
Consulting Services for Package 3

Technical Design, Cost Estimation and Tender Assistance for Hanoi City Ring Road No.3 Construction Project (Mai Dich – South Thang Long Section)

Loan No. VN13-P2

Project Office
20th floor, ICON4 Building, 243A La Thanh Street
Dong Da District, Hanoi City, Vietnam

Tel. : +84-04-62776782/85
Fax. : +84-04-62776788

Ref. No.: HNRR3DD-PMUTL-211-15

Date: December 25, 2015

Mr. Vu Xuan Hoa

General Director

Project Management Unit Thang Long

Group 23, Linh Nam Ward, Hoang Mai District, Hanoi, Vietnam

Telephone: (84) 4 3643 0200

Facsimile: (84) 4 3643 0212

Email: pqlda1pmutl@gmail.com

Subject: Submission of TOR on Additional Consulting Services of Technical Design for Ramps at Hoang Quoc Viet and West Thang Long Interchanges and Widening Part of the Main Viaduct for Connecting on-off Ramps in the Second Phase

Dear Sir,

Based on Letter Ref. 3659/PMUTL-DA1 dated December 18, 2015 issued by PMU Thang Long to MOT on additional work items of Hanoi City Ring Road No. 3 Construction Project, Mai Dich – South Thang Long section;

The Consultant finalized TOR on additional consulting services of technical design for ramps at Hoang Quoc Viet and West Thang Long Interchanges and widening part of the main viaduct for connecting on-off ramps in the second phase . Accordingly, the Consultant would like to submit two (02) sets of the TOR.

Your kind attention and/or comment on the TOR will be highly appreciated.

Sincerely yours,



Ichizuru ISHIMOTO
Team Leader

Attachment: TOR on additional consulting services of technical design for ramps at Hoang Quoc Viet and West Thang Long and widening part of the main viaduct for connecting on-off ramps in the second phase (02 sets of English and 02 sets of Vietnamese).

Cc: - Mr. Pham Thanh Binh, Deputy General Director;
- Mr. Pham Anh Tu, Manager of PMD1;
- Office file

Dịch vụ tư vấn cho gói thầu số 3

**Thiết kế kỹ thuật, Lập dự toán và Hỗ trợ đấu thầu cho Dự án đầu tư xây dựng cầu cạn đoạn Mai Dịch–Nam Thăng Long thuộc đường vành đai 3, TP Hà Nội
Khoản vay số. VN13-P2**

Văn phòng Dự án
Tầng 20, Tòa nhà ICON4, 243A đường La Thành
Quận Đống Đa, Hà Nội, Việt Nam

ĐT : +84-04-62776782/85
Fax : +84-04-62776788

Số: HNRR3DD-PMUTL-211-15

Ngày: 25/12/2015

Ông Vũ Xuân Hòa

Tổng giám đốc

Ban Quản lý Dự án Thăng Long

Tổ 23, Phường Lĩnh Nam, Quận Hoàng Mai, Hà Nội, Việt Nam

ĐT: (84) 4 3643 0200

Fax: (84) 4 3643 0212

Email: pqla1pmutl@gmail.com

**Subject: Đề trình Đề cương tham chiếu của dịch vụ tư vấn bổ sung
thiết kế kỹ thuật các nhánh của nút giao Hoàng Quốc Việt và Tây Thăng Long
và phần mở rộng cầu chính để chờ kết nối cho các nhánh cầu lên và xuống trong giai đoạn 2**

Thưa Quý Ban,

Căn cứ vào Văn bản số 3659/PMUTL-DA1 ngày 18/12/2015 của Ban QLDA Thăng Long gửi Bộ GTVT về bổ sung các hạng mục thuộc Dự án đầu tư xây dựng cầu cạn đoạn Mai Dịch – Nam Thăng Long;

Tư vấn đã hoàn thành đề cương tham chiếu của dịch vụ tư vấn bổ sung thiết kế kỹ thuật các nhánh của nút giao Hoàng Quốc Việt và Tây Thăng Long và phần mở rộng cầu chính để chờ kết nối cho các nhánh cầu lên và xuống trong giai đoạn 2. Theo đó, Tư vấn xin đệ trình Quý Ban hai (02) bộ của đề cương tham chiếu.

Xin cảm ơn sự phối hợp và/ hoặc ý kiến của Quý Ban về đề cương tham chiếu này.

Trân trọng,

(đã ký)

Ichizuru ISHIMOTO
Nhóm trưởng Tư vấn

Đính kèm: Đề cương tham chiếu của dịch vụ tư vấn bổ sung thiết kế kỹ thuật các nhánh của nút giao Hoàng Quốc Việt và Tây Thăng Long và phần mở rộng cầu chính để chờ kết nối cho các nhánh cầu lên và xuống trong giai đoạn 2 (02 bộ Tiếng Anh và 02 bộ Tiếng Việt)..

Nơi nhận:

- Ông Phạm Thanh Bình, Phó Tổng giám đốc;
- Ông Phạm Anh Tú, Trưởng Phòng DA1;
- Lưu Vp.

TERMS OF REFERENCES

ADDITIONAL CONSULTING SERVICES OF TECHNICAL DESIGN FOR RAMPS AT HOANG QUOC VIET AND WEST THANG LONG INTERCHANGES

1 Overview

1.1 General

Mai Dich Viaduct Construction Project is a part of the master plan constructing Ring Road No.3 to connect Thanh Tri Bridge and Thang Long Bridge as well as to strengthen the operational effectiveness of entire route synchronously in accordance with the Expressway Standards. The road is constructed with the aim connecting NH1, NH5, NH6, NH32 to Noi Bai International Airport, Noi Bai – Lao Cai Expressway, thus it's facilitated to access to the northern provinces.

