

APPENDIX C

Scope of Pier 68 Area Electrification Project Work to be Funded and Completed by Port as Shipyard Site Preparation for New Operator –

Shipyard Power Relocation and High Voltage Redistribution Project –

The Port has fully funded and is executing a \$4.3 million Shipyard Power Relocation and High Voltage Redistribution project that will replace aged electrical infrastructure throughout the Shipyard; remove, replace, and properly dispose of all known PCB oil-containing transformers and electrical equipment located at the Shipyard; and install new switch gear and power routing equipment that will allow for more efficient and effective power consumption and use.

ADVICE: The work will extend through November, 2018 and will result in periodic disruptions to electrical service throughout the shipyard. Electrical disruptions may last for days or weeks depending on the particular infrastructure equipment being upgraded. There may be additional intermittent shut downs lasting from 8 to 24 hours. It is anticipated that these may occur approximately six times during the project. The new Shipyard operator will need to coordinate access and operational issues with Historic Pier 70, LLP/Orton Development, Inc. to minimize disruption to Shipyard operations.

SCOPE OF WORK – The scope of engineering services includes but is not limited to the items below:

- Electrical Engineering Services
 - Help develop and incorporate design elements established in the electrical performance specifications and design criteria.
 - Coordinate with appropriate code authorities and utility providers to determine the electrical and site utility requirements for the Project to satisfy the required building permits and to obtain the certificate of occupancy.
 - Analyze and develop preliminary calculations establishing electrical design requirements, electrical metering systems, electrical distribution, electrical transformation, and any other electrical systems required for the Project.
 - Establish preliminary space and power requirements for the Project electrical systems and assist Architect to incorporate such requirements into the overall Project design.
 - Prepare plans, sections, details, schedules, diagrams, notes, outline specifications, and final specifications (collectively, "Electrical Drawings and Specifications") and any other information necessary to prepare the complete electrical design for the Project.
 - Electrical Drawings and Specifications shall include the following without limitation:
 - a. Electrical Power
 - b. Single-line diagrams
 - c. Load calculations
 - d. Panel Schedules
 - e. Electrical Room and equipment layouts details
 - Electrical Drawings and Specifications will include single-line drawings, and data in sufficient detail to adequately explain the electrical concepts for the preparation of a cost analysis of the design(s) under consideration.

- Prepare all Electrical Drawings and Specifications based upon engineering calculations establishing the size, dimensions, and capacity of the electrical systems and equipment. The calculations will be based upon prudent engineering principles and practices for this type of project.
- Provide detailed layout and service requirements for electrical system for the Project.

SPECIFIC WORK WILL INCLUDE –

- Building 36: Feed Building 36 from Building 102 Substation.
Provide and install a UCD Transformer outside Building 102.
Provide and install a 1200A switchboard.
Demo existing disconnects and refeed loads.
- Building 68: Remove and dispose of PCB Transformers.
Provide and install new Transformers.
- Building 102: Remove and Dispose of existing PCB transformers and switchgear on 2nd floor.
Install 2 new sections on existing 12kv gear on 1st floor.
Feed Building 105 & 102 from existing substation.
- Building 103: Refeed building 103 with conduit overhead from building 105.
- Building 105: Remove and dispose of PCB Transformer.
Remove and dispose of existing switchgear.
Install new 1500KVA Transformer.
Refeed new transformer from Building 102.
Refeed admin building and Building 109.
Reconnect existing loads in Building 105.
Provide and install a new 480v Distribution Board.
- Building 108: Remove and Dispose of PCB Transformers and Capacitor.
Reconnect loads to existing equipment.
- Building 109: Remove and Dispose of capacitor.
Provide a new feed from Building 105.
Provide and install a new switchboard in building 109.
Refeed all loads in building 109.

These SCOPE OF WORK items are available for inspection or download by sending a request in writing to: Jeffrey A. Bauer, Project Manager, Port of San Francisco, Pier 1, San Francisco, CA 94111, or to jeff.bauer@sfport.com.