DIVISION 2 SITE WORKS

2.1 DEMOLITION AND REMOVAL WORKS

2.1.1 DESCRIPTION

The work includes the furnishing of all labor, materials and equipment required to carry out the demolition and removal of obstructions, portions of existing piers including extraction/cutting of timber and R.C piles at required depth and demolition of miscellaneous buildings, pavements, fences, utilities, navigation aids and wrecks etc., as required for the execution of the Contract.

The Contractor shall submit the proposed methodology or procedure of demolition work with detailed drawings and calculations if necessary, to the Engineer for approval, before the execution of the Works.

The Contractor shall keep all pavements and landing areas to and from the site of the disposal area clean and free of mud, dirt and debris during and after the execution of disposal. Disposal of debris and materials shall be as directed by the Engineer

For off-shore obstructions to pile driving and dredging, survey shall be executed by the Contractor with the Engineer before any demolition and removal of wrecks commence and shall be as directed by the Engineer.

2.1.2 GENERAL PROVISIONS

1. The Contractor shall be deemed to have satisfied himself of the site conditions, and to have included in his unit prices provision for all risks that may arise during or in connection with the work.

2. The demolition work shall be carried out by approved methods and equipment such as concrete breakers, gas-cutters, hydraulic jacks, compressed air disintegrators, etc., however, no blasting shall be used unless approved in writing by the Engineer and after obtaining the written permission of the concerned Authorities.

3. The Contractor shall provide suitable equipment, skilled labor and appropriate temporary works such as scaffoldings to ensure safety in his demolition works as well as in the adjacent area.

4. The Contractor shall demolish all the structural members above the level on which the subsequent and permanent works under this Contract will begin. To this end, the temporary construction works such as excavation shall be conducted by the Contractor.

5. Materials coming from the demolition works, except general earth, shall remain the property of the Procuring Entity, the designated part of which shall be stored by the Contractor at places specified by the Engineer’s authorized Representative.

2.1.3 INTERFERENCE WITH PORT OPERATIONS

1. During the execution of the work, the Contractor shall not interfere with the shipping, navigation and other traffic in the port.

2. The Contractor shall make arrangements with the operations people on the schedule of demolition and related works to keep port operation activities undisturbed at all times.

3. Prior to commencement of the demolition works, the Contractor shall inform/announce to port users the schedule of disconnection of utilities.

2.1.4 STORAGE AND DUMPING

Prior to the commencement of the demolition work, the Engineer shall submit to the Contractor a list in which all the materials to be salvaged and overhauled, as property of PPA and the location of their storage shall be described. Materials embedded in concrete units shall not be salvaged.

The Contractor shall separate materials to be salvaged from debris. Salvaged materials shall be loaded, transported and unloaded by the Contractor at the specified locations.

Debris, if it does not contain any pollutant in the opinion of the Contractor may be dumped at the offshore area.

The Contractor may dump debris on land areas but out of the site, which areas shall be procured and prepared at his own expense. In this case, safety measures shall be undertaken in the transporting, unloading, covering and others as requested by the Engineer.

2.1.5 EXECUTION

1. Prior to the commencement of demolition works, the alignments of the new construction works to existing pier shall be checked.

2. The width and alignment of portion of existing structure to be demolished shall be marked by paint.

3. With these lines as guides, concrete shall be broken and reinforcing bars cut, such that panels or portions of the structure can be lifted out for disposal elsewhere outside of the operational work area.

4. Extract concrete piles with care in order not to damage existing or adjacent structures, equipment or materials.

5. Piles (timber/concrete) for demolition/extraction shall be done with care and/or to the required level indicated in the plan as shown in the drawings.

6. Rocks removed from existing slope protection shall be stored for re-use in new construction.

7. Demolish buildings, pavements, curbs, fences, utilities, services, navigation aids and the like as determined in the field for each project and as shown on the drawings or as directed by the Engineer.

8. Materials coming from the demolish works shall be properly disposed by the Contractor.

2.1.6 SAFETY

At the end of each day's work, the site shall be left in safe condition, so that no part is in danger of toppling, or falling or creating hazards to personnel or equipment.

2.1.7 MEASUREMENT AND PAYMENT

Demolition and removal, unless otherwise noted, shall be measured by number or unit quantities or lump sums as appropriate for each class of work for each category. Cost of disposal of debris shall be incidental to the work and shall not be paid for separately.

Demolition and removal of existing pavement shall be measured and paid for under this section unless such pavement falls within or above the new subgrade, in which case, measurement and payment shall be under Division 5, "Roads and Pavements."

The price listed above shall be full compensation for all labor, materials, tools and equipment and all incidental works necessary for the successful completion of work.

2.2 SURVEYS, SOUNDINGS, SOIL INVESTIGATIONS, INSTALLATION OF MARKERS, ETC.

2.2.1 GENERAL

Work under this Contract shall be in accordance with Section 1, "General Requirements" of these Specifications and shall apply to this Section whether herein referred to or not.

2.2.2 SCOPE OF WORK

This Section covers topographic and hydrographic surveys including setting out of works, as well as soil investigations.

2.2.3 PRELIMINARY REMARK

All data relating to surveys, soundings, soil investigations, included in the Bid Documents and all data contained in the Drawings are honestly given in order to provide the Contractor with the best possible information needed for the proper performance of the works.

Relating to these data, the Contractor will have to make his own investigations to verify and to complete the given data.

These additional investigations by the Contractor are deemed to be included in the Contract Prices and will not involve any additional cost to the Engineer.

2.2.4 TOPOGRAPHIC AND HYDROGRAPHIC SURVEYS

1. References: All surveys shall be carried out with reference to benchmarks or monuments and Chart Datum proposed by the Contractor and approved by the Engineer.