Construct a viaduct from Mai Dich intersection to South Thang Long Bridge to meet transportation demand, serve social-economic development purpose at the western area of Hanoi city, minimize traffic congestion, accident and contribute to accomplishment of traffic network of Hanoi city.

Hence, Ministry of Transport (MOT) issued Decision No.2260/QD-BGTVT dated September 3rd, 2013 to approve the the investment for the construction of Mai Dich – South Thang Long Viaduct on Ring Road No.3 of Hanoi with following key issues:

- Construct viaduct from Mai Dich to Nam Thang Long along central reserve of the expanded Pham Van Dong Street (the master plan alignment of the future widened street). The total expected length of viaduct is 4.803Km, while viaduct is 24m wide in conformity with the 4-lane expressway Standard which regulates the design speed is 100Km/h as the regulation mentioned in TCVN 5729-2012.
- The Project Scope (in 1st phase): It is planned to construct an expressway viaduct except completion of interchanges as master plan due to limitation of land. The design, construction of interchanges on the section from Mai Dich to Nam Thang Long will be considered after construction of the expanded Pham Van Dong Street as per master plan.

1.2 Necessity of additional technical design for the ramps at Hoang Quoc Viet and West Thang Long Interchanges

- To ably construct and reduce the constructional cost of the widened section of the main bridge as well as to connect synchronously to the on – off ramps at two interchanges in the second phase, It should be studied promptly at the technical design step. Specifically. It should study on the interchange plan, location, scope as well as the approach for the bridge deck widened in the second phase, particularly the measure of pier-head joint treatment for connecting the approach ramps to the main bridge.
- Basing on the Project' review result, it is necessity to construct the off ramp at Hoang Quoc Viet interchange within the prepared land (cleared). This such ramp should be constructed in the first phase to deduct the municipal traffic load on urban-road flowing from Thang Long Bridge go to Hoang Quoc Viet Street and to NH32, as well as to reduce the vehicular volume running to the intersection at Mai Dich flyover-head (of which connection length on the land of 2 bridge was limited and disadvantageous for vehicle go up and go down to viaduct to go to Linh Dam North direction).

However, the duties of the technical design concerned in the consulting services is to design a 24m wide main bridge without involvement of the on – off ramps design for Hoang Quoc Viet and West Thang Long Interchanges as in approved TOR. Hence, PMUTL requested the Consultant to estimate

the added cost for the additional design of on – off ramps at Hoang Quoc Viet and West Thang Long Interchanges.

1.3 Legal basis

- Construction Law No.50/2014/QH13 dated June 18th, 2014, replacing for Construction No.16/2003/QH121 dated November 26th, 2003;
- Central Government’s Decree No.12/2009/ND-CP dated February 10th, 2009 regarding to the management on investment of the work construction project; Decree No.83/2009/ND-CP dated October 15th, 2009, amending and supplementing some Articles of Decree No.12/2009/ND-CP;
- Prime Minister’s Decree No.15/2013/ND-CP dated February 6th, 2013, managing on the constructional work quality;
- TOR of the Consulting Services of Technical Design of Ring Road No.3 Construction Project for Mai Dich – South Thang Long Section;
- The Final Feasibility Study (October 2013);
- The Project Appraisal Report of MOT (Letter No.1006/KHDT dated September 3rd, 2013);
- MOT’s Approval on the Project Investment (in Decision No.2660/QD-BGTVT dated September 3rd, 2013);
- MOT’s Approval on the Bidding Schedule (in Decision No.542/QD-BGTVT dated February 26th, 2014);
- Submission No. 3096/PMUTL-DA1 of PMU Thang Long dated October 14th, 2015;
- Letter No. 14105/BGTVT-KHDT of DPI of MOT dated October 22nd, 2015;
- Letter No. 2015/HAN(IA) – 172 of JICA dated December 11th, 2015;
- MOT’s Approval dated ...

2 Area to study

Based on the F/S design, the location and plan of interchanges were determined, agreed by the relevant agencies and Hanoi People’s Committee (HPC), the area is as below:

- Starting-point: at Sta. Km1+250, at the North of Hoang Quoc Viet Interchange,
- Ending-point: At Sta. Km2+650, at the South Thang Long Western Interchange,
- Total studied length about 1,4 Km (including the lengths of the connecting road, the approach road by R.C retaining wall, the approach bridge of on-off ramps at town direction and widen mail bridge).

3 Applied standards

The technical standards applied into this Project were approved with MOT’s Decision No.1502/QD-BGTVT dated June 27th, 2012 in F/S Study.

The Consultant has reviewed and updated in accordance with the newly updated technical standards to submit separately in the other report for the approval of Science and Technology Department.

4 Additionally required survey works

4.1 Topographic survey

Re-use the Project's plan control network and general elevation which has been restored in the Technical Design step, re-use the topographic map which has been revised with the additional survey. Additional survey works of profile survey and installation horizontal alignments is as follows:

- Additional survey works are profile survey, installation horizontal alignments of 4 on-off ramps scaled 1/500 – 1/50 at distance of 20m/station.

The expected profile length: $4 \times 495\text{m} = 1980\text{m}$.

- Cross sections survey for approach roads of 4 ramps; the average distance between the two cross-sections is 20m. Cross section is about 15m wide, scaled 1/200.

Expected volume of work for cross section survey: $4 \times (12 \text{ cross sections/ramp} \times 30\text{m}) = 1440\text{m}$.

4.2 Geological Survey

22TCN-263-2000 (Expressway survey and design standard) regulates that there must be drilling a hole at each abutment or pier location. However, this is such a recently added work items, so it will affect to the project's general progress when the geological survey is carried out in the Technical Design Stage.

