

June 06, 2025

Nicole Aubain  
Contract Administration, Manager  
Virgin Islands Water and Power Authority  
9720 Estate Thomas  
Al Cohen Plaza  
St. Thomas, VI 00802

**RE: PR-11-25 Underground Electrical Construction Project Feeder 9A      Primary St.  
Thomas**

Dear Ms. Aubain:

Haugland Virgin Islands, LLC (HVI) is pleased to submit our proposal for Virgin Islands Water and Power Authority's (VIWAPA's) Request for Proposals (RFP) for the Feeder 9A Underground Electrical Construction Project. Our team is uniquely qualified to deliver this critical infrastructure, offering VIWAPA an unmatched combination of successful USVI project experience, specialized underground electrical expertise, and a permanent local presence that ensures responsive service throughout project execution.

Having successfully completed multiple underground electrical construction projects in the USVI, including Cruz Bay UG Feeder 7E on St. John, Feeder 8B in St. Croix, and our ongoing Feeder 5A project in St. Thomas, HVI brings proven methodologies specifically tailored to the challenges of underground utility construction in the territory. Our proposal offers VIWAPA:

- **Proven Performance:** Our team has successfully installed over 65,000 linear feet of underground duct bank and 70,000 linear feet of medium voltage cable throughout the USVI with zero electrical failures during testing and acceptance
- **Specialized Expertise:** Our field crews, led by Jonathan Kuhl, bring extensive experience in underground electrical construction with specific knowledge of St. Thomas infrastructure challenges
- **Minimized Community Impact:** Our phased construction approach and comprehensive traffic management plan will maintain vehicular and pedestrian access throughout the project while ensuring timely completion
- **Local Economic Benefits:** Our established MWBE utilization plan maximizes participation of local businesses while meeting all federal funding requirements

Our proposed schedule demonstrates our clear understanding of the project requirements and our commitment to efficient execution. We acknowledge that this proposal remains valid for sixty (60) days following the public opening date and expressly agree to VIWAPA's payment schedule as detailed in the RFP.

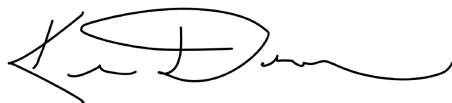
HVI confirms that we are not debarred from federal contracts and maintains a Unique Entity ID under registration number Q9G6K9MDU1P3. We certify that we have no conflicts of interest as defined in Title 3, Chapter 37 of the Virgin Islands Code, and have no contractual or business relationships with VIWAPA employees, officers, or board members.

We acknowledge our understanding and acceptance of all federal requirements associated with this project, including FEMA and HUD CDBG-DR grant funding provisions, Davis-Bacon requirements, and MWBE utilization goals.

Thank you for considering our proposal. We are confident in our ability to deliver this project safely, on schedule, and with the highest quality standards. Should you have any questions, please contact me directly.

Our completed Proposal Form [6.0] follows this cover letter, along with our comprehensive technical approach detailing how we will successfully execute this project.

Best Regards,

A handwritten signature in black ink, appearing to read 'Kevin Davis', with a stylized, flowing script.

**Kevin Davis** , Director of Commercial Management at Haugland Group  
Phone: (516) 350 - 1443; email: [kdavis@hauglandllc.com](mailto:kdavis@hauglandllc.com)

## Proposal Form [6.0]

### 6.0 PROPOSAL FORM

Name of the Offeror Haugland Virgin Islands, LLC (HVI) (Individual, Firm or Corporation)

Date of Proposal May 30, 2025

To: The Virgin Islands Water and Power Authority  
St. Thomas, Virgin Islands

Pursuant to your request for proposal and in compliance with other related Contract Documents, the undersigned does hereby propose to furnish all materials, labor, tools, supervision, equipment, and insurance necessary for the Feeder 9A Underground Electrical Construction Project, in strict accordance with the Contract Documents for the prices indicated below.


The above-named Offeror affirms and declares:

1. That the Offeror is of lawful age and that no other person, firm or corporation has any interest in this Proposal or in the Contract proposed to be entered into.
2. That this Proposal is made without any understanding, agreement or connection with any person, firm, or corporation making a Proposal for the same purposes, and is in all respects fair and without collusion or fraud.
3. That the Offeror is not in arrears to the Virgin Islands Water and Power Authority, upon debt or contract, and is not a defaulter, as surety or otherwise, upon any obligation in the Virgin Islands Water and Power Authority.
4. That no officer or employee or person whose salary is payable in whole or in part from the Virgin Islands Water & Power Authority is, shall be or become interested, directly or indirectly, as a contracting party, partner, stockholder, surety or otherwise, in this Proposal, or in the performance of the Contract, or in the supplies, materials, or equipment and work or labor to which it relates, or in any portion of the profits thereof.
5. That the Offeror has carefully examined the site of the work and that, from his own investigations, he has satisfied himself as to the nature and location of the work, the character, quality, and quantity of materials and the kind and extent of equipment and other facilities needed for the performance of the work, the general and local condition and all difficulties to be encountered, and all other items which may, in anyway, affect the work or its performance.
6. All proposals shall remain firm for a period of Sixty (60) days following the date of public opening.

7. That the undersigned, as Offeror, also declares that he has carefully examined and fully understands all the component parts of the Contract Documents and agrees that he will execute the Contract and will completely perform the work in strict accordance with the terms of the Contract and the Contract Documents therein referred to for the following prices, to wit:
8. Offeror must fill in all blanks in the Proposal Form. The sum of the extended costs must equal the Lump Sum Proposal Price.
9. The Offeror will carefully coordinate his work with the Virgin Islands Water and Power Authority. The Offeror shall submit a detailed time schedule. This schedule shall be incorporated into the construction schedule to be submitted to the Engineer.  
  
Work on the Project Contract time begins on the date of issuance of the NOTICE TO PROCEED.
10. The proposed construction schedule must accompany this Proposal Form. (Note: Offeror(s) must bid on each item. All entries in the entire Proposal must be made clearly and in ink; or typed.)



SUBMITTED TO



# UNDERGROUND ELECTRICAL CONSTRUCTION PROJECT FEEDER 9A PRIMARY ST. THOMAS

## RESPONSE TO RFP PR-11-25

DUE DATE: MAY 30, 2025



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## Executive Summary



**Haugland Virgin Islands, LLC (HVI)** is pleased to present our response to VIWAPA's Request for Proposal for the Underground Electrical Construction Project Feeder 9A Primary St. Thomas. We have thoroughly reviewed all RFP materials and supporting documentation to develop a comprehensive approach that delivers critical infrastructure improvements while maximizing value to VIWAPA and the St. Thomas community.

## Qualifications and Past Work History Statement [5.1]

Supported by Haugland's 25+ years providing energy, HVI approaches this opportunity as more than a construction contract—we view it as the continuation of our successful seven-year partnership with VIWAPA, where our permanent local presence and demonstrated performance create the foundation for seamless project execution. Unlike temporary contractors who mobilize for individual projects, HVI has made a strategic commitment to the USVI, establishing deep local knowledge, workforce development, and supply chain relationships that directly benefit every project we undertake.

Since establishing our permanent presence in 2018, we have successfully completed multiple similar projects including the **Cruz Bay UG Feeder 7E on St. John** (5 miles of duct bank, \$16.3M), **STX Feeder 8B on St. Croix** (8,200 LF of 750 MV AL EPR cable, \$1.95M), and our ongoing **STT Feeder 5A** project (8,288 LF of duct bank, \$4.4M). Our parent company, Haugland Energy Group, provided critical emergency restoration services following Hurricanes Irma and Maria, deploying over 600 crew members and 600 pieces of equipment across the territory. Our dedication to USVI is reflected in our dedicated USVI presence, HVI, and recommendation letters by USVI.

## Construction Execution Excellence

HVI's systematic approach combines concurrent civil and electrical operations with segmented construction to optimize schedule efficiency while minimizing traffic and community impacts. Our proven methodology utilizes specialized crews working in sequence—lead crews handle excavation and support installation, following crews install conduit and form duct banks, subsequent crews place concrete and thermal backfill, and final crews manage restoration. This coordinated approach, successfully implemented on our previous VIWAPA projects, significantly accelerates project delivery while maintaining quality control at each step.

## Comprehensive Risk Management

At the core of our approach is proactive identification and mitigation of project risks through detailed pre-construction planning and our intimate knowledge of St. Thomas infrastructure challenges. Our project team will implement proven strategies developed through our successful USVI projects to address:

- **Utility Coordination:** Comprehensive Subsurface Utility Engineering (SUE) and coordination protocols developed through our work on multiple feeder projects
- **Traffic Management:** Strategic sequencing and community coordination approaches refined through our work along major St. Thomas thoroughfares
- **Environmental Compliance:** Established procedures for archaeological monitoring and environmental protection specific to USVI requirements
- **Material Management:** Proven logistics strategies that address island-specific supply chain challenges and customs procedures

Our value engineering process has consistently delivered benefits on previous VIWAPA projects. During our STT Feeder 5A project, our proactive coordination with local authorities and utilities enabled us to optimize construction sequencing and minimize service disruptions, maintaining project momentum while protecting community interests.

## Leadership and Accountability

Successfully executing the Feeder 9A project requires committed leadership with clear accountability. HVI's management structure ensures direct executive involvement and rapid decision-making capability:

- **Jonathan Kuhl**, serving as both Project Manager and Superintendent, provides unified leadership with over 15 years of underground electrical distribution experience
- **Direct communication** with VIWAPA representatives through established relationships developed over our seven-year partnership
- **Local decision-making authority** eliminates delays associated with remote management approval processes

This streamlined approach has proven effective across our VIWAPA project portfolio, enabling prompt resolution of field issues and maintenance of aggressive construction schedules.

## Strategic Community Benefits and MWBE Commitment

The Feeder 9A project represents more than infrastructure improvement—it provides meaningful economic opportunities for local businesses and workforce development. HVI's comprehensive MWBE utilization plan includes strategic partnerships with qualified local firms:

- **VI Quality Control Services LLC (DBE)** for comprehensive testing services
- **Fabien's Trucking (MBE)** for specialized logistics and material handling

Since inception, HVI has hired more than 110 local residents and currently employs at least 45 active employees who reside within USVI communities. Our commitment extends beyond individual project requirements to include skills development and workforce training that creates lasting benefits for the local community.

## Summary of Key Advantages

HVI brings proven capabilities that directly address VIWAPA's objectives for the Feeder 9A project:

HVI Capability	Direct Benefits to VIWAPA
<b>Established Local Presence</b>	Immediate mobilization, established supplier relationships, intimate knowledge of local requirements
<b>Proven USVI Underground Experience</b>	Reduced project risk, schedule certainty, demonstrated performance on similar infrastructure
<b>Comprehensive Safety Record</b>	EMR of 0.65 (well below industry average), zero OSHA recordable incidents on recent USVI projects
<b>Financial Stability</b>	Substantial bonding capacity ensures project completion without financial constraints
<b>Integrated Service Delivery</b>	Single point of responsibility eliminates coordination gaps between civil and electrical work

HVI is fully committed to the success of VIWAPA's Feeder 9A Underground Electrical Construction Project. Our approach focuses on leveraging our established local presence, proven technical expertise, and demonstrated partnership with VIWAPA to deliver exceptional value while supporting local economic development and workforce growth.

We appreciate the opportunity to continue our successful partnership with VIWAPA and look forward to delivering another exemplary infrastructure project for the St. Thomas community.

## 8.0 QUESTIONNAIRE

The undersigned guarantees the truth and accuracy of all statements and answers contained herein. (Include **additional sheets** if necessary)

1. How many years has your organization been in business as a General Offeror/Sub-Offeror?

25+ Years

2. Include a company profile and brief history with proposal.

Following Haugland Energy Group's emergency restoration work after Hurricanes Irma and Maria, Haugland Virgin Islands (HVI) was established in 2018 to provide dedicated support to USVI. See **Section 1. Experience and Qualifications** for additional information.

3. Within the past five years, how many Construction projects equal to or greater than this project has your organization completed?

Three: 1) Cruz Bay UG Feeder 7E, 2) STX Feeder 8B, 3) Cyril E King Airport Taxiway Rehab

4. Have you ever failed to complete work per Contract Specifications or within the time limits of a Contract awarded to you? If so, where, when, and why?

No.

5. Provide the following reference information regarding individuals and/or companies for which you have performed related work (Note: Provide additional references on a separate sheet.):

**Name and address of owner:**

Virgin Islands Water and Power Authority

Charlotte Amalie, St Thomas 00804

**Name and telephone number of contact person:**

**Name:** Cordell Jacobs **Phone:** 1-340-642-0949

Excavation Heavy Equipment, Reel Trailers, Wire Tuggers, Bucket Equipment: and Line Trucks

Work Scope: SC-23-21 Cruz Bay STJ Feeder 7E UG

Start Date: August 2021

Completion Date: January 2023

Project Cost: \$16,265,135

6. What is your understanding of the project scope?

HVI understands that VIWAPA's Feeder 9A Underground Construction project is critical to enhancing power reliability and resilience for St. Thomas residents and businesses. See **Section 2.1 Understanding of the Project** for more details.

7. What is your approach to completing the work that will best accomplish the scope of the RFP? Note in detail how work will be completed.

Our execution strategy for the FEEDER 9A project combines meticulous planning with proven field methodologies to deliver underground electrical construction safely, efficiently, and with minimal community impact. We leverage our experience with previous USVI projects to implement a structured, phase-based construction process. We provide additional details in **Section 2.2 Approach to Completing the Work.**

8. Provide a comprehensive safety plan and risk assessment.

HVI provides details on our comprehensive safety plan and risk assessment in **Section 6. Safety and Compliance.** We also provide a detailed Safety Plan as **Attachment 7: Haugland's Safety Plan.**

9. Provide the numbers, size, and descriptions of crews, personnel, and other resources that will work on this project.

HVI provides a comprehensive project team lead by our Project Manager and Super Intendent, Jonathan Kuhl. We provide additional details about our crew's composition and resources in **Section 3 Capabilities.**

10. Will you sublet any part of this work? If so, give details.

Yes. We have partnered with four subcontractors. We provide details on each subcontractor and their qualifications in **Section 8.1 Subcontractor Information.**

11. Please note how your company will support utilizing MWBE firms.



HVI has partnered with DBE, VI Quality Control Services, LLC ad MBE, Fabien's Trucking.

We provide details on how we support MWBE firms in **Section 8 MWBE Utilization Plan.**

12. Have you personally inspected the site(s) of the proposed work? Describe any anticipated problems with the site and your proposed solutions.

Our team made a site-specific visit and will use our previous experience with HVI projects and and general area knowledge to address any issues that may arise. We provide additional details in **Section 2.1.1 Site Visit Observations.**

13. Have you included any exceptions with your proposal?

No. HVI has no exceptions and agrees to all terms and conditions..

14. Have you included a Preliminary Project Schedule with your proposal? Yes. See **Section 4.**

15. Have you included the professional resume of your intended Project Manager with your proposal? Yes. Please see **Section 1.3 Project Manager Resume** for Mr. Kuhl's resume.

16. Is the business a: Sole-Proprietorship, Partnership, Corporation? (Circle one)

17. Please mark (with an X) the included documentation or accepted terms in your proposal.

Bid Bond Included	<u>X</u>
Performance Bond Included	<u>X</u>
Payment Bond included	<u>X</u>
Liquidated damages accepted	<u>X</u>
Insurance included	<u>X</u>
General Contract Terms Accepted	<u>X</u>
Payment Schedule Accepted	<u>X</u>
Valid VI Business License	<u>X</u>
Submittals (Project schedule, etc.)	<u>X</u>

Note: If any unmarked, please explain:

N/A

The names of all persons interested in the foregoing proposal as principal are:

Joseph Haugland, President & Chief Operating Officer

(NOTE: If Offeror or other interested person is a corporation, give legal name of corporation, state where incorporated and names of president and secretary; if partnership, give name of firm and names of all individual co-partners composing the firm; if Offeror or other interested person is an individual, give first and last names in full.)

Haugland Virgin Islands Inc

Incorporated in US Virgin Islands

- President - William J. Haugland
- Secretary - Edward Tackenberg

Are any current employees of the Authority involved in any way, shape, or form with the preparation of the proposal or completion of the described work scope? If so, please describe.

No.

Licensed in accordance with 27 Virgin Islands Code Section 303 and with license number:

1-43282-3L

SIGN HERE:



\_\_\_\_\_  
Signature of Offeror (Joseph Haugland, President & COO)

(NOTE: If the Offeror is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If the Offeror is a partnership, set forth the name of the firm together with the signature(s) of the partner or partners authorized to sign contracts on behalf of the partnership.)

Business Address: Foothills STE 101, 9151 Estate Thomas, St. Thomas, VI 00802

\_\_\_\_\_  
\_\_\_\_\_

Telephone Number: (340) 714-9008

Facsimile Number: \_\_\_\_\_

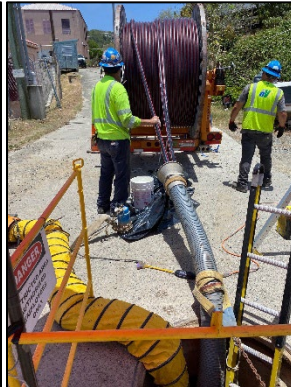
Date of Proposal: Friday, June 6, 2025

**END OF PROPOSAL FORM**

## 1.1 Additional References [8.5]

### 1.1.1 Additional Reference #1: VIWAPA Feeder 7E

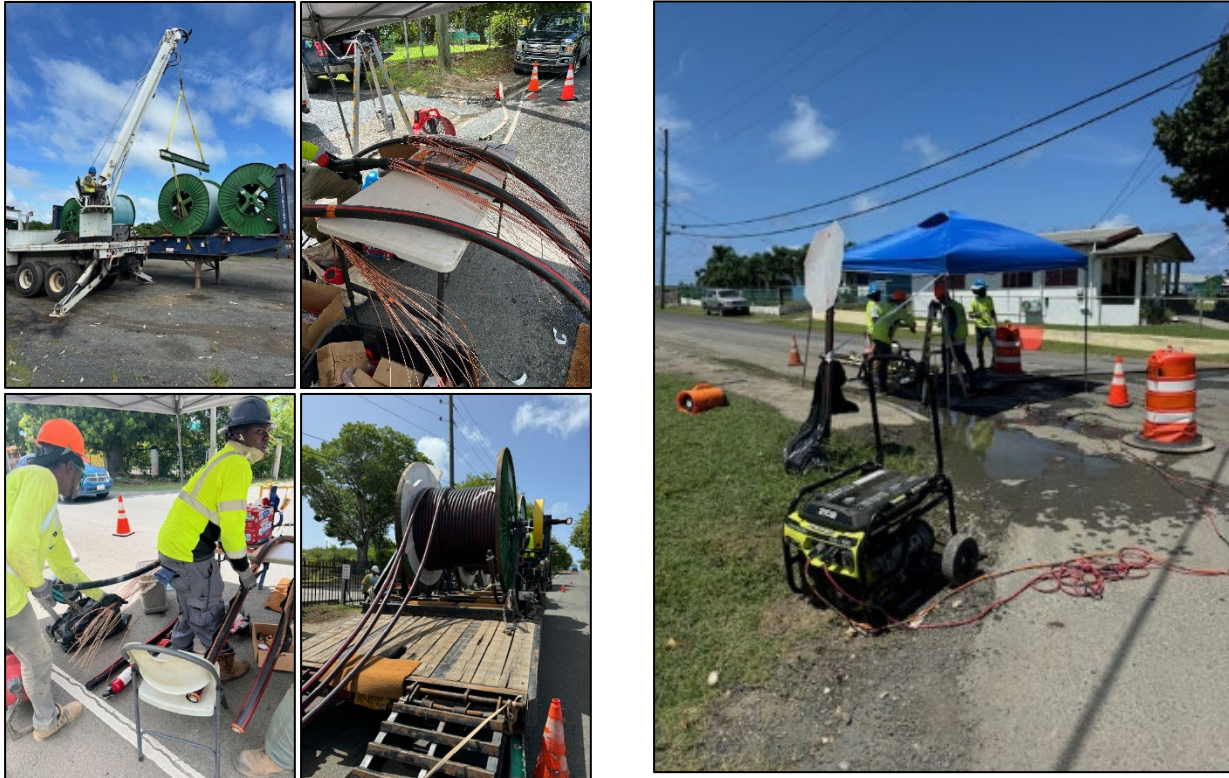
<b>Name of Owner</b>	Virgin Islands Water and Power Authority
<b>Address of Owner</b>	Charlotte Amalie, St Thomas 00804
<b>Name of POC</b>	Cordell Jacobs
<b>Telephone Number of POC</b>	1-340-642-0946
<b>Equipment</b>	Excavation Heavy Equipment, Reel Trailers, Wire Tuggers, Bucket and Line Trucks
<b>Start/Completion Date</b>	August 2021 / January 2023
<b>Project Cost</b>	16,265,135
<b>Work Scope</b>	SC-23-21 Cruz Bay STJ Feeder 7E UG





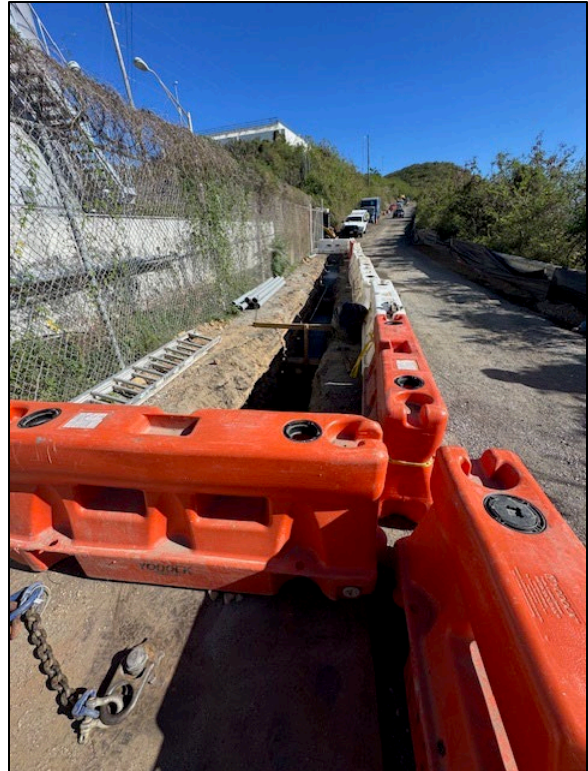
## 1.1.2 Additional Reference #2: VIWAPA Feeder 8B

<b>Name of Owner</b>	Virgin Islands Water and Power Authority
<b>Address of Owner</b>	Christiansted, St. Croix 00823
<b>Name of POC</b>	Matthias Clarke
<b>Telephone Number of POC</b>	1-340-244-7081
<b>Equipment</b>	Reel Trailers, Wire Tuggers, Line Trucks
<b>Start/Completion Date</b>	April 2024 / September 2024
<b>Project Cost</b>	1,954,072
<b>Work Scope</b>	SC-17-23 Feeder 8B STX Phase 1



### 1.1.3 Additional Reference #3: VIWAPA Feeder 5A

<b>Name of Owner</b>	Virgin Islands Water and Power Authority
<b>Address of Owner</b>	Charlotte Amalie, St Thomas 00804
<b>Name of POC</b>	Jamal Hodge and Starr Matthew
<b>Telephone Number of POC</b>	1-340-201-8508
<b>Equipment</b>	Excavation Heavy Equipment, Reel Trailers, Wire Tuggers, Bucket and Line Trucks
<b>Start/Completion Date</b>	In Progress March 2025 – Estimated Completion December 2025
<b>Project Cost</b>	4,414,749
<b>Work Scope</b>	SC-03-25 Feeder 5A UG STT



## 1.2 Project Manager/Superintendent Resume [8.15]

### Jonathan Kuhl

#### Professional Summary

*Passionate and dedicated electrical professional with a deep-seated commitment to excellence in every aspect of the field. With a genuine enthusiasm for problem-solving and a meticulous attention to detail, I approach each project with unwavering dedication. Whether it's designing intricate systems or troubleshooting complex issues, my goal is to consistently deliver results that not only meet but exceed expectations. I thrive on the challenges that the electrical field presents, and my unyielding passion drives me to continuously expand my knowledge and skills to stay at the forefront of innovation.*

#### Experience

##### General Superintendent

November 2023- Present

Haugland Group LLC

US Virgin Islands

- Providing comprehensive support for overall operations, including assistance with business development and coordination of bids.
- Leading and managing project teams to ensure successful completion of projects.
- Management of Electrical and Civil Personnel
- Allocating resources, including manpower, equipment, and materials, efficiently to meet project demands.
- Developing comprehensive project plans and schedules to ensure timely completion of projects.
- Managing project budgets, ensuring that expenditure is within the allocated budget.

##### Electrical Superintendent

Aug 2021 – November 2023

US Virgin Islands

- Specialized in underground distribution systems with a proven track record of successfully overseeing complex projects from inception to completion.
- Coordinated and managed teams of skilled technicians, ensuring efficient installation, maintenance, and repair of electrical systems.
- Interpreted technical drawings, blueprints, and schematics to ensure the precise implementation of projects while adhering to safety regulations and industry standards.
- Utilized exceptional problem-solving abilities combined with a strong commitment to quality assurance and timely project delivery.
- Fostered productive relationships with cross-functional teams, contractors through collaborative communication.
- Stayed current with industry advancements and innovative technologies to optimize operations and enhance overall project outcomes.

##### Journeyman Electrician

Mar 2018 - Aug 2021

New York

- Installed, maintained, and repaired electrical systems in utility distribution systems.
- Interpreted blueprints, technical drawings, and specifications to ensure compliance with electrical codes and standards.
- Conducted inspections and troubleshooting to diagnose and resolve electrical issues.

##### Journeyman Electrician

Jan 2017 - Jan 2018

Gordon L. Seaman, Inc.

New York

- Managed the installation of electrical wiring and equipment in residential and commercial buildings.



- 
- Performed routine maintenance and upgrades to electrical systems to enhance performance and safety.
  - Assisted in the training and supervision of apprentice electricians.
  - Ensured adherence to safety protocols and industry regulations.

**Apprentice Electrician**

Jan 2015 - Jan 2017

- Assisted journeymen electricians in the installation, repair, and maintenance of electrical systems.
- Gained hands-on experience in wiring, conduit bending, and panel installation.
- Participated in safety meetings and adhered to all safety guidelines and regulations.

**Apprentice Electrician**

Jan 2012 - Jan 2015

**Di Fazio Power & Electric, LLC**

New York

- Supported senior electricians in various electrical projects, including residential and commercial installations.
- Developed skills in reading and interpreting electrical blueprints and schematics.
- Conducted basic troubleshooting and repair tasks under supervision.

**Assistant Electrician**

Jan 2007 - Jan 2012

**TFS Electrical Contracting**

New York

- Aided in the installation of commercial and residential electrical systems.
- Learned foundational skills in electrical work, including wiring and circuit installation.

**Education**

**Long Island Joint Apprenticeship IBEW**

Jun 2012 – Jun 2017

**Training / Certifications**

- 
- Medium Voltage Splicing Certification
  - Confined Space
  - OSHA 30
  - NFPA 70E
  - AED/CPR First Aid
  - Trenching and Earthwork



## 1 Experience and Qualifications [4.10.1]

VIWAPA will benefit from Haugland Virgin Islands' (HVI) proven track record successfully completing underground electrical construction projects in the USVI, ensuring the Feeder 9A project will be executed efficiently, safely, and with minimal disruption to the community.

HVI's approach to delivering complex infrastructure projects has been refined through decades of experience. Our vertically integrated family of companies provides comprehensive self-performance capabilities across all disciplines required for underground transmission projects, from heavy civil construction to specialized electrical work and trenchless installations. This integration eliminates interface gaps between contractors, simplifies contract administration, and ensures seamless coordination between civil and electrical work—all providing significant benefits to VIWAPA throughout project execution.

### 1.1 Company Profile and History [2.0, 4.10.1, 8.2]

HVI offers VIWAPA an unmatched combination of local expertise, proven performance, and dedicated resources for the Feeder 9A Underground Electrical Construction Project. As a trusted partner to VIWAPA for over seven years, we bring comprehensive knowledge of St. Thomas's infrastructure challenges and a demonstrated track record of successfully completing similar underground electrical projects throughout the territory.

Following the devastation of Hurricanes Irma and Maria in 2017, the Haugland Group family of companies deployed to the USVI through its Haugland Energy Group (HEG) affiliate to perform critical emergency restoration work on the territory's transmission and distribution systems. HEG dispatched over 600 crew members and 600 pieces of equipment to restore power infrastructure across St. Thomas and St. Croix. Recognizing the ongoing infrastructure needs and opportunities in the USVI, Haugland established HVI in 2018 as a sister company to HEG, bringing the same focus, expertise, and capability but centered specifically on USVI work.

#### VIWAPA Recommends HVI

As evidenced by VIWAPA's own recommendation letter from November 18, 2024, HVI has consistently delivered high-quality work across multiple projects, earning recognition as **"a vital partner to the Virgin Islands Water and Power Authority"** and **"a key vendor, supporting VIWAPA's energy transformation efforts and ensuring the continued reliability and resilience of the territory's power infrastructure."**

Unlike temporary contractors who departed after the emergency response, HVI made a strategic commitment to maintain a permanent presence in the US Virgin Islands, allowing us to develop deep local knowledge, establish strong relationships with local subcontractors, and build a comprehensive understanding of the unique challenges presented by the USVI environment. This permanent commitment is backed by HEG's extensive history in underground transmission construction, which dates back nearly to its inception in 1999, providing HVI with decades of specialized expertise in complex underground electrical infrastructure projects.

We specialize in electric transmission, distribution, substation, and power plant construction and maintenance services across all voltage levels present in the USVI. Our capabilities extend beyond electrical work to include:

- Civil construction
- Vegetation management
- Horizontal drilling
- Rock drilling
- Fiber optics and telecommunications services
- Debris collection and processing

HVI's management team excels in coordinating comprehensive program management activities, including field engineering and design, material specification and procurement, contracting and scheduling, permitting, and safety and regulatory compliance.

With substantial financial resources and access to one billion dollars in bonding capacity through our parent company and the surety market, HVI demonstrates the financial credibility and capability necessary to handle large-scale infrastructure projects like Feeder 9A without risk of financial instability or project delays.

Our established relationships with local vendors and subcontractors will be leveraged to ensure the successful execution of this project while maximizing local economic benefits and meeting MWBE utilization goals.

## 1.2 Relevance of Past Projects [2.5.A.8, 4.10.1]

HVI brings recent experience with multiple underground electrical construction projects in the USVI which closely mirror the Feeder 9A project requirements as demonstrated in Table 1. Our team has successfully executed similar work throughout the territory, giving us unmatched understanding of the unique challenges and requirements specific to underground electrical construction in the Virgin Islands.

**Table 1: Relevant Past Projects in USVI**

Project	Scope	Relevance to Feeder 9A
<b>STT Feeder 5A</b> (Active Project, completion December 2025)	<ul style="list-style-type: none"> <li>Installation of duct bank utilizing open-cut excavation (8,288 LF)</li> <li>Road restoration (asphalt and concrete)</li> <li>Concrete pads, pad-mounted switchgear and transformers</li> <li>MV cable installation</li> <li>MV terminations and splices</li> </ul>	Current project with nearly identical scope to Feeder 9A, showcasing HVI's active capabilities and up-to-date methodologies for underground electrical construction in St. Thomas
<b>Cruz Bay UG Feeder 7E</b> (St. John - Completed)	<ul style="list-style-type: none"> <li>Installation of 5 miles of duct bank utilizing open-cut excavation</li> <li>Installation of manholes, pad-mounted switchgear and transformers</li> <li>Cable installation and MV terminations/splicing of 750MCM and 1/0 EPR copper cable</li> </ul>	Directly applicable experience with identical duct bank construction, equipment installation, and cable work in challenging USVI terrain and conditions
<b>STX Feeder 8B</b> (St. Croix - Completed)	<ul style="list-style-type: none"> <li>Cable-only project involving installation of 8,200 LF of 750 MV AL EPR cable in existing underground infrastructure</li> <li>MV terminations in each manhole to allow for future pad mount equipment</li> </ul>	Demonstrates expertise in cable pulling through existing infrastructure and termination work in an active VIWAPA system
<b>Cyril E King Airport (CEKA) Taxiway Rehabilitation</b> (Completed)	<ul style="list-style-type: none"> <li>Installation of new conduit and manhole systems</li> <li>Installation of MV cables, splicing &amp; termination</li> <li>Open cut excavation and jack/bore installation</li> <li>Temporary and permanent restoration</li> </ul>	Showcases our ability to work in sensitive areas with complex logistics and strict scheduling requirements while maintaining airport operations

Haugland's consistent success across multiple underground electrical construction projects demonstrates our mastery of the technical challenges specific to these environments. Our proven record includes maintaining EMR rates well below industry averages (0.65 nationally), delivering projects on schedule despite complex field conditions, and achieving exceptional safety performance throughout construction.

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## Long-Term Partnership with VIWAPA

Beyond our specific underground projects, HVI has been a key partner to VIWAPA for over seven years, beginning with emergency power restoration following the 2017 hurricanes. We have worked on multiple infrastructure improvement initiatives including:

- Transformation of overhead 13.8kV and 24.9kV distribution systems
- Replacement of traditional wood poles with more durable composite poles
- Reconstruction of the East End Substation (civil and electrical services)
- Emergency repairs to underground Feeder 13 transmission line in St. Thomas/St. John district

Our extensive experience with similar projects in the USVI environment, combined with our in-depth knowledge of VIWAPA's systems and standards, makes HVI uniquely qualified to successfully execute the Feeder 9A underground electrical construction project with minimal risk and maximum efficiency for VIWAPA.

## 2 Work Approach and Methodology [4.10.2]

VIWAPA will benefit from HVI's proven methodology developed through successful completion of similar underground electrical projects throughout the USVI, including Feeder 7E on St. John, Feeder 8B on St. Croix, and our ongoing work on Feeder 5A on St. Thomas. Our approach combines efficient resource allocation, strategic phasing, and proactive communication to deliver the Feeder 9A project safely, on schedule, and with minimal disruption to the community.

We have structured our methodology around three key principles that will guide project execution:

1. **Concurrent civil and electrical operations** to optimize the construction schedule
2. **Segmented construction approach** to minimize traffic and community impacts
3. **Proactive risk management** to address challenges before they impact the project

Our Project Manager, Jonathan Kuhl, will serve as both the Project Manager and Superintendent for this project, providing unified leadership and direct oversight of all construction operations. Jonathan Kuhl will implement a comprehensive work plan that addresses every aspect of the technical specifications while maintaining alignment with VIWAPA's objectives for system reliability and resilience. The following sections detail our specific approaches to key project components and how we will ensure successful execution of all required work.

Our methodology is built around a systematic approach to underground transmission projects. This proven system creates a continuous flow of work by organizing construction into a series of sequential operations with specialized crews performing specific functions in a carefully orchestrated sequence. Our coordinated crews work in sequence: lead crews handle excavation and support installation, following crews install conduit and form duct banks, subsequent crews place concrete and thermal backfill, and final crews manage restoration. By deploying multiple crews simultaneously on different segments, we significantly accelerate the overall project schedule while maintaining strict quality control at each step, resulting in enhanced schedule efficiency, consistent quality through specialized crew expertise, reduced community disruption, and optimized resource allocation.

### 2.1 Understanding of the Project[4.10.2, 8.6]

HVI understands that VIWAPA's Feeder 9A Underground Construction project is critical to enhancing power reliability and resilience for St. Thomas residents and businesses. The project requires converting overhead electrical infrastructure to underground along a route from Subbase Road through Crown Bay Road and Harwood Highway up to Kronprindsens Gade.

Our approach to the FEEDER 9A Underground Construction project includes a segment-by-segment analysis, where we identify each segment as the route between two manholes/vaults or between a vault and a point of termination. This targeted approach allows us to evaluate and plan for the specific construction challenges and restrictions along each distinct portion of the transmission route. For each segment, we will document existing conditions, identify potential conflicts with existing utilities, assess access constraints, and develop tailored execution strategies to address the unique characteristics of that section. This granular planning methodology has proven highly effective on our previous underground transmission projects.

Our team has thoroughly analyzed the project requirements and understands that successful execution requires:

- **Complete replacement** of existing overhead infrastructure with underground systems
- **Coordination** of civil and electrical work components to minimize community disruption
- **Installation** of 9,157 linear feet of new duct bank across varying terrains and construction conditions
- **Construction** of new electrical manholes, handholes, and equipment pads
- **Integration** with existing electrical infrastructure at specified connection points
- **Installation** and termination of medium voltage cables and related components
- **Full restoration** of affected roadways, sidewalks, and landscape elements
- **Compliance** with all federal funding requirements, including FEMA, HUD CDBG-DR, and Davis-Bacon

Having completed similar projects on St. Thomas, St. John, and St. Croix, our project team understands the unique logistical challenges of underground utility construction in the USVI. We recognize that this project has several technically complex components, including:

Technical Component	HVT's Understanding
<b>Working in high-traffic areas</b>	Project spans major thoroughfares requiring comprehensive traffic management plan and coordination with local authorities
<b>Environmental/Archaeological concerns</b>	Portions of the route may require archaeological monitoring, particularly near Moravian Cemetery, requiring careful excavation protocols
<b>Utility conflicts</b>	Existing water, sewer, telecom, and other facilities will require precise identification, protection, and coordination
<b>Terrain considerations</b>	Variable soil conditions, including potential rock excavation, requiring appropriate equipment and methods
<b>Integration with existing systems</b>	Ensuring seamless connection to existing infrastructure while maintaining service reliability

Mr. Jonathan Kuhl, our proposed Project Manager, has personally examined the project route and identified access points, potential staging areas, and key risk areas that will inform our execution plan. Our General Foreman will provide direct field oversight of daily construction activities, ensuring compliance with safety protocols and quality standards. Our team has also analyzed the subsurface conditions based on previous work in adjacent areas to anticipate soil conditions and potential obstructions.

Based on our understanding of the project scope and site conditions, HVI has developed a detailed approach to work execution that will ensure successful project delivery while minimizing community impact.

### 2.1.1 Site Visit Observations [2.3, 8.12]

HVI's regular operations throughout St. Thomas and the Charlotte Amalie area provide our team with ongoing familiarity with the general work environment and construction challenges typical of the Feeder 9A Phase 1 project corridor. Our team made a site-specific visit and will use our previous project experience and general area knowledge to approach this project. Our continuous presence and recent 15KV underground distribution projects throughout the area have established understanding of the construction challenges present within similar work zones.

**Table 2: VIWAPA Infrastructure Experience Relevant to Feeder 9A Project Area**

VIWAPA Infrastructure Experience	Typical Area Challenges	Solutions Approach
<b>15KV Underground Distribution</b>	<ul style="list-style-type: none"> <li>• Medium voltage splicing/terminations,</li> <li>• Manhole installations</li> <li>• Roadway paving/restoration</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic conduit placement</li> <li>• Environmental protection measures</li> <li>• Coordinated traffic management</li> </ul>
<b>Utility Pole Replacement Projects</b>	<ul style="list-style-type: none"> <li>• Mountainous terrain access</li> <li>• Densely vegetated areas</li> <li>• Equipment transport</li> </ul>	<ul style="list-style-type: none"> <li>• Enhanced safety protocols</li> <li>• Specialized equipment deployment</li> <li>• Vegetation management</li> </ul>
<b>Island Infrastructure Projects</b>	<ul style="list-style-type: none"> <li>• Shipping schedule coordination</li> <li>• Limited local transport</li> <li>• Environmental regulations</li> </ul>	<ul style="list-style-type: none"> <li>• Contingency planning with multiple suppliers</li> <li>• Early regulatory agency coordination</li> </ul>

Based on our regular work throughout St. Thomas and experience with similar underground electrical infrastructure projects, we proactively plan for challenges encountered on previous projects:

- **Underground Installation Coordination:** HVI proactively and systematically plans and establishes utility coordination protocols to ensure an efficient approach to existing utilities and traffic management.
- **Island Logistics Management:** Given our experience with similar projects in the USVI, we understand the challenges generally faced when it comes to material transport and scheduling. HVI's approach includes comprehensive logistics planning with shipping contingencies and local resource coordination to ensure minimal disruption to heavily trafficked tourist areas and residential communities while maintaining efficient material delivery schedules.
- **Environmental and Community Considerations:** This project's work will require environmental compliance and community coordination. Given our experience with similar requirements, we have developed an approach which emphasizes established regulatory protocols and proactive community engagement strategies.

Through our established presence throughout St. Thomas and experience with similar VIWAPA infrastructure projects, HVI understands the challenges associated with underground electrical construction in the project area and maintains proven approaches for successful project execution while maintaining focus on minimizing community disruption.

## 2.2 Approach to Completing the Work[4.10.2, 8.7]

Our execution strategy for the FEEDER 9A project combines meticulous planning with proven field methodologies to deliver underground electrical construction safely, efficiently, and with minimal community impact. We implement a structured, phase-based construction process that begins with comprehensive mobilization planning and progresses through systematic installation sequences for each project segment. Our approach emphasizes proactive coordination with local authorities, strict adherence to permit requirements, and adaptive management of field conditions to maintain schedule momentum. This methodical execution approach, refined through dozens of similar projects, ensures predictable outcomes



even when facing the complex challenges inherent in underground utility construction in the USVI environment.

### 2.2.1 Division 01: General Requirements

The construction phase will begin with our team meeting with VIWAPA project management to review the scope of work, Stormwater Pollution Control/Prevention Plan, and Maintenance and Protection of Traffic plans. Following this meeting, we will prepare a site-specific Health and Safety Plan (HASP) which will be submitted for review and approval. During the review period, we will request utility mark-outs for the proposed route. With HASP approval, we will mobilize equipment, office trailers, storage containers, and contractor-supplied materials to the proposed laydown yard. All necessary permits will be obtained prior to occupying any laydown yard, maintaining strict compliance with regulatory requirements throughout all phases of construction..

Based on our experience with similar underground electrical distribution projects in St. Thomas, including previous VIWAPA infrastructure work, we've developed robust systems to address each aspect of Division 01. The following sections outline our comprehensive approach to meeting these critical project requirements while ensuring efficient project delivery.

#### 2.2.1.1 Special Provisions (00100)

##### Scope of Section

HVI will implement all project scope elements in accordance with Section 00100 to provide comprehensive construction administration that streamlines project execution. Our Project Manager will maintain strict compliance with special provisions to mitigate risks, manage changeable site conditions, and ensure quality control. This approach proved successful during our Feeder 5A project in St. Thomas, where our attention to special provisions resulted in zero compliance issues and timely project execution.

For this project, we will implement our proven 'train' approach to underground electrical construction. This methodology organizes construction into a series of sequential operations with specialized crews performing specific functions in a carefully orchestrated sequence. Each 'train' consists of multiple crews handling different aspects from excavation to restoration. By deploying multiple trains simultaneously on different segments of the transmission route, we can significantly accelerate the overall project schedule while maintaining strict quality control at each step.

##### Order of Work

HVI will coordinate all work sequences with VIWAPA, submitting a detailed schedule prior to mobilization that allows for:

- Logical progression of activities to minimize service disruptions
- Weekly progress reviews with VIWAPA representatives
- Just-in-time material delivery to optimize construction efficiency

Our Project Manager will ensure work proceeds according to the approved sequence, adjusting as needed with VIWAPA approval. This methodology successfully supported our Cruz Bay Feeder 7E project, where we completed 5 miles of duct bank installation while maintaining continuous service to customers.

##### Cooperation With Others

HVI will establish clear communication channels with VIWAPA and all other contractors on site to prevent conflicts and ensure efficient project delivery as detailed in **Table 3**.

**Table 3: Cooperation and Coordination Strategy for Seamless Project Integration**

Cooperation Element	Implementation Method
<b>VIWAPA Coordination</b>	Daily meetings with Project Coordinator; 48-hour notice for equipment shutdowns
<b>Contractor Coordination</b>	Weekly coordination meetings; shared schedule reviews
<b>Public Utility Coordination</b>	Pre-construction meetings with all utility owners; continuous updates during construction

Our cooperative approach reduced conflicts during our St. Thomas Feeder 5A project, allowing concurrent civil and electrical operations without disruption to other contractors.

### Pre-Construction Conference

HVI's Project Manager will actively participate in the pre-construction conference to:

- Present our detailed execution plan
- Establish communication protocols
- Confirm permit statuses
- Address potential challenges before mobilization
- Introduce key personnel and their responsibilities

We will document all decisions made during this conference, distribute meeting minutes within 48 hours, and incorporate any adjustments into our project execution plan.

### Contractor's Office

Our established St. Thomas office location provides project oversight without requiring a separate filed facility for the Feeder 9A project. Located in in close proximity to the project corridor, our existing office enables us to efficiently supervise the project daily while also minimizing additional project overhead costs for VIWAPA.

Our main office maintains complete sets of contract documents, approved submittals, permits, and as-built documentation in both physical and digital formats, ensuring all project information remains organized and readily accessible to VIWAPA representatives upon request. The strategic proximity allows our Project Manager to respond rapidly to field conditions and provide optimal oversight of construction activities.

Our office serves as more than just administrative space—it functions as a **communication hub** equipped with reliable internet and workstations for coordination meetings, when needed. As required by contract specifications, Jonathan Kuhl, serving as both Project Manager and Superintendent, will maintain a consistent project presence, bringing 15+ years of underground electrical distribution experience to provide competent supervision throughout all work hours. Our General Foreman will handle day-to-day field oversight and coordinate directly with crews, while Jonathan focuses on project management coordination and technical supervision. His ability to quickly transition between office coordination and field oversight ensures seamless project management.

Our office also serves as our central coordination point for subcontractor meetings, ensuring alignment on schedule, quality, and safety requirements across all project participants. This centralized approach has successfully supported our previous VIWAPA projects including Feeder 7E and Feeder 5A, minimizing coordination conflict throughout project duration. With our established office, VIWAPA gains a single point of contact and management center for all project-related matters, which aids in facilitating communication and expediting decision-making between all involved in the project.

### Temporary Controls

HVI will implement a comprehensive environmental control system that exceeds regulatory requirements while minimizing project impact on both the community and surrounding natural resources. Our proven protocols not only protect sensitive areas but also maintain public safety and comfort throughout construction.

During our excavation work on Feeder 5A in St. Thomas, HVI successfully protected environmentally sensitive areas while maintaining project schedule. For Feeder 9A, we will apply these proven methods detailed in **Table 4** and document our compliance with all control measures.

**Table 4: Temporary Controls Implementation**

Control Type	Implementation Approach	Verification Method
<b>Dust Control</b>	<ul style="list-style-type: none"> <li>Daily water applications by dedicated water truck at active excavation areas</li> <li>Covered soil stockpiles with weighted tarps</li> <li>Dust monitoring stations at key community interfaces</li> <li>Immediate cessation of work when wind speeds exceed 25 mph</li> </ul>	Daily air quality log with photographic documentation
<b>Noise Control</b>	<ul style="list-style-type: none"> <li>Equipment fitted with manufacturer-approved mufflers</li> <li>Strategic scheduling of high-noise operations between 9:00 AM-3:00 PM</li> <li>72-hour advance notice to community for unavoidable high-noise activities</li> <li>Sound barriers around stationary equipment</li> </ul>	Weekly decibel monitoring at property lines
<b>Vibration Control</b>	<ul style="list-style-type: none"> <li>Automated seismograph monitoring at structures within 50' of excavation</li> <li>Pre-construction structural surveys of adjacent buildings</li> <li>Implementation of hand-digging techniques near sensitive infrastructure</li> <li>Real-time vibration alerts to site supervisors</li> </ul>	Daily vibration reports with threshold alerts
<b>Stormwater Management</b>	<ul style="list-style-type: none"> <li>Perimeter silt fencing installed prior to ground disturbance</li> <li>Temporary berms and diversion channels to protect waterways</li> <li>Inlet protection at all drainage structures</li> <li>Same-day stabilization of disturbed areas not actively being worked</li> </ul>	Pre-storm inspection checklists; post-precipitation audits
<b>Spill Containment</b>	<ul style="list-style-type: none"> <li>Spill kits positioned at 200' intervals throughout active work areas</li> <li>Secondary containment for all fluids and hazardous materials</li> <li>Designated fueling/maintenance areas with impermeable barriers</li> <li>15-minute response protocol for any release</li> </ul>	Monthly spill prevention training for all field personnel

Our Superintendent coordinates with VIWAPA representatives to adjust these controls as needed based on site conditions and feedback. By maintaining a proactive approach to environmental management, HVI ensures Feeder 9A construction proceeds efficiently while protecting community resources and maintaining regulatory compliance.



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### **General Quality of Material and Workmanship**

HVI has established quality control processes to ensure superior material quality and workmanship through:

- Material verification prior to installation
- Compliance with manufacturer specifications
- Regular quality inspections by dedicated QC personnel
- Comprehensive testing protocols
- Immediate correction of deficiencies

Our Quality Control Manager maintains detailed records of all inspections and tests, providing VIWAPA with quality reports, upon request.

### **Materials and Equipment Furnished by Owner**

HVI will coordinate closely with VIWAPA regarding owner-furnished materials, implementing careful handling protocols. Our protocols include a thorough inspection upon receipt for damage or defects. Products are then stored in secure, weather-protected storage and regularly inventoried and tracked. We ensure proper handling during installation and provide immediate notification of any discrepancies.

Our Logistics Coordinator will maintain complete documentation of all owner-furnished materials, ensuring proper integration into the project. This approach successfully protected VIWAPA-supplied switchgear during our STX Feeder 8B project.

### **Hurricane/Inclement Weather Preparedness Plan**

Within 30 days of Notice to Proceed, HVI will submit a comprehensive Hurricane Preparedness Plan detailing:

- Material and equipment securing procedures
- Site drainage maintenance
- Evacuation protocols
- Communication plan for weather events
- Recovery procedures following severe weather

Our Project manager will monitor weather forecasts daily and implement preparedness measures when conditions warrant, with our General Foreman executing field preparations. Our Hurricane Preparedness Plan approach has effectively managed weather -related challenges, including minor delays due to rain events during our Feeder 5A project in St. Thomas. When weather conditions impact primary activities, we proactively adjust work schedules by shifting activities not impacted by weather conditions, maintaining project momentum and minimizing overall delays.

### **Traffic Control**

HVI implements a comprehensive traffic management plan that prioritizes public safety while maintaining efficient traffic flow throughout the project corridor. Our Project Manager and Safety Manager collaborate to develop and submit traffic control plans for approval, applying proven methods from our successful work on Feeder 7E in Cruz Bay to minimize disruption along the heavily traveled Feeder 9A route.

Before beginning any road-impacting work, our Project Manager will secure all necessary permits from DPW and coordinate a traffic planning meeting with local police, emergency services, and transit authorities to establish communication protocols and approval processes. VIWAPA will issue press releases notifying the public of scheduled work activities. **Table 5** details our traffic control strategy.

**Table 5: Traffic Control Implementation Strategy**

Traffic Element	Implementation Approach	Management Responsibility
<b>Maintenance of Traffic</b>	<ul style="list-style-type: none"> <li>Two-way traffic maintained during peak hours on all two-way streets</li> <li>Alternating one-way traffic during off-peak hours with real-time monitoring</li> <li>Steel plates installed over all open trenches by 4:00 PM daily</li> <li>Digital message boards deployed 5 days before traffic pattern changes</li> </ul>	Project Manager and Safety Manager conduct twice daily inspections
<b>Road Closures</b>	<ul style="list-style-type: none"> <li>Coordinated permits obtained from DPW with VIPD approval</li> <li>Public notification via radio, social media, and on-site signage 72 hours in advance</li> <li>Emergency services provided with weekly look-ahead schedules</li> <li>Business access maintained with dedicated personnel at access points</li> </ul>	Project Manager personally verifies all closure communications
<b>Flagging Operations</b>	<ul style="list-style-type: none"> <li>ATSSA-certified flaggers positioned at both ends of work zones</li> <li>High-visibility clothing exceeding ANSI Class 3 requirements</li> <li>Flaggers equipped with two-way radios for coordination</li> <li>Relief flaggers available to ensure continuous coverage</li> </ul>	General Foreman conducts random compliance checks throughout workday
<b>Signage</b>	<ul style="list-style-type: none"> <li>MUTCD-compliant placement of advance warning signs at 500', 350', and 100'</li> <li>Night-reflective signage with additional flashing beacons in low-light areas</li> <li>Daily inspection and cleaning of all traffic control devices</li> <li>Signage inventory maintained on-site for immediate replacement</li> </ul>	Daily photographic documentation of signage placement
<b>Pedestrian Protection</b>	<ul style="list-style-type: none"> <li>Dedicated 4' minimum width pathways with ADA-compliant temporary surfaces</li> <li>Physical barriers separating pedestrians from work zones and traffic</li> <li>Temporary crossings with ramps at all intersections</li> <li>Additional flaggers at high-pedestrian areas during peak times</li> </ul>	Safety Manager inspects all pedestrian accommodations daily
<b>Emergency Vehicle Access</b>	<ul style="list-style-type: none"> <li>Maintained 12' clear zone through all work areas</li> <li>Designated spotter on each crew assigned to emergency response</li> <li>Pre-established protocols for immediate work stoppage</li> <li>Weekly coordination with emergency service dispatchers</li> </ul>	Project-wide simulation drills conducted monthly

Our Project Manager and Safety Manager inspect all traffic controls at the beginning and end of each workday, maintaining detailed documentation for VIWAPA review. Our comprehensive traffic

management approach enables HVI to ensure safe passage for both vehicles and pedestrians throughout the project duration while maintaining community access to businesses and critical services.

#### 2.2.1.2 General Specifications (01000)

HVI's methodical approach to the General Specifications ensures compliance with all technical and procedural requirements while maintaining the highest quality standards. Our experience with similar underground electrical projects in St. Thomas, St. John, and St. Croix has refined our processes to suit the unique conditions of the USVI.

#### Definitions and Abbreviations

HVI will adhere to all definitions and abbreviations outlined in Section 01000 of the specifications. Our Project Manager will maintain a comprehensive reference document of all applicable definitions and abbreviations for immediate reference by our field personnel to ensure consistent understanding and application across all project documentation and communication.

#### Handling and Distribution

Materials handling represents a critical component of project success in the confined work areas of Feeder 9A's route. We have provided detail on our materials handling strategy in **Table 6**.

**Table 6: Materials Handling Implementation Strategy**

Handling Element	Implementation Strategy
<b>Material Logistics</b>	Project Manager will coordinate deliveries to minimize on-site storage requirements and align with the installation schedule
<b>Equipment Handling</b>	Operating Engineers will utilize appropriate lifting equipment (cranes, forklifts) based on manufacturer specifications
<b>Distribution Protocol</b>	General Foreman will establish material staging areas at strategic locations along the project route to minimize re-handling

As demonstrated during our Cruz Bay UG Feeder 7E project in St. John, our handling protocols effectively navigate limited staging areas in condensed traffic corridors, preventing material damage and ensuring smooth workflow sequences.

#### Materials - Samples - Inspection

HVI's rigorous quality control process ensure all materials meet or exceed contract specifications before installation, preventing costly rework and schedule delays. Our comprehensive materials management system includes strict verification protocols at every stage from procurement through installation:

- **Pre-Procurement Verification:** Our Quality Manager reviews manufacturer data sheets, certifications, and test reports for all materials, confirming compliance with project specifications before purchase orders are issued.
- **Material Sample Testing:** Our Quality Manager then collects representative samples of critical materials (concrete, aggregates, backfill) and coordinates third-party laboratory testing to verify compliance with ASTM standards and project requirements.
- **Receiving Inspection Protocol:** Upon delivery, our receiving team conducts thorough dimensional and visual inspections, documenting compliance with approved submittals using detailed inspection checklists that become part of the project quality record.
- **Collaborative Quality Assurance:** Our Project Manager coordinates directly with VIWAPA representatives to schedule witness points during critical material inspections, ensuring transparency and alignment with owner expectations.

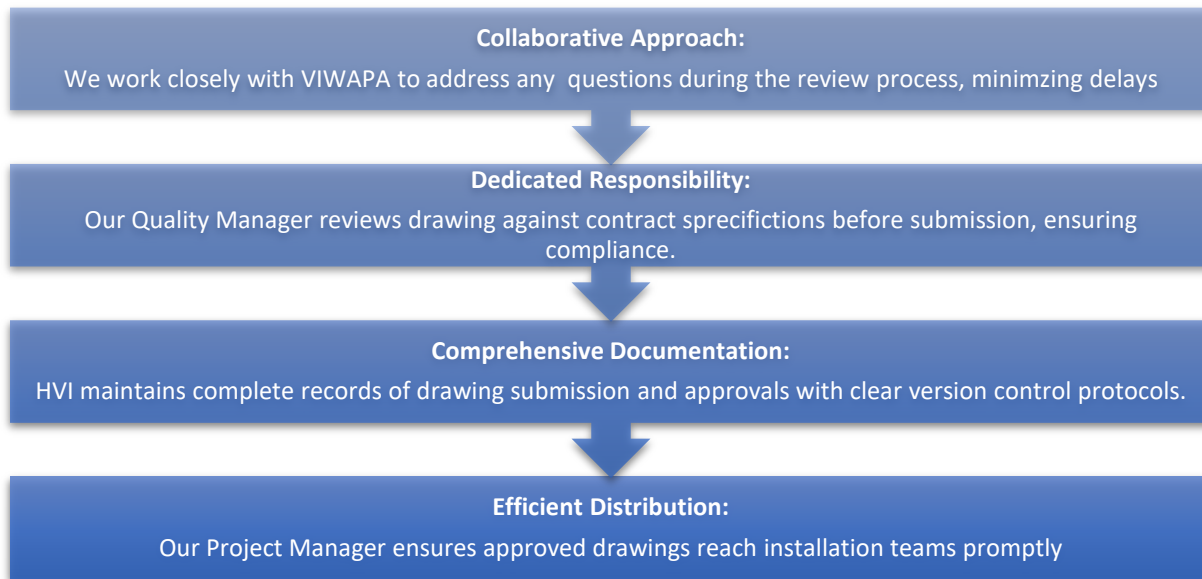
- **Material Traceability:** HVI maintains comprehensive documentation linking materials to their source, testing results, and installation location, providing complete traceability throughout the project lifecycle.

Should any non-conforming materials be identified, our Quality Manager immediately initiates our non-conformance reporting process, documenting the issue and recommended corrective action for VIWAPA review and approval.

### Contractor's Shop and Working Drawings

VIWAPA will benefit from HVI's structured drawing management system ensuring accuracy, compliance, and efficient approvals for all project submittals. Our comprehensive drawing control process prevents costly field errors and minimizes construction delays through careful coordination of all technical documentation.

Our Project Manager coordinates all shop and working drawings, implementing a systematic review process which maintains document integrity from concept through construction. As shown in **Figure 1**, our drawing control workflow encompasses critical quality checkpoints.



**Figure 1: Drawing Control Process Flow**

During our previous VIWAPA projects, including STX Feeder 8B and STT Feeder 5A, our drawing control process facilitated efficient review cycles and timely approvals. For Feeder 9A, we will apply these proven methods to maintain the same level of quality and efficiency, reducing potential construction delays while ensuring high-quality installations throughout the project timeline.

### Occupying Private Land and Interference with Streets

HVI recognizes the importance of minimizing disruption during construction:

**Table 7: Private Property and Traffic Disruption Mitigation Measures**

Mitigation Measure	Responsibility
<b>Private Property Coordination</b>	Project Manager will secure written consent prior to any access of private land
<b>Traffic Management</b>	Safety Manager will implement approved traffic control plans
<b>Pedestrian Safety</b>	Civil Foreman will ensure safe pedestrian pathways are maintained at all times

Mitigation Measure	Responsibility
Street Restoration	Quality Control Manager will verify restoration meets or exceeds original conditions

### Storage of Materials and Equipment

Our materials management plan includes:

- Project Manager will designate secure storage areas along the project route
- Logistics Coordinator will schedule deliveries to minimize on-site storage requirements
- Security measures including temporary fencing and surveillance at storage locations
- Protection from weather and environmental factors for sensitive materials

During the Cruz Bay Feeder 7E project on St. John, we successfully managed materials storage in limited spaces by implementing a just-in-time delivery approach coordinated with our installation schedule.

### Safety and Sanitary Regulations

Safety is HVT's top priority. Our comprehensive approach includes:

- Site-specific safety plan developed by our Safety Manager prior to mobilization
- Daily safety briefings conducted by General Foreman with all crew members
- Regular safety audits performed by independent safety personnel
- Prompt addressing of any identified hazards or safety concerns

Sanitation facilities will be provided at strategic locations throughout the project, with regular maintenance scheduled to ensure cleanliness and compliance with regulations.

### Lines, Grades, and Measurements

Accurate layout is critical to successful underground utility installation. As shown in **Table 8**, our team ensures precision through a systematic approach.

**Table 8: Survey and Measurement Control Process**

Responsibility	Action
Professional Land Surveyor	Establish control points and benchmarks
Field Engineer	Verify all measurements prior to excavation
Quality Control Manager	Confirm compliance with design elevations and alignments
Survey Crew	Document as-built conditions for accurate record documentation

### Dimensions of Existing Structures

HVT's approach to verifying existing conditions includes:

1. SUE Consultant will perform utility investigations prior to excavation
2. Field Engineer will document all existing underground structures encountered
3. Project Manager will coordinate with design team for any required adjustments
4. Quality Control Manager will verify proper clearances are maintained

### Work to Conform and Computation of Quantities

HVI will ensure all work conforms to the contract requirements:

- General Foreman will review work for compliance with specifications
- Quality Control personnel will perform regular inspections throughout construction
- Quantity surveyor will document installed quantities for accurate payment applications
- Field Engineer will maintain detailed records of all installed materials

### Planning and Progress Schedules

Our scheduling approach provides transparency and accountability:

- Project Manager will develop and maintain a detailed CPM schedule
- Weekly schedule updates reflecting actual progress and forecasted completion
- Three-week look-ahead schedules distributed to all stakeholders
- Monthly progress reports documenting schedule performance

### Precautions During Adverse Weather

Given our presence in the USVI and eight years of experience executing underground projects in the islands, HVI understands USVI's tropical climate requires specific weather-related protocols. **Table 9** summarizes our weather mitigation strategies that will be implemented on Feeder 9A.

