

# HAUGLAND VIRGIN ISLANDS WORK PLAN

## PR-02-24 UNDERGROUND ELECTRIC CONSTRUCTION OF FEEDER 5A PRIMARY CABLE SYSTEM

### Company Profile

Haugland Virgin Islands provides electric transmission, distribution, substation and power plant construction and maintenance services. We are capable and qualified to work on all voltages that exist in the USVI. In addition, the company provides civil, vegetation management, horizontal drilling, rock drilling, fiber-optics, telecommunication services, and debris collection and processing services.

Haugland Energy's management are experienced in coordinating program management activities including field engineering and design, material specification and procurement, contracting, scheduling, permitting, safety and compliance.

In 2018, Haugland formed Haugland Virgin Islands Inc as a continuance of Haugland Energy Group LLC to have a long term presence and commitment to the US Virgin Islands. In addition, Haugland formed Grace Civil LLC in the US Virgin Islands to perform civil construction. Collectively, Haugland Energy Group LLC. and Haugland Virgin Islands Inc are referred to as the "Company" in this proposal.

The Company is supported by an extensive balance sheet. The Company has excellent relationships with the banking community and maintains several equipment and lines of credit facilities to support its day-to-day operations. In addition, the Company is further supported by the surety market with one billion dollars in bonding capacity.

The Company has been operating in the USVI for over four years and has established a working relationship with several vendors and subcontractors that will play a vital role in the performance of this contract. Their roles are discussed in detail further in this proposal,

### Company Qualifications and Compliance:

As active contractors operating in the electrical and civil construction markets in the USVI, we are well versed on local ordinances, state, federal and utility companies' rules and regulations. This includes OSHA, EPA, DPNR, National Electrical Safety Code, and WAPA specific Construction Standards. Haugland Energy is qualified to work on energized lines, is compliant with OSHA section 1910.269.

The Company is licensed in the USVI territory to perform electric service work, engineering services and has a general contractor's license pending issuance. In addition, the Company carries the proper insurance including territory based auto and workers compensation insurances.

The Company has an active DUNS number and is registered with US Government and is listed on the "SAM" system.

The Company is compliant with Davis Bacon Requirements and HUD reporting.

The Company has a Drug, Alcohol and Unauthorized Substance Testing Policy. In addition, its field and safety management are trained on reasonable suspicion and post-accident testing.

The Company has performed construction related activities and is familiar with working conditions in St John.

The Company has and enforces an Affirmative Action Policy. In addition, the Company makes best efforts to provide procurement opportunities for small and minority or women owned businesses. The Company also seeks opportunities to employ local residents and firms. As an IBEW contractor who actively participates in apprenticeship programs, the Company is committed to on the job training and the development of its workforce including presenting opportunities for Section 3 employees.

### **Relevant Project Experience:**

The Company has been performing underground electrical construction in its territory in the Northeast since its inception. Its management and ownership experience dates back three decades. In the current day, the Company is progressing underground electrical construction:

### **In progress relevant project experience:**

Firm: St. Thomas International Airport Project: Location; St. Thomas

Contact: Timothy Mullarkey

Phone Number: 516-336-6720

Work Scope; This project involves reconstruction of the active runway at the airport.

Key Points:

- Installation of new conduit and manhole systems
  
- Installation of MV cables, splicing & termination
- Conduit will be installed in the following manners
  - Open cut excavation
  - Jack and Bore if needed. This includes all temporary and permanent restoration

### **Recently completed similar projects:**

Firm: VIWAPA

Project Location: St. Thomas

Contact: Kevin Hansen/ Sean Cooper

Phone Number: 516-336-6720

Work Scope: This project installs approximately 5miles of new UG Transmission Line in the Cruz Bay Area

Key Points:

- Installation of new conduit and manhole system
- Installation of MV Cable including terminations and splices.
- Installation of new terminations structures in both substations to support cable terminations.
- Conduit will be installed in the following manners
- Open cut excavation

Management Approach to Work

PROJECT ORGANIZATION CHART

For this project, the Company will have three dedicated staff positions which will include a Project

Manager, Civil Works Supervisor and an Electrical Supervisor. In addition to the dedicated full time positions, the Company will supplement the site management staff as required with task specific positions including a Health and Safety Engineer, a Project Engineer, an Equipment Receiving and Logistics Manager and a Public Works Liaison with overall assignment to a Project Executive.

