



CAPACITY PROFILE

OPEN LETTER

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INTRODUCTION

PART I: INTRODUCTION

1. ABOUT TOAN PHAT CONSTRUCTION JOINT STOCK COMPANY

Toan Phat Construction Joint Stock Company, Certificate of Business Registration No.: 0101379930, first issued by Hanoi Department of Planning and Investment on June 24th, 2003.

Company’s name	: TOAN PHAT CONSTRUCTION JOINT STOCK COMPANY		
Abbreviation	: TOAN PHAT., JSC		
Representative	: Mr. Luu Trung Luong		
Address	: Quang Minh Industrial Park – Chi Dong – Me Linh – Hanoi		
Factory Hanoi	: Lot 49A – Quang Minh Industrial Park – Chi Dong – Me Linh –		
Tel	: (04) 3586 0525	Fax: (04) 3586 0526	
Charter capital	: VND 50,000,000,000 (Fifty billion dong)		
Tax ID	: 0101379930		
Account 1	: 10201 0000 682077 VietinBank – Quang Minh Branch		
Account 2	: 100 114 8510 38420 Eximbank – Hanoi Branch		
Website	: www.bulong.com.vn; cotdentoanphat.vn		
Email	: matoanphat2013@gmail.com		
Slogan	: Company is home – Partner is friend – Customer is King		
Logo	:		



2. THE PROCESS OF FORMATION AND DEVELOPMENT

Toan Phat Construction Joint Stock Company was established on June 24th, 2003 with the initial charter capital of VND 50,000,000,000. The Company specializes in the main business lines as follows: Hot-dip galvanization of steel structures products, manufacture of bolts, screws and lamp handle for urban lighting.

Grasping the increasing development demands of the transport, construction and mechanical engineering industries, in 2007, the Company decided to build Toan Phat Hot-Dip Galvanizing Factory in Quang Minh Industrial Park, Chi Dong town, Me Linh district, Hanoi City. In 2008, the factory was officially put into operation with an initial capacity of 12,000 tons/year.

Toan Phat hot-dip galvanized products are highly appreciated by customers for quality. With the increasing needs for hot-dip galvanization of steel structure products on the market, the output does not meet the schedule of domestic and foreign customers. In order to promptly meet customers' needs, in early August 2009, the Company built the second production line. This line was officially put into operation in May 2010, raising the total capacity of hot-dip galvanization to 18,000 tons/year.

With the determination to improve labor productivity and constantly improve technology of the Company's staff, currently, the capacity of hot-dip galvanization of steel structure products of the factory has been raised to 24,000 tons/year.