**Table 9: Weather Mitigation Measures**

Weather Condition	Mitigation Measure
<b>Hurricane Preparation</b>	Equipment secured, excavations backfilled, materials protected
<b>Heavy Rain</b>	Temporary pumps and dewatering equipment ready for deployment
<b>High Winds</b>	Storage areas secured, lightweight materials properly anchored
<b>Heat</b>	Work scheduling adjusted to avoid peak temperatures, hydration stations provided

During our work on Feeder 5A in St. Thomas, our hurricane preparedness plan was successfully implemented, protecting both the work in progress and the surrounding community from potential hazards.

### Electrical Energy and Protection Against Electrolysis

HVI will implement proper protocols for electrical safety and corrosion prevention:

- Power Coordinator will arrange for temporary power connections as required
- Electrical Foreman will ensure proper grounding of all equipment and components
- Materials Engineer will verify proper isolation between dissimilar metals
- Quality Control Manager will inspect installations for compliance with anti-electrolysis requirements

### Record Contract Documents (As-Built)

Comprehensive as-built documentation ensures long-term operational success:

1. Field Engineer will maintain accurate red-line drawings throughout construction
2. Survey crew will document installed elevations and coordinates of all underground components
3. CAD technician will incorporate field markups into final as-built drawings
4. Project Manager will verify completeness of as-built documentation before submission

Our comprehensive approach to as-built documentation on the STX Feeder 8B project resulted in highly accurate record documents that continue to serve VIWAPA's maintenance and operations teams.

#### 2.2.1.3 Miscellaneous Requirements (01005)

HVI project implements includes comprehensive measures to address all miscellaneous requirements, ensuring minimal disruption to existing infrastructure while maintaining the highest quality standards throughout project execution. Our approach delivers value to VIWAPA through careful coordination, expert consultants, and proven methodologies refined through our extensive underground electrical construction experience in the USVI.

### Interference With Existing Works

HVI's Project Manager leads a systematic approach to minimize interference with existing infrastructure, implementing our approach, detailed in **Table 10**, developed during similar projects such as the Cruz Bay Feeder 7E and STT Feeder 5A underground electrical construction.



**Table 10: Interference Mitigation Measures and Implementation Approach**

Interference Mitigation Measure	Implementation Approach
<b>Coordination Program Development</b>	Project Manager will develop a detailed coordination program with VIWAPA and interested officials within the first week of Notice to Proceed, establishing clear communication protocols and approval processes for all work affecting existing operations.
<b>Proactive Scheduling</b>	Project Manager will schedule all connection work, cutting, and reconstruction activities during periods of lowest demand on existing facilities, working during off-hours when necessary to minimize service disruptions.
<b>Preparatory Planning</b>	Field crews will complete all possible preparatory work before any service interruption, having all tools, materials, and equipment ready at hand to minimize connection time.
<b>Modification Flexibility</b>	Technical leads will make necessary minor modifications to work relating to existing structures without additional compensation, documenting all changes in as-built documentation.

### Archaeology Consultant

HVI recognizes the cultural significance of potential archaeological findings in Charlotte Amalie and will implement a comprehensive archaeological management plan exceeding FEMA and regulatory requirements.

We will retain a qualified Archaeological Consultant who meets the Secretary of the Interior Professional Qualification Standards for Archaeology and Historic Preservation to:

- Develop comprehensive archaeological workplans for FEMA approval through SHPO consultation prior to ground disturbance
- Establish protocols for responding to any discoveries of human remains or significant archaeological features
- Coordinate with FEMA/VISHPO for approval on sensitive excavation areas
- Prepare detailed archaeological testing methods and reporting for non-linear excavations
- Conduct all required field investigations and provide real-time consultation during excavation

The Archaeological Consultant will be secured immediately following Notice to Proceed, and all workplans will be submitted for approval before mobilization. Drawing from our experience on St. Thomas infrastructure projects, our team understands the importance of early archaeological coordination to prevent project delays.

### Archaeology Monitoring

Our approach to archaeological monitoring exceeds compliance requirements by monitoring all elements listed in **Table 11**.

**Table 11: Archaeological Monitoring Elements and Implementation Approach**

Monitoring Element	Implementation Approach
<b>Kronprindsens &amp; Gasvairks Gades Area</b>	SOI-qualified archaeologist will provide continuous monitoring along the identified 75-meter section from coordinates 18.34122, -64.93987 to 18.34047, -64.93981 with particular attention to the Moravian Cemetery boundary.
<b>Historic Properties</b>	Archaeological monitoring will be conducted for all trenching-related excavation within 100 feet of all properties listed or potentially eligible for the National Register of Historic Places along the project route.
<b>Documentation Standards</b>	All monitoring activities will include comprehensive photography and detailed recording of any archaeological features, with samples of diagnostic artifacts mapped, properly labeled, and cataloged according to VISHPO requirements.

Monitoring Element	Implementation Approach
<b>Discovery Response Protocol</b>	In the event of human remains discovery, our team will immediately cease work, secure the area, and notify FEMA and local law enforcement according to territorial statutes.

Our archaeological monitoring program, developed through our extensive work in historic districts including our current Feeder 5A project, ensures all cultural resources are properly identified, documented, and protected while maintaining project momentum.

### Arborists Consultant

HVI will engage a certified Arborist immediately upon contract award to:

- Conduct a comprehensive survey of the project area to identify all trees requiring protection
- Develop custom protection plans for significant trees along the route
- Establish protection zones with appropriate barriers before construction begins
- Monitor tree health throughout construction
- Provide remediation recommendations if accidental damage occurs

Our arborist consultant will work directly with our Project Manager to ensure construction activities maintain appropriate distances from root zones. Drawing from our experience on the Cruz Bay Feeder 7E project, we understand the importance of proactive tree protection in maintaining community acceptance and environmental compliance.

### Subsurface Utility Engineering (SUE) Requirements

HVI's comprehensive SUE program mitigates underground utility conflicts through a structured approach that exceeds standard practice as demonstrated by the elements detailed in **Table 12**.

**Table 12: Subsurface Utility Engineering Elements and Implementation Methods**

SUE Element	Implementation Method
<b>Professional Qualifications</b>	HVI will engage a licensed Professional Engineer with SUE expertise to perform all subsurface utility investigations according to ASCE Standard 38-22.
<b>Quality Level Documentation</b>	All existing utility features will be documented to Quality Level B, with Quality Level A designation in areas of caution, congestion, or at test borehole locations as identified in contract drawings.
<b>Equipment Utilization</b>	SUE consultant will deploy comprehensive detection equipment including GPR, electromagnetic locators, and vacuum excavation to precisely identify subsurface utilities.
<b>Deliverables</b>	Signed and sealed Utility Plan & Profile Drawings with quality level designations and a comprehensive Utility Report documenting the subsurface landscape will be produced before excavation begins.
<b>Utility Coordination</b>	Project Manager will formally notify all utility companies (DPW, VIWAPA departments, Waste Management, VINGN, Liberty, AT&T, and VIYA) of project scope, schedule, and SUE findings before construction begins.

#### 2.2.1.4 Summary of Work (01010)

HVI provides VIWAPA with comprehensive underground electrical construction services for Feeder 9A meeting all scope requirements while minimizing disruption to the community. Our Project Manager directly oversees the efficient execution of both civil and electrical work packages, ensuring seamless coordination and accountability throughout the project lifecycle.

HVI fully comprehends the breadth of work specified in Section 01010 of the specifications. We will execute all civil and electrical work in strict accordance with the contract documents detailed in **Table 13**.



**Table 13: Feeder 9A Project Work Packages with HVI Approach**

Work Package	Components	HVI Approach
<b>General Requirements</b>	Mobilization, bonding, permits, construction impact mitigation, traffic control, specialty consulting, and project close-out	Project Manager coordinates mobilization of equipment and personnel to site, procures all necessary bonds and permits prior to work commencement, and develops comprehensive environmental and traffic control plans
<b>Civil Work</b>	Construction of duct banks, manholes, handholes, equipment pads, and road restoration	Civil Foreman oversees excavation teams, coordinates with utility locators, and ensures all infrastructure is installed per specifications and drawings
<b>Electrical Work</b>	Installation of cables, transformers, switchgear, sectionalizing cabinets, grounding systems, and testing	Electrical Foreman manages skilled electricians for cable pulling, terminations, equipment installation, and comprehensive electrical testing

HVI's approach to executing this project is based on our extensive experience with similar underground electrical construction projects in the USVI, including our recent success with Feeder 5A in St. Thomas. For Feeder 9A, our focus will be on:

1. **Parallel Work Execution:** Our Electrical Foreman will begin cable pulls using existing infrastructure while our Civil Foreman simultaneously directs crews to construct new duct banks, optimizing the project timeline.
2. **Section-by-Section Implementation:** To minimize community impact, our Project Manager will divide the route into manageable sections, with steel plates covering open trenches for safety and accessibility.
3. **Quality Assurance:** Our dedicated QA/QC personnel will verify all installations meet or exceed specifications before backfilling or energizing systems.
4. **Detailed Documentation:** Our Project Manager will ensure comprehensive as-built documentation including AutoCAD drawings and ArcGIS shapefiles with GPS coordinates of all installed infrastructure.

HVI has successfully executed similar work on our current Feeder 5A project in St. Thomas, which included the installation of 8,288 LF of duct bank, road restoration (both asphalt and concrete), construction of concrete pads, installation of pad-mounted switchgear and transformers, and medium voltage cable installation including terminations and splices. This experience provides us with intimate knowledge of local conditions, material supply chains, and regulatory requirements specific to underground electrical construction in St. Thomas.

By leveraging our established presence in the territory and lessons learned from previous VIWAPA projects, HVI will deliver this project efficiently while maintaining the highest standards of quality and safety. Our Project Manager will coordinate daily with VIWAPA representatives to ensure transparent communication and prompt resolution of any issues that arise during construction.

#### **2.2.1.5 Coordination and Meetings (01039)**

HVI will implement a comprehensive coordination and meeting structure to facilitate seamless project execution and clear communication throughout the Feeder 9A project. Our approach leverages proven methods from our successful USVI projects, including the recently completed Cruz Bay UG Feeder 7E on St. John and our ongoing Feeder 5A project on St. Thomas.

Our Project Manager serves, serving in dual capacity as both Project Manager and Superintendent, as the central coordination point between VIWAPA, regulatory agencies, and our field teams, eliminating information gaps and ensuring all stakeholders remain informed throughout the project lifecycle. Our coordination plan includes:

- Daily field coordination briefings led by our General Foreman to synchronize civil and electrical activities
- Weekly schedule coordination meetings to forecast upcoming work and identify potential conflicts
- Bi-weekly progress meetings with VIWAPA representatives to review project status
- Monthly utility coordination meetings with affected service providers

As demonstrated during our Feeder 7E project in Cruz Bay, effective coordination significantly minimizes service disruptions and accelerates overall project delivery.

### Required Meetings Schedule

**Table 14** outlines our structured meeting approach, including frequency, participants, and deliverables. These meetings will follow the requirements specified in Section 01039 while providing the real-time coordination needed for successful project execution.

**Table 14: Meeting Schedule for Feeder 9A Project Coordination**

Meeting Type	Timing	Key Participants	Deliverables
<b>Preconstruction</b>	Within 7 days of Notice to Award	Project Manager, General Foreman, VIWAPA, Project Engineer	Submittal schedule, field decision protocols, coordination procedures
<b>Mobilization</b>	Prior to construction start-up	Project Manager, General Foreman, Subcontractors, VIWAPA	Permits confirmation, traffic control plan, security protocols, schedule baseline
<b>Progress Meetings</b>	Bi-weekly	Project Manager, General Foreman, Subcontractors, VIWAPA	Updated schedule, resolved field issues, upcoming work coordination
<b>Special Coordination</b>	As needed	Project Manager, affected stakeholders	Resolution documentation for specific issues

### Field Coordination Process

Our General Foreman maintains daily on-site coordination of all construction activities, ensuring proper execution of:

- Field surveying for precise utility locations
- Traffic control implementation and daily verification
- Coordination of material deliveries with storage limitations
- Synchronization of civil and electrical work activities

During our STX Feeder 8B project, HVI's coordination approach enabled our team to successfully complete the installation of 8,200 LF of 750 MV AL EPR Cable in existing underground infrastructure (duct bank and manholes), demonstrating our capability to manage complex cable installations within the USVI environment. Our coordination and meeting structure ensures VIWAPA remains informed throughout the project while minimizing disruptions to the community and existing utility services. Our experienced management team will leverage lessons learned from previous USVI projects to deliver a seamless coordination experience.

#### 2.2.1.6 Cutting and Patching (01045)

HVI applies a methodical approach to cutting and patching operations to preserve the integrity of existing structures while efficiently installing new underground electrical infrastructure. Our cutting and patching methodology minimizes disruption to traffic flow and ensures aesthetically acceptable restoration of surfaces upon project completion.

### General

Our Project Manager coordinates with VIWAPA representatives before commencing any cutting or patching activities, especially where work may affect the structural integrity or visual appearance of existing surfaces.

For work on private properties with approved right-of-ways, our Civil Foreman conducts thorough pre-construction assessments, documenting existing conditions with photographs and measurements to ensure proper restoration. All cutting and patching activities strictly comply with the National Historic Preservation Act (NHPA) requirements as specified in the FEMA/EHP Record of Environmental Consideration (REC) document. When submitting cutting and patching proposals, we include:

- Detailed descriptions of cutting extent and required procedures
- Assessment of impacts on existing structures and finishes
- Comprehensive plans for restoration of affected areas
- Timing schedule to minimize disruption to traffic and businesses

## Products

HVI exclusively uses materials matching or exceeding the quality of existing surfaces when performing patching operations as detailed in **Table 15**.

**Table 15: Material Selection Criteria for Patching Operations**

Material Type	Selection Criteria	Application Method
<b>Concrete Patching</b>	Identical composition and strength to existing concrete (min. 3000 psi)	Applied in proper layers with adequate curing time
<b>Asphalt Patching</b>	Matching aggregate size and bituminous content	Hot-applied with proper compaction equipment
<b>Sidewalk Materials</b>	Visual match to surrounding surfaces with proper expansion joints	Finished to match existing texture and color
<b>Structural Reinforcements</b>	Engineer-approved materials that maintain or enhance structural integrity	Installed according to design specifications

For exposed surfaces, our crews ensure visual consistency with adjacent materials, and for structural elements, we maintain or exceed the load-bearing capacity of the original construction. All patch materials are sourced from approved suppliers and tested for compatibility before application.

## Execution

HVI's execution of cutting and patching follows a disciplined, sequential approach as demonstrated in **Table 16**.

**Table 16: Cutting and Patching Methodology with Phase-Specific Execution Approach**

Phase	Execution Approach
<b>Inspection Phase</b>	Our Civil Foreman examines work areas before cutting begins to identify potential hazards, verify utility locations from SUE surveys, and document pre-existing conditions.
<b>Preparation</b>	Operating Engineers establish proper safety barriers and dust control measures while our laborers protect adjacent surfaces from damage.
<b>Temporary Support</b>	When cutting near structural elements, our crew installs appropriate bracing or shoring before proceeding.
<b>Cutting Process</b>	We employ precision cutting techniques using diamond-blade concrete saws for roadways and sidewalks, ensuring clean edges that promote proper bonding with patch materials.
<b>Cutting Depth Control</b>	For utility trenches, our operators maintain consistent, specification-compliant depths throughout the cutting process.
<b>Weather Considerations</b>	Our Project Manager monitors weather conditions to prevent cutting operations during adverse conditions that could compromise restoration quality.

Phase	Execution Approach
<b>Patching Sequence</b>	Patches are installed in appropriate layers, with each layer properly cured or compacted before proceeding to the next.
<b>Finishing</b>	Final surfaces are finished to match surrounding areas in texture, color, and grade, with special attention to drainage patterns.
<b>Cleanup</b>	All cutting debris is promptly removed from the site and properly disposed of according to local regulations.

During our Cruz Bay UG Feeder 7E project on St. John, HVI successfully implemented our cutting and patching methodology across 5 miles of duct bank installation. Our specialized crews maintained pedestrian access to businesses throughout construction by sectionalizing the work and providing temporary walking surfaces. This approach resulted in high-quality restorations, preserving the historic character of the area while installing modern underground infrastructure.

#### 2.2.1.7 Materials and Equipment (01600)

HVI will implement a comprehensive materials and equipment program to deliver high-quality components while maintaining strict quality control throughout procurement, delivery, and installation. Our approach benefits VIWAPA by reducing schedule risks and ensuring all installed materials meet contract specifications.

#### General

Our Project Manager ensures all materials and equipment comply with Section 01600 requirements by establishing a rigorous verification process. For each material or component, HVI verifies:

- Source limitations are maintained, using single sources for product categories to ensure uniformity
- All products meet specified performance criteria
- All nameplates are properly installed and visible for inspection
- Material traceability is maintained from procurement through installation

Our approach mirrors our successful methodology implemented during the Cruz Bay UG Feeder 7E STJ project, where we maintained material conformance records throughout the 5-mile duct bank installation.

#### Products

HVI follows all product selection procedures as outlined in Section 01600. **Table 17** outlines our compliance approach to product requirements.

**Table 17: HVI Product Selection Compliance Approach**

Requirement Category	HVI Implementation Approach
<b>Proprietary Specifications</b>	Our Procurement Manager identifies and source specified manufacturers only
<b>Semiproprietary Specifications</b>	We submit equivalent products for approval when beneficial to VIWAPA
<b>Nonproprietary Specifications</b>	We source compliant products that maximize value while meeting all specifications
<b>Performance Specifications</b>	Our Project Engineer verifies all products meet performance requirements with documented testing
<b>Visual Matching</b>	Our Superintendent verifies aesthetic consistency with samples and mockups

#### Execution

During installation, our Electrical Foreman ensures all products are installed according to manufacturers' instructions. Key installation protocols include:

- Pre-installation inspection by our QC Manager to verify materials meet specifications

- Complete documentation of installation procedures for all critical components
- Photographic documentation before, during, and after installation
- Third-party verification of critical installations

As demonstrated during our STT Feeder 5A project, our installation teams maintain comprehensive installation documentation validating compliance with manufacturer specifications and enabling efficient troubleshooting if needed. Our rigorous materials management approach for the Feeder 9A program will ensure all components meet specifications, are properly installed, and provide VIWAPA with reliable documentation for future maintenance operations.

#### 2.2.1.8 Transportation and Handling (01620)

VIWAPA benefits from HVI's proven transportation and handling procedures which aim to minimize equipment damage and prevent project delays. Through our systematic approach, all materials arrive intact and on schedule, while our experienced logistics team maintains strict chain-of-custody documentation for all project components.

#### Material Transportation Plan

HVI implements a material transportation plan addressing the unique challenges of island logistics. Our approach includes a range of transportation elements as described in **Table 18**.

**Table 18: HVI's Transportation Management Approach**

Transportation Element	Implementation Method
<b>Shipping Coordination</b>	Project Manager coordinates with suppliers and shipping companies to ensure timely delivery of materials to St. Thomas
<b>Quality Verification</b>	General Foreman conducts receiving inspections using detailed checklists to confirm materials meet specifications
<b>Handling Equipment</b>	Dedicated crane operators and certified riggers utilize appropriate equipment sized for specific material weights and dimensions
<b>Documentation</b>	Our Project Manager and General Foreman maintain digital tracking system for all shipments with real-time status updates

#### Specialized Handling Procedures

For the Feeder 9A project, we will implement specialized handling procedures for critical components such as pad-mounted switchgear, transformers, and cable reels.

Our General Foreman oversees the implementation of proper handling techniques for all materials, particularly delicate electrical components. When handling medium-voltage cables, our crews will:

- Use appropriate cable pulling equipment with tension monitoring
- Employ cable guides and lubricants to prevent damage during installation
- Maintain minimum bending radius requirements at all times
- Secure cable ends with temporary seals to prevent moisture ingress

For transformers and switchgear, our certified riggers use purpose-specific lifting devices to prevent damage to bushings and other sensitive components.

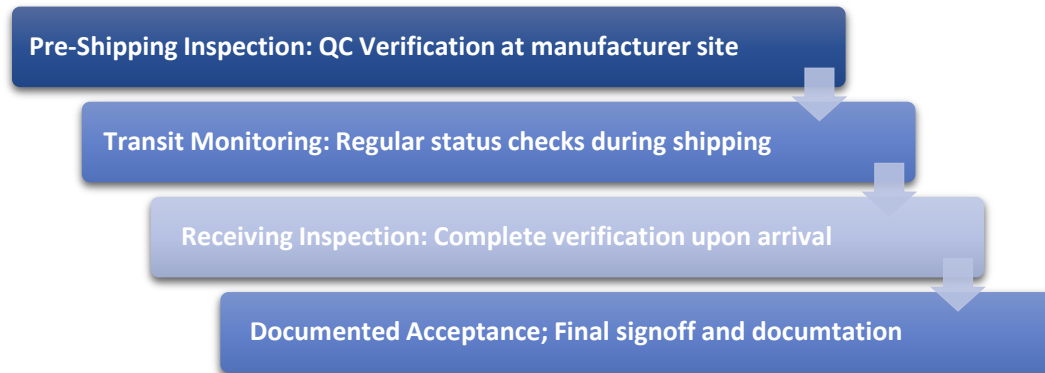
#### Quality Control for Transportation

Our quality control process for transportation and handling includes rigorous oversight at every stage of the material journey. The VIWAPA Feeder 9A project requires careful handling of sensitive electrical components that must arrive on-site in pristine condition. To facilitate the schedule, HVI implements a



comprehensive, multi-stage verification system beginning at the manufacturer's facility and continuing until final acceptance at the project site.

Our process includes documentation of material condition throughout transportation, providing traceability and accountability. Each step has a detailed checklist tailored to specific material types, with particular attention to critical components such as transformers, switchgear, and medium-voltage cables. Our Project Manager reviews quality control documentation daily, allowing immediate corrective action if any issues arise during transportation.



**Figure 2: HVI's Four-Step Quality Control Process for Material Transportation and Handling**

Our approach has proven successful in our previous USVI projects, including the Cruz Bay UG Feeder 7E project in St. John, where we safely transported and installed over 5 miles of duct bank materials.

#### 2.2.1.9 Storage and Protection (01630)

VIWAPA will benefit from our meticulous materials management approach aimed at preserving equipment integrity and preventing project delays. Our storage and protection protocols exceed industry standards while addressing the unique challenges of St. Thomas's climate conditions.

#### Material Storage Protocol

HVI implements a comprehensive storage and protection program to preserve material integrity throughout the project lifecycle. **Table 19** outlines our systematic approach to material storage and protection for Feeder 9A.

**Table 19: Material Storage and Protection Procedures**

Requirement	Implementation Approach	Responsible Party
<b>Owner-furnished equipment storage</b>	Secure receipt, inspection, unloading, and handling at designated St. Thomas facility	Logistics Coordinator
<b>Equipment protection</b>	Store above ground on suitable wooden blocks or braces to prevent excessive deflection	Project Superintendent
<b>Outdoor electrical equipment</b>	Elevate one end to facilitate drainage and prevent water accumulation	General Foreman
<b>PVC pipe protection</b>	Provide sunlight protection through suitable coverage with tarp	Electrical Foreman
<b>Sensitive equipment</b>	Store in weather-protected environments per manufacturer recommendations	Project Manager

Our Project Superintendent ensures all equipment receives proper handling and storage upon delivery and throughout the installation process. For sensitive electrical components, HVI maintains environmental controls to prevent moisture accumulation and temperature fluctuations.

### **Proven Storage Procedures**

Drawing on our experience from the Cruz Bay UG Feeder 7E project in St. John, we have refined our material management systems to maximize protection in the Virgin Islands environment. For the Feeder 9A project, we will:

- **Implement daily inspections** of stored materials by our QC Manager
- **Utilize elevated storage platforms** to protect materials from ground moisture and flooding
- **Provide proper ventilation** under all covered materials to prevent condensation buildup
- **Maintain inventory tracking** through digital documentation available to VIWAPA representatives, upon request

For wiring and cables, we store materials indoors in dry areas with climate control to prevent degradation. Our storage facilities have backup power to maintain environmental controls during outages.

### **Equipment Protection Standards**

Jonathan Kuhl, our Project Manager, personally oversees the implementation of our storage protocols, ensuring compliance with manufacturer specifications for all equipment. For electrical equipment stored outdoors, we:

- Support equipment above ground on wooden blocks or braces
- Position items with elevation at one end to facilitate drainage
- Install tarpaulins with proper ventilation to prevent condensation
- Maintain ongoing protection of all PVC from sunlight with continuous covering

Our approach to material and equipment protection has been proven effective on our STX Feeder 8B and STT Feeder 5A projects. By implementing our storage and protection measures, HVI ensures all materials maintain their integrity throughout the project, eliminating delays and quality issues related to material deterioration.

#### **2.2.1.10 Guarantees & Warranties (01730)**

VIWAPA receives comprehensive warranty coverage safeguards the Feeder 9A Underground Construction investment. HVI's proven warranty management protocols ensure rapid response to any covered issues, minimizing system downtime while maintaining distribution reliability.

### **Comprehensive Warranty Framework**

HVI provides a robust twelve-month warranty on all equipment, materials, products, and workmanship supplied for the Feeder 9A Underground Construction Project. This warranty period begins from the date of final acceptance by VIWAPA and covers defects in workmanship, materials, design specifications, or structural/mechanical applications.

Should any equipment, materials, or products be found defective during the warranty period, our team will promptly address the issue upon written notification from VIWAPA. Our response includes repair or replacement of defective components with minimal disruption to operations.

**Table 20: HVI Warranty Response Framework for Feeder 9A Project**

Warranty Element	HVI Commitment	Implementation Approach
<b>Coverage Period</b>	12 months minimum from date of final acceptance	Our Project Manager tracks warranty periods using digital warranty management system with automated notifications
<b>Response Time</b>	Within 24 hours of notification for assessment	Dedicated warranty response team with 24/7 availability
<b>Resolution Time</b>	Expedited repair/replacement schedule based on component criticality	Pre-positioned replacement components for critical systems
<b>Documentation</b>	Complete digital and physical warranty documentation package	Provided at project closeout with user-friendly indexing system

### Multiple Equipment Failure Protection

For contractor equipment experiencing multiple failures prior to warranty expiration, HVI implements our comprehensive remediation protocol, which includes complete disassembly, inspection, and modification of the affected equipment to prevent recurrence. All components potentially damaged as a consequence of the equipment failure will be replaced. Following remediation, HVI provides a new twelve-month warranty against defective design, workmanship, and materials, beginning on the date the equipment is reassembled and returned to operation.

HVI's warranty scope differs based on equipment source. For VIWAPA supplied equipment we receive custody of and install per plans and specifications, our warranty is limited to installation workmanship and proper handling procedures, while equipment manufacturing defects remain under original manufacturer warranties.

Our Equipment Failure Analysis Team, led by our Electrical Foreman, conducts root cause analysis to identify systemic issues.

### Component Acceptance and Sequential Operations

For operational continuity during construction, HVI works with VIWAPA to accept and start-up operable components prior to project completion, enabling continued operation while construction progresses in other areas.

The component acceptance process follows sequential steps, to include:

1. **Completion and Testing:** HVI's Electrical Foreman completes checkout and field-testing of an operational component
2. **Notification:** HVI formally notifies VIWAPA in writing that the component is substantially complete
3. **Inspection:** VIWAPA's Project Manager schedules inspection within 10 days
4. **Acceptance:** Upon concurrence, VIWAPA provides written notification of substantial completion
5. **Punchlist:** VIWAPA provides list of remaining items requiring completion/correction

### Beneficial Occupancy Process

When components are needed to maintain operations during construction, HVI coordinates with VIWAPA for beneficial occupancy. After achieving stable operation (minimum 95% availability over a 7-day period), VIWAPA assumes beneficial occupancy of the component, which includes commencement of the one-year warranty for the component, VIWAPA assumes operational and maintenance responsibility, and HVI continues to honor all warranty obligations.

Our approach ensures VIWAPA can utilize completed portions of the system while construction progresses on the remaining sections. Our handover documentation includes detailed operating instructions, maintenance requirements, and emergency procedures to ensure seamless transition to VIWAPA operations.

Our sequential energization approach on the St. Thomas Feeder 5A project demonstrates our expertise with this approach, where we coordinated with VIWAPA to energize completed duct bank sections while continuing work on the remainder of the installation.

#### **2.2.1.11 Allowances (012100)**

VIWAPA benefits from HVI's proven track record managing allowances on similar projects. Our experience with quantity allowances on the Feeder 5A St. Thomas project enabled us to effectively track, document, and process rock excavation quantities, resulting in transparent cost management and no unexpected change orders for the Authority.

#### **General**

Our Project Manager coordinates with VIWAPA's Project Engineer to establish clear protocols for the processing and documentation of allowances. For the Feeder 9A project, Haugland will:

- Document all rock excavation encounters with photographic evidence and precise measurements
- Submit detailed proposals for each allowance use with supporting documentation
- Maintain a comprehensive allowance tracking log updated weekly
- Present allowance status in all progress meetings to ensure transparency

Our approach to managing rock excavation allowance follows a structured process ensuring proper oversight and cost control, as shown in **Table 21**.

**Table 21: Rock Excavation Allowance Management Process**

Process Step	Implementation Details
<b>Identification</b>	General Foreman identifies rock material requiring excavation; documents with photos and measurements
<b>Notification</b>	Project Manager notifies VIWAPA Project Engineer within 24 hours of encountering rock, providing location and preliminary volume estimate
<b>Measurement</b>	Civil Foreman establishes pre-excavation and post-excavation measurements to calculate accurate volumes
<b>Documentation</b>	Quantity Surveyor creates detailed reports with calculations, supporting photos, and GPS coordinates
<b>Verification</b>	VIWAPA Project Engineer reviews and approves quantities before proceeding with replacement materials
<b>Reporting</b>	Weekly allowance utilization reports track running totals against the 600 cu. yd. allowance

#### **Products**

For rock excavation allowances, we maintain detailed material tracking to ensure appropriate backfill products are used in accordance with specifications. Jonathan Kuhl, in his Project Manager capacity, oversees proper handling of rock materials and installation of replacement materials adhering to the following guidelines:

- Segregate excavated rock from other materials to facilitate accurate measurement
- Document replacement materials with delivery tickets and installation records
- Maintain material testing records for all replacement materials
- Track material quantities against allowance balances in real-time

Based on our experience with the St. Thomas Feeder 5A project, we anticipate encountering similar geological conditions requiring selective use of specialized excavation techniques and appropriate backfill materials.

### Execution

Haugland's execution of allowance-related work leverages lessons learned from our previous USVI underground distribution projects. Our equipment operators and field crews are trained to recognize rock formations and follow established protocols to minimize costs while maintaining schedule. Our execution approach is detailed in **Table 22**.

**Table 22: Allowance Management Frequency and Responsibilities**

Time Frame	Allowance Management Activity	Responsibility	Deliverable
Daily	Coordination between excavation teams and project management	General Foreman	Daily field reports with allowance utilization updates
Weekly	Reconciliation of quantities with VIWAPA representatives	Project Manager	Signed quantity verification sheets and updated allowance log
Monthly	Formal reporting on allowance status with projected forecasts	Project Manager	Comprehensive allowance status report with trending analysis
As Required	Adjustment of work sequencing to optimize resource allocation	Project Manager & General Foreman	Revised two-week look-ahead schedules reflecting allowance impacts

When processing allowance adjustments, we follow a transparent methodology supported by our documented field measurements and VIWAPA-approved verification procedures. This approach ensures all parties have clear visibility into allowance utilization throughout the project lifecycle. During our work on Feeder 7E in Cruz Bay, St. John, we successfully managed rock excavation allowances across 5 miles of duct bank installation, demonstrating our ability to work with VIWAPA to control costs while maintaining construction quality and schedule adherence.

#### 2.2.1.12 Construction Progress Documentation (013200)

VIWAPA benefits from HVI's structured approach to documentation which provides holistic visibility into project progress and enables timely, data-driven decisions. Our methodology creates a comprehensive record of the project and supports efficient reporting, anticipates potential delays, and ensures all stakeholders remain informed throughout the project lifecycle.

### Comprehensive Documentation Strategy

HVI implements a three-tiered documentation strategy to ensure all project phases are systematically captured and tracked as shown in **Table 23**.

**Table 23: HVI's Documentation Hierarchy for Feeder 9A Project**

Documentation Level	Frequency	Responsibility	Distribution
Daily Construction Reports	Daily	Site Foreman	Project Manager, Superintendent
Project Status Updates	Bi-weekly	Project Manager	VIWAPA Project Manager
Executive Summary Reports	Monthly	Project Manager	VIWAPA Management Team

### Daily Construction Reports

Our General Foreman prepares detailed daily reports extending beyond basic activity logging to capture crucial project insights. These comprehensive reports serve as both a real-time project management tool and a permanent record of construction activities.



**Table 24: Enhanced Daily Reporting Benefits**

Daily Report Element	Content Details	Direct Benefit to VIWAPA
<b>Workforce Tracking</b>	Detailed breakdown of HVI personnel and subcontractor attendance with skill classifications	Real-time visibility into resource allocation ensuring optimal staffing for VIWAPA's critical infrastructure work
<b>Equipment Utilization</b>	Comprehensive equipment deployment status with performance metrics	Maximizes productivity on VIWAPA's investment through transparent equipment allocation and utilization reporting
<b>Material Management</b>	Current inventory levels, daily usage rates, and delivery tracking	Prevents project delays through proactive material planning, protecting VIWAPA's service continuity commitments
<b>Progress Measurement</b>	Quantitative completion percentages against schedule milestones	Enables early identification of schedule variances, allowing VIWAPA to coordinate dependent operations with confidence
<b>Weather Documentation</b>	Detailed atmospheric conditions with specific impacts on electrical installation activities	Creates defensible documentation for schedule adjustments while minimizing weather-related disruptions to VIWAPA services
<b>Risk Identification</b>	Daily field-level obstacle reporting with preliminary mitigation recommendations	Reduces potential service interruptions through early detection of issues before they impact VIWAPA operations
<b>Visual Documentation</b>	Geotagged, timestamped photography of critical infrastructure installation	Provides VIWAPA with permanent visual record of buried infrastructure for future maintenance and expansion activities

Our comprehensive daily reporting system transforms standard construction documentation into a strategic management tool directly supporting VIWAPA's operational objectives while maintaining complete transparency throughout the project lifecycle. During our Feeder 7E project in St. John, this detailed documentation approach enabled us to quickly identify and address an unexpected utility conflict before it could impact the critical path.

### Progress Tracking Methodology

The Project Manager will implement HVI's proven progress tracking system, which includes:

1. **Schedule Integration:** Our documentation directly connects to the master schedule, allowing real-time progress assessment against planned milestones
2. **Variance Analysis:** Weekly verification of actual vs. planned progress with automatic flagging of potential schedule impacts
3. **Resource Utilization Tracking:** Monitoring of labor, equipment, and material utilization rates to optimize deployment
4. **Critical Path Monitoring:** Daily assessment of activities on the critical path with proactive identification of potential delays

### Project Schedule Management

HVI's Project Manager will maintain a dynamic master schedule that evolves with the project:

- Initial 14-day detailed look-ahead schedule updated weekly
- Monthly schedule assessments with comprehensive project timeline updates
- Bi-weekly progress meetings with VIWAPA representatives to review schedule status
- Automated critical path analysis to highlight potential schedule impacts
- Resource-loaded schedule that tracks labor, equipment, and material requirements

For the Feeder 9A project, our Project Manager will implement the same proactive schedule management approach same as we have for our on-time performance with our current STT Feeder 5A project.

## Reporting Systems

HVI's reporting system creates a continuous information flow that keeps all stakeholders informed as detailed in **Table 25**.

**Table 25: HVI's Reporting Framework for Construction Progress**

Report Type	Content	Format	Distribution
<b>Daily Field Reports</b>	Crew activities, material usage, equipment deployment, issues encountered	Standardized electronic form with photo attachments	Project team, archived in project database
<b>Material/Equipment Tracking</b>	Delivery status, inventory levels, utilization rates	Spreadsheet with visual indicators for reorder points	Procurement team, Project Manager
<b>Schedule Updates</b>	Progress against baseline, forecast completion dates, critical path analysis	Gantt chart with variance highlighting	VIWAPA Project Manager, HVI management
<b>Quality Control Documentation</b>	Inspection results, test outcomes, verification of specifications	Standardized forms with supporting documentation	Quality control team, VIWAPA inspectors

Our Project Manager utilize Procore, our cloud-based documentation system, to maintain all project records, making them readily accessible to authorized team members and VIWAPA representatives, upon request. VIWAPA personnel are familiar with Procore from HVI's recent VIWAPA projects, ensuring seamless information sharing and collaboration. This system ensures project documentation is:

- Securely stored with appropriate access controls
- Properly categorized for easy retrieval
- Linked to relevant schedule activities
- Preserved throughout the project lifecycle and warranty period

HVI's approach to construction progress documentation has been a cornerstone of our successful project delivery throughout the USVI, including our completed Feeder 7E Cruz Bay Underground St. John project and our active Feeder 5A St. Thomas project. By implementing our established documentation and reporting systems, HVI will provide VIWAPA with complete transparency into project progress, enable timely decision-making, and create a comprehensive record of the Feeder 9A project implementation.

### 2.2.1.13 Submittal Procedures (013300)

HVI implements a systematic submittal process maintaining quality control while ensuring project progression is not impeded. Our approach focuses on efficient documentation management, prompt processing, and clear communication to keep VIWAPA fully informed throughout the project lifecycle.

#### Streamlined Submittal Management System

To maintain proper control over all project submittals, our Project Manager establishes a comprehensive tracking system at project initiation utilizing Procore project management software. Our system captures critical information including:

- Specification section references
- Submittal descriptions and intended uses
- Required and actual submission dates
- Review status and approvals
- Implementation status

**Table 26** below outlines our submittal coordination and processing approach, which has proven effective on similar USVI projects including the Cruz Bay UG Feeder 7E on St. John and our current Feeder 5A project on St. Thomas.

**Table 26: Submittal Management Approach**

Submittal Management Element	Implementation Approach
<b>Initial Processing</b>	Our Project Manager will review all submittals prior to submission to verify completeness, accuracy, and compliance with contract requirements
<b>Coordination with Construction</b>	Our General Foremen will ensure field activities are synchronized with approved submittals, preventing work from proceeding without proper documentation
<b>Digital Documentation</b>	All submittals will be organized through Procore's document management system and transmitted via email with clear subject line identification to facilitate tracking
<b>Transmittal Documentation</b>	Each submittal package will include a complete transmittal form with specification references, item descriptions, and intended application
<b>Resubmittal Process</b>	For any rejected submittals, we'll implement a 3-day turnaround for corrections to prevent schedule impacts

### Quality Control and Verification Protocols

Drawing from our experience on the St. Thomas Feeder 5A project, HVI uses our established internal review process to ensure submittals meet all technical and administrative requirements before transmission to VIWAPA. Our Project Manager conducts comprehensive verification of submittal content, ensuring manufacturer information is complete, dimensional data matches field conditions, and product options are appropriate for the intended application. When technical deviations are necessary, these are clearly identified with supporting justification to facilitate VIWAPA's review process.

For product data submittals, Haugland provides consolidated information packages to include everything from manufacturer specifications to installation requirements, eliminating the need for VIWAPA to request supplemental information and preventing potential delays in the approval process.

### Processing Timeline Commitments

Recognizing the critical nature of prompt submittal processing, Haugland Virgin Islands commits to the following timeline for submittal management:

- Initial submittals will be transmitted within 10 days of Notice to Proceed
- High-priority submittals for long-lead materials (transformers, switchgear, cable) will be expedited
- Our Project Manager will maintain a 5-business-day response timeframe for any requests for clarification
- Weekly submittal status reports will be provided during progress meetings

Our above approach has successfully supported our timely completion of the 5-mile duct bank installation for the Cruz Bay UG Feeder 7E project, allowing for coordinated material deliveries that prevented schedule delays.

### Resubmittal Management

For any submittals requiring revision, our Project Manager implements our proven three-step resubmittal protocol as detailed in **Table 27**.

**Table 27: Resubmittal Management Process**

Resubmittal Phase	Actions and Responsibilities
<b>Initial Assessment</b>	<ul style="list-style-type: none"> <li>• Project Manager reviews rejection comments within 24 hours</li> <li>• Technical team consulted for resolution strategies</li> </ul>

Resubmittal Phase	Actions and Responsibilities
	<ul style="list-style-type: none"> <li>Root cause analysis performed to prevent similar issues</li> </ul>
<b>Document Revision</b>	<ul style="list-style-type: none"> <li>Clear highlighting of all modifications from original submittal</li> <li>Cross-reference to reviewer comments to demonstrate compliance</li> <li>Additional supporting documentation added as needed</li> </ul>
<b>Expedited Processing</b>	<ul style="list-style-type: none"> <li>Revised submittals prioritized in workflow</li> <li>Direct communication with VIWAPA to clarify any outstanding concerns</li> <li>Confirmation of receipt and expected review timeline</li> </ul>

By addressing all submittal requirements comprehensively and proactively, HVI ensures the Feeder 9A project documentation fully supports the construction sequence while maintaining quality standards and schedule requirements.

#### 2.2.1.14 Quality Requirements (014000)

##### General Requirements

VIWAPA benefits from HVI's tested quality management approach which has been refined through multiple successful USVI underground electrical projects. Our quality program integrates systematic field verification, strategic testing coordination, and timely documentation - all designed to ensure the Feeder 9A construction meets or exceeds specifications while minimizing rework and avoiding project delays. Our QC processes are tailored to both administrative and technical performance requirements and enable HVI to maintain exceptional quality through a comprehensive program outlined in **Table 28**.

**Table 28: Quality Control Program Components**

Program Element	Implementation Process	Benefit to VIWAPA
<b>Pre-Installation Coordination</b>	Our Project Manager conducts comprehensive review of contract requirements with field leadership before mobilization	Ensures alignment on quality standards before construction begins
<b>Systematic Inspections</b>	Scheduled verification at critical construction points by dedicated quality personnel	Prevents costly rework and ensures compliance with specifications
<b>Documentation Management</b>	Electronic documentation system with organized filing structure for all quality records	Creates accessible audit trail and expedites project closeout
<b>Third-Party Testing Integration</b>	Strategic coordination with independent testing agencies to verify material and installation quality	Provides unbiased verification of work quality at critical project milestones
<b>Deficiency Resolution Protocol</b>	Structured process for documenting, addressing, and verifying corrections	Ensures prompt attention to quality issues with minimal impact to schedule

Our quality performance on previous USVI projects demonstrates our commitment to excellence. Our systematic quality approach on projects like Cruz Bay UG Feeder 7E project on St. John has consistently delivered high-quality project outcomes.

##### Contractor's Quality Control Plan

Within ten days of receiving the Notice to Proceed, our Quality Manager will submit our tailored Quality Control Plan, which will contain:

- Designated quality control personnel and their qualifications
- Testing procedures for materials and installations
- Inspection schedules tied directly to construction activities
- Documentation procedures and forms
- Communication protocols for quality issues

- Corrective action procedures

Unlike generic quality plans, our Feeder 9A plan incorporates lessons learned from our STX Feeder 8B and STT Feeder 5A projects, with specific focus on underground distribution system quality verification points.

### Testing Agency Qualifications

HVI contracts only with qualified testing agencies which meet all verification requirements detailed in **Table 29**.

**Table 29: Testing Agency Selection Criteria**

Qualification Requirement	Verification Method	Example Agency Compliance
<b>OSHA Accreditation</b>	Review of current certification documentation	Confirmed prior to contract execution
<b>NVLAP Compliance</b>	Verification of testing capabilities against ASTM E329	Validated through agency qualifications package
<b>Local Experience</b>	Assessment of agency's USVI project history	Preference for agencies with proven local performance
<b>Staff Certifications</b>	Review of technician qualifications and certifications	Only NICET-certified personnel permitted for electrical testing
<b>Equipment Calibration</b>	Examination of calibration records for testing equipment	Verified before mobilization to site

VI Quality Control Services LLC, a DBE-certified testing firm, will provide concrete and compaction testing for our Feeder 9A project, continuing our successful partnership from the Feeder 5A project currently underway on St. Thomas.

### Testing Requirements

Our comprehensive testing program includes strategic verification points throughout construction which are detailed in **Table 30**.

**Table 30: Testing Program Execution**

Construction Element	Test Type	Frequency	Documentation
<b>Subgrade Verification</b>	Compaction Testing	Every 150 linear feet of trench	Written reports with test locations mapped on as-builts
<b>Concrete for Electrical Structures</b>	Compression Strength	Each concrete placement for manholes and equipment pads	Test cylinders with 7 and 28-day break reports
<b>Duct Bank Installation</b>	Mandrel Testing	Each conduit run before cable installation	Photographic and written verification
<b>Medium Voltage Cable</b>	VLF Testing	All installed cables before termination	Electronic test reports with pass/fail criteria
<b>Grounding Systems</b>	Fall-of-Potential Testing	Each ground grid installation	Resistance measurements with site conditions noted
<b>Switchgear and Transformers</b>	Factory and Field Testing	Per manufacturer requirements	Test protocols with acceptance criteria

Our testing approach adds value through strategic timing—conducting tests at optimal points to verify quality while maintaining progress. During our STX Feeder 8B project, this approach allowed us to efficiently identify and address minor issues before they impacted the construction schedule.



## Execution

HVI's Project Manager maintains direct accountability for our quality program execution throughout the Feeder 9A project. Each morning begins with focused quality briefings where the Project Manager meets with the General Foreman and crew foremen to explicitly highlight specific quality requirements for the day's planned construction activities. The Project Manager further reinforces quality through weekly review meetings that serve dual purposes—examining upcoming work phases while capturing and applying lessons learned from completed activities.

To prevent construction delays, the Project Manager strategically schedules all third-party testing services, ensuring testing activities align seamlessly with construction milestones. Throughout the project, the Project Manager maintains regular coordination with VIWAPA's Project Manager, facilitating open communication that ensures continuous alignment on quality expectations and creates opportunities to address any concerns before they impact project delivery.

For the Feeder 9A project, we implement discipline-specific quality control procedures as we have broken down in **Table 31**.

**Table 31: Discipline-Specific Quality Controls**

Discipline	Critical Quality Points	Verification Method	Responsible Party
<b>Civil Construction</b>	Excavation dimensions and depth	Field measurements against approved drawings	Civil Foreman with QC verification
<b>Duct Bank Installation</b>	Proper spacing and alignment of conduits	Visual inspection before concrete placement	Electrical Foreman with photographic documentation
<b>Manhole Installation</b>	Proper drainage slope and watertight construction	Water testing after installation	General Foreman with QC verification
<b>Cable Installation</b>	Cable pulling tensions and bend radius compliance	Continuous monitoring during installation	Electrical Foreman with specialized equipment
<b>Equipment Installation</b>	Level mounting and proper anchoring	Survey verification and torque testing	General Foreman with manufacturer rep
<b>Terminations and Connections</b>	Proper compression and insulation	Megger testing and visual inspection	Electrical Foreman with test equipment

## Documentation and Reporting

Our three-tier documentation approach ensures comprehensive quality records:



**Figure 3: HVI Quality Documentation Process**

Our established and systematic approach ensures all quality documentation is organized, accessible, and useful for both ongoing project management and final acceptance.

#### **Non-Conformance Management**

When quality issues are identified, HVI's structured resolution process ensures prompt and effective corrective action through the following steps:

- Immediate documentation of the non-conforming condition
- Root cause analysis to identify underlying issues
- Corrective action plan development and implementation
- Verification testing to confirm resolution
- Preventative measures to avoid recurrence

#### **Project Closeout Quality Verification**

HVI elevates project closeout from a simple checklist to a structured verification process ensuring long-term quality beyond construction completion. Our Project Manager leads a methodical transition process documenting every aspect of the installed systems while providing VIWAPA with comprehensive verification of all deliverables. Our rigorous approach eliminates post-project uncertainties, accelerates final system acceptance, and provides VIWAPA with complete documentation for future maintenance and operations. Our five-phase closeout verification process, detailed in **Table 32** below, has successfully supported HVI's other USVI underground electrical project, resulting in smooth transitions from construction to operation.

**Table 32: Closeout Quality Verification Process**

Closeout Element	Verification Activity	Documentation
<b>As-Built Documentation</b>	Field verification of installed locations against recorded data	GPS-verified as-built drawings with ArcGIS shapefiles
<b>System Testing</b>	Final acceptance testing of all electrical systems	Test reports with VIWAPA witness signatures
<b>Restoration Verification</b>	Inspection of all restored surfaces	Photographic comparison of pre/post conditions

<b>Warranties</b>	Collection and organization of all warranty documentation	Digital and hard copy warranty package
<b>Training/Operation Verification</b>	Functional demonstration of installed equipment	Training records and operational verification forms

HVI's quality management approach for the Feeder 9A project draws on our extensive experience with similar VIWAPA underground distribution projects, incorporating lessons learned and proven methodologies to ensure the highest standards of construction quality while maintaining efficient project execution.

#### 2.2.1.15 Temporary Tree & Plant Protection (015639)

VIWAPA benefits from HVI's comprehensive tree and plant protection approach which balances infrastructure improvements with environmental preservation. Our methodology incorporates specialized expertise, proven protection techniques, and careful coordination with project stakeholders to maintain the ecological integrity of the project area while enabling efficient underground electrical construction.

#### General

HVI's tree and plant protection strategy begins with thorough identification and assessment. Our Project Manager coordinates with our designated Arborist to identify trees requiring protection prior to any site disturbance. Our proactive approach has been refined through our experience on the Feeder 7E project in St. John, where we successfully preserved trees along sensitive roadway corridors.

**Table 33: Tree Protection Pre-Construction Activities**

Activity	Implementation Approach
<b>Tree and vegetation survey</b>	Arborist will inventory and tag all trees and vegetation within work zones requiring protection using blue vinyl tape 54" above ground per specification requirements
<b>Protection zone establishment</b>	Project Superintendent will establish protection zones at minimum 12 times the tree's caliper with a 96" minimum radius
<b>Preinstallation meeting</b>	Our General Foreman will conduct dedicated tree protection meeting with crew supervisors, arborist, and VIWAPA representatives
<b>Photo documentation</b>	Safety Manager will photograph and document pre-existing conditions for reference and comparison throughout project
<b>Protection zone marking</b>	Civil Foreman will physically mark protection zones with high-visibility markers and install protective fencing

For areas adjacent to historic properties along Kronprindsens Gade, our Civil Foreman will implement enhanced protection measures exceeding standard requirements, ensuring valuable mature trees are safeguarded during construction activities. This approach mirrors our successful implementation of enhanced protection measures on the Feeder 5A project in St. Thomas.

#### Products

Our tree protection implementation uses only high-quality, durable materials for effective vegetation safeguarding during the construction period as detailed in **Table 34**. Materials selection is guided by our experience and the specific environmental conditions in St. Thomas.

**Table 34: Tree Protection materials and Implementation**

Protection Element	Material Specifications	Implementation Method
<b>Organic mulch</b>	Shredded hardwood or wood/bark chips, 3" maximum/0.5" minimum particle size, natural color	Applied by Laborers at 2" depth within protection zones, maintaining 6" clearance from tree trunks

Protection Element	Material Specifications	Implementation Method
<b>Protection-zone fencing</b>	Galvanized chain-link, 48" height with 2-3/8" OD line posts, or plastic high-visibility orange fencing depending on location sensitivity	Installed by Civil Crew at protection zone boundaries with secure post anchoring at maximum 96" spacing
<b>Gates</b>	24" single-swing access gates matching fencing material	Positioned by General Foreman at strategic points for maintenance access
<b>Signage</b>	3" black lettering on white background with proper warning text	Mounted by Safety Manager at visible intervals along protection zones

On previous USVI projects, particularly in Cruz Bay during the Feeder 7E underground installation, our material selection proved highly effective at withstanding tropical conditions while maintaining clear visual boundaries for construction personnel.

### Execution

HVI executes tree protection measures through our systematic approach which focuses on thorough planning, physical protection, and ongoing monitoring throughout the construction duration.

Our Civil Foreman begins with site examination to verify erosion control measures are in place before protection zone establishment. This sequencing ensures that water flows are properly managed around tree protection zones, preventing soil erosion that could damage root systems.

**Table 35: Tree Protection Zone Management Procedures**

Phase	Actions	Responsible Personnel
<b>Site preparation</b>	Verify protection zone marking accuracy, install mulch layer, verify drainage patterns	General Foreman and Arborist
<b>Fencing installation</b>	Install protection-zone fencing with secure posts, gates, and signage	Civil Crew supervised by General Foreman
<b>Root zone management</b>	Implement trenching protocols in proximity to protection zones, use hand excavation or air spade within protection zones	Operating Engineers and Laborers with Arborist supervision
<b>Ongoing monitoring</b>	Weekly inspections of protection measures, maintenance of fencing, mulch and signage	Safety Manager and Project Superintendent
<b>Incident response</b>	Protocol for addressing accidental damage, including immediate consultation with Arborist	Project Superintendent and Arborist

When excavation must occur near protection zones, our Engineers employ specialized techniques which may include

- Employ trenching by hand within protection zones using narrow-tine spading forks
- Utilize air spade technology for work within critical root zones
- Maintain exposed roots with moisture protection during open excavation periods
- Complete backfill operations promptly to minimize root exposure time
- Implement targeted root pruning only when absolutely necessary and under Arborist supervision

For root protection during mainline duct bank installation along Harwood Highway, HVI will implement tunneling under significant tree roots rather than cutting through them, maintaining vital tree health while accomplishing necessary infrastructure installation. Our commitment to meticulous tree and plant protection protocols ensures alignment with FEMA/EHP requirements while enabling successful infrastructure modernization. HVI's proven track record on previous USVI underground electrical projects demonstrates our capability to preserve valuable vegetation while delivering critical electrical improvements for the community.

### 2.2.1.16 Closeout Procedures (017700)

VIWAPA benefits from HVI's structured closeout approach ensuring complete documentation, smooth transitions, and quality-verified deliverables which maintain long-term infrastructure reliability. Our approach eliminates the risk of incomplete documentation which could negatively impact future maintenance and operations.

#### Substantial Completion Procedures

HVI implements a rigorous substantial completion process beginning well before the targeted completion date. Our Project Manager initiates preparation activities 30 days prior to anticipated substantial completion, coordinating with all team members to ensure all requirements are met.

**Table 36: HVI's Substantial Completion Preparation Protocol**

Action Item	Implementation Approach	Verification Method
<b>Punch List Creation</b>	Our General Foreman conducts thorough pre-inspection walkthrough with foremen to identify and document incomplete items	Comprehensive electronic punch list with photo documentation
<b>Submittal Package Organization</b>	Project Administrator compiles required closeout submittals including operation and maintenance manuals	Checklist verification against contract requirements
<b>Equipment Testing &amp; Preparation</b>	Electrical Foreman conducts operational readiness checks of all equipment	Completed startup and testing reports with date stamps
<b>Facility Systems Readiness</b>	General Foreman ensures all materials and debris are cleared from MV equipment access points	Photo documentation and verification checklist
<b>Owner Personnel Instruction</b>	Our Project Manager conducts training sessions for VIWAPA personnel on equipment operations	Signed attendance sheets and training certificates

During our Feeder 7E Cruz Bay project in St. John, we demonstrated quality closeout preparation by delivering complete testing documentation for 5 miles of duct bank and associated equipment ten days prior to the scheduled substantial completion walkthrough, which allowed VIWAPA operations personnel to efficiently review documentation and expedited the acceptance process.

#### Final Completion Process

HVI's Final Completion strategy centers on addressing all remaining items identified during substantial completion inspection with precise tracking and verification. Our Project Manager maintains daily oversight of the completion process, ensuring all punch list items receive appropriate resources and attention.

- Our Electrical Superintendent personally verifies each corrected electrical item using the same testing procedures employed during initial installation
- HVI's Quality Control Manager conducts independent verification of each completed item before requesting VIWAPA inspection
- Project Administrator prepares comprehensive documentation packages including as-built drawings with precise GPS coordinates as required by Section 01000
- General Foreman ensures all temporary erosion controls are properly removed and surfaces are restored to original or improved condition

When completing the STX Feeder 8B project, HVI delivered final completion documentation, facilitating efficient record-keeping by VIWAPA personnel.

#### Warranty Documentation

HVI provides comprehensive warranty documentation in compliance with contract requirements, ensuring proper protection for VIWAPA's investment in this critical infrastructure.



**Table 37: HVI Warranty Management Approach**

Warranty Element	HVI Approach
<b>Documentation Delivery</b>	Organized warranty certificates provided during closeout in both physical and electronic formats
<b>Coverage Term</b>	One-year warranty period as specified in section 4.18 of the RFP, with clear start/end dates
<b>Equipment Records</b>	Detailed equipment identification linked to corresponding warranty documentation
<b>Manufacturer Information</b>	Complete manufacturer contact information for warranty service
<b>Service Process</b>	Clear procedures for initiating warranty claims and service requests

Our approach to warranty documentation is part of our comprehensive project closeout process, which has been successfully implemented on similar VIWAPA projects including Feeder 7E in St. John and Feeder 8B in St. Croix as referenced in our past performance. This systematic approach helps ensure VIWAPA can easily access warranty information should service needs arise during the warranty period.

### Record Documentation Management

HVI's record documentation process ensures VIWAPA receives complete, accurate as-built information to facilitates future maintenance and system modifications.

- Our Project Manager reviews all as-built documentation for accuracy against field conditions before submission
- Survey team captures precise GPS coordinates for all underground infrastructure with accuracies exceeding contract requirements
- AutoCAD-generated drawings include metadata linking specifications to installed components
- All ArcGIS shapefiles include comprehensive attribute data conforming to VIWAPA standards
- Electronic documentation includes searchable text and hyperlinked references for efficient information retrieval

**Table 38: HVI As-Built Documentation Enhancement Process**

Documentation Stage	Quality Control Measure	Benefit to VIWAPA
<b>Field Documentation</b>	Daily updates with photo verification	Ensures accuracy of buried infrastructure location
<b>Preliminary Drawing Production</b>	Weekly review by Project Manager and General Foreman	Identifies discrepancies while field verification is still possible
<b>GPS Coordinate Collection</b>	Survey performed using RTK corrected equipment with $\pm 1$ cm accuracy	Exceeds standard requirements for future locating precision
<b>Final Drawing Production</b>	Independent verification by senior engineer not involved in construction	Ensures objective quality assessment
<b>Electronic Conversion</b>	Metadata embedding and searchable PDF creation	Facilitates efficient document retrieval and reference

Jonathan Kuhl, our Project Manager, will personally oversee the closeout documentation process, leveraging his experience from similar VIWAPA projects to ensure documentation meets all authority requirements while maintaining practical usability for maintenance personnel.

### Warranty Service Response Plan

HVI stands behind our work with a responsive warranty service approach that minimizes system downtime should warranty issues arise.

- Dedicated warranty response team available 24/7 to address emergency warranty concerns
- Established relationships with equipment manufacturers facilitate expedited parts acquisition

- Root cause analysis conducted for all warranty issues to prevent recurrence
- Comprehensive reporting of all warranty service activities with recommendations for preventative measures

By implementing our comprehensive closeout procedures, HVI ensures that VIWAPA will receive a fully compliant, thoroughly documented system that supports reliable long-term operations while facilitating efficient maintenance activities throughout the infrastructure lifecycle.

### 2.2.2 Division 03: Concrete

VIWAPA will benefit from our precision-engineered concrete solutions that ensure long-term durability for all underground electrical infrastructure components. Our concrete work forms the literal foundation for project success, providing structural integrity and protection for vital electrical systems.

Our Project Manager will implement a comprehensive concrete management approach utilizing the following methodologies:

**Table 39: Concrete Implementation Requirements and Methodology**

Requirements	Haugland Implementation
<b>Quality Control</b>	Our Concrete Foreman performs pre-pour inspections of all formwork, reinforcement, and embedded items, conducting slump tests for every load to ensure proper workability and strength
<b>Mix Design</b>	We utilize specialized concrete mixes with corrosion inhibitors for manholes and handholes to withstand the aggressive salt environment of St. Thomas
<b>Installation Method</b>	Our crew employs vibration techniques that eliminate voids and ensure complete consolidation around conduits and reinforcement
<b>Testing</b>	VI Quality Control Services (DBE) conducts comprehensive testing including compression, slump, and air content tests in accordance with ACI standards

Haugland successfully implemented this concrete methodology on the Cruz Bay UG Feeder 7E project, where we installed over 25 concrete equipment pads and 15 manholes without a single failure or rejection. Our concrete structures have withstood multiple severe weather events with zero structural issues reported.

#### 2.2.2.1 Cast-In-Place Concrete (033000)

VIWAPA will benefit from our precision-engineered concrete implementation that ensures long-lasting durability for pad foundations, duct bank encasements, and manhole structures. Our approach to concrete work maximizes the service life of all underground electrical infrastructure while minimizing future maintenance requirements.

Our Project Manager will personally inspect all concrete materials prior to use, ensuring they meet the requirements of ACI 301 and ACI 117. For this project, we will:

### Materials Selection and Quality Control

**Table 40: Concrete Materials Selection and Quality Standards**

Material Component	Implementation Approach	Quality Standard
<b>Portland Cement</b>	Type I/II for optimal sulfate resistance	ASTM C150/C150M
<b>Aggregates</b>	Local suppliers with proven quality record	ASTM C33/C33M
<b>Admixtures</b>	Water-reducing and retarding as required for USVI climate	ASTM C494/C494M
<b>Reinforcement</b>	Grade 60 deformed bars with proper protective coverage	ASTM A615

All concrete mixes will be designed for 3000-4000 PSI 28-day compressive strength, appropriate for the underground applications in this project.

