-	-	Replaced under Previous Contract
1396	1396A	-	-	Need CCTV (Predicted to not need repair)
1396A	1397	Full	160	(8 Hr/Day x 5 days/week x 4 weeks)
1397	1398	Full	512	(12 Hr/Day x 5 days/week x 8 weeks) + (8 Hr/Day x 2 days/trip x 2 trips)
1398	Asan PS	-	0	
Unbilled Monitoring Hours			33.5	\$4,187.50
Total Daytime Monitoring			296	\$37,000
Total Nighttime Monitoring			512	\$64,000

Travel Costs

	# of Trips/Days/Nights	
Airfare (x2, once before sheet pile, once after sheet pile)(\$2500/trip)	2	\$5,000
Hotel (\$180/night)	59	\$10,620
Car (\$70/day)	60	\$4,200
Per Diem (\$50/day)	60	\$3,000
Total Travel Costs		\$22,820
Total SEARCH Costs		\$128,008