#### JOB DESCRIPTIONS:

##### SR PROJECT MANAGER

The Sr. Project Manager will be a senior position with ultimate responsibility for the steering and success of the project. The Sr. Project Manager will provide oversight and management of the entire project team and is responsible to carry out the full project cycle from the start to the completion of construction and through the project closeout phase. The Sr. Project Manager will continually assess the projects safety, monitor project performance indicators and oversee the short term and long term project planning and ensure compliance with all Contractual obligations.

##### PROJECT MANAGER

The Project Manager has direct responsibility for the schedule, budget, quality and Health, Safety, Security and Environmental performance of the project and all Project resources, and is the primary point of contact between the EPC contractor and the Owner. The duties of the Project Manager include oversight of all Engineering, Procurement and Construction activities to ensure that all Project work is carried out according to the standards set forth in this Project Execution Plan and in accordance with the requirements of the EPC Contract.

##### HEALTH, SAFETY AND ENVIRONMENTAL MANAGER

The Health, Safety and Environmental Manager has overall responsibility for the establishment and enforcement of the Company's Health, Safety, Security and Environmental standards for all Project work. The HSSE Manager will:

- Ensure all required environmental health and safety activities for the site are accomplished as required by regulatory or policy requirements.
- Work with all on-site parties to assure that activities of policy and procedure maintenance and development, walkthrough inspections, audits, task evaluations, testing, training, briefings and reporting of performance measures/metrics are completed.
- Support and advise site management and supervision in matters relating to safety and health and shall have the authority to stop work activity in the event of imminent danger to the safety and health of workers, the public, or the environment.
- Conduct safety orientations and indoctrination, effect scheduled safety observations and inspections, develop site-specific safety processes and procedures, and work with the Corporate HSSE Manager to ensure implementation of the HSSE Plan.
- Interface and coordinate with Owner's management personnel on HSSE-related matters.
- Monitoring storm water management practices to prevent adverse effects to surrounding water bodies;

##### CIVIL WORKS SUPERVISOR

The Civil Works Supervisor ensures that all civil work including subcontractors and direct hire work is proceeding safely, on schedule, and in compliance with the Contract and applicable technical requirements.

##### ELECTRICAL SUPERVISOR

The Electrical Works Supervisor ensures that all electrical work including subcontractors and direct hire work is proceeding safely, on schedule, and in compliance with the Contract and applicable technical requirements.

## QA/QC MANAGER

The Company A/QC Manager has overall responsibility for the establishment and implementation of the Quality Standards for the Project and for the maintenance of the Project Quality Plan. The QA/QC Manager performs Quality Assurance reviews; evaluates, audits, and reports on the effectiveness of the Quality Management System during all phases of the project; and verifies compliance of work with, or identifies departures from, contractual requirements.

## PROJECT ENGINEER

The Project Engineer is responsible for all Engineering aspects of the work throughout the planning and construction phase of the project. The Project Engineer will prepare detailed plans adding in the construction of the project. The Project Engineer will also be responsible to manage the shop drawing design review and submittal process between HE and the engineer/WAPA.

## EQUIPMENT PROCUREMENT AND LOGISTICS MANAGER

The Company's Equipment Procurement and Logistics Manager oversees the procurement and receiving of product, including HE and WAPA supplied equipment. The Equipment Procurement Manager directs, coordinates, and controls the development of quotations, oversees the bid evaluation process, reviews awards, makes recommendations, and directs the placement of purchase orders and subcontracts with suppliers meeting established acceptance criteria. The Procurement Manager issues and coordinates supplier inspection and expediting activities, and maintains the Material Status Report to track material from purchase order award to delivery on site for and WAPA procured materials. Additionally, the Procurement Manager provides input to Project Controls for tracking the procurement cycle from requisition preparation to purchase order award and issues the Procurement Status Report.