It is expected that the pier locations for the widened main bridge and on-off ramps will be at the same location on the longitudinal profile of the main bridge; and location of piers of ramps are adjacent to the main pier on transverse direction; hence, the geological survey data of piers of the main bridge could be referred to design the abutment and piers of the on – off ramps.

Therefore, the geological survey data of pier on main bridge may be utilized to design the pier foundations of the on – off ramps at the interchanges to minimize the changed survey and design progress. The additionally geological survey drilling for each abutment and piers of ramps will be executed in the construction drawing design stage by the Contractor.

5 Requirement of additional works for technical design and tender assistance

5.1 Technical Design

The approved F/S Study had not prepared the basic design of alternatives for the on – off ramps bridge, as well as there weren't proposed any technical solutions for the connecting joints to widen the bridge in 2nd stage.

Hence, it's so important to prepare the basic design for the appropriate bridge plan selection, investment-phase to construction bridge and as well as technical solutions for the connecting joints of structures to ensure the integrity, technical-economy and aesthetic of bridge. The progress of additional technical design is proposed to involve two steps (basic design and detailed design) as following:

(1) Preparation of basic design

- Review of interchange plan in the F/S;
- Research to re-arrange the span layout of main bridge to ensure technical requirements, it could connected ramps to main bridge at the intersections.
- Study on the investment-phase area and the solution for connecting ramps to the main bridge as follows:

- + Firstly, to construct the main bridge B=24m wide in the first phase only, the ramps will be constructed and connected to the operational bridge section in the 2nd phase (same as approved F/S).
- + Secondly: The main bridge and the widening the main bridge sections of the ramps which will be constructed in the 1st phase; the approach bridges and on – off roads of each ramp will be constructed in the second phase when the work site is available.
- Primarily propose options of retaining walls and piers (pier cross beam, pier column, pile quantity), To plan the girders and the deck slabs for 4 ramps, the connecting part of ramps to the main bridge section and the widened section of main bridge.
- Analyse the advantages and disadvantages of each options; To submit the compared options to the Employer (PMUTL) and MOT for the optimal option approval.

(2) Detailed design

Based on the approved basic designs, the Consultant carry out the detailed design for 4 ramps with the following works items:

To prepare the general schedule for the additional survey and design works.

a) Interchange and Road Design

- Detailed geometric interchange standards,
- Detailed interchange plan.
- Typical cross-section of approach roads,
- Longitudinal section of ramps,
- Detail cross sections,
- Road pavement,
- Traffic organization,
- Drainage system,
- Traffic signaling system (printed markings, traffic signs)
- Detailed cost estimate of road-related work items.

b) D/D Bridge and Retaining wall design:

- Cost estimate form and the detail cost estimate for the work items of bridge structures;
- Detail span structure (7m-breadth spans for the ramps and the widened bridge sections, etc...)
- Detail design of pier structures (7m-breadth for the ramps, the widened pier cross beam types which are the single-pile-column pier or the 2 ÷ 3 pile-column pier in the first phase)
- Detailed design of abutments.
- Detailed design of PC retaining walls for the approach roads.
- Detailed design the other structures (drainage system, parapets, expansion joints, slabs, etc.) and the utilities (if any).
- Construction planning.
- Detail cost estimate for the bridge structures.

c) Preparation of construction schedule and organization

Studying on the adjunctive work site, the measures for abutments, piers and span construction.

d) Formulation of detail design report.

(3) Deliverables documents:

a) Basic design: Submitted 06 copies (03 English and 03 Vietnamese copies)

a1) Drawings:

- Interchange plan;
- Preliminary profile for ramps of interchange;

- General view of 4 ramps of proposed options (following phasing of construction);
- Typical cross section of ramp B = 7.0m;
- Typical cross section of retaining wall;
- Typical cross section of connection part from ramps to main bridge;
- Typical cross section of widening section on main bridge;
- For proposed options: detail drawings describing general dimensions of pier, abutment, girder and deck slab arrangement.

a2) Report: Analysis of advantages and disadvantages of proposed options.

b) Technical design documents of bridge and access road: submitted 20 copies (10 English and 10 Vietnamese copies)

b1) Drawings

After having decision of which bridge items to be constructed in phase 1, the technical design document of such items shall be put into the bidding document of phase 1. Items constructed in phase 2 shall be separated with specific requirements as follows:

(01) General drawings of interchanges:

- General plan of interchanges;
- Typical cross sections, pavement structure;
- Profile of ramps in interchanges R1, R2, R3, R4;
- General view drawing of ramps R1, R2, R3, R4.

(02) Detailed drawings for widening main bridge section:

- Superstructure of widening main bridge section:
 - + General layout of spans of Super T girders;
 - + Cross sections of spans;
 - + General dimensions of super T girder;
 - + Pre-stressed cable of super T girder;
 - + Reinforcement of super T girder;
 - + Drawings of reinforcement deck slab (attached with connecting joint structure for 2 phases if any);
 - + Reinforcement of cross beams and link slab
- Substructure for connection part for widening main bridge
 - + Dimension of piers
 - + Pre-stressed cable for pier cross beam;
 - + Reinforcement for pile caps, pier columns and pier heads
 - + Bored piles.
- Auxiliary structure: drainage, handrail, expansion joint, bearing.
- Detailed quantity for individual items.