3. OBJECTIVES

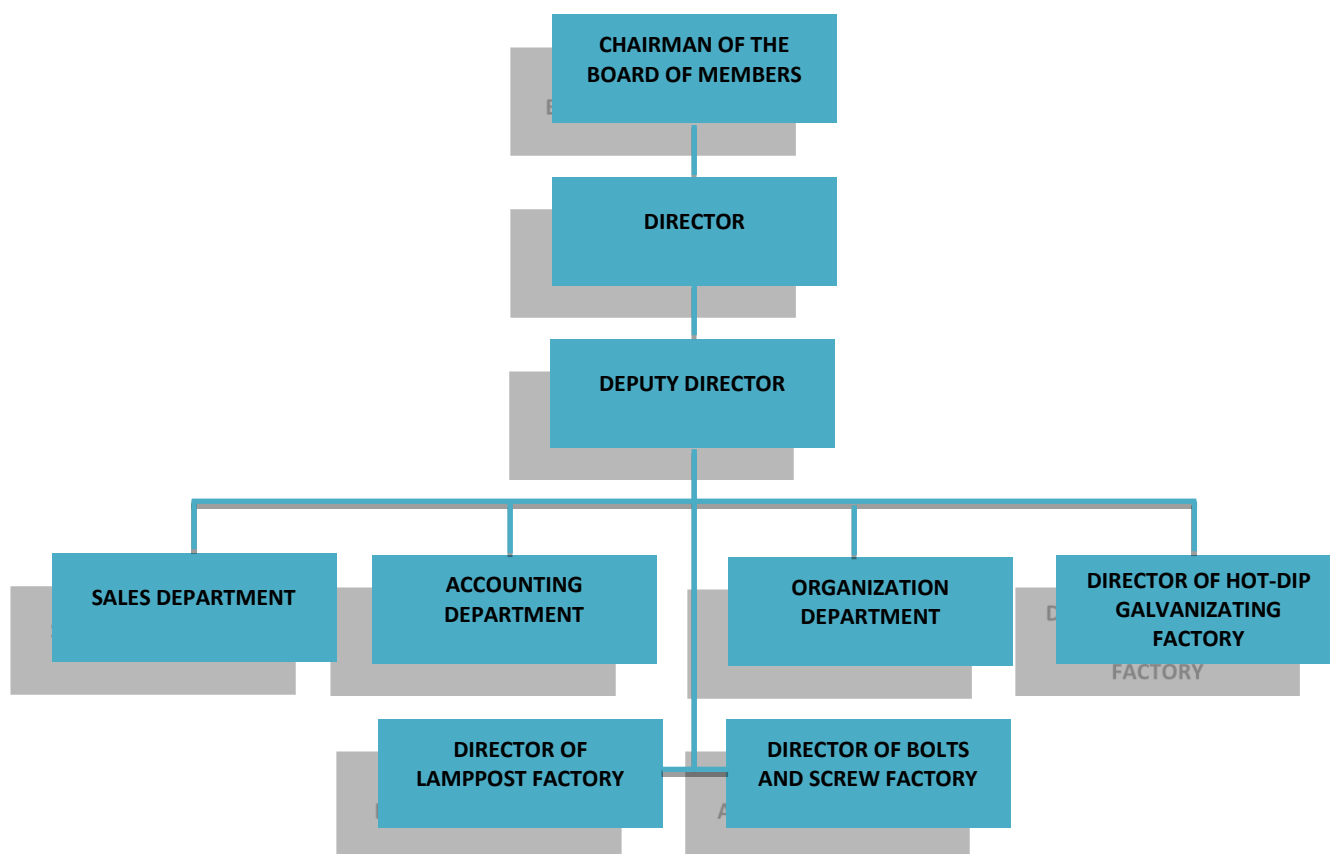
- Constantly improving technology, enhancing labor productivity and product quality: with the goal of becoming the leading hot-dip galvanizing provider in the Northern provinces, we always strive to perfect the quality of products through improved labor productivity and technological improvement. Toan Phat Construction Joint Stock Company has applied many improvements to automate the lines, save labor and maximize human resources.
- Customer centricity: Toan Phat undertakes to strive to meet customer needs at maximum. Toan Phat takes trust of customers as the purpose to operate. We are committed to delivering high quality products, sufficient quantity and on time.
- Always be dynamic and creative: In a fiercely competitive environment, to survive and develop, Toan Phat must be dynamic and creative. In the Company, we create a comfortable and professional working environment so that every individual can freely promote their full potential. Outside the Company, we use flexible policies to cope with market fluctuations.

4. OPERATION FIELDS

- Hot-dip galvanization of steel structure products;

- Production of rubber plastic products;
- Production of bolts and screws;
- Production of steel structures;
- Production and trading of construction materials;
- Construction of power lines and substations up to 35kV;
- Civil construction and industrial construction and installation, construction of transport, irrigation, water supply and drainage works.

5. ORGANIZATIONAL STRUCTURE



Total number of employees : 200 people

Human resource qualification:

- Engineer : 05
- Bachelor : 12
- College : 20
- Intermediate : 50
- Worker : 113

6. MACHINERY AND EQUIPMENT

NO.	NAME OF EQUIPMENT	SPECIFICATIONS	Q.TY
PART OF HOT DIP GALVANIZATION			
1	Steel tank for dip zinc Muk 3, made in Germany	Inner size LxWxH Furnace 1: 12000x1500x2200mm	1
2	Furnace	Built of fire bricks and heat-resistant mortar with red brick insulation for chimney, heat transfer ribs, floor support pipes, nozzle pipes, surrounded by red bricks.	2
3	Oil burner	Ecoflam S.P.A, made in Italy	4
4	Temperature sensor (Germany)	0 – 1000 ⁰ C in the furnace chamber 0 – 600 ⁰ C in the plating tank	12
5	Molten zinc pump	10m ³ /h – High heat resistance	2
6	FO oil tank	20m ³ made of stainless steel with heater and automatic pump controller	2
7	Intermediate FO oil tank	10m ³ made of stainless steel with heater and automatic pump controller	1
8	Acid detergent tank	Inner size LxWxH mm Tank 1: 12000x2000x3000 Tank 2: 12000x2000x3000 Tank 3: 12000x2000x3000 Tank 4: 12000x2000x3000 Tank 5: 12000x2000x3000 Made of imported steel plate and lining of acid-resistant and temperature-resistant Composite up to 70 ⁰ C	1
9	Wash tank	Inner size LxWxH mm Tank 1: 12000x2000x3000 Tank 2: 12000x2000x3000 Made of imported steel plate and lining of acid-resistant and temperature-resistant Composite up to 70 ⁰ C.	1
10	Flux tank	Inner size LxWxH mm Tank 1: 12000x2000x3000 Tank made of stainless steel 306 and heated by the residual heat of the plating furnace.	1