## PROJECT DPW LIAISON

HE will assign a specific position that will be responsible to liaison with the Public Works Department to facilitate safe work plans and minimize public interference. The Project Liaison will ensure all work plans and schedules are understood by all project stakeholders.

## PROJECT SCHEDULER

The Scheduler is responsible for leading planning sessions and developing and maintaining the Project Schedule. The Scheduler is responsible for analyzing the schedule, identifying problems and providing recovery strategies.

## Construction Plan

The Company's plan and schedule divides the project into distinct work zones, each approximately 300' in length. To minimize the timeframe of the disruption to the local flow of traffic, we propose two dedicated crews to construct the project as referenced by the attached project schedule.

Generally, we will start one crew at the Northern most point of the circuit and progress the project out onto the peninsula. It is anticipated that each work zone will take 4 weeks to construct. Below is our typical plan for each work zone.

### Typical Work Zone Activities

Activity Name	Schedule
Establish Work Zone / Signage	Week One
Sawcut, Excavate Trench and Manhole / Handhole	Week Two
Install Manholes / Communication Handholes	Week Two
Install Conduit	Week Three
Misc. Restoration	Week Three
Backfill Trench and Pavement Restoration / Castings	Week Three
Line Striping as Required	Week Four
Remove Work Zone Barricades	Week Four

Prior to establishing each work zone, the company will prepare a detailed work zone plan inclusive of signage, delineation devices, schedule and our logistics plan for review and approval by the WAPA Construction Manager and VI Public Works.

Although not indicated on the plans or specifications, we have made provisions for roadway plating over trenches to allow for traffic and pedestrians to safely pass over trenches where required.

Once the work zone plan is reviewed and approved, we will establish the work zone delineation devices and pursue the work per the approved plan.

When the conduit system is completed the effort on the project will shift to the installation of the cable system and the AG equipment. This will be followed by splicing and termination of the newly installed cable system. The cable will be tested as required and test reports will be submitted as part of the QA/QC program and as part of our as-built closeout package.

Wire pulling methods will be supported by our best in-class equipment such as self-loading reel trailers and sophisticated cable pullers. The care of the cable will be a top priority to ensure the proper installation is completed and the life of the system is guaranteed.

### Meetings / Coordination

Coordination of construction activities is paramount for this project. The public interface is a significant factor and will be so throughout the entire duration of the project. Meeting with all project stakeholders is mandatory in maintaining a harmonious project that considers the safety and interaction between construction and the public. It will be vital to plan work and convey the plan so to minimize disruptions as much as possible.

During the course of the work and on a weekly basis, we will submit a Weekly Report/Update to WAPA which will outline the completed work, issues, questions, schedule and plan forward. Each weekly report will be reviewed with the on-site WAPA Project Manager at a regularly scheduled weekly status and coordination meeting between HVI and WAPA.

Reference typical example of weekly report.

Additionally, we plan to have our own internal coordination and logistics planning meeting with our own direct crews as well as our Subcontractors. Similarly, we also plan a weekly meeting direct with WAPA to discuss project issues, concerns and schedule review.

### **On-Island Logistics**

In support of construction and logistical activities, the Company has established a main office on the island to house our project management office, laydown and material stockpiles. Our stockpile yard is located near the car ferry dock which will provide a substantial benefit by minimizing the on-island truck traffic hauling to/from the construction sites. The Company has also secured local vendors to provide trucking and barging services for our equipment and personnel.

Switchgear and Transformer delivery and installation will progress via a “just in time” delivery program, whereby the equipment will only be loaded the day or night before the planned installation and will be transported to the project on an as needed basis. This will minimize double handling, damage potential and will maintain the integrity of the secured storage under the control of WAPA until just before the installation is completed.