(03) Detailed drawings for approach bridge and retaining wall (7m wide and independent from main bridge) for ramps R1, R2, R3, R4:

- Superstructure for approach bridge:
 - + General layout of spans of super T girder;
 - + Cross sections of spans
 - + Dimensions of super T girder;
 - + Tendon for super T girder;
 - + Reinforcement of super T girder;
 - + Reinforcement of deck slab;
 - + Reinforcement of cross beam and link slab.
- Substructure for approach bridge:
 - + Dimensions of pier;
 - + Pre-stressed cable for pier heads (if any);

- + Reinforcement for pile caps, pier columns and pier heads;
- + Dimension of abutments;
- + Reinforcement of abutments;
- + Approach slabs (if any);
- + Bored piles;
- + Auxiliary structure: drainage, handrail, expansion joint, bearing;
- Retaining wall at 4 ramps:
 - + General layout of retaining wall;
 - + Dimension of retaining wall segments;
 - + Detailed reinforcement of segments.
- Detailed quantity for individual items.

(04) Approach road and ramps:

- Plan of approach road;
- Typical cross section, pavement structure;
- Vertical and horizontal alignments;
- Drainage;
- Painting, safety signal plate;
- Design for utilities compensation (if any);
- Detailed quantity for individual items.

(05) Drawings for construction:

- Foundation construction (bored pile and driven pile);
- Pier construction;
- Abutment construction;
- Span construction.

b2) Report:

Clear description of the intersection solution, structural solution and phasing between phases 1 and 2.

b3) Calculation sheet:

- 4 ramps of width $B = 7.0\text{m}$ (R1, R2, R3, R4): calculation and design for girder, deck slab, abutment and pier.
- Connection from ramp to main bridge: calculation and design for expanded pier head via bridge width $27.5\text{m} > B > 24\text{m}$. Design for 3-column pier for $B > 27.5\text{m}$. Design for span of super T in different widths and number and calculation for cantilever deck slab.
- Retaining wall for 4 ramps: calculation and design for concrete structure and foundation (if any).

5.2 Other designs

Relevant works like electric and lighting or utilities removal (if any) shall be designed to meet requirement in the TOR was approved design to apply for main bridge.

5.3 Support for reviewing and updating Environmental Management Plan (EMP)

Additional tasks for Environment Team including:

- Examine potential environmental impact for additional design works of 2 ICs;
- Give appropriate measure environmental management;
- Examine and update land status report for additional design works of 2 ICs;
- Support for procedures and report JICA on environmental issues.

5.4 Cost Estimation

Additional tasks for Cost Estimate Team include:

- Make preliminary cost estimate for comparison of construction phasing options;

- Make detailed cost estimate for works in phase 1 and phase 2 (to be separated).

5.5 Tender Assistance

Additional tasks for tender include:

- Review conditions of instruction to bidder in pre-qualification and tender invitation as well as contract in case of additional items are put in phase 1;
- Put additional items in to bidding documents if needed.

6 Project Implementation and Staffing Schedule

Implementation schedule: To keep the project schedule unchanged, the additional design schedule will follow the bid schedule.

Appendix C-A1 – Expert Schedule

| Calender | | Calender Year | | 2015 | | | | | 2016 | | | | | Man-months | | | | | |
|--|-------|---------------|---------------------------------------|------------------------------|---|---|---|---|--|---|---|---|---|------------|--|------|------|---|-----|
| | | TOR | Proposal | A | S | O | N | D | J | F | M | A | M | | | J | J | A | S |
| Stage | | | | Step I: D/D Stage (7 months) | | | | | Step II: Tender Assistance Stage (14 months) | | | | | | | | | | |
| | | | | Step I: D/D Stage (7 months) | | | | | Step II: Tender Assistance Stage (14 months) | | | | | | | | | | |
| Expert | | | | | | | | | | | | | | | | | | | |
| Management Team (MGT) | | | | | | | | | | | | | | | | | | | |
| Design Group (DEG) | | | | | | | | | | | | | | | | | | | |
| Road Design Team (DRD) | | | | | | | | | | | | | | | | | | | |
| L2 | H1 | H1 | Highway/Pavement Engineer | Nguyen Manh Chung | | | | | | | | | | | | | | | 2.0 |
| | H3 | H3 | Highway/Interchange | Hoang Duc Chau | | | | | | | | | | | | | | | 3.0 |
| Bridge Design Team (DBR) | | | | | | | | | | | | | | | | | | | |
| B | BE | BE | Bridge Engineer (IC) | Shoichiro Tokumaru | | | | | | | | | | | | | | | 15 |
| L4 | B1(1) | B1(1) | Bridge Engineer 1 (general structure) | Dang Van Hieu | | | | | | | | | | | | | | | 4.0 |
| L5 | B1(2) | B1(2) | Bridge Engineer (Superstructure) | Additional | | | | | | | | | | | | | | | 3.0 |
| L8 | B2(1) | B2(1) | Bridge Engineer (Substructure) | Additional | | | | | | | | | | | | | | | 2.0 |
| L9 | B2(2) | B2(2) | Bridge Engineer (Foundation) | Additional | | | | | | | | | | | | | | | 2.0 |
| L10 | B2(3) | B2(3) | Bridge Engineer (Retaining wall) | Additional | | | | | | | | | | | | | | | 2.0 |
| Electrical and Utility Design Team (DEU) | | | | | | | | | | | | | | | | | | | |
| L14 | EE | EE | Electrical Engineer | Le Viet Cuong | | | | | | | | | | | | | | | 10 |
| L15 | U | U | Utility Engineer | Ho Minh Tuan | | | | | | | | | | | | | | | 10 |
| L16 | T | T | Topographical Engineer | Dinh Viet Hung | | | | | | | | | | | | | | | 10 |
| Environmental Team (ENV) | | | | | | | | | | | | | | | | | | | |
| L21 | E2 | E2 | Environmental Specialist 2 | Nguyen Xuan Hoa | | | | | | | | | | | | | | | 10 |
| Cost and Document Group (CDG) | | | | | | | | | | | | | | | | | | | |
| Construction and Safety Planning Team (CSP) | | | | | | | | | | | | | | | | | | | |
| L22 | C/S | C/S | Construction Planner/Safety Engineer | Nguyen Truong Son | | | | | | | | | | | | | | | 10 |
| Cost Estimate Team (COS) | | | | | | | | | | | | | | | | | | | |
| L23 | C1 | C1 | Cost estimator | Additional | | | | | | | | | | | | | | | 10 |
| Document Team (DOC) | | | | | | | | | | | | | | | | | | | |
| L26 | D2 | D2 | Document Specialist 2 | Pham Quang Dau | | | | | | | | | | | | | | | 10 |
| Total (Expert) | | | | | | | | | | | | | | | | 15 | 25.0 | | |
| Local Assistant Staff | | | | | | | | | | | | | | | | | | | |
| | BS1 | | Bilingual Secretary 1 | Nguyen Thi Kim Cuc | | | | | | | | | | | | | | | 3.0 |
| | CO1 | | CAD Operator 1 | Bach Hung Phu | | | | | | | | | | | | | | | 3.0 |
| | BS3 | | Bilingual Secretary 3 | Bui Dieu Hien | | | | | | | | | | | | | | | 3.0 |
| | CO7 | | CAD Operator 7 | Nguyen Truong Khang | | | | | | | | | | | | | | | 3.0 |
| | CO8 | | CAD Operator 8 | Phan Cong Oanh | | | | | | | | | | | | | | | 10 |
| | CO9 | | CAD Operator 9 | Additional | | | | | | | | | | | | | | | 2.0 |
| | CO10 | | CAD Operator 10 | Additional | | | | | | | | | | | | | | | 3.0 |
| Total (Local Assistant Staff) | | | | | | | | | | | | | | | | 18.0 | | | |