### Field Execution Excellence

Our General Foreman will manage three distinct concrete operations: duct bank encasement, manhole installation, and equipment pad construction. Each operation follows our proven quality implementation process:

1. **Pre-Pour Inspection:** Our Project Manager conducts thorough inspections of forms, reinforcement, and embedments before any pour begins
2. **Climate-Adapted Placement:** Special timing considerations for St. Thomas weather patterns, with concrete trucks scheduled for early morning delivery to avoid heat-related complications
3. **Vibration Control:** Careful vibration of concrete without disturbing adjacent underground utilities
4. **Curing Management:** Moisture-retaining compounds applied immediately after finishing

Based on our success with similar concrete work on Feeder 7E in Cruz Bay, we anticipate achieving consistent results that exceed VIWAPA's requirements.

### Quality Assurance Testing

Our dedicated testing partner will conduct comprehensive concrete testing through all phases:

**Table 41: Concrete Quality Assurance Testing Schedule**

Test Type	Frequency	Standard
Slump Testing	Each truck delivery	ASTM C143
Air Content	Daily	ASTM C231
Compressive Strength	7-day and 28-day breaks	ASTM C39
Temperature Monitoring	Continuous during placement	ASTM C1064

All test results will be documented and submitted to VIWAPA as part of our quality control records.

### 2.2.3 Division 26: Electrical

VIWAPA will gain a robust and reliable underground electrical distribution system built by our specialized electrical teams who understand the unique challenges of the St. Thomas environment. Our proven installation methodologies ensure seamless integration with existing infrastructure while minimizing service disruptions.

Our Electrical Foreman leads our comprehensive approach to electrical installation:

**Table 42: Electrical Component Installation Implementation Strategy**

Component	Haugland Implementation
Medium Voltage Cables	Dedicated crews use proper pulling tensions and sidewall pressure monitoring during installation to prevent cable damage; all terminations undergo meticulous preparation with proper cleaning, measurement, and lubrication
Grounding Systems	Electrical teams install comprehensive grounding grids for switchgear and transformers, ensuring resistance measurements below 5 ohms for maximized protection
Pad-Mounted Equipment	Specialized rigging teams position and secure transformers and switchgear with precision alignment and proper connections to ground grid systems
Testing and Commissioning	Our testing personnel conduct VLF testing on all new cables and comprehensive acceptance testing on switchgear per IEEE standards before energization

Having successfully installed over 52,000 linear feet of medium voltage cable on Feeder 8B in St. Croix and 35,000 linear feet on Feeder 7E in St. John, our electrical teams bring proven expertise to this project.

On our recent STX Feeder 8B project, we achieved zero test failures on medium voltage cable installations and maintained 100% first-time acceptance on terminations.

#### 2.2.3.1 Medium Low Voltage Cables (260513)

VIWAPA will receive properly installed and tested medium voltage cables that meet or exceed all project specifications. HVI's electrical team understands that reliable medium voltage cable installation forms the backbone of the Feeder 9A underground system.

Our execution approach includes:

**Table 43: Medium Voltage Cable Installation Process and Implementation**

Process	Implementation Details
<b>Comprehensive Preparation</b>	Our Electrical Foreman will coordinate with VIWAPA to confirm conductor specifications prior to installation, ensuring compatibility with existing infrastructure.
<b>Rigorous Conduit Preparation</b>	Before cable installation, our team will proof all conduits using a wire brush mandrel followed by a rubber duct swab, properly spaced on pull rope to identify and clear any obstructions.
<b>Controlled Cable Pulling</b>	We will utilize proper equipment including pulling eyes, lubricant, dynamometers, and cable feeders to ensure cable pulling tensions stay within manufacturer-specified limits, preventing damage during installation.
<b>Precise Terminations</b>	Our electricians will install separable insulated connectors according to IEEE 386 standards, with particular attention to proper grounding of cable shields.
<b>Comprehensive Testing</b>	Following installation, cables will undergo Very Low Frequency (VLF) testing in accordance with ANSI/IEEE Standard 400 to verify integrity before energization.

HVI's experience with Feeder 7E and 8B cable installations has refined our medium voltage cable installation process, ensuring VIWAPA receives a distribution system with minimal potential for future cable failures or service interruptions.

#### 2.2.3.2 Low-Voltage Electrical Power Conductors and Cables (260519)

VIWAPA will benefit from properly installed low-voltage systems that ensure reliable operation for secondary power distribution. HVI will implement proven methods for installing conductors that meet NEMA WC 70 standards while maintaining system integrity.

**Table 44: Low Voltage Conductor Installation Methodology**

Installation Aspect	HVI Approach
<b>Material Selection</b>	Our Project Manager will verify all copper conductors comply with NEMA WC 70 standards, ensuring type THHN-THWN or XHHW insulation for appropriate applications throughout the project.
<b>Installation Practices</b>	Our electrical crew will use manufacturer-approved pulling compounds when necessary while monitoring pulling tensions to protect conductor insulation integrity.
<b>Environment-Specific Methods</b>	For exposed feeders, our team will install Type THHN-THWN single conductors in raceways, while feeders concealed in concrete or below grade will receive Type THHN/THWN-2 or XHHW-2 conductors with appropriate protection.
<b>Connection Techniques</b>	Electrical connections will be torqued to manufacturer specifications using calibrated tools, with proper splicing methods that maintain or exceed the mechanical strength and insulation ratings of unspliced conductors.
<b>Quality Control</b>	Our QC Inspector will perform visual and mechanical inspections on all connections, with continuity testing to verify proper circuit identification and uniform resistance across parallel conductors.

Based on our experience with similar undergrounding projects, HVI will maintain adequate conductor slack

at outlets and implement thorough testing protocols for feeders and critical circuits, ensuring a low-voltage distribution system that meets all specifications and provides reliable service for the intended lifetime.

#### 2.2.3.3 Grounding and Bonding for Electrical Systems (260526)

HVI will provide a robust, code-compliant grounding and bonding system that ensures personnel safety and equipment protection throughout the Feeder 9A project. Our approach creates a low-impedance path to earth that effectively dissipates fault currents and lightning strikes.

Our Electrical Foreman will oversee the installation of all grounding systems according to the following methodology:

**Table 45: Grounding and Bonding System Implementation**

Task	Implementation Approach
<b>Ground Rod Installation</b>	<ul style="list-style-type: none"> <li>• Drive 5/8-inch by 10-foot copper-clad steel ground rods at manholes, handholes, and equipment pads</li> <li>• Verify installation depth ensures top of rod is 2 inches below grade level</li> <li>• Test ground resistance immediately after installation</li> </ul>
<b>Ground Ring Systems</b>	<ul style="list-style-type: none"> <li>• Install bare copper conductors in continuous rings around pad-mounted equipment per drawings</li> <li>• Maintain minimum 12-inch burial depth</li> <li>• Use exothermic welding for all below-grade connections to ensure long-term reliability</li> </ul>
<b>Equipment Grounding</b>	<ul style="list-style-type: none"> <li>• Bond all metallic equipment enclosures directly to ground system</li> <li>• Use double-nut bolted connections with anti-oxidation compound on all exposed terminations</li> <li>• Install stainless steel hardware for all ground connections</li> </ul>
<b>Cable Shielding</b>	<ul style="list-style-type: none"> <li>• Ground cable shields at terminations using manufacturer-approved grounding kits</li> <li>• Maintain consistent grounding policies at every equipment termination point</li> <li>• Verify proper shield grounding at each manhole location</li> </ul>

Our Project Manager and Electrical Foreman will implement the following QC procedures to ensure grounding system integrity:

- Perform ground resistance testing at each equipment pad, manhole, and handhole location
- Verify all ground points achieve 5 ohms or less resistance
- Document all test readings with photographs and GPS coordinates
- Ensure all exothermic welds are properly executed with no voids or weak points
- Verify mechanical ground connections meet torque specifications

#### 2.2.3.4 Supports for Electrical Systems (260529)

HVI delivers proper support systems for all electrical equipment and raceways, ensuring durability and compliance with seismic requirements. Our installation methods prevent equipment movement and stress on electrical connections, providing VIWAPA with a reliable infrastructure that maintains structural integrity throughout its service life.

Our Civil and Electrical teams will coordinate on support system installation using the following approach:

**Table 46: Electrical Support System Installation Methodology**

Support Type	Installation Methodology
<b>Equipment Pads</b>	<ul style="list-style-type: none"> <li>• Install concrete pads with embedded anchor bolts positioned precisely according to equipment templates</li> <li>• Verify correct anchor bolt patterns before concrete placement</li> <li>• Maintain minimum edge distances for all anchors per manufacturer specifications</li> </ul>
<b>Conduit Support</b>	<ul style="list-style-type: none"> <li>• Use appropriate spacers for maintaining proper conduit separation in duct banks</li> </ul>



Support Type	Installation Methodology
	<ul style="list-style-type: none"> <li>• Install support brackets for wall-mounted raceways with correct spacing intervals</li> <li>• Secure risers at proper intervals to prevent sagging or movement</li> </ul>
<b>Cable Support</b>	<ul style="list-style-type: none"> <li>• Install cable support brackets in manholes at appropriate intervals</li> <li>• Use porcelain insulators for medium voltage cable support where required</li> <li>• Verify proper attachment to manhole walls using expansion anchors</li> </ul>
<b>Structural Attachments</b>	<ul style="list-style-type: none"> <li>• Utilize stainless steel hardware for all structural attachments in the corrosive USVI environment</li> <li>• Apply proper torque to all bolted connections</li> <li>• Install isolation materials between dissimilar metals to prevent galvanic corrosion</li> </ul>

### Field Verification and Quality Control

Our Superintendent will verify that all support systems are properly installed:

- Conduct pull tests on installed anchors to verify proper embedment and capacity
- Check alignment of all equipment mounting holes with pad anchor bolts before setting
- Verify all supports maintain proper clearances for cable training and future maintenance access
- Ensure all support hardware is properly tightened and secured
- Document all support systems with photographs for project records

HVI's experience with the unique environmental conditions in the USVI allows us to select and install support systems that will maintain their integrity despite exposure to salt air, high humidity, and potential seismic activity.

#### 2.2.3.5 Underground Ducts and Raceways for Electrical Systems (260543)

HVI delivers superior underground duct and raceway installations that provide VIWAPA with reliable, long-lasting electrical infrastructure while minimizing community disruption. Our specialized methodologies ensure adherence to all quality standards while maintaining an efficient project timeline.

**Table 47: Underground Duct Raceway Pre-Installation Planning**

Activity	HVI Implementation
<b>Utility Location</b>	Our SUE team conducts comprehensive underground utility surveys prior to excavation using electromagnetic detection and ground penetrating radar to prevent service disruptions and excavation delays.
<b>Material Inspection</b>	Our General Foreman personally inspects all PVC conduit, spacers, and accessories for defects before installation, ensuring only quality materials enter the construction zone.
<b>Proof Testing</b>	Project Manager coordinates pre-installation conduit testing using wire brush mandrels and rubber duct swabs to verify clear pathways, preventing costly rework later in the project.

### Installation Methodology

HVI employs a systematic installation approach that ensures proper alignment, spacing, and protection of all underground duct systems:

- **Trench Excavation:** Civil crews excavate trenches to precise specifications, maintaining uniform width (3 inches wider than duct on each side) and depth (minimum 36 inches below grade unless otherwise specified)
- **Bedding Preparation:** Laborers install crushed stone bedding courses to provide stable, continuous support for duct systems
- **Duct Placement:** Electrical teams position ducts with proper spacers (minimum 3 inches between exterior wall and edge, 2 inches between ducts)
- **Concrete Encasement:** For reinforced sections, our concrete specialists ensure proper coverage (minimum 3 inches) and installation of reinforcing steel without forming conductive loops

- **Warning Tape Installation:** Crews install detectable warning tape 12 inches below grade for future utility location

### Quality Control Measures

Our dedicated Quality Control Manager performs comprehensive inspections at critical installation points:

1. **Alignment Verification:** Ensures proper slope of 1:300 minimum toward manholes/handholes
2. **Clearance Confirmation:** Verifies proper spacing between ducts and exterior concrete walls
3. **Pull-cord Installation:** Confirms 200-lb test nylon cord placement in all empty ducts
4. **Waterproofing:** Validates all end bells are properly sealed into structure walls

### Specialized Handling Techniques

HVI's specialized approach to duct bank installation in the Charlotte Amalie area includes:

- **Curve Management:** Our crews use 5-degree angle couplings for directional changes, ensuring proper bend radius for subsequent cable installation
- **Tree-Root Protection:** In protected zones, our SUE specialist and Arborist coordinate hand-excavation techniques to prevent damage to heritage trees
- **GPS Documentation:** Our survey team documents exact locations of all installed duct banks, maintaining comprehensive as-built documentation

HVI's installation procedures comply with NEC, NESC standards and Section 260543 specifications, resulting in high-integrity underground duct systems that will serve VIWAPA reliably for decades. Our documented installation methodologies have been successfully implemented in multiple USVI underground distribution projects, including the recently completed Feeder 7E in St. John.

#### 2.2.3.6 Seismic Controls for Electrical Systems (260548.16)

HVI implements comprehensive seismic controls that safeguard VIWAPA's critical electrical infrastructure against the region's seismic hazards. Our tailored approach ensures all installations remain operational during and after seismic events, protecting your investment and maintaining service reliability.

Our Project Engineer conducts a site-specific seismic assessment for Feeder 9A infrastructure, applying the stringent requirements of IBC Category D design standards. This assessment includes:

**Table 48: Seismic Control Assessment and Implementation**

Assessment Component	HVI Implementation
<b>Site Class Analysis</b>	Our teams coordinate with VIWAPA's designated engineers to implement appropriate foundation designs for pad-mounted equipment based on provided soil analysis
<b>Equipment Anchoring</b>	Project Manager specifies Hilti mechanical anchor bolts with 5× safety factor for all equipment mounting points
<b>Vibration Isolation</b>	Our teams install specialized isolation hardware for switchgear connections to prevent transmission of damaging forces

### Equipment-Specific Seismic Protection

HVI tailors seismic protection measures to each equipment type:

- **Pad-Mounted Transformers:** Our crews install flexible connections at all conduit entries, allowing for independent movement during seismic events while maintaining electrical continuity
- **Switchgear Installations:** General Foreman oversees the installation of seismic-rated channel bracings with appropriate anchorage to prevent lateral movement

- **Underground Structures:** Civil crews ensure manholes and handholes include floating connections at duct entries to accommodate ground movement without damage to cables

### Quality Verification Protocol

Our seismic installation quality is verified through a multi-step process:

1. **Anchorage Testing:** Four anchor points per equipment pad are pull-tested to verify holding strength meets 125kV BIL rating requirements
2. **Documentation Review:** Project Manager verifies all restraint components match approved submittal documentation
3. **Inspection Certification:** Independent inspector confirms all installations comply with specified seismic requirements in accordance with ASCE/SEI 7

### Installation Experience in Seismic Zones

HVI brings proven experience implementing seismic controls for electrical systems in the USVI, including:

- **Resilient Foundation Design:** Our civil team designed and constructed robust equipment pads for the East End Substation that withstood multiple 4.0+ magnitude events
- **Flexible Connection Systems:** We installed seismic-rated connections for every underground-to-overhead transition on the St. John Feeder 7E project

HVI's specialized seismic protection approach ensures your electrical infrastructure will maintain operational integrity through the seismic conditions experienced in the USVI. Our proactive designs eliminate the risk of equipment displacement and connection failures that could lead to extended outages.

#### 2.2.3.7 Identification for Electrical Systems (260553)

VIWAPA will benefit from our comprehensive labeling and identification system that enhances system safety, streamlines maintenance, and ensures code compliance throughout the Feeder 9A project. Our approach creates a clear visual system that reduces operational errors and maintenance time while creating an accurate, permanent record of all installed components.

Our Project Manager will oversee implementation of a detailed identification system that includes:

**Table 49: Electrical System Identification Implementation Strategy**

Identification Component	Implementation Approach
<b>Medium Voltage Cable Identification</b>	HVI electricians will apply 316 stainless steel letters and numbers with easy carriers and multi-lok ties at each termination point, clearly indicating circuit number and phase (e.g., "Feeder 9A / Phase A")
<b>Equipment Labeling</b>	Our General Foreman will ensure all pad-mounted equipment (switchgear, transformers, cabinets) receives permanent, weatherproof laminated acrylic labels (4" high) with clear, visible identification
<b>Warning Signs</b>	Our Project Manager will confirm proper placement of OSHA-compliant warning signs and labels on all high-voltage compartments
<b>Underground Warning Tape</b>	Civil crews will install detectable warning tape 12" below grade directly above all duct banks
<b>Arc Flash Warning Labels</b>	Lead electricians will apply self-adhesive arc flash warning labels on all applicable equipment according to NFPA 70E requirements

## Quality Control Measures

- Before installation, our QC Manager will verify all nameplates, tags, and markers meet contract specifications and manufacturer recommendations
- General foreman will conduct post-installation inspections to ensure all identification systems remain visible and properly secured
- Final walkthrough documentation will include photographs of all identification elements for inclusion in the as-built documentation

## Materials and Application

Our experienced electrical teams will use only premium-grade identification materials designed specifically for the harsh Caribbean environment, including:

- UV-stabilized, weatherproof labels resistant to fading, corrosion, and other environmental challenges
- High-contrast colors and text sizes that exceed minimum NEC requirements
- Mechanically-fastened identification systems on critical equipment to ensure permanent adherence

By implementing this thorough identification system, HVI will deliver a distribution network where every component is clearly marked, properly documented, and easily identifiable for both operational and maintenance purposes, creating lasting value for VIWAPA and the St. Thomas community.

### 2.2.3.8 Electrical Inspection and Testing (260800)

VIWAPA will receive a meticulously tested electrical system that meets or exceeds all industry standards, ensuring maximum reliability from day one of operation. Our comprehensive testing regime verifies every component's performance, identifies potential issues before energization, and provides detailed documentation of system integrity.

Our dedicated testing team will implement a multi-phase inspection and testing program:

**Table 50: Electrical System Testing Approach and Methodology**

Test Phase	Testing Activities	Personnel Responsible
<b>Preliminary Inspections</b>	Visual inspections of all components prior to installation	QC Manager and Electrical Foreman
<b>Post-Installation Checks</b>	Equipment-specific verification after installation but before connection	Testing Technicians
<b>Component Testing</b>	Individual testing of cables, transformers, switchgear	NETA-Certified Technicians
<b>System Integration Tests</b>	End-to-end verification of entire electrical systems	Lead Testing Engineer
<b>Final Acceptance Testing</b>	Demonstrations performed with VIWAPA representatives	Project Manager and Testing Team

## Key Testing Procedures

- **Medium Voltage Cable Testing:** Our qualified technicians will perform VLF testing on all new 15kV cables in accordance with IEEE 400 standards, providing verification of cable integrity and proper installation
- **Switchgear and Transformer Testing:** Testing engineer will conduct comprehensive factory acceptance testing verification, insulation resistance tests, and operational testing of all protective devices
- **Ground System Verification:** Point-to-point resistance testing will be performed by our grounding specialists to ensure all resistance values are below 5 ohms as specified

- **600V System Testing:** Complete continuity testing, insulation resistance measurement, and load verification will be performed on all secondary systems

### Documentation and Reporting

Jonathan Kuhl, Project Manager, will ensure all testing is thoroughly documented with:

- Formal test reports for each major system component
- Calibration certificates for all test equipment
- Photographic evidence of testing procedures
- Consolidated digital and hard-copy testing binders organized by system

### Safety During Testing

All testing activities will be conducted under our strict testing safety protocol that includes:

- Establishing clear testing boundaries with warning signage
- Stationing safety personnel at access points during energized testing
- Daily safety briefings specific to testing activities
- Verification of proper PPE for all testing personnel

By implementing this comprehensive testing approach, HVI will deliver a fully validated electrical system that provides VIWAPA with confidence in long-term reliability while establishing clear baseline measurements for future maintenance reference

#### 2.2.3.9 Sectionalizing Cabinets with Junction Modules (261130)

VIWAPA will receive superior system flexibility and reliability through our expert installation of sectionalizing cabinets with junction modules. These critical components provide essential switching capabilities and fault isolation, significantly reducing outage time and improving maintenance options throughout the underground distribution system.

Our dedicated electrical team will deploy a systematic approach to sectionalizing cabinet installation:

**Table 51: Sectionalizing Cabinet Installation Methodology and Quality Measures**

Installation Phase	Key Activities	Quality Measures
<b>Pre-Installation Planning</b>	Detailed review of manufacturer specifications and site requirements	Verification of proper cabinet dimensions and pad design
<b>Foundation Preparation</b>	Precise excavation and concrete pad construction	QC inspection of reinforcement placement and concrete quality
<b>Cabinet Placement</b>	Careful rigging and positioning using specialized lifting equipment	Verification of level installation within 0.5° tolerance
<b>Grounding System</b>	Installation of ground loop, rods, and connections per detail drawings	Point-to-point resistance testing to ensure <5 ohm readings
<b>Cable Terminations</b>	Preparation and connection of cables to junction modules	Hi-pot testing of all connections before final closure

- Our electricians will carefully install 5 pad-mounted sectionalizing cabinets with 3-point or 4-point junction modules at locations specified on drawings
- Each cabinet will receive proper 3-phase grounding and bonding per drawing E-104, with special attention to grounding grid continuity and protective bollard installation
- Electrical Foreman will oversee proper operational testing of all switching mechanisms before acceptance
- Our team will confirm proper load-break capabilities during cabinet commissioning



## Installation Quality Standards

Jonathan Kuhl, Project Manager, will implement specific quality measures including:

- Rigorous pre-installation cabinet inspections to verify all factory-installed components
- Verification of proper alignment of all bushings and terminals
- Detailed documentation of all connections with thermal imaging before energization
- Confirmation of proper labeling and operational instructions on all cabinets

## Long-Term Reliability Measures

To ensure long-term operational reliability, our installation team will:

- Apply anti-corrosion compounds to all exterior hardware to withstand coastal conditions
- Verify proper door alignment and gasket seals to prevent water intrusion
- Test all mechanical interlocks to ensure proper safety functionality
- Provide comprehensive operation training to VIWAPA personnel upon project completion

By implementing these rigorous installation methods, HVI will deliver a sectionalizing system that provides VIWAPA with exceptional operational flexibility, improved safety, and reduced maintenance requirements throughout the system's operational life.

### 2.2.3.10 Pad-Mounted, Liquid-Filled Transformers (261219)

HVI will deploy proven methodologies for handling, installing, and testing pad-mounted transformers that prioritize safety, efficiency, and reliability for VIWAPA's distribution system. Our approach for transformer installation includes:

**Table 52: Pad-mounted Transformer Installation Implementation Strategy**

Activity	Implementation Details
<b>Receipt &amp; Inspection</b>	Our Electrical Foreman personally inspects all VIWAPA-furnished transformers upon delivery, documenting condition with photographs and verifying all components against specifications before signing acceptance.
<b>Transportation &amp; Rigging</b>	Our specialized rigging team uses properly rated equipment to transport transformers from storage to installation locations without risking damage to sensitive components.
<b>Placement &amp; Mounting</b>	Operating Engineers precisely position transformers on prepared concrete pads, ensuring proper alignment with conduit stub-ups and maintaining manufacturer-specified clearances.
<b>Grounding &amp; Bonding</b>	Electricians install comprehensive grounding systems per drawing E-104/E-105, connecting transformer tanks to ground loops with exothermic welds to ensure long-term connectivity.
<b>Testing &amp; Commissioning</b>	Our testing team coordinates with VIWAPA to perform comprehensive acceptance testing including turns-ratio, insulation resistance, and functional tests before energization to verify transformer integrity, with final testing responsibilities to be determined per contract requirements.

For this project, our Project Manager will personally oversee transformer installation, implementing quality checkpoints at each stage of the process. We've successfully installed over 75 similar transformers across St. Thomas, St. John, and St. Croix without a single failure or rework requirement.

Our rigorous approach to transformer handling and installation ensures VIWAPA receives a distribution system with maximum reliability and minimum maintenance requirements throughout the equipment lifecycle.

### 2.2.3.11 Pad Mounted MV Distribution Switchgear (261300.01)

VIWAPA will benefit from Haugland Virgin Islands' expertise in handling and installing medium voltage switchgear, ensuring maximum reliability and operational efficiency for Feeder 9A's distribution network. Our specialized approach delivers precision installation of pad-mounted switchgear:

**Table 53: Medium Voltage Distribution Switchgear Installation Strategy**

Phase	Implementation Strategy
<b>Pre-Installation Planning</b>	Our Project Manager conducts detailed coordination meetings with VIWAPA representatives to verify switchgear specifications, termination details, and operational requirements before equipment arrival.
<b>Receipt &amp; Inspection</b>	The General Foreman meticulously inspects each switchgear unit upon delivery, verifying intact shipping bracing, no visible damage, and complete accessory packages before acceptance.
<b>Site Preparation</b>	Civil crews prepare switchgear foundations to exact specifications, ensuring proper elevation, level placement, and conduit alignment to prevent future cable stress or water infiltration issues.
<b>Installation</b>	Our specialized rigging team employs proper lifting techniques with appropriate spreader bars to maintain switchgear integrity during placement, followed by precise positioning on pads.
<b>Grounding System</b>	Electricians install comprehensive grounding systems per drawing E-104, constructing ground loops with exothermically welded connections to ensure long-term system integrity.
<b>Cable Termination</b>	Our certified cable splicers install load-break and dead-break connectors with precision, following manufacturer specifications and utilizing torque documentation for all bolted connections.
<b>Testing</b>	Comprehensive testing includes contact resistance, insulation resistance, and functional operation verification before energization to confirm proper switchgear performance.

Haugland's switchgear installation team has successfully completed similar installations on Feeder 7E in St. John and Feeder 5A in St. Thomas. Our Project Manager personally oversees all switchgear installations to ensure compliance with manufacturer recommendations and VIWAPA standards.

By implementing our proven switchgear installation methodology, we deliver a reliable distribution system with properly installed and tested equipment that will provide decades of trouble-free service for VIWAPA and its customers.

### 2.2.4 Division 21: Earthwork

VIWAPA will benefit from HVI's proven earthwork methodology that minimizes community disruption while maintaining the highest standards of safety and quality. Our dedicated Civil team, led by our Civil Foreman, implements precise excavation and site preparation techniques that protect existing infrastructure and enable efficient underground duct bank installation. Our earthwork approach addresses four critical components:

**Table 54: Earthwork Implementation Strategy by Component**

Component	HVI Implementation Approach
<b>Site Clearing</b>	Our crews perform targeted clearing operations that minimize environmental impact while creating necessary workspace for construction activities.
<b>Earth Moving</b>	We utilize specialized equipment and techniques to execute precise excavation, backfilling, and compaction that meets or exceeds specifications.
<b>Dewatering</b>	Our proactive dewatering systems maintain dry work areas even in challenging conditions, preventing construction delays and ensuring structural integrity.
<b>Excavation Support</b>	We implement comprehensive shoring and protection systems that safeguard workers, adjacent structures, and existing utilities.

This integrated earthwork strategy has proven successful on multiple USVI underground electrical construction projects, including our recent work on Feeder 7E in St. John and Feeder 5A in St. Thomas. By addressing site-specific challenges proactively, we minimize unforeseen conditions and maintain schedule adherence.

#### 2.2.4.1 Site Clearing (311000)

HVI delivers efficient site clearing with minimal environmental impact and no disruption to nearby properties, ensuring a properly prepared construction zone for the FEEDER 9A project.

Our General Manager will implement a methodical approach to site preparation, focusing on protecting existing infrastructure while efficiently removing obstacles to construction:

**Table 55: Site Clearing Implementation Approach by Activity**

Site Clearing Activity	HVI Implementation Approach
<b>Pre-Clearing Survey</b>	<ul style="list-style-type: none"> <li>• Our Project Manager and Civil Foreman will conduct comprehensive site walks to document pre-existing conditions</li> <li>• Project Manager will coordinate with property owners adjacent to work areas</li> <li>• Survey team will establish and mark clear boundaries for clearing activities</li> </ul>
<b>Vegetation Protection</b>	<ul style="list-style-type: none"> <li>• Certified Arborist will identify all trees and vegetation to be protected</li> <li>• Installation of physical barriers around vegetation within protection zones</li> <li>• Civil Foreman will verify all protection measures before beginning any clearing operations</li> </ul>
<b>Clearing and Grubbing</b>	<ul style="list-style-type: none"> <li>• Crews will methodically remove only obstructions necessary for installation</li> <li>• Use of hand methods near protection zones to prevent damage to nearby vegetation</li> <li>• Daily inspection of cleared areas by Safety Manager to ensure compliance with environmental requirements</li> </ul>
<b>Proper Disposal</b>	<ul style="list-style-type: none"> <li>• General Foreman will coordinate daily removal of clearing debris</li> <li>• Segregation of recyclable materials from general waste</li> <li>• All disposal in accordance with FEMA/EHP/DPNR/CZM requirements</li> </ul>
<b>Utility Protection</b>	<ul style="list-style-type: none"> <li>• SUE Engineer will verify all underground utility locations before starting clearing operations</li> <li>• General Foreman will ensure physical marking of all utilities remains visible throughout clearing</li> <li>• Hand excavation in proximity to existing underground facilities</li> </ul>

HVI's disciplined approach maintains strict compliance with FEMA/EHP/DPNR/CZM environmental requirements while creating a clean, properly prepared construction zone. Our Civil Foreman will conduct daily inspections of cleared areas to ensure no unauthorized vegetation removal occurs and all protection measures remain intact.

Following clearing operations, our Project Manager will review completed areas with VIWAPA representatives to confirm work meets project specifications before progressing to excavation and installation activities. This verification step eliminates rework and ensures seamless transition between project phases.

#### 2.2.4.2 Earth Moving (312000)

HVI's earth moving operations deliver precise excavation, proper compaction, and optimal backfill to ensure the long-term integrity of the FEEDER 9A underground infrastructure while minimizing disruption to St. Thomas roadways and properties.

Our experienced Civil Team implements proven methodologies that balance efficient progress with strict quality control:

**Table 56: Earth Moving Activity Implementation Strategy**

Earth Moving Activity	HVI Implementation Approach
<b>Pre-Excavation Planning</b>	<ul style="list-style-type: none"> <li>• Project Manager and General Foreman establish clear excavation sequence by segment</li> <li>• Daily planning meetings to coordinate excavation with utility installation</li> <li>• Safety Manager reviews each segment for potential hazards before work begins</li> </ul>
<b>Excavation</b>	<ul style="list-style-type: none"> <li>• Operating Engineers utilize appropriately sized equipment to match urban environment</li> <li>• General Foreman maintains continuous oversight of trench dimensions and soil conditions</li> <li>• Real-time adjustments to excavation methods based on encountered soil types</li> </ul>
<b>Rock Management</b>	<ul style="list-style-type: none"> <li>• Immediate assessment by Project Manager when rock is encountered</li> <li>• Mechanical removal methods prioritized in populated areas</li> <li>• Accurate documentation of rock quantities for fair unit price compensation</li> </ul>
<b>Soil Classification</b>	<ul style="list-style-type: none"> <li>• On-site testing by VI Quality Control Services (MWBE) to verify soil properties</li> <li>• Proper segregation of suitable versus unsuitable materials by laborers</li> <li>• Project Manager decisions on import material requirements based on test results</li> </ul>
<b>Backfill Operations</b>	<ul style="list-style-type: none"> <li>• Controlled placement of engineered backfill in 8-inch lifts</li> <li>• Compaction testing at frequencies exceeding project requirements</li> <li>• VI Quality Control Services (MWBE) documentation of all compaction test results</li> </ul>
<b>Subgrade Preparation</b>	<ul style="list-style-type: none"> <li>• Civil Foreman verification of trench bottom conditions before pipe placement</li> <li>• Installation of properly graded bedding material for optimal conduit support</li> <li>• Final inspection by Superintendent before authorization to install conduit</li> </ul>

Our earth moving approach incorporates proven techniques from our successful St. Thomas Feeder 5A project, where we maintained excellent compaction results while meeting aggressive production goals. The Project Manager will maintain daily documentation of excavation progress, soil conditions encountered, and compaction test results to provide VIWAPA with comprehensive records of subsurface conditions.

When excavating in high-traffic areas, our Project Manager will implement a "cut-and-cover" strategy—opening only sections that can be excavated, conduit installed, and backfilled within the same work period. This approach minimizes open trenches and allows for faster restoration of normal traffic patterns, directly benefiting the St. Thomas community.

HVI's precise earth moving operations create the solid foundation necessary for a reliable underground electrical distribution system while maintaining the structural integrity of St. Thomas roadways and minimizing community disruption.

#### **2.2.4.3 Dewatering (312319)**

HVI's proactive dewatering program ensures dry, stable work environments throughout the FEEDER 9A project, preventing water-related construction delays while protecting groundwater quality and nearby properties from impacts.

Our specialized dewatering approach adapts to St. Thomas' unique hydrogeological conditions based on our successful implementations on multiple Virgin Islands underground projects:

**Table 57: Dewatering Implementation Approach by Phase**

Dewatering Phase	HVI Implementation Approach
<b>Pre-Construction Assessment</b>	<ul style="list-style-type: none"> <li>• Civil Engineer analyzes soil boring logs to identify likely groundwater zones</li> <li>• Project Manager establishes monitoring wells at strategic locations</li> <li>• Project Manager develops segment-specific dewatering plans based on anticipated conditions</li> </ul>
<b>Equipment Mobilization</b>	<ul style="list-style-type: none"> <li>• Dedicated Dewatering Technician maintains standby pumping equipment on-site at all times</li> <li>• Scalable pumping systems ready for immediate deployment to affected areas</li> <li>• Sediment filtration systems positioned at strategic collection points</li> </ul>
<b>Active Dewatering</b>	<ul style="list-style-type: none"> <li>• Personnel install and operate submersible pumps in excavations as needed</li> <li>• Continuous monitoring by General Foreman to adjust pumping rates</li> <li>• Safety Manager conducts twice-daily inspections of all dewatering operations</li> </ul>
<b>Water Management</b>	<ul style="list-style-type: none"> <li>• Filtered discharge directed to approved drainage structures</li> <li>• Testing of discharged water to verify compliance with DPNR requirements</li> <li>• Dewatering Technician maintains detailed logs of pumping hours and volumes</li> </ul>
<b>Groundwater Protection</b>	<ul style="list-style-type: none"> <li>• Implementation of turbidity barriers around all dewatering discharge points</li> <li>• Regular inspection of filtration systems by Project Manager</li> <li>• Water quality sampling at discharge points to verify environmental compliance</li> </ul>

HVI's dewatering approach incorporates lessons learned from our successful Cruz Bay UG Feeder 7E project on St. John, where we encountered significant groundwater in coastal areas. Our Project Manager has developed detailed contingency plans for potential high-volume groundwater zones based on historical data and geotechnical reports.

The General Foreman will monitor excavation work fronts daily for signs of water infiltration, allowing our team to deploy dewatering systems proactively rather than reactively. This preventive approach minimizes work stoppages and maintains project momentum even during St. Thomas' rainy season.

For environmentally sensitive areas, our Project manager will implement enhanced filtration systems including multi-stage settlement tanks and geotextile filters to ensure discharged water meets or exceeds all DPNR water quality requirements. This approach protects both the natural environment and VIWAPA from potential compliance issues.

HVI's comprehensive dewatering program transforms potentially challenging groundwater conditions into efficiently managed scenarios that maintain production rates while adhering to all environmental regulations.

#### **2.2.4.4 Excavation Support and Protection (315000)**

HVI provides VIWAPA with proven excavation support and protection systems that maximize public safety while maintaining project efficiency. Our approach incorporates stringent monitoring and professional engineering oversight to ensure all excavations remain stable throughout the construction process.

Our Project Manager, Jonathan Kuhl, will oversee the implementation of our excavation support and protection systems with direct assistance from our General Foreman. Together, they will:

- Engage our licensed Professional Engineer to design appropriate support systems for each excavation type
- Deploy appropriate temporary earth retention systems based on soil conditions, excavation depth, and proximity to structures
- Implement daily inspection protocols to ensure continued stability throughout construction



HVI will utilize aluminum and steel trench boxes specifically designed for excavation support. These systems protect workers and prevent soil movement while accommodating utility installation.

**Table 58: Excavation Support System Configuration and Application**

Support System	Application	Configuration
<b>Aluminum Trench Boxes</b>	Areas with minimal space constraints	8' height x 10'-20' length panels
<b>Steel Trench Boxes</b>	Deep excavations and areas with unstable soils	8'-12' height with reinforced corners
<b>Hydraulic Shores</b>	Narrow trenches where box placement is impractical	Adjustable width with engineered struts

Our Operating Engineers will position these systems using tracked excavators, ensuring precise placement without disturbing surrounding soil structures. For excavations exceeding 20 feet in length, our crews will utilize overlapping box configurations to maintain continuous protection.

In locations where conventional trench boxes are impractical, our General Foreman will direct the installation of properly tensioned tie-backs to secure excavation walls, cross-braces positioned at engineer-specified intervals, and custom fabricated internal bracing to prevent wall displacement. Each tie-back undergoes load testing supervised by our on-site Safety Manager before excavation proceeds to full depth, ensuring system integrity and compliance with design specifications.

HVI's comprehensive monitoring program includes daily visual inspections by our Project Manager and Safety Manager, survey benchmarks established and monitored by our licensed Surveyor, immediate corrective actions for any detected movement, and systematic documentation of all inspection results. For locations adjacent to existing structures, our Safety Manager will install vibration monitoring equipment with automated alerts to prevent damage to surrounding infrastructure. This system provides real-time data that guides excavator operation parameters.

Our experience on previous USVI underground projects has refined our approaches for challenging situations. For work in heritage areas, our team employs hand excavation and specialized support systems to prevent any disturbance to historic structures. In urban roadway sections, HVI will implement steel plate covering systems that maintain traffic flow while providing access for emergency vehicles. In utility congestion areas, our General Foreman will direct the use of custom-fabricated support systems that accommodate complex utility configurations. By implementing these targeted approaches, HVI has completed extensive underground excavation work on Feeder 7E in St. John and Feeder 5A in St. Thomas without a single excavation-related incident.

Upon completing utility installation, our General Foreman will coordinate the sequential removal of all support systems to prevent soil displacement. Our documented removal process includes staged backfilling with appropriate compaction between removal steps, use of hydraulic extractors to remove supports without disturbing compacted material, and final grade restoration with native, low-settlement materials. This methodical removal process, developed through our experience on previous USVI projects, ensures long-term stability of the backfilled trenches and minimizes future settlement concerns.

HVI's excavation support and protection approach delivers VIWAPA a comprehensive system that protects workers, maintains public safety, and enables efficient project completion while minimizing disruption to surrounding areas. Our team's expertise in executing these systems has been demonstrated across multiple successful underground projects throughout the USVI.

### 2.2.5 Division 32: Exterior Improvements

HVI will complete the Feeder 9A project in accordance with all Division 32: Exterior Improvements requirements, including:

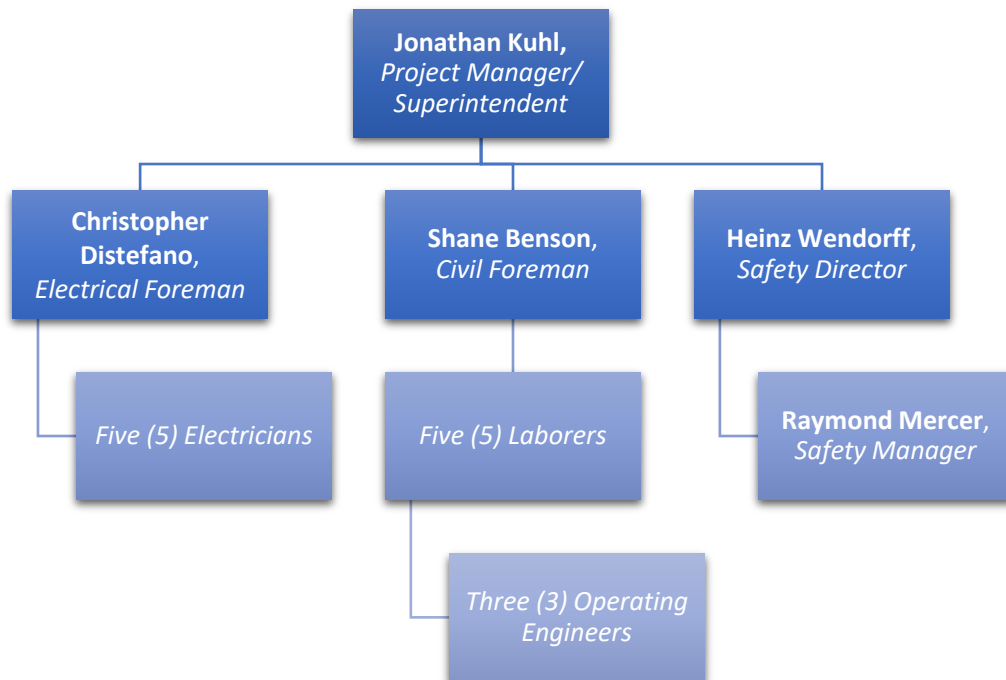
- Asphalt Paving (321216)
- Concrete Paving (321313)
- Pavement Markings (321723)
- Turf and Grasses (329200)

## 3 Capabilities [4.10.3, 8.9]

VIWAPA gains an experienced, fully-equipped team with HVI's dedicated resources for the Feeder 9A project. Our capabilities include specialized crews with extensive underground electrical construction experience, modern equipment specifically suited for utility work in the USVI terrain, and proven management systems that ensure project excellence.

### 3.1 Resource Allocation [2.5.A.4.iv]

HVI assembles a specialized team structure designed to execute the Feeder 9A Underground Electrical Construction Project with maximum efficiency. Our organization (**Figure 4**) optimizes parallel civil and electrical operations while maintaining rigorous quality and safety standards.



**Figure 4: Feeder 9A Project Organization Chart**

#### Staffing Matrix

Key Project Role	Personnel	Responsibilities
<b>Project Manager</b>	Jonathan Kuhl	Overall project leadership, client communication, schedule management, financial oversight
<b>Superintendent</b>	Jonathan Kuhl	Daily field operations supervision, coordination of civil and electrical crews, quality control

Key Project Role	Personnel	Responsibilities
<b>Electrical Foreman</b>	Christopher Distefano	Directs cable pulling, terminations, testing, and equipment installation
<b>Civil Foreman</b>	Shane Benson	Manages excavation, duct bank installation, concrete work, and road restoration
<b>Safety Director</b>	Heinz Wendorff	Oversees safety plans, consults and informs daily safety briefings, ensures compliance
<b>Safety Manager</b>	Raymond Mercer	Implements site-specific safety plans, conducts daily safety briefings, ensures compliance

Our fully staffed crews will be deployed based on the project's phasing requirements:

- **Five (5) Licensed Electricians:** Specialize in medium-voltage cable pulling, splicing, terminating, equipment installation, and testing procedures
- **Five (5) Laborers:** Support both civil and electrical operations, with experience in underground utility work
- **Three (3) Operating Engineers:** Operate excavation equipment, manage trench work, and handle specialized machinery for underground construction

This staffing approach allows us to simultaneously progress with both underground civil infrastructure and electrical installation work, maximizing efficiency while maintaining strict quality control.

### 3.1.1 Local Labor Utilization [4.6]

HVI is committed to employing local labor for the Feeder 9A project. We will register all job vacancies with the Virgin Islands Department of Labor in accordance with ACT 5174 of the Virgin Islands Code. Our project team will:

- Submit formal job postings to VI Department of Labor prior to project mobilization
- Work with local workforce development agencies to identify qualified candidates
- Provide on-the-job training opportunities for entry-level positions where appropriate

We have successfully integrated local labor into our previous USVI projects, including Feeders 7E, 8B, and 5A, enhancing both project performance and community economic benefits. Since inception, HVI has hired more than 110 local residents and currently employs at least 45 active employees who reside within the local USVI communities. Part of this hiring effort has included developing the skills and expertise necessary for utility construction work among the local population, creating lasting workforce development benefits beyond individual project completion.

### 3.1.2 Equipment Resource Allocation [2.5.8, 4.10.3]

HVI will deploy specialized equipment specifically suited to the constraints and requirements of underground electrical construction in the USVI:

Equipment Type	Quantity	Purpose
<b>Excavators (Various Sizes)</b>	3	Trench excavation, backfilling, material handling
<b>Backhoe Loaders</b>	2	Versatile utility work in confined areas
<b>Cable Pullers (6,000 lb capacity)</b>	2	MV cable installation in underground systems
<b>Dump Trucks</b>	4	Material transport, spoil removal
<b>Concrete Mixer Trucks</b>	As needed	Concrete delivery for duct bank encasement
<b>Plate Compactors</b>	4	Soil compaction in trenches
<b>Traffic Control Equipment</b>	Multiple sets	Safe work zone establishment

Equipment Type	Quantity	Purpose
<b>Air Compressors &amp; Pneumatic Tools</b>	3	Concrete demolition, material removal
<b>Cable Pulling Winches</b>	2	Primary & secondary cable installation
<b>Vacuum Excavation System</b>	1	Safe utility location and potholing
<b>Steel Road Plates</b>	50	Trench covering for traffic management
<b>Light Towers</b>	6	Nighttime work illumination
<b>Generator Sets</b>	4	Power for tools and equipment

All equipment will be maintained on-site or readily accessible to prevent project delays. Our equipment fleet is sized to accommodate the concurrent civil and electrical operations outlined in our project approach.

### 3.2 Material Equipment Storage Plan [4.17]

HVI will implement a comprehensive material management system to ensure all project components are properly received, stored, and deployed to worksites according to the project schedule.

#### 3.2.1 Plan for Unloading, Handling, and Storing Materials [4.17]

Our material management approach prioritizes protection of critical electrical components while maintaining efficient access for installation:

1. **Secure Storage Facility:** HVI will establish a dedicated material storage yard centrally located to the project area, with:
  - Fenced and secured perimeter with 24-hour monitoring
  - Designated areas for different material types (conduit, cable reels, equipment)
  - Covered storage for moisture-sensitive materials
  - Inventory tracking system for material accountability
2. **Material Handling Procedures:**
  - All electrical equipment will be inspected upon delivery for damage
  - Cable reels will be stored on end with flanges vertical to prevent deformation
  - Pad-mounted equipment will remain on shipping pallets until installation
  - PVC conduit will be stored on flat surfaces with proper support to prevent warping
  - All equipment will be handled using appropriate rigging and lifting methods
3. **Just-in-Time Delivery:**
  - The Superintendent will coordinate material deliveries to align with installation schedule
  - Daily material needs will be determined during morning planning meetings
  - Only materials needed for immediate installation will be transported to work sites
  - Specialized components (transformers, switchgear) will be scheduled for direct delivery to installation locations when possible
4. **VIWAPA-Furnished Equipment:**
  - Our team will coordinate closely with VIWAPA for receipt of owner-furnished equipment
  - The Project Manager will maintain documentation of all received VIWAPA materials
  - VIWAPA-furnished materials will be stored separately with clear identification
  - Receipt inspection reports will be completed for all VIWAPA-furnished items

HVI's material management approach ensures all components remain in optimal condition throughout the project while minimizing on-site storage requirements.

## **4 Project Schedule and Milestones [4.10.4, 2.0, 2.5.A.4]**

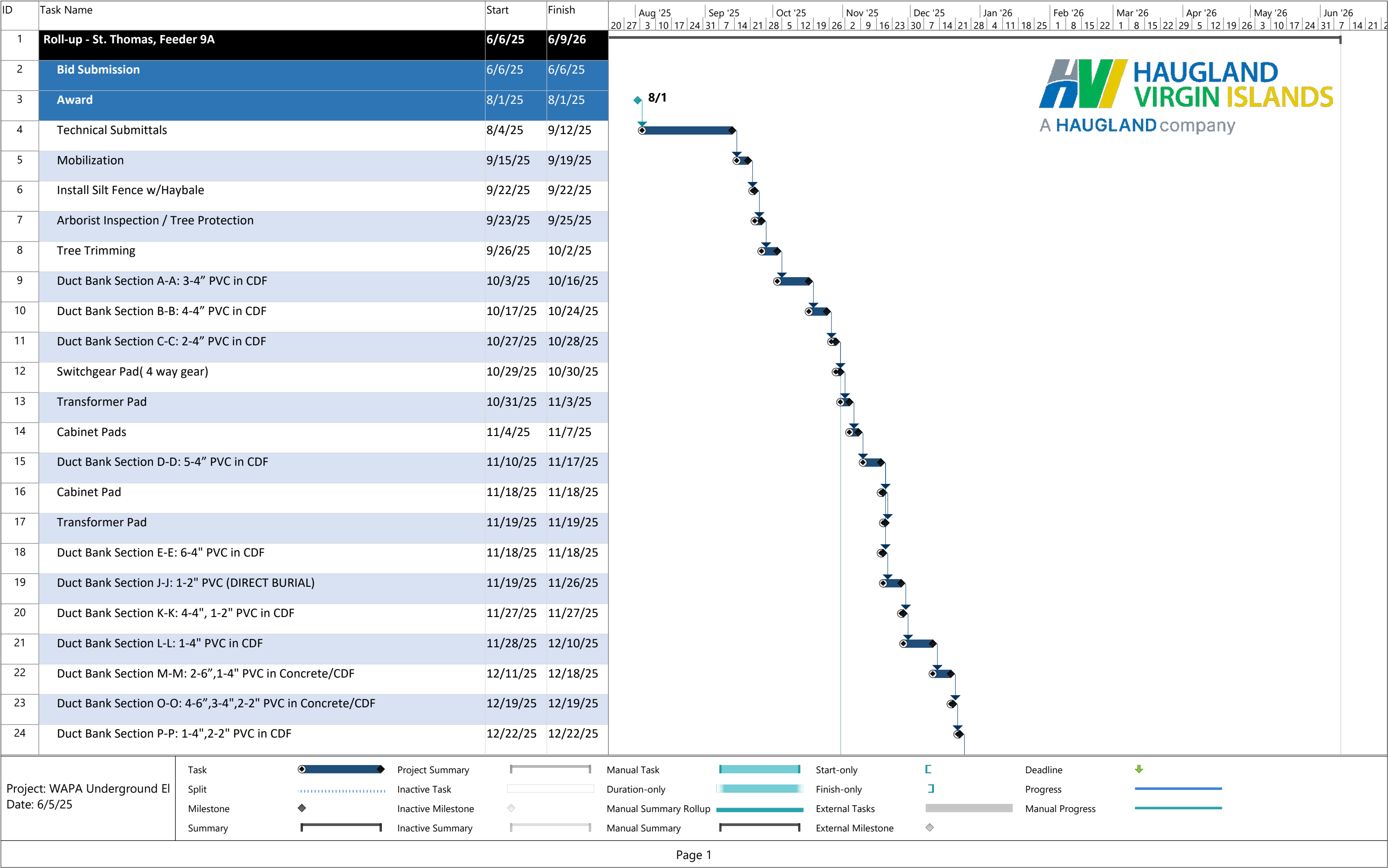
Haugland Virgin Islands delivers predictable project completion through proven scheduling methodologies and proactive delay mitigation strategies. Our comprehensive scheduling approach ensures VIWAPA receives reliable timeline execution while maintaining the flexibility to address unforeseen challenges without compromising the overall project delivery.

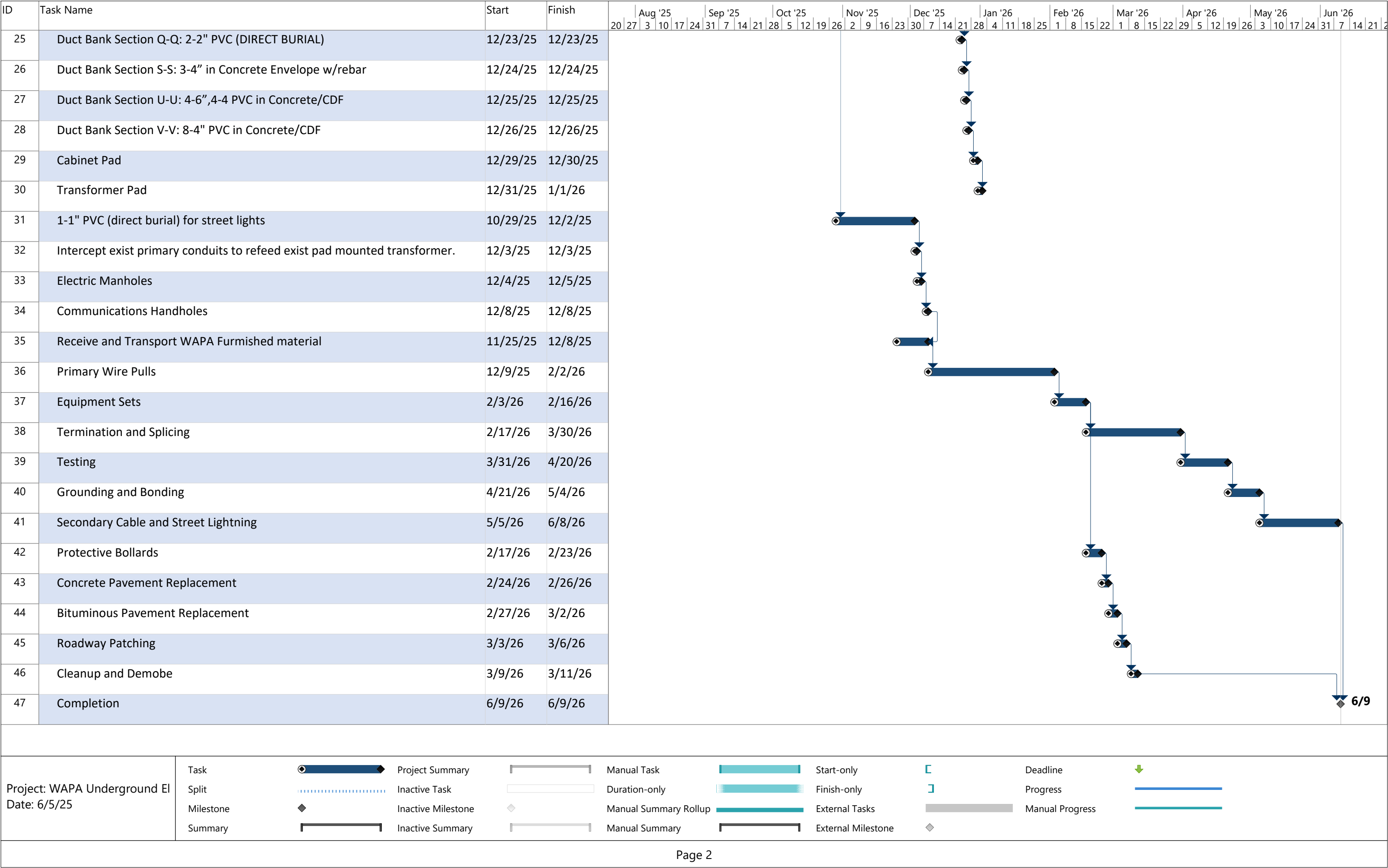
### **4.1 Preliminary Project Schedule [2.5.A.4, 5.1, 8.14]**

HVI acknowledges the requirement to make up time through extended working hours, additional shifts, or increased manpower when project schedules fall behind. Our PM will submit a detailed preliminary project schedule within five workdays of contract execution and Notice to Proceed issuance, as required. The PM is also responsible for ensuring timeliness of the schedule.

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## 4.2 Project Documentation and Reporting [5.1, 5.2]

Haugland Virgin Islands provides comprehensive project documentation that ensures VIWAPA receives complete project transparency and maintains accurate records for future system operations. Our documentation approach meets all RFP requirements while supporting VIWAPA's project management and long-term infrastructure needs [RFP 5.1].

### Daily Field Reporting

We submit typed daily field reports on company letterhead to VIWAPA's Project Manager and project team, as required by RFP 5.1. Handwritten reports will not be submitted. Each report includes photographic documentation of work progress and site conditions. We document the entire project through photographs that include:

- Work progress at each phase
- Material delivery and staging
- Safety compliance measures
- Quality control verification
- Environmental protection measures

### As-Built Documentation

Per RFP 5.2, upon project completion, we deliver:

- **AutoCAD Generated Plans:** As-built drawings showing actual duct bank and handhole locations
- **ArcGIS Shapefiles:** GPS-coordinated files with equipment identification and attribute data
- **GPS Coordinates:** Center-point locations for all duct bank installations using North American Datum of 1983 (NAD 83) coordinate system
- **Equipment Attributes:** Complete feature and attribute data per Appendix F requirements

### Environmental and Waste Documentation

We maintain proper documentation for all waste materials disposal, including:

- Required testing and documentation for waste material handling
- Disposal records showing final destination of all materials
- Compliance with applicable local and federal requirements
- Documented evidence of proper disposal for final payment processing

Haugland Virgin Islands' systematic documentation approach ensures VIWAPA receives all required project records while maintaining compliance with RFP specifications and regulatory requirements.

## 4.3 Inclement Weather Approach [4.5]

HVI's proactive Inclement Weather Plan maximizes project continuity while prioritizing safety during adverse weather conditions, protecting VIWAPA's assets and minimizing delays.

### Pre-Event Planning and Preparation

Our Project Manager will submit a comprehensive Inclement Weather Plan to VIWAPA within ten days of receiving the Notice to Proceed. This plan includes:

Planning Element	Implementation Approach
<b>Weather Monitoring</b>	<ul style="list-style-type: none"> <li>• Daily monitoring of National Weather Service forecasts</li> <li>• Use of real-time weather tracking applications</li> <li>• 72/48/24-hour action thresholds for different weather scenarios</li> </ul>
<b>Site-Specific Preparation</b>	<ul style="list-style-type: none"> <li>• Detailed checklists for securing each active work zone</li> <li>• Priority rankings for critical infrastructure protection</li> <li>• Equipment and materials relocation plans</li> </ul>

Planning Element	Implementation Approach
Communication Protocol	<ul style="list-style-type: none"> <li>Structured notification system with defined roles</li> <li>Emergency contact list with redundant communication methods</li> <li>Coordination procedures with VIWAPA operations team</li> </ul>

### Weather Response Measures

Our Superintendent will implement specific protective measures based on the nature and severity of weather conditions:

Weather Condition	Response Actions	Responsible Member	Team
<b>High Wind Conditions</b>	<ul style="list-style-type: none"> <li>Secure all loose materials and equipment</li> <li>Remove or anchor temporary structures</li> <li>Lower crane booms and secure heavy equipment</li> <li>Relocate vehicles to protected areas</li> </ul>	Site Superintendent	
<b>Heavy Rain/Flooding</b>	<ul style="list-style-type: none"> <li>Deploy additional pumping equipment to vulnerable areas</li> <li>Implement enhanced erosion and sediment controls</li> <li>Protect electrical components with waterproof coverings</li> <li>Establish drainage pathways to direct water away from excavations</li> </ul>	Civil Foreman	
<b>Hurricane Warnings</b>	<ul style="list-style-type: none"> <li>Activate 72-hour demobilization protocol</li> <li>Remove non-essential equipment from site</li> <li>Install storm shutters on temporary facilities</li> <li>Secure all materials that cannot be relocated</li> </ul>	Project Manager	
<b>Lightning</b>	<ul style="list-style-type: none"> <li>Cease all outdoor activities immediately</li> <li>Move personnel to designated safe locations</li> <li>Secure electronic equipment</li> <li>Wait minimum 30 minutes after last lightning strike</li> </ul>	Safety Manager	

### Project Protection Measures

Our field crews will take specific actions to safeguard work in progress:

Project Element	Protection Strategy	Verification Method
<b>Open Excavations/Trenches</b>	<ul style="list-style-type: none"> <li>Cover with secure, weighted tarps</li> <li>Install temporary drainage systems</li> <li>Fill partially completed trenches where feasible</li> <li>Place steel plates over critical areas</li> </ul>	Daily site inspection with photographic documentation
<b>Construction Materials</b>	<ul style="list-style-type: none"> <li>Store in secured, elevated locations</li> <li>Apply additional tie-downs and coverings</li> <li>Group materials by priority and protection needs</li> <li>Document locations prior to weather events</li> </ul>	Pre-storm inventory checklist completion
<b>Electrical Components</b>	<ul style="list-style-type: none"> <li>Disconnect power to temporary installations</li> <li>Apply waterproof coverings to junction points</li> <li>Elevate components above potential flood levels</li> <li>Seal partial cable installations</li> </ul>	Electrical verification Foreman
<b>Partially Completed Work</b>	<ul style="list-style-type: none"> <li>Apply temporary protective coatings</li> <li>Install additional bracing or support</li> <li>Remove temporary formwork where necessary</li> <li>Document pre-storm condition</li> </ul>	Pre/post event comparison report

### Recovery Protocol

Timeframe	Post-Weather Activities	Documentation Requirements
<b>Immediate (0-2 hours)</b>	<ul style="list-style-type: none"> <li>Site safety assessment</li> <li>Personnel headcount and status</li> </ul>	Initial incident report

Timeframe	Post-Weather Activities	Documentation Requirements
	<ul style="list-style-type: none"> <li>• Preliminary damage identification</li> <li>• Urgent mitigation actions</li> </ul>	
<b>Short-Term (2-24 hours)</b>	<ul style="list-style-type: none"> <li>• Detailed damage assessment</li> <li>• Water removal operations</li> <li>• Temporary repairs to damaged work</li> <li>• Restoration of safety systems</li> </ul>	Comprehensive damage report with photos
<b>Recovery (24-72 hours)</b>	<ul style="list-style-type: none"> <li>• Restoration of normal operations</li> <li>• Resource reallocation if needed</li> <li>• Schedule adjustments</li> <li>• Material/equipment reordering if required</li> </ul>	Recovery plan and schedule impact analysis

The HVI Safety Manager will conduct daily inspections during inclement weather events to verify protective measures remain effective and identify any developing risks.

By implementing this comprehensive approach to inclement weather, HVI ensures VIWAPA's project remains protected, minimizing delays and avoiding potential damage to both completed work and surrounding infrastructure.



## **5 Price/Cost [4.10.5]**

HVI provides our completed Exhibit H with our Price/Cost as Attachment 1 and our completed Appendix A – Rate Sheet , as Attachment 2 to our proposal

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## 6 Safety and Compliance [4.10.6]

The company's safety statistics speak to performance with a national EMR of 0.65. All project deployments are staffed with qualified Superintendents, General Foremen, and Safety Leadership to ensure comprehensive safety oversight throughout project execution.

