

SPECIFICATION SECTION 12860 – FOUNDATION FOR LIGHTING

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SPECIFICATION SECTION 12860 – FOUNDATION FOR ROAD LIGHTING

1. DESCRIPTION

1.1 General

This Specification Section prescribes furnishing the materials and constructing Foundations for Street Lighting; in accordance with the Drawings, this Specification Section or such additional details and clarifications as may be provided by the Engineer. The locations of the Foundations for Street Lighting and other accessories and attachments shown on the Drawings are approximate. Exact locations are to be determined on Site and confirmed by the Engineer in the field.

The works for road lighting including electrical facilities, luminaries, lighting poles, etc. other than foundations, conduits and manholes will be procured through other packages.

1.2 Scope of Works

The scope of work included in this Specification Section covers the supply, delivery to Site, construction, testing and commissioning of Foundations for Street Lighting as described in the Drawings and includes but is not necessarily limited to:

- (a) Preparation and submission of shop and working drawings
- (b) Submission of detailed Work Scheduling
- (c) Site measurement of foundation locations at sites and all tests with data to assist the Engineer in his review of the foundation details or technical proposals shown on the working drawings.
- (d) All other services needed to complete a Foundation fit for purpose in accordance with relevant codes and local regulations for Foundations for Street Lighting.

2. MATERIAL REQUIREMENTS

2.1 Reference Standards and Regulations:

- (a) The work covered by this Specification Section shall be carried out in accordance with the regulations issued by the local Electricity Authority and with the following applicable standards and codes as appropriate:
 - (i) Vietnamese Construction Standard

- (ii) Vietnamese Standard TCVN 5729:1997: Expressway specification for design
- (iii) QCVN07:2010-chapter 7- Vietnam Building Code Urban Engineering Infrastructures.

2.2 Materials

- (a) Concrete for Foundations for Street Lighting shall be of Class C25 or as shown on the Drawings.
- (b) All details of concrete and reinforcement for foundations shall conform to the applicable requirements of Specification Section 07100 Concrete and Concrete Structures.

2.3 Submittals

2.3.1 Shop and Working Drawings

- (a) The location plans for Foundations for Street Lighting shown in the Drawings are approximate and the Contractor shall furnish shop and/or working drawings containing the construction details for lighting foundation as indicated on the Drawings and/or as directed by the Engineer.
- (b) The shop and/or working drawings shall be submitted to the Engineer, in due time and in accordance with the Program, for approval, prior to the start of the Works.

2.3.2 Work Scheduling

- (a) A detailed work schedule for the lighting foundations, which shall be incorporated in the Program shall be submitted to the Engineer by the Contractor. In addition a method statement shall be submitted to the Engineer. Both submissions are subject to the approval of the Engineer.
- (b) The Contractor shall not begin the construction works for the Foundations for Street Lighting without the Engineer's approval on the schedules and construction methods proposed by the Contractor.

3. CONSTRUCTION REQUIREMENTS

3.1 Execution of the Works

- (a) The actual construction and testing of the work described in this Specification Section shall be carried out by trained and experienced personnel who are familiar with the requirements of this work.

- (b) All work shall comply with the Drawings, this Specification Section and the codes, regulations and requirements of the relevant Vietnamese Authorities.
- (c) All workmanship shall be complete and in accordance with the latest accepted standards of the industry.

3.2 Excavation and Backfilling

- (a) All excavation for lighting foundations shall be carried out so as to minimize damage to existing surfaces. The Contractor will reinstate all surfaces on completion of backfilling to the original condition and in accordance with the Engineer's instruction.
- (b) The Engineer may waive or modify the above requirements for excavation and reinstatement when the excavation lies within an area to be overlaid or reconstructed under another Section of the Specification.

3.3 Construction of Foundations

- (a) Concrete for foundations shall be the class indicated on the Drawings and shall conform with the appropriate Specification Sections.
- (b) The bottom of concrete foundations shall rest on firm ground.
- (c) Foundations shall be poured in one pour, where practical.
- (d) The exposed portions shall be formed to present a neat appearance.
- (e) Forms shall be true to line and grade.
- (f) Tops of footings for poles shall be finished to ground line or sidewalk grade, unless otherwise noted on the Drawings or directed by the Engineer.
- (g) Forms shall be rigid and securely braced in place.
- (h) Anchor bolts shall be placed in their proper position and height and shall be held firmly in place until concrete sets.
- (i) Formwork and ground in contact with the concrete shall be thoroughly moistened before placing concrete.
- (j) Forms shall not be removed until the concrete has set for at least 3 days.
- (k) A wood float finish shall be applied to exposed surfaces of concrete.

- (l) Where obstructions prevent construction of a foundation as detailed the Contractor shall propose and construct an effective foundation to the satisfaction of the Engineer.

4. MEASUREMENT AND PAYMENT

4.1 Method of Measurement

- (a) The street lighting pole foundations shall be measured according to the number of units of each type, furnished and installed in accordance with the Drawings and the instructions of the Engineer.
- (b) The unit rates shall include, inter alia, excavation, backfill, compaction, disposal of spoil on or off site, blinding concrete, concrete, formwork, reinforcement.
- (c) The Foundation for Lighting provisions, material requirements and construction requirements identified in this Specification Section shall be measured for payment in pay items 12860-01, 12860-02 and 12860-04.
- (d) Any Foundation for Lighting Works not specifically indentified in this Specification Section but which are necessary for the performance of the Works shall be deemed to be included in pay items 12860-01, 12860-02 and 12860-04.

4.2 Basis of Payment

The work under this Specification Section shall be paid for in accordance with the applicable unit prices as indicated in the Bill of Quantities and given below. Payment shall constitute full compensation for performing the requirements of the Contract for the item of work as specified including furnishing all necessary labor, materials, tools, equipment, incidentals and tests.

<u>Pay Item</u>	<u>Description</u>	<u>Unit</u>
12860	Foundation for Lighting Pole	
12860-01	Foundation for 12m Lighting Pole (W:1000xD:1000xH:1200)	no.
12860-02	Foundation for 25m Lighting Pole (W:1400xD:1400xH:3000)	no.
12860-04	Foundation for 12m Lighting Pole (T) (W:1000xD:1000xH:1200)	no.