■ : International Expert
 ■ : Local Expert/Local Assistant Staff

Appendix D-A1 – Remuneration Cost Estimates

| No. Stt | Position/Chức danh | | Name/Tên | Employment Status/Hình thức làm việc (1) | Total Months/ Tổng Tháng- Công | Currency/Đơn vị tiền tệ | Home Office Rate/ Lương tại Trụ sở chính | | Field Rate/ Lương tại Thực địa | | Amount/ Thành tiền |
|---|--------------------|--|-------------------------|--|--------------------------------|-------------------------|--|---|--------------------------------|---|----------------------|
| | Symbol/ Ký hiệu | Name/Tên | | | | | Man-Months / Tháng- Công | Unit Rates/ Đơn giá tiền Lương tại Trụ sở chính | Man-Months / Tháng- Công | Unit Rates/ Đơn giá tiền Lương tại Thực địa | |
| (1) | | | | (2) | (3)=(5)*(7) | (4) | (5) | (6) | (7) | (8) | (9)=(5)*(6)+(7)*(8) |
| A. International Experts/ Chuyên gia Nước ngoài | | | | | | | | | | | |
| | | Bridge Engineer (IC Bridge) / Kỹ sư cầu (nút giao) | Shoichiro Tokumaru | FT | 1.50 | JPY | - | 1,750,000 | 1.50 | 1,750,000 | 2,625,000 |
| Sub-Total of International Experts | | | | | 1.50 | JPY | | | 1.50 | | 2,625,000 |
| B. Local Experts/ Chuyên gia Trong nước | | | | | | | | | | | |
| 1 | H2 | Highway/ Interchange Engineer/ Kỹ sư đường/ Nút giao | Nguyen Manh Chung | FT | 2.00 | VND | - | 40,000,000 | 2.00 | 40,000,000 | 80,000,000 |
| 2 | H3 | Highway/ Interchange Engineer/ Kỹ sư đường/ Nút giao | Hoang Duc Chau | FT | 3.00 | VND | - | 37,000,000 | 3.00 | 37,000,000 | 111,000,000 |
| 3 | B1(1) | Bridge Engineer 1(1) (General design)/ Kỹ sư Cầu (Thiết kế tổng thể) | Dang Van Hieu | FT | 4.00 | VND | - | 40,000,000 | 4.00 | 40,000,000 | 160,000,000 |
| 4 | B1(2) | Bridge Engineer 1(2) (Superstructure Eng.)/ Kỹ sư Cầu 1(2) (Kết cấu phần trên) | TBN | FT | 4.00 | VND | - | 37,000,000 | 3.00 | 37,000,000 | 111,000,000 |
| 5 | B2 (1) | Bridge Substructure Engineer 2(5)/ Kỹ sư Cầu 2(1) (Kết cấu phần dưới) | TBN | FT | 2.00 | VND | - | 37,000,000 | 2.00 | 37,000,000 | 74,000,000 |
| 6 | F1 | Bridge Foundation Engineer 1/ Kỹ sư Nền móng Cầu 1 | TBN | FT | 2.00 | VND | - | 37,000,000 | 2.00 | 37,000,000 | 74,000,000 |
| 7 | B2 (2) | Bridge Foundation Engineer 2/ (Retaining wall design) Kỹ sư Cầu 2 (2)/ Thiết kế tường chắn | TBN | FT | 2.00 | VND | - | 37,000,000 | 2.00 | 37,000,000 | 74,000,000 |
| 8 | EE | Electrical Engineer/ Kỹ sư Điện | Le Viet Cuong | FT | 1.00 | VND | - | 35,000,000 | 1.00 | 35,000,000 | 35,000,000 |
| 9 | U | Utility Engineer/ Kỹ sư Công trình Tiện ích | Ho Minh Tuan | FT | 1.00 | VND | - | 35,000,000 | 1.00 | 35,000,000 | 35,000,000 |
| 10 | T | Topographical Engineer/ Kỹ sư Địa hình | Dinh Viet Hung | FT | 1.00 | VND | - | 37,000,000 | 1.00 | 37,000,000 | 37,000,000 |
| 11 | E2 | Environmental Specialist 2/ Chuyên gia Môi trường 2 | Nguyen Xuan Hoa | FT | 1.00 | VND | - | 35,000,000 | 1.00 | 35,000,000 | 35,000,000 |
| 12 | C/S | Construction Planner/ Safety Engineer/ Kỹ sư Quy hoạch thi công/ Kỹ sư An toàn | Nguyen Truong Son | FT | 1.00 | VND | - | 37,000,000 | 2.00 | 37,000,000 | 74,000,000 |
| 13 | C2 | Cost Estimator 2/ Dự toán 2 | Do Thi Mai Huong | FT | 1.00 | VND | - | 35,000,000 | 1.00 | 35,000,000 | 35,000,000 |
| 14 | D2 | Document Specialist 2/ Chuyên gia Tài Liệu 2 | Pham Quang Dau | FT | 1.00 | VND | - | 35,000,000 | 1.00 | 35,000,000 | 35,000,000 |
| Sub-Total of Local Experts | | | | | 26.00 | VND | | | 26.00 | | 970,000,000 |
| C. Local Supporting Staffs | | | | | | | | | | | |
| Nhân viên Hỗ trợ | | | | | | | | | | | |
| 1 | BS1 | Bilingual Secretary 1/ Thư ký 1 | Nguyen Thi Kim Cuc | FT | 3.00 | VND | - | 10,000,000 | 3.00 | 10,000,000 | 30,000,000 |
| 2 | CO1 | CAD Operator 1/ Nhân viên CAD 1 | Bach Hung Phu | FT | 3.00 | VND | - | 10,000,000 | 3.00 | 10,000,000 | 30,000,000 |
| 3 | BS3 | Bilingual Secretary 3/ Thư ký 3 | Bui Dieu Hien | FT | 3.00 | VND | - | 10,000,000 | 3.00 | 10,000,000 | 30,000,000 |
| 4 | CO7 | CAD Operator 7/ Nhân viên CAD 7 | Nguyen Truong Khang | FT | 3.00 | VND | - | 10,000,000 | 3.00 | 10,000,000 | 30,000,000 |
| 5 | CO8 | CAD Operator 8/ Nhân viên CAD 8 | Phan Cong Oanh | FT | 1.00 | VND | - | 10,000,000 | 1.00 | 10,000,000 | 10,000,000 |
| 6 | CO9 | CAD Operator 8/ Nhân viên CAD 8 | To be named/ Bổ trí sau | FT | 2.00 | VND | - | 10,000,000 | 2.00 | 10,000,000 | 20,000,000 |
| 7 | CO10 | CAD Operator 9/ Nhân viên CAD 9 | To be named/ Bổ trí sau | FT | 3.00 | VND | - | 10,000,000 | 3.00 | 10,000,000 | 30,000,000 |
| Sub-Total of Local Supporting Staffs | | | | | 18.00 | VND | | | 18.00 | | 180,000,000 |
| Total of Local Experts and Local Supporting staffs | | | | | 44 | | | | 44 | | 1,150,000,000 |

