Resettlement Due Diligence Report

Project Number: 46391-001
July 2016

VIE: Ha Noi and Ho Chi Minh City Power Grid Development Sector Project

Prepared by the Hanoi Power Corporation for the Asian Development Bank (ADB)

Resettlement Due Diligence Report

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Viet Nam: Ha Noi and Ho Chi Minh City Power Grid Development Sector Project

(EVN HN: Building the underground cable 110kV Tay Ho – Yen Phu subproject)

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ABBREVIATIONS

ADB	:	Asian Development Bank
AH	:	Affected Household
DCC	:	District Compensation Committee
EVN	:	Vietnam Electricity
EVN Hanoi	:	Hanoi City Power Corporation
EVNNPT	:	National Power Transmission Corporation
GoV	:	Government of Vietnam
SS	:	Substation
PC	:	People's Committee
PMB	:	Project Management Board

ELECTRICAL TERMINOLOGY

kV	(kilovolt)	-	1,000 volts
MW	(Megawatt)	-	1,000 kW
MVA	(Megavolt-ampere)	-	1,000 kVA
Transmission System		-	500 kV, 220 kV, 110 kV lines
Medium Voltage Distribution (MV)		-	35 kV, 22 kV or 10 kV lines supplying distribution substations
Low Voltage Distribution (LV)		-	400/230 V distribution and service lines
Load Factor		-	Ratio of average power demand to maximum power demand
Electrical Losses		-	Difference between energy delivered and energy sent out

REMARKS

In this report, "$" refers to US dollars.

Executive Summary

1. The 110 kV underground cables Tay Ho – Yen Phu subproject is among twenty-seven(27) non-core subprojects of the EVN Ha Noi of Hanoi and Ho Chi Minh City Power Grid Development Sector Project financed by the Asian Development Bank (ADB).

2. This Due Diligence Document is prepared for the 110 kV underground cables Tay Ho – Yen Phu subproject.

3. The 110 kV cable line has a total length of 6,102.79m, all of which are underground. As the cable line is arranged inside the underground technical boxes which are already existing or will be built beneath the roads, the construction of the 110 kV Tay Ho-Yen Phu underground cable line will not cause any land acquisition or social safeguard impact.

4. However, in order to ensure that the project's impacts are well managed, a due diligence report (DDR) is prepared to serve as a social safeguard document of the subproject.

I. Introduction

1. Objectives of the Subproject

5. The construction of the "110 kV Tay Ho-Yen Phu underground cable" is among the non-core subprojects of the Hanoi and Ho Chi Minh City Power Grid Development Sector Project financed by the Asian Development Bank (ADB). The Subproject is implemented in the areas of Phu Thuong, Nhat Tan, Quang An, Tu Lien, Yen Phu in Tay Ho District and Truc Bach wards in Ba Dinh District of Hanoi City.

6. The construction of the "110 kV Tay Ho-Yen Phu underground cable" aims to:

   i. Increase the reliability of power supply for Hanoi Capital.

   ii. Increase power supply for Ba Dinh and Tay Ho districts, thereby reducing the loads for the 110 kV Chem-Yen Phu-Hoan Kiem Lake-Tran Hung Dao-Mai Dong TL which is currently overloaded, especially in case of incidents.

   iii. Reduce the loads of the 220/110 Tay Ho SS and increase power supply for 110 kV Yen Phu SS.

   iv. Play a connecting role between the 220 kV Tay Ho SS and 110 kV Yen Phu SS, enhance the grid reliability, and meet the uninterrupted power demands of the critical loads of the city.

2. Main Features of the Subproject

7. The 110 kV Tay Ho-Yen Phu underground cable has the following main features:

   - Starting point : Bays numbered E08, E09 of the 220 kV Tay Ho SS
   - Ending point : Bays numbered E07, E08 of the 110 kV Yen Phu SS
   - Total length : 6,102.79m

8. Starting from the switchgear of the 220 kV Tay Ho SS, the cable line goes inside a cable trench (which is built under another project), reaching the Alley No. 15 on An Duong Vuong Road and then going along the AN Duong Vuong-Au Co-Nghi Tam 5-meter frontage road. Then the cable line will cross to reach Yen Phu Road-Phu Duc Chinh Street-Chau Long Street and then terminate at the 110 kV Yen Phu SS.

