

# **BIDDING DOCUMENTS**

**Issued on: \_\_\_\_\_**

**for**

## **Procurement of**

**North-South Expressway Construction Project**

**(Danang-Quang Ngai Section)**

**Civil Works Contract Package 3B**

**(KM18+100 - KM021+500)**

**(ADDENDUM)**

### **PART 2-WORKS REQUIREMENTS**

**Section VI - Works Requirements**

**Volume 2.3 - Bill of Quantities**

**Employer: Vietnam Expressway Corporation**

**Country: The Socialist Republic of Vietnam**

***August 2013***

# North South Expressway Construction Project (Danang - Quang Ngai Section)

## Civil Works Contract Package 3B

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## PREAMBLE TO BILL OF QUANTITIES

### 1. General

#### 1.1 Documents to Refer

The Contractor's attention is specifically directed to the Conditions of Contract, the General Specifications, Technical Specifications and the Drawings, which are to be read in conjunction with the Bill of Quantities (BQ) and this preamble.

#### 1.2 Application of Preamble to Subsequent Work

The relevant clauses of this preamble shall be deemed to apply equally to Works subsequently ordered for execution by the Contractor, either instructed under a Provisional Sum orders or a Variation Order, except where specifically varied therein.

#### 1.3 Unit Prices to be for Work complete

The unit prices entered in the Bills of Quantities shall be deemed to be the fully inclusive value of the Works covered by the items in the Bills of Quantities including but not limited to the following unless otherwise stated:

- (a) Labour, Contractor's Equipment, tests and all costs in connection therewith;
- (b) The supply of materials, goods storage and cost in connection therewith including waste and delivery to Site;
- (c) Fixing, erecting and installing or placing of materials and goods in position;
- (d) All Temporary Works;
- (e) All general obligations, liabilities and risks involved in the execution of the Works and
- (f) Establishment and disestablishment cost, overheads and profits.

#### 1.4 Quantities in the BOQs

The quantities in the Bills of Quantities are approximate only and in no case are shall such quantities be considered to limit or extend the amount of work to be done or material to be supplied by the Contractor. They are given in order that bids submitted may be evaluated on an equal basis and for the purposes set out in the Conditions of Contract.

#### 1.5 Separate Items not Provided

Separate items are not provided for the followings:

- (a) Construction, maintenance and removal of access roads
- (b) Cost of any land required by the Contractor.

- (c) The provision and removal of the Contractor's Site accommodation and quarrying facilities and the reinstatement of the Site, prior to the issue of the Taking Over Certificate;
- (d) Protection of the Works from any water source;
- (e) Setting out and verification of all survey details and dimensions;
- (f) Provision and preservation of survey beacons;
- (g) Provision of all samples and test certificates;
- (h) Water supply and other utilities and
- (i) Care of the Works.

The Contractor shall be deemed to have allowed in his unit prices, inter alia for the above.

## 2. Method of Measurement

The methods of measurement of completed Works for payment shall be in accordance with the requirements given in the relevant Specification Sections included in "Volume 2.1 – Specification.

The Works executed, in accordance with the Drawings and the Specification or as instructed by the Engineer will be measured for payment in accordance with the Bill of Quantities, this Preamble and the measurement and payment subsections of the Specification Sections under the items designated in the Bill of Quantities. The net measurement or weight of the finished work in place will always be taken and except where otherwise stated or where separate items are provided no allowance will be made for; cutting , waste, laps , circular work, etc..

Payments will be certified for those materials which are specified on the Drawings and/or instructed by the Engineer and installed in the Permanent Works to the approval and satisfaction of the Engineer. Ownership of materials supplied and delivered to the Site by the Contractor, which are surplus to the requirements of the Works, shall revert to the Contractor who shall reimburse the Employer any money that was paid to the Contractor under clause 14 of the Conditions of Contract, for the supply and delivery to Site of the materials.

Measurement in the longitudinal direction for area or volume shall be taken along the centre line of the road. Measurement in the transverse direction for area or volume shall be taken horizontally as indicated in plans or as ordered by the Engineer in writing.

Unless otherwise mentioned measurements for structures shall be in accordance with dimensions shown on plans or as directed by the Engineer in writing.

While computing volumes for excavation, embankment and borrow, average end area method shall be applied. The intervals of the intermediate sections, unless specified, shall be agreed by the Contractor and the Engineer and reasonably represent the shape.

Unless otherwise provided, all items measured in the BQ in linear meters such as pipe, guard rails etc. shall be measured parallel to the base or foundation upon which such structures are placed, unless specified otherwise.