(1) Full-time (FT) – employee of the lead firm or joint venture member or Sub-consultant; Other Source (OS) – an Expert provided by another source that is not a joint venture member or a Sub-consultant firm; Independent Expert (IP) – independent, self-employed Expert làm việc toán thời gian (FT) – nhân viên của công ty lãnh đạo hoặc thành viên liên doanh hoặc Tư vấn phụ; Nguồn khác (OS) – một Chuyên gia được cung cấp bởi một nguồn khác không phải từ thành viên liên doanh hoặc công ty Tư vấn phụ; Chuyên gia Độc lập (IP) - Chuyên gia làm việc độc lập

Appendix E-A1 – Reimbursable Cost Estimates

| Appendix E-A1 (1/2)- Breakdown of Reimbursable Expenses (other expenses) | | | | | | | |
|---|---|---------------------------------------|----------------------------|------------------------|----------------------|-----------------------|---------------|
| Phụ lục E-A1 (1/2)- Dự toán chi phí bồi hoàn | | | | | | | |
| No/ Stt | Description/ Nội dung | Unit of Measurement Đơn vị tính | Currency Đơn vị tiền tệ | Quantity Khối lượng | Unit Rate Đơn giá | Amount/ Thành tiền | |
| | | | | | | Ngoại tệ JPY | Nội tệ VND |
| Foreign Currency (JPY) | | | | | | 810,000 | |
| Ngoại tệ (Yên) | | | | | | | |
| 1 | International Air Fare (At Actual Cost) Vé máy bay quốc tế (Chi phí thực tế) | | | | | | |
| a) | Tokyo - Hanoi (return) Tokyo - Hanoi (khứ hồi) | Trip/ Chuyến | JPY | 1.00 | 252,000 | 252,000 | |
| Sub Total of 1 / Tổng phụ của 1 | | | | | | 252,000 | |
| 2 | Mobilization Allowance for International Experts (Fixed Unit Rate) Phụ cấp huy động các chuyên gia quốc tế (Đơn giá cố định) | | | | | | |
| | Miscellaneous Travel Expenses such as insurance, VISA and transportation from/to Airport etc. Chi phí đi chuyên khác như bảo hiểm, visa, di lại từ/đến sân bay | Trip/ Chuyến | JPY | 1.00 | 18,000 | 18,000 | |
| Sub Total of 2 / Tổng phụ của 2 | | | | | | 18,000 | |
| 3 | Daily Allowance and Accommodation for Expatriate (Fixed Unit Rate) Công tác phí và chi phí ăn ở cho chuyên gia quốc tế (đơn giá cố định) | Man-Day/ Ngày công | JPY | 45.00 | 12,000 | 540,000 | |
| Sub Total of 3 / Tổng phụ của 3 | | | | | | 540,000 | |
| Local Currency (VND) | | | | | | | |
| Nội tệ (VND) | | | | | | | - |