### 6.1 Comprehensive Safety Plan [4.10.6, 8.8]

Since inception, the various Haugland companies have maintained an excellent safety and incident record and have received awards and recognition from the industry regarding the same. This can be attributed to the core values at Haugland, which are constructed around an on-going effort to develop, monitor, and maintain a resilient safety culture, and reflected in **Attachment 7: Haugland's Corporate Safety Manual**.

Drawing on the principles associated with high reliability organizations, Haugland strives to constantly improve human and organizational performance outcomes. The team at Haugland strongly believes that success in the field can be attributed to a continuous effort to improve performance by addressing safety at three levels: the organizational, the process, and the worker. The team knows that on each project Haugland performs successful outcomes in the field are dependent upon, and the responsibility of, each and every Haugland employee assigned to the project.

Safety is paramount at Haugland and will be a key area of focus throughout execution of this project. As described in this document, the team will establish a project-specific HASP early in execution that will govern the activities specific to construction of the duct bank for each project. Each HASP is built upon Haugland's robust Health and Safety Manual, which is a comprehensive set of standard safety practices and can be provided upon request.

All work will be performed with complete regard for the safety of workers and the public while adhering to or exceeding the expectations of Eversource. Haugland's Safety Department management team and employees will actively promote, recognize, and train to provide a safe working environment.

The team at Haugland does not compromise on supervision. All project deployments are staffed with qualified Superintendents, General Foreman, and Safety Leadership.

#### 6.1.1 Site Specific Measures [4.11]

This section outlines the approach and key activities the Haugland team will follow in executing the project and ensuring safety and compliance is kept at the forefront every day on the project site. Elements of our onsite safety and compliance program are shown in Table 59.

**Table 59: Safety and Compliance Program Elements**

Program Elements	Approach and Key Activities
<b>Pre-Construction Meeting &amp; Job Walk</b>	<ul style="list-style-type: none"> <li>A pre-construction meeting for all project personnel and subcontractors will be held to review the scope of the project, identify the safety and environmental requirements and concerns, and introduce key personnel.</li> </ul>
<b>Pre-Job Hazard and Safety Assessment</b>	<ul style="list-style-type: none"> <li>Pre-job hazard assessments are performed and documented before the start of every project.</li> </ul>
<b>Health &amp; Safety Plan (HASP)</b>	<ul style="list-style-type: none"> <li>As described above, a project specific Health &amp; Safety Plan (HASP) will be prepared, reviewed and approved by all project participants prior to the start of work.</li> </ul>

Program Elements	Approach and Key Activities
	<ul style="list-style-type: none"> <li>• Additionally, a Job Hazard Analysis (JHA) will be prepared at the start of each work day by the On Site Safety Manager (OSSM) or Project Supervisor.</li> <li>• A designated Competent Person will be present for all tasks involving excavation or other hazardous activities.</li> </ul>
<b>Training</b>	<ul style="list-style-type: none"> <li>• Each employee and all subcontractor employees will receive site-specific environmental, safety and health training as required by the contract documents and Haugland Energy. This will include, but is not be limited to: <ul style="list-style-type: none"> <li>○ Haugland Energy Safety Training and Orientation</li> <li>○ Project Specific HASP &amp; Environmental, Safety and Health Manual</li> </ul> </li> </ul>
<b>Briefings, Meetings &amp; Inspections</b>	<ul style="list-style-type: none"> <li>• Pre-job safety briefings are conducted daily by the General Foreman or Foreman prior to the start of any work. This person will also conduct a hazard assessment for the day's work as part of the briefing process. All pre-job briefings are documented and signed by all jobsite employees, including subcontractors on site that day.</li> <li>• Weekly tailgate safety talks will be conducted by the Project Supervisor or General Foreman about current topics, such as adverse weather conditions or a recent near miss.</li> <li>• Jobsite safety inspections are performed daily to weekly by the General Foreman or Project Supervisor. Weekly to bi-monthly project inspections will be conducted by HE's Safety Department depending on scope and hazards. Inspection reports are generated and distributed to responsible managers and officers for review, comment and follow-up, if necessary.</li> </ul>
<b>Other Safety Measures</b>	<ul style="list-style-type: none"> <li>• 100% fall protection or restraint will be used when a fall hazard is six (6) feet or greater.</li> <li>• All crane operations will follow a documented Pick Plan, especially when multiple cranes or lifting devices are used.</li> <li>• All personnel will adhere to the drug and alcohol screening process, which includes pre-employment, for-cause, and random testing.</li> <li>• All workers have the authority to call a stop work if they feel their safety is at risk.</li> <li>• Trenches will be properly sloped or shored, and a 4-foot egress will be maintained.</li> </ul>
<b>Haugland Energy's OSSM Responsibilities</b>	<ul style="list-style-type: none"> <li>• Necessary updates to the written Project Specific HASP</li> <li>• Administration of the Haugland Environmental, Health &amp; Safety Plan</li> <li>• Reporting, notification and investigation requirements of any accidents, injuries and near misses</li> <li>• Record keeping of Daily Tailboard Meetings, Daily Job Briefings, Safety Inspection Records, etc.</li> <li>• Conducting and recording job site safety inspections</li> </ul>

Human and Organizational Performance (HOP) Tools are at the core of Haugland's safety culture, particularly exercising one's Stop Work Authority. Haugland operates on a commitment to never sacrifice safety for production, knowing that one mistake or injury can derail any project more significantly than

deliberate safe work practices. To reinforce and remind the team in the field of this approach daily, Haugland employs a number of tools and commitment statements:

- First Check / Self Check / Peer Check
- Plan to “Fail Safely”
- Eyes Always Open
- Be Your Brother’s or Sister’s Keeper
- See Something. Say Something. Do Something.
- Blame Solves Nothing
- Context Drives Response / How a Leader Responds Matters
- Continuous Improvement and Learning are Vital

#### 6.1.2 Sanitation Plan [4.12]

HVI maintains comprehensive sanitation standards that protect worker health and prevent the spread of disease on all project sites. Our Site Superintendent will enforce strict cleanliness regulations and waste disposal protocols from project mobilization through completion.

##### Sanitary Facilities and Waste Management

Our sanitation approach includes immediate establishment of necessary facilities upon first crew arrival. The Site Superintendent will ensure proper seclusion of all facilities from public observation and maintain sanitary conditions throughout the project duration.

Sanitation Component	Implementation
<b>Waste Disposal</b>	Daily removal of garbage and waste materials according to health department regulations
<b>Facility Maintenance</b>	Regular cleaning and restocking of sanitary conveniences
<b>Disease Prevention</b>	Enforcement of cleanliness standards among all personnel
<b>Site Cleanliness</b>	Daily site cleanup protocols to maintain hygienic working conditions

##### Enforcement and Compliance

The Project Manager will designate a responsible crew member to oversee daily sanitation compliance and report any issues requiring immediate attention. This systematic approach ensures our workforce remains healthy and productive while meeting all regulatory requirements for sanitary working conditions.

Our proven sanitation protocols have successfully supported our previous VIWAPA projects, including Feeder 7E and ongoing Feeder 5A work, demonstrating our commitment to maintaining the highest standards of workplace hygiene and safety.

#### 6.1.3 Security Measures [4.13]

Our Project Manager will implement comprehensive security protocols that protect VIWAPA's facilities and ensure project materials remain secure throughout construction. These measures maintain site integrity while facilitating efficient project execution.

##### Personnel Security Management

Prior to mobilization, our Project Manager will submit a complete personnel roster to VIWAPA's Project Coordinator for all team members working on the Feeder 9A project. This list will include all Haugland Virgin Islands employees, subcontractors, and consultant personnel. We understand that identification

passes will be provided at no cost to our company and will ensure all personnel carry proper identification while on-site.

### **Material and Equipment Security**

Our Superintendent will implement daily security protocols for all stored materials and equipment. Despite the existing facility fencing, we recognize our responsibility for maintaining additional security measures against unauthorized use. All tools, materials, and equipment will be secured in designated storage areas at the end of each workday using appropriate locking mechanisms and security barriers.

### **Demobilization Procedures**

Upon project completion, our Project Manager will coordinate with VIWAPA's Project Coordinator to ensure all identification passes are returned prior to demobilization. This process will be completed systematically to account for all issued credentials.

These security measures ensure VIWAPA's facilities remain protected while maintaining accountability for all project personnel and materials throughout the construction process.

## **6.2 Risk Assessment [4.10.6, 8.8]**

VIWAPA benefits from HVI's advanced risk management approach that combines proactive identification, systematic mitigation, and real-time monitoring to eliminate project risks before they impact schedule, budget, or safety outcomes. Our comprehensive risk assessment methodology leverages both field experience and cutting-edge technology platforms to deliver predictable project execution. Our strategic partnership with Procore's Operational Excellence team enables us to optimize workflows and deliver unprecedented transparency and risk management capabilities specifically tailored for complex underground electrical construction projects like Feeder 9A.

### **Procore Construction Management Software**

Haugland Group has recently become one of the top specialty contractors on the Procore platform, fully integrating the Project Management module throughout all facets of the company. Through the project management tool, the team can plan, improve, and measure success while responding to opportunities and challenges in real time. Procore connects people and systems to ensure best-in-class performance. The Procore platform allows for collaboration across specialties ensuring open communication and transparency between the project's Engineers, Owners, Contractors, Subcontractors, Material Suppliers, and all others that have a stake in the project.

Haugland's custom interface and added benefit to the Customer can be seen throughout the entirety of the project life cycle. Haugland works closely in partnership with Procore's Operational Excellence team to optimize internal systems (strategically) to deliver (tactically) the best possible product to Eversource.

During the Pre-construction phase, the team onboards all subcontractors so that they are involved in an initial project information exchange, reducing the risk of gaps and increasing collaborator buy-in. Subcontractor work can be clearly defined, measured, and analyzed to ensure they are meeting any milestone dates and are following the Owner's requirements.

Throughout the Project Execution phase, all areas of project management (RFIs, Submittals, Meetings, Schedules, Daily Log, etc.) are housed in one cloud-based location with a connection to the Owner for review and monitoring. Haugland develops a project specification plan, which outlines the daily, weekly, and monthly reporting requirements, which expands from project management to safety. Additionally, the Haugland Safety team will create a project specific inspection plan that meets the Owners requirements. Within Procore, Haugland has developed analytics reports (utilizing PowerBI) which measure both frequency and quality of all safety inspections.



Procore also allows for centralized Workforce Management. The housing of project schedules and task assignment and reporting drives home responsibility and measures activity completion percentage compared to the baseline schedule. The process of identifying an issue, design or other, now flows through one platform from Contractor/Subcontractor to Engineer/Owner with all the necessary information available for review and determination. Utilizing Procore eliminates inefficiency and lack of predictability by leveraging information across all modules and synchronizing them to produce timely, accurate information.

Leveraging Procore has put Haugland on the offensive, proactively searching for issues and addressing them before they grow and have a compounding effect. Haugland not only uses Procore as a project management platform, but also as the key business intelligence driver allowing the company to use live data to make immediate adjustments to project delivery approach, giving the team best in class agility. Data is captured in real-time, and insights are available immediately, allowing Haugland to adjust proactively, which saves all stakeholders time and money.

Haugland's customization of dashboards, developed from experience and in conjunction with customers, help track leading indicators of safety concerns, schedule slip or change conditions, and immediately address them. These dashboards are shared at project meetings to enable data-driven decisions that ensure accuracy and insightful AI-guided workflows.

The sum of Haugland's use of Procore has achieved consistent increased efficiency and productivity, while systematically reducing, mitigating, and eliminating risk.

### 6.3 Knowledge of Relevant Regulations and Standards [4.3, 4.11, 4.10.6]

VIWAPA benefits from HVT's thorough knowledge of all applicable federal and local regulations, ensuring full compliance throughout project execution. Our team maintains current certifications and regularly updates our knowledge of evolving standards to minimize regulatory risks.

#### Regulatory Compliance Framework

Our Project Manager oversees a comprehensive compliance program addressing all regulatory requirements:

**Table 60: Adhering to Compliance and Regulation**

Regulatory Area	Implementation Approach	HVI Advantage
<b>NEC and NESC Standards</b>	Our Electrical Foreman ensures all installations meet current National Electric Code and National Electric Safety Code requirements	Daily inspections with documented compliance checklists
<b>OSHA Requirements</b>	Our Safety Manager conducts daily toolbox talks and weekly comprehensive safety audits	Zero OSHA recordable incidents on recent USVI projects
<b>DPNR Regulations</b>	Our Superintendent coordinates with DPNR for permits and maintains ongoing communication throughout construction	Established relationship with local regulators
<b>Federal Highway Administration</b>	Traffic control plans follow FP-96 standards with our Civil Foreman ensuring daily compliance	Experienced in minimizing traffic disruption in high-visibility areas
<b>Environmental Protection</b>	Our team follows EPA, RCRA, and TSCA guidelines for all material handling	Environmental protection measures exceed minimum requirements

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### Code-Specific Implementation

HVI's execution plan incorporates the latest editions of all applicable codes and standards, including:

- **IEEE/ANSI Standards:** Our electricians apply IEEE standards for equipment installation and testing
- **ASTM Requirements:** Our Civil Foreman ensures materials meet all testing and quality standards
- **AWWA Standards:** Water systems protection measures follow American Water Works Association guidelines
- **NEMA Standards:** Electrical equipment selection and installation follows NEMA requirements

### Local Regulatory Expertise

Having completed multiple projects throughout the USVI, our Superintendent maintains productive relationships with local regulatory authorities. This allows us to navigate permitting processes efficiently while ensuring full compliance with USVI-specific requirements.

### Environmental Compliance

Environmental compliance is critical to project success. Our approach adheres to both local requirements and industry best practices for the management of stormwater during construction. Our environmental management program includes:

- A comprehensive Stormwater Pollution Control Plan (SWPCP) to manage stormwater runoff and prevent sedimentation
- Robust erosion and sediment controls, including silt fences, straw wattles, Silt Sacks, and sediment traps that are regularly inspected and maintained
- Invasive species control measures to prevent spreading during construction activities
- Systematic soil management practices in accordance with local specifications and applicable regulations
- Groundwater management protocols for evaluation, treatment, and disposal of construction groundwater
- Historic preservation considerations for potentially sensitive areas along the project route

HVI delivers peace of mind through rigorous regulatory compliance, minimizing the risk of delays or violations while maintaining the highest quality standards throughout project execution.

## 7 Financial Stability [4.10.7]

### 7.1 Demonstrated Financial Capacity [4.10.7]

HVI is well-capitalized, with extensive bonding capacity to support projects of this magnitude. Our financial strength allows us the flexibility needed to ensure projects remain fully resourced throughout execution, while providing VIWAPA with confidence in our ability to deliver the FEEDER 9A project without financial constraints or limitations. We provide details on our bonding capacity in **Attachment 4:**

#### **Performance and Payment Bonds.**

### 7.2 Request for Letter of Credit [3.3]

HVI has submitted a performance bond and will not be requesting VIWAPA for the option to submit a Letter of Credit.

## 8 MWBE Utilization Plan [4.10.8, 3.9.C, 8.10-8.11]

VIWAPA will benefit from Haugland Virgin Islands' proven commitment to fostering economic growth within the local community through our strategic MWBE utilization approach. Our plan maximizes local business participation while ensuring the highest quality standards for the FEEDER 9A project.

### 8.1 MWBE Subcontractor Engagement

Haugland Virgin Islands implements a comprehensive approach to maximize MWBE participation throughout the project lifecycle:

Strategy	Implementation Method
<b>Identification</b>	Our Project Manager conducts targeted outreach to qualified MWBE firms using the V.I. UCO Directory of DBE Firms and local business networks
<b>Solicitation</b>	We actively solicit MWBE participation through direct communication and clear scope definitions tailored to local capabilities
<b>Division of Work</b>	Our Project Manager and Superintendent identify opportunities to break down larger tasks into manageable components that align with local MWBE capacity
<b>Scheduling</b>	We establish delivery schedules that accommodate MWBE partners' capabilities and resources
<b>Technical Assistance</b>	Our field supervisors provide ongoing mentorship and technical guidance to MWBE partners to ensure successful execution

#### Selected MWBE Partners for FEEDER 9A

For this project, we have identified and secured commitments from the following MWBE firms based on their qualifications, experience, and capacity:

1. **VI Quality Control Services LLC (DBE)**
  - Scope: All concrete testing and compaction verification services
  - Benefits: Ensures quality assurance for critical infrastructure components with local expertise
2. **Fabien's Trucking (MBE)**
  - Scope: Customs clearing and specialized trucking services
  - Benefits: Provides efficient material delivery and logistics support with local knowledge

Our Superintendent will conduct weekly coordination meetings with MWBE partners to monitor progress, identify potential challenges, and implement solutions proactively.

#### MWBE Development and Support Program [3.9.C]

Beyond contractual engagement, Haugland Virgin Islands is committed to strengthening the local MWBE community through:

- Providing technical training opportunities to enhance the capabilities of local MWBE firms
- Establishing prompt payment procedures to support MWBE cash flow
- Documenting MWBE performance to build track records for future opportunities
- Creating opportunities for skills transfer between our specialized crews and local MWBE personnel

Our Project Manager will track MWBE participation throughout the project, ensuring all targets are met while maintaining quality and schedule requirements.

Haugland Virgin Islands' MWBE Utilization Plan for the FEEDER 9A project represents our commitment to not only meeting regulatory requirements but strengthening the economic foundation of the local community while delivering exceptional value to VIWAPA.

## 8.2 Subcontractor Information [4.15, 8.10]

Haugland Virgin Islands has carefully selected specialist subcontractors who enhance our project delivery capabilities while meeting MWBE utilization goals. Our subcontractors bring valuable local knowledge and specialized expertise that directly benefit VIWAPA through improved project outcomes and local economic impact.

### Selected Subcontractors

Selected Subcontractors		
Subcontractor	Scope of Work	Qualifications
<b>VI Quality Control Services LLC (DBE)</b>	<ul style="list-style-type: none"> <li>Concrete testing</li> <li>Soil compaction testing</li> <li>Materials verification</li> </ul>	<ul style="list-style-type: none"> <li>USVI-based engineering testing firm</li> <li>8+ years of infrastructure testing experience</li> <li>Certified testing technicians</li> </ul>
<b>Fabien's Trucking (MBE)</b>	<ul style="list-style-type: none"> <li>Customs clearing</li> <li>Heavy equipment transport</li> <li>Material delivery</li> <li>Waste removal</li> </ul>	<ul style="list-style-type: none"> <li>Established USVI logistics provider</li> <li>Fleet of specialized vehicles</li> <li>Knowledge of local transport regulations</li> </ul>
Subcontractors Under Evaluation		
Subcontractor	Scope of Work	Qualifications
<b>Bateman Civil Survey Company</b>	<ul style="list-style-type: none"> <li>GPR survey</li> <li>Utility location services</li> <li>As-built documentation</li> </ul>	<ul style="list-style-type: none"> <li>Advanced subsurface detection equipment</li> <li>Experienced in utility identification</li> <li>History of USVI infrastructure projects</li> </ul>
<b>Stell Environmental</b>	<ul style="list-style-type: none"> <li>Archaeological monitoring</li> <li>Environmental compliance</li> </ul>	<ul style="list-style-type: none"> <li>Specialized in cultural resource management</li> <li>Experience with historic district requirements</li> <li>Familiar with USVI regulatory landscape</li> </ul>

### Subcontractor Management Approach

Our Project Manager and Superintendent will implement a proven subcontractor management system to ensure seamless integration:

- Pre-award Qualification:** We have verified each subcontractor's technical capabilities, safety record, financial stability, and adherence to project standards.
- Subcontractor Onboarding:** Prior to mobilization, our Superintendent will conduct dedicated orientation sessions covering:
  - Project-specific safety requirements
  - Quality control expectations
  - Communication protocols
  - Schedule milestones
- Ongoing Supervision:** Our Electrical and Civil Foremen will directly oversee subcontractor work, providing:
  - Daily work direction
  - Quality verification
  - Technical guidance
  - Schedule coordination
- Payment Management:** We facilitate timely subcontractor payments to maintain project momentum:
  - Clear documentation requirements
  - Weekly invoice reviews
  - 15-day payment processing
  - Verification of payments to sub-tier contractors

All subcontractors have received copies of project specifications and drawings relevant to their scope. Each has confirmed their commitment to the project schedule and their ability to meet VIWAPA's quality standards.

Haugland Virgin Islands maintains full responsibility for all subcontractor work and will ensure seamless coordination between all parties throughout the FEEDER 9A project execution.

## 9 Contractual Terms and Conditions [4.10.9]

HVI confirms our acceptance of all contractual terms and conditions set forth in this RFP, including:

Contractual Element	HVI Approach	Benefit to VIWAPA
<b>General Contract Terms</b>	Full compliance with all terms in Appendix B - Federal Requirements	Seamless contract administration with minimal amendments
<b>HUD Rider (Exhibit B)</b>	Complete acceptance of all HUD-CDBG General Provisions	Ensures federal funding compliance
<b>Liquidated Damages</b>	Accept \$1,000/day provision up to 10% of contract price	Demonstrates our commitment to schedule adherence
<b>Warranty Provisions</b>	One-year warranty on all work, beginning upon final acceptance	Comprehensive protection of VIWAPA's investment

### Insurance Coverage

HVI complies with all insurance requirements and provides all required insurance coverage in accordance with Exhibit A, in **Attachment 5: Insurance**. Our Project Manager will ensure all certificates are provided at contract execution and maintained throughout the project duration and warranty period.

### Payment Terms

HVI accepts the payment schedule outlined in Section 4.8 of the RFP, including:

- Progress payments based on verified completion percentages
- Retainage provisions as specified
- Final payment upon completion of punch list items and delivery of all required documentation

### Change Order Process

Our Superintendent acknowledges and will follow the change management procedures in Section 5.3, promptly notifying VIWAPA of any potential scope changes and providing detailed documentation to support efficient processing.

HVI's unconditional acceptance of all contractual terms, combined with our established record of contractual compliance on previous VIWAPA projects, ensures a smooth administrative process and allows project teams to focus on successful execution rather than contractual disputes.

## 10 Exceptions to RFP Requirements [2.5.1, 8.13]

HVI has no exceptions to the RFP requirements.



## Attachments

HVI provides the below listed attachments in the pages that follow:

- Attachment 1: Exhibit H: Feeder 9A Construction Bid Form
- Attachment 2: Appendix A - Rates for Labor [2.5.A.3]
- Attachment 3: Bid Bond [8.17]
- Attachment 4: Performance and Payment Bonds [3.3, 4.10.7, 8.17]
- Attachment 5: Insurance [4.10.9, 8.17]
- Attachment 6: Business License [8.17]
- Attachment 7: Haugland's Corporate Safety Manual [8.8]

## Attachment 1: Exhibit H: Feeder 9A Construction Bid Form

**VIRGIN ISLANDS WATER & POWER AUTHORITY**  
**CHARLOTTE AMALIE - UNDERGROUND ELECTRIC CONSTRUCTION PROJECT**  
**FEEDER 9A, Phase 1, Construction Bid Form, 05-21-25**  
**ST. THOMAS U.S. VIRGIN ISLANDS**

Item	Quantity	Unit	Description	Unit Cost	Total Cost
GENERAL					
1A	1	Lot	Mobilization	\$900,000.00	\$900,000.00
1B	1	Lot	Bonding: Bid Guarantee, Performance Bond, Payment Bond	\$68,600.00	\$68,600.00
2	1	Lot	Construction Impact Mitigation including Stormwater / Sediment & Erosion Control, Dust Control, Dewatering, Noise Control, Vibration Control, Landscaping & Brush / Tree Removal & Protection	\$132,000.00	\$132,000.00
3A	1	Lot	Traffic Control/Traffic Control Devices/Road Closure Permits	\$137,000.00	\$137,000.00
3B	1	Lot	Traffic Control/Traffic Control Devices/Road Closure Permits (cable only areas)	\$222,000.00	\$222,000.00
4A	1	Lot	Specialty Consulting Services: Archaeologist	\$71,600.00	\$71,600.00
4B	1	Lot	Specialty Consulting Services: Arborist	\$10,700.00	\$10,700.00
4C	1	Lot	Specialty Consulting Services:SUE Engineer/ Surveyor/Civil Engineer	\$119,000.00	\$119,000.00
4D	1	Lot	Special Inspection Services (soils, concrete, anchors)	\$106,000.00	\$106,000.00
4E	1	Lot	Asphalt testing Agency	\$2,850.00	\$2,850.00
5	1	Lot	Project Cleanup, Punchlist, Demobilization, Closeout	\$88,100.00	\$88,100.00
6	1	Lot	General Demolition: Remove & dispose of existing items as required to clear areas for new construction, in accordance with contract documents (including, but not limited to transclosure, bollards, concrete pads, rubbish & debris, etc.)	\$6,970.00	\$6,970.00
Subtotal General					\$1,864,820.00
CIVIL WORK					
7			Duct Banks: Including roadway/driveway cutting, excavation, PVC conduits, spacers, elbows, couplings, pull lines, warning tape, concrete envelope (where required per section details), Control Density Fill, roadway patching		
7-A	2,373	Linear Feet	Duct Bank Section A-A: 3-4" PVC in CDF (Refer to Drawing 104 for Duct Bank Details)	\$350.00	\$830,550.00
7-B	671	Linear Feet	Duct Bank Section B-B: 4-4" PVC in CDF (Refer to Drawing E-104 for Duct Bank Details)	\$480.00	\$322,080.00
7-C	925	Linear Feet	Duct Bank Section C-C: 2-4" PVC in CDF (Refer to Drawing E-104 for Duct Bank Details)	\$420.00	\$388,500.00
7-D	477	Linear Feet	Duct Bank Section D-D: 5-4" PVC in CDF- Refer to E-104 for Duct Bank Details	\$530.00	\$252,810.00
7-E	183	Linear Feet	Duct Bank Section E-E: 6-4" PVC in CDF (Refer to Drawing E-104 for Duct Bank Details)	\$570.00	\$104,310.00
7-F	0	Linear Feet	Duct Bank Section F-F: 3-4", 1-2" PVC in CDF (Refer to Drawing 104 for Duct Bank Details)	\$0.00	\$0.00
7-J	591	Linear Feet	Duct Bank Section J-J: 1-2" PVC (DIRECT BURIAL) (Refer to Drawing E-104 for Duct Bank Details)	\$300.00	\$177,300.00
7-K	31	Linear Feet	Duct Bank Section K-K: 4-4", 1-2" PVC in CDF (Refer to Drawing E-104 for Duct Bank Details)	\$720.00	\$22,320.00
7-L	887	Linear Feet	Duct Bank Section L-L: 1-4" PVC in CDF (Refer to Drawing E-104 for Duct Bank Details)	\$370.00	\$328,190.00
7-M	220	Linear Feet	Duct Bank Section M-M: 2-6",1-4" PVC in Concrete/CDF (Refer to Drawing E-104 for Duct Bank Details)	\$700.00	\$154,000.00
7-O	34	Linear Feet	Duct Bank Section O-O: 4-6",3-4",2-2" PVC in Concrete/CDF (Refer to Drawing E-104 for Duct Bank Details)	\$2,090.00	\$71,060.00
7-P	24	Linear Feet	Duct Bank Section P-P: 1-4",2-2" PVC in CDF (Refer to Drawing E-104 for Duct Bank Details)	\$630.00	\$15,120.00
7-Q	58	Linear Feet	Duct Bank Section Q-Q: 2-2" PVC (DIRECT BURIAL) (Refer to Drawing 104 for Duct Bank Details)	\$360.00	\$20,880.00

Item	Quantity	Unit	Description	Unit Cost	Total Cost
7-S	47	Linear Feet	Duct Bank Section S-S: 3-4" in Concrete Envelope with rebar (Culvert Crossing)	\$720.00	\$33,840.00
7-U	51	Linear Feet	Duct Bank Section U-U: 4-6", 4-4" PVC in Concrete/CDF (Refer to Drawing E-104 for Duct Bank Details)	\$1,590.00	\$81,090.00
7-V	20	Linear Feet	Duct Bank Section V-V: 8-4" PVC in Concrete/CDF (Refer to Drawing E-104 for Duct Bank Details)	\$1,390.00	\$27,800.00
7-SL	3,500	Linear Feet	1-1" PVC (direct burial) for street lights	\$190.00	\$665,000.00
8-A	8	Each	6'W x 6'L x 6'-0"D Electric Manhole: Including roadway/sidewalk cutting, excavation, concrete forms (if cast in place), delivery & storage (if precast), concrete, rebar, back fill, heavy duty frame & cover	\$34,300.00	\$274,400.00
8-B	8	Each	4'W x 4'L x 4'D Communications Handhole: Including excavation, concrete forms (if cast in place), delivery & storage (if precast), concrete, rebar, back fill, heavy duty frame & cover	\$26,700.00	\$213,600.00
8-C	5	Each	Furnish & Install Polymer Primary Handhole (24" x 36" x 24")	\$11,200.00	\$56,000.00
8-D	7	Each	Furnish & Install Polymer Secondary/COMMS. Handhole (24"x24"x24")	\$9,920.00	\$69,440.00
9-A	1	Each	Switchgear Pad( 4 way gear) 8'-3"L X 6'-0" W X 2'-0" thick	\$9,930.00	\$9,930.00
9-B	1	Each	Switchgear Pad( 5 way gear) 9'-11"L X 6'-0" W X 2'-0" thick	\$11,000.00	\$11,000.00
9-C	6	Each	Lateral Feeder Sectionalizing Cabinet Pad (elevated in flood zone)	\$6,670.00	\$40,020.00
9-D	5	Each	Three Phase Transformer Pad (elevated in flood zone)	\$9,270.00	\$46,350.00
9-E	3	Each	Single Phase Transformer Pad (elevated in flood zone)	\$6,440.00	\$19,320.00
9-F	1	Each	Single Phase Transformer Pad (standard)	\$7,610.00	\$7,610.00
9-G	1	Each	Primary Metering Cabinet Pad (elevated in flood zone)	\$8,330.00	\$8,330.00
9-H	2	Each	Primary Metering Cabinet Pad (standard)	\$5,400.00	\$10,800.00
9-I	39	Each	Protective Bollards	\$1,420.00	\$55,380.00
10-A	1	Lump Sum	Primary riser pole (main feeder) civil work including Rigid Aluminum conduits, concrete encasement, and support brackets, per detail on dwg. #E-100	\$45,400.00	\$45,400.00
10-B	3	Each	Secondary riser pole civil work including PVC cable sleeve, detail on dwg. E-100	\$23,300.00	\$69,900.00
10-C	1	Lump Sum	Break into existing manhole #018621 at Nisky Lane and Subase RoaD (Duct Bank D-D and O-O). This work to be performed outside of normal working hours.	\$13,200.00	\$13,200.00
10-D	1	Lump Sum	Break into existing manhole #010629 at Harwood Highway and Gasvaerks Gade (Duct Bank U-U). This work to be performed outside of normal working hours.	\$13,200.00	\$13,200.00
10-E	9	Each	Intercept existing primary conduits to refeed existing pad mounted transformer. This work to be performed outside of normal working hours.	\$11,400.00	\$102,600.00
10-F	1	Lump Sum	Intercept existing primary conduits to refeed existing pad mounted primary load interrupter switchgear on Crown Bay Road. This work to be performed outside of normal working hours.	\$11,400.00	\$11,400.00
11-A	60	Linear feet	Cut & repair concrete curbs (per detail on Dwg. #G-101)	\$410.00	\$24,600.00
11-B	60	Linear Feet	Cut & repair sidewalks (per detail on Dwg. #G-101)	\$530.00	\$31,800.00
11-C	28,875	Square Feet	Concrete pavement replacement on public roadway (per detail on Dwg. #G-101)	\$41.00	\$1,183,875.00
11-D	7,558	Square Feet	Concrete and Bituminous Pavement Replacement on public roadway (per detail on Dwg. #G-101)	\$46.00	\$347,668.00
11-E	3,590	Square Feet	Bituminous Pavement Replacement on public roadway (per detail on Dwg. #G-101)	\$12.00	\$43,080.00
11-F	1,164	Square Feet	Concrete Pavement Patching on private road/drive (per detail on Dwg. #G-101)	\$230.00	\$267,720.00
12	600	Cubic Yard	Rock Excavation: (allowance)	\$470.00	\$282,000.00
13	1	Each	Electric manhole evaluation of existing conditions and associated repairs or modifications required (per Dwg. #G-100)	\$8,654.00	\$8,654.00
<b>Subtotal Civil</b>					<b>\$6,762,127.00</b>

Item	Quantity	Unit	Description	Unit Cost	Total Cost
<b>ELECTRICAL WORK</b>					
13-A	3	Each	Receive, transport, rig & Install pad mounted switchgear (terminations are included under a separate line item)	\$28,000.00	\$84,000.00
13-B	6	Each	Furnish, transport, rig & install, pad mounted lateral feeder Sectionalizing Cabinet (junctions & terminations are included under separate line items)	\$24,700.00	\$148,200.00
13-C	2	Each	Receive, transport, rig and install 1 phase, 25kVA transformer (terminations are included under a separate line item)	\$17,600.00	\$35,200.00
13-D	1	Each	Receive, transport, rig and install 1 phase, 50kVA transformer (terminations are included under a separate line item)	\$19,800.00	\$19,800.00
13-E	1	Each	Receive, transport, rig and install 1 phase, 75kVA transformer (terminations are included under a separate line item)	\$19,800.00	\$19,800.00
13-F	1	Each	Receive, transport, rig and install 3 phase, 75kVA transformer (terminations are included under a separate line item)	\$20,600.00	\$20,600.00
13-G	2	Each	Receive, transport, rig and install 3 phase, 225kVA transformer (terminations are included under a separate line item)	\$23,500.00	\$47,000.00
13-H	1	Each	Receive, transport, rig and install 3 phase, 300kVA transformer (terminations are included under a separate line item)	\$28,900.00	\$28,900.00
13-I	2	Each	Receive, transport, rig and install 3 phase, 500kVA transformer (terminations are included under a separate line item)	\$29,900.00	\$59,800.00
13-J	3	Each	Furnish, transport, rig & install, & connect, primary pad mounted Metering Cabinet, including CT's and PT's and instrumentation wiring	\$51,500.00	\$154,500.00
13-K	3	Each	Furnish & Install above ground primary pedestal / pull box	\$1,420.00	\$4,260.00
14-A	8	Each	Furnish & install grounding & bonding in electric manholes per detail on dwg. #E-101	\$3,570.00	\$28,560.00
14-B	3	Each	Furnish & install grounding & bonding for pad mounted switchgear per detail on dwg. #E-104	\$14,500.00	\$43,500.00
14-C	6	Each	Furnish & install grounding & bonding for pad mounted sectionalizing cabinet per detail on dwg. #E-104	\$5,660.00	\$33,960.00
14-D	6	Each	Furnish & install grounding & bonding for 3 phase pad mounted transformer per detail on dwg. #E-105	\$4,540.00	\$27,240.00
14-E	4	Each	Furnish & install grounding & bonding for 1 phase pad mounted transformer per detail on dwg. #E-104	\$4,250.00	\$17,000.00
14-F	3	Each	Furnish & install grounding & bonding for primary metering switchgear per detail on dwg. #E-105	\$9,600.00	\$28,800.00
14-G	1	Each	Furnish & install grounding & bonding for 3 phase Primary Riser Pole per detail on Drawing #E-100	\$7,110.00	\$7,110.00
14-H	3	Each	Furnish & install grounding & bonding for Secondary Riser Pole per detail on Drawing #E-100	\$3,460.00	\$10,380.00
15-A	47,285	Linear Feet	Receive, pull / install medium voltage main feeder 9A cable (3-1/C #750 kcmil), Tag 1 on dwg. #E-201, termination of cable to be included under cable termination category	\$29.00	\$1,371,265.00
15-B	21,796	Linear Feet	Receive, pull / install 3 phase medium voltage feeder cable (1/C #1/0) tag 2 on dwg. #E-400, termination of cable to be included under cable termination category	\$22.00	\$479,512.00
15-C	255	Linear Feet	Receive, pull / install 1 phase medium voltage feeder cable (1/C #1/0) tag 3 on dwg. #E-400, termination of cable to be included under cable termination category	\$81.00	\$20,655.00
16-A	9	Each	Furnish & Install 15kV Cold Shrink Splices for #1/0 AWG Cable Tag 1A on dwg. #E-400)	\$7,200.00	\$64,800.00
16-B	9	Each	Furnish & Install 15kV Cold Shrink Splices for #750 kcmil Cable Tag 1B on dwg. #E-400)	\$10,700.00	\$96,300.00
16-C	151	Each	Furnish & Install 200A, 15kV Elbows (Tag 2A on dwg. #E-400)	\$1,060.00	\$160,060.00
16-D	0	Each	Furnish & Install 200A, 15kV, fused load break Elbows, with fuses (Tag 3A on dwg. #E-400). Refer to one line diagram for all fuse sizes.	\$0.00	\$0.00



Item	Quantity	Unit	Description	Unit Cost	Total Cost
16-E	214	Each	Furnish & install Cable Fault Indicators (Tag 4 on dwg. #E-400)	\$1,030.00	\$220,420.00
16-F	76	Each	Furnish & install Deadbreak Elbows, 600A, 15/25kV (Tag 5 on dwg. #E-400)	\$2,390.00	\$181,640.00
16-G	12	Each	Furnish & install 15KV Reducing Tap Plug (Tag 6A on dwg. #E-400)	\$1,760.00	\$21,120.00
16-H	34	Each	Furnish & Install 18kV elbow type Surge Arresters (Tag 7A on dwg. #E-400)	\$1,750.00	\$59,500.00
16-I	13	Each	Furnish & Install Load Break Feed Thru Inserts (Tag 8A on dwg. #E-400)	\$2,330.00	\$30,290.00
16-J	6	Each	Furnish & install outdoor termination kits., with support brackets, for #1/0 awg MV Cable (Tag 10A on dwg. #E-400)	\$3,250.00	\$19,500.00
16-K	6	Each	Furnish & install outdoor termination kits., with support brackets, for #750 kcmil MV Cable (Tag 10B on dwg. #E-400)	\$4,540.00	\$27,240.00
16-L	18	Each	Furnish & install 4 point, 200A junction (Tag 11B on dwg. #E-400)	\$3,730.00	\$67,140.00
16-L	48	Each	Furnish & install 4 point, 600A variable junction (Tag 11D on dwg. #E-400)	\$6,440.00	\$309,120.00
16-M	8	Each	Furnish & install 15kV Insulating Cap for 200A Bushings (Tag 12A on dwg. #E-400)	\$1,490.00	\$11,920.00
16-M	24	Each	Furnish & install 15kV Insulating Cap for 600A Bushings (Tag 13 on dwg. #E-400)	\$1,410.00	\$33,840.00
16-N	3	Each	Furnish & install 15kV modular splice kit for #1/0 AWG cable (Tag 14 on dwg. #E-400) complete with T-Body, Insulatng Plugs, Tap Plugs, Connection Plugs, cable adapters and compression lugs	\$8,600.00	\$25,800.00
16-O	1	Lot	10% additional MV cable accessories (line item 16A thru 16N) with a minimum of 1 additional accessory.	\$52,700.00	\$52,700.00
16-P	8	Each MH	Furnish & install manhole accessories for per bill of material on Dwg. E-100	\$13,300.00	\$106,400.00
17-A	1400	Linear Feet	Furnish & install #600 kcmil cu, 600 volt conductor (secondary)	\$91.00	\$127,400.00
17-B	4220	Linear Feet	Furnish & install #500 kcmil cu, 600 volt conductor (secondary)	\$61.00	\$257,420.00
17-C	300	Linear Feet	Furnish & install #250 kcmil cu, 600 volt conductor (secondary)	\$88.00	\$26,400.00
17-D	810	Linear Feet	Furnish & install #3/0 cu, 600 volt conductor (secondary)	\$54.00	\$43,740.00
17-E	450	Linear Feet	Furnish & install #1/0 cu, 600 volt conductor (secondary)	\$68.00	\$30,600.00
17-F	1,450	Linear Feet	Furnish & install #2 cu, 600 volt conductor (secondary)	\$21.00	\$30,450.00
17-G	11,550	Linear Feet	Furnish & install #8 cu, 600 volt conductor (from transformers for street lights)	\$5.00	\$57,750.00
17-H	18	Each	Secondary lugs / Terminations (1 phase) at transformer, meter/disconnect	\$4,480.00	\$80,640.00
17-I	48	Each	Secondary lugs / Terminations (3 phase) at transformer, meter/disconnect	\$3,860.00	\$185,280.00
17-J	1	Lot	Insulated/weatherproof multi tap connectors in secondary handholes	\$9,940.00	\$9,940.00
17-K	8	Each	Furnish & install street light fixture, pole, arm, foundation, fuses, and grounding/bonding per street light fixture detail on dwg. #E-100	\$10,200.00	\$81,600.00
17-L	3	Each	Fiber/Scada for Pad Mounted Switchgear	\$2,500.00	\$7,500.00
18-A	47,285	Linear Feet	Electrical Acceptance Testing for #750 kcmil, 15kV cable	\$13.00	\$614,705.00
18-B	22,051	Linear Feet	Electrical Acceptance Testing for #1/0, 15kV cable	\$17.00	\$374,867.00
18-C	20,180	Linear Feet	Electrical Acceptance Testing for 600 volt conductors	\$8.00	\$161,440.00
18-D	3	Each	Electrical Acceptance Testing for Pad Mounted Switchgear	\$15,900.00	\$47,700.00
18-E	16	Each	Electrical Acceptance Testing for pad mounted transformers and primary metering cabinet	\$4,800.00	\$76,800.00
19	1	Lot	Electrical Demolition: De-energize, disconnect, remove & dispose of existing electrical equipment as required to clear areas for new construction. in	\$222,000.00	\$222,000.00
Subtotal Electrical					\$6,614,064.00
TOTAL LUMP SUM CONSTRUCTION BID					\$15,241,011.00

## Attachment 2: Appendix A - Rates for Labor [2.5.A.3]

## Appendix A - Rate Sheet

ITEM NO.	ESTIMATED QUANTITY	UNIT	UNIT COST	DESCRIPTION	TOTAL COST
1	3000	Hours	\$190	Sr. Project Manager	\$570,000
2	4000	Hours	\$150	On-Site Project Manager	\$600,000
3	4000	Hours	\$140	On-Site Construction Manager	\$560,000
4	4000	Hours	\$125	Project/Construction Engineer	\$496,000
5	4000	Hours	\$105	Construction Inspector	\$420,000
6	2000	Hours	\$111	QA/QC Engineer	\$222,000
7	2000	Hours	\$91	Junior Engineer	\$182,000
8	2000	Hours	\$88	Document Control/Admin	\$176,000
9	800	Hours	\$170	Home Office Engineering Support	\$136,000
10	1000	Hours	\$120	GIS/Draftsman/CAD Operator	\$120,000
12	800	Days	\$125	Per Diem (per person per day)	\$100,000
<b>Est. Project Cost</b>					<b>\$3,582,000.00</b>

**Attachment 3: Bid Bond [8.17]**

VIWAPA FORM NO. 508  
June 1988 Edition

<b>VIRGIN ISLANDS WATER AND POWER AUTHORITY</b>		DATE BOND EXECUTED
<b>F. BID BOND</b> (See Instructions on Sheet 2)		5/30/2025
PRINCIPAL Haugland Virgin Islands Inc., Foothills, Suite 101, 9151 Estate Thomas, St. Thomas, VI 00802 A Corporation formed under the laws of the U.S. Virgin Islands		
SURETY Travelers Casualty and Surety Company of America One Tower Square, Hartford, CT 06183 A Corporation formed under the laws of the State of Connecticut		
PENAL SUM OF BOND (Express in words and figures) Five Percent of Proposal Price (5% of P.P.)		DATE OF BID 5/30/2025

KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the Virgin Islands Water and Power Authority, hereinafter called the Authority, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal has submitted the accompanying bid, dated as shown above, for PR-11-25 Underground Electrical Construction Project Feeder 9A Primary St. Thomas, USVI

NOW THEREFORE, if the principal shall not withdraw said bid within the period specified therein after the opening of the same, or, if no period be specified, within sixty (60) days after said opening, and shall within the period specified therefor, or, if no period be specified, within ten (10) days after the prescribed forms are presented to him for signature, execute such further contractual documents, if any, as may be required by the terms of the bid as accepted, and give bonds with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of the resulting contract, and for the protection of all persons supplying labor and material in the prosecution of the Work provided for in such contract, or in the event of the withdrawal of said bid within the period specified, or the failure to enter into such contract and give such bonds within the time specified, if the principal shall pay the Authority the difference between the amount specified in said bid and the amount for which the Authority may procure the required work, supplies, and services, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In Presence of:

WITNESS		INDIVIDUAL PRINCIPAL	
1.	as to		(SEAL)
2.	as to		(SEAL)
3.	as to		(SEAL)
4.	as to		(SEAL)

WITNESS		INDIVIDUAL SURETY	
1.	as to		(SEAL)
2.	as to		(SEAL)

WITNESS ATTEST: <i>Sina Rooney</i>	CORPORATE PRINCIPAL Haugland Virgin Islands Inc.	
	BUSINESS ADDRESS Foothills, Suite 101, 9151 Estate Thomas, St. Thomas, VI 00802	
Witness ATTEST: <i>Lace Druce</i>	BY <i>[Signature]</i>	AFFIX CORPORATE SEAL
	TITLE CFO	
CORPORATE SURETY Travelers Casualty and Surety Company of America		
BUSINESS ADDRESS One Tower Square, Hartford, CT 06183		
BY <i>[Signature]</i>		
TITLE Susan Lipski Attorney-in-Fact License No. 300352873		

1.

VIWAPA FORM NO. 508  
June 1966 Edition

The rate of premium on this bond is N/A per thousand.

Total amount of premium charged, \$ N/A

(The above must be filled in by corporate surety)

#### CERTIFICATE AS TO CORPORATE PRINCIPAL

I, Edward Tackenberg, certify that I am the secretary of the corporation named as principal in the within bond; that Matthew Therien who signed the said bond on behalf of the principal, was then CEO of said corporation; that I know his signature, and his signature thereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.



[ CORPORATE  
SEAL ]

#### INSTRUCTIONS

1. This form shall be used for Contracts whenever a bid bond is required. There shall be no deviation from this form except as authorized by the Virgin Islands Water and Power Authority.
2. The surety on the bond may be any corporation authorized by the Secretary of the Treasury to act as surety, or two responsible individual sureties. Where individual sureties are used, this bond must be accompanied by a completed Standard Affidavit of Individual Surety for each individual surety.
3. The name, including full Christian name, and business or residence address of each individual party to the bond shall be inserted in the space provided therefor, and each such party shall sign the bond with his usual signature on the line opposite the scroll seal, and if signed in Maine or New Hampshire, an adhesive seal shall be affixed opposite the signature.
4. If the principals are partners, their individual names shall appear in the space provided therefor, with the recital that they are partners composing a firm, naming it, and all the members of the firm shall execute the bond as individuals.
5. If the principal or surety is a corporation, the name of the State in which incorporated shall be inserted in the space provided therefor, and said instrument shall be executed and attested under the corporate seal as indicated in the form. If the corporation has no corporate seal the fact shall be stated, in which case a scroll or adhesive seal shall appear following the corporate name.
6. The official character and authority of the person or persons executing the bond for the principal, if a corporation, shall be certified by the secretary or assistant secretary, according to the form herein provided. In lieu of such certificate there may be attached to the bond copies of so much of the records of the corporation as will show the official character and authority of the officer signing, duly certified by the secretary or assistant secretary, under the corporate seal, to be true copies.
7. The date of this bond must not be prior to the date of the instrument in connection with which it is given.

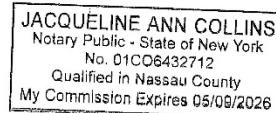
**ACKNOWLEDGEMENT FOR PRINCIPAL**

**ACKNOWLEDGEMENT FOR PRINCIPAL IF CORPORATION**

STATE OF New York )  
COUNTY OF Suffolk )

ON THE 27<sup>th</sup> DAY OF May, 2025 BEFORE ME  
PERSONALLY APPEARED Matthew Therien, TO ME  
KNOWN AND KNOWN TO ME TO BE THE Chief Financial Officer OF  
HAUGLAND VIRGIN ISLANDS INC. DESCRIBED IN AND WHO EXECUTED THE  
FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT (S)HE  
EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT  
(S)HE EXECUTED THE SAME AS AND FOR THE ACT AND DEED OF SAID  
CORPORATION.

*Jacqueline A. Collins*  
Notary Public





**Attachment 4: Performance and Payment Bonds [3.3, 4.10.7, 8.17]**



**Travelers Bond & Financial Products**  
Construction Services  
One Tower Square  
Hartford, CT 06183  
Phone: 732-321-5600  
Fax: 866-829-0409

**PERFORMANCE AND PAYMENT BOND COMMITMENT LETTER**

May 30, 2025

To: Haugland Virgin Islands Inc.  
Foothills Ste 101, 9151 Estate Thomas, St. Thomas, VI 00802

Re: Virgin Islands Water and Power Authority

Sirs:

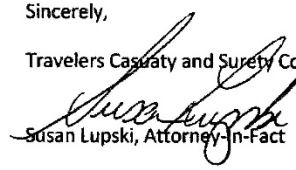
We have been informed that the Virgin Islands Water and Power Authority ("the Authority") requires that you obtain a surety bond to guarantee your full performance of all terms and conditions of any contract that you may be awarded as a result of your submitting a bid in the amount of \$100% of Total Amount Bid in response to PR-11-25 Underground Electrical Construction Project Feeder 9A Primary St. Thomas, USVI. That bond requirement is outlined at Clause 22 of the Authority's General Contract Terms and must be submitted on the Authority's "VIWAPA Form No. 512".

This letter indicates our commitment to issue in favour of the "Virgin Islands Water and Power Authority", upon the negotiation of all applicable terms with you, a performance bond and a payment bond naming you as the "Principal" and in an amount not exceeding your bid price. That bonds shall remain in full force and effect throughout the entire period of the contract, as well as any modifications and extensions to the subject contract, and for a one (1) year warranty period commencing after the date of the Authority's acceptance of the work as conforming to the contract.

We will execute the Authority's bond form at the appropriate time.

Sincerely,

Travelers Casualty and Surety Company of America

  
Susan Lupski, Attorney-In-Fact



**TRAVELERS**

**Travelers Casualty and Surety Company of America  
Travelers Casualty and Surety Company  
St. Paul Fire and Marine Insurance Company**

**POWER OF ATTORNEY**

Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and the Companies do hereby make, constitute and appoint **Susan Lupski** of **UNIONDALE**, **New York**, their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 16th day of February, 2024.



State of Connecticut

By:

Bryce Grissom, Senior Vice President

City of Hartford ss.

On this the 16th day of February, 2024, before me personally appeared Bryce Grissom, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2026



Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary, and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary of each of the Companies do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 30th day of May, 2025



Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.  
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.

ACKNOWLEDGEMENT OF SURETY COMPANY

STATE OF NEW YORK

COUNTY OF NASSAU

On this May 30, 2025 before me personally came Susan Lupski to me known, who, being by me duly sworn, did depose and say; that he/she resides in Nassau County, State of New York, that he/she is the Attorney-In-Fact of the Travelers Casualty and Surety Company of America the corporation described in which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to Travelers Casualty and Surety Company of America (Surety) his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such Certificate has not been revoked.



Notary Public

**Karen Bravo**  
Notary Public - State of New York  
No. 01BR0022282  
Qualified in Nassau County  
Commission Expires 03/14/2028

TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA

HARTFORD, CONNECTICUT 06183

FINANCIAL STATEMENT AS OF DECEMBER 31, 2024

CAPITAL STOCK \$ 6,480,000

ASSETS		LIABILITIES & SURPLUS	
BONDS	\$ 5,357,694,447	LOSSES	\$ 1,648,851,742
STOCKS	99,502,344	LOSS ADJUSTMENT EXPENSES	199,492,904
CASH AND INVESTED CASH	99,869,628	REINSURANCE PAYABLE ON PAID LOSSES & LOSS ADJ. EXPENSES	15,148,347
OTHER INVESTED ASSETS	8,866,783	COMMISSIONS	62,999,717
SECURITIES LENDING REINVESTED COLLATERAL ASSETS	30,953,008	OTHER EXPENSES	99,184,511
INVESTMENT INCOME DUE AND ACCRUED	45,430,962	TAXES, LICENSES AND FEES	18,511,579
PREMIUM BALANCES	346,017,428	CURRENT FEDERAL AND FOREIGN INCOME TAXES	7,102,552
REINSURANCE RECOVERABLE	62,034,928	UNEARNED PREMIUMS	1,547,984,865
NET DEFERRED TAX ASSET	78,278,940	ADVANCE PREMIUM	3,870,518
UNDISTRIBUTED PAYMENTS	15,807,785	POLICYHOLDER DIVIDENDS	28,972,587
GUARANTY FUNDS RECEIVABLE OR ON DEPOSIT	2,148,727	CEDED REINSURANCE NET PREMIUMS PAYABLE	67,878,540
OTHER ASSETS	1,100,108	AMOUNTS WITHHELD / RETAINED BY COMPANY FOR OTHERS	17,071,065
		REMITTANCES AND ITEMS NOT ALLOCATED	10,466,481
		PROVISION FOR REINSURANCE	8,748,887
		PAYABLE TO PARENTS, SUBSIDIARIES AND AFFILIATES	79,837,444
		PAYABLE FOR SECURITIES LENDING	30,953,908
		ESCHEAT LIABILITY	660,014
		OTHER ACCRUED EXPENSES AND LIABILITIES	4,726
		TOTAL LIABILITIES	\$ 3,973,025,960
		CAPITAL STOCK	\$ 6,480,000
		PAID IN SURPLUS	433,803,760
		OTHER SURPLUS	1,815,349,418
		TOTAL SURPLUS TO POLICYHOLDERS	\$ 2,256,533,178
TOTAL ASSETS	\$ 6,128,659,161	TOTAL LIABILITIES & SURPLUS	\$ 6,128,659,161

STATE OF CONNECTICUT )  
COUNTY OF HARTFORD ) SS.  
CITY OF HARTFORD )

MICHAEL J. DOODY, BEING DULY SWORN, SAYS THAT HE IS VICE PRESIDENT - FINANCE, OF TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA,  
AND THAT TO THE BEST OF HIS KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT STATEMENT OF THE FINANCIAL CONDITION OF SAID  
COMPANY AS OF THE 31ST DAY OF DECEMBER, 2024

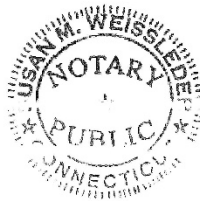


*Michael J. Doody*  
VICE PRESIDENT - FINANCE

SUBSCRIBED AND SWORN TO BEFORE ME THIS  
15TH DAY OF MARCH, 2025

NOTARY PUBLIC

SUSAN M. WEISSELEDER  
Notary Public  
My Commission Expires November 30, 2027





**Attachment 5: Insurance [4.10.9, 8.17]**



**Travelers Casualty and Surety Company of America**  
**Travelers Casualty and Surety Company**  
**St. Paul Fire and Marine Insurance Company**

**POWER OF ATTORNEY**

Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and the Companies do hereby make, constitute and appoint **Susan Lupski** of **UNIONDALE**, **New York**, their true and lawful Attorney(s)-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 16th day of February, 2024.



State of Connecticut

By.   
Bryce Grissom, Senior Vice President

City of Hartford ss.

On this the 16th day of February, 2024, before me personally appeared Bryce Grissom, who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2026



  
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

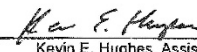
**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 30th day of May, 2025



  
Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.  
Please refer to the above-named Attorney(s)-in-Fact and the details of the bond to which this Power of Attorney is attached.

ACKNOWLEDGEMENT OF SURETY COMPANY

STATE OF NEW YORK

COUNTY OF NASSAU

On this May 30, 2025 before me personally came Susan Lupski to me known, who, being by me duly sworn, did depose and say; that he/she resides in Nassau County, State of New York, that he/she is the Attorney-In-Fact of the Travelers Casualty and Surety Company of America the corporation described in which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to Travelers Casualty and Surety Company of America (Surety) his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such Certificate has not been revoked.



Notary Public

**Karen Bravo**  
Notary Public - State of New York  
No. 01BR0022282  
Qualified in Nassau County  
Commission Expires 03/14/2028



TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA

HARTFORD, CONNECTICUT 06183

FINANCIAL STATEMENT AS OF DECEMBER 31, 2024

CAPITAL STOCK \$ 6,400,000

ASSETS		LIABILITIES & SURPLUS	
BONDS	\$ 5,357,894,447	LOSSES	\$ 1,848,831,742
STOCKS	99,602,344	LOSS ADJUSTMENT EXPENSES	166,492,904
CASH AND INVESTED CASH	69,689,828	REINSURANCE PAYABLE ON PAID LOSSES & LOSS ADJ. EXPENSES	15,148,347
OTHER INVESTED ASSETS	8,066,793	COMMISSIONS	62,390,717
SECURITIES LENDING REINVESTED COLLATERAL ASSETS	30,943,998	OTHER EXPENSES	89,184,511
INVESTMENT INCOME DUE AND ACCRUED	45,630,952	TAXES, LICENSES AND FEES	16,311,679
PREMIUM BALANCES	346,017,428	CURRENT FEDERAL AND FOREIGN INCOME TAXES	7,102,553
REINSURANCE RECOVERABLE	82,934,928	UNEARNED PREMIUMS	1,847,994,685
NET DEFERRED TAX ASSET	78,278,940	ADVANCE PREMIUM	3,970,618
UNDISTRIBUTED PAYMENTS	15,607,785	POLICYHOLDER DIVIDENDS	25,972,557
GUARANTY FUNDS RECEIVABLE OR ON DEPOSIT	2,149,727	CEDED REINSURANCE NET PREMIUMS PAYABLE	57,879,540
OTHER ASSETS	1,100,108	AMOUNTS WITHHELD / RETAINED BY COMPANY FOR OTHERS	17,071,865
		REMITTANCES AND ITEMS NOT ALLOCATED	10,456,481
		PROVISION FOR REINSURANCE	8,746,827
		PAYABLE TO PARENTS, SUBSIDIARIES AND AFFILIATES	79,937,444
		PAYABLE FOR SECURITIES LENDING	30,943,998
		ESCHEAT LIABILITY	595,014
		OTHER ACCRUED EXPENSES AND LIABILITIES	4,729
		TOTAL LIABILITIES	\$ 3,873,025,685
		CAPITAL STOCK	\$ 6,400,000
		PAID IN SURPLUS	433,803,780
		OTHER SURPLUS	1,815,249,416
		TOTAL SURPLUS TO POLICYHOLDERS	\$ 2,255,533,176
TOTAL ASSETS	\$ 6,125,659,161	TOTAL LIABILITIES & SURPLUS	\$ 6,128,559,161

STATE OF CONNECTICUT )  
COUNTY OF HARTFORD ) SS.  
CITY OF HARTFORD )

MICHAEL J. DOODY, BEING DULY SWORN, SAYS THAT HE IS VICE PRESIDENT - FINANCE, OF TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA,  
AND THAT TO THE BEST OF HIS KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT STATEMENT OF THE FINANCIAL CONDITION OF SAID  
COMPANY AS OF THE 31ST DAY OF DECEMBER, 2024.

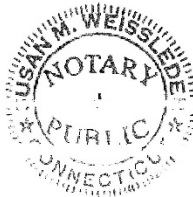


*Michael J. Doody*  
VICE PRESIDENT - FINANCE

SUBSCRIBED AND SWORN TO BEFORE ME THIS  
15TH DAY OF MARCH, 2025

NOTARY PUBLIC

SUSAN M. WEISSELEDER  
Notary Public  
My Commission Expires November 30, 2027



**Attachment 6: Business License [8.17]**

THE GOVERNMENT OF THE VIRGIN ISLANDS DEPARTMENT OF LICENSING AND CONSUMER AFFAIRS <b>BUSINESS LICENSE</b> KNOW ALL BY THIS PRESENT	
<p>That, in accordance with the applicable provisions of Title 3 Chapter 16 and Title 27 V.I.C. relating to the licensing of businesses and occupations, and compliance having been made with the provisions of 10 V.I.C. Sec. 41 relating to the Civil Rights Act of the Virgin Islands, the following license is hereby granted.</p>	
<b>Licensee:</b>	HAUGLAND VIRGIN ISLANDS, INC.
<b>Trade Name:</b>	HAUGLAND VIRGIN ISLANDS, INC.
<b>Mailing Address</b>	<b>Physical Address</b>
P.O. BOX 11309 CHARLOTTE AMALIE ST. THOMAS VI 00801	62-1 & 62-2 ESTATE THOMAS NO. 6A NEW QTT SUITE 101 & 102 ST. THOMAS ST. THOMAS VI 00801
<b>Business No:</b> 43282	<b>License No:</b> 1-43282-3L
<b>Types of License(s)</b> Installation of Equipment Electric Service Rental of Equipment Solicitor, Sales & Commission Agt. Asphalt Paving Service	
<p>As provided by law, the authorized licensing authority shall have the power to revoke or suspend any License issued hereunder, upon finding, after notice and adequate hearing, that such revocation or suspension is in the public interest; provided, that any persons aggrieved by any such decision of this office shall be entitled to a review of the same by the Territorial Court upon appeal made within (30) days from the date of the decision; provided, further, that all decisions of this office hereunder shall be final except upon specific findings by the Court that the same was arrived at by fraud or illegal means.</p>	
<div>2024</div>	
<p>If a renewal is desired, the holder is responsible for making application for same without any notice from this office. It is the responsibility of the Licensee to notify the Department in writing within (30) days, when a license is to be cancelled or placed in inactive status. Failure to do so will result in the assessment of penalties as authorized by law.</p>	
<b>Valid from</b>	12/01/2024 until 12/31/2025
<b>Printed on</b>	12/05/2024
<b>Issued at</b>	St. Thomas, V.I.
<b>Fee</b>	650.00
<div>H. Nathalie Hodge Commissioner, Department of Licensing and Consumer Affairs</div>	
<b>THIS LICENSE MUST BE PROMINENTLY DISPLAYED AT PLACE OF BUSINESS</b>	

## **Attachment 7: Haugland's Corporate Safety Manual [8.8]**

Starting on the following page, Haugland provides our Corporate Safety Manual which outlines our approach and reflects our dedication to safety



**HEALTH**

**AND**

**SAFETY MANUAL**

**Revision 6**

**336 South Service Rd**  
**Melville, NY 11747**  
**(516) 336-6720**

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## **Environmental, Health and Safety Policy**

It is the company's policy that environmental, health and safety excellence is an integral part of our business practices. We at strive to protect the interests of our customers while ensuring the health and safety of our employees and the public. All employees at every level are responsible for observing environmental, health and safety requirements as they apply to their assigned responsibilities. We are committed to continually improving our environmental, health and safety practices, while providing a quality of work that is unmatched in the construction industry.