### **3. Units and Extension of Bills of Quantities**

All sizes and quantities have been entered in the Bills of Quantities are in metric units. Figures involving decimal places, including sums of money, are written in the British tradition, namely with a full stop in the decimal position and commas between each successive group of three digits to the left of the decimal position.

The bidder shall insert the unit price(s) for each item in the BQ and shall multiply the same by the quantity for each BQ item to arrive at a total(s). The unit prices in Vietnamese Dong shall be expressed in whole number(s) of Dong.

### **4. Unit Prices and Sums to Bear Proper Relation to Work Described**

The unit prices and sums entered by the Contractor against all items in the Bill of Quantities must bear a proper relationship to; the cost of carrying out the work described in the Contract. All costs and similar charges which are applicable to the Contract as a whole are to be spread over all the unit prices in the Bills of Quantities, whilst those which are applicable only to particular sections of the Contract are only to be spread over items to which these section refer unless otherwise described in the Specification.

However, the Contractor shall ascertain the exact nature and extent of work to be performed by reference to the Drawings, Specifications and Conditions of Contract as the case may be.

### **5. Provisional Sum Items**

Payments to be made against Provisional Sums (in the BQ) shall be determined in accordance with subclause 13.5 of the Conditions of the Contract. The percentage figure included in the Particular Conditions in accordance with subclause 13.5 is considered full payment for all financial and administrative charges, cost of liaison with external agencies, overhead costs, profit and any other costs for performing the work under the Provisional Sums.

### **6. Payment of Lump Sums Items**

Payment against lump sum Items shall be made in accordance with the requirements given the relevant specification section of Volume 2.1 – Specification where no requirements are given certifications shall be calculated by pro rating the value of the Works completed (excluding lump sum payments) to the accepted Contract Price (excluding lump sums and contingencies)

### **7. Protection of Work and Cleaning Up on Completion**

The Contractor shall allow, in his unit prices, for caring for and protecting the Works up to the issue of the Taking-Over Certificate, making good all damage to the Works, for clearing away all rubbish as it accumulates and leaving the Site in a tidy condition, to the satisfaction of the Engineer, upon the issue of the Taking-Over Certificate.

### **8. Unit of Measurement**

The units of measurement described in the Bills of Quantities are metric units. Abbreviations used in the Bills of Quantities are as follows:

km	=	Kilometre
lm	=	Linear metre
cm	=	Centimetre
mm	=	Millimetre
sq.m.	=	Square metre
cu.m.	=	Cubic metre
Nos.	=	Numbers
kg	=	Kilogramme
t	=	Tonne
ltr	=	Litre
hrs	=	Hours
LS	=	Lump Sum
PS	=	Provisional Sum
wk	=	Week
NA	=	Not applicable
Qty	=	Quantity
OH&P	=	Overhead and Profit
PQ	=	Provisional Quantity

**9. “Pay Item” and “Item” Numbers Given in the BQ**

The term “Pay Item” number refers to the Pay Items detailed in the relevant sections of Volume 2.1 – Specification

The term “Item” number refers solely to the individual measurement items included in the Bills of Quantities.

**BILL OF QUANTITIES**  
**PACKAGE 3B (Km18+100 ~ Km21+500)**

BILL ITEM	DIVISION NO.		ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE		AMOUNT	
	PAY ITEM NO.					FOREIGN CURRENCY (JPY)	LOCAL CURRENCY (VND)	FOREIGN CURRENCY (JPY)	LOCAL CURRENCY (VND)
B	ROAD WORKS								
B1	EXPRESSWAY								
B1-1	DIVISION 02 SITE WORKS								
B1-1	Section	02100	Clearing and Grubbing						
B1-1	02100-01		Clearing and Grubbing	m2	115,664.3				
B1-1	Section	02200	Demolition and Removal of Existing Structure and Obstructions						
B1-1	02200-01		Demolition of Existing Concrete, Masonry or Wood Structures	m3	8.0				
B1-1	02200-02		Demolition of Existing Asphalt or Concrete Pavement	m3	27.8				
	Sub- Total B1-1								
B1-2	DIVISION 03 EARTH WORKS								
B1-2	Section	03050	Removal of Topsoil						
B1-2	03050-01		Excavation of Topsoil	m3	48,160.3				
B1-2	Section	03100	Common Soil Excavation						
B1-2	03100-01		Soil Excavation	m3	112,101.6				
B1-2	Section	03150	Common Rock Excavation						
B1-2	03150-01		Rock Excavation	m3	99,442.7				
B1-2	Section	03200	Structural Excavation						
B1-2	03200-01		Structural Excavation in all materials	m3	1,109.4				
B1-2	03200-05		Soil Backfill (Arisen from Excavation, K95)	m3	348.8				
B1-2	03200-06		Granular Backfill, Type I (K95) Borrow Material	m3	2,631.3				
B1-2	03200-08		Blinding Stone	m3	75.9				
B1-2	Section	03400	Embankment Construction						
B1-2	03400-01		Embankment Construction (K95)	m3	506,280.5				
B1-2	03400-02		Embankment Construction (K98)	m3	13,194.6				
	Sub- Total B1-2								
B1-3	DIVISION 04 DRAINAGE WORKS								
B1-3	Section	04100	Precast R.C Pipe and Box Culverts						
B1-3	04100-05		Precast R.C Pipe Culvert, Ø800	m	98.0				
B1-3	04100-06		Precast R.C Pipe Culvert, Ø1000	m	69.0				
B1-3	04100-08		Precast R.C Pipe Culvert, Ø1500	m	129.0				
B1-3	04100-11		Precast R.C. Box Culvert (0.75x0.75)	m	52.0				