| Appendix E-A1 (2/2): COST ESTIMATE FOR SURVEY WORK (At actual cost) | | | | | | | | |
|---|--|-----------------|--------------------------------|-------------------------|--|--|---|-------------------|
| Phụ lục E-A1 (2/2): Dự toán Chi phí Khảo sát (Chi phí thực tế) | | | | | | | | |
| No./ Stt | Item/ Nội dung | Unit/ Đơn vị | Currency/ Đơn vị tiền tệ | Quantity/ Khối lượng | Unit price before Tax/ Đơn giá trước Thuế | Amount/ Thành tiền | | |
| | | | | | | Foreign Currency (JPY)/ Ngoại tệ (Yên) | Local Currency (VND)/ Nội tệ (Đồng) | |
| Local Currency/ Nội tệ | | | | | | | | |
| I. Topographic Survey/ Khảo sát địa hình | | | | | | | | 62,621,037 |
| 1 | Measurement and drawing of vertical profile of alignment with rate 1/50; 1/500/ Đo vẽ mặt cắt dọc tuyến 1/50; 1/500 | 100m | VND | 19.80 | 1,252,457 | | | 24,798,649 |
| 2 | Measurement and drawing of cross section of TL alignment with rate TL 1/200/ Đo vẽ mặt cắt ngang tuyến TL 1/200 | 100m | VND | 14.40 | 2,165,056 | | | 31,176,806 |
| 3 | Measurement of Elastic Modulus of Existing pavement by Benkelman beam/ Đo Modun đàn hồi mặt đường hiện hữu bằng cần Benkelman | point/điểm | VND | - | 753,038 | | | - |
| 4 | Preparation of documents of topographic report (=4% x ((1)+(2)+(3))/ Lập hồ sơ báo cáo KS địa hình tiếng Việt (bằng 4% của ((1)+(2)+(3))) | % | VND | 4% | 55,975,455 | | | 2,239,018 |
| 5 | Temporary accommodation (excluding cost of survey report (=3% của ((1)+(2)+(3))) Chi phí lán trại tạm (không bao gồm lập báo cáo KS) (bằng 3% của ((1)+(2)+(3))) | % | VND | 3% | 55,975,455 | | | 1,679,264 |
| 6 | Translation report document from Vietnamese into English/ Dịch báo cáo tiếng Việt sang tiếng Anh | page/trang | VND | 100.00 | 27,273 | | | 2,727,300 |
| II. Geological survey/ Khảo sát địa chất | | | | | | | | |
| | | | | | | | | - |
| III. Moving machinery and equipment and labours for serving topographical | | | | | | | | |
| Vận chuyên máy thiết bị và công nhân phục vụ khảo sát địa hình | | | | | | | | 8,561,654 |
| 1 | Cars moving machinery and equipment in service for one (01) topographical survey group, car 5 tons Xe ô tô phục vụ chuyên máy thiết bị đi về cho 1 tổ khảo sát địa hình, ô tô 5 tấn | shift/ ca | VND | 2.00 | 1,018,483 | | | 2,036,966 |
| 2 | Labours moving back (1 groups x 8 people x 2 lv); labour 4,0/7 Nhân công di chuyển đi về (1 tổ x 8 người x 2 lv); nhân công 4,0/7 | work/ công | VND | 16.00 | 407,793 | | | 6,524,688 |
| Sub - total of cost survey before Tax Tổng phụ Chi phí Khảo sát trước Thuế | | | | | | | | 71,182,691 |

Appendix F-A1 – Summary of Cost Estimates

| Appendix F-A1- Summary of Cost Estimates for Add No.1 | | |
|--|---|--|
| Phụ lục F-A1- Tổng hợp dự toán cho Phụ lục số 1 | | |
| Item/ Nội dung | Foreign Currency (JPY)/ Ngoại tệ (Yên) | Local Currency (VND)/ Nội tệ (Đồng) |
| Competitive Components/ Hợp phần cạnh tranh | | |
| 1. Remuneration/ Lương | 2,625,000 | 1,150,000,000 |
| 2. Reimbursable expenses (other expenses)/ Chi phí khác | 810,000 | - |
| 3. Survey cost at Detailed Design Stage/ Chi phí khảo sát bước TKKT | - | 71,182,691 |
| A. Total/ Cộng ((1)+(2)+(3)) | 3,435,000 | 1,221,182,691 |
| Non-competitive Components Hợp phần không cạnh tranh | | |
| 4. Tax/ Thuế ((4.1.)+(4.2.)+(4.3.)+(4.4.)) | 371,094 | 122,118,269 |
| Tax for Local Currency/ Thuế cho phần Nội tệ | | |
| 4.1. Survey Tax 10% of (3) Thuế GTGT khảo sát 10% của (3) | | 7,118,269 |
| 4.2 Design consultant's Tax 10% of ((1)+(2)) Thuế GTGT Tư vấn thiết kế 10% của ((1)+(2)) | | 115,000,000 |
| Tax for Foreign Currency/ Thuế cho phần Ngoại tệ | | |
| 4.3. CIT Tax/ Thuế TNDN ((A)/(1-5%)*5%) | 180,789 | |
| 4.4. VAT Tax/ Thuế GTGT (((A)+(4.3.))/(1-5%)*5%) | 190,305 | |
| 5. Survey Contingency (10%) and Design Consultant (15%) Dự phòng khảo sát (10%) và Tư vấn thiết kế (15%) | - | - |
| 5.1. Survey contingency (10%* ((3)+(4.1.))) Dự phòng khảo sát (10% *((3)+(4.1.))) | | |
| 5.2. Design Consultant/ Dự phòng Tư vấn thiết kế: - Foreign Currency/ Phần Ngoại tệ (15%*((1)+(2)+(4.3.)+(4.4.))) - Local Currency/ Phần Nội tệ (15%*((1)+(2)+(4.2.))) | | |
| B. Total/ Cộng ((4)+(5)) | 371,094 | 122,118,269 |
| C. Total/ Tổng cộng (A)+(B) | 3,806,094 | 1,343,300,960 |
| JICA Loan Portion/ Phần vốn vay JICA (A)+10%(3)+15%((1)+(2)) | 3,435,000 | 1,221,182,691 |
| Counter-Budget Portion for Local Tax/ Phần vốn đối ứng cho Thuế trong nước (4)+10%(4.1.)+15%((4.2.)+(4.3.)+(4.4.)) | 371,094 | 122,118,269 |
| Remark: Applied exchange rate: JPY 1 = VND 179.46 | | |
| Ghi chú: Tỷ giá áp dụng: 1 JPY = 179,46 VND | | |