To meet this commitment shall continue to:

1. Develop and implement effective environmental, health and safety programs that will assure compliance with all Federal, State, Local and Customer safety regulations.
2. Ensure accountability for effective management of environmental, health and safety programs and issues through periodic audits, reviews and corrective action programs.
3. Provide the necessary equipment, resources and working conditions to minimize all recognized hazards and conditions that could cause personal injuries and/or health problems for our employees or the public.
4. Provide training to prepare employees to meet environmental, health and safety challenges.
5. Implement work methods and procedures that will promote efficient operations and quality service that will comply with all environmental, health and safety regulations.

**A COMMITMENT TO "SAFETY" AND "QUALITY SERVICE" ARE ESSENTIAL FOR  
OVERALL SUCCESS AT HAUGLAND ENERGY GROUP LLC**

## **Section “A” Corporate Safety Policies and Procedures**

### **1.00 Overview**

1.1 Many companies involved in construction have written safety plans for individual safety topics, but few have an umbrella plan to summarize overall safety. This safety policy states Haugland Energy Group's overall view of safety and the tenets of the safety program for our company.

1.2 In order to establish and organize good safety policies and procedures, this Safety Policies and Procedures Written Plan summarizes information regarding general safety policies and procedures. Additional policies and site specific plans are developed for each job. The Safety Director is responsible for implementing and updating this plan.

### **2.00 General Company Safety Philosophy Statement**

2.1 This general company safety philosophy has been developed to reflect and communicate the proactive safety attitude maintained at this company.

2.2 The company will comply with appropriate safety and security laws and regulations such as those established by:

- The Occupational Safety and Health Act (OSHA),
- The EPA (Environmental Protection Agency),
- The DOT (Department of Transportation),
- ISO (International Organization for Standardization)
- Project Owner Environmental Health & Safety Rules
- All other applicable federal, state, and local safety and health regulations.

2.3 In addition, our corporate safety philosophy includes the following vision statements:

- We believe that the safety of employees is of utmost importance, along with quality, production, and cost-control. Maintenance of safe operating procedures at all times is of both monetary and human value, with the human value being far greater to the employer, the employee, and the community. The following principles support this philosophy:
- All injuries and accidents are preventable through establishment and compliance with safe work procedures.

- The prevention of bodily injury and safeguarding of health are the first considerations in all workplace actions and are the responsibility of every employee at every level.
- Written safety plans describing the safe work practices and procedures to be practiced in all workplace actions are an essential element of the overall workplace safety program. All employees at every level are responsible for knowing and following the safety practices described in the written safety plans.
- Off the job, all employees shall be similarly safe and demonstrate awareness of potential hazards.

### **3.00 Types of Written Safety Plans in Place**

3.01 Because we care about our employees and strive to provide a safe work place, we have put into place a number of written safety plans. These written plans provide guidance and direction for the safety issues they cover. The topics covered in written safety plans at this company include the following:

1. Hazard Assessment and PPE Selection
2. Hazard Communication Program
3. Accident/Injury Reporting and Investigation Plan
4. Exposure Control Plan (ECP) for Blood borne Pathogens
5. Excavations, Trenching and Shoring
6. Electric Safety Plan
7. Energy Control Program
8. Confined Space Program
9. Hearing Conservation Program
10. Compressed Gas Plan
11. Respiratory Protection Program
12. Emergency Action Plan
13. Machine/Equipment Safety and Guarding Plan
14. Fleet Safety and Procedures Program



- 15. Materials Handling
- 16. Environmental Compliance Program
- 17. Welding, Cutting and Brazing
- 18. Work Area Protection
- 19. Hearing Conservation Program
- 20. Sub-Contractor Safety Plan
- 21. Fall Protection Program
- 22. General Safety Requirements for Gas Utility Work

#### **4.00 General Safety Provisions**

4.01 This section covers general safety provisions, responsibility of individuals, project engineers, supervisors, foreman or person in charge and employee responsibility.

#### **5.00 General Provisions**

5.1 It shall be the responsibility of Haugland Energy Group to initiate and maintain such programs as may be necessary to comply with these rules.

5.2 Such programs shall provide for frequent and regular inspections of the job sites, materials, and equipment to be made by competent persons designated by Haugland Energy Group.

5.3 The use of any machinery, tool, material, or equipment which is not in compliance with the applicable requirement is prohibited. Such machine, tool, material or equipment shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation.

5.4 Haugland Energy Group shall permit only those employees qualified by training or experience, and required licensing to operate equipment and machinery.

5.5 It is the responsibility of each employee to report immediately to his supervisor when his driver's license is revoked.

## **6.00 Responsibility of Individuals**

6.1 Accident prevention shall be recognized as a part of all operations. It is the definite responsibility of managers and supervisors in charge of company operations to see that work is carried out in a safe manner and in accordance with all safe operating rules and instructions of Haugland Energy Group and its contract customers.

6.2 Any employee who unnecessarily endangers their own or others personal safety shall be subject to disciplinary action.

6.3 Compensation shall be granted in accordance with the following conditions;

a. The injury/illness was incurred in the line of duty;

b. The accident was not due to:

- Misconduct
- Violation of rules
- Failure to use proper safety devices on the part of the employee.

c. The employee reported the injury as promptly as possible under the circumstances.

6.4 Injury to company personnel shall be reported immediately in accordance with Haugland Energy Group's Accident Reporting and Investigation Plan.

## **7.00 Engineering**

7.01 The Engineering Department shall make every effort to be certain that all work can be accomplished in accordance with Haugland Energy Group's Health and Safety Plan and other applicable local, state and federal codes and standards.

## **8.00 Purchasing**

8.01 Haugland Energy Group management in charge of purchasing equipment, materials and supplies shall make every effort to be certain that all equipment, materials and supplies are in accordance with Haugland Energy Group's Environmental Health and Safety Plan and other applicable local, state and federal codes and standards.

## **9.00 Supervisors Responsibility**

9.1 Supervisors shall not permit any work to be performed without providing proper safeguards against all dangers that may be reasonably expected.

9.2 No employee shall be assigned a job which he is not qualified to perform or is able to do safely.

9.3 Employees shall at all times be adequately trained in and kept informed of the general and special precautions and instructions applying to their work. Adequate documentation of training shall be maintained.

9.4 All unsafe or environmentally non-compliant conditions reported shall be investigated and made safe before personnel are permitted to proceed with the work. Project owners shall be made aware of any changes in working conditions.

9.5 The supervisor shall see that all defective tools and equipment are tagged and removed from service.

## **10.00 Foreman or Person In Charge of Work Responsibility**

10.1 Each person in charge shall be responsible for general safety conditions and all accidents occurring under their supervision unless investigation shows that such conditions or accidents were due to circumstances beyond their control.

10.2 The person in charge shall direct that inspection be made of tools and equipment which are to be used for the day's work. All defective items shall be removed from service and tagged and a report submitted to the supervisor covering repair or replacement of such articles. It is the intent of this rule that an inspection of tools and equipment be made. The degree of inspection will be dependent upon the tool or article which is being used.

10.3 Personnel shall not be permitted to work when guards are out of place or without adequate protective equipment.

10.4 The person in charge shall take necessary steps to ensure that injuries to persons and damage to public or private property are eliminated.

10.5 The person in charge shall take special precautions during repair or construction work where conditions present a more than ordinary hazard. Before such work is started, the supervisor shall be informed.

10.6 When a person in charge finds working conditions unsafe, clearances inadequate, or tools and equipment unsuitable for the job, they shall halt operations, and make the corrections if possible and/or report the condition to their immediate supervisor.

10.7 The person in charge of the work where an accident occurs shall be responsible for obtaining all details of the accident and making a complete report on forms provided by the company.

## **11.00 Employee Responsibility**

11.1 It shall be the responsibility of every employee of Haugland Energy Group to act so as to provide:

11.1.1 Safety to self.

11.1.2 Safety to fellow employees.

11.1.3 Safety and protection to the persons and property of the public.

11.1.4 Safety and protection to property of the company.

11.2 Every employee shall familiarize themselves with Haugland Energy Group's health and safety plan and apply it to them and their work.

11.3 Employees shall report to work with all personal protective equipment issued or required for the work they are to perform.

11.4 Every employee shall report promptly to the person in charge or supervisor any dangerous or improper or substandard condition on any apparatus or equipment which comes to their attention.

11.5 Employees shall not engage in horseplay or other distractions.

11.6 Every employee shall observe all warnings, signs and signals which may prevent them or others' from becoming injured.

11.7 Whenever the work of any employee involves contact with hazardous conditions or equipment with which he or she is not familiar, he or she shall not proceed with the work until he or she is properly instructed and authorized. The supervisor or the person in charge shall determine the safe method and the proper way of carrying on the work.

11.8 Whenever a job is hazardous and is not protected with sufficient safeguards, the employee shall bring such facts to the attention of the supervisor. This also applies to guarding against injuries to the public as well as to Haugland Energy Group Employees.

11.9 Employees shall not use defective tools or equipment and shall always use good tools and equipment properly and carefully.

11.10 Employees shall be careful to maintain the necessary clearance so as not to strike each other with picks, shovels, hammers wrenches, etc.

11.11 Employees with long hair (extending beyond shirt collar) unless their hair is effectively contained under a safety hat or in a hair net shall not work near:

- a. Moving or rotating machinery or equipment;
- b. Welding or open flame operations;
- c. Where possibility of electric flash exists.

11.12 Employees whose work requires the wearing of respiratory equipment that requires a tight fit between the equipment and the employees face shall not have facial hair that interferes with the seal of the respirator mask.

11.13 Employees on a prescription drug that may cause physical limitations must notify their supervisor of the limitations. This is being done for the protection of the individual and for those working with him/her. This notification allows the supervisor to make job assignments accordingly.

## **12.00 Job Briefing**

12.1 Before starting any job, the supervisor or person in charge of work shall hold a brief discussion explaining the safe method of accomplishing the job. The following points will be understood:

12.2 Status of the equipment to be worked on, including what parts are pressurized, energized, or otherwise presents a hazard.

12.3 The proper placing of protective equipment including barriers, blocking, chains and locks, barricade tape or other safeguards insuring the safety of the men and equipment.

12.4 The employees own particular job and also the work to be performed by others.

12.5 Any change or break in the work procedure as outlined by the supervisor or person in charge of work, shall be preceded by additional briefing.

12.6 Tailgate safety meetings shall be held on a weekly basis by the supervisor, general foreman or the person in charge.

## **13.00 Preservation and Access to Employee Exposure Records**

13.1 Purpose: The purpose of this section is to provide Haugland Energy Group Employees and their designated representatives a right of access to relevant exposure records.

13.2 Definitions

13.2.1 "Access" means the right and opportunity to examine and copy.

13.2.2 "Designated representative" means any individual or organization to which an employee gives written authorization to exercise a right of access. For the purposes of access to employee exposure records and analyses using exposure or medical records, a recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

13.2.3 "Employee" means a current employee, a former employee, or an employee being assigned or transferred to work where there will be exposure to toxic substances or harmful physical agents. In the case of a deceased or legally incapacitated employee, the employee's legal representative may directly exercise all the employee's rights under this section.

13.2.4 "Employee exposure record" means a record containing any of the following kinds of information:

- Environmental (workplace) monitoring or measuring of a toxic substance or harmful physical agent, including personal, area, grab, wipe, or other form of sampling, as well as related collection and analytical methodologies, calculations, and other background data relevant to interpretation of the results obtained;
- Biological monitoring results which directly assess the absorption of a toxic substance or harmful physical agent by body systems (e.g., the level of a chemical in the blood, urine, breath, hair, fingernails, etc.) but not including results which assess the biological effect of a substance or agent or which assess an employee's use of alcohol or drugs;
- Material safety data sheets indicating that the material may pose a hazard to human health; or
- In the absence of the above, a chemical inventory or any other record which reveals where and when used and the identity (e.g., chemical, common, or trade name) of a toxic substance or harmful physical agent.

13.2.5 "Exposure" or "exposed" means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure and potential (e.g., accidental or possible) exposure, but does not include situations where the employer can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical non-occupational situations.

13.2.6 "Record" means any item, collection, or grouping of information regardless of the form or process by which it is maintained (e.g., paper document, microfiche, microfilm, X-ray film, or automated data processing).

### 13.3 Preservation of records



13.3.1 Unless a specific occupational safety and health standard provides a different period of time, Haugland Energy Group's Human Resource Dept. shall assure the preservation and retention of records as follows:

13.3.2 Employee exposure records: Each employee exposure record shall be preserved and maintained for at least thirty (30) years, except that:

- Background data to environmental (workplace) monitoring or measuring, such as laboratory reports and worksheets, need only be retained for one (1) year so long as the sampling results, the collection methodology (sampling plan), a description of the analytical and mathematical methods used, and a summary of other background data relevant to interpretation of the results obtained, are retained for at least thirty (30) years; and
- Material safety data sheets and paragraph (c) (5) (iv) records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least thirty (30) years (1); and
- Biological monitoring results designated as exposure records by specific occupational safety and health standards shall be preserved and maintained as required by the specific standard.

13.3.3 Employee medical records: The medical record for each employee shall be preserved and maintained for at least the duration of employment plus thirty (30) years, except that the following types of records need not be retained for any specified period:

- Health insurance claims records maintained separately from Haugland Energy Group's medical program and its records
- First aid records (not including medical histories) of one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and the like which do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job, if made on-site by a non-physician and if maintained separately from the Haugland Energy Group's medical program and its records, and
- The medical records of employees who have worked for less than (1) year for Haugland Energy Group need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment.

13.3.4 Analyses using exposure or medical records: Each analysis using exposure or medical records shall be preserved and maintained for at least thirty (30) years.

#### 13.4 Access to records

13.4.1 Whenever a Haugland Energy Group employee or designated representative requests access to a record, Haugland Energy Group shall assure that access is provided in a reasonable time, place, and manner. If Haugland Energy Group cannot reasonably provide access to the record within fifteen (15) working days, Haugland Energy Group shall within the fifteen (15) working days apprise the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

13.4.2 Whenever a Haugland Energy Group Employee or designated representative requests a copy of a record, Haugland Energy Group shall assure that either:

- A copy of the record is provided without cost to the employee or representative,
- The necessary mechanical copying facilities (e.g., photocopying) are made available without cost to the employee or representative for copying the record, or The record is loaned to the employee or representative for a reasonable time to enable a copy to be made.

## **Section “B” Accident Reporting and Investigation Plan**

### **1.00 Purpose**

1.1 An accident reporting and investigation plan prescribes methods and practices for reporting and investigating accidents that can be read and understood by all managers, supervisors, and employees. No matter how conscientious the safety effort at a company, accidents are going to happen sometimes due to human or system error.

1.2 This written Accident Reporting and Investigation Plan is intended to demonstrate Haugland Energy Group’s compliance with the requirements in 29 CFR 1904 by:

- prescribing methods and practices for reporting and investigating accidents, and
- providing a means to deal with workplace accidents in a standardized way.

1.3 In addition it is the policy of Haugland Energy Group to comply with all workers' compensation laws and regulations.

1.4 The requirements of this plan apply to all operations and departments at Haugland Energy Group.

### **2.00 Administrative Duties**

2.1 The Safety Director is responsible for developing and maintaining this written Accident Reporting and Investigation Plan.

2.2 This written Accident Reporting and Investigation Plan is kept at the main office.

### **3.00 Accident Reporting Procedures**

3.1 All accidents must be reported immediately by the employee(s) involved to their supervisor. Near miss accidents or incidents (when an employee nearly has an accident but is able to avoid it) shall be reported as well. If a supervisor is not available, then the employee shall contact their department manager or the Safety department. All accidents must be reported to Haugland Energy Group on forms supplied by the company for this purpose. In the event an accident does occur the following forms need to be documented:

3.1.1 First Report of Injury – must be submitted within 24 hours of an injury by the employee’s supervisor to the Corporate Safety Department. If no injury occurs this form does not need to be completed.

3.1.2 Vehicle Accident Report – must be submitted by the employee’s supervisor

within 24 hours of the vehicle accident to the Safety Department. If the employee(s) involved in the accident are unable to complete the form their supervisor or manager will complete the form for them. (See 4.00 Vehicle Accident Reporting Procedures)

3.1.3 General Liability Accident Report – must be submitted within 24 hours of the accident/incident by the employee’s supervisor to the Safety Department. This form shall also be used to document “near miss” accidents/incidents. Forms used for reporting near misses shall be labeled by writing “near miss” at the top of the form.

3.1.4 Police Reports – shall be obtained whenever possible.

3.1.5 Additional forms – any additional accident/incident forms required to be completed for the project owner shall be done so in the manner prescribe by that owner. These forms shall not be substituted for the required Haugland Energy Group forms listed above.

3.2 Disciplinary Actions – Any disciplinary actions taken as a result of the accident are at the discretion of management and shall be documented.

3.3 Any employee witnessing an accident at work is to call for emergency help or whatever assistance appears to be necessary. In addition, the employee is immediately to report the accident to his or her supervisor and take part in answering questions related to the Accident Report and Investigation.

## **4.00 Vehicle Accident Procedures**

### **In the Event of an Accident or Damage to Company Vehicle:**

4.1 In the event a driver is involved in an accident, please follow the instructions below:

- Stop and investigate
- Call for medical aid, if necessary
- Notify police, and obtain police report
- Notify your supervisor or manager, dispatch, fleet manager, and the safety department
- DO NOT ADMIT FAULT!!
- Complete Haugland Energy Group Accident Report Form (if the employee(s) involved in the accident are unable to complete the form their supervisor will complete the form for them)
- When an accident involves another vehicle, get the following information:
  - Driver’s name
  - Address
  - Phone number
  - Name of insurance company
  - Vehicle registration number
  - Vehicle license plate number
  - If possible, obtain the name, address and phone number of any witness
  - Name, badge number and address of any investigating police agency
  - Note if any injuries are reported by anyone in the accident

4.2 The department supervisor or manager must investigate and report findings of the accident or damages to the corporate office.

4.3 Do not discuss the accident with anyone other than your supervisor, manager or Haugland Energy Group administrative staff.

4.4 If any representative from the other driver's insurance company contacts you for a statement (either written or recorded), refer that person to your Department Manager.

## **5.00 Accident Investigation Procedures**

5.1 Thorough investigation of all accidents will lead to identification of accident causes and help:

- reduce economic losses from injuries and lost productive time;
- determine why accidents occur, where they happen, and any trends that might be developing.
- Employees develop an awareness of workplace problems and hazards;
- identify areas for process improvement to increase safety and productivity;
- note areas where training information or methods need to be improved; and
- suggest a focus for safety program development.

5.2 For all accident investigations, Safety Director or his/her designee (Managers, Supervisors, and General Foreman) will perform the following duties:

5.2.1 Assess the incident; ensure no further potential for injury exists and that the proper notification procedures have been followed.

5.2.2 Written statements signed by the employee will be documented. Ask the employee(s) involved in the accident and any witnesses, in separate interviews, to tell in their own words exactly what happened. Repeat the employee's version of the event back to him/her and allow the employee to make any corrections or additions.

5.02.2.1 Employee Accident/Incident Statement form – shall be completed when necessary by employees involved in or witness to an accident/incident.

5.02.3 Investigation reports and witness statements will be forwarded to the Safety Department. The final accident investigation report will be written by the safety department and shall include a detailed summary of events surrounding the accident.

5.02.3.1 Supervisor Accident Investigation Forms – shall be completed by the employee's supervisor whenever an accident/incident has occurred.

5.02.4 Corrective action: Assessments shall be made by the Safety Department and respective Department Manager of what corrective actions need to be taken to avoid future incidents (i.e. retraining, safety meeting etc.).

5.3 The accident investigation report is used to:

- Track and report injuries on an annual basis;
- Group injuries by type, cause, body part affected, time of day and process involved;
- determine if any trends in injury occurrence exist and graph those trends if possible;
- identify any equipment, materials, or environmental factors that seem to be commonly involved in injury incidents;
- discuss the possible solutions to the problems identified with the safety team and superiors; and
- proceed with improvements to reduce the likelihood of future injuries.

5.4 \*Employees who do not comply with the reporting and investigation procedures mentioned in this plan will be subject to company disciplinary action.

## **6.00 Injury/Medical Issues**

6.1 If a workplace accident results in injury or illness requiring hospitalization of three or more employees or a fatality of one or more employee, the Safety Director Manager will report the incident within eight hours by phone or in person to the nearest OSHA office:

6.1.1 Operations Headquarters (Long Island): to the Long Island Area Office: 1400 old Country Rd., Suite 208, Westbury, NY 11590. Phone: (516) 334-3344, Fax: (516) 334-3326.

6.1.2 New York (Upstate): to the Albany Area Office: 401 New Karner Rd., Suite 300, Albany, New York 12205-3809. Phone: (518) 464-4338, Fax (518) 464-4337.

6.01.4 New Jersey: to the Parsippany Area Office: 299 Cherry hill Rd., Suite 120, Marlton, New Jersey 07054. Phone (973) 263-1003, Fax (973) 299-7161.

6.1.6 Connecticut: to the Hartford Area Office: Federal Office Building, 450 Main St., Room 613, Hartford, Connecticut 06103. Phone (860) 240-3152, Fax (860) 240-3155.

6.1.7 Massachusetts: to the Springfield Area Office: 1441 Main St., Room 550, Springfield, Massachusetts 01103-1493. Phone (413) 785-0123, Fax (413) 785-0136.

6.02 If an injured person is taken to a doctor, a statement from the doctor will be attached to



the Accident Report form.

## **7.00 Recordkeeping**

7.01 The Safety Director is responsible for maintaining the following records and documentation:

- OSHA 300 log of injuries and illnesses
- Accident investigation reports
- Training records

## **8.00 Training**

8.01 This plan is an internal document guiding the action and behaviors of employees, so they need to know about it. To communicate the new accident reporting and investigation plan, all employees are given a thorough explanation as to why the plan was prepared and how individuals may be affected by it.

## **9.00 Program Evaluation**

9.01 The accident reporting and investigation program is evaluated and updated by the Safety Director according to the following schedule to determine whether the plan is being followed and if further training may be necessary: evaluations will take place on an annual basis.

## **Section “C” Exposure Control Plan (ECP) for Blood borne Pathogens**

### **1.00 Purpose**

1.1 This document serves as the written procedures Blood borne Pathogens Exposure Control Plan (ECP) for Haugland Energy Group. These guidelines provide policy and safe practices to prevent the spread of disease resulting from handling blood or other potentially infectious materials (OPIM) during the course of work.

1.2 This ECP has been developed in accordance with the OSHA Blood borne Pathogens Standard, 29 CFR 1910.1030. The purpose of this ECP includes:

- Eliminating or minimizing occupational exposure of employees to blood or certain other body fluids.
- Complying with OSHA's Blood borne Pathogens Standard, 29 CFR 1910.1030.
- Ensuring all employees receive the proper ECP training.

### **2.00 Exposure Determination**

2.01 For this contract exposure is limited to application of First Aid/CPR. Employees trained in such application can reasonably anticipate exposure to human blood or OPIM. While it may be required that certain employees be trained in First Aid/CPR, company policy does not require an employee to administer it.

### **3.00 Compliance Strategies**

3.01 Universal precautions – employees who can reasonably anticipate exposure to human blood and other potentially infectious materials will be trained to assume that all human and bodily fluids may be infectious and must be handled on the assumption they are infectious.

### **4.00 Engineering and Work Practice Controls**

4.1 Engineering and work practice controls will be used to eliminate or minimize exposure to employees at this facility. Where occupational exposure remains after institution of these controls, employees are required to wear personal protective equipment. At this company the following engineering controls are used:

- Removing soiled PPE as soon as possible.
- Cleaning and disinfecting all equipment and work surfaces potentially contaminated with blood or OPIM. Note: We use a solution of 1/4 cup chlorine bleach per gallon of water.

- Thorough hand washing with soap and water immediately after providing care or provision of antiseptic towelettes or hand cleanser where hand washing facilities are not available.
- Prohibition of eating, drinking, smoking, applying cosmetics, handling contact lenses, and so on in work areas where exposure to infectious materials may occur.
- Haugland Energy Group shall ensure that the worksite is maintained in a clean and sanitary condition. The employer shall determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area.

4.2 The above controls are examined and maintained on a regular schedule.

## **5.00 Hand Washing Facilities**

5.1 When circumstances require hand washing and facilities are not available, either an antiseptic cleanser and paper towels or antiseptic towelettes are provided. Employees must then wash their hands with soap and water as soon as possible.

5.2 Supervisors are to make sure that employees wash their hands and any other contaminated skin after immediately removing personal protective gloves, or as soon as feasible with soap and water. Supervisors also ensure that if employees' skin or mucous membranes become contaminated with blood or OPIM, then those areas are washed or flushed with water as soon as feasible following contact.

## **6.00 Personal Protective Equipment**

6.1 All personal protective equipment (PPE) used at this facility is provided without cost to employees. PPE is chosen based on the anticipated exposure to blood or OPIM. The protective equipment is considered appropriate only if it does not permit blood or OPIM to pass through or reach the employees' clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

6.2 Haugland Energy Group makes sure that appropriate PPE in the appropriate sizes is readily accessible at the work site or is issued without cost to employees by:

6.3 Work site supervisors will ensure that the necessary PPE is available to employees.

6.4 All repairs and replacements are made by Haugland Energy Group

6.5 Employees must remove all garments which are penetrated by blood immediately or as soon as possible.

6.6 Gloves

6.06.1 Employees must wear gloves when they anticipate hand contact with blood, OPIM, nonimpact skin, and mucous membranes, and when handling or touching contaminated items or surfaces.

## **7.00 Information and Training**

7.1 Haugland Energy Group ensures that blood borne pathogens trainers are knowledgeable in the required subject matter. We make sure that employees covered by the blood borne pathogens standard are trained at the time of initial assignment to tasks where occupational exposure may occur, and every year thereafter by the following methods:

- Annual training for all employees shall be provided within one year of their previous training. The Safety Department shall provide additional training when changes such as modification of tasks affect the employee's occupational exposure.

7.2 Training is tailored to the education and language level of the employee, and offered during the normal work shift. The training will be interactive and cover the following:

- The standard and its contents.
- The epidemiology and symptoms of blood borne diseases.
- The modes of transmission of blood borne pathogens.
- Haugland Energy Group's Blood borne Pathogen ECP, and a method for obtaining a copy.
- The recognition of tasks that may involve exposure.
- The use and limitations of methods to reduce exposure, for example engineering controls, work practices and personal protective equipment (PPE).
- The basis of selection of PPEs.
- The appropriate actions to take and persons to contact in an emergency involving blood or OPIM.
- The procedures to follow if an exposure incident occur, including the method of reporting and medical follow-up.
- The evaluation and follow-up required after an employee exposure incident.

7.3 Additional training is provided to employees when there are any changes of tasks or procedures affecting the employee's occupational exposure. Employees who have received training on blood borne pathogens in the 12 months preceding the effective date of this plan will only receive training in provisions of the plan that were not covered.

## **8.00 Recordkeeping**

8.1 Medical records shall be maintained in accordance with OSHA Standard 29 CFR 1910.20. These records shall be kept confidential, and must be maintained for at least the duration of employment plus 30 years. The records shall include the following:

- The name and social security number of the employee.
- A copy of the employee's HBV vaccination status, including the dates of vaccination.
- A copy of all results of examinations, medical testing, and follow-up procedures.
- A copy of the information provided to the healthcare professional, including a description of the employee's duties as they relate to the exposure incident, and documentation of the routes of exposure and circumstances of the exposure.

## 8.2 Availability

8.2.1 All employee records shall be made available to the employee in accordance with 29 CFR 1910.20. All employee records shall be made available to the Assistant Secretary of Labor for the Occupational Safety and Health Administration and the Director of the National Institute for Occupational Safety and Health upon request.

## 8.3 Transfer of Records

8.3.1 If this facility is closed or there is no successor employer to receive and retain the records for the prescribed period, the Director of the NIOSH shall be contacted for final disposition.

## 9.00 Evaluation and Review

9.01 This program and its effectiveness is reviewed every year and updated as needed. All provisions required by this standard will be implemented by January 1, 2009.

## 10.00 Hepatitis B Vaccination Program

10.1 For the duration of the contract for which this plan was written, Haugland Energy Group offers the Hepatitis B vaccine and vaccination series to all employees who have occupational exposure to blood borne pathogens, and post exposure follow-up to employees who have had an exposure incident.

10.2 All medical evaluations and procedures including the Hepatitis B vaccine and vaccination series and post exposure follow up, including prophylaxis are:

- Made available at no cost to the employee.
- Made available to the employee at a reasonable time and place.
- Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional.
- Provided according to the recommendations of the U.S. Public Health Service.

10.3 All laboratory tests are conducted by an accredited laboratory at no cost to the employee.

10.4 Participation in a pre-screening program is not a prerequisite for receiving Hepatitis B vaccination. If the employee initially declines Hepatitis B vaccination but at a later date while still covered under the standard decides to accept the vaccination, the vaccination will be made available. All employees who decline the Hepatitis B vaccination offered must sign the OSHA-required waiver indicating their refusal.

10.5 If a routine booster dose of Hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster doses will be made available.

## **11.00 Post-Exposure Evaluation and Follow-Up**

11.1 All exposure incidents are reported, investigated, and documented. When the employee is exposed to blood or OPIM, the incident is reported to the Safety Department. When an employee is exposed, he or she will receive a confidential medical evaluation and follow-up, including at least the following elements:

- Documentation of the route of exposure, and the circumstances under which the exposure-occurred.
- Identification and documentation of the source individual, unless it can be established that identification is infeasible or prohibited by state or local law. State or local laws affecting the investigation or documentation of exposure incidents are: New York State.
- The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the Safety Director establishes that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, will be tested and the results documented.
- When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated.
- Results of the source individual's testing are made available to the exposed employee, and the employee is informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

11.2 Collection and testing of blood for HBV and HIV serological status will comply with the following:

- The exposed employee's blood is collected as soon as possible and tested after consent is obtained;
- The employee will be offered the option of having their blood collected for testing of the employee's HIV/HBV serological status. The blood sample will be preserved for up to 90 days to allow the employee to decide if the blood will be tested for HIV serological status.

11.3 All employees who incur an exposure incident will be offered post-exposure evaluation and follow-up according to the OSHA standard. The healthcare professional responsible for the employee's Hepatitis B vaccination is provided with the following:

- A copy of 29 CFR 1910.1030.
- A written description of the exposed employee's duties as they relate to the exposure incident.
- Written documentation of the route of exposure and circumstances under which exposure occurred.



- Results of the source individuals blood testing, if available.

- All medical records relevant to the appropriate treatment of the employee including vaccination status.

11.4 Haugland Energy Group obtains and provides the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

11.5 The healthcare professional's written opinion for HBV vaccination must be limited to whether HBV vaccination is indicated for an employee, and if the employee has received such vaccination.

11.6 The healthcare professional's written opinion for post-exposure follow-up is limited to the following information:

- A statement that the employee has been informed of the results of the evaluation.
- A statement that the employee has been told about any medical conditions resulting from exposure to blood or OPIM which require further evaluation or treatment.

11.7 Note: All other findings or diagnosis shall remain confidential and will not be included in the written report.

## **Section “D” Electric Safety Plan**

### **1.00 General Company Policy**

1.1 The purpose of this program is to inform interested persons, including employees, that Haugland Energy Group is complying with the OSHA Electrical Safety Standard, Title 29 Code of Federal Regulations 1926 Subpart K, by determining that this workplace needs written procedures for preventing electric shock or other injuries resulting from direct/indirect electrical contacts to employees working on or near energized or de-energized parts. This program applies to all work operations at Haugland Energy Group where employees may be exposed to live parts and/or those parts which have been de-energized.

1.2 If, after reading this program, you find that improvements can be made, please contact or The Safety Director. We encourage all suggestions because we are committed to creating a safe workplace for all our employees and a successful electrical safety program is an important component of our overall safety plan. We strive for clear understanding, safe work practices, and involvement in the program from every level of the company.

### **2.00 Hazard Analysis Report**

2.01 To determine areas of Haugland Energy Group that need to be included in the Electrical Safety Program, the Safety Director has conducted a hazard analysis. This has provided us with information identifying which departments have equipment using electricity, various types of wiring installations, and the types of employee functions that must be covered by the Electrical Safety Program. The departments/areas of our company identified as having electrically operated equipment and/or wiring installations are Electric, Gas, G.C., Tree Trim, Shop and Warehouse.

### **3.00 Training**

3.01 At Haugland Energy Group all the persons working on or near energized or de-energized electric sources are considered "qualified" to work safely with electrical energy and have received the appropriate training and certification to do so. In addition to the basic training elements, our "qualified" employees are trained in the skills and techniques necessary to identify exposed live parts, determine nominal voltages, and clearance distances and corresponding voltages.

## **4.00 Lockout And Tagging**

4.1 It is Haugland Energy Group's policy that circuits and equipment must be disconnected from all electric energy sources before work on them begins, unless the employee is "qualified" to for live line work. We use lockout and tagging devices to prevent the accidental re-energizing of equipment. Lockout and tagging procedures are a critical component of our electrical safety program. The safety procedures that make up our lockout and tagging program include these elements (Refer to the Lock-out/Tag-out, Energy Control Program (Section 5) for further detail):

4.1.1 De-energizing circuits and equipment. We disconnect the circuits and equipment to be worked on from all electric energy sources and we release stored energy that could accidentally reenergize equipment. (Except for required live line work by qualified employees on overhead and underground electric transmission and distribution)

4.1.2 Only authorized employees are allowed to place a lock and tag on each disconnecting means used to de-energize our circuits or equipment before work begins. Our locks prevent unauthorized persons from re-energizing the equipment or circuits and the tags prohibit unauthorized operation of the disconnecting device.

4.1.3 Verification of de-energized condition of circuits and equipment. Prior to work on the equipment, we require that a "qualified" employee verify that the equipment is de-energized and cannot be restarted.

4.1.4 Before circuits or equipment are re-energized, we follow these steps in this order:

- A "qualified" employee conducts tests and verifies that all tools and devices have been removed.
- All exposed employees are warned to stay clear of circuits and equipment.
- Authorized employees remove their own locks and tags.
- We do a visual inspection of the area to be sure all employees are clear of the circuits and equipment.

## **5.00 Electric Equipment Safety**

5.1 All electrical equipment used on a project (hand tools etc.) must be protected with a ground-fault circuit interrupter.

5.2 Workers must inspect all electrical equipment, including extension cords, for the following hazards:

Missing ground pins on plugs  
Insulation pulled free from plugs or support connections

Damaged insulation

Exposed wires

Evidence of arcing, sparking, or smoking

5.3 When conditions are identified on equipment that makes it unsafe to operate, the equipment must be removed from service until repaired by a qualified person.

5.4 Portable lamps must be covered by a fixed, grounded (if metal) guard and equipped with an insulated handle.

5.5 Portable metal ladders and ladders with metal reinforcements are prohibited near energized electrical equipment.

5.6 Extension cords

- Flexible cords must be suitable for the condition and location of use and must be used as appropriate.
- Three wire extension cords must be used and must be rated for hard or extra-hard use.
- Extension cords must not be fastened with staples, hung with nails, or suspended on wires.

## **6.00 Safe Practices for Electric Utility Work**

6.1 General Safety Precautions

6.1.1 Electrical equipment and lines shall always be considered as energized unless they are positively proven to be de-energized and properly grounded. Operating voltage of lines and equipment shall be determined before working on or near energized parts. The following equipment shall be treated as energized equipment at the same voltage as the energized line to which they are connected or associated:

- a. Ungrounded: Tanks of transformers, capacitors, bolsters, regulators oil switches, line reclosers, and ungrounded portion of switch rods, handles and mechanisms.
- b. Ungrounded primary metering installations.
- c. All wires that are down due to storm damage or accidents and not properly grounded.
- d. All ungrounded wires in proximity of tree trimming operations and in trees.
- e. Ungrounded equipment of street circuits.

6.1.2 Personal protective equipment identified in this plan shall be worn as required, in addition to the basic safety equipment (i.e., hard hats, safety glasses, and traffic vests as required).

6.1.3 Additional safety rules for all employees are as follows:

Be continually alert for unsafe conditions or work practices. Correct them if possible or report them to the supervisor immediately;

All accidents or injuries shall be immediately reported to the supervisor. Near misses shall be reported to help prevent future accidents, (refer to the Accident Reporting/Investigation Plan for details);

Employees shall not engage in practical joking or “horseplay”

Good job site and shop housekeeping shall be maintained. Work materials and tools shall be properly stored to prevent tripping hazards or possible damage to the equipment or material;

When working at night, spotlight or portable lights for emergency lighting shall be provided, as needed, to perform the work safely;

When working over or near water, and when danger of drowning exists, suitable protection shall be provided.

## 6.2 Pre-Job Planning

6.2.1 The first step toward safe and efficient lineman operating starts with the planning board. Pre-job planning for safety will help to reduce accidents, employee injuries, and promote efficiency once the job gets underway. Hazards shall be anticipated and plans developed to control or eliminate them. These plans shall be followed carefully and thoroughly for the duration of the project.

## 6.3 Initial Inspecting and Testing

6.3.1 Existing conditions shall be determined before starting work, by an inspection or a test. Such conditions shall include, but are not limited to, energized lines and equipment, condition of poles, and the location of circuits, switches and equipment, including power and communication lines, CATV, and fire alarm circuits.

6.3.2 Electric equipment and lines shall be considered energized until determined to be de-energized by tests or other appropriate methods or means.

6.3.3 Operating voltage of equipment and lines shall be determined before working on or near energized parts.

## 6.4 Climbing

6.4.1 The following are the safe practices that shall be observed by all Haugland Energy Group Employees when climbing and working on utility poles:

1. Before climbing all poles are to be inspected to assure they are in safe condition for the work to be performed. Inspections shall be made for rot, knots, nails, proper support etc.
2. Poles and structures that may be unsafe will not be climbed until made safe by guying, bracing or by other adequate means. Securing devices shall remain throughout the time any work is being performed. When poles or structures are deemed unsafe alternate means shall be considered, (i.e. aerial buckets);
3. Wires shall not be attached or removed until it is determined the pole or structure can withstand the altered strain.
4. Employees shall not wear climbing gaffs while doing work on the ground, on ladders, in aerial buckets or on platforms. Gaffs shall be kept within safe lengths (1-1/4" minimum), properly shaped and sharp.
5. Body belts, meeting the requirements of OSHA standard 1926.959, with straps or lanyards, shall be worn to protect employees working at elevated locations on poles, towers, or other structures, except where such use creates a greater hazard to safety of the employees. In such cases other safeguards must be employed. Belts and straps shall be inspected before each use.
6. Safety belts shall not be fastened around the pole above the uppermost pole attachment position, except where the pole top or attachment is above eye level.
7. Employees shall not trust their weight to guy wires, pins, braces, conductors, or other such equipment that might prove unstable.
8. When two or more employees are at work on the same pole at the same time, one shall reach the work position before the next leaves the ground. They shall descend the pole one at a time.

## 6.5 Personal Protective Equipment

### 6.5.1 Hard Hats

All employees shall be equipped with hard hats to protect against electric shock, burns and falling objects. Hats shall be in accordance with ANSI Specification Z89-2-1971 – Industrial Protective Helmets for Electrical Workers, Class B.

### 6.5.2 Rubber Gloves

**Ground to Ground Rubber Gloves and Sleeves are required for all distribution work.**

1. Rubber gloves, with leather gloves, or gauntlets, shall be worn when climbing or working on installation or structures in the vicinity of live circuits or any wire or equipment that may become energized by remote or accidental means;
2. Rubber gloves will not be used without protector gloves over them. Liners are also available for wearing inside rubber gloves to absorb perspiration;
3. Rubber gloves shall be carefully inspected and air tested before each use. Defective gloves will be immediately replaced;
4. Rubber gloves shall be properly stored in a protective canvas bag when not in use and placed in a compartment designed solely for the storage of this equipment.
5. Rubber gloves shall be put on before linemen are in a position where it is possible to come into contact with anything energized or anything that may become energized. The gloves and



sleeves shall be put on at the base of the pole or when entering the aerial basket unit.

#### 6.5.3 Rubber Sleeves

1. Rubber sleeves shall be worn every time rubber gloves are worn;
2. Rubber sleeves shall be worn at all times when working off platforms or from aerial basket units due to the danger of accidental contact;
3. Rubber sleeves shall be inspected prior to each use and replaced if defective. They shall be stored in their proper place and shall never be stored inside out.

#### 6.6 General Rubber Protective Equipment

6.6.1 This section applies to cover-up rubber protective equipment such as line hose, hoods, blankets and shields.

1. Wires in or near work areas shall be properly protected with protective insulating equipment.
2. When covering a work area, cover up the nearest wires and equipment first and distant ones last so it will not be necessary to reach over or between unprotected wires. Cover from beneath and work up so that it will not be necessary to climb through unprotected wires.
3. The second point of contact such as grounded guys, equipment, and secondary wires shall be covered to provide complete protection.
4. In cases where voltage is too high for safe application of rubber protection, the lines, and taps, located near the work area shall be killed, discharged to the ground, and grounded on all sides of the work area, preferably within sight of the work area.
5. Rubber protective equipment shall be inspected daily and stored in its proper compartment or container.
6. Rubber protective equipment shall be in accordance with provisions of ANSI J6 Series, as follows:
  - Gloves – J6.6 – 1971;
  - Matting of use around electrical apparatus – J6.7 – 1935 (R. 1971);
  - Insulating Blankets – J6.4-1971;

- Insulating Hoods – J6.2 – 1950 (R. 1971)
- Insulating Line Hose – J6.1 – 1950 (R. 1971);
- Insulating Sleeves – J6.5 – 1971;

#### 6.6.2 Electric Testing

1. Rubber protective goods shall be electrically tested according to the following schedule:

- Rubber Gloves – Every 3 months
- Rubber Sleeves – Every 6 months
- Rubber Blankets – Every 6 months
- Rubber Line Hose – Every 12 months

2. It shall be the responsibility of the General Foreman to ensure that all rubber protective equipment is replaced and electrically tested according to the schedule above.

#### 6.7 Live Line Tools

6.7.1 All live line tools shall be visually inspected before use each day. Tools to be used shall be wiped clean and if any hazardous defects are observed such tools shall be removed from service.

6.7.2 Only live line tools having a manufacturer's certification to withstand the following minimum tests shall be used:

- 100,000 Volts AC per foot of length for 3 minutes when the tool is made of fiberglass; or
- 75,000 Volts AC per foot of length for 3 minutes when the tool is made of wood;

#### 6.8 Aerial Basket

1. A safety belt shall be worn and lanyard attached to the boom or basket when working from an aerial lift. Safety belts shall be worn at all times.
2. Vehicles shall be properly parked with appropriate traffic control devices, such as cones and signs placed. Flagmen shall be used when the disruption of traffic flow requires it.
3. Units shall be properly spotted and the outrigger in position before the aerial basket is raised to the working position. Wheel chocks shall be installed when working on an incline.
4. Prior to movement of the basket, the operator shall check for hazards and plan his movements to avoid them. Ground men shall be warned prior to moving the basket. Trucks shall not be

moved when the boom is in the elevated position with men in the basket.

5. Before entering a vehicle, or before removing equipment from it, the boom and basket shall be checked to be sure it is not in contact with energized conductors.

6. Standard protective equipment used by linemen such as hard hats, rubber gloves, rubber sleeves; line hose, blankets, and shields shall be used as the exposure demands.

7. No handlines shall be used between the bucket, boom and the ground.

8. Equipment shall be inspected daily. Defects shall be reported and corrected before use. Pay particular attention to hydraulic systems. Manufacturer's suggested maintenance recommendations shall be followed.

## 6.9 Grounding

6.9.1 When attaching or removing grounds the following procedures are to be followed:

1. The ground end shall be attached first, and the other end shall be attached and removed by means of insulated tools or other suitable devices;

2. When removing grounds, the grounding device shall first be removed from the line or equipment using insulated tools or other suitable devices;

3. Grounds shall be placed between the work location and all other sources of energy and as close as practical to the work location, or grounds shall be placed at the work location.

4. If work is to be performed at more than one location in a line section, the line section must be grounded and short-circuited at one location in the line section and the conductor to be worked on shall be grounded at then work location.

5. The minimum distance shown in the table below shall be maintained from underground conductors at the work location;

6. Where the making of a ground is impracticable, or the conditions resulted therefrom would be more hazardous than working on the lines or equipment without grounding, the grounds may be omitted and the line or equipment worked as energized;

7. Grounds may be temporarily removed only when necessary for test purposes and extreme caution shall be exercised during the test procedures;

8. When grounding electrodes are utilized, such electrodes shall have a resistance to ground low enough to remove the danger of harm to personnel or permit prompt operation of protective devices;

9. Grounding to a tower shall be made with a tower clamp capable of conducting the anticipated fault current;

10. A ground lead, to be attached to either a tower ground or driven ground, shall be capable of conducting the anticipated fault current and shall have a minimum conductance of No.2 AWG cooper.

Table - 1  
Alternating Current – Minimum Distances

Voltage Range (phase to phase) Kilovolt	Minimum Working and Clear Hot Stick Distance
0.5 – 1.0	avoid contact
1.1 – 15	2’-1”
15.1 – 36	2’-4”
36.1 – 46	2’-7”
46.1 – 72.5	3’-0”
72.6 – 121	3’-2”
138 – 145	3’-7”
161 – 169	4’-0”
230 – 242	5’-3”
345 – 362	8’-6”
500 – 550	11’-3”
765 – 800	14’-11”

#### 6.10 De-energizing Lines and Equipment

6.10.1 The following procedures apply to the de-energizing of lines and equipment in excess of 600 volts when the means of disconnecting from electric energy is not visibly open or locked out:

1. The particular section of line or equipment to be de-energized shall be clearly identified, and it shall be isolated from all sources of voltages.
2. Notification and assurance from the designated employees shall be obtained that all switches and disconnectors are plainly tagged indicating that men are at work, and that where design of such switches and disconnectors permits, they have been rendered inoperable.
3. After all designated switches and disconnectors have been opened, rendered inoperable, and tagged, visual inspection or tests shall be conducted to ensure that equipment or lines have been de-energized;
4. Protective grounds shall be applied on the disconnected lines or equipment to be worked on;
5. Guards or barriers shall be erected as necessary to adjacent energized lines.
6. When more than one independent crew require the same line or equipment to be de-energized, the designated employee in charge shall place a prominent tag for each such independent crew on the line or equipment;
7. When a crew working on a line or equipment can clearly see that the means of disconnecting from electric energy are visibly open or visibly locked out, guards or barriers shall be erected as necessary to adjacent energized lines;
8. Upon completion of work on de-energized lines or equipment, each designated employee in charge shall determine that all employees in his crew have been removed, and he shall report to

the designated authority that all tags protecting his crew may be removed.

#### 6.11 Metal Tower Construction

1. When assembling and erecting towers, guy lines shall be used as necessary, and members and sections supported adequately. Energizing lines adjacent to hoisting equipment shall be bonded to a ground or barricaded.
2. All workers shall be prohibited under sections except to guide and secure the section being set. A designated employee shall be utilized to determine that required clearance is maintained in moving equipment near or under energized lines.
3. A designated employee shall direct mobile equipment adjacent to footing excavations and no one shall remain in the footing while equipment is being spotted.
4. When working in excavations for pad or pile type footings in excess of 5 feet deep, angle of response or shoring shall be provided and a ladder provided for access if depths are over 4 ft.;

#### 6.12 Stringing or Removing De-energized Conductors

1. Prior to operation, a briefing shall be held to set forth the plan of operations.
2. Where the possibility exists of the conductor accidentally contacting an energized circuit or receiving a dangerous induced voltage build-up, the conductor shall be grounded or the exposed employee isolated.
3. When crossing over energized conductors in excess of 600 volts, rope nets or guard structures shall be installed or provisions made to isolate the workers. The line being strung shall be grounded on either side of the crossover or worked as if energized.
4. Pulling lines and accessories shall be inspected weekly and manufacturer's load ratings shall not be exceeded.
5. While conductor-pulling line is being pulled, employees are prohibited from working under cross arm or overhead operations.
6. Transmission clipping crews shall have a minimum of two structures clipped between the crew and the conductor being sagged. When working on bare conductors, clipping and tying crews shall work between grounds at all times.
7. Reel handling equipment shall be maintained in accordance with the manufacturer's operating instructions and communications between reel tender and pulling rig operator provided.
8. Each pull shall be snubbed or dead-ended at both ends before subsequent pulls.

#### 6.13 Stringing Adjacent to Energized Lines

6.13.1 Unless the line is worked as de-energized, the following procedure applies when there is a possibility that dangerous induced voltage build-ups will occur in stringing parallel to existing energized transmission lines:

1. When stringing adjacent to energized lines, the tension stringing method or other method which preclude unintentional contact between the lines being pulled and any employee shall be

used.

2. All pulling and tension equipment shall be isolated, insulated, or effectively grounded.
3. A ground shall be installed between the tensioning reel setup and the first structure in order to ground each bare conductor, sub-conductor, and overhead ground conductor during stringing operations.
4. During stringing operations, each bare conductor, sub-conductor, and overhead conductor shall be grounded at the first tower adjacent to both the tensioning and pulling setup and in increments so that no point is more than two miles from a ground.
5. Conductors, sub-conductors, and overhead conductors shall be grounded at all dead ends or catch off points.
6. A ground shall be located at each side and within ten feet of the working areas where conductors, sub-conductors, or overhead ground conductors are being spliced at ground level. The two ends to be spliced shall be bonded to each other. It is recommended that splicing be carried out on either an insulated platform or on a conductive metallic grounding mat bonded with both grounds. When a grounding mat is used, it is recommended that the mat is roped off and an insulated walkway be provided for access to the mat.
7. All conductors, sub-conductors, or overhead ground conductors shall be bonded to the tower where it may be necessary to complete work on the transmission line.
8. When performing work from structures, clipping crews and all others working on conductors, sub-conductors, or overhead ground conductors shall be protected by individual grounds installed at every work location.

#### 6.14 Live-Line Bare-Hand Work

1. A person trained and qualified to perform live-line bare-hand work shall personally supervise all work.
2. Employees shall be instructed and trained in the live-line bare-hand technique and the safety requirements pertinent thereto before being permitted to use the technique on energized circuits.
3. Work shall not be performed during the progress of an electrical storm in the immediate vicinity.
4. Before using the live-line bare-hand technique on energized high voltage conductors or parts, a check shall be made of
  - The voltage rating of the circuit on which the work is to be performed;
  - The clearances to ground of lines and other energized parts on which work is to be performed, and;

- The voltage limitations of the aerial lift equipment intended to be used.

5. Only tools and equipment intended for live-line bare-hand work shall be used and such tools and equipment will be kept clean and dry.

6. The automatic re-closing feature of circuit interrupting devices shall be made inoperative where practical before working on any energized line or equipment.

7. A conductive bucket liner or other suitable conductive device shall be provided for bonding the insulated aerial device to the energized line or equipment.

8. The employee shall be connected to the bucket liner by use of conductive shoes, leg clips, or other suitable means.

9. Where necessary, adequate electrostatic shielding, for the voltage being worked, or conductive clothing shall be provided.

## **7.00      Underground Electrical Facilities**

7.1            The rules and procedures of this section shall apply to all employees engaged in the construction and maintenance of underground electric facilities, and all other persons who may be required to enter underground facilities.

### **7.2            Working Area Safeguards**

1. Warning devices, barriers, barricades or guardrails shall be placed to adequately protect the public and employees before manhole or vault covers or gratings are removed or other work is started. All such signs and barricades will comply with federal, state and local regulations.

2. Warning devices and barricades shall not be removed until all work is completed and hazards to the public and employees no longer exist.

3. All trucks, tools and equipment shall be positioned to pose the least impediment or hazard to traffic, consistent with maintaining a safe work place. Where trucks are used as barricades care must be taken to shut off engines to protect workers from exhaust fumes.

### **7.3            Operating and Switching Procedures**

1. Before any enclosure associated with a direct burial distribution system is opened, proper barriers shall be placed and precautions taken to keep the public at a safe distance from the work area.

2. All direct burial cables and equipment shall be considered alive at all times and shall be de-energized and grounded.

3. Live line tools, rubber protective equipment, and eye protection shall be used when switching an energized circuit.

4. Direct burial distribution circuits shall be energized and de-energized in accordance with the



applicable work methods, procedures, and by equipment designed for those purposes.

#### 7.4 Vault and Manhole Work

##### 7.04.1 When opening a vault or manhole the following precautions shall be observed:

1. A blowtorch or other open flame shall never be used to melt ice around a manhole or vault cover.
2. Vault and manhole covers shall be placed clear of traffic and so that they do not present a tripping hazard to workers or the public.
3. No entry will be permitted unless forced ventilation is provided or the atmosphere is found to be safe by testing for oxygen deficiency and the presence of explosive gases or fumes. Shall unsafe conditions be detected by testing, the work area shall be ventilated and otherwise made safe.
4. A ladder shall always be used in entering or leaving a manhole or vault.
5. While work is being performed in manholes, and employee shall be available in the immediate vicinity to render emergency assistance as may be required. This shall not prevent the employee in the immediate vicinity from occasionally entering a manhole to provide assistance, other than emergency. This requirement does not preclude an authorized employee, working alone, from entering for brief periods of time, a manhole where energized cables or equipment are in service, for the purpose of inspection, housekeeping, taking readings, or similar work if such work can be performed safely.
6. Before any work is done on a cable, it shall be identified by an approved method. If there is any doubt as to the identification, work shall not be started until it is checked and identified by the proper authority.
7. No workman shall use or be required to use any toxic cleaning fluids in manholes, vaults or excavations.

#### 7.5 Work on Energized Cables

1. When live work is to be done on cables, wires or other equipment, identification shall be made first at each working point by tags, route directions, vault or manhole number, position on the pole, cable size and type and position of conduit as indicated on maps, records or layouts.
2. All underground cables and apparatus carrying current at voltage above 500 volts shall be de-energized before work is done on the conductor or before cables are cut into or spliced.
3. Before any work is done on an energized cable, other cables and all grounded equipment with

which contact can be made while working on the energized cable shall be covered with rubber blankets or approved insulating shields.

4. When work is performed on cables or apparatus carrying less than 500 volts, employees shall take extra precautions in the use of necessary rubber protective equipment, in observing adequate clearances and in using proper tools to prevent short circuits.

5. Employees shall wear rubber gloves with leather protectors, sleeves and stand on rubber mats or use insulated tools while cutting into and removing sheathing or sleeves and while testing energized equipment.

6. When cutting an energized multiple conductor cable, a piece of fiber or wood shall be placed between the conductor being cut and the other conductors, and the cut shall be made directly over the shield.

7. Immediately after each conductor of an energized multiple conductor cable is cut in two, the ends shall be insulated before another conductor is cut. During the course of the work, only one insulated conductor shall be exposed at any one time.

#### 7.6 Work on De-energized Cables

1. When work is to be performed on de-energized cables, wires or equipment, proper identification shall be made at each work location.

2. Before making an opening in or removing a part of the sheath or sleeve of a cable, the line shall be grounded at the first possible point on each side of the work location.

3. When working on de-energized cables in manholes containing other energized cables, care shall be taken not to disturb the energized cables. Cables shall not be unnecessarily moved nor shall they be stepped on.

4. Arc proofing shall not be unnecessarily disturbed on adjacent cables in the manhole.

#### 7.7 Pulling Cable

1. Employees shall not handle pull-wires or pulling lines within reaching distance of blocks, sheaves, winch drums or take-up reels.

2. Pull-wires, steel pulling-lines or metal rodding shall not be pushed through ducts where energized equipment is present unless another employee is stationed at the other end of the run.

3. Employees shall not remain in a manhole or vault during pulling operations involving heavy pulling strains unless they can take position clear of the pulling line.

4. Communication between manholes shall be maintained.

5. Shieve wheels, pulling blocks and lines shall be properly secured to prevent contact with adjacent live cables in manholes while pulling operations are in progress.

6. Cable reels shall not be left unattended, but if necessary to do so, they shall be lagged and blocked on both sides.

## 7.8 Splicing Cables

1. Solder and joint heating compound heating equipment using open flames shall not be permitted in manholes.
2. Employees shall use equipment provided for lowering materials and tools into manholes and vaults. Safety pot hooks shall be used when lowering solder pots and compound kettle. Solder ladles shall be lowered separately. Hand lines shall be properly secured to prevent slipping.
3. No materials shall be lowered into manholes or vaults until those working in the hole are warned and stand clear. The employee lowering materials shall not proceed until instructed to do so from below.

## 7.9 Moving Cables

1. Cables operating at voltages above 15,000 volts shall not be moved under any circumstances.
2. All cables up to 15,000 volts may be moved at the discretion of the foreman. They shall not, however, be moved where such movement requires changing bends.
3. All cables energized above 500 volts shall be handled with rubber gloves and sleeves.

## **8.00 Electric Line Clearance Tree Trimming**

### 8.1 General Safety

8.01.1 The following safety rules shall apply to all Haugland Energy Group employees and equipment engaged in pruning, trimming, removing, or clearing of trees from electric lines and equipment. Employees involved in line clearance activities shall be instructed that:

1. Basic personal protective equipment (hard hats, safety glasses, gloves, and reflective vests) shall be worn at all times by employees engage in line clearance operations.
2. Employees shall consider all overhead and underground electrical power conductors to be energized and are never to be touched either directly or indirectly unless suitable protective equipment is used.
  - A direct contact is made whenever any part of the body touches or contacts an energized conductor, or other electrical fixture or apparatus.
  - An indirect contact is made whenever any part of the body touches any conductive object in contact with an energized electrical conductor, or other energized electrical fixture or apparatus.
  - An indirect contact can be made through conductive tools, tree branches, trucks, equipment or other objects, or as a result of communication wires, cables, fences or guy wires being accidentally energized.
3. Employees shall never pass between or contact energized wires unless such wires are covered

with protective devices.

4. During all tree working operations aloft where an electrical hazard or more than 600 volts exists, there shall be a second employee or trainee qualified in line-clearance trimming within normal voice communication.

5. Where tree work is performed by employees qualified in line clearance tree trimming and trainees qualified in line clearance tree trimming, the clearance from energized conductors in Table 1 of the electric safety plan shall apply.

6. Branches hanging on an electrical conductor may only be removed using properly insulated live-line tools or equipment.

7. Rubber footwear, including lineman's overshoes, shall not be considered as providing any measure of safety from electrical hazards.

8. Ladders, platforms, and aerial lifts, shall not be brought into contact with an electrical conductor.

9. If an insulated aerial lift device inadvertently contacts an electrical conductor, the truck supporting the aerial lift device shall be considered as energized.

10. Branches or other material shall not be dropped unless the immediate area has been cleared so that there is no possibility of injury to persons or damage to property. If such a possibility exists, a rope shall be used to lower branches or other materials.

11. Ropes shall not be thrown over conductors or crossarms for the purpose of using the conductor or crossarm as a support or hitch.

## 8.2 Brush Chippers

1. All brush chippers shall be equipped with a locking device on the ignition system. The chipper key shall be removed when the chipper is unattended.

2. Access panels for maintenance and adjustment shall be closed and secured prior to operation.

3. All brush chippers shall be equipped with an in-feed hopper of sufficient length so as to prevent employees from contacting the blades or knives of the machine during normal operation.

4. Trailer chippers detached from trucks shall be chocked or otherwise secured.

5. Employees in the immediate area of chipper operations shall wear eye and hearing protection.

6. Tools or other metallic objects shall not be used to push brush into a chipper. Sweepings, which may contain foreign objects shall be loaded on to the truck and not fed into the chipper.

## 8.3 Powered Trimming Equipment

1. Power saws weighing more than 10 pounds that are used in trees shall be supported by a separate line, except when working from an aerial lift device.

2. The operator shall have secure footing when starting the saw. The saw shall be firmly supported.

3. The engine shall be started and the saw operated only when all other employees are clear of the saw.

4. The engine shall ordinarily be stopped when carrying power saws. One-man saws shall be carried to the side with guide bar to the rear. The saw need not be stopped between cuts when

performing consecutive felling, bucking, or limb-cutting operations on reasonably level ground. The chain shall not be turning and the hand shall be off the throttle lever while moving between work locations.

5. The engine shall be stopped for all cleaning, refueling, adjustments, and repairs to the saw or engine, where practical, except where manufacturer's procedures requires otherwise.

6. The saw bumper shall be against the tree or limb before starting a cut.

7. Employees shall never hand a pneumatic or hydraulic pruner or saw to another employee unless it is disconnected from the air hose.

8. Power tools shall not be left unattended if connected to a power source.

9. Power tools shall not be adjusted or repaired while connected to a power source.

#### 8.4 Tree Climbing Work

1. Dead or rotted limbs, regardless of size, shall not be used by employees for support.

2. No work shall be done in a tree until the employee is securely tied in or belted to the tree.

3. Climbing rope shall be crotched in such a manner as to prevent working its way out on a lateral limb.

4. When working in a multiple-trunk tree, the climbing rope shall preferably be crotched around a main trunk other than the one on which the employee is working.

5. Employees shall crotch their climbing rope in two places if a single crotch does not adequately protect them from falling into energized lines or falling back into the trunk of the tree.

6. The climbing rope shall not be used as a pull rope or as a hand line for lowering limbs, branches or tools.

7. The ground end of a climbing rope shall not be allowed to dangle over roadways and shall be kept free from obstructions, passing vehicles, etc.