BILL ITEM	DIVISION NO.		ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE		AMOUNT	
	PAY ITEM NO.					FOREIGN CURRENCY (JPY)	LOCAL CURRENCY (VND)	FOREIGN CURRENCY (JPY)	LOCAL CURRENCY (VND)
B	ROAD WORKS								
B1	EXPRESSWAY								
B1-3	Section	04120	Improvement and Relocation of Existing Irrigation Channels						
B1-3	04120-01		Irrigation Channel Relocation, Type CE1 (Earth: 0.5mx0.5m)	m	63.0				
B1-3	04120-04		Irrigation Channel Relocation, Type CE3A (Earth: 1.0mx0.6m)	m	380.3				
B1-3	04120-21		Irrigation Channel Relocation, Type CR1 (Concrete: 0.5mx0.5m)	m	785.7				
B1-3	Section	04200	Ditches						
B1-3	04200-01		Toe Slope Ditch, Type CF-400	m	70.7				
B1-3	04200-02		Toe Slope Ditch, Type CF(E)-400	m	1,056.4				
B1-3	04200-08		Side Ditch, Type SD-600*600	m	1,669.3				
B1-3	04200-21		Cut Berm Ditch, Type CF(B)-400 Type 1	m	286.5				
B1-3	04200-23		Cut Berm Ditch, Type CL(B)-400 (For Rock) Type 1	m	264.5				
B1-3	04200-26		Top Slope Ditch, Type CF(T)-500	m	108.9				
B1-3	04200-28		Shoulder Drainage Ditch (at Roadside Slope), Type VCF-400	m	547.3				
B1-3	04200-29		Median Ditch (at Superelevation Curve), Type MD-350*400	m	376.5				
	Sub- Total B1-3								
B1-4	DIVISION 05 SUBBASE AND BASE COURSES								
B1-4	Section	05100	Subbase, Base and Levelling Courses						
B1-4	05100-01		Aggregate Subbase Course	m3	13,006.7				
B1-4	05100-02		Aggregate Base Course	m3	14,305.6				
B1-4	Section	05200	Asphalt Treated Base Courses						
B1-4	05200-01		Asphalt Treated Base, thickness=10cm	m2	13,171.2				
B1-4	Section	05300	Cement Treated Base Courses						
B1-4	05300-01		Cement Treated Base, thickness=15cm	m3	6,119.6				
	Sub- Total B1-4								
B1-5	DIVISION 06 PAVEMENT								
B1-5	Section	06100	Prime Coat and Tack Coat						
B1-5	06100-01		Prime Coat 1.0 kg/m2	m2	52,533.2				
B1-5	06100-02		Tack Coat 0.5kg/m2	m2	132,544.0				
B1-5	Section	06200	Asphalt Concrete Binder and Surface Courses						
B1-5	06200-01		Anti Skid Asphalt Concrete Surface Course, thickness=3cm	m2	44,026.3				
B1-5	06200-02		Asphalt Concrete Surface Course, thickness=5cm	m2	44,730.2				
B1-5	06200-05		Asphalt Concrete Binder Course, thickness=8cm	m2	37,762.8				
B1-8	Section	06300	Bituminous Surface Treatment						
B1-10	06300-02		Bituminous Surface Treatment Type 4.5kg/m2	m2	975.5				
	Sub- Total B1-5								