NO.	NAME OF EQUIPMENT	SPECIFICATIONS	Q.TY
11	Cooling tank	Size of tank 1: 12000x2000x3000mm Size of tank 2: 12000x2000x3000mm Tank made of stainless steel Q235B and lined inside with Composite layer.	1
12	Acid pump	Manufacturer: APP Taiwan Suction capacity: 10.8m ³ /h Electric power: 220kV	6
13	Coating thickness check machine	Manufacturer: Defelsko – USA Model: Positector 6000 standard Range: 0 – 63.5mm	4
14	pH Tester	Manufacturer: Martini – Rumania Model: MW802 Range: 0 – 14pH	1
15	Portable thermometer	Manufacturer: Testo – Germany	2
16	Crane 3 tons - 5 tons	Span: 15m Lifting speed: 8m/min Lifting height: 6m	10
17	Forklift truck	Manufacturer: Toyota – Japan Load capacity: 3 tons	3
MACHINE & EQUIPMENT OF MECHANICAL PROCESSING			
1	Crane 5 tons	Span: 15m Lifting speed: 8m/min Origin: Japan 2013	8
2	Shearing machine	Origin: Taiwan Year of manufacture: 2015	1
3	Press brake machine 15m	Origin: Taiwan Year of manufacture: 2015	1
4	Automatic welding machine	Origin: Taiwan Year of manufacture: 2015	1
5	Manual welding machine	Origin: Taiwan Year of manufacture: 2015	10
6	Punching machine	Origin: Japan Year of manufacture: 2013	1
7	Pipe bending machine	Origin: Vietnam Year of manufacture: 2015	3
8	Cutting punching machine with 5 functions	Origin: Japan	1
9	Magnetic drilling machine	Origin: Japan	1

NO.	NAME OF EQUIPMENT	SPECIFICATIONS	Q.TY
10	Drilling machine with 8 dedicated heads	Origin: Japan	1
11	Grinding machine, cutting machine	Origin: China Year of manufacture: 2015	10
12	Drilling machines of all kinds	Origin: Japan	5
13	Air compressor	Origin: Taiwan Year of manufacture: 2015	2
14	Air Plasma cutting machine	Origin: Japan Year of manufacture: 2015	2
15	Paint spraying machine	Origin: China Year of manufacture: 2015	2
	Semi-automatic welding machine		2
	Punching machine 150 tons	Origin: Japan	2
	Punching machine 80 tons	Origin: Japan	2