8. The taut-line hitch shall not be released until the climber is on the ground.

9. Groundmen shall not attempt to clear limbs or brush from under that side of the tree in which the climber is working.

#### 8.5 Tree Felling

1. Trees to be felled shall be inspected for dead limbs that may break, or broken limbs lodged in the tree that might fall into the working area as the job progresses.

2. No one shall be allowed to work in a tree located near a tree that is being felled if there is any danger of its being struck by any part of the falling tree.

3. All persons not engaged in the felling operation shall be kept clear of guide ropes and other rigging.

4. Clear warning shall be given to all employees in the area when trees are to be felled or heavy

tree members are to be dropped.

5. Once the felling operation has begun, it shall be completed before leaving the job.

#### 8.6 Care and Use of Tools and Rope

1. Ropes shall be inspected periodically. Damaged sections shall be cut out and destroyed or the rope replaced.

2. Ropes shall be kept away from fire, acids, oil, chemicals and all sources of excess heat.

3. Dragging ropes over rough surfaces and sharp objects shall be avoided. Ropes shall be stored separately from sharp edged cutting tools.

4. The cutting edge of tools shall be suitably sheathed or guarded except while in actual use.

5. Axes shall not be used in trees or carried on shoulders.

6. Tools shall not be thrown into or dropped from a tree; they shall be raised and lowered by a suitable rope line.

## **Section “E” Lockout / Tagout – Energy control program**

### **1.00 SCOPE**

This program specifically outlines the purpose, authorization, and techniques to be utilized by Haugland Energy Group employees on a daily basis to guard against the unexpected energizing, start-up, or release of stored energy, which could cause injury. It shall be the duty of each employee to become familiar with the contents of this program and ensure compliance with its procedures. Heads of departments shall ensure that employees under their supervision receive training in the contents of this program and ensure records of this training are maintained.

\*(This program does not apply to those employees engaged in work on Electric Utility Transmission and Distribution Systems. Haugland Energy Group employees involved in such work will adhere to the prescribed lockout / tagout procedures of the electric utility owner.)

### **2.00 PURPOSE**

The purpose of this program is to establish procedures for affixing appropriate lockout or tagout devices to energy-isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start-up or release of stored energy in order to prevent injury to employees.

### **3.00 DEFINITIONS APPLICABLE TO THIS PROGRAM**

Affected Employee: An employee whose job requires them to operate or use a machine or piece of equipment on which servicing is being performed under lockout or tagout, or whose job requires them to work in an area in which such servicing or maintenance is being performed.

3.1 Authorized Employee: A person who locks or implements a tagout system procedure on machines or equipment to perform the servicing or maintenance on that machine or equipment. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or service on a machine or piece of equipment which must be locked, or a tagout system implemented. Energy Source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

3.2 Lockout: The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy- isolating device and the equipment being controlled cannot be operated until the lockout device is removed. Lockout Device: A device that utilizes a positive means, such as a lock, to hold an energy-isolating device in the safe position and prevent the energizing of a machine or piece of equipment.

3.3 Normal Production Operations: The utilization of a machine or piece of equipment to perform its intended production function.

3.4 Primary Authorized Employee: The authorized employee who has been vested with responsibility for a set number or group of employees performing service or maintenance on machines or equipment subject to lockout or tagout procedures.



3.5        Servicing and/or Maintenance: Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment, and making adjustments or tool changes where the employee may be exposed to the unexpected energization or start-up of the equipment or release of hazardous energy.

3.6        Tagout: The placement of a tagout device on an energy- isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

#### **4.00        AUTHORIZATION**

4.1        Heads of departments will implement the program and insure that the personnel under their supervision are trained in accordance with the procedures established herein. This responsibility may be delegated to another person or persons within the department providing it is done so in writing and the designated person is qualified and competent. This person will authorize employees to implement the locking and tagging system procedure.

4.2        An employee who has been authorized by his or her department head or that department head's designated individual shall lock or implement a tagout system procedure on machines or equipment to perform servicing or maintenance; or on a machine which the unexpected energization or start-up of the machine or equipment, or release of stored energy could cause injury.

#### **5.00        RULES**

5.1        If an energy-isolating device is capable of being locked out, the authorized employee shall utilize lockout, unless the department head or their designated representative can demonstrate that utilization of a tagout system will provide full employee protection. When a tagout device is used on an energy-isolating device which is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached.

5.2        Lockout devices used for the implementation of this program shall be used for no other purpose than lockout, and shall be substantial enough to prevent removal without use of excessive force or unusual techniques.

5.3        Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

5.4 The Safety Director or his/her designated representative shall conduct periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of 29CFR1910.150 are being followed. The heads of departments or their designated representatives are required to provide training to ensure that the purpose and function of the energy control program are understood by employees. Through training, employees will be required to possess the knowledge and skills required for safe application, usage, and removal of energy controls.

5.5 Training shall include the following:

1. Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
2. Each affected employee shall be instructed in the purpose and use of the energy control procedure.
3. All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked-out or tagged-out.

5.6 When tagout systems are used, employees shall also be trained in the following limitations of tags:

1. Tags are essentially warning devices affixed to energy-isolating devices, and do not provide the physical restraint on those devices that is provided by lockout.
2. When a tag is attached to an energy-isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored or otherwise defeated.
3. Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.
4. Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
5. Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.
6. Tags must be securely attached to energy- isolating devices so that they cannot be inadvertently or accidentally detached during use.

5.7 Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or process that presents a new hazard, or when there is a change in energy control procedures. Retraining shall establish employee proficiency and introduce new or revised control methods and procedures as necessary. The heads of departments or their designated representatives shall certify that employee training has been accomplished and is being kept up-to-date. The certification shall contain each employee's name and dates of training.

## **6.00 TECHNIQUES**

Implementation of the lockout or tagout system shall be performed only by authorized employees. Affected employees shall be notified by heads of departments, or their designated representatives, of the application and removal of lockout or tagout devices. Notification shall be given before the controls are applied, and after they are removed from the machine or equipment. The established procedure for the application of energy control shall cover the following elements and actions and shall be done in the following sequence:

6.1 Preparation for shutdown: Before an authorized or affected employee turns off a machine or piece of equipment, they shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

6.2 Machine or equipment shutdown: An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of equipment de-energization.

6.3 Machine or equipment isolation: All energy-isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

6.4 Lockout or tagout device application: Lockout or tagout devices shall be affixed to each energy-isolating device by authorized employees. Lockout devices, where used, shall be affixed in a manner that will hold the energy in a "safe" or "off" position. Tagout devices, where used, shall be affixed in such a manner as will clearly indicate that the operation or movement of energy-isolating devices from the "safe" or "off" position is prohibited.

6.4.1 Where tagout devices are used with energy-isolating devices designed with the capability of being locked, the tag shall be fastened at the same point at which the lock would have been attached.

6.4.2 Where a tag cannot be affixed directly to the energy-isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

6.5 Stored Energy: Following the application of lockout or tagout devices to energy-isolating devices, all potentially hazardous stored energy shall be rendered safe. If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no

longer exists.

6.6 Verification of Isolation: Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and de-energization of the machine or equipment has been accomplished.

6.7 Release from Lockout or Tagout: Before lockout or tagout devices are removed and energy is restored to the machine or equipment, procedures shall be followed and actions taken by the authorized employee(s) to ensure the following:

- The Machine or Equipment: The work area shall be inspected to ensure that nonessential items have been removed and that machine or equipment components are operationally intact.
- Employees: The work area shall be checked to ensure that all employees have been safely positioned or removed. Before lockout or tagout devices are removed and before machines or equipment are energized, affected employees shall be notified.

6.8 Lockout or Tagout Device Removal: Each lockout or tagout device shall be removed from each energy isolating device by the employee who applied the device.

Exception: When the authorized employee who applied the lockout or tagout device (installer) is not available to remove it, that device may be removed under the direction of the installer's immediate supervisor. Specific training and procedures for such removal shall be provided by each department involved in lockout or tagout operations. The procedures and training shall be documented. The documentation shall demonstrate that safety equivalent to the original process of having only the installer remove the device is maintained. The specific procedure shall include at least the following elements:

- Verification by the immediate supervisor that the employee who applied the device is not at the facility,
- Making all reasonable efforts to contact the authorized employee to inform them that his/her lockout or tagout device has been removed, and
- Ensuring that the authorized employee has this knowledge before they resume work at the facility.

6.9 Testing or Positioning of machines, equipment, or components thereof: In situations where lockout or tagout devices must be temporarily removed from the energy-isolating device and the machine or equipment energized to test or position the equipment or component thereof, the following sequence of actions shall be followed:

- Clear the machine or equipment of tools and materials.
- Remove employees from the machine or equipment area.
- Remove the lockout or tagout devices.
- Energize and proceed with testing or positioning.

- De-energize all systems and reapply energy control measures to continue the servicing and/or maintenance.

6.10 Outside Personnel (contractors, etc.): Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this program, the designated Haugland Energy Group representative and the outside employer shall inform each other of their respective lockout or tagout procedures. The designated Haugland Energy Group representative shall ensure that his/her personnel understand and comply with restrictions and prohibitions of the outside employer's energy control procedures. If the outside employer has no documented lockout or tagout procedures, they shall ensure that their personnel understand and comply with the procedures established in this program.

6.11 Group Lockout or Tagout: When servicing and/or maintenance is performed by a crew or department, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device. This shall be accomplished by:

- The application of a multi-lock accepting device by the primary authorized employee to the energy- isolating device.
- The primary authorized employee attaching his/her lock to the multi- accepting device.
- Each authorized employee shall affix a personal lockout or tagout device to the multi-lock accepting device when they begin work, and shall remove those devices when they stop working on the machine or equipment being serviced or maintained.
- The primary authorized employee removing his/her lock and the multi-lock accepting device when all service or maintenance has been completed.

6.12 Shift or Personnel Changes: To insure the orderly transfer of lockout or tagout devices between off-going and on-coming employees and minimize exposure to hazards from unexpected energization, start-up of the machine or equipment, or release of stored energy, these procedures shall be followed:

- The on-coming personnel shall notify the off-going personnel that they are ready to begin work on the machine or equipment.
- All lockout and/or tagout devices attached to the machine or equipment by the off-going personnel shall be removed and immediately replaced with like devices by the on-coming authorized personnel.

The primary authorized employee shall insure that all pertinent co-ordination between off-going and on-coming personnel has been completed before the on-coming authorized personnel begin work on the machine or equipment and that all necessary energy has been rendered safe.

## **Section “F” Excavations, Trenching and Shoring**

### **1.00 Purpose:**

The purpose of this plan is to provide guidelines for Haugland Energy Group Personnel in the evaluation and implementation of protective measures to ensure employee safety while working in excavations.

### **2.00 Definitions:**

2.1 Aluminum hydraulic shoring means an engineered shoring system comprised of aluminum hydraulic cylinders (crossbraces), used in conjunction with vertical rails (uprights) or horizontal rails (walers). Such a system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

2.2 Benching means a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

2.3 Cave-in means the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

2.4 Competent person means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. A competent person shall have and be able to demonstrate the following:

2.4.1 Training, experience, and knowledge of:

- soil analysis,
- use of protective systems, and
- requirements of 29 CFR 1926 Subpart P.

2.4.2 Ability to detect:

- conditions that could result in cave-ins,
- failures in protective systems,
- hazardous atmospheres, and

- other hazards including those associated with confined spaces.

2.4.3 Authority to take prompt corrective measures to eliminate existing and predictable hazards and to stop work when required.

2.5 Excavation means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

2.6 Registered professional engineer means a person who is registered as a professional engineer.

2.7 Shield (shield system) means a structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees with the structure. Shields can be permanent structure or can be designed to be portable and moved along as work progresses. Also known as trench box or trench shield.

2.8 Shoring (shoring system) means a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

2.9 Sloping (sloping system) means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

2.10 Trench (trench excavation) means a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less, the excavation is also considered to be a trench.

### **3.00 General Requirements:**

3.01 All excavations shall be made in accordance with the rules, regulations, requirements, and guidelines set forth in 29 CFR 1926.650, .651, and .652; the Occupational Safety and Health Administration's standard on Excavations.

### **4.00 Procedures**

4.01 A competent person shall be placed in charge of all excavations. Underground utilities must be located and marked before excavation begins. Employees are not allowed in the excavation while heavy equipment is digging.



## **5.00 Inspections**

5.01 The competent person shall conduct inspections:

- Daily and before the start of each shift.
- As dictated by the work being done in the trench.
- After every rain storm.
- After other events that could increase hazards, such as snowstorm, windstorm, thaw, earthquake, dramatic change in weather, etc.
- When fissures, tension cracks, sloughing, undercutting, water seepage, bulging at the bottom, or other similar conditions occur.
- When there is a change in the size, location, or placement of the spoil pile.
- When there is any indication of change or movement in adjacent structures.

## **6.00 Soil Types**

6.1 Type A - Most stable: clay, silty clay, and hardpan (resists penetration). No soil is Type A if it is fissured, is subject to vibration of any type, has previously been disturbed, or has seeping water.

6.2 Type B - Medium stability: silt, sandy loam, medium clay and unstable dry rock; previously disturbed soils unless otherwise classified as Type C; soils that meet the requirements of Type A soil but are fissured or subject to vibration.

6.3 Type C - Least stable: gravel, loamy sand, soft clay, submerged soil or dense, heavy unstable rock, and soil from which water is freely seeping.

6.4 Layered Geological Strata (where soils are configured in layers) - The soil must be classified on the basis of the soil classification of the weakest soil layer. Each layer may be classified individually if a more stable layer lies below a less stable layer, i.e. where a Type C soil rests on top of stable rock.

## **7.00 Testing Methods**

7.1 The competent person in charge of the excavation shall be responsible for determining whether the soil is Type A, B or C. If the competent person wants to classify the soil as Type C, they do not need to do any tests. However, tests must be conducted to determine if the soil can be classified as Type A or B. To do this, the competent person shall use a visual test coupled with one or more manual tests.

7.2 Visual test

7.2.1 In addition to checking the items on the trench inspection form, the competent person shall perform a visual test to evaluate the conditions around the site. In a visual test, the entire excavation site is observed, including the soil adjacent to the site and the soil being excavated.

The competent person also checks for any signs of vibration.

7.2.2 During the visual test, the competent person shall check for crack-line openings along the failure zone that would indicate tension cracks, look for existing utilities that indicate that the soil has been previously disturbed, and, if so, what sort of backfill was used, and observe the open side of the excavation for indications of layered geologic structuring.

7.2.3 This person shall also look for signs of bulging, boiling, or sloughing, as well as for signs of surface water seeping from the sides of the excavation or from the water table.

7.2.4 In addition, the area adjacent to the excavation shall be checked for signs of foundations or other intrusions into the failure zone, and the evaluator shall check for surcharging and the spoil distance from the edge of the excavation.

### 7.3 Manual tests

7.3.1 Thumb penetration test Attempt to press the thumb firmly into the soil in question. If the thumb penetrates no further than the length of the nail, it is probably Type B soil. If the thumb penetrates the full length of the thumb, it is Type C. It shall be noted that the thumb penetration test is the least accurate testing method.

7.3.2 Dry strength test Take a sample of dry soil. If it crumbles freely or with moderate pressure into individual grains it is considered granular (Type C). Dry soil that falls into clumps that subsequently break into smaller clumps (and the smaller clumps can only be broken with difficulty) it is probably clay in combination with gravel, sand, or silt (Type B).

7.3.3 Plasticity or Wet Thread Test Take a moist sample of the soil. Mold it into a ball and then attempt to roll it into a thin thread approximately 1/8 inch in diameter by two inches in length. If the soil sample does not break when held by one end, it may be considered Type B.

7.03.3.1 A pocket penetrometer, sheervane, or torvane may also be used to determine the unconfined compression strength of soils.

## 8.00 Spoil

8.1 Temporary spoil shall be placed no closer than 2 feet from the surface edge of the excavation, measured from the nearest base of the spoil to the cut. This distance shall not be measured from the crown of the spoil deposit. This distance requirement ensures that loose rock or soil from the temporary spoil will not fall on employees in the trench.

8.2 Spoil shall be placed so that it channels rainwater and other run-off water away from the excavation. Spoil shall be placed so that it cannot accidentally run, slide, or fall back into the excavation.

8.3 Permanent spoil shall be placed some distance from the excavation.

## **9.00 Surface Crossing of Trenches**

9.1 Surface crossing of trenches shall not be made unless absolutely necessary. However, if necessary, they are only permitted under the following conditions:

9.1.1 Vehicle crossings must be designed by and installed under the supervision of a registered professional engineer.

9.1.2 Walkways or bridges must:

- have a minimum clear width of 20 inches,
- be fitted with standard rails, and
- extend a minimum of 24 inches past the surface edge of the trench.

## **10.00 Ingress and Egress**

10.1 Trenches 4 feet or more in depth shall be provided with a fixed means of egress.

10.2 Spacing between ladders or other means of egress must be such that a worker will not have to travel more than 25 feet laterally to the nearest means of egress.

10.3 Ladders must be secured and extend a minimum of 36 inches above the landing.

10.4 Metal ladders shall not be used when electric utilities are present.

## **11.00 Exposure to Vehicles**

11.1 Employees exposed to vehicular traffic shall be provided with and required to wear reflective vests or other suitable garments marked with or made of reflectorized or high-visibility materials.

11.2 Trained flag persons, signs, signals, and barricades shall be used when necessary.

## **12.00 Exposure to Falling Loads**

12.1 All employees on an excavation site must wear hard hats.

12.2 Employees are not allowed to work under raised loads.

12.3 Employees are not allowed to work under loads being lifted or moved by heavy equipment used for digging or lifting.

12.4 Employees are required to stand away from equipment that is being loaded or unloaded to avoid being struck by falling materials or spillage.

12.5 Equipment operators or truck drivers may remain in their equipment during loading and unloading if the equipment is properly equipped with a cab shield or adequate canopy.

### **13.00 Warning Systems for Mobile Equipment**

13.01 The following steps shall be taken to prevent vehicles from accidentally falling into the trench:

- Barricades must be installed where necessary,
- Hand or mechanical signals must be used as required,
- Trenches left open overnight shall be fenced and barricaded.

### **14.00 Hazardous Atmospheres and Confined Spaces**

14.1 Employees shall not be permitted to work in hazardous and/or toxic atmospheres. Such atmospheres include those with:

- less than 19.5% oxygen,
- a combustible gas concentration greater than 20% of the lower flammable limit, and,
- concentrations of hazardous substance that exceed those specified in the Threshold Limit Values for airborne contaminants established by the American Conference of Governmental Industrial Hygienists(ACGIH).

14.2 All operations involving such atmospheres must be conducted in accordance with OSHA requirements for occupational health and environmental controls for personal protective equipment and for lifesaving equipment. Engineering controls (such as ventilation) and respiratory equipment may be required.

#### **14.3 Testing for Atmospheric Contaminants**

14.3.1 If a hazardous atmospheric condition exists or could reasonably be expected to exist in excavations greater than 4 feet in depth, the Competent Person shall proceed as follows:

1. Testing and Controls: Test the atmosphere before any employee enters the excavation with a properly calibrated atmospheric testing device. When controls are used (i.e., forced venting or approved respiratory protection), testing shall be performed as often as necessary to ensure employee safety.
2. Emergency rescue Equipment: Ensure that emergency rescue equipment is readily available (i.e., breathing apparatus, safety harness and line, or basket stretcher).

14.3.2 The frequency of testing shall be increased if equipment is operating in the trench. Testing frequency shall also be increased if welding, cutting, or burning is done in the trench.

14.3.3 Employees required to wear respiratory protection must be trained, fit-tested, and enrolled in a respiratory protection program.

14.3.4 Some trenches qualify as confined spaces. When this occurs, compliance with Haugland Energy Group's Confined Space Program is also required.

## **15.00 Standing Water and Water Accumulation**

15.01 Methods for controlling standing water and water accumulation must be provided and shall consist of the following if employees must work in the excavation:

- Use of special support or shield systems approved by a registered professional engineer.
- Water removal equipment, such as pumps, used and monitored by a competent person.
- Employees removed from the trench during rainstorms
- Trenches carefully inspected by a competent person after each rain and before employees are permitted to re-enter the trench.

## **16.00 Benching, Sloping, Shoring, and Shielding Requirements**

16.1 All excavations or trenches 4 feet or greater in depth shall be appropriately benched, shored, or sloped according to the procedures and requirements set forth in OSHA's Excavation standard, 29 CFR 1926.650, .651, and .652.

16.2 Excavations or trenches 5 feet deep or greater must have a protective system designed by a registered professional engineer.

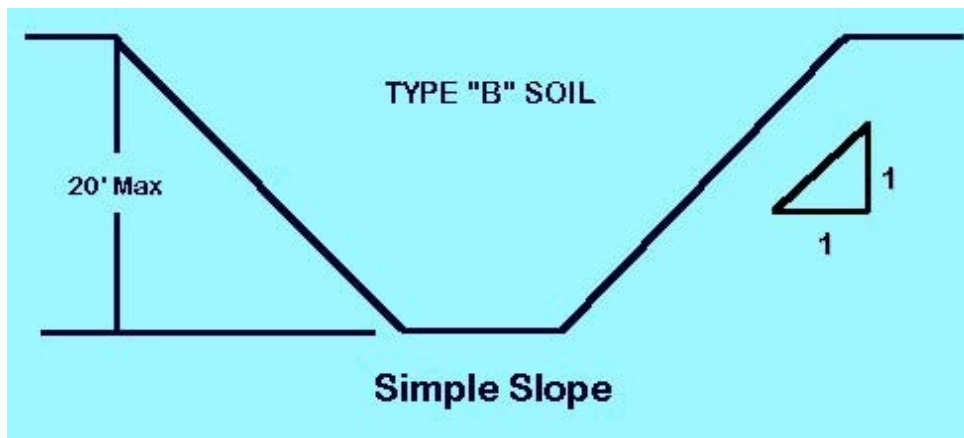
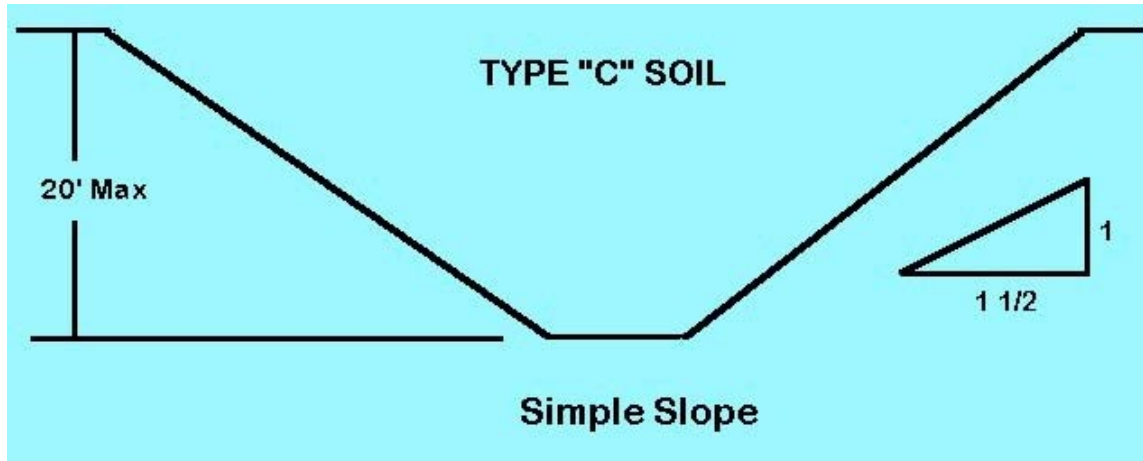
16.3 Excavations under the base of footing of a foundation or wall requires a support system designed by a registered professional engineer.

16.4 Sidewalks and pavement shall not be undermined unless a support system or another method of protection is provided to protect employees from their possible collapse.

16.5 Sloping

16.5.1 Maximum allowable slopes for excavations less than 20' based on soil type and angle to the horizontal are as follows:

16.5.2 A 10-foot-deep trench in Type B soil would have to be sloped to a 45-degree angle, or sloped 10 feet back in both directions. Total distance across a 10-foot-deep trench would be 20 feet, plus the width of the bottom of the trench itself. In Type C soil, the trench would be sloped at a 34-degree angle, or 15 feet back in both directions for at least 30 feet across, plus the width of the bottom of the trench itself. Illustrations of simple slope trenching are shown below:

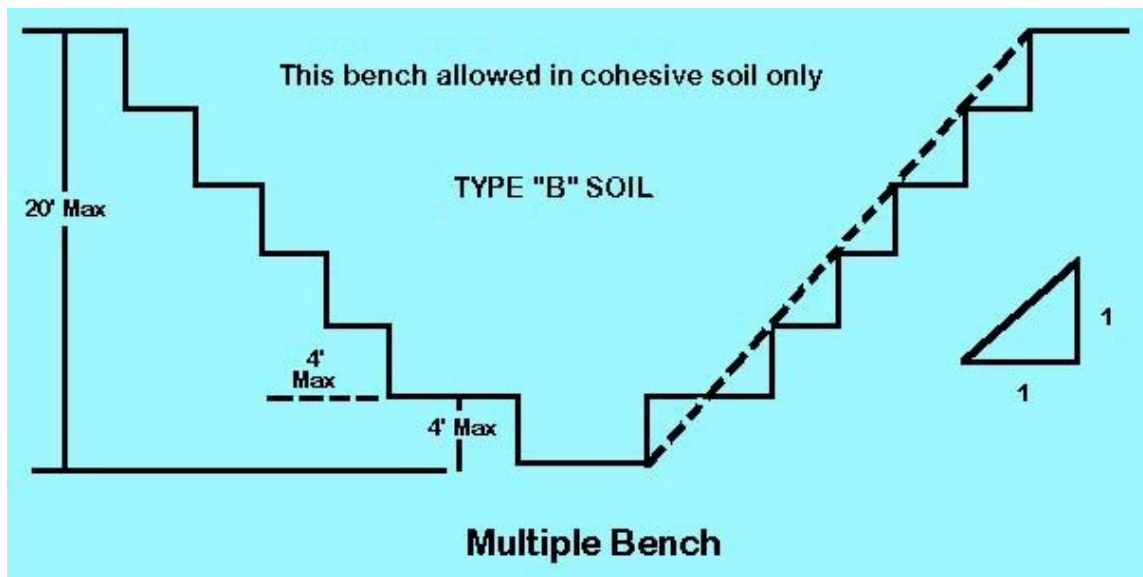
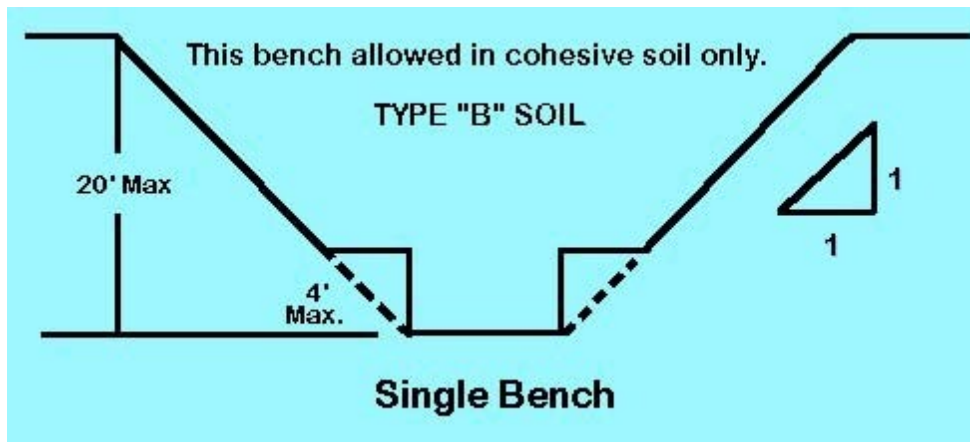




## 16.6 Benching

16.6.1 There are two basic types of benching, single and multiple, which can be used in conjunction with sloping.

16.6.2 In Type B soil, the vertical height of the benches must not exceed 4 feet. Benches must be below the maximum allowable slope for that soil type. In other words, a 10-foot deep trench in Type B soil must be benched back 10 feet in each direction, with the maximum of a 45-degree angle. Illustrations of single and multiple benching are shown below:



Benching is not allowed in Type C soil.

## 16.7 Shoring

16.7.1 Shoring or shielding is used when the location or depth of the cut makes sloping back to the maximum allowable slope impractical. There are two basic types of shoring, timber and aluminum hydraulic.

16.7.2 Hydraulic shores will be the focus of this section. Hydraulic shoring provides a critical safety advantage over timber shoring because workers do not have to enter the trench to install them. They are also light enough to be installed by one worker; they are gauge-regulated to ensure even distribution of pressure along the trench line; and they can be adapted easily to various trench depths and widths. However, if timber shoring is used, it must meet the requirements of 29 CFR 1926.650, .651, and .652.

16.7.3 All shoring shall be installed from the top down and removed from the bottom up. Hydraulic shoring shall be checked at least once per shift for leaking hoses and/or cylinders, broken connections, cracked nipples, bent bases, and any other damaged or defective parts.

16.7.4 The top cylinder of hydraulic shoring shall be no more than 18 inches below the top of the excavation.

16.7.5 The bottom of the cylinder shall be no higher than four feet from the bottom of the excavation. (Two feet of trench wall may be exposed beneath the bottom of the rail or plywood sheeting, if used.)

16.7.6 Three vertical shores, evenly spaced, must be used to form a system.

16.7.7 Wales are installed no more than two feet from the top, no more than four feet from the bottom, and no more than four feet apart, vertically.

16.7.8 Hydraulic shores must be installed in accordance with Table - 1.2 and Table - 1.3 in soil Type B.

16.7.9 Hydraulic shores must be installed with sheeting in accordance with Table - 1.4 in soil Type C.

Table -1.2 Aluminum Hydraulic Shoring Vertical Shores for Soil Type B

### NOTE (1)

For applications other than those listed in the tables, refer to CFR 1926.652(c)(2) for use of manufacturer's tabulated data. For trench depths in excess of 20 feet, refer to CFR 1926.652(c)(2) and CFR 1926.652(c)(3).

### NOTE (2)

2-inch diameter cylinders, at this width, shall have structural steel tube (3.5x3.5x0.1875) oversleeves, or structural oversleeves of manufacturer's specification, extending the full, collapsed length.

Table – 1.3

Aluminum Hydraulic Shoring Waler Systems for Soil Type B

\*Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

Table -1.4 Aluminum Hydraulic Shoring Waler Systems for Soil Type C

\*Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

16.7.10 Here are some typical installations of aluminum hydraulic shoring:

- Aluminum Hydraulic Shoring Waler system (typical)
- Vertical aluminum hydraulic shoring (spot bracing)
- Vertical aluminum hydraulic shoring (with plywood)
- Vertical aluminum hydraulic shoring (stacked)

## 16.8 Shielding

16.8.1 Trench boxes are different from shoring because, instead of shoring up or otherwise supporting the trench face, they are intended primarily to protect workers from cave-ins and similar incidents.

16.8.2 The excavated area between the outside of the trench box and the face of the trench shall be as small as possible. The space between the trench box and the excavation side must be backfilled to prevent lateral movement of the box. Shields may not be subjected to loads exceeding those which the system was designed to withstand.

16.8.3 Trench boxes are generally used in open areas, but they also may be used in combination with sloping and benching.

16.8.4 The box must extend at least 18 inches above the surrounding area if there is sloping toward the excavation. This can be accomplished by providing a benched area adjacent to the box.

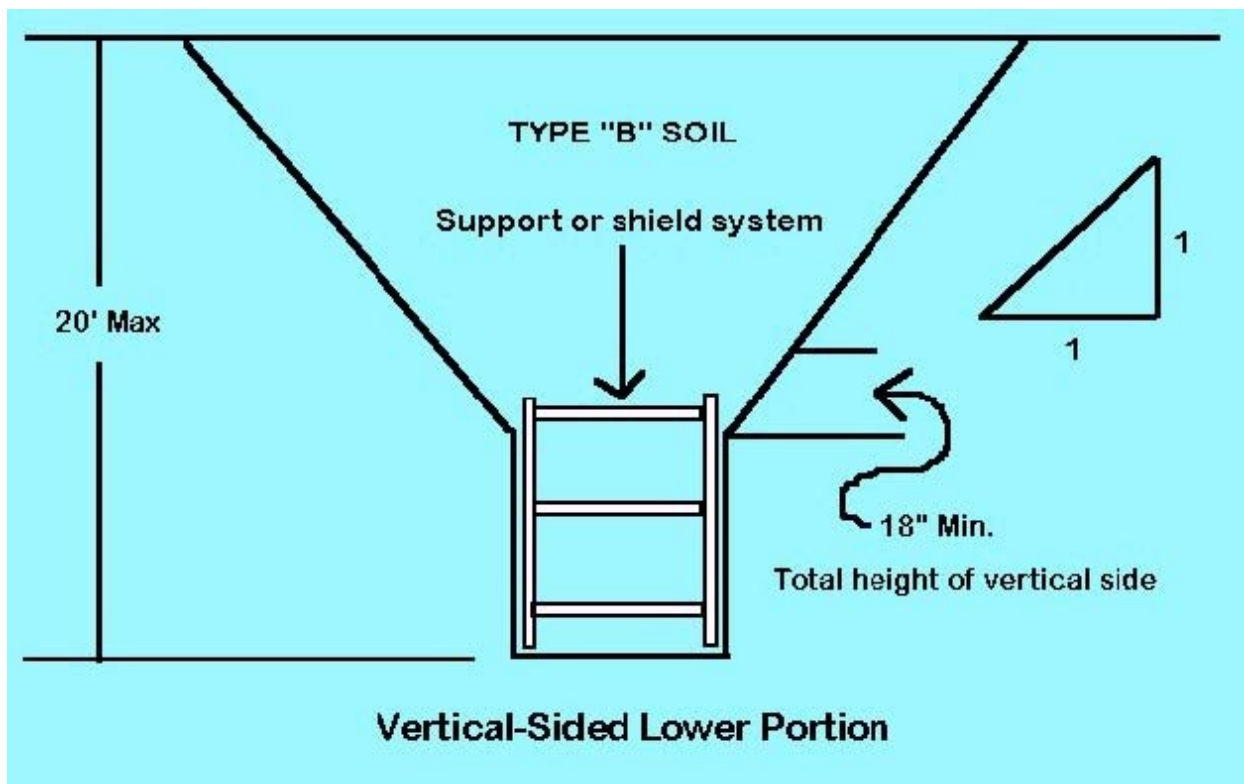
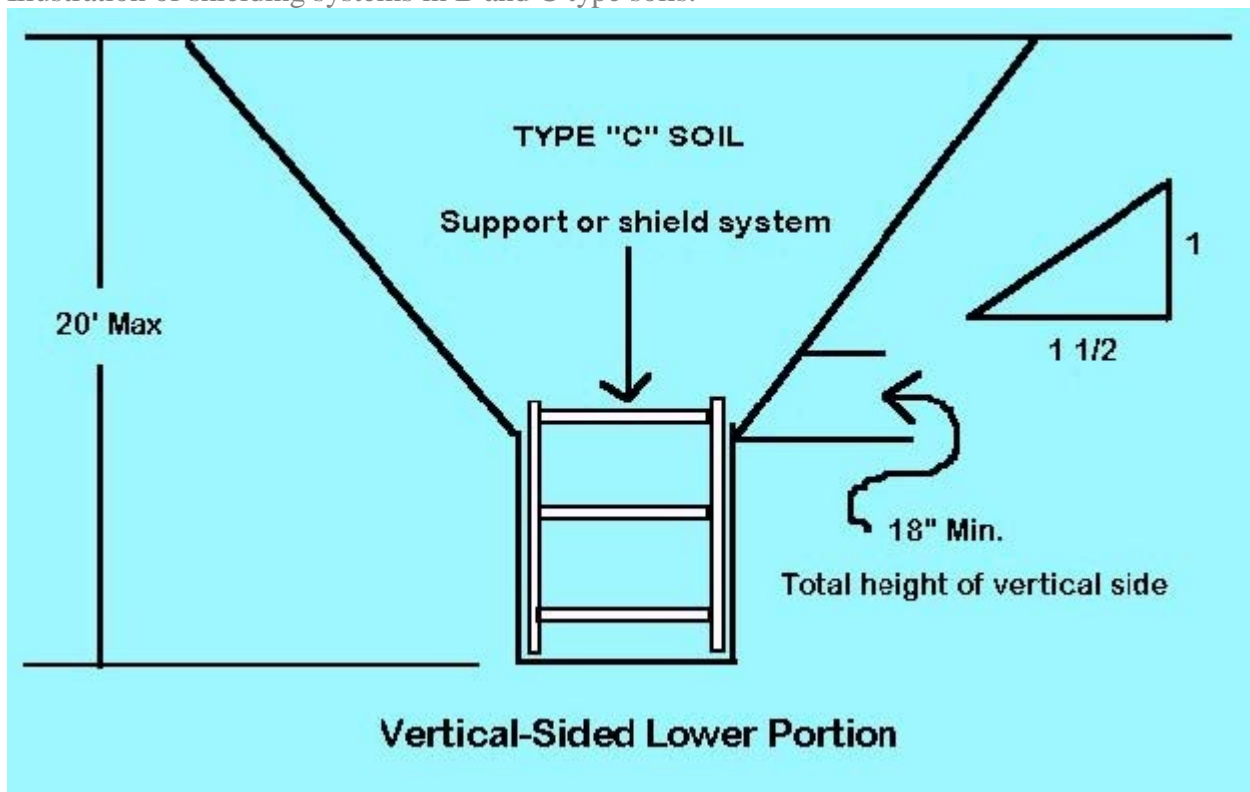
16.8.5 Any modifications to the shields must be approved by the manufacturer.

16.8.6 Shields may ride two feet above the bottom of an excavation, provided they are calculated to support the full depth of the excavation and there is no caving under or behind the shield.

16.8.7 Workers must enter and leave the shield in a protected manner, such as by a ladder or ramp.

16.8.8 Workers may not remain in the shield while it is being moved.

Illustration of shielding systems in B and C type soils.



## **Section “G” Confined Space Program**

### **1.00 IDENTIFYING CONFINED SPACES**

1.1 The first step toward conducting a safe confined-space entry is to identify the space as potentially dangerous. All Confined Spaces shall be considered "permit-required" until pre-entry procedures demonstrate otherwise. To clarify what constitutes a Confined Space, the following definition will be used.

1.2 A Confined Space is any space that has the following characteristics:

1. Large enough or so configured that an employee can bodily enter and perform assigned work.
2. Has limited or restricted means for entry or exit. Confined-space openings are limited primarily by size and location. Openings may be small in size and may be difficult to move through easily. However, in some cases openings may be very large; for example, open-topped spaces such as pits or excavations. Entrance and exit may be required from top, bottom, or side. Size or location may make rescue efforts difficult.
3. Is not designed for continuous employee occupancy.

1.3 Most confined spaces are not designed for employees to enter and work on a routine basis. They may be designed to store a product, enclose materials and process, or transport products or substances. Therefore, occasional employee entry for inspection, maintenance, repair, cleanup, or similar tasks, is often difficult and dangerous. The danger associated with entry may come from chemical or physical hazards within the space.

1.4 Non-Permit Confined Space means a confined space that does not contain, nor has the potential to contain, any hazard capable of causing death or serious physical harm (with respect to atmospheric hazards).

1.5 Permit-Required Confined Space (permit space) means a confined space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere.
2. Contains a material that has the potential for engulfing an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly-converging walls or by a floor that slopes downward and tapers to a smaller cross-section; or
4. Contains any other recognized serious safety or health hazard.

1.6 Based on the definition, many types of spaces may be considered "confined," and therefore, hazardous. Some examples of confined spaces might be sewers, electrical vaults,

steam tunnels, mechanical rooms, or other similar types of enclosures.

1.7 It is the responsibility of department heads to evaluate potentially hazardous spaces within facilities or areas under their control and ensure that the proper precautions are taken for safety. This responsibility may be delegated to a competent person within the department provided he/she is qualified. It may be determined that a space presents no real danger for employees. However, until the space has been evaluated and tested, it shall be assumed to be confined and potentially dangerous. Once a space has been evaluated and it has been determined that confined space characteristics are present, the Safety Department shall determine if the Confined Space requires a permit and will apply appropriate labeling.

## **2.00 IDENTIFYING CONFINED SPACE HAZARDS**

2.1 Once a space has been identified as confined, the hazards that may be present within the confined space must be identified. Confined-space hazards can be grouped into the following categories: 1) Oxygen-deficient atmospheres, 2) flammable atmospheres, 3) toxic atmospheres, and 4) mechanical and physical hazards.

2.2 Every confined space must be evaluated for these four types of hazards. The three types of atmospheric hazards are often the most difficult to identify since they are normally invisible.

1. Oxygen-Deficient Atmospheres The normal atmosphere is composed of approximately 21% oxygen and 79% nitrogen. An atmosphere containing less than 19.5% oxygen shall be considered oxygen-deficient. The oxygen level inside a confined space may be decreased as the result of either consumption or displacement. There are a number of processes which consume oxygen in a confined space. Oxygen is consumed during combustion of flammable materials, as in welding, cutting, or brazing. A more subtle consumption of oxygen occurs during bacterial action, as in the fermentation process. Oxygen can also be consumed during chemical reactions such as in the formation of rust on the exposed surfaces of a confined space. The number of people working in a confined space and the amount of physical activity can also influence oxygen consumption. Oxygen levels can also be reduced as the result of oxygen displacement by other gases.

2. Flammable Atmospheres Flammable atmospheres are generally the result of flammable gases, vapors, dust mixed in certain concentrations with air, or an oxygen-enriched atmosphere. Oxygen-enriched atmospheres are those atmospheres which contain an oxygen concentration greater than 22%. An oxygen-enriched atmosphere will cause flammable materials such as clothing and hair to burn violently when ignited. Combustible gases or vapors can accumulate within a confined space when there is inadequate ventilation. Gases that are heavier than air will accumulate in the lower levels of a confined space. Therefore, it is especially important that atmospheric tests be conducted near the bottom of all confined spaces. The work being conducted in a confined space can generate a flammable atmosphere. Work such as spray painting, coating, or the use of flammable solvents for cleaning can result in the formation of an explosive atmosphere. Welding or cutting with oxyacetylene equipment can also be the cause of an explosion in a confined space and shall not be allowed without a hot work permit. Oxygen and acetylene hoses may have small leaks in them which could generate an explosive atmosphere

and, therefore, shall be removed when not in use. The atmosphere shall be tested continuously while any hot work is being conducted within the confined space.

3. Toxic atmospheres may be present within a confined space as the result of one or more of the following:

- **The Product Stored in the Confined Space** When a product is stored in a confined space, the product can be absorbed by the walls and give off toxic vapors when removed or when cleaning the residual material. The product can also produce toxic vapors which will remain in the atmosphere due to poor ventilation.
- **The Work Being Conducted in the Confined Space** Toxic atmospheres can be generated as the result of work being conducted inside the confined space. Examples of such work include: Welding or brazing with metals capable of producing toxic vapors, painting, scraping, sanding, etc. Many of the solvents used for cleaning and/or degreasing produce highly toxic vapors.
- **Areas Adjacent to the Confined Space** Toxic fumes produced by processes near the confined space may enter and accumulate in the confined space. For example, if the confined space is lower than the adjacent area and the toxic fume is heavier than air, the toxic fume may "settle" into the confined space.

4. **Mechanical and Physical Hazards** Problems such as rotating or moving mechanical parts or energy sources can create hazards within a confined space. All rotating or moving equipment such as pumps, process lines, electrical sources, etc., within a confined space must be identified. Physical factors such as heat, cold, noise, vibration, and fatigue can contribute to accidents. These factors must be evaluated for all confined spaces. Excavations could present the possibility of engulfment. Employees shall be protected from cave-ins by sloping, benching, or shoring systems when the depth of the excavation is more than four feet.

### **3.00      CONFINED SPACE ENTRY PROGRAM**

#### **3.1            Identifying All Confined Spaces**

3.1.1          All confined spaces located within a facility or under the facility's control shall be identified. Once the space has been identified as Confined, the Safety Dept. shall determine if a permit is required.

3.1.2          All employees shall be made aware of these confined spaces through training or instruction provided by department heads or their designated representatives. Assistance in this training shall be provided by the Safety Dept.

#### **3.2            Preventing Unauthorized Entry**

3.2.1          All employees shall be instructed by department heads or their designated representatives that entry into a confined space is prohibited without an authorized permit.

3.2.2          Department heads or their designated representatives shall instruct all employees to list their names on the authorized permit before they will be allowed to enter a confined space.

#### **3.3            The Permit System**

3.3.1 When a confined space must be entered, a permit shall be completed and authorized by department heads, supervisors, or their designated representatives prior to entry of the confined space. This permit shall serve as certification that the space is safe for entry. The permit shall contain the date, the location of the space, and the signature of the person providing the certification.

3.3.2 A permit shall not be authorized until all conditions of the permit have been met.

#### **4.00 Planning the Entry**

4.1 The first step towards conducting a safe confined-space entry is to plan the entry. This will allow for the identification of all hazards, and for the determination of all equipment necessary, to complete the project.

##### **4.1.1 Gathering General Data**

- Identify the confined space. Give the name or location of the confined space.
- Give the reason for entering the confined space. Be specific. Also, identify if hot work will be done.
- Identify the contents of the confined space. This refers to any chemicals or other materials and energy that are usually present in the confined space.

##### **4.1.2 Identifying the Hazards**

NOTE: It is recommended that atmospheric tests be conducted by the entry supervisor prior to the opening of any covers.

- The entry supervisor will determine the oxygen content and describe the testing procedures and equipment used.
- The entry supervisor will determine flammable gas content and describe the testing procedures and type analyzer used.
- If a toxic substance is determined to be in the confined space during testing by the entry supervisor, the Safety Dept. shall be contacted to assist in obtaining a Material Safety Data Sheet or other chemical information to determine what type of personal protective equipment is required, the potential health effects, the Permissible Exposure Limits, and any other information needed to safely conduct the work.
- Department heads or their designated representatives will determine mechanical and physical hazards. They shall list all items and energy that will require lockout/tagout, blanking and bleeding, disconnecting, or securing. Physical hazards shall also be listed.



#### 4.1.3 Ventilation of the Confined Space

- Indicate whether mechanical or natural ventilation will be used. Describe the procedures to be used.

NOTE: If mechanical ventilation is to be used, the exhaust must be pointed away from personnel or ignition sources. Also, mechanical ventilators shall be bonded to the confined space.

#### 4.1.4 Isolating the Confined Space

- Describe the procedures for disconnecting equipment or lockout and tagout. All mechanical, electrical, or heat-producing equipment shall be disconnected or locked and tagged out. This would also include any pumps that pull fluid from, or pump fluid into, the confined space.

#### 4.1.5 Purging/Cleaning the Confined Space

- Indicate if the confined space will be purged. Purging with inert gas is not recommended. If the space must be purged, describe the procedures.
- Indicate the type of cleaning methods to be used. If chemical cleaners are to be used, name the type and describe the procedures. The MSDS for the chemical shall be consulted prior to use.

NOTE: When introducing a chemical into a confined space, the compatibility of that chemical with the contents of the confined space must be checked. If in doubt, consult the Safety Dept.

NOTE: If steam is to be used, the hose shall be bonded to the confined space.

#### 4.1.6 Placement of Warning Signs

- Indicate if warning signs or barriers will be needed to prevent unauthorized entry or to protect workers from external hazards. If the confined space will be left open and unattended for any length of time, warning signs and barriers will be required.

#### 4.1.7 Identifying All Personnel

- List all employees that will be required to prepare the confined space and complete the work inside the space.

#### 4.1.8 Identifying Necessary Equipment

- List all equipment that will be necessary to complete the project.

## **5.00 Conducting Pre-Entry Training**

5.01 Once the entry has been planned, department heads or their designated representatives must train all employees who will be involved in the entry. The training shall be conducted no earlier than one day before entry is to be made. The following outline shall be used for the training:

1. Identify the confined space and the reason(s) for entry
2. Identify the work detail.

- Assign each employee the job(s) he/she is to perform in the entry project (entrant, standby person, etc.).

- If an employee is required to use a piece of equipment, be sure that he/she is capable of using the equipment properly.

- Inform all personnel that no one is to enter the confined space unless the standby person is present at the work site.

3. Inform entrants of all known or suspected hazards.

- Inform personnel of any access or exit problems.

- Inform personnel of all equipment that must be locked out or tagged out.

- Inform personnel of the contents of the confined space.

- Inform personnel of all atmospheric levels that must be maintained before entering and while working in the confined space.

If a toxic atmosphere or substance is present or could become present, the following additional training must be completed:

- If respiratory protection is not going to be used, inform personnel of the maximum permissible exposure level (PEL) that can exist within the confined space, and the method used to monitor PEL.

- Inform personnel of the potential health effects of exposure to the toxic atmosphere or substance.

- Inform personnel of the signs and symptoms of exposure to the toxic fume.

- Inform personnel of the personal protective equipment (PPE) that they will be required to wear.

- If entrants are unaware of the proper use of the PPE, they must be trained in the proper use of this equipment.

NOTE: Department heads may request assistance from Environmental Health & Safety in providing the above- mentioned training.

- Persons shall not be assigned to tasks requiring use of respirators unless it has been determined

that they are physically able to perform the work and use the equipment. A local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status shall be reviewed periodically (for instance, annually).

4. Identify isolation procedures.

- Inform the personnel responsible for the lockout/tagout of all equipment that must be isolated.
- Inform the personnel responsible for performing this function of the methods to be used.

5. Identify purging and/or ventilation procedures.

- Inform all personnel responsible for performing this function of the methods to be used.

6. Identify all equipment needed.

- Inform personnel involved in the project of all equipment that will be necessary to complete the project.
- Make sure that all employees are capable of using their assigned equipment properly.

7. Determine necessary personal protective equipment.

- Inform personnel of all PPE that must be used to ensure their safety.
- Make sure that all personnel required to use PPE are trained in the proper use of the equipment.

8. Establish communication

- Inform all entrants that they are required to maintain communication with the standby person.
- Inform standby person that he/she must maintain constant contact with all entrants.
- Inform personnel of the type of communication they are to use.

9. Protect from external hazards

- Inform personnel where signs and barriers will be placed to prevent unauthorized entry and protect entrants from external hazards.

#### 10. Pre-plan rescue procedures.

- The designated standby person(s) shall be informed of the rescue procedures to be followed.
- The standby person shall be informed that he/she can have no other duty but to maintain contact with personnel inside the confined space.
- Inform the standby person(s) that they must not enter the confined space under any circumstances.

#### 11. Place the confined space back into service.

- Inform personnel of the steps to be taken to place the confined space back into service.

### **6.00      Preparing the Confined Space for Entry**

6.01      Once the entry has been planned and personnel have been trained, the next step is to prepare the confined space for entry. The following steps are to be followed when preparing the confined space for entry:

1. If warning signs or barriers are to be used to prevent unauthorized entry or to protect entrants from external hazards, they shall be placed on or around the confined space as planned and discussed in training.
2. Place all tools, safety equipment, monitoring equipment, etc., near the confined space.
3. Isolate all mechanical and/or electrical hazards as planned and discussed in training.
4. Purge/ventilate the confined space as planned and discussed in training.
5. The entry supervisor will test the atmosphere as discussed in training.
  - If oxygen content is less than 19.5% or greater than 21.5%, perform additional ventilation. Then, shut off ventilation equipment and re-test the oxygen content.
  - If oxygen content is between 19.5% and 21.5%, continue entry preparation.
6. The entry supervisor will test for flammable gas level as planned and discussed in training.
  - If the meter reading is less than 10% of the lower explosive limit (LEL), continue entry preparations.
  - If the meter reading is above 10% of the LEL, continue ventilation of the confined space. Then, shut off the ventilation and have the atmosphere re- tested.

- If the meter reading is still above 10% of the LEL, the confined space must be cleaned before entry is permitted. If the confined space must be entered for cleaning purposes, the procedures outlined in Item 9 of this section must be followed.

7. The entry supervisor will determine the toxicity of the atmosphere as planned and discussed in training. If a toxic atmosphere is present, no person shall be permitted to enter the confined space at a level exceeding the Permissible Exposure Limit without proper Personal Protective Equipment. Environmental Health & Safety shall be called to assist in identifying proper precautions and the protective measures to be taken.

8. Assemble all personnel involved and conduct a simulated rescue drill.

9. The entry supervisor will then add any needed information, then complete and sign the permit.

## **7.00 Utilizing Safety Equipment**

Where practical, all personnel entering a confined space shall be equipped with a retrieval line secured at one end to the entrant by a full-body harness with its other end secured to a tripod lifting hoist.

## **8.00 Atmospheric Testing Procedures**

1. All testing equipment shall be calibrated as instructed by the manufacturer.
2. All of the manufacturer's operating instructions must be followed.
3. The test equipment shall be tested in a known atmosphere to insure its accuracy.
4. Ventilation equipment must be shut off before conducting any atmospheric tests.
5. The atmosphere must be tested at the bottom, top, and middle of all confined spaces.
6. The atmosphere must be continuously monitored while work is being conducted in the confined space.
7. If the confined space is left for any reason, the atmosphere must be re-tested before re-entering the space.

## **9.00 Confined Space Cleaning Procedures**

9.01 If cleaning must be conducted in a confined space to achieve acceptable atmospheric conditions, the following procedures must be followed:

1. All entrants must be equipped with designated safety equipment.
2. All entrants must be equipped with an SCBA.
3. No spark-producing tools will be allowed for use.

## **10.00 Rescue Procedures**

10.01 In the event of an emergency, the standby person shall:

1. Immediately summon the Fire Department by radio or telephone. (Dial 911)
2. Attempt to remove the victim by use of the retrieval line from outside the confined space if this can be accomplished without creating further hazard for the entrant or the attendant.
3. If the standby person is able to remove the victim with the retrieval line, he/she shall administer aid within the limits of his/her training until emergency medical services (EMS) arrive.
4. If the standby person is unable to remove the victim by using the retrieval line, he or she must wait for help to arrive. The standby person(s) is not to enter the confined space for any reason.
5. Give EMS personnel any information they request.

## **11.00 PERSONNEL RESPONSIBILITIES & TRAINING**

11.1 Everyone involved in a confined-space entry project has certain responsibilities and requires a certain amount of training. It is very important that every individual is familiar with their responsibilities. This section outlines the responsibilities and training requirements of each individual involved in a project.

1. Safety Department
2. Department Heads and Their Designated Representatives
3. Authorized Entrants
4. Standby Persons (Attendants)

### **11.2 Responsibilities of the Safety Department**

The Safety Dept. Director or his/her designated representative shall be responsible for the following:

- Review and update of the Haugland Energy Group Confined Space Entry Program to conform with current CFR standards.
- Insure compliance with standards set forth in the program by periodic inspection of entry sites and canceling permits where unsafe conditions are present.
- Assisting Department Heads, Managers and Supervisors with:
  1. providing training as set forth in the program,
  2. identification of confined spaces,
  3. identifying spaces that require a permit for entry,
  4. labeling Permit-Required Confined Spaces.

- Perform a single annual review covering all entries performed during a 12-month period to ensure employees participating in entry operations are protected from permit space hazards.

### 11.3 Responsibilities and Training Requirements of Department Heads or Their Designated Representatives

11.3.1 Department heads or their designated representatives shall be responsible for the following:

- Identifying confined spaces within facilities or areas under their control.
- Identifying hazards within a confined space under their control.
- Documenting that all training requirements for a specific confined space entry have been met by signing the pre-entry authorization space on the entry permit.
- Insuring that the required atmospheric tests are performed at the confined space and results recorded on the permit prior to entry authorization.
- Obtaining and maintaining all equipment necessary to complete the confined-space entry project.
- Authorize entry by signing the Entry Authorization space on the entry permit after all conditions for a safe entry have been met.
- Terminating the entry and canceling the permit when:

11.3.2 Entry operations covered by the entry permit have been completed.  
A condition that is not allowed under the entry permit arises in or near the permit space.

- Determining, whenever responsibility for a permit space entry operation is transferred, and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

### 11.04 Responsibilities and Training Requirements of Authorized Entrants

11.04.1 The person(s) authorized to enter a confined space shall be responsible for and receive training in the following:

- The knowledge of hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure.

- Proper use of equipment, which includes:

1. Atmospheric testing and monitoring equipment.
2. Ventilating equipment needed to obtain acceptable entry conditions.
3. Communication equipment necessary to maintain contact with the standby person.
4. Personal protective equipment as needed.
5. Lighting equipment as needed.
6. Barriers and shields as needed.
7. Equipment, such as ladders, needed for safe ingress and egress.
8. Rescue and emergency equipment as needed.
9. Any other equipment necessary for safe entry into and rescue from permit spaces.

- Communication with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space if required.

- Alert the attendant (standby person) whenever:

1. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or
2. The entrant detects a prohibited condition.

- Exiting the permit space as quickly as possible whenever:

1. An order to evacuate has been given by the attendant or the entry supervisor;
2. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
3. The entrant detects a prohibited condition; or
4. An evacuation alarm is activated.

#### 11.05 Responsibilities and Training Requirements of Standby Persons (Attendants)

11.05.1 Persons authorized to perform duties as attendant shall be responsible for and receive training in the following:

- Knowing the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of exposure.
- Is aware of possible behavioral effects of hazard exposure in authorized entrants.



- Continuously maintaining an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized entrants accurately identifies who is in the permit space.
- Remains outside the permit space during entry operations until relieved by another attendant.
- Attempting non-entry rescue if proper equipment is in place and the rescue attempt will not present further hazards to the entrant or attendant.
- Communicating with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space when conditions warrant.
- Monitoring activities inside and outside the space to determine if it is safe for entrants to remain in the space and ordering the authorized entrants to evacuate the permit space immediately under any of the following conditions:
  1. If the attendant detects a prohibited condition.
  2. If the attendant detects the behavioral effects of hazard exposure in an authorized entrant.
  3. If the attendant detects a situation outside the space that could endanger the authorized entrants.
  4. If the attendant cannot effectively and safely perform all the duties required by this program.
    - Summoning rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.
    - Taking the following actions when unauthorized persons approach or enter a permit space while entry is underway:
      1. Warn the unauthorized persons that they must stay away from the permit space.
      2. Advise the unauthorized persons that they must exit immediately if they have entered the permit space.
      3. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space.
- Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

## **12.00 List of Terms**

### **Authorized Entrant**

A person who is approved or assigned by the department head in charge of the entry to perform a specific type of duty or duties or to be at a specific location at the job site.

### **Bonding**

The joining of two or more items with an electrical conductor so that all ends joined have the same electrical charge or potential.

Confined Space

### **Entry**

The action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space. Entry Permit The written or printed document that is provided by the employer to allow and control entry into a permit space and that contains the information specified in this program.

### **Entry Supervisor**

Department Head or the designated representative (such as the foreman or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this program.

Note: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this program for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of entry operation.

### **Hazardous Atmosphere**

An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL).
- Airborne combustible dust at a concentration that meets or exceeds its LFL. NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less.
- Atmospheric oxygen concentration below 19.5% or above 23.5%.
- Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of 29 CFR 1910 and that could result in employee exposure in excess of its dose or permissible exposure limit.

NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

- Any other atmospheric condition that is immediately dangerous to life or health.

NOTE: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Standard, section 1910.1200, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

### **Hot Work**

Any work involving burning, welding or similar fire-producing operations. Also, any work that produces a source of ignition, such as grinding, drilling, or heating.

**Hot Work Permit**

The employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

**Immediately Dangerous to Life or Health**

An atmosphere that poses an immediate threat of loss of life: May result in irreversible or immediate severe health effects; may result in eye damage/irritation; or other condition that could impair escape from a confined space.

**Lower Explosive Limit (LEL)**

The minimum concentration of a combustible gas or vapor in air that will ignite if an ignition source is introduced.

**Non-Permit Required Confined Space**

A confined space that does not contain, nor has the potential to contain, any hazard capable of causing death or serious physical harm (with respect to atmospheric hazards).

**Oxygen-Deficient Atmosphere**

An atmosphere that contains an oxygen concentration of less than 19.5% by volume.

**Oxygen-Enriched Atmosphere**

An atmosphere that contains an oxygen concentration greater than 22% by volume.

**PPE - Personal Protective Equipment**

Any devices or clothing worn by the worker to protect against hazards in the environment. Examples are respirators, gloves, and chemical splash goggles.

**PEL - Permissible Exposure Level**

Concentration of a substance to which an individual may be exposed repeatedly without adverse effect.

**Permit-Required Confined Space****Purging**

The removal of gases or vapors from a confined space by the process of displacement.

**Standby Person**

A person designated by the department head in charge of entry to remain outside the confined space and to be in constant communication with the personnel working inside the confined space.

## **Section “H” Hazard Communication Program**

### **1.00 Purpose**

The purpose of this program is to ensure that the hazards of all chemicals and substances are evaluated and the information concerning their hazards is communicated to employees, including emergency response organizations, state and federal agencies, other employers and contractors, as necessary. This hazard information will be communicated, and displayed in accordance with this Hazard Communication Program.

is firmly committed to providing each of its employees a safe and healthy work environment. It is recognized that workers may use chemicals or substances that have potentially hazardous properties. When using these substances, workers must be aware of the identity, toxicity or hazardous properties of a chemical or substance, since an informed employee is more likely to be a safe employee. To this end, has established a written Hazard Communication Program.

### **2.00 Scope**

This program is applicable to all employees who may be exposed to hazardous chemicals. When work is performed on a non-owned or operated site, the operator’s program shall take precedence, however, this document covers employees and contractors and shall be used on owned premises, or when an operator’s program doesn’t exist or is less stringent.

### **3.00 Definitions**

Chemical - any element, chemical compound, or mixture of elements and/or compounds.

Chemical Inventory List - a list of chemicals used at this facility, or by personnel that report to this facility.

Electronic Access – using electronic media (telephone, fax, internet, etc.) to obtain Material Safety Data Sheets or health information.

Facility - an establishment at one geographical location containing one or more work areas.

Hazardous chemical - any chemical that is a physical hazard, a health hazard, or has a Permissible Exposure Limit established for it.