BILL ITEM	DIVISION NO.		ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE		AMOUNT	
	PAY ITEM NO.					FOREIGN CURRENCY (JPY)	LOCAL CURRENCY (VND)	FOREIGN CURRENCY (JPY)	LOCAL CURRENCY (VND)
B	ROAD WORKS								
B1	EXPRESSWAY								
B1-6	DIVISION 07 CONCRETE WORKS								
B1-6	Section	07100	Concrete and Concrete Structures						
B1-6	07100-07		Concrete Class C20	m3	326.0				
B1-6	07100-08		Concrete Class C15	m3	13.6				
B1-6	07100-09		Concrete Class C10	m3	2.3				
B1-6	Section	07500	Reinforcing Steel						
B1-6	07500-02		Reinforcing Steel (10mm<D≤18mm)	ton	1.0				
	Sub- Total B1-6								
B1-7	DIVISION 12 MISCELLANEOUS								
B1-7	Section	12200	Sodding, Grassing and Planting						
B1-7	12200-01		Grassing	100m2	418.1				
B1-7	Section	12300	Topsoiling						
B1-7	12300-01		Topsoiling	m3	4,181.0				
B1-7	Section	12400	Slope Protection						
B1-7	12400-03		Mortared Stonework for Embankment Slope Protection	m3	5,939.4				
B1-7	12400-05		Mortared Stonework for Toe of Slope Protection (h=0.55m)	m	1,634.4				
B1-7	Section	12450	Shotcrete and Shotcrete Frame						
B1-7	12450-02		Slope protection Type 5 Comprising SF	m2	6,300.7				
B1-7	12450-04		Slope protection Type 1 Comprising SF+SC	m2	1,458.5				
B1-7	Section	12600	Curb, Gutter and Median						
B1-7	12600-05		Asphalt Concrete Curb	m	3,028.1				
B1-7	12600-06		Concrete Median Barrier, Type-1 (L=4.0m)	m	728.1				
B1-7	12600-07		Concrete Median Barrier, Type-2 (Transition at Approach Section)	m	50.4				
B1-7	12600-08		Concrete Median Barrier, Type-3 (Emergency Turning L=1.0m)	m	56.0				
B1-7	12600-09		Concrete Median Barrier, Type-4 (L=1.0m for Median Drainage)	m	313.4				
B1-7	12600-12		Concrete Median Barrier, Transition Section at Flyover	m	28.7				
B1-7	Section	12750	Project information signs						
B1-7	12750-01		Project Information signs	no	2.0				
B1-7	Section	12800	Gabions						
B1-7	12800-01		Rock Filled Gabion Baskets	m3	32.0				
	Sub- Total B1-7								
	TOTAL BILL ITEM B1 (CARRY OVER TO BID PRICE SUMMARY)								

**BILL OF QUANTITIES**  
**PACKAGE 3B (Km18+100 ~ Km21+500)**

BILL ITEM	DIVISION NO.		ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE		AMOUNT	
	PAY ITEM NO.					FOREIGN CURRENCY (JPY)	LOCAL CURRENCY (VND)	FOREIGN CURRENCY (JPY)	LOCAL CURRENCY (VND)
B	ROAD WORKS								
B2	DRAINAGE BOX CULVERT								
B2-1	DIVISION 03 EARTH WORKS								
B2-1	Section	03200	Structural Excavation						
B2-1	03200-01		Structural Excavation in all materials	m3	1,545.1				
B2-1	03200-05		Soil Backfill (Arisen from Excavation, K95)	m3	242.8				
B2-1	03200-06		Granular Backfill, Type I (K95) Borrow Material	m3	5,541.0				
B2-1	03200-08		Blinding Stone	m3	122.0				
	Sub- Total B2-1								
B2-2	DIVISION 04 DRAINAGE WORKS								
B2-2	Section	04400	Mortared Stonework						
B2-2	04400-01		Mortared Stonework	m3	70.7				
	Sub- Total B2-2								
B2-3	DIVISION 07 CONCRETE WORKS								
B2-3	Section	07100	Concrete and Concrete Structures						
B2-3	07100-06		Concrete Class C25	m3	839.2				
B2-2	07100-07		Concrete Class C20	m3	332.9				
B2-3	07100-09		Concrete Class C10	m3	70.5				
B2-3	Section	07500	Reinforcing Steel						
B2-3	07500-01		Reinforcing Steel (D≤10mm)	ton	3.4				
B2-3	07500-02		Reinforcing Steel (10mm<D≤18mm)	ton	85.0				
B2-3	07500-03		Reinforcing Steel (D>18mm)	ton	6.4				
	Sub- Total B2-3								
B2-4	DIVISION 12 MISCELLANEOUS								
B2-4	Section	12400	Slope Protection						
B2-4	12400-03		Mortared Stonework for Embankment Slope Protection	m3	281.6				
	Sub- Total B2-4								
	TOTAL BILL ITEM B2 (CARRY OVER TO BID PRICE SUMMARY)								