9. The cable line has to cross over some locations as follows: below Nhat Tan Bridge, Lac Long Quan-An Duong Vuong T-junction; Au Co-Xuan Dieu T-junction, Thanh Nien-Yen Phu-Nghi Tam crossroad, and Pho Duc Chinh-Chau Long T-junction with highly traffic density.

10. The cable line has large navigating angles as the followings: the turning angle of the Alley No. 15 An Duong Vuong, from the Alley No. 15 An Duong Vuong to the 4-meter frontage road at the flower garden near Nhat Tan Bridge (Phu Thuong traffic intersection), and from Chau Long to 110 kV Yen Phu SS.

3. Mitigation Measures

11. The alignment of the cable line mostly goes along the frontage road (dike road) with narrow width ranging from 3.5m to 6m and crowded inner-city roads. The selection of the route alignment has been considered by the Design Consultant and Hanoi DPMB and the selected alignment is entirely in line with the alignment of Hanoi Urban Planning Institute and Hanoi Department of Planning and Architecture.

12. The option of cable line going underground is appropriate for the successive construction method. The construction sections will be fenced. The scope of the construction is bounded by the length of the cable line and the width that is large enough for 5-ton trucks transporting soil. The construction of the cable line is carried out by machines combined with manual works at nights. During the days, the cable trench is filled with sand and covered with thick steel plate so that vehicles can travel as normal.

Hình 1.1. Sơ đồ vị trí Tuyến cáp ngầm 110kV Tây Hồ - Yên Phụ

Figure 1. Location of the 110 kV underground cables 110kV Tay Ho – Yen Phu

II. Methodology

13. A number of research methods were utilized for the purpose of the due diligence review, including:

- Desk study method was utilized to review the project documents including (i) Feasibility Study Report of 110 kV underground cable Tay Ho – Yen Phu Subproject; (ii) Environmental Impact Assessment Report of the Subproject.
- Field visits were organized to the project area in order to observe and assess the project impacts.

III. Scope of impacts of the Subproject

14. The Subproject has large scale and is located in the area with highly traffic density and narrow roads. Specifically:

1 Starting point at the 220 kV Tay Ho SS

15. Currently the 220 kV Tay Ho SS is being built in form of a gas-insulated switchgear (GIS) substation. All of the 110 kV equipment is installed as modules in the 110 kV GIS distribution room.

16. The cable line from the cable box in the 110 kV GIS distribution room goes inside the cable trench system within the boundary of the 220 kV Tay Ho SS. When going outside the SS, the cable line turns right and goes into the existing cable trench to the Alley No. 15 on An Duong Vuong Road.

2 Alley No. 15 An Duong Vuong

a. Current state of the Alley No. 15 An Duong Vuong (the direction from 220 kV Tay Ho SS)

17. The Alley No. 15 An Duong Vuong is concrete road with the width from 8m to 10m. The following cables and underground works at the alley are as follows:

- One (01) double-circuit 110 kV underground cable line (six cable conductors) of the E.21 110 kV Nhat Tan SS goes along and is 1m from the left roadside. The cable line is put inside HDPE pipe and buried directly under the ground at a depth of about 1.8m to 2.5m in accordance with the design.
- One (01) 22kV medium-voltage underground cable including the bays numbered 471, 473, 475, 478, 480, and 482 of the E.21 Nhat Tan SS goes along and 0.8m from the right roadside at the depth of 0.8m to 1.2m.
- At the T-junction next to the packaging building, there is a cable line crossing over the road and then turning back near the E.21 SS. The cable line is 0.5m from the left roadside and goes in parallel with the existing 110 kV cable line, which is 0.5m from the 110 kV underground cable.
- At the tower No. 1 in front of the Cultural House of the Residential Group No. 7, two cable lines cross over the road and one of which goes along the right roadside. The cable line goes to and across An Duong Vuong dyke.

b. Alignment of the cable line

- The cable line under Alley No. 15 goes in the middle of the road. The cable trench is designed with the width of 1.5m and depth of 2.2m. As such, the distance from the underground cable to the existing 110 kV and 22 kV underground cable lines ensures

the safe distance.