Hazardous substance - see hazardous chemical.

Hazard Communication Program Coordinator - the person who has overall responsibility at a facility for that facility's Hazard Communication Program.

Health hazard - a substance for which there is statistically significant evidence based on

at least one study conducted in accordance with established scientific principles that acute or chronic adverse health effects may occur in exposed employees.

IDLH - immediately dangerous to life and health.

Immediate Use - the chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Jobsite - an area remote from a facility where hazardous chemicals are stored or used and employees are present for the purpose of business.

(MSDS) Material Safety Data Sheet - a written or printed document containing chemical hazard and safe handling information, prepared in accordance with the OSHA Occupational Safety & Health Standards, Section 1910.1200, paragraph (g).

(NFPA) National Fire Protection Association Labeling - a common industry labeling method developed by the National Fire Protection Association to identify the hazards associated with a particular chemical.

(PEL) Permissible Exposure Limit - the maximum eight-hour time weighted average of any airborne contaminant to which an employee may be exposed.

Readily available - when an employee has access during the course of his/her normal work shift. Substance - see Chemical.

(TLV) Threshold Limit Value - the airborne concentration of a substance that represents conditions under which it is believed that nearly all normal workers may be repeatedly exposed day after day without adverse effect.

Work area - a room or defined space in a facility where hazardous chemicals are stored or used and where one or more employees are present.

Workplace - see Facility.

Workplace Chemical List - see Facility Chemical List.

#### **4.00 Responsibilities**

This written hazard communication program has been developed, implemented and will be maintained at each workplace. The program shall describe how labels, other forms of warning and material safety data sheets shall be communicated to employees.

The Safety Manager is responsible for developing and implementing the Hazard Communications Program. Managers are responsible for maintaining Material Safety Data Sheets and the Chemical Inventory List for their locations. The Safety Manager reviews the MSDS files and Chemical Inventory List at each location at least annually to ensure that they are complete and up to date.

Employees are responsible for following the requirements in the Hazard Communication Program, to use proper personal protective equipment, to report containers without labels immediately and to not deface any label.

Any employee who transfers any material from one container to another is responsible for labeling the new container with all required information.

All employees are responsible for learning the requirements of this section and for applying them to their daily work routine.

## **5.1 Requirements**

This Hazard Communication Program was prepared for use by to explain how meets the requirements of the federal Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200). It spells out how will inventory chemicals stored and used, obtain and use material safety data sheets, maintain labels on chemical substances, and train employees about the hazards of chemicals they are likely to encounter on the job.

Preparation of this program indicates our continuing commitment to safety among our employees in all of our locations.

- Each facility is expected to follow this program and maintain its work areas in accordance with these requirements.
- Employees, their designated representatives, and government officials must be provided copies of this program upon request.
- In addition to the program, other information required as part of our hazard communication effort is available to workers upon request.
- Asking to see this information is an employee's right.
- Using this information is part of our shared commitment to a safe, healthy workplace.

## **6.00 List of Hazardous Chemicals**

maintains a listing of all known hazardous chemicals known to be present used at, or by this facility by using the identity that is referenced on the material safety data sheet (MSDS). This identity is often a common name, such as the product or trade name (i.e., Lime-A-Way).

The Chemical Inventory List is updated as necessary and at least annually by the Hazard Communication Program Coordinator or their designee.

The facility Chemical Inventory List must be available for review upon request.

## **7.00 Material Safety Data Sheets**

Chemical manufacturers are responsible for developing MSDSs. shall have a MSDS for each chemical used with the exception of consumer products.

Material Safety Data Sheets, for chemicals used in this facility or by personnel reporting to this facility, shall be maintained, readily accessible in each work area and be made available, upon request, to employees, their designated representatives and regulatory officials in accordance with the requirements of 29 CFR 1910.1020(e).

Material Safety Data Sheets are filed alphabetically, by material classification, in the MSDS Book. A Chemical Inventory List is provided in the front of the MSDS Book, listing all MSDS' contained therein. This inventory serves as the index of the MSDS Book. The MSDS Book shall be displayed in a prominent location in the work area where it is accessible to all employees.

A copy of a MSDS request form is located in the first section of the MSDS Book. An employee may use a copy of this form to request an MSDS or he may ask the Manager for one. In either case the requested MSDS must be given to the employee within 24 hours.

MSDS' must be obtained for each required chemical from the chemical manufacturer, supplier or vendor. The purchasing of any potentially hazardous chemical products from any supplier that does not provide an appropriate Material Safety Data Sheet in a timely fashion is prohibited.

The Material Safety Data Sheet must be kept in the MSDS library for as long as the chemical is used by the facility. Electronic access (telephone, fax, internet, etc.) may be used to acquire and maintain MSDS libraries and archives.

The Manager is responsible for seeing that the Chemical Inventory List inventory is maintained, is current and is complete. He will review the inventory and the MSDS Book at least annually. When a hazardous material has been permanently removed from the work place, its MSDS is to be removed from the MSDS Book and the Chemical Inventory List. A file copy is to be maintained in a "dead file".

MSDS' for hazardous materials to which employees have been exposed must be maintained after the employee leaves the employment of HAUGLAND ENERGY GROUP LLC. Before any non- routine task is performed, employees will be advised of special precautions and the hazards associated with chemicals contained in unlabeled pipes in their work areas, if present. In the unlikely event that such tasks are required, the Manager will provide MSDS for involved chemical. Employees have the right to request MSDS on any



chemical and it must be provided without any issues. hazards of non-routine tasks

### **8.1 Labels, Labelling and Warnings:**

The Manager will ensure that all hazardous chemicals used or stored in the facility are properly labelled.

- Damaged labels or labels with incomplete information shall be reported immediately.
- Damaged labels on incoming containers of chemicals shall not be removed.
- New labels shall be provided as needed so that all containers are properly labelled.
- Only containers into which an employee transfers a chemical for their own immediate use will not require labelling.
- Employees who are unsure of the contents of any container, vessel or piping must contact their supervisor for information regarding the substance including:
  - The name of the substance
  - The hazards related to the substance
  - The safety precautions required for working with the substance.

Labels, tags or markings on containers shall list as a minimum:

- Words, pictures, symbols or combinations thereof may be used.
- The trade name of the product as listed on the Material Safety Data Sheet.
- Appropriate hazard warnings to help employees protect themselves from the hazards of the substance.
- Labels provided by chemical manufacturers, distributors, and importers must also list the name and address of the manufacturer, importer, or vendor responsible for the chemical, and from whom more information about the chemical can be obtained.
- Labels shall be legible, in English. However, for non-English speaking employees, information shall be presented in their language as well.
- or employees shall not remove or deface labels on incoming containers of hazardous chemicals.

All containers must be labelled. When an employee transfers the contents of one container to another, he must label the new container with all required information. This information can

be obtained from the labelling of the original container or from the material's MSDS. Any container of a potentially hazardous material that will not be emptied during one shift must be labelled, without exception.

Personnel in the Shipping and Receiving Departments are responsible for proper labelling of all containers shipped by and for the inspection of all incoming materials to ensure correct labelling. Chemicals received from vendors that are not properly labelled must be rejected.

NFPA Standard 704 labels shall be the preferred hazard identification method used in facilities and on materials containers used on client sites. All employees, clients, subcontractors and visitors who may come in contact with a hazardous substance must be briefed to ensure understanding of the NFPA 704 labelling system.

## **9.1 Training**

shall provide employees and new hires at their initial assignment effective information and training on hazardous chemicals in their work area.

Additional training will be provided whenever a new chemical hazard is introduced into the work area. To reinforce the importance of handling chemicals properly when performing new or non-routine tasks, Supervision will conduct supplementary training as needed.

Formal training will be conducted by facility employees or individuals who are knowledgeable in the Hazard Communication program.

The Manager shall ensure records of employee training are maintained.

When an outside contractor, such as a pest control worker or a carpenter enters a site to perform a service for the Haugland Energy Group LLC, he must first present MSDS' for any and all hazardous chemicals he will use. These MSDS' will be treated as above with the same training requirements. The Manager will be responsible for contacting each contractor before work is started to gather and disseminate any information concerning chemical hazards the contractor is bringing into the work place.

The Hazard Communication Program documented training shall, as a minimum, include:

- Requirements, details and rights of the employee as contained in the Hazard Communication regulation
- Operations and work areas where hazardous chemicals are present.
- Location of the written Hazard Communication Program, MSDSs and the Chemical Inventory List.
- How to access MSDS' or MSDS information.

- How to read and an explanation of labels and Material Safety Data Sheets for pertinent hazard information and how employees can obtain and use the appropriate hazard information.
- Methods and observations that may be used to detect the presence or release of hazardous chemicals by use of monitoring devices, visual appearance or odor.
- The physical & health hazards of chemicals in the work area.
- Protection measures to be utilized to prevent exposure.
- Appropriate work practices.
- Emergency procedures.
- Proper PPE to be used.

## **10.1 Multi-Employer Job Sites/Multi-Work Site**

### Multi-Work Sites

Where employees must travel between work places during a work shift, the written HAZCOM Program shall be kept at a primary job site. If there is no primary job site, then the program shall be sent with employees.

The program shall be made available, upon request, to employees, their designated representatives, the Assistant Secretary and the Director in accordance with requirements of 29 CFR 1910.1020(e).

### Multi-Employer Job Sites

A pre-job briefing shall be conducted with the contractor prior to the initiation of work on the site.

- During this pre-job briefing, contractors shall notify and present current copies of Material Safety Data Sheets and label information for every hazardous substance brought on- site.
- shall notify and provide MSDS' and label information for all hazardous materials the contractor may encounter on the job.
- The facilities labelling system and any precautionary measures to be taken by contractor during normal conditions and emergencies shall be addressed.
- By providing such information to other employers, does not assume any obligations that other employers have for the safety of their employees.

- In this regard, other employers working on property or for on client's property remain fully responsible for developing and implementing their own compliant hazard communication programs.

## **11.00 Hazard Warnings / NFPA 704**

The NFPA 704 Diamond is a means of disseminating hazard warning and information for a material. The diamond is divided into four sections. Each of the first three colored sections has a number in it associated with a particular hazard. The higher the number is, the more hazardous a material is for that characteristic. The fourth section includes special hazard information. The four sections and an explanation of the numbers in them are provided.

# **Section "I" Hearing Conservation Program**

## **1.00 Introduction**

1.01 The Purpose of the hearing conservation program is to prevent hearing loss which may be caused by prolonged exposure to loud noise during contract work. Exposure to high levels of sound may cause damage to the ear resulting in temporary or permanent hearing loss. The extent of the damage to hearing is related to the intensity of the noise and duration of exposure.

## **2.00 Hearing Conservation Measures**

A. Monitoring employee's exposure to noise.

B. Audiometric testing of exposed employees to detect early signs of hearing loss.

C. Use of Hearing Protection.

D. Posting of high noise areas requiring the use of hearing protection.

E. Employee training, stressing the effects of noise exposure and the use of hearing protection.

## **3.00 Established hearing conservation practices:**

A. The use of hearing protection is mandatory in all areas where noise levels exceed 85 dBA.

B. All employees in the above average exposure group who are exposed to an 8 hour time weighted average noise level of 85 dBA or above shall be included in the Hearing Conservation Program.

C. All employees included in the program shall receive annual audiometric tests.

D. Annual training on the effects of noise on hearing and use of hearing protection shall be provided for each employee by their Department Manager or his/her designee.

E. Noise level surveys shall be conducted by the Safety Department.

#### **4.00 Control Measures**

##### **4.1 Engineering Controls**

4.1.1 Engineering controls shall be to reduce the noise level, if feasible, by controlling the sources of noise. Typical engineering controls involve:

Reducing noise at the source.

Interrupting the noise path.

Reducing reverberation.

Reducing structure-borne vibration

Common examples of such controls are:

1. Installing a muffler

2. Erecting acoustical enclosures and barriers.

3. Installing sound absorbing material.

4. Installing vibration mounts and providing proper lubrication.

##### **4.2 Personal Protective Equipment**

4.2.1 PPE shall be used when engineering controls are not feasible for reducing employee exposure to noise. Hearing protection usually takes the form of ear muffs or ear plugs.

Department managers shall be responsible for ensuring that the proper PPE is made available to all affected employees.

##### **4.3 Administrative Controls**

4.3.1 Administrative controls shall be used to limit employees exposure to noisy conditions by limiting exposure times to those areas. This control method is only effective where supervision diligently monitors employee exposure times in high noise areas. Administrative

controls may be used only when hearing protection provides insufficient attenuation to reduce an employees exposure to permissible exposure limits. That is, administrative controls shall not be used in place of hearing protection, but shall be used in addition to protection when this alone cannot reduce the exposure to permissible limits.

## **5.00 Responsibilities**

### **5.1 Safety Department**

A. Conduct sound level surveys and noise exposure measurements in various areas and facilities as required.

B. Assist in training programs on hearing protection.

C. Make recommendations in selecting protective equipment for various activities.

D. Make recommendations in selecting engineering controls to reduce noise exposures.

E. Maintain legal record of hearing loss cases (OSHA 200 Log).

### **5.2 Department Managers**

A. Ensure annual training of employees through periodic safety meetings.

B. Ensure posting of all areas identified as “Hearing Protection Required”.

C. Ensure affected employees are supplied with appropriate hearing protection devices.

### **5.3 Department Supervisors**

A. Identify work activities involving high noise levels and initiate the required protective actions.

B. Become familiar with the provisions of the Hearing Conservation Program.

C. Be aware of every high noise area into which employees under his/her supervision must enter.

D. Instruct employees on the proper use of hearing protection devices.

E. Enforce the wearing of hearing protection devices when and where they are required.

F. Encourage use of hearing protection in areas not specifically posted.

#### 5.4 Employee

A. Wear hearing protect in high noise areas in accordance with this program.

B. Initiate corrective actions at any point in the job when acceptable sound levels are exceeded.

C. Take annual audiometric (hearing) test.

D. Report problems or concerns to their Supervisor, Department Manager, or the Safety Department.

### **6.00 Noise Minimization**

6.1 In order to reduce the exposure of both Haugland Energy Group employees and the general public to unacceptable noise levels the following steps shall be taken before the start of each project:

A. Local noise ordinances shall be reviewed for each job site, to determine maximum noise levels that can be generated during planned work periods.

B. Sampling required by local noise ordinances shall be performed and evaluated by a qualified person following ANSI standards. All sampling results shall be compared to applicable ordinances.

6.2 Supervisors shall ensure that all noise local ordinances are adhered to and that all possible steps are taken to reduce the production of unacceptable noise levels. This includes ensuring that all vehicles, machines and equipment to be used on the job site are properly maintained.

## **Section “J” Fleet Safety and Procedures Program**

### **1.00 Motor vehicles**

#### **1.1 Introduction**

1.1.1 The operation of our automobiles and trucks on the highways is part of our company’s association with the public, and our policy in this respect is that of utmost courtesy. This program addresses fleet vehicles that can reasonably be expected to be used during contract work.

1.1.2 Operators of Company Equipment shall obey all Federal, State, and local motor vehicle and traffic laws as well as these safe driving rules at all times.

#### **1.2 General**

1.2.1 Employees shall make a pre-trip inspection to their assigned vehicle before taking it on the road to be sure it is in proper condition. This check shall include the State registration and inspection stickers and to be sure they are properly affixed and do not exceed their expiration dates. Operators shall also review the vehicles operating manual, especially before operating a vehicle they are unfamiliar with. While performing the inspection the vehicle shall be allowed to warm up before it is put into motion. Vehicles shall be operated at moderate speeds until they have reached the proper operational temperature.

1.2.2 Employees shall not drive a company vehicle which is need of repair and is unfit for safe operation.

1.2.3 Employees shall report promptly any defects in company vehicles, which may constitute a hazard.

1.2.4 The use of any motor vehicle, mechanical equipment, crane, hoist or derrick which is not in compliance with any applicable requirement is prohibited. These vehicles shall be identified as hazardous and have their controls locked or tagged out of operation, or the vehicle shall be physically removed from its place of operation.

1.2.5 Employees shall keep a safe distance when following other vehicles.

1.2.6 Employees shall remove the ignition key when leaving company vehicles unattended. A motor vehicle is to be considered unattended when the operator is 25 feet or more from the vehicle. Employees are also to place manual transmission vehicles in low gear if on a grade and chock the wheels when necessary.

1.2.7 Seatbelts and restraints shall be worn at all times by the driver and all passengers in a company vehicle. Seatbelts shall not be tied or chained in any manner to make them inoperable.

1.2.8 Only an employee with a valid driver’s license issued by the state in which the employee works shall be authorized to operate company vehicles. The employees’ license must be the proper class for the type of vehicle they intend to operate. No company vehicle is to be operated without the authorization of a management supervisor.



## **2.00 Preventative Maintenance**

### **2.1 Overview**

2.1.1 This preventative maintenance program has been established to provide a means of vehicle inspection on a regular interval to detect mechanical problems and correct them before hazards arise which could cause damage or injure employees.

### **2.2 General**

2.2.1 The Fleet Manager administers the preventative maintenance program by scheduling periodic maintenance inspections for all company vehicles and equipment. The majority of the success of this program falls on the individual operator of the vehicle, by whose use of the vehicle, is the best qualified person to report any defects affecting safe, and efficient operation.

## **3.00 Vehicle operation and unattended or overnight parking**

### **3.1 Overview**

3.1.1 This section puts forward the general vehicle and equipment operating requirements necessary to assure safe operation. In addition to overnight parking this section will review the requirements for D.O.T motor vehicle inspection, Hazardous material shipping papers, and medical cards required when transporting hazardous material.

### **3.2 General**

3.2.1 All vehicles or equipment left unattended at night adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, to identify the location of the equipment.

3.2.2 Heavy machinery, equipment, or parts thereof which are suspended or held aloft shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them.

3.2.3 Bulldozers and scraper blades, endloader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in a neutral position, with the motors stopped and brakes set, unless work is being performed on those components.

3.2.4 Whenever the equipment is parked, the brakes shall be set.

3.2.5 All vehicles shall be equipped with an adequate audible warning device (horn).

3.2.6 Motor vehicle equipment having an obstructed view to the rear shall not be operated in reverse unless:

3.2.6.1 The vehicle has a signal alarm audible above the surrounding noise level or; the vehicle horn may be used as the audible signal.

3.2.6.2 The vehicle is backed up only when an observer signals that it is safe to do so.

3.2.7 A vehicle or combination of vehicles when loaded with any material extending four feet or more beyond its rear shall be provided with a red flag (24" X 24") by day or a red light at night on the extreme rear end of the load.

3.2.8 All vehicles with cabs shall have windshields and power wipers. Cracked and broken

glass shall be replaced.

3.2.9 All vehicles to be loaded with spoils or loose aggregate, filled by means of cranes, power shovels, loaders, etc., shall have a cab shield and or canopy.

3.2.10 Vehicles shall have seats firmly secured and seat belts adequate for the number of employees to be carried.

3.2.11 Dump trucks shall be equipped with a permanently attached positive means of support, capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done.

3.2.12 Trip handles for tailgate of dump trucks shall be so arranged that the operator will be in the clear when the tailgate is released for dumping the load.

#### **4.00 D.O.T. Inspection Procedures**

4.01 D.O.T. regulations regarding the transportation of hazardous materials require that the operator of a vehicle covered by the regulations inspect and prepare an inspection report on the vehicle at the end of his shift. Any defects noted on the inspection report must be corrected and certified on the inspection report prior to the vehicles next operation. In addition, the most current vehicle inspection report must be kept in the cab of the vehicle when it is on the road. These inspection reports must be kept on file in the operating headquarters for a minimum of ninety days.

#### **5.00 Operator – Actions/Responsibilities**

5.1 At the end of each workday or shift the vehicle operator shall:

5.2 Inspect appropriate items on his vehicle utilizing the “Vehicle Inspection Report”. Complete the appropriate day’s entries on the report, sign the report and place it on the clipboard in the cab of the vehicle.

5.3 Prepare a “Repair Request” report for any defects noted on the “Vehicle Inspection Report”. Submit the copies of the “Repair Request” to the Fleet manager or his designated representative.

5.4 The proper completion of the inspection report at the end of the shift is the full responsibility of the driver.

5.5 At the beginning of the workday, prior to operating the vehicle, the operator shall:

5.6 Review the current “Vehicle inspection Report” to determine that any noted defects from the last previous operation have been corrected or that corrective action was not required and the report is certified. Check the vehicle to confirm that the repairs have been completed and sign the report in the place designated. Place the report in the designated location inside the vehicle.

5.7 If the current “Vehicle Inspection Report” shows that there are outstanding defects, the vehicle shall not be operated until it can be determined that the repairs have been completed. After repairs are completed they must be certified by the person making the repairs on the inspection report. The reviewing driver must also sign off on the report.

5.8 If no defects are noted on the current “Vehicle Inspection Report” from the last previous inspection, no action is required by the new driver.

5.9 The proper review and completion of the “Vehicle Inspection Report” is the full responsibility of the driver. The driver is responsible for citations, fines etc. resulting from failure to comply with the above procedure.

5.10 At the end of the normal workday on Monday, the operator shall turn in the

previous weeks “Vehicle Inspection Report” to his supervisor. If the vehicle is not operated on Monday, the report will be turned in by the driver on the next day it is used.

## **6.00 Fleet Management Dept. – Actions/Responsibilities**

6.1 After completing repairs required the mechanic shall check in the cab of the vehicle and review the “Vehicle Inspection Report” to see if the defects he corrected were recorded on the report. If the defects he repaired were on the report he shall sign the inspection report in the place provided for the mechanic. If the defect was noted on the inspection report and the mechanic determined that no repairs were required, this section will be checked and the report signed by the mechanic.

6.2 The Fleet Dept. shall establish a file for each vehicle. The “Vehicle Inspection Reports” and “Repair Requests” shall be kept for a minimum of ninety days in the vehicle file.

6.3 All vehicles in use shall be checked at the beginning of each shift to ensure that the following parts, equipment, and accessories are in safe operating condition and free of apparent damage: services brakes, including trailer brake connections; parking system; emergency stopping system; tires; horn; steering mechanism; coupling devices; seat belts; operating controls; and, safety devices, lights, reflectors, windshield wipers, defrosters, fire extinguisher, etc. All defects shall be corrected before the vehicle is used.

6.4 The D.O.T. Vehicle Inspection form shall be completed daily, where required, in accordance with all Federal and State Motor Vehicle & Traffic Laws.

6.5 The hazardous material shipping form shall be fully completed, where required. Guidelines for “Shipping Papers”:

6.5.1 “Shipping Papers” are the documents that describe and properly identify the hazardous materials on board a vehicle (see list attached). The U.S. Department of Transportation, Title 49 Code of Federal Regulations, require that “Shipping Papers” accompany all shipments of hazardous materials, regardless of quantity.

6.5.2 The purpose of “Shipping Papers” is to inform emergency personnel of what is on board your vehicle.

6.5.3 It is the responsibility of the operator of a vehicle being used to transport hazardous materials to ensure that the “Shipping Papers” are in the vehicle and readily available and recognizable by authorities in case of an accident or inspection.

6.5.4 On Haugland Energy Group crews, “Shipping Papers” are required when gasoline, chain saw gas/oil mix or other hazardous material from the attached list is carried on the truck.

6.5.5 It is recommended that the “Shipping Papers” be placed in a clear plastic envelope and kept in the driver’s door pouch.

6.5.6 Instructions for filling in the “Shipping Papers” form:

6.5.6.1 “Quantity” is filled in by the operator or Foreman.

6.5.6.2 The “Shipping Papers” must be kept current. However, when the hazardous materials (such as gas/oil mix) are being carried for general use (not being delivered), the volume does not have to be changed as the material is used. Only when the material is depleted (or taken off the truck) does it need to be removed (erased or scratched out) from the “Shipping Papers”.

6.5.6.3 List only material that is being carried on the truck.

6.5.6.4 The operator shall sign and write the vehicle number on the form.

6.06 The drivers Medical card, where required shall be up-to-date at all times, especially when transporting hazardous material.

## **7.00 Vehicle Transport of Employees**

7.01 General

7.01.1 Trucks or cars transporting employees shall be equipped with approved seating and shall not be loaded to an extent that riding conditions are made unsafe.

## **8.00 Earth Moving Equipment**

8.00.1 This section is designed to cover the safe operation of “earth moving equipment” such as backhoes, loaders, scrapers, crawler or wheel tractors, bulldozers etc.

8.1 General

8.1.1 No employee shall move or cause to be moved construction equipment or vehicles upon any access roadway or grade unless it is constructed and maintained to accommodate safely the movement of such vehicles.

8.1.2 Excavation equipment shall not be driven over-the-road or used on slopes or inclines without rollover protection.

8.1.3 Only authorized and trained personnel shall be permitted to operate excavating equipment.

8.1.4 Equipment shall not be oiled, greased, fueled or adjusted while the motor is running.

8.1.5 If it becomes necessary to remove an obstruction near or in the excavating equipment, the machine shall be shut down and the boom placed in a safe position.

8.1.6 When the front bucket is loaded by hand, the operator shall place the bucket on the ground and turn off the engine. The worker shall notify the operator when loading is complete and he is clear of the machine.

8.1.7 Employees shall stay clear of a machine in operation and keep away from the extended arc of the digging boom.

8.1.8 When equipment is left unattended, the engine shall be shut off, the hand brake on, buckets placed on the ground and the ignition key removed.

8.1.9 Seatbelts shall be worn when provided and required by law.

8.1.10 The operator shall not allow anyone to ride any part of his machine.

8.1.11 The operator shall not backfill any excavation before visually checking it.

8.1.12 Safety chains shall be attached to the stabilizers and digging boom before it can be driven on the road.

8.1.13 Both stabilizers shall be properly positioned before any lifting operation.

8.1.14 During lifting and setting operations, the machine engine is to run at its lowest practical speed.

8.1.15 Loads too heavy to be safely handled shall not be lifted with the backhoe.

8.1.16 Equipment specifically designed for lifting shall be used.

8.1.17 Only qualified operators specifically trained in lifting operations shall be used.

## **9.00 Crawler Type Equipment**

9.1 The blade shall not be used as a battering ram.

9.2 When crossing logs or other obstacles, travel slowly and at an angle to the obstacle. This will slow the tractor fall and prevent operator injury.

9.3 Travel slowly when moving over rough terrain.

9.4 Carry the blade as low as possible when working on traveling down steep inclines.

9.5 Never leave the tractor seat with the blade raised.

9.6 Do not attempt to turn around on steep slopes, backup or down.

9.7 Employees shall never ride on the drawbar of a tractor.

9.8 Always disengage the master clutch and put the machine in neutral when starting the engine.

## **10.00 Trailing**

10.1 Overview

10.1.1 This section reviews for all operating departments the requirements regarding trailing of equipment or materials.

## 10.2 General

10.2.1 Before loading equipment or materials on a trailer, a check shall be performed to see that the tire pressure is as posted and equal in all tires.

10.2.3 When loading any equipment on a trailer, the trailer shall be attached to the closed pintle hook of a truck.

10.2.4 The front loader and the digging bucket of the backhoe and the digging chain of the trencher shall be down on the trailer bed, and the parking brake applied.

10.2.5 Approved load binders, chains, and slings properly attached to the trailer shall be used to tie down equipment.

10.2.6 It shall be the qualified driver's responsibility to see that lights, brake lines and chains are properly hooked up and are in working condition.

10.2.7 When transporting a backhoe on a trailer, speed limits shall not exceed the manufacturer's rated speed limit for the trailer. Maximum rated speed limit shall not exceed 50 mile per hour. The rated speed limit of the trailer shall be stenciled on the sides of the trailer.

10.2.8 When trailering equipment at least 10% of the weight on the trailer shall be placed on the tow hook.

10.2.9 The operator shall be familiar with restrictions placed upon specific vehicles for towing trailers. Design characteristics of some trucks, such as Tower or Small Rigs, have limited use for trailering.

## **11.00 Lifting and Hauling Equipment**

### 11.1 Overview

11.1.1 This section is to review the requirements for safe operation of industrial trucks (forklifts), stackers, etc.

### 11.2 General

11.2.1 Lift trucks shall have the rated capacity clearly posted on the vehicle so as to be clearly visible to the operator, and these ratings shall not be exceeded.

11.2.2 No modifications or additions which affect the capacity or safe operation shall be made without the manufacturer's written approval.

11.2.3 If such modifications or changes are made, the capacity, operation and maintenance instruction plates, tags, or decals, shall be changed accordingly.

11.2.4 Steering or spinner knobs shall not be attached to the steering wheel.

11.2.5 A forklift inspection log shall be kept and filled out before each shift.

### 11.3 Training

11.3.1 OSHA mandates the training and evaluation of all operators on the safe and proper use of forklifts.

11.3.2 Haugland Energy Group shall ensure that each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by the successful completion of the required training and evaluation.

11.3.3 Operators must have both formal instruction (lecture, discussion, written materials, computer-based training, or videos, etc.) and practical training (demonstrations and exercises). Drivers must successfully complete the training and an evaluation before they are allowed to operate a truck without direct supervision.

11.3.4 Training must cover the requirements of the regulation and:

#### 11.3.4.1 Truck-related topics

Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate. Differences between the truck and the automobile. Truck controls and instrumentation: where they are located, what they do, and how they work. Engine and motor operation. Steering and maneuvering. Visibility (including restrictions due to loading). Fork and attachment adaptation, operation, and use limitations. Vehicle capacity. Vehicle stability. Any vehicle inspection and maintenance that the operator will be required to perform. Refueling and/or charging and recharging of batteries. Operating limitations. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

#### 11.3.4.2 Workplace-related topics

Surface conditions where the vehicle will be operated. Composition of loads to be carried and load stability. Load manipulation, stacking, and unstacking. Pedestrian traffic in areas where the vehicle will be operated. Narrow aisles and other restricted places where the vehicle will be operated. Hazardous (classified) locations where the vehicle will be operated. Ramps and other sloped surfaces that could affect the vehicle's stability. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

#### 11.3.4.3 Retraining

Refresher training and reevaluations can be triggered by:

Accidents, Near-misses, Assignment to a different type of truck, Changes in the work environment that have an effect on forklift safety, Observations of unsafe operation, Evaluations that reveal a need for retraining.

Each operator shall have an evaluation at least every three years. When the evaluation finds that the operator is competent in any of the required topics, he or she does not need additional training in those topics.



## **12.00      Cranes, Hoists, Derricks and Other Lifting Equipment**

### **12.1          Overview**

This section is designed to cover the safe operation of cranes and derricks.

### **12.2          General Requirements**

12.2.1      The operators of cranes and derricks shall comply with the manufacturer's specifications and limitations.

12.2.2      Operators of mobile cranes rated over 5 tons shall be licensed by the state in which they work, except as exempted by law.

12.2.3      Rated load capacities, and recommended operating speeds, special hazard warnings, or instructions shall be conspicuously posted on all equipment.

12.2.4      Instructions and warnings shall be visible to the operator while he is at his control station.

12.2.5      Hand signals to crane and derrick operators shall be those prescribed by the applicable ANSI standard for the type of crane in use.

12.2.6      All machinery and equipment shall be inspected prior to each use, and during use, to make sure it is in safe operating condition.

12.2.7      Any deficiencies shall be repaired, or defective parts replaced, before continued use.

12.2.8      A thorough annual inspection of hoisting machinery shall be made by a competent person and record of the dates and results maintained.

12.2.9      Accessible areas within the swing radius of the rear of the rotating superstructure of the crane, either permanently or temporarily mounted, shall be barricaded in a manner as to prevent injury or property damage.

12.2.10     Loads lifted by mobile cranes shall be raised vertically so as to avoid swinging during hoisting, except when such operations are permitted by the capacity chart.

12.2.11     A tag or restraint line shall be used when rotation or swinging of any load being hoisted by a mobile crane may create a hazard.

12.2.12     The side loading of booms on mobile cranes, tower cranes and derricks shall be limited to freely suspended loads.

12.2.13     Mobile cranes, tower cranes, and derricks shall not be used for dragging loads sideways.

12.2.14 Mobile cranes, tower cranes, and derricks shall not hoist, lower, swing or travel while any person is located on the load or hood.

12.2.15 Mobile cranes, tower cranes and derricks shall not hoist or carry any load over and above any person.

12.2.16 The operator of any mobile crane, tower crane, or derrick shall not leave his position at the controls while any load is suspended nor shall any person be permitted to work or pass under stationary suspended load.

12.2.17 All loads shall be handled carefully under the direction of one man. Several test lifts, taking the load a few feet in the air, shall be made before attempting the working lift.

12.2.18 On all hoists on which cable drums are used, at least two full wraps of the lifting cable shall remain on the drum at all times.

12.2.19 When operating cranes, derricks, hoists and other lifting equipment in proximity to energized electric lines or equipment, the required clearances shall be kept at all times.

### **13.00 Mobile/Gantry Crane**

13.1 Always operate crane on firm, level ground or cribbing.

13.2 Know the weight of the load to be lifted and make allowances for safety factor in rigging. (5 to 1) Only authorized personnel shall act as flagpeople. Make sure operator and flagperson understands the signals to be used. Give clear, exact signals to the crane operator.

13.3 Crane operator shall be in eye contact with flagperson at all times.

13.4 Only one person shall give signals to the crane operator at any one time.

13.5 Check the boom charts in the crane cab for the correct boom radius, and measure if in doubt. Boom radius is measured from the center pin out to the load that is being lifted.

13.6 Set all outriggers on motor cranes when making a heavy lift.

13.7 Brakes shall be checked before making a heavy lift by picking up a load and checking it close to the ground, especially in icy and cold conditions.

13.8 Use sufficient tag lines of adequate size and length on all loads.

13.9 All loads shall be balanced loads.

13.10 Keep load and all parts of the crane 15 feet from all electric lines.

- 13.11 All loads shall be double checked for proper rigging and that the hooks are properly rigged.
- 13.12 No oiling or repairing is to be permitted while the equipment is in operation.
- 13.13 In cases where the crane operator is not satisfied that the job is being performed safely, he shall stop the crane and contact his supervisor immediately.
- 13.14 The supervisor or foreman shall ascertain whether the crane operator is competent to operate the crane.
- 13.15 There shall be a firm policy requiring regular inspection and the immediate reporting of defects for prompt corrective action.
- 13.16 Manufacturer's procedures on specifications for maintenance and inspection shall be carefully followed.
- 13.17 Equipment used for hoisting shall be inspected daily before operations start. A qualified person shall make inspections of cables, sheaves, pulleys, boom and boom stops on a regular basis. Reaving diagrams and loading diagrams must be available and checked daily.
- 13.18 A copy of the crane manufacturer's handbook shall be available in the cab of the crane at all times.
- 13.19 Manufacturer's load rating plates shall be attached to all load hoisting equipment in view of the operator. On boom cranes and derricks they shall clearly indicate the safe load for maximum and minimum positions of the boom and for at least intermediate stations. These indications shall be for loads both with and without outriggers extended, where so equipped.
- 13.20 An illustration of the crane hand signals being used shall be posted at the job site.
- 13.21 No person shall be permitted to ride the load, block, hook, or ball of any crane, hoist, or derrick.
- 13.22 Accessible areas within the swing radius of the rear of the rotating superstructure of the crane shall be barricaded to prevent employees from entering that area.
- 13.23 Power cranes shall be equipped with an audible backing up device that can be heard above the usual noises at the work site. This device shall sound continuously while the crane is backing.
- 13.24 The hook shall be directly over the load being lifted in order to minimize strain to the crane and cable. A safety catch or moused hook shall be used.
- 13.25 No one shall be permitted to get on or get off a moving crane.

13.26 On soft or unstable ground, mats shall be required. All outriggers shall be extended when necessary. Cranes shall not be operated or left near the edge of an excavation, during conditions that may cause instability of the crane caused by rainfall or high wind, etc. Cranes shall be lowered if high winds are forecast.

## **14.00 Vehicle-Mounted Elevating and Rotating Work Platforms**

### **14.1 Overview**

14.1.1 This section pertains to aerial devices which are used to elevate personnel to work sites or work operations aboveground.

14.1.2 Included in this category are: powered or manually operated aerial equipment; extendible boom platforms; aerial ladders; articulating boom platforms; vertical towers; or a combination of such devices.

### **14.2 General Requirements**

14.2.1 Employees are prohibited from wearing climbers while working from an aerial lift.

14.2.2 Employees shall always stand firmly on the floor of the basket or platform and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

14.2.3 Employees shall not climb out of or otherwise exit from an elevated basket or platform unless this equipment is specifically designed to permit safe ingress and egress. Climbing on railings or the edge of the basket or platform for this purpose is strictly prohibited. Under unusual conditions, exceptions to this rule may be made only with the approval of the immediate management supervisor.

14.2.4 An aerial lift device shall not be moved while the boom is elevated with personnel in the basket.

14.03.5 Insulated portions of aerial lifts shall not be altered.

### **14.4 Preparation For Use**

14.4.1 Prior to highway travel vehicles with aerial devices shall be inspected to ensure that the aerial device is properly cradled and the appropriate tie downs, if required, have been installed.

14.4.2 Only trained persons shall be authorized to operate an aerial device.

14.4.3 Lift controls shall be tested each day prior to use to ensure that they are in safe working condition.

14.4.4 Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both upper and lower controls.

14.4.5 Controls shall be plainly marked as to their function.

14.4.6 Upper controls shall be in or beside the platform within easy reach of the operator.

14.4.7 Lower controls shall provide for overriding the upper controls.

14.4.8 Lower controls shall not be activated without first obtaining permission of the employee on the platform, except in the case of an emergency.

14.4.9 Recommended operating speeds, special hazard warnings, and operating instructions shall be conspicuously posted so as to be visible to the operator at both the upper and lower controls.

14.4.10 Manufacturer's load limits shall not be exceeded.

14.4.11 The brakes shall be set and outriggers or stabilizers, when in use, shall be positioned on pads or a solid surface.

14.4.12 Wheel chocks shall be installed before using an aerial device.

#### 14.5 Use of Personal Protective Devices

14.5.1 Belting off to an adjacent pole, structure, or equipment while working from an aerial device shall not be permitted.

14.5.2 A body belt with lanyard shall be worn and the lanyard shall be attached to the boom or basket when working from an aerial lift.

#### 14.6 Inspection Procedures and Responsibilities

14.6.1 Periodic aerial device inspections will be performed by the Fleet management Dept. on a predetermined schedule.

14.6.2 Electrical tests of insulated aerial devices will be conducted twice a year by an outside contractor.

14.6.3 It is the operators responsibility to report any defects affecting safe, efficient operation of the aerial device and to advise the Fleet Services when the due date for their next aerial device or electrical inspection is about to expire.

14.6.4 All vehicles and equipment shall be inspected as required by federal and state law to ensure that exhaust emissions are in compliance with EPA regulations.

## **Section “K” Materials Handling**

### **1.00 Introduction**

1.01 This section covers the rules and regulations for materials handling.

### **2.00 Materials Handling**

2.1 Workman shall not attempt to handle alone any object that cannot be so handled with reasonable assurance of safety. Assistance shall be obtained when required.

2.2 Skids, tackles, hoists and other mechanical means for lifting or lowering or moving heavy equipment shall be used whenever possible.

2.3 Materials that are to be stored in piles shall be supported so as to prevent the material from sliding, rolling, or falling.

2.4 All protruding nails shall be removed or bent over as soon as practical after they are exposed.

2.5 Loads shall not be handled from the street side of a vehicle if it can be avoided.

2.6 Employees shall not stand directly under loads which are suspended by ropes, chains or cables. Employees and others must stand clear of rigging ropes, cables and chains which are under tension. All loads shall have tag lines attached to the load.

2.7 Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways shall be appropriately marked.

2.8 Storage of material shall not create a hazard. Bags, containers, bundles, etc., stored in tiers shall be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding, rolling or collapsing.

2.9 Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary.

2.10 Persons shall never place their hands or any other part of their body where it can be injured.

2.11 Employees required to handle or use poisons, caustics acids, and harmful substances, shall be instructed regarding the safe handling and use, and be made aware of the potential hazards, personal hygiene, and personal protective measures required.

2.12 Employees required to handle or use flammable liquids, gases, or toxic materials shall be instructed in the safe handling and use of these materials and made aware of the specific requirements for the safe handling and use of these products.

2.13 All crane operators, foreman, etc., shall be cognizant of any applicable floor load limits where lifting/hoisting is being performed.

## **Section “L” Machine/Equipment Safety & Guarding Plan**

### **1.00 Purpose**

1.1 It is the policy of this company to permit only trained and authorized employees to operate machinery, tools, or equipment at any time. This policy is applicable to:

- daily operators of machinery, tools, and equipment; and
- those who only occasionally have cause to use machinery, tools, or equipment.

1.2 This written Machine/Equipment Safety and Guarding Plan describes methods and practices for care and use of machines, equipment, and tools that can be read and understood by all managers, supervisors, and employees at Haugland Energy Group. This written plan is intended to be used to:

- create an awareness of the hazards among our workforce,
- standardize procedures for use and care of the equipment,
- provide a consistent format for training employees on the proper procedures to be used,
- minimize the possibility of injury or harm to our employees, and
- demonstrate Haugland Energy Group's compliance with machine safety and equipment usage requirements for general industry in Subpart O and P of 29 CFR 1910.

1.3 As our company is a construction employer, this plan is also intended to demonstrate Haugland Energy Group's compliance with machine and tool safety requirements for construction in Subpart I of 29 CFR 1926.

### **2.00 Administrative Duties**

2.1 The Safety Department is responsible for developing and maintaining this written Machine/Equipment Safety and Guarding Plan.

2.2 Department Supervisors and General Foremen are responsible for enforcement of the requirements of the plan during the contract work.

### **3.00 Pre-Operational Procedures**

3.1 Hand tools must be inspected prior to use to ensure that:

- For tools with jaws, jaws are not sprung to the point of slippage.

- For impact tools, they are free of mushroom heads.
- For tools with wooden handles, the handles are free of splinters or cracks and are tight in the tool.
- The tool is otherwise safe for use.

3.2 Any machine or power-operated tool, function, or process which may cause injury will be guarded. All permanent guards are securely attached in good working order and all removable guards are in place on the machine or equipment before starting use. Guards meet these minimum general requirements:

- Prevent contact - The guards prevent hands, arms, or any part of an employee's body or clothing from making contact with dangerous moving parts.
- Secure - Guards are not easy to remove or alter. Guards and safety devices are made of durable material that will withstand the conditions of normal use. They are firmly secured to the machine.
- Protect from falling objects - The guards ensure that no objects can fall into moving parts.
- Create no new hazards - If a guard creates a hazard of its own such as shear point, a jagged edge, or an unfinished surface which can cause a laceration, then employees must not use the piece of machinery or equipment.

3.3 If a guard is defective, damaged, or in any way does not meet the requirements of these procedures, employees may not use the machine, and must immediately notify their supervisor.

3.4 Where the operation of a machine or accidental contact with it can injure employees in the vicinity, the hazard is either controlled or eliminated.

3.5 Employees must locate and put on necessary and appropriate personal protective equipment (PPE) for use with the machinery or equipment before beginning use. PPE can be obtained from the employees supervisor.

3.6 Employees must make sure that work areas are well-lit, dry, and clean before beginning work. Sawdust, paper and oily rags are a fire hazard and can damage machinery and equipment.

3.7 Employees must change clothing or take off jewelry that could become entangled in the machinery or equipment they are to use.

3.8 Only qualified personnel may install or repair equipment. Employees must notify their supervisor or a qualified person if machinery or equipment is in need of any type of repair.

3.9 If a lock or tag is in place on a piece of machinery or equipment, it may not be removed and the machinery or equipment may not be used.

## **4.00 Operating Procedures**

4.1 Employees may not remove a guard for any reason while operating any piece of machinery or equipment.

4.2 All necessary personal protective equipment (PPE) is worn while the machinery or equipment is running.



- 4.3 If an employee is distracted or unable to focus on the work with the machinery or equipment, they must stop work with that machinery or equipment.
- 4.4 Upon finishing with a piece of equipment, tool, or machine, basic maintenance must be performed. It shall be kept sharp, oiled, and stored properly, as appropriate.
- 4.5 Problem equipment must be immediately reported to a supervisor and so it can be repaired or replaced.
- 4.6 Employees must always use the proper piece of machinery or equipment for the job.
- 4.7 Electric cables and cords are kept clean and free from kinks. Equipment may never be carried by its cord.

## **5.00 Training Program**

- 5.1 The company training program includes operational training on each specific piece of machinery and equipment to be utilized by the employee in the assigned work area.
- 5.2 Operational training consists of:

- Pre-operational procedures.
- Basic maintenance for machinery and equipment.
- Operational review of each piece of machinery, tool, or equipment the employee is expected to operate.

## **6.00 Inspections**

- 6.01 Machinery, tools, and equipment will be inspected regularly to insure safety and serviceability. The area supervisor/foreman shall inspect all machinery, equipment, cords and accessories.

## **7.00 Disciplinary Procedures**

- 7.01 Constant awareness of and respect for machine, tool, and equipment safety procedures and compliance with all safety rules are considered conditions of employment. Supervisors and individuals in the Safety and Personnel Department reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this machine, tool, and equipment safety program.

## **8.00 Program Evaluation**

- 8.1 Although we may not be able to eliminate all problems, we try to eliminate as many as possible to improve employee protection and encourage employee safe practices. Therefore, the Safety Dept. is responsible for evaluating and updating this written plan. The evaluation will include a review of reported accidents, as well as near misses, to identify areas where additional safety measures need to be taken.
- 8.2 Safety inspectors will also conduct a periodic review to determine the effectiveness of the program. This review may include:

- a walk-through of the work site, and
- interviews with employees to determine whether they are familiar with the requirements of this program and if safety measures are being practiced.

## **Section “M” Hazard Assessment and Personal Protective Equipment Selection**

### **1.00 Purpose**

To assist in developing good hazard assessment and selection of personal protective equipment on job sites or company facilities.

### **2.00 Policy**

Haugland Energy Group is responsible for requiring the wearing of appropriate Personal Protective Equipment in all operations where there is a known or potential exposure to hazardous conditions.

### **3.00 Procedure**

#### **3.1 Controlling Hazards**

PPE devices alone shall not be relied upon to provide protection against hazards, but shall be used in conjunction with guards, engineering controls, and sound construction practices.

#### **3.2 Assessment and selection**

It is necessary to consider certain general guidelines for assessing the foot, head, eye and face, and hand hazard situations that exist in an occupational operation or process, and to match the protective devices to the particular hazard.

#### **3.3 Assessment guidelines**

In order to assess the need for PPE the following steps shall be taken:

##### **3.3.1 A) Survey**

Conduct a walk-through survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and co-workers. Consideration shall be given to the basic hazard categories:

- (a) Impact
- (b) Penetration
- (c) Compression (roll-over)
- (d) Chemical
- (e) Heat

(f) Harmful dust

(g) Light (optical) radiation

(h) Energy (electricity)

### 3.3.2 B.) Sources

During the walk-through survey the lead supervisor/foreman shall observe:

(a) sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects.

(b) sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.

(c) types of chemical exposures

(d) sources of harmful dust

(e) sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.

(f) sources of falling objects or potential for dropping objects

(g) sources of sharp objects, which might pierce feet or cut hands

(h) sources of rolling or pinching objects, which could crush

(i) layout of workplace and location of co-workers

(j) any electrical hazards

(k) review of accident/injury data to help identify problem areas

### 3.3.3 C.) Organize data

Following the walk-through survey, it is necessary to organize the data and information for use in the assessments of hazards. The objective is to prepare for an analysis of the hazards in the environment to enable proper selection of protective equipment.

### 3.3.4 D.) Analyze data

Having gathered and organized data on a workplace, an estimate of the potential for injuries shall be made. Each of the basic hazards shall be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the area. The

possibility of exposure to several hazards simultaneously shall be considered.

#### **4.00 Selection guidelines**

4.01 After completion of the assessment procedures, the general procedure for selection of protective equipment is to:

A) Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do; i.e, splash protection, impact protection, etc.

B) Compare the hazards associated with the environment; i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment

C) Select the protective equipment which ensures a level of protection greater than the minimum required to protect employees from hazards

D) Fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end users be made aware of all warning labels for and limitations of their PPE.

#### **5.00 Fitting the device**

5.01 Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely if it fits the wearer comfortably. Protective devices are generally available in a variety of sizes. Care shall be taken to ensure that the right size is selected.

#### **6.00 Devices with adjustable features**

6.01 Adjustments shall be made on an individual basis for a comfortable fit that will maintain the protective device in the proper position. Particular care shall be taken in fitting devices for eye protection against dust and chemical splash to ensure that the devices are sealed to the face. In addition, proper fitting of helmets is important to ensure that it will not fall off during work operations. In some cases a chinstrap may be necessary to keep the helmet on an employees head. Where manufacturer's instructions are available, they shall be followed.

#### **7.00 Reassessment of hazards**

7.01 It is the responsibility of the lead supervisor/foreman to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the suitability of previously selected PPE.

#### **8.00 Types of personal protective equipment**

8.01 When needed, Personal Protective Equipment shall include, but not be limited to the following:

Belt Lanyards – shall be worn when using a trim lift, it's the law.

Chaps – shall be worn when using chain saws on the ground.

Fire Resistant Clothing – shall be worn for those who are exposed to the hazards of electric arcs or flames. Unless the employee can demonstrate that the fabric has been treated to withstand these hazards, acetate nylon, polyester and rayon will not be worn.

Gloves – shall be worn when the potential for hand injury exists during the performance of work activities.

Hearing Protection – shall be worn by employees operating high noise emitting equipment such as jackhammers, or employees working within 25 feet of such operations.

Hard Hats – shall be worn at all times during work activities, with exceptions made only with the approval of the management supervisor in charge dependant upon the employees activity.

Reflective Vests – shall be worn at all time when employees are exposed to traffic or any situation in which the visibility of that employee is essential to his/her safety.

Rubber Goods – shall be used as required (gloves, sleeves, blankets, etc.).

Safety Glasses – shall be worn at all times.

Sleeved Shirts – long sleeves are to be worn when required, no tank tops or sleeveless shirts.

Welding Mask – shall be worn when welding.

Work Boots – shoes suitable to the type of work normally performed shall be worn at all times.

Work Pants – shall be worn at all times, no shorts.

If the job performed requires unique safety protection, Haugland Energy Group shall supply the proper equipment.

## **9.00 Employee Training**

9.1 Managers shall ensure the training of their supervisors and they in turn shall ensure the training of all field personnel in the proper use of said equipment. Training must be documented by the employee trained and the supervisor who provided the training. When there is a need for additional Personal Protective Equipment, a new documentation sheet shall be completed. New employees shall be trained at the time they are hired. Training includes:

- When PPE is necessary
- What PPE is necessary

- How to wear assigned PPE
- Limitations of PPE
- The proper care, maintenance, useful life, and disposal of assigned PPE

9.2 Employees must demonstrate an understanding of the training and the ability to use the PPE properly before they are allowed to perform work requiring the use of the equipment.

9.3 Employees are prohibited from performing work without donning appropriate PPE to protect them from the hazards they will encounter in the course of that work.

9.4 If the Safety Director has reason to believe an employee does not have the understanding or skill required, the employee must be retrained. Since an employee's supervisor is in the best position to observe any problems with PPE use by individual employees, the Safety Director will seek this person's input when making this determination. Circumstances where retraining may be required include changes in the workplace or changes in the types of PPE to be used which would render previous training obsolete. Also, inadequacies in an affected employee's knowledge or use of the assigned PPE which indicates that the employee has not retained the necessary understanding or skills.

9.5 Because failure to comply with company policy concerning PPE can result in OSHA citations and fines as well as employee injury, an employee who does not comply with this program will be disciplined for noncompliance.

## **10.00 Cleaning and Maintenance**

It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE is to be inspected, cleaned, and maintained by employees at regular intervals as part of their normal job duties so that the PPE provides the requisite protection. Supervisors are responsible for ensuring compliance with cleaning responsibilities by employees. If a piece of PPE is in need of repair or replacement, it is the responsibility of the employee to bring it to the immediate attention of his or her supervisor or the Safety Director. It is against work rules to use PPE that is in disrepair or not able to perform its intended function. Contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

## **Section “N” Respiratory Protection Program**

### **1.00 Purpose**

1.01 Employees of Haugland Energy Group, during their regular course of duty, may be required to enter environments where airborne contaminants, toxins, or sufficants are present; as such, a comprehensive respirator protection program is mandatory (29 CFR {Code of Federal Regulations} 1910.134 (Attachment A), 29 CFR 1926.103 (Attachment B) and ANSI {American National Standard institute} Z88.6-1990 (Attachment C). It is the purpose of this document to establish procedures that are in compliance with the above cited regulations as they apply to the unique situations with which designated employees may be faced.

### **2.00 Obligations**

#### **2.1 Project Management**

2.1.1 Haugland Energy Group shall make available to all employees (whose responsibilities require entrance into a potentially hazardous environment) an appropriate respirator for his/her personal use for protection against the potential hazards encountered.

2.1.2 The Safety Dept. shall provide training in the proper use and care of the respiratory protection devices including refresher training. Periodic inspections of the respiratory protective devices shall be performed relative to equipment maintenance. Maintenance, other than routine preventative, shall be performed by a qualified technician. There shall be no interchanging of parts between different brands of respirators or different model numbers manufactured by the same manufacturer.

2.1.3 Employees shall not be assigned respiratory protection devices unless it has been determined that the employee is physically able to perform the work and use the respirator. The local physician shall determine pertinent health and physical conditions. Prior to performing a fit-test, employees shall have successfully completed a pulmonary function and be certified as capable of wearing a respirator. The respirator user's medical status will be reviewed at a frequency established by local physician.

#### **2.2 Employees:**

2.2.1 The employee shall wear the respiratory protective device(s) when performing tasks in areas where the potential for exposure to airborne contaminants, sufficants, or toxins exist. The employee shall maintain a facial surface consistent with a proper fit of the respiratory protective device, i.e., no beards and clean-shaven. The employee shall be required to read this respiratory protection program and all literature pertaining to the use and maintenance of each protective device before being allowed to wear the same for work purposes. The employee shall be available, with the protective devices, for inspection and fit testing as requested. The employee shall be responsible for the routine care and preventative maintenance of the respiratory protective device (as described in the manufacturer's manual) and keep the appropriate records.

### **3.00 Program Administration**

#### **3.1 Administrator's Responsibilities:**

3.01.1 The responsibilities of the administrator shall include but not be limited to the following:

- Area Designation: Identification of areas requiring respiratory protection.
- Hazard Assessment: Determining the level of protection necessary to accomplish a specific task (29 CFR 1926.103, Table E-4).
- Respiratory Protection Selection, Purchasing, and Inventory: Must be compatible with units in use, to reduce inventory and cost.
- Employee Training: Establishment of respiratory equipment training programs for employees.
- Establishment of continuing program of cleaning and inspection of respiratory equipment.
- Designation of proper storage areas for respiratory equipment.
- Establishment of issuance and accounting procedures for uses of respiratory equipment.
- Establishment of medical screening program/procedures for employees assigned to wear respiratory equipment.
- Establishment of a periodic inspection schedule of those workplaces/conditions that require respiratory equipment in order to determine exposure and and/or changing situations.
- Evaluate program for effectiveness.
- Establish procedure for record retention and maintenance.

### 3.2 Supervisor's Responsibility:

3.02.1 Any employee who has questions or problems with respirators or their use must immediately notify his/her immediate supervisor. If such supervisor cannot resolve the question or problem, the supervisor shall refer the matter to the person in charge of the respirator program.

### 3.03 Delegation of Responsibility:

3.03.1 The Safety Director may delegate responsibility of various aspects of the respiratory protection program to another person or qualified organization. However, the ultimate responsibility for the program cannot be delegated.

## **4.00 Use of Respirators**

4.1 It is mandatory that employees wear the appropriate respirator when working where the air contains regulated substances in concentrations exceeding the permissible exposure limit (PEL), and whenever there is potential exposure to a contaminant substance for which the contaminant's material safety data sheet (MSDS) prescribes respirator use.

4.2 Supervisors will maintain surveillance of work conditions in all places where employees for whom they are directly responsible work, as well as employee exposures and stress, in order to determine if any additions to, or changes in, respirator use requirements are needed.



4.3 The Supervisor shall promptly notify employees of changes whenever they are needed.

4.4 This respiratory protection program, the instructions accompanying the respirator, the applicable OSHA regulations and the precautions stated in the MSDS for each of the substances being protected against must be observed by each user of a respirator.

4.5 No employee shall perform a job that requires respirator use or be present at any place where respirators are necessary unless all provisions of this Respirator Program are observed.

4.6 Any employee performing such a job, or present in such a place, who is wearing a respirator must immediately cease their work, leave the area and report the matter to their supervisor whenever any of the following conditions exist: a) Dizziness, difficulty breathing, or other physical stress or disorder; b) Damage to, or ineffectiveness of, the respirator being worn; c) The smell or taste of any contaminant or any unfamiliar smell or taste or other such sensation that troubles or concerns such employee; or d) Lack of the respirator training and instruction required under this Program or the absence of any other requirement of this Program.

4.7 Surveillance of conditions in the work area and degree of worker exposure or stress (combination of work rate, environmental conditions and physiological burdens of respirator) must be maintained at all times.

4.8 Changes in operating procedures, temperature, movement of air, humidity and work practices may influence the concentration of a substance in the work area atmosphere. These factors may necessitate periodic monitoring of the air contaminant concentration. If testing is undertaken, it shall continue in order to assure that the contaminant has not risen above the maximum capability of the respirators being used.

4.9 Employees using self-contained breathing apparatus or supplied-air respirators in confined spaces, where the air may be "Immediately dangerous to life and health," must wear safety harnesses and lifelines. A second person equipped with complete protective gear must be standing by ready to help if the first worker gets into trouble. Communications (voice, visual, or signal line) must be maintained with all persons present. Precautions must be taken so that in the event of an incident, at least one person will be unaffected and have the proper rescue equipment to be able to assist those encountering an emergency situation.

4.10 Only those individuals who are medically able to wear respiratory protective equipment shall be issued this type of equipment. No employee shall wear a respirator unless they are medically able to do so.

4.10.1 No one shall be permitted to use a respirator unless they are physically capable of performing their work while wearing the respiratory protection device.

4.10.2 Prior to respiratory protective equipment being used, each employee must complete a medical questionnaire and be examined by appropriate medical personnel and be certified as fit to wear a respirator.

4.10.3 The fitness requirement will be at the discretion of the examining physician, but if any respirator user's physical ability changes at any time, they must notify their supervisor at once and cease respirator use until medical approval for resuming respirator use has been obtained.

4.10.4 The examining physician will determine what health and physical conditions are pertinent to an employee's respirator usage.

4.11 Each respirator user must receive fitting instructions that include demonstrations and practice on how the respirator shall be worn, how to adjust and how to determine if the respirator fits properly.

4.11.1 Although respirators are designed for maximum efficiency, they cannot protect the wearer without a tight seal between the facepiece and wearer. Beards and other facial hair can substantially reduce the effectiveness of a respirator. The absence of dentures can seriously affect the fit of a facepiece. To assure proper protection for a facepiece, it must be checked by the wearer each time the respirator is put on.

4.11.2 Corrective lenses worn by employees also present a problem when fitting respirators. Special mountings to hold corrective lenses inside full facepieces are available. If corrective lenses are needed, the facepiece and lens must be fitted by a qualified individual to provide good vision, comfort, and proper sealing.

4.11.3 Contact lens shall not be worn while wearing a respirator in a contaminated area. Foreign bodies or contaminants that penetrate the respirator may get into the eyes and cause severe discomfort compelling the wearer to remove the respirator.

4.11.4 Full facepiece and half-mask respirators have different fitting characteristics. Of the several brands of each style marketed, each has a different size and fitting characteristic. No respirator will fit everyone.

4.11.5 Any employee who finds that they cannot obtain a proper fit with their respirator must notify their supervisor immediately.

4.11.6 Upon notification by any worker of any respirator's improper fit, the supervisor shall not permit the employee to work in any area where respiratory protection is required until the employee is equipped with a proper-fitting respirator.

4.11.7 The effectiveness of the facepiece fit of a respirator can be tested either by qualitative or quantitative measures:

- Qualitative fit testing involves the introduction of a harmless, odorous or irritating substance into the breathing zone of the wearer. A proper fit is indicated if the wearer cannot detect the irritating substance.

- Quantitative fit testing offers more detailed information on respirator fit. It involves the introduction of an aerosol to the wearer while they are in a test chamber. While the wearer performs exercises that could induce facepiece leakage, the air inside the facepiece is measured

for the presence of the aerosol.

4.11.8 The supervisor of each respirator wearer is responsible for ensuring that the appropriate facepiece fit test has been conducted and that the result of such testing has indicated a proper fit.

## **5.00 Selection of Respirators**

5.1 Choosing the correct respiratory protection equipment involves several steps:

- a) Determination of the hazard,
- b) Choosing equipment that is certified for the function,
- c) Assuring the device is performing the function it is intended to do.

5.2 Proper selection of respirators must be made according to the OSHA requirements set forth in 29 CFR 1910.134 (c) and the American National Standards Institute (ANSI) publication "Practices for Respiratory Protection," ANSI Z88.2-1990. All respiratory protective devices must be approved for the contaminant or situation to which employees may be exposed by either the Mine Safety and Health Administration, U.S. Department of Labor, or the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services.

5.3 In addition to the aforementioned, there are substance-specific OSHA standards that require additional criteria for respirator selection (for example, 29 CFR 1910.1101 (d)(2)(IV) Asbestos). All such requirements of each applicable OSHA standard must be observed.

5.4 Chemical and physical properties of the contaminant, as well as the toxicity and concentration of the hazardous material and the amount of oxygen present must be considered in selecting the proper respirator.

5.5 The nature and extent of the hazard, the work rate, the area to be covered, mobility, work requirements and conditions, as well as the limitations and characteristics of the available respirators, also are selection factors that must be considered.