SOME PHOTOS OF EQUIPMENT AND MACHINERY OF TOAN PHAT COMPANY

Semi-automatic welding line



Sheet metal press brake line

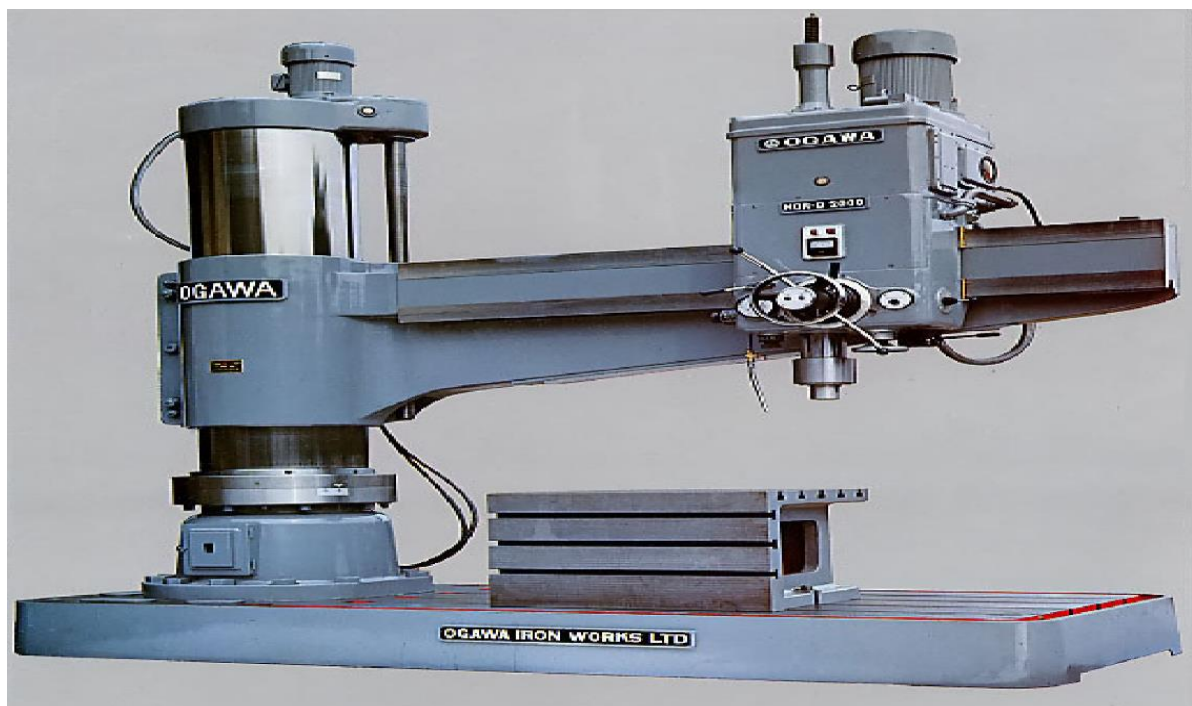
Automatic welding machine



Uncoiler machine



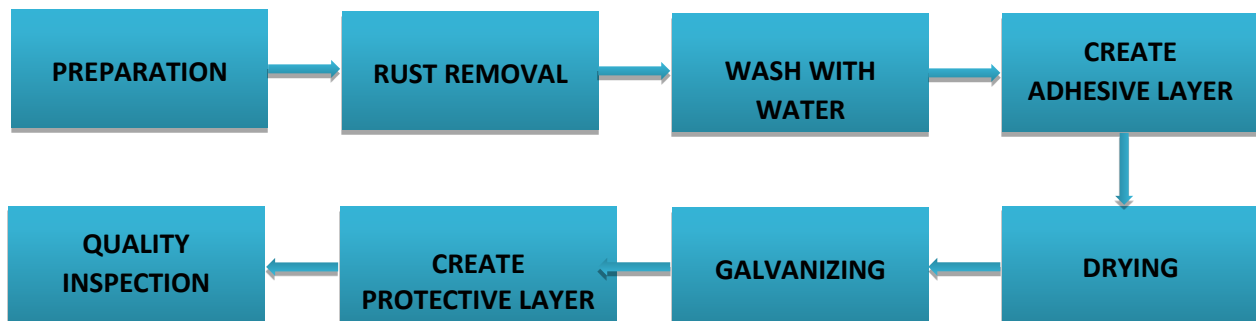
OGAWA Drilling machine – Japan



Shearing machine with CNC control



7. TECHNOLOGICAL PROCESS



STEP 1: PREPARATION AND CLASSIFICATION OF PRESET STEEL STRUCTURES.

Materials are preset correctly and suitable for dip-hot galvanizing technology:
 Structure without air bags;
 No paint and grease on the surface;
 No warping.

Process of preparation and classification of goods:

- Arrange the preset components according to the same shape and size.
- Components with paint, grease must be grinded, burned or shot by sand before removing rust.

STEP 2: RUST REMOVAL BY CHEMICAL.

Preset components are neatly stowed and hoisted to soak in a rust removal tank.
 Rust removal tank includes 5 tanks:

Rust removal solution: Hydrochloric Acid:

Tank 1 – tank 4: Used to remove uncoated products; concentration: 18 - 21%.

Tank 5: Used for products that have been dipped or electroplated (with zinc on the surface); concentration: 5-15%.

Rust removal period: from 20 – 60 minutes depending on the product structure (little rust or no rust).

The concentration of acid solution is regularly checked (about once or twice a day).

After soaking and removing for 20 minutes or more, the acid team must regularly check the dirt level of the product, if it is clean, take it out to wash with water and move on to the next stage.

STEP 3: WASH WITH WATER.

After cleaning with acid, the preset components must be washed away from chemicals, residue and iron salts on metal surface to prepare for the next stage.