2. Surveying: All survey work specified in this Section shall be carried out by licensed surveyors. The Contractor shall submit in advance for the Engineer's approval, true copies of the license and qualifications of the surveyors to be employed for the works.

3. The Contractor shall carry out the topographic and hydrographic surveys of the job-site, as required for the proper performance and quantity measurement of the works, by means of traversing, sounding and leveling, and shall prepare topographic maps and/or hydrographic charts at the appropriate scales.

2.2.5 SOILS INVESTIGATIONS

1. The Contractor shall locate the sites of soils investigations based on the Engineer's maps and drawings. The Contractor shall also establish the ground levels and the various levels of investigations. He shall be solely responsible for the accuracy of such locations and elevations.

2. The boring schedule to verify the foundations of the proposed new structures is described below.

3. All borings shall be made using rotary drilling. Samples for identification of soils shall be taken at every 1.5 m and at any point where material changes in character. Each sample shall be kept in an approved sample bottle which shall be sealed and on which a label with the descriptions of the sample shall be fixed. The Contractor shall submit to the Engineer all samples in sealed bottles placed in a case/container for permanent storage thereof.

4. During the boring operations, standard penetration tests shall be carried out at one-meter intervals in accordance with ASTM D 1586.

2.2.6 SETTING OUT OF WORKS

1. The Contractor shall set out the Works and shall be solely responsible for the accuracy of such setting out. The Contractor shall provide, fix and maintain all stakes, marks or the like which are necessary for the accurate setting out of the Works, and shall take all necessary precautions to prevent their removal or disturbance, all as approved by the Engineer. The Contractor shall provide a suitable range in the water to indicate the face lines of the quays, revetment, breakwater and related facilities.

2. Setting Out of Works shall include the verifications of position of all markers and the supply and installation of any and all other markers which the Contractor may require for the proper execution and completion of the Works, and shall also include the repositioning of the PPA's markers if such repositioning is deemed necessary by the Contractor and approved by the Engineer.

2.2.7 FIELD NOTES, ETC.

Field notes, calculation sheets and all other documents shall be prepared in the English language and in a manner acceptable to the Engineer. The Contractor shall submit such notes and other documents upon completion of the respective works or if so required, the Engineer may have the option to inspect even during the progress of works.

2.2.8 MEASUREMENT AND PAYMENT

2.2.8.1 TOPOGRAPHIC AND HYDROGRAPHIC SURVEYS

1. Cost for the topographic and hydrographic surveys including preparation of topographic maps and hydrographic charts that could be required for the proper execution of the works and/or for the calculation of the quantities to be paid shall be deemed to be included in the unit prices of the corresponding works.

2. Separate payment will not be made for setting out of works as such setting out will be considered as incidental to and part of the various works to be executed.

2.2.8.2 SOIL INVESTIGATIONS

Borings and soil tests made by the Contractor in addition to the given data shall not be normally paid separately. The cost shall be deemed to be included in the Contract unit prices.

2.3 MAJOR FACILITIES FOR CONSTRUCTION

2.3.1 GENERAL

1. Work under this contract shall be subject to the terms and conditions stipulated in the Conditions of Contract.

2. This Section generally defines the major facilities needed for construction as a whole and major terms of work to be done under each facility.

3. This Section relates the general composition of the Technical Specifications in correlation of this Document to the Bill of Quantities.

2.3.2 BRIEF DESCRIPTION/LOCATION OF THE FACILITIES

[Indicate Port Facilities to be included as part of the Project. Listed below are the major part facilities.]

1. WHARVES/PIERS/TRESTLES

   A wharf, pier or trestle is a reinforced concrete apron on reinforced concrete (RC) or steel pipe piles reaching depths not less than those shown on the Drawings. These structures are for multi-purpose uses.

2. CAUSEWAY

   A causeway is a rock mound jetty with a roadway built generally perpendicularly to the shoreline to reach the future port basin area.

3. REVETMENT

   A revetment is a rock structure enclosing, protecting and retaining a causeway or a reclaimed area.

4. RECLAMATION AREA

   A reclaimed area is a yard area obtained by fill on land or on water.

5. RO-RO RAMP

   A Ro-Ro ramp is a berthing facility with a sloping ramp to be used for loading/unloading transport vehicles to/from vessels.

6. STAIR LANDING

   A stair landing is a stepped RC facility located on the slope of revetment with its lower level at about 0.00 meter MLLW.

2.3.3 MAJOR FACILITIES WORK ITEMS

[Listed below is major Port Facilities Work Item. Indicate the required Port Facilities for Particular Project]

1. Wharf/Pier & Ro-Ro Ramp Construction

   a. Casting of RC and Steel Pipe Piles
   b. Driving of RC and Steel Pipe Piles
   c. Casting of Pile Caps
   d. Casting of Beams & Fascia Beams
   e. Casting of Apron Slab
   f. Supply & Installation of Fenders
   g. Supply & Installation of Bollards and Bitts

2. Dolphin and Fender Construction

   a. Supply of timber piles
   b. Driving of timber piles

3. Causeway/Revetment

   a. Quarrying and placing of rocks
   b. Rock grading

4. Dredging and Reclamation

   a. Dredging works
   b. Reclamation works

5. Stair Landing

    a. Casting and installation of concrete block
    b. Asphalt Concrete Pavement/Portland Concrete Pavement Works

6. Roads and Pavement

    a. Base courses
    b. Concrete works

7. Buildings

    a. Excavation and backfilling
    b. Concrete Works
    c. Masonry Works
    d. Steel and Metal Works
    e. Doors and Windows
    f. Finishes
    g. Utilities