### **Local Interaction / Team**

The Company has assembled a project team of local firms with highly skilled employees; all with prior WAPA and DPW experience. Our prime subcontractors will be segregated into two disciplines; site/civil work & electrical services. Site and Civil Work will be performed by Grace Civil LLC including roadway excavation, manhole and handhole construction, concrete encasement work, curbs, sidewalks, walls, hauling and permanent pavement restoration. Asphalt will be made locally at our asphalt plant. Electrical work including ductbank, equipment installation and cable pulling, will be performed by local firms and Haugland Virgin Islands Inc.

Additionally, we have secured trucking and barging services with local entities, as well as, on- island storage, logistic yards and temporary sanitary services to be secured via local land and business owners.

### **Safety**

The Company, its employees and its subcontractors will comply with the projects Environmental, Safety and Health document including pre-construction meetings, job walks, pre-job hazard and safety assessments. All on site personnel will be orientated and trained on the hazards of the project.

### **Location, Inspection and Protection of Existing Facilities**

It is the Company’s understanding that the existing utility owner’s throughout the contract limits do not participate in Dig Safe. Because of this, the Company intends to contract with a utility markout service to locate the existing underground facilities. Each facility will be test holed and its location surveyed in advance of our trenching operations to make best efforts to avoid damage during the installation of the proposed work.

### **Consideration of Public/Commerce and Safety**

The nature of the project will create continual exposures to open excavations and heavy construction equipment consisting of excavators, cranes, dump trucks and personnel. As such, the Company is fully committed to minimizing the risks and hazards through public awareness campaigns, appropriate signage and blockades, training of crews and outreach programs. Safety of all workers and the public is the largest component to the successful execution of the project.

The project will require highly skilled and qualified personnel to manage the work zone safety and interface between construction crews equipment, public safety, business commerce and the designated St Thomas designated Public Works office.

If not managed properly, the project can become highly dangerous and disruptive to the ongoing vehicular and pedestrian traffic which will exist in parallel throughout the entire project schedule.

The Company recognizes that it is of the utmost importance to review each and every construction task with regard to how the activities will impact the public and we will constantly evaluate the risks to the travelling public and implement appropriate safety measures to mitigate those risks. The Company will also designate a Traffic Control Manager with each crew who will be able to make appropriate changes to the traffic control measures as conditions within the work zone change.

### **Peak / Off Peak**

HE's has planned for the work to be performed Monday through Friday and during daytime hours. It is HE's opinion that the nighttime hours and weekends are too busy and would be too disruptive to commerce to perform work. Therefore, and as the basis of our proposal, HE has considered that Off-Peak hours are Monday through Friday 7:00 AM through 5:00 PM and Peak Hours are all other hours and weekends.

### **Work Zone Establishment**

The Company recognizes that each work zone is specific to each area of work and that every work zone is not the same. The Company's plan will be to assess each work zone with regard to public interface, traffic maintenance, alternative routes and detours to minimize disruption and to maintain the highest regard for public safety.

In some areas of work temporary barrier or cones may suffice while in others, a highly detailed and organized work zone with alternate traffic and pedestrian patterns will be necessary. The Company will prepare, and submit for approval, detailed Traffic Control Plans for each work zone

Typical work zone protection will include the following devices:





Typical Work Zone - Short Term



Typical Work Zone - Long Term

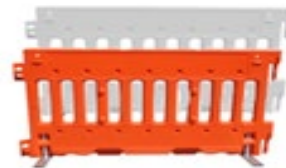


Typical Hole and Trench Protection



Recap

Pedestrian Guidance Protection (optional)



### Haugland Virgin Island Highlights:

- Highly Skilled and Qualified Team
- Work Zone and Pedestrian Safety recognized as the utmost Priority
- Short term and long term Work Zone protection plans
- Project Office and laydown yard within ¼ mile of the project site

- (2) Remote yards for storage of excavated material
- Local STT crews and equipment usage
- Planning two primary crews and can supplement crews as needed
- Flagger and Traffic Safety Training
- Trench and Excavation Protection Training
- OSHA trained Personnel
- Fully Dedicated Management Team for Construction and Public Interface
- Virtually unlimited access to equipment and personnel needs to perform all aspects of the project
- Highly experienced team with full recognition of the need for public and pedestrian safety and minimal disruption to business commerce.
- Competitive pricing utilizing local labor and equipment.