The water tank is clean water tank, including 2 tanks.

The product, after removing rust will be put into the water tank 1 to remove chemicals and iron salt residue and then transferred to the water tank 2 to wash again.

After passing through two water tanks, the product is washed again with a large pressure pump to thoroughly remove the oxides that remain on the metal surface before being moved on to the next stage.

STEP 4: DIP INTO FLUX.

The flux solution is a strong corrosive salt consisting of zinc chloride salt (ZnCl_2) and Ammonium chloride salt (NH_4Cl). It has the effect of cleaning up the oxide that remains on the surface of the component and preventing oxidation again on the component surface.

The salt content is mixed according to the ratio:

- ZnCl_2 salt: from 140 – 350 (g/l).
- NH_4Cl salt: from 90 – 250 (g/l)

The flux solution is heated from the heat of the zinc tank, the solution temperature is from 60 - 80°C.

The soaking duration of the component in the flux solution is from 2 – 5 minutes depending on the product structure (made from corrugated iron or steel). Then moving on to the next stage.

STEP 5: DRYING

This is the process of drying the flux solution immediately on the surface of the zinc tank before dipping the galvanized product into the zinc surface to minimize the explosion of zinc.

Drying duration is from 2 – 5 minutes depending on the product structure.

STEP 6: GALVANIZING

Zinc content in the tank reaches 98 – 99 % of pure zinc that is imported.

The temperature of the galvanizing tank must be in the range of 440 - 450°C depending on each product category.

The product is dipped into the tank by a crane system with inverter to adjust the speed appropriately during the up and down process.

The dipping duration depends on the product structure (long or short, with air bags or easily vented).

The soaking duration in the zinc tank depends on the product structure (thick or thin). The soaking duration in the tank is usually from 2-7 minutes.

After dipping, the product is shaken or vibrated to create ventilation to escape slag sticking to the product surface, and get rid of the slag on the surface of the zinc tank, remove the zinc drops still sticking to the end points of the product before removing the product from the zinc tank and moving on to the next stage

STEP 7: COOLING

Cooling the hot-dip galvanized product in water to prevent further interaction process between iron and zinc at high temperature and also to ensure occupational safety.

Cooling water tank temperature ranges from 20 - 50°C. Cooling water is circulated continuously between the tanks to prevent the water from overheating. The chemical that is mixed in the cooling tank is Anhydride chromic, concentration of 1-1,5 %. The tank is constantly supplemented with clean water and chemicals to ensure the temperature and concentration of the solution of 3.5 - 5.5 PH degrees.

The effect of the cooling solution is not only to cool the product but also to create the shine and is the surface preservation layer.

STEP 8: QUALITY INSPECTION

Product quality is checked by a technician at the final stage. After being taken from the cooling tank, the product is polished off all the boils remaining on the product.

Observe visually for glossiness, whether the zinc layer has cracks, slags, clumps, flux burns or zinc oxide films or not.

The coating surface quality is assessed visually according to TCVN.

Measure the thickness of the galvanizing layer by measuring devices based on magnetic principle.

The thickness must meet the standards of ISO 1461:1999, ASTM A123/A 123M – 08, 18TCN 04 – 92.

According to ASTM A123/A 123M-08 Standards, minimum thickness of plating on the product is specified in the following table:

Plating products	Unit	Plating steel thickness (mm)				
		<1.6	1.6 to <3.2	3.2 to 4.8	>4.8 to <6.4	≥ 6.4
Shaped steel and plate	μm	45	65	75	85	100
Bar	μm	45	65	75	85	100
Tube and box	μm	45	45	75	75	75
Coil	μm	35	50	60	65	80

The thickness inspection of the coating is carried out regularly, measurement is performed every 3 batches of galvanization.

The products that meet the requirements on quality and techniques will be transferred to the finished product warehouse and neatly arranged in batches.

PRODUCTS

PART II: PRODUCTS

1. TELECOMMUNICATIONS COLUMNS

With high quality zinc raw materials imported from countries such as: Korea, Canada, USA, hot-dip galvanized telecommunications columns at Toan Phat meet high quality standards according to ASTM 123/123M-02, TCVN 5408:2007 and ISO 01461:1999.



2. BRIDGE RAILING – GUARDRAIL

With the strong investment of the State in the transportation industry, in recent years, many expressways linking the provinces have been commenced and put into use. Therefore, the mechanical processing industry manufacturing bridge railings and corrugated iron lines are also focused. The products of hot-dip galvanized bridge railings and guardrails at Toan Phat meet high quality standards according to ASTM 123/123M-02, TCVN 5408:2007 and ISO 01461:1999.