| Appendix F-A1- Summary of Cost Estimates | | | | | | |
|--|--|---|--------------------|------------------------|--------------------|-----------------------|
| Phụ lục F-A1- Tổng hợp dự toán | | | | | | |
| Item/ Nội dung | Original Contract | | Addendum No.1 | | | |
| | Foreign Currency (JPY)/ Ngoại tệ (Yên) | Local Currency (VND)/ Nội tệ (Đồng) | Variation | | Accumulated Total | |
| | | | JPY | VND | JPY | VND |
| Competitive Components/ Hợp phần cạnh tranh | | | | | | |
| 1. Remuneration/ Lương | 95,300,000 | 7,241,000,000 | 2,625,000 | 1,150,000,000 | 97,925,000 | 8,391,000,000 |
| 2. Reimbursable expenses (other expenses)/ Chi phí khác | 26,266,000 | 3,965,028,000 | 810,000 | | 27,076,000 | 3,965,028,000 |
| 3. Survey cost at Detailed Design Stage/ Chi phí khảo sát bước TKKT | - | 15,310,394,754 | | 71,182,691 | - | 15,381,577,445 |
| A. Total/ Cộng ((1)+(2)+(3)) | 121,566,000 | 26,516,422,754 | 3,435,000 | 1,221,182,691 | 125,001,000 | 27,737,605,445 |
| Non-competitive Components Hợp phần không cạnh tranh | | | | | | |
| 4. Tax/ Thuế ((4.1.)+(4.2.)+(4.3.)+(4.4.)) | 13,133,169 | 2,651,642,275 | 371,094 | 122,118,269 | 13,504,263 | 2,773,760,544 |
| Tax for Local Currency/ Thuế cho phần Nội tệ | | | | | | |
| 4.1. Survey Tax 10% of (3) Thuế GTGT khảo sát 10% của (3) | | 1,531,039,475 | | 7,118,269 | | 1,538,157,744 |
| 4.2 Design consultant's Tax 10% of ((1)+(2)) Thuế GTGT Tư vấn thiết kế 10% của ((1)+(2)) | | 1,120,602,800 | | 115,000,000 | | 1,235,602,800 |
| Tax for Foreign Currency/ Thuế cho phần Ngoại tệ | | | | | | |
| 4.3. CIT Tax/ Thuế TNDN ((A)/(1-5%)*5%) | 6,398,211 | | 180,789 | | 6,579,000 | |
| 4.4. VAT Tax/ Thuế GTGT ((A)+(4.3.))/(1-5%)*5%) | 6,734,958 | | 190,305 | | 6,925,263 | |
| 5. Survey Contingency (10%) and Design Consultant (15%) Dự phòng khảo sát (10%) và Tư vấn thiết kế (15%) | 20,204,875 | 3,533,138,043 | (3,806,094) | (1,343,300,960) | 16,398,781 | 2,189,837,083 |
| 5.1. Survey contingency (10%* ((3)+(4.1.))) Dự phòng khảo sát (10% *((3)+(4.1.))) | - | 1,684,143,423 | | (78,300,960) | - | 1,605,842,463 |
| 5.2. Design Consultant/ Dự phòng Tư vấn thiết kế: - Foreign Currency/ Phần Ngoại tệ (15%*((1)+(2)+(4.3.)+(4.4.))) - Local Currency/ Phần Nội tệ (15%*((1)+(2)+(4.2.))) | 20,204,875 | 1,848,994,620 | (3,806,094) | (1,265,000,000) | 16,398,781 | 583,994,620 |
| B. Total/ Cộng ((4)+(5)) | 33,338,044 | 6,184,780,318 | 371,094 | 122,118,269 | 29,903,044 | 4,963,597,627 |
| C. Total/ Tổng cộng (A)+(B) | 154,904,044 | 32,701,203,072 | 3,806,094 | 1,343,300,960 | 154,904,044 | 32,701,203,072 |
| JICA Loan Portion/ Phần vốn vay JICA (A)+10%(3)+15%((1)+(2)) | 139,800,900 | 29,728,366,429 | | | 139,800,900 | 29,728,366,429 |
| Counter-Budget Portion for Local Tax/ Phần vốn đối ứng cho Thuế trong nước (4)+10%(4.1.)+15%((4.2.)+(4.3.)+(4.4.)) | 15,103,144 | 2,972,836,643 | | | 15,103,144 | 2,972,836,643 |
| Remark: Applied exchange rate: JPY 1 = VND 179.46 | | | | | | |
| Ghi chú: Tỷ giá áp dụng: 1 JPY = 179,46 VND | | | | | | |