### **Bid Clarifications**

- Asphalt paving limited to 10' in width
- We have included 400 lf of Traffic Rated Steel Roadway Plating for use where/when required
- All work to be performed during daytime hours – Monday through Friday
- We have made an allowance for Roadway Sweeping and Dust Control where/when required

### **Major Sublet & Vendors**

#### **Haugland Energy, LLC / Haugland Virgin Islands, LLC**

- Project Management Services
- Specialty Construction Equipment
- Direct Hire Forces as/if needed to supplement work force

#### **Haugland Virgin Islands, LLC**

- Saw Cutting
- Trench Excavation and Hauling
- Manhole / Handhole Construction and Installation
- Concrete Encasement of Ducbank
- Backfill and Hauling
- Work Zone Establishment
- Flagging Services
- Asphalt Pavement Installation

#### **Haugland Virgin Islands Inc**

- Conduit Installation
- Cable Pulling and Splicing
- Equipment Installation
- Cable Terminations
- Manhole/Handhole Installation Support

### **Crane Service and Rigging**

- Jackson Crane Service

## **Typical Weekly Report**

### **Progress of Work**

#### **Control Building**

Much work was accomplished on the Control Building this week including the completion of the inside wall forms and the exterior wall forms have started and the window and door cutouts have been laid out and installed. Progress on the Control Building continues to progress in accordance with the project schedule. Conduit penetrations are laid out in accordance with coordination drawings.

#### **GIS Building**

The GIS Building is undergoing a design review and modifications to improve the overall layout and position of the building and ductbanks as well as a structural design review to accommodate ABB equipment and platforms. It is anticipated that the changes will be issued via Bulletin 4. Until receipt and review of Bulletin 4, the work within and around the GIS building has been temporarily placed on hold. Despite the hold, it was discussed at last week's progress meeting that awaiting the design review and improvements of the GIS Building would be better for the long-term efficiency and functionality of the facility.

#### **Ductbanks**

Demolition is near complete on the easternmost ductbank. The ductbank required demolition of the existing rock face to accommodate the routing of the conduits per the design.

A decision was made to demo the existing ductbank below the GIS slab to allow for a design that makes provisions specifically to accommodate the new GIS gear. The decision to demo the ductbank was a result of a design and constructability review conducted over the past couple weeks. The design and constructability review considered the condition of the existing conduits and stubups, the condition of the surrounding pad, the alignment of the existing stubups with the new GIS Gear and the turning radius of the cable with respect to the stubup and entry into the gear. Upon a detailed review, the team concluded with a consensus that would be best that the existing ductbank and pad be removed and a new ductbank be installed in addition to a new slab that would better accommodate the new GIS gear.

### **Project Issues**

- General
  - Bulletins 1, 2.1 and 3 have been received and priced – See change log.
  - Duct Bank Trench
    - Encountered bluestone rock, very hard slow process of chipping away.

- Rock Excavation Quantity to date = 5 loads – See Attached Log
- Revised CD-2 Drawings – Will easternmost ductbank shift further east or can the ductbank be lowered within its current location?
- Anticipate issuance of Bulletin 4. Bulletin 4 will release the GIS Building work.

### **Short Term Look Ahead**

- Continue setting forms and scaffold for Control Building walls
- Concrete at Control Building wall forms
- Bulletin 4 - Layout GIS Building location
- Bulletin 4 - Excavate for GIS Building footings and below footing ductbanks.
- Continue with demo/clearing for easternmost ductbank

## **PROGRESS PHOTOS**



**West Wall and initial start of Generator Pad**

**7/24/19**





**North Wall Exterior door frame**

**07/24/19**





## **Easternmost Duct bank Trench & Existing GIS Slab demo 07/24/19**



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