5.6 Although many kinds of breathing equipment are used for protection, there are two basic types: Air-purifying and atmosphere-supplying respirators:

- Air-Purifying Respirators are designed to remove harmful substances from the air. They range from simple disposable masks to sophisticated positive-pressure, blower-operated respirators. Air-purifying respirators may not be used in an oxygen-deficient atmosphere or under conditions immediately dangerous to life and health.
- Atmosphere-Supplying Respirators are designed to provide air from a clean source outside of the contaminated work area. They range from air-line respirators and self-contained breathing apparatus (SCBA) to complete air-supplied suits.
- The time needed to perform a given task usually determines the length of time for which respiratory protection is needed, including the time necessary to enter and/or leave a contaminated area.
- A self-contained breathing apparatus, gas mask, or chemical cartridge respirator provides respiratory protection for a relatively short period, whereas the air-line respirator provides protection for as long as the facepiece is supplied adequate respirable air AND the contaminated material has not penetrated other personal protective equipment.

- Particulate-filter respirators can provide protection for long periods without need of filter replacement only if the total atmospheric particulate concentration is low.
- For longer periods of use, air-line respirators offer the advantage of longer use in high dust-loaded areas and avoid the need to be concerned about the sensory warning properties of the airborne toxic material. Those respirators also cause less discomfort than air-purifying respirators because the wearer need not overcome filter resistance to inhale.
- For self-contained breathing apparatus and some gas masks, a warning of service life is available. It may be a pressure gauge of timer with audible alarm or a window indicator for canisters. The respirator user must understand the operation and limitations of each type of warning device. Most other gas masks and chemical cartridge respirators have no indicator of remaining service life. Therefore, it is important that canisters and cartridges be changed according to the manufacturer's directions.
- Air-purifying respirators present minimal interference with the wearer's movement. Supplied air respirators with trailing hoses severely restrict the area the wearer can cover and present a potential hazard where the trailing hose can come in contact with machinery. A self-contained breathing apparatus presents a size and weight penalty that may restrict climbing and movement in tight places.
- The wearer's work rate determines the volume of air breathed per minute, maximum respiratory flow rate, and the tolerable inhalation and exhalation breathing resistance. The respiratory minute volume is of great significance in self-contained and air-line respirators operated from cylinders since it determines their operating life. Useful life under moderate working conditions may be significantly less than under rest conditions.
- Peak airflow rate is important in the use of constant low air-line equipment. The air supply rate shall always be greater than the peak respiratory flow rate to maintain the respiratory enclosure under positive pressure.
- High breathing resistance of air-purifying respirators under conditions of heavy work can result in distressed breathing.
- A person working in an area of high temperature is under stress. Additional stress resulting from use of a respirator shall be minimized by using a respirator with minimum weight and breathing resistance.

## **6.00 Employee Training, Instruction and Discipline**

6.01 Every employee who is required to wear a respirator must know how to wear it, care for it, adjust it and know how to determine if it fits properly and provides the appropriate protection.

6.1 Each supervisor will provide their employees with needed respirator training and instruction.

6.2 Such training and instruction will be given to any employee under the supervisor's direct and immediate control if the employee has not already received it OR if the employee's prior training/instruction did not satisfy OSHA requirements, or if any doubt or question exists about respirator use or of any of the matters mentioned in this program.

6.3 Additional training (on a daily basis if necessary) will be provided by each supervisor whenever it is needed to protect the health and safety of employees.

6.4 Each respirator wearer shall be given an opportunity to handle the respirator, have it fitted properly, test its facepiece-to-face seal, wear it in normal air for a period of time long enough to gain familiarity with it, have the respirator fit-tested as required by the applicable OSHA regulation and to wear the respirator in a test atmosphere.

6.5 Each respirator is accompanied by its own set of instructions for proper use, care and protection as well as its limitations. The instructions are printed in or on the respirator box, bag or container. These instructions must be observed.

6.6 Each respirator wearer must read and abide by these instructions.

6.7 Any employee who does not understand the respirator instructions must immediately ask his/her supervisor for assistance.

6.8 Any employee who has not been provided with all of the training and instruction set forth above, or at any time is unsure about respirator use, care or protection, or has any problems or difficulties with work while wearing a respirator, must inform his or her supervisor at once so that the employee can be provided with the proper training and instruction.

6.9 Failure to follow all instructions and training on use, care and protection and/or failure to wear respirator during times of exposure can reduce respirator effectiveness and result in sickness or death. The vapors and mists that can be dangerous to health include particulates or gasses that may not be visible with the normal eye.

6.10 It is vital to each employee's health that the respirator training and instruction be observed; AND it is vital to each employee's job.

6.11 Appropriate discipline will be taken against any employee who fails to observe any portion of the OSU respirator program.

6.12 Persons who provide respirator training and instruction must make sure a written record is provided of the required training and fit-test.

## **7.00 Inspection, Cleaning, Storage and Repair of Respirators:**

7.1 Each employee who has finished wearing a disposable respirator or a respirator that is to be used only once, shall place the respirator in the

appropriate trash or disposal container. It shall not be taken from the premises for additional use or used a second time under any circumstances.

7.2 Respirators that are routinely used shall be regularly cleaned and disinfected by the respirator user. This shall be done as frequently as necessary to ensure proper protection is being provided to the wearer.

7.3 A cleaning and disinfecting solution shall be provided for use in cleaning your respirator. It shall be located adjacent to each respirator storage facility.

7.4 No one shall ever use a respirator that has previously been used by another person, without first cleaning and disinfecting the respirator.

7.5 Before putting a respirator on, the user shall inspect the respirator for defects and cleanliness. This must be done EVERY time a respirator is put on.

7.6 The respirator shall be inspected after taking it off prior to putting the respirator in storage.

7.7 Each respirator not routinely used, but kept ready for emergency use, shall be inspected after each use and at least monthly to assure it is in satisfactory working condition.

7.8 An employee must never wear an unclean respirator or a respirator that is in any way defective.

7.9 Each employee must report any instance of a defective or ineffective respirator to his or her supervisor immediately.

7.10 Respirator inspection shall include a check of the tightness of connections and the condition of the facepiece, headbands, valves, connecting tube and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from "setting" during storage.

7.11 Any employee who does not know how to properly inspect his or her respirator must ask their supervisor for assistance.

7.12 Respirator repairs and part replacement shall only be done by experienced persons. There shall be no interchanging of parts; replacement parts shall be approved for the particular respirator in use.

7.13 Attempts to replace components or make adjustments or repairs beyond the manufacturer's recommendations shall not be made.

7.14 Reducing valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

7.15 When not in use, each respirator shall be stored in a manner to protect it against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

7.16 Clearly marked storage locations shall be assigned to each person who has been issued a respirator. Each person must store his or her respirator in its proper place and in the correct manner.

7.17 Respirators must be stored so the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

7.18 Dust respirators must be stored in a clean plastic bag.

7.19 Respirators shall never be stored in such places as lockers or tool boxes unless they are in clean carrying cases or cartons and the cleaning and storage conditions listed above can be assured.

7.19.1.1 No employee shall remove a respirator from the premises unless directed to do so by his or her immediate supervisor.

## **Section “O” Welding, Cutting and Brazing**

### **1.00 General Requirements**

1.1 Flammable mixture. Mixtures of fuel gases and air or oxygen shall be guarded against. No device or attachment facilitating or permitting mixtures of air or oxygen with flammable gases prior to consumption, except at the burner or in a standard torch, shall be allowed unless approved for the purpose.

1.2 Maximum pressure. Under no condition shall acetylene be generated, piped (except in approved cylinder manifolds) or utilized at a pressure in excess of 15 p.s.i. gage pressure or 30 p.s.i. absolute pressure. This requirement is not intended to apply to storage of acetylene dissolved in a suitable solvent cylinders.

1.3 All cylinders with a water weight capacity of over 30 pounds shall be equipped with means of connecting a valve protection cap or with a collar or recess to protect the valve.

1.4 All equipment shall meet OSHA, Underwriters Labs and/or national Electrical Manufacturer’s Association Standards.

1.5 Extreme caution shall be used in cutting repairing, or welding of closed containers. Purge the container / piping with air, water, or steam. An explosive vapor test shall be performed before any cutting or welding is attempted. In confined spaces where the means of egress are hampered by manholes, or other small openings, protective measures shall be provided.

1.6 Only qualified personnel shall make repairs on or electrical hookups for welding machines.

Note: Hookups of plugs for welding equipment may only be done by a qualified welder.

### **2.00 Application, Installation and Operation of Arc Welding and Cutting Equipment**

2.1 Welding equipment shall be chosen for safe application to the work to be done.

2.2 Workmen designated to operate arc welding equipment shall have been properly instructed and qualified to operate such equipment.

2.3 Voltage. Open circuit (no load) voltage of arc welding and cutting machines shall be as low as possible consistent with satisfactory welding or cutting being done. The following limits shall not be exceeded:

A. Alternating-current machines  
Manual arc welding and cutting – 80 volts



Automatic (machine or mechanized) - 100 volts

B. Direct-current machines

Manual – 100 volts

Automatic – 100 volts

2.4 When special welding and cutting processes require values of open circuit voltages higher than the above, means shall be provided to prevent the operator from making accidental contact with high voltage by adequate insulation or other means.

2.5 Machine hook-up. Before starting operations all connections to the machine shall be checked.

2.6 Grounding of the welding machine frame shall be checked.

2.7 There shall be no leaks of cooling water, shielding gas or engine fuel.

2.8 Proper switching equipment for shutting down the machine shall be provided. Manufacturers' instructions shall be strictly followed.

2.9 Electrode holders when not in use shall be so placed that they cannot make electrical contact.

2.10 Cables with splices within 10 feet of the holder shall not be used. The welder shall not coil or loop welding electrode cable around parts of the body.

2.11 The operator shall report any equipment defect or safety hazard to his supervisor and the use of the equipment discontinued until its safety has been assured.

2.12 Machines which have become wet shall be thoroughly dried and tested before being used.

2.13 Work and electrode lead cables shall be frequently inspected for wear and damage.

2.14 Only manual electrode holders which are specifically designed for arc welding and cutting, and are of a capacity capable of safely handling the maximum rate currents (amps) required by the electrode, shall be used.

2.15 Any current carrying parts, passing through the portion of the arc welder or cutter grips in the welders hands, and the other surfaces of the jaws of the electrode holder, shall be fully insulated against the maximum voltage encountered to the ground.

2.16 Only standard electric arc welding equipment such as generators, motor generator units, transformers, rectifiers, etc., conforming to the requirements of the National Electrical

Manufacturer's Assoc. or the Underwriters Laboratories, Inc. or both shall be used.

### **3.00 Fire Prevention and Protection**

3.1 Fire Hazards: If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity shall be taken to a safe place.

3.2 Guards: If the above requirement (3.01) cannot be met, guards shall be used to confine heat, sparks, and slag, and to protect the immovable fire hazards.

3.3 Restrictions: If the requirements mentioned in 3.01 and 3.02 cannot be followed then welding and cutting shall not be performed.

3.4 Combustible Material: Wherever there are floor openings or cracks in the flooring that cannot be closed, precautions shall be taken so that no readily combustible materials on the floor below will be exposed to sparks which might drop through the floor. The same precautions shall be observed with regard to cracks or holes in walls, open doorways and open or broken windows.

3.5 Fire Extinguishers: Suitable fire extinguishing equipment shall be maintained in a state of readiness for instant use. Extinguishers types may vary depending upon the nature and quantity of the combustible material exposed.

3.6 Fire Watches: Shall be required whenever welding or cutting is performed in locations where other than a minor fire might develop or any of the following conditions exist: or where the location or position of the welder is such that clothing ignition could occur...

3.6.1 Appreciable combustible material...closer than 35 feet to the point of operation.

3.6.2 More than 35 feet away but are easily ignited by sparks.

3.6.3 Wall or floor openings within a 35 foot radius exposed combustible material in adjacent areas.

3.6.4 Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.

3.6.5 Fire watches shall have fire extinguishing equipment readily available and be trained in its use... be familiar with facilities for sounding an alarm...A fire watch shall be maintained for at least ½ an hour after completion of the welding or cutting operations.

3.6.6 Before burning or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations to ensure all safety requirements are met.

3.6.7 Where combustible materials are on the floor, the floor shall be swept clean for a radius of

35 feet. Combustible floors shall be kept wet, covered with damp sand, or protected by fire resistant shields. Where floors have been wet down, personnel operating arc welding or cutting equipment shall be protected from possible shock.

3.7 Cutting or Welding shall not be permitted in unauthorized areas:

3.7.1 In buildings while sprinkler protection is impaired, if so equipped.

3.7.2 In the presence of explosive atmospheres, or an accumulation of combustible dusts.

3.7.3 In areas near the storage of large quantities of exposed, readily ignitable materials.

3.7.4 In ducts and conveyor systems that might carry sparks to distant combustibles shall be suitably protected or shutdown.

3.8 No welding, cutting, or other hot work shall be performed on containers until they have been cleaned so thoroughly as to make absolutely certain that there are no substances which when subjected to heat, might produce flammable or toxic vapors. Any pipelines or connections to the drum or vessel shall be disconnected or blanked.

3.9 When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine be disconnected from the power source.

3.10 Torch valves shall be closed and the gas supply positively shutoff at some point outside the confined area whenever the torch is not to be used for a substantial period of time.

3.11 A fire resistant bucket or container shall be provided for the disposal of hot electrode stubs.

3.12 Hoses, cables, etc., shall be strung overhead or otherwise be located to keep clear of passage ways, ladders, and stairways. If they must be on the ground, protect them and erect barricades so that personnel and vehicles do not come in contact with them.

3.13 Welding machines shall be turned off at the end of each work shift, or when not in use for extended periods.

3.14 After a welding job is complete, the material shall be chalk marked "HOT" or warning signs posted to caution other employees.

3.15 Before the start of operations, all electrical wiring and connections shall be inspected by a qualified person to insure the welding machine, cable and wiring are safe to operate.

#### **4.00 Protection of Personnel**

#### 4.1 Eye Protection

4.1.1 Helmets or hand shields shall be used during all arc welding. Goggles shall also be worn to provide protection from injurious rays from adjacent work, and protection from flying objects. Helpers or attendants shall be provided with the proper eye protection.

4.1.2 Goggles or other suitable eye protection shall be used during all gas welding or oxygen cutting operations.

4.1.3 All operators and attendants of resistance welding or brazing equipment shall use transparent face shields or goggles, depending on the particular job, to protect their faces or eyes, as required.

4.1.4 Eye protection in the form of suitable goggles shall be provided where needed for brazing operations not covered above.

4.1.5 Only approved filter lenses and plates shall be used.

4.1.6 Workers or other persons adjacent to the welding areas shall be protected from the rays by non combustible or flameproof screens or shields or shall be required to wear appropriate goggles.

#### 4.2 Protective Clothing

4.2.1 General: employees exposed to the hazards created by welding, cutting or brazing operations shall be protected by personnel protective equipment.

4.3 Airline Respirators: where it is impossible to provide proper ventilation, airline respirators or hose masks approved by NIOSH shall be used. Refer to respiratory protection program.

4.4 Oxygen shall never be used for ventilation.

4.5 Electric Shock: When arc welding is performed in wet conditions, or under conditions of high humidity, special protection against electric shock shall be supplied.

4.6 Pressure Testing Pipelines: The workers and the public shall be protected against injury by the blowing out of closures or other pressure restraining devices. Also, protection shall be provided against expulsion of loose dirt that may have become trapped in the pipe.

4.7 When welding overhead, the use of ear covers or ear plugs shall be used for ear protection.

4.8 Rubber gloves shall be worn under welding gloves when welding in wet or damp conditions or when welders are perspiring excessively, to prevent shock.

## **5.00 Gas Welding and Cutting**

5.01 The following shades of absorptive lenses diminish the intensity of the visible light to a point where there will be no glare, but where the weld or cut may be clearly seen, and enough of the surrounding area seen to permit good work practices.

Light cutting and welding – Shade No.5

Medium cutting and welding – Shade No.6

Heavy welding – Shade No.8

## **6.00 Electric Arc Welding**

6.01 Helmets and hand held shields shall be provided with both a proper shade of filter lens and a clear protective cover glass.

## **7.00 Ventilation for General Welding and Cutting**

7.1 Mechanical ventilation shall be provided when welding or cutting is performed in the following areas:

7.1.1 In a space of less than 10,000 cubic feet per welder

7.1.2 In a room having a ceiling height of less than 16 feet.

7.1.3 In confined spaces or where the welding space contains partitions, balconies or structural barriers to the extent that they significantly obstruct cross ventilation.

7.2 Ventilation shall be provided at the minimum rate of 2,000 cubic feet per minute per welder, except where the use of local hoods and booths meet the requirements below:

7.3 Mechanical ventilation provided by the local hoods and booths shall meet the following:

7.4 Local Hoods – freely movable hoods intended to be placed by the welder as near as practicable to the work being welded and provided with an air flow rate of 100 linear feet per minute towards the hood across the work zone.

7.5 Fixed Booths – shall be an enclosure with a top and not less than two sides surround the welding or cutting operation and with a rate of air flow sufficient to maintain a velocity away from the welder of not less than 100 linear feet per minute.

## **Section “P” Work Area Protection**

### **1.00 Introduction**

1.01 This plan provides guidelines for protection of the public and the worker when working on a road or near a roadway / sidewalk.

### **2.00 General Guidelines**

2.1 Work area protection shall be designed and installed for the protection of the public when hazards exist in a work area that cannot be eliminated under all conditions of weather, day or night.

2.2 These hazards may be from gas flash fires, explosions, electrical contact, motor vehicles, mobile power equipment, machinery, openings in walking surfaces, defective structures or substructures, falling objects and tripping hazards.

2.3 Barricades, tapes, signs, flags, high intensity flashing lights and tags are devices that shall be considered as parts of a work area protection system designed to protect against a known hazard.

2.4 When operations are such that signs, signals and barricades do not provide the necessary protection on or adjacent to a highway or street, a flag person or other appropriate traffic controls shall be provided.

2.5 Hand signaling by a flagperson shall be by use of red flags at least 24 inches square or sign paddles, and in periods of darkness, red lights.

2.6 Flaggers and employees exposed to vehicular traffic shall wear traffic safety vests or other suitable high visibility garments marked with or made of reflecting material. Vests shall be flame retardant.

2.7 All work occupying a work area for more than a brief period shall be considered “short duration stationary work”. At least one advanced warning sign shall face each direction of traffic approaching the work area. Channelizing devices (cones) shall be used if the work area occupies a portion of the roadway.

2.8 References for standards of signs, signaling and barricades shall be the Department of Transportation Manual of Uniform Traffic Control Devices. Hand signals for traffic control can be seen in attachment 1 and shall use the following guidelines:

2.8.1 All signs used for traffic control shall meet all federal, state and local regulations.

2.8.2 Flagman stations shall be located far enough from the work site so that vehicles will have sufficient distance to slow down before entering a project, but not so far that vehicles will tend to speed up again before entering the work site.

2.8.3 Flagman stations shall be illuminated at night. Conspicuous clothing is required to accentuate the visibility of flagmen.

2.8.4 Red lanterns or lights shall be used to flag traffic at night. To stop traffic the light shall be waved back and forth across the path of the approaching vehicle. The signal to proceed shall be made verbally or by hand motion.

2.8.5 Each flagman shall be equipped to give an audible signal which may be used to attract the attention of motorists and to warn the workmen when a motorist refuses to obey the flagman.

2.09 All federal, state, and local laws governing roadway work shall supercede the rules set by Haugland Energy Group and shall be followed by all Haugland Energy Group employees.

## **Section “Q” Housekeeping and Waste Management**

### **1.00 Introduction**

1.01 This program covers housekeeping and waste management requirements for all company work locations.

### **2.00 Requirements**

2.1 All work areas, passageways, storerooms, service rooms and vehicles shall be kept clean, orderly and in a sanitary condition.

2.2 Floor and walkways shall be maintained in a clean and, so far as possible, dry condition.

2.3 Form and scrap lumber with protruding nails, and other debris shall be kept clear from work areas, passageways, and stairs.

2.4 Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse. Containers used for garbage and other oily, flammable or hazardous wastes, such as caustics, acids, harmful dusts, etc. shall be equipped with covers. Garbage and other waste shall be disposed of at frequent and regular intervals.

2.5 Containers provided for waste disposal shall be labeled to identify the type of waste that it shall be used to dispose of.

2.6 Any hazardous wastes that may be produced during operations shall be disposed of in a manner conforming to all applicable federal, state and local laws. Any and all hazardous wastes shall be identified and manifested.

2.7 Recyclable materials: Work site supervisors shall ensure that all recyclable materials are disposed separately from other wastes and are hauled to the proper facilities.

2.8 Haugland Energy Group shall ensure that all waste disposal contractors have the proper permits and certifications prior to hauling waste.



## **Section “R” Environmental Compliance**

### **1.00 Introduction**

1.01 This guideline provides a general overview of environmental requirements and procedures to be followed during contracted work to ensure compliance with existing environmental regulations as established by federal, state and local agencies and to minimize any deleterious environmental impacts during construction projects in or near environmentally sensitive areas.

### **2.00 Regulatory Compliance**

2.1 Engineering shall review project scope documents to determine the need for all environmentally-related permits for the project. Engineering shall provide information and guidance on environmental issues in order to ensure an environmentally sound project design and construction and to ensure full compliance with all applicable regulations and standards.

2.2 Project engineers shall apply to the appropriate federal, state or local environmental agencies for all necessary permits. It is the responsibility of the lead engineer or project manager to provide all project documentation required for permit application.

2.3 Whenever performing a project for which an environmental permit has been issued, a copy of the appropriate permit(s) shall be kept at the work site. In the event a project has several work sites active at any given time, each work site shall have a copy of the permit present at the site. If provided, the Notice of Permit or Permit Sign issued by a regulatory agency shall be prominently posted at each work site as required in the permit(s).

2.4 All parties in a project involved shall be made aware of and shall comply with all conditions of the permit(s). If any conditions are unclear or appear to be inappropriate the lead engineer or project manager shall be notified immediately. The lead engineer or project manager shall be the main point of contact between Haugland Energy Group and the appropriate regulatory agency.

2.6 If any modifications to the project design or construction method become necessary after the permit has been issued the lead engineer or project manager shall contact the appropriate agency to determine if a change or modification to the permit is required. Under no circumstances shall the work methods or project design be changed from those described in the permit application unless approval has been received.

2.7 The lead engineer or project manager shall be notified immediately in the event of any contact between any regulatory agencies and Haugland Energy Group personnel or sub-contractors or any other party involved in the project.

2.8 The lead engineer or project manager may stop the project in the event of any violation of regulations or permit conditions or in the event of sub standard work practices.

### **3.00 Project Owner**

3.1 Project Management shall ensure that all environmental rules and policies of project owner are strictly complied with for the duration of the project, so long as they meet or exceed the

standards of Haugland Energy Group and the regulating federal, state and local agencies.

3.2 Project management shall communicate all environmental concerns to the project owner representative before contract work begins, and as issues arise during the project. Project management shall consult with the project owner's environmental engineer or designated representative on the appropriate course of action to be taken.

#### **4.00 Water Resources**

4.1 For operations at Haugland Energy Group two sources of wastewater have been identified:

1. De-watering of trenches
2. Water containing bentonite clay used in directional boring operations

4.2 It has been determined that de-watering of trenches shall be accomplished by using one of two methods.

4.2.1 The first method is to have waste water shall be collected by a licensed waste disposal contractor.

4.2.2 The second option is for Haugland Energy Group project management to obtain the necessary municipal approval for discharge into the local sewer system.

4.3 Operations involving directional drilling shall properly collect and dispose of all wastewater containing bentonite clay. Bentonite shall not be discharged into sewers or bodies of water for disposal.

4.3.1 Bentonite shall be collected either by qualified Haugland Energy Group employees or a licensed waste disposal contractor, and disposed of properly.

#### **5.00 Mercury Awareness**

5.1 It is the policy of Haugland Energy Group that all work involving mercury materials shall be handled in accordance with the work method prescribed by the project owner.

5.01.1 Haugland Energy Group personnel shall coordinate with the project owner authorized representative for all mercury regulator removal and disposal.

5.2 Training - All Haugland Energy Group employees that have the potential for exposure to mercury shall have the proper mercury awareness training. Training shall meet the requirements set forth by the project owner.

5.3 Spills - In the event of a mercury spill employees shall:

1. Immediately notify regulatory authorities
2. Make all possible efforts to contain the spill area and prevent public exposure
3. If the spill occurred indoors, attempt to ventilate the area

5.03.1 Spill clean up shall be performed by an Environmental Engineering approved spill clean-up contractor. Employees shall not attempt to perform spill clean-up.

5.4 All items that come into direct contact with mercury shall be considered contaminated and shall be handled accordingly.

5.5 Smoking, eating, chewing gum, drinking shall not be permitted in the work area where mercury is present.

5.6 All mercury containing materials shall be handled in accordance with the project owner's prescribed work method or procedures.

## **6.00 Asbestos Awareness**

6.1 Training – All Haugland Energy Group employees shall receive asbestos awareness training as prescribed by the contract owner prior to the commencement of contract work. Haugland Energy Group employees shall be able to identify asbestos containing material so that such materials can be quarantined to protect employees and the public.

6.2 Handling – All asbestos containing materials shall be handled by the project owner designated representative for removal, packaging, transport and disposal. Haugland Energy Group personnel shall notify the proper project owner representative to have this work performed.

## **7.00 Lead Awareness**

7.1 All Haugland Energy Group personnel with potential exposure to lead containing material during the contract work shall be provided with lead awareness training. This training shall be provided so that affected personnel may identify locations and quantities of lead containing materials to minimize contact with and exposures to lead.

7.2 Lead removal and abatement work shall be done by a licensed and qualified contractor or qualified project owner designated representative.

## **8.00 PCB Management**

8.1 Projects where the possibility of Haugland Energy Group employee contact with PCB's exist shall conform to the project owners standards and methods for PCB management.

8.2 All Haugland Energy Group employees that reasonably anticipate potential exposure to PCB's must have PCB awareness training and be trained in the proper personal protection procedures.

8.3 Project owners and Haugland Energy Group personnel shall be notified when PCB containing materials are present on the work site

## **Section “S” EMERGENCY ACTION PLAN**

### **1.00 Policy Statement:**

Haugland Energy Group employees are not required to fight fires and shall evacuate buildings and work sites immediately in the event of a fire. The local Fire Department has primary responsibility for managing fire emergencies and must be notified immediately of such situations at their emergency number, 911. Employees may use fire extinguishers to fight small, incipient stage fires (no larger than a waste paper basket) only if they have been trained in the proper use of a fire extinguisher and are confident in their ability to cope with the hazards of a fire. In such cases, fire fighting efforts must be terminated when it becomes obvious that there is danger of harm from smoke, heat, or flames.

### **2.00 Reporting Fires and Emergencies:**

If you discover a fire, activate the nearest fire alarm pull station or call 911. A project owner representative must be notified of all fire or explosion occurrences.

2.1 Haugland Energy Group employees may attempt to put out the fire if they have been trained in and are comfortable with using a fire extinguisher. Otherwise, immediately evacuate. A list shall be furnished for project owner containing the names of all Haugland Energy Group employees working on the contract that are qualified to use fire extinguishers.

2.2 Hazardous equipment or processes shall be shut down before leaving unless doing so presents a greater hazard.

### **3.00 Evacuation Procedures:**

Evacuations shall be made to the nearest pre-designated assembly point for each work site. The designated assembly point shall be determined separately for each work site, before contract work begins. At the assembly point, supervisors account for personnel and report any that are unaccounted.

3.01 During an emergency, visitors who may not be familiar with this plan must be informed of the requirement to evacuate. Special attention shall also be given to any persons with disabilities, especially those who are visitors or unfamiliar with the building.

### **4.00 Training:**

Employees must receive training on all elements of this plan upon initiation of contract work. Thereafter, new employees must receive training when first assigned to the contracted work. Additional training is necessary only when an employee's required actions under the plan change, or when there are changes to the plan.

## **5.00 Spill Response Plan**

Pre-planning is essential to handling a spill. Haugland Energy Group's workers shall consider the following items to prepare themselves and their work areas for spill control and cleanup. Review Material Safety Data Sheets (MSDSs) or other references for recommended spill cleanup methods and materials, and the need for personal protective equipment (i.e., respirator, gloves, protective clothing, etc.).

1. Acquire sufficient quantities and types of spill control materials to contain any spills that can be reasonably anticipated. The need for equipment to disperse, collect and contain spill control materials (i.e., brushes, scoops, sealable waste containers, etc.) shall also be reviewed. Spill kits shall be kept on all Haugland Energy Group vehicles to contain or cleanup spills related to vehicles or equipment on the work site.

2. Acquire recommended personal protective equipment and know how to use it properly.

3. Place spill control materials in a readily accessible location within or immediately adjacent to the laboratory.

5.01 Spill Response Procedure: In the event of a spill, the general procedure listed below shall be followed:

1. Immediately alert others in the area and the supervisor, and evacuate the area, if necessary.

2. Contact 911 if there is a fire or medical attention is needed.

3. Attend to any persons who may have been contaminated. Contaminated clothing must be removed immediately and the skin flushed with water for no less than fifteen minutes. Clothing must be laundered before reuse.

4. If a volatile, flammable material is spilled, immediately warn others in the area, control sources of ignition and ventilate the area.

5. Don personal protective equipment, as appropriate to the hazards. Refer to the MSDS or other references for information.

6. Consider the need for respiratory protection. The use of a respirator or self-contained breathing apparatus requires specialized training and medical surveillance. Never enter a contaminated atmosphere without protection or use a respirator without training. If respiratory protection is needed and no trained personnel are available, call 911. If respiratory protection is available, be sure there is another person outside the spill area in communication or in sight, in case of emergency.

7. Protect floor drains or other means for environmental release. Spill socks and absorbents may be placed around drains, as needed.

8. Clean up the spill according to the previous table.

9. Loose spill control materials shall be distributed over the entire spill area, working from the outside, circling to the center. This reduces the chance of splash or spreading of the spilled chemical.

10. When the spilled materials have been absorbed, use a brush and scoop (spark-resistant if flammable materials are involved) to place materials in an appropriate container. Polyethylene bags may be used for small spills. Five gallon pails or 20 gallon drums with polyethylene liners may be appropriate for larger spills.

11. Affix a hazardous waste sticker to the container or bag. Remember the use of an absorbent does not alter the chemical properties of the chemical.

12. Place the container in a hood or other properly ventilated area until the next chemical waste pick-up.

13. Decontaminate surfaces involved in the spill using a mild detergent and water, as appropriate.

Report all spills to your supervisor or the principal investigator.

## **Section “T” Compressed Gas Plan**

### **1.00 Purpose**

1.1 It is the policy of Haugland Energy Group to permit only trained and authorized employees to handle, store, use, and inspect compressed gases and equipment at any time. This policy is applicable to daily users and those who only occasionally have cause to use the equipment.

1.2 This written Compressed Gas Plan describes methods and practices for care and use of compressed gases that can be read and understood by all managers, supervisors, and employees at Haugland Energy Group. This written plan is intended to be used to:

- create an awareness of the hazards among our workforce,
- standardize procedures for use and care of the equipment,
- provide a consistent format for training employees on the proper procedures to be used,
- minimize the possibility of injury or harm to our employees, and
- demonstrate Haugland Energy Group Construction 's compliance with OSHA's compressed gas requirements.

### **2.00 List of Compressed Gases and Equipment**

2.1 The compressed gases used at this company include the following: Acetylene, Air (compressed), Carbon Monoxide (0-10%) in Argon, Liquefied petroleum gas w/ methylacetylene, Nitrogen, Oxygen, Propane.

2.2 The compressed gas equipment used at this company includes the following: compressed gas cylinders, portable tanks, standing tanks, welding torches, etc.

### **3.00 Personal Protective Equipment**

3.01 We have assessed the hazards associated with the compressed gases and equipment at Haugland Energy Group and have taken measures to eliminate or reduce their presence with engineering and administrative controls. Where these controls were not enough for employee protection, our company provides all necessary personal protective equipment according to both our written respirator and personal protective equipment (PPE) programs. See the respirator program for details about respirator selection, training, inspection, cleaning, maintenance, storage, work area surveillance, program evaluation, user physical fitness determination, and air quality standards. See the PPE program for details about hazard assessments, PPE selection, employee training, PPE cleaning and maintenance, and PPE-specific information.

#### **4.00 Inspection Procedures**

4.1 Only properly trained and authorized employees are qualified to determine that compressed gas cylinders at the company are in a safe condition to the extent that can be determined by visual inspection.

4.2 Inspections of cylinders are conducted according to the following schedule: (1) monthly when kept in storage, (2) daily before each use.

4.3 Our inspections are conducted as prescribed by the following, as applicable:

- 49 CFR 171 - 179 and 49 CFR 103 (Hazardous Materials Regulations under the Department of Transportation).

- Compressed Gas Association Pamphlet C-6-1968 (Standards for Visual Inspection of Steel Compressed Gas Cylinders).

- Compressed Gas Association Pamphlet C-8-1962 (Standard for Re-qualification of DOT-3HT Seamless Steel Cylinders).

4.4 Of course, if a cylinder is found to be unfit in its present condition, then it will be returned to the distributor who then must determine whether it can be repaired or must be scrapped. If a cylinder is repaired, it can only go back into service if the defect is corrected as specified according to the requirements listed above.

#### **5.00 Handling Procedures**

5.1 Compressed gases are considered to be handled when employees perform any of the following activities:

- identify contents;
- fill, transfill, change gas service, maintain and move containers; and
- connect containers and withdraw content.

5.2 We follow the safe handling procedures found in the CGA pamphlet series, including the P-1-1991 pamphlet. Our handling procedures include the following:

1. Identify a gas and its dangers before using it. Look for this information on labels, MSDSs, and cylinder markings. If you don't know what's in a cylinder, don't use it.
2. Examine cylinders as soon as you receive them. If you detect signs of damage or leakage, move them to a safe, isolated area and return them to the supplier as soon as possible.
3. Use only regulators, pressure relief devices, valves, hoses, and other auxiliary equipment that is designed for the specific container and compressed gas/cryogenic liquid to be used.
4. Do not interchange equipment between different types of gases.
5. Make sure valves, hoses, connectors, and regulators are in good condition. Don't use cylinders without them.



6. Use pressure relief devices and safety devices to help maintain cylinder or system pressure at the desired levels. (Exceeding the desired pressure could damage the cylinder or system.)
7. Check to see if regulators, hoses, and gauges can be used with different gases. Assume they cannot.
8. Never open valves until regulators are drained of gas and pressure-adjusting devices are released. When opening cylinders, point outlets away from people and sources of ignition, such as sparks or flames. Open valves slowly. On valves without hand wheels, use only supplier-recommended wrenches. On valves with hand wheels, never use wrenches.
9. Do not tamper with connections and do not force connections together.
10. Do not hammer valves open or closed.
11. Do not drop, bang, slide, clank, or roll cylinders.
12. Cylinders may be rolled along the bottom rim.
13. Don't let cylinders fall or have things fall on them.
14. Don't lift a cylinder by its cap unless using hand trucks so designed.
15. Use carts or other material handling equipment to move cylinders. Use ropes and chains to move a cylinder only if the cylinder has special lugs to accommodate this. Some cylinders may require special hand trucks.
16. Keep cylinders secured and upright. (But never secure cylinders to conduit carrying electrical wiring.)
17. When transporting compressed gas cylinders, be sure the vehicle is adequately equipped to haul compressed gases safely. Stop the engine while loading or unloading flammable compressed gases.
18. Don't drive a vehicle hauling liquefied hydrogen through a tunnel.
19. Know accident procedures.

## **6.00      Storage Procedures**

6.1      The following activities are involved in safely storing compressed gases:

- post areas where gases are present,
- group gases,
- separate combustibles,
- avoid corrosives or areas where container damage can occur,
- position containers properly, and
- use indoor and outdoor storage appropriately.

6.2      We follow the safe storage procedures found in the CGA pamphlet series, including the P-1-1991 pamphlet. Our storage procedures for compressed gases include the following:

- Store cylinders upright.
- When a cylinder is in storage, keep the steel protective cap screwed on. This step reduces the chance that a blow to the valve will allow gas to escape.
- Group cylinders by types of gas.
- Store full and empty cylinders apart.
- Store gases so that old stock is removed and used first.
- To keep cylinders from falling over, secure them with chains or cables.
- Store compressed gas containers in dry, well-ventilated areas away from exits and stairways. If outside, store containers off the ground and out of extremely hot or cold environments.
- Do not store compressed gas containers in high pedestrian and vehicle traffic areas. (Containers are more likely to be damaged there.)
- Store oxygen cylinders at least 20 feet from flammables or combustibles or separate them by a 5-foot, fire-resistant barrier.
- Keep oil and grease away from oxygen cylinders, valves, and hoses.
- If your hands, gloves, or clothing are oily, do not handle oxygen cylinders.
- Make sure fire extinguishers near the storage area are appropriate for gases stored there.
- Post signs stating the name(s) of gas present and NO SMOKING where gases are stored.

## **7.00      Usage Procedures**

7.1          Safe use of compressed gases involves the following activities:

- properly handle leaking containers,
- prevent abuse,
- identify contents,
- properly use container and valve caps and plugs, and
- return empty containers.

7.2          We follow the safe usage procedures found in the CGA pamphlet series, including the P-1-1991 pamphlet. Our procedures for using compressed gases include the following:

- Remove any leaking containers to a well-ventilated area and post a warning of the hazard.
- Shut a leaking valve and tighten the valve gland or nut. Then try opening the valve; if it still leaks, close it and tag the container unserviceable.
- Make sure labels are legible before using containers; otherwise, return the containers to the supplier.
- Do not misuse containers (i.e., using them for support); only use them as they were intended.
- Keep containers away from fire, sparks, and electricity.

- Don't smoke or allow others to smoke in the vicinity of flammable compressed gas containers.
- Do not subject containers to extreme heat or cold.
- Use a respirator or SCBA (self-contained breathing apparatus) according to 29 CFR 1910.134 when using toxic compressed gas.
- Contact the manufacturer/supplier with questions about safe handling.
- Always keep removable caps and valve outlet caps/plugs on containers except when connecting to dispensing equipment.
- Do not use oxygen and compressed air interchangeably. They are not the same.
- Comply with ANSI Z49.1 when using or storing oxyfuel-gas containers for welding and cutting and other similar activities.
- When empty, close and return cylinders. Empty cylinders must be marked MT or Empty. Empty acetylene cylinders must be so labeled.
- Be sure valves are closed when not using the container and before returning containers. Properly label returning containers.
- Do not refill non-refillable containers once they are empty.

## **8.00 Compressed Gas Emergency Procedures**

8.1 In an emergency, employees may seek advice from the Chemical Transportation Emergency Center, known as CHEMTREC, which can be reached 24 hours a day by dialing (800) 424-9300. The Chemical Manufacturers Association provides this service. A similar Canadian service, CANMTEC, is available at (613) 996-6666.

8.2 Refer to our written emergency action plan for employee escape procedures and assignments during a compressed gas emergency.

## **Section “U” Subcontractor Safety Policy**

### **1.00 Overview**

1.01 Good communication is a necessary element of maintaining safety at construction sites. Communication among subcontractor groups must identify safety hazards and prevention practices that each bring to the work site. Therefore, Haugland Energy Group has implemented the following subcontractor safety program for our work sites so that on the job injuries are minimized and work practices may be standardized.

### **2.00 Purpose**

2.1 A written subcontractor safety policy establishes guidelines to be followed for contractors working at our company. The rules established:

- Provide a safe working environment.
- Govern facility relationships with outside contractors.
- Ensure that contractor employees and our employees are trained to protect themselves from all potential and existing hazards.

2.2 The effectiveness of the contractor safety program depends upon the active support and involvement of all employees. This plan is intended to implement a program to ensure that all subcontractor work practices are carried out safely to minimize the possibility of injury or harm to the subcontractors' employees or our own employees. It is intended to serve as an additional tool in safeguarding the health and safety of employees.

2.3 The subcontractor safety policy establishes uniform requirements designed to ensure that subcontractor safety orientation, coordination, and safety administration practices are communicated to and understood by employees.

2.4 This document is provided to ensure all corporate safety plans, policies and procedures are communicated to all participating subcontractors. It also provides an avenue for subcontractors to communicate their safety plans, policies and procedures to the company. This program aims to prevent personal injuries and illnesses.

### **3.00 Administrative Duties**

3.1 The Safety Department is responsible for developing and maintaining the program. A copy of the plan may be reviewed by employees. In addition, the Safety Department is responsible for maintaining any records related to the subcontractor safety program.

3.2 If after reading this program, you find that improvements can be made, please contact the Safety Department. We encourage all suggestions because we are committed to the success of our subcontractor safety program. We strive for clear understanding, safe behavior, and involvement from every level of our company.

### **4.00 Explanation Of Responsibilities**

4.1 Haugland Energy Group's Responsibilities

4.1.1 Haugland Energy Group has specific safety responsibilities when hiring subcontractors to come onto the work site, onto the grounds, or into the buildings or facilities to

perform work. Company responsibilities when hiring subcontractors include the following listed steps. The company will:

1. Take steps to protect contract workers who perform work on or near a potentially hazardous process.
2. Obtain and evaluate information regarding the contract employer's safety performance and programs.
3. Inform the subcontractor of known potential fire, explosion, or toxic release hazards related to the contractor's work and the process.
4. Explain the applicable provisions of the Emergency Action Plan to the subcontractor, and require that the subcontractor disperse that information to all workers who will work at this site.
5. Develop and implement safe work practice procedures to control contract employee entry into hazardous work areas.
6. Maintain a contract employee injury and illness log.
7. Periodically evaluate the contract employer's fulfillment of his or her responsibilities under this policy.
8. Hire and use only subcontractors who meet Subcontractor Selection Criteria as listed in the next section of this policy.

#### 4.2 Subcontractor Responsibilities

4.2.1 Contract employees must perform their work safely. Considering that subcontractors often perform very specialized and potentially hazardous tasks, such as confined space entry activities and non-routine repair activities, their work must be controlled. Subcontractor responsibilities when accepting contracts with this company include the following listed steps. The contract employer will:

1. Assure that the contract employee is trained in the work practices necessary to safely perform his or her job.
2. Instruct the contract employee in the potential fire, explosion, or toxic release hazards related to his or her job and the process.
3. Assure that the contract employee knows the applicable provisions of the Emergency Action Plan.
4. Document contract employee training.
5. Inform contract employees of and then enforce safety rules of the facility, particularly those implemented to control the hazards of the contracted process during operations.
6. Abide by the facility smoking rules. Smoking is prohibited in certain areas of some facilities.

#### 5.1 Guidelines For Subcontractor Safety

5.2 The following listed steps are the standard procedures for evaluating and choosing subcontractors who will work on-site for Haugland Energy Group.

5.3 Obtain and evaluate information regarding a subcontractor's safety performance and programs when selecting a subcontractor to perform any type of contract work that might bring them into contact with any hazardous chemical or process while working for Haugland Energy Group.

5.4 To determine that past safety performance, the group or individual selecting the subcontractor shall consider the subcontractor's:

- Employee injury records such as Experience Modification Rate (EMR or MOD) for workers' compensation for the past three years and the contractor's past safety record in performing jobs of a similar nature.
- OSHA log, which includes the injury and illness rates (number of lost-time accident cases, number of recordable cases, number of restricted workday cases, number of fatalities) for the past three years.
- Incidence rates for lost-time accidents and recordables for the past three years.
- Written safety program and training system.

5.5 For subcontractors whose safety performance on the job is not known, obtain information on injury and illness rates and experience and obtain contractor references.

5.6 Subcontractor work methods and experience shall be evaluated. Ensure that for the job in question the contractor and its employees have the appropriate:

- Job skills.
- Equipment.
- Knowledge, experience, and expertise.
- Any permits, licenses, certifications, or skilled tradespeople necessary to be capable of performing the work in question.

5.7 The subcontractor must be willing and able to provide a current certificate of insurance for workers' compensation and general liability coverage with the contracting company.

5.8 Each subcontractor must be responsible for ensuring that its employees comply with all applicable local, state, and federal safety requirements, as well as with any safety rules and regulations set forth by this company, at which it is performing the contracted work.

5.9 Possible ways to determine past compliance with such safety regulations include:

- Requesting copies of any citations for violations occurring within the last three years, to determine the frequency and type of safety laws violated.
- Having all bidders on jobs describe in detail in writing any safety programs in place at the contractor, infractions, accidents, and workers' compensation claims within the last three years. This information will provide the company (company name) with a solid background on that contractor's safety performance and adherence to safety rules and regulations.

## **6.00 Guidelines For Information Exchange**

### **6.1 Company Guidelines for Information Exchange**

#### **6.1.1 Before contract work begins, Haugland Energy Group must:**

1. Designate a representative to coordinate and communicate all safety and health issues and communicate with the subcontractor. The designated representative will have a copy of the work document, be thoroughly familiar with its contents, and with the safety and health aspects of the work, or know whom to call to obtain this information. The designated representative is responsible for ensuring that all company responsibilities listed below are carried out.
2. Provide a copy of Haugland Energy Group's written safety policies and procedures to the contractor.
3. Inform the subcontractor of any emergency signals and procedures that may be put into operation in areas where the contractor's employees are working. The contractor shall be given the telephone numbers of the nearest hospital, ambulance service, and fire department.
4. Conduct an inspection of the proposed work site area before the pre-start up meeting so any known information about on-site hazards, particularly non-obvious hazards, are documented and thoroughly communicated to the subcontractor.
5. Work directly with the subcontractor's designated representative, with whom all contacts shall be made.
6. Conduct a pre-start up meeting (walk through) with the subcontractor's designated representative and a supervisor from each department involved in the subcontractor's work.
7. Review all contract requirements related to safety and health with the subcontractor's designated representative, including, but not limited to, rules and procedures, personal protective equipment (PPE), and special work permits or specialized work procedures. Advise the subcontractor that Haugland Energy Group's safety and health policies must be followed. A copy of the safety plans must be furnished to the subcontractor.
8. Inform subcontractor's designated representative of the required response to employee alarms and furnish the subcontractor with a demonstration or explanation of the alarms.
9. Communicate thoroughly with the subcontractor's designated representative any safety and health hazards (particularly non-obvious hazards and hazard communication issues) known to be associated with the work, including those in areas adjacent to the work site. Tell them it is the subcontractor's responsibility to convey this information to its employees.
10. Review preparation of work site before subcontractor begins initial work.
11. Identify connect-points for all services, such as steam, gas, water, electricity, etc. Define any limitations of use of such services.
12. Ensure that all affected employees at Haugland Energy Group receive training on all hazards to which they will be introduced by a subcontractor.

#### **6.1.2 During the contract work, Haugland Energy Group must:**

1. Limit, as necessary, the entry of company employees into subcontractor work areas.
2. Monitor the subcontractor's compliance with the contract throughout the duration of the work. When checking subcontractor work during the project, note any negligent or unlawful act or condition in violation of safety standards or requirements. Any items noted shall be brought immediately to the attention of the subcontractor's designated representative in writing, with a copy of the notice being sent to the subcontractor's home office concurrently. However, if an unsafe act or a condition is noted that creates an imminent danger of serious injury, immediate steps shall be taken with the subcontractor's designated representative, or in his or her absence, the subcontractor's employees to stop the unsafe act or condition. Do not allow work that is in

violation of a regulation to continue.

3. Document all discussions, including place, time, and names of subcontractor employees in attendance.

4. Approve the subcontractor beginning work each day, unless it is routine service or maintenance work or periodic outdoor service or maintenance work.

5. For work for which this company has developed specific and generally applicable procedures, make sure subcontractors follow the same procedures.

6. Do not allow loaning of tools and equipment to subcontractors. The subcontractor is required to provide the necessary tools and equipment, unless stated by the specific contract.

7. Contact the nearest medical facilities, when available, in emergency situations where severity of the injury dictates immediate attention.

8. Obtain a copy of each OSHA recordable injury report from the subcontractor. Investigate and report to the Department Manager and Safety Department all personal injuries to subcontractor employees.

9. Investigate and report any property losses. Maintain a subcontractor accident report file.

6.1.3 After conclusion of the contract work, the Safety Dept. completes a post-project assessment of the subcontractor's safety performance for the Department Manager to be used for future reference, with a recommendation on whether or not to re-hire the subcontractor.

6.2 Subcontractor Guidelines for Information Exchange

6.2.1 Before the contract work begins, the subcontractor must:

1. Designate a representative to coordinate all safety and health issues and communicate with Haugland Energy Group's designated representative.

2. Provide documentation of any necessary safety training, as described in the Training Requirements section of this policy.

3. Provide information to the designated representative on the safety and health hazards that may arise during the course of the subcontractor's work at this company and the means necessary to avoid danger from those hazards, including Hazard Communication and all other potential hazards.

4. Obtain safety rules and regulations in effect at the site or potential hazards present that may affect the subcontractor's work.

5. Be certain to be informed of any emergency signals and procedures that may be put into operation in areas where the subcontractor's employees are working. The subcontractor shall be certain to have the telephone numbers of the nearest hospital, ambulance service, and fire department.

6. Advise and train its employees on hazards associated with the work to be performed, including any Hazard Communication or other hazard information provided the subcontractor.

7. Keep the designated representative of this company fully informed of any work which may affect the safety of employees or property. This includes complying with the state and federal right-to-know legislation and providing the designated representative appropriate material safety data sheets (MSDSs) or other required information about chemicals the subcontractor will bring onto the site.

8. Know who to call and what to do in emergencies, including where first-aid and medical services are located and train employees on this.

6.2.2 During the contract work, the subcontractor will:

1. Have a designated site safety coordinator present and attentive to the work being carried out at all times.



2. Establish necessary safe practices to permit work under normal operating conditions without endangering associates and property. This includes but is not limited to barricading, sign-posting, etc.
  4. Make sure that any equipment, chemicals, or procedures used by the subcontractor to perform contracted work meet all OSHA requirements.
  5. Be held responsible and accountable for any losses or damages suffered by Haugland Energy Group and/or its employees as a result of subcontractor negligence.
  6. Provide its employees with medical care and first-aid treatment.
  7. Provide supervisors and employees who are competent and adequately trained, including training in all health and safety aspects of the work involved in the contract.
  8. Provide all tools and equipment for the work, including personal protective equipment (PPE), and ensure the equipment is in proper working order and employees are instructed in its proper use.
  9. Maintain good housekeeping in the workplace.
  10. Notify the designated representative immediately of any OSHA recordable injury or illness to subcontractor employees occurring while on the site of this company. Provide a copy of each accident report to the designated representative.
  11. Receive and use a copy of Haugland Energy Group's written safety policies and procedures.
- 6.2.3 After conclusion of the contract work, the subcontractor is responsible for cleaning all work areas and disposing of any discarded materials in a proper and legal manner.

## **7.00 Training Requirements**

- 7.1 Company Requirements
  - 7.1.1 Haugland Energy Group makes sure that affected company employees receive training on all hazards to which they will be introduced by a subcontractor.
  - 7.1.2 In addition, we emphasize to the subcontractor that it is the subcontractor's responsibility to convey to its employees any safety information provided by Haugland Energy Group to the subcontractor.
- 7.2 Subcontractor Requirements
  - 7.2.1 The subcontractor must:
    1. Train all workers on all safety and health hazards and provisions applicable to the type of work being done, and provide documentation of such training to this company's designated representative.
    2. Train employees on where to obtain first-aid and medical services.

## **8.00 Recordkeeping Requirements**

- 8.1 Company Requirements
  - 8.1.1 The designated representative will:
    1. Have a copy of the contract on file and be thoroughly familiar with its contents, and with the safety and health aspects of the work.
    2. Keep records of all training done with company workers regarding hazards to be caused by the contracting company.
    3. Keep copies on file of all forms or statements related to the contract that are required by the company to be filled out before or during contract work.
    4. Keep records of all documentation of any sort given to the company by the subcontractor, including records of training done, MSDSs, accident reports, etc.

5. Keep records of all documentation of any sort the company gives to the subcontractor, including list of hazards to train their employees on, MSDSs, etc.
6. Document all discussions, letters, memos, or other communications made to the subcontractor regarding safety issues, including place, time, names of people involved.

## 8.2 Subcontractor Requirements

### 8.2.1 The subcontractor will:

1. Keep records of all training done with contract workers and all documentation provided to the contracting company regarding such training.
2. Keep copies on file of all forms or statements related to the contract that are required by the company to be filled out before or during contract work.
3. Have on file the telephone numbers of the nearest hospital, ambulance service, and fire department.
4. Have copies on-site of all material safety data sheets (MSDSs) or other required information about chemicals relevant to the work on-site.
5. Keep an OSHA recordable injury and illness log for the project, as well as copies of accident reports on all accidents that occur in the course of the project.

## **Section “V” Fall Protection Program**

### **1.00 Policy**

1.1 Haugland Energy Group is committed to the philosophy of continuous fall hazard control wherever the potential exists for personnel falls from heights of at least six feet. Accordingly, Haugland Energy Group will take practical measures to eliminate, prevent and control fall hazards. Work sites and activities shall be surveyed to identify all hazards of personnel falling from elevations. First consideration shall be given to the elimination of those hazards. If a fall hazard cannot be practically eliminated, second consideration will be given to implementing effective permanent means of fall prevention.

1.2 If a fall hazard cannot be eliminated or fall prevention assured, then effective fall protection means shall be planned, implemented and carefully monitored to control the risks of personnel injury due to falling. Fall protection systems will be continuous by design and supervision shall control against their intermittent or improper use.

1.3 All personnel and management staff who are working where fall hazards cannot be eliminated or the onset of falls prevented, shall be uniformly equipped trained, and given refresher training at specified intervals to minimize adverse effects of accidental falls. Fall protection equipment and compliance will be in accordance with OSHA standards. Subcontractors will be required to comply with our fall protection program to work on our projects.

This policy will be implemented in accordance with the following objectives, guidelines, and directives:

### **2.00 Control Methods**

2.1 When we address fall protection we will implement three topics:

1. Elimination
2. Prevention
3. Control

2.2 Elimination of fall hazards is the first and best line of defense against falls from heights. To do it requires careful assessment of the workplace and the work itself. The “who, what, when, where, why and how much” of each exposure is considered. This pre-job approach of the work and site often not only leads to eliminating the hazard altogether but also identifies alternative approaches to the work that can measurably enhance productivity. The idea is to design safety right into the work process, and not simply try to add safety as an after thought to inherently unsafe work procedures.

Prevention of falls is the second line of defense when fall hazards cannot be entirely eliminated. This also requires assessment of the workplace and the work process. It involves making changes to the workplace so as to preclude the need to rely on the worker's behavior and personal protective equipment to prevent falls. Where feasible we will utilize stairs, guardrails, barriers, and travel restriction systems to prevent our employees from direct and unprotected exposure to the fall hazard. These techniques will be implemented prior to the actual work.

Control of falls is the last line of defense. It will be considered only after determining that the fall hazard cannot be eliminated or the possibility of falling prevented. If elimination and prevention are not feasible then control calls for equipment such as safety nets or harnesses, lanyards, shock absorbers, fall arresters, lifelines and anchorage connectors. It deals with reducing the risk of injury in falling after onset of the fall. Fall protection also necessitates workplace and work process assessment and planning in order to select the proper equipment and install and use it correctly.

### **3.00      Fall Hazard Control**

3.01      To implement an effect fall protection program all company personnel and subcontractors will work together to protect all employees against fall hazards. The parties that are responsible for fall protection at Haugland Energy Group are as follows:

- Heath and Safety Dept.
- Department Managers
- Site Superintendent
- General Foreman / Foreman
- Employees
- Subcontractors

### **4.00      Management Responsibilities**

- Identify all hazards
- Identify, evaluate, prioritize and select controls.
- Communicate identified hazards and controls to company department heads and subcontractors.
- Follow up and assure company department head and subcontractor planning and action.
- Communicate general information between departments and subcontractors which would be of value.

4.01 It is the primary responsibility of management of project management to assure that all fall hazards are

1. Identified

2. Evaluated

3. Controlled

## **5.00 Fall Hazard Inspections**

5.1 An effective way to identify hazards is to conduct detailed walk-through tours of work operations. The walk through tours will be conducted by the work site supervisor on a constant basis. Furthermore the health and Safety department shall make periodic inspections of the work site.

5.2 Once a fall hazard has been identified it shall be determined what measures shall be implemented to eliminate or control the hazard.

## **6.00 Feasibility of Implementation of Effective Controls**

6.1 The goal is to provide the greatest amount of protection in the shortest amount of time. We will do this by, first isolating the hazards most likely to result in death or serious injury, as well as those most likely to occur. Among this group, begin with those easiest to eliminate or prevent (due to economical and technological feasibility) in order to provide the greatest protection in the shortest amount of time.

6.2 Perhaps the most critical and difficult decisions in a program for safety at heights is the selection of the proper control method. The fundamental principle underlying the selection process is that it is more reliable to depend on engineering controls, which provide automatic protection, than it is to depend upon workers' and supervisors' behavior to control hazards. We will always aim to eliminate or reduce the risk of falling through engineering means which provide "automatic" controls rather than rely on people to always behave safely.

6.3 After we have eliminated or reduced the risk of a fall injury to the extent feasible, some residual hazards and risk will still remain. That is, there will be risks of injury that can be reduced through training, instructions, warnings, inspections, maintenance, supervision, preventative maintenance and scheduling. Therefore, each employee of Haugland Energy Group must follow the following:

**UTILIZE THE PERSONAL PROTECTIVE EQUIPMENT HAUGLAND ENERGY GROUP PROVIDES AT ALL TIMES**

6.4 Failure on the part of those employees who do not cooperate with this fall protection program shall be subject to disciplinary action or terminated.

## **7.00      Summary**

7.01      The personal safety and health of the general public and each employee at Haugland Energy Group is of primary importance. The prevention of occupationally induced injuries and illnesses is of such consequence that it will be given precedence over operating productivity whenever necessary. To the greatest degree possible, management will provide all mechanical and physical facilities required for personal safety and health of the general public and each employee. Therefore, this fall protection program is an integral part of the Corporate Health and Safety Manual.

## **Section “W” General Safety Requirements for Gas Utility Work**

### **A. Fire Extinguisher**

An approved 20 lb. ABC type fire extinguisher must be on the job and readily accessible during all routine or emergency live gas operations for maintenance and repairs, shutdown operations, tapping operations, or whenever conditions exist which might warrant their use.

### **B. Purging**

Extreme care shall be taken to properly vent and direct the gases utilized for purging of all gas mains, services and related equipment. The gas that is normally used is nitrogen, which can cause an oxygen deficient atmosphere and asphyxiation. Every effort is to be made to avoid exposure to these gases by remaining outside of the excavation or surrounding area where the gases are being released. The employee who is monitoring the stack shall wear FR coveralls, FR gloves and FR hood and have available airline respirators and safety harness with lifelines.

### **C. Static Electricity and Plastic Pipes**

Prior to any work, including purging and during gassing in, extreme care shall be taken to ground all plastic pipes and related equipment.

### **D. Wheel Chocks**

All company vehicles over 10,000lbs shall be equipped with approved wheel chocks. Vehicles less than 10,000lbs. Used to perform pipeline maintenance activities, shall be chocked if the vehicle is running and parked.

If a vehicle is parked and equipment being towed remains secured to the vehicle, as in the case of a portable compressor, the equipment being towed is to be chocked on one wheel of the single axle. The towing vehicle must also be chocked according to the guidelines below.

Chocks are to be used during all Work operations accordingly whenever vehicles are parked (with the engine running or not in the cab:

1. One chock in front of each of the rear wheels when the vehicle is on a downgrade incline. The front wheels will be turned toward the curb.
2. One chock in back of each of the rear wheels when the vehicle is on an upgrade incline. The back of the front wheels will be turned toward the curb.
3. One chock in front and one chock in the back of a rear wheel when the vehicle is stopped on what seems to be a level grade.
4. One chock in front and one chock in back of each rear wheel when the vehicle is stopped and running.

## **E. Excavations**

Precautions shall be taken by personnel when entering excavation. See section F of Haugland Energy Group Safety Manual.

No Metal ladders shall be used during any gas construction or maintenance work.

## **F. Personal Protective Equipment**

1. Fire Retardant (FR) Clothing- Personnel are assigned with their own FR clothing consisting of approved FR coverall, hood and gloves or gloves liner, FR clothing is designed to protect personnel from potential fire hazards in the event of a flash fire resulting from a flammable hazardous atmosphere. It is the intent that the FR clothing will provide personnel with adequate time to escape a flash fire situation without burn injury.
2. Airline Respirators- used to protect personnel in oxygen deficient atmospheres and prevent inhalation of hot gas in situations that may pose a hazard for ignition. Personnel assigned with their own FR airline respirator face piece and breathing tube will be responsible to maintain them in sanitary and proper Working order and to have them available at all times at the job site. Personnel are required to undergo medical evaluation prior to issuance of airline respirator equipment.
3. Safety Harness and Lifeline- Used as emergency rescue equipment. An attendant must monitor the lifeline above ground at all times and if rescue is required, attendant will pull and remove employee from excavation entering the opening.
4. Hard Hats- All personnel and supervisors shall wear approved Safety Hard Hats at all times upon exiting their vehicle, on all construction/ operations job sites.
5. Safety Eye Glasses / Goggles – All personnel and supervisors shall wear approved Safety Eye Glasses at all times upon exiting their vehicle, on all construction / operations job sites. This includes excavation, backfill and compaction, pipe installation and cleanup operations. Safety Eye Goggles must be worn when operation pneumatic equipment. (e.g., knuckler, scaler, and rock drill)



6. Hearing Protection- Hearing Protection is required when operating pneumatic equipment or any device that may exceed OSHA noise limits.

7. High Visibility Safety Vest or Clothing- All personnel and supervisors shall wear approved High Visibility Safety Vest or clothing at all times upon exiting their vehicle, on all construction / operations job sites.

8. Safety Steel Toe Boot- All personnel and supervisors shall wear approved Safety Steel Toe Boots at all times upon exiting their vehicles, on all construction/operations job sites.

## **G. Tools and Equipment**

1. No electric tools or equipment shall be used shall be used on live gas work.

2. Portable lamps – only portable lamps that are intrinsically safe and that have been approved by the Haugland Energy Group Safety Department shall be used during gas operations.

## **H. Smoking**

1. No smoking is allowed on gas construction or maintenance work sites at any time.