

## SECTION 450

### CONCRETE FOOTINGS FOR STRUCTURAL PLATE STRUCTURES

#### INDEX

##### **450.01 SCOPE**

##### **450.02 MATERIALS**

###### **450.02.01 Base Channel**

###### **450.02.02 Concrete**

###### **450.02.03 Reinforcing Steel**

##### **450.03 EXCAVATION**

##### **450.04 FORMWORK**

##### **450.05 PLACING OF REINFORCING STEEL**

##### **450.06 PLACING CONCRETE AND CHANNEL**

##### **450.07 CURING THE CONCRETE**

##### **450.08 TRIMMING**

##### **450.09 MEASUREMENT FOR PAYMENT**

##### **450.10 BASIS OF PAYMENT**

##### **450.11 CONCRETE ACCEPTANCE AND REDUCED PAYMENT CRITERIA ON CONCRETE FOOTINGS FOR STRUCTURAL PLATE STRUCTURES**

##### **450.01 SCOPE**

This specification covers the Department's requirement for the construction of concrete footings for structural plate arches and long span structural plate structures. The footings incorporating a base channel, reinforcing steel, and dowels if required, shall be as shown on the drawings, or as directed by the Owner's Representative.

Dowels where required, shall be a separate contract item.

Where unwatering is required, it shall be carried out as specified in Section 180.

## **450.02 MATERIALS**

### **450.02.01 Base Channel**

The Contractor will supply the base channel sections. Base channels are supplied and paid for under Section 424 or Section 426, as appropriate.

### **450.02.02 Concrete**

Concrete shall meet all requirements for "Substructure, Reinforced Wharf Deck, Cast-In-Place Median & Precast Traffic Barrier" concrete, in accordance with Section 904.

### **450.02.03 Reinforcing Steel**

Reinforcing steel shall be of the sizes shown in the drawings. Reinforcing steel shall conform to the requirements of Section 905

## **450.03 EXCAVATION**

The Contractor shall excavate a foundation within the limits and to the grades as staked by the Owner's Representative.

The excavation shall be carried out and paid for in accordance with Section 403.

## **450.04 FORMWORK**

Before placing formwork, the Contractor shall have drilled the required holes removed any dirt and debris that may be in the holes with compressed air or other acceptable means, inserted the required dowels, free of oil, grease, excessive rust and scale, and grouted them securely in place where the contract documents indicate that dowels are required. Holes to be drilled into the rock for the insertion of dowels shall have a maximum size of 1.5 to 2 times the dowel diameter.

Formwork shall be supplied by the Contractor, and shall conform to the requirements of Section 907.

## **450.05 PLACING OF REINFORCING STEEL**

Reinforcing steel shall be placed in accordance with the requirements of Section 905.

## **450.06 PLACING CONCRETE AND CHANNEL**

The Contractor shall load the channel sections at the point of supply and transport them to the installation site.

The lugs on the channels shall be bent down and twisted into the correct position.

The channels shall be placed in the footings to the lines and grades indicated on the plans and shop drawings.

Concrete shall be placed in accordance with the requirements of Section 904.

As soon as the concrete has been placed and consolidated, it shall be struck off true to grade on each side of the imbedded channel.

The surface shall then be floated with a wooden float until the mortar flushes to the top, and the entire surface, on each side of the channel, presents a tight and compact appearance.

#### **450.07 CURING THE CONCRETE**

Concrete shall be cured in conformity with the requirements of Section 904.

#### **450.08 TRIMMING**

After the removal of the forms and after the initial curing of the concrete, the Contractor shall backfill adjacent material into any foundation trenches which may occur at the ends and at the stream sides of the footings. The ground next to the ends and the stream sides of the footings shall be made trim to slightly proportions.

#### **450.09 MEASUREMENT FOR PAYMENT**

Measurement for payment for Concrete Footings for Structural Plate Structures shall be calculated from the dimensions of the footings as laid out according to the instructions of the Owner's Representative and such measurements will be computed to obtain the volume in cubic metres, rounded to two decimal places.

#### **450.10 BASIS OF PAYMENT**

Payment at the contract price for Concrete Footings for Structural Plate Structures shall be full compensation for all labour, materials, and equipment use: to supply and place formwork, to supply reinforcing steel, to protect and clean the reinforcing steel as required, to bend, cut and weld the reinforcing steel, to place the reinforcing steel in the work, to support the reinforcing steel during the placing, to supply and place concrete, to cut and place channel sections, to cure the concrete, to remove the forms and to trim the adjacent ground; together with labour, materials, and equipment use to provide such unwatering provisions that may be necessary in order to carry out the work according to these specifications.

It should be clearly understood, that the supply of the reinforcing steel is included in the basis of payment for Concrete Footings for Structural Plate Structures.

Dowels, where required, shall be compensated for in a separate contract item.

**450.11 CONCRETE ACCEPTANCE AND REDUCED PAYMENT CRITERIA ON CONCRETE FOOTINGS FOR STRUCTURAL PLATE STRUCTURES**

Concrete footings and headwalls, as defined by the contract item and the required specified strength at 28 days, must have an average tested strength at 28 days equal to or greater than that specified for payment at the bid price.

Concrete of a lower strength will have Section 904.11.03 apply for adjustment of the unit price applicable or judgement of the acceptability of the concrete placed for this item.