3. HIGH VOLTAGE COLUMN – SUBSTATION EQUIPMENT

The industry of manufacturing steel electric columns in our country has been invested and developed very early and has achieved great achievements. However, with the rapid development of the economy, investing in expanding high voltage lines, medium voltage lines and substations is still an urgent task. Hot-dip galvanized high voltage columns and substation equipment at Toan Phat meet high quality standards according to ASTM 123/123M-02, TCVN 5408:2007 and ISO 01461:1999.



4. ELECTRICAL BEAM

In order to bring electricity to remote and isolated villages of the country, the rural electric grid system has been constantly invested and developed. Electrical beam products and equipment for rural electric grid must be hot-dip galvanized. Hot-dip galvanized electrical beams at Toan Phat always ensure the quality requirements and industry standard 18 TCN04-92.



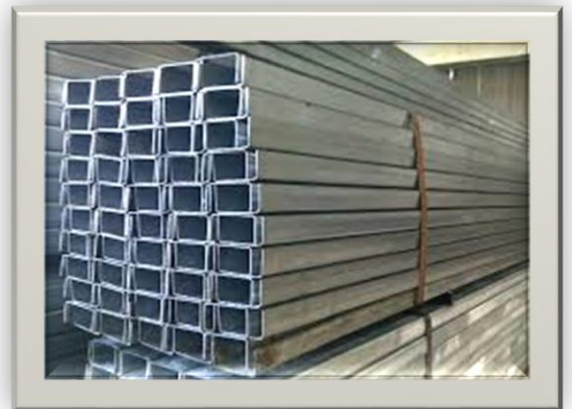
5. WELDED STEEL PIPE – SEAMLESS PIPE OF ALL KINDS

Today, the need to use welded steel pipes and seamless pipes is huge. Using welded steel pipes and seamless pipes to be hot-dip galvanized will bring many advantages such as: Low price and high durability. Galvanized pipe products at Toan Phat ensure current standards ASTM 123/123M-02.



6. SHAPED STEEL OF ALL KINDS

With the very good steel protection ability of zinc, the application of hot-dip galvanizing technology in steel structures is becoming increasingly popular. Zamil house frame structures were often painted before, but have now gradually switched to use hot-dip galvanization.



7. LIGHTING COLUMNS

Along with the development of the transportation industry, the lighting industry has also grown rapidly in recent years. The lamp handle products processed and galvanized by Toan Phat have been supplied to the market and met processing standards according to standard ASTM123/123M-02.



8. BOLTS AND SCREWS

Bolts and screws produced by Toan Phat are used in manufacturing and processing industry.



TYPICAL WORKS

PART III: TYPICAL PROJECTS

With high quality products, in the past years Toan Phat Construction has received the attentions and trust from customers. Major projects which have used Toan Phat products:

1. WORK: NATIONAL CONVENTION CENTER

Location: Me Tri, Nam Tu Liem, Hanoi City

Toan Phat provides: Processing and hot dip galvanizing of beams and pillars.

Picture:



2. WORK: STATE AUDIT HEADQUARTERS - BASE 2

Location: Trung Hoa - Cau Giay - Hanoi

Toan Phat provides: Processing and hot dip galvanizing of stone bracket steel structure.



3. WORK: NHAT

TAN BRIDGE

Location: Starting from Phu Thuong Ward, Tay Ho District to the end of NH3 Km7 + 100 intersection at Vinh Ngoc Commune, Dong Anh District.

Toan Phat provides: Processing and hot dip galvanizing of bridge handrail.

Picture:



4. WORK: NATIONAL ASSEMBLY BUILDING

Location: Ba Dinh District, Hanoi City

Toan Phat provides: Processing and hot dip galvanizing of steel structure frames and beams.

Picture:



5. WORK: HANOI – THAI NGUYEN EXPRESSWAY

Location: The route passes through three provinces: Hanoi, Thai Nguyen and a short section in Bac Ninh province.

Toan Phat provides: Processing of handrail, guardrail and fence frame.

Picture:



6. WORK: HANOI – HAI PHONG EXPRESSWAY

Location: Connect Hanoi City and Hai Phong City through the territory of Hung Yen and Hai Duong provinces.

Toan Phat provides: Processing of handrail, guardrail and fence frame.

Picture:



APPENDIX