- At the T-junction next to the packaging building and tower no. 1 in front of the Cultural House of the Residential Group No. 7, the 110 kV Tay Ho-Yen Phu underground cable line crosses over medium voltage cable lines. At these locations, the cable will be arranged to run under the existing cable lines and the distance from the cable to the existing lines is more than 0.5m to ensure the safety in accordance with the regulations on electricity equipment.
- It is expected that one (01) duct to connect cable lines and two (02) ducts to bend cables will be built on Alley 15 An Duong Vuong to ensure technical specifications and requirements during construction.
- The cable line will run under and to the end of the Alley No 15 An Duong Vuong (30m) and then turn right to the new frontage road of Nhat Tan Bridge Project.

3. At the 5m frontage road from An Duong Vuong to Lac Long Quan T-Junction

a. Current state of the 5m frontage road from An Duong Vuong (in the direction from the end of Alley 15 An Duong Vuong) to Lac Long Quan T-junction.

18. The 5m frontage road is a concrete road and located under the An Duong Vuong dyke road. Currently at this location, there are the underground cable lines and works as follows:

- One (01) 110 kV underground cable line composed of six (06) conductors that go in parallel and are 4.3m from the existing 5m frontage road.
- The 22 kV medium voltage cable routes including 471, 473, 478, 480, and 482, and two (02) connecting cables of the E1.21 Nhat Tan SS. These 22 kV cable lines are at the right side of the existing 5m frontage road.
- Currently on the 5m frontage road, the section from Alley No. 15 An Duong Vuong to Lac Long Quang T-junction, two bridge approach roads are being built. These roads belong to the Phu Thuong intersection construction component under Nhat Tan Bridge Project managed by the PMU of Project 85. In accordance with the Phu Thuong intersection engineering design, the PMU of Project 85 will build a new frontage road which is about 27m to 29m from the existing 5m frontage road and a cable trench which will go through the pass roads to Nhat Tan Bridge.

b. Alignment of the cable line

19. Due to the construction of the roads and bridge on the existing 5m frontage road, the underground cable line no longer traverses the existing 5m frontage road, but through the new frontage road. Details are as follows:

20. From the Alley No. 15 An Duong Vuong, the 110 kV Tay Ho-Yen Phu underground cable will go through the cable trench and run beneath the new frontage road. The cable line is 1m from the right side of the road. The cable trench is 1.5m in width and 2.2m in depth.

21. The distance from the 110 kV Tay Ho-Yen Phu underground cable to the existing 110 kV underground cable line is about 24m, which will cause no impacts on the existing cable line. The distance of the proposed underground cable to the existing 22 kV medium voltage cable line is 28m to ensure the safety distance and requirements.

22. As for the cable section at the flower garden at Phu Thuong intersection at the beginning of Nhat Tan Bridge, from the location No. 4 to location No. 5, cable trench and HDPE pipe with the length of 451.72m have already been built during the previous phase of the project “Construction of cable trench for the 110 kV Tay Ho-Yen Phu underground cable line at Phu

Thuong intersection". Therefore, during this phase, additional works related to cable pulling at this location will be carried out.

4. At Lac Long Quan T-Junction

a. Current state of Lac Long Quan T-junction

23. Lac Long Quan T-junction is the intersection of three roads, namely Lac Long Quan, An Duong Vuong, and Au Co. The Lac Long Quan T-junction is about 30m wide and covered with asphalt. The following underground cables and works are existing at this location:

- The routes 478 and 482 of the E1.21 Nhat Tan SS turns to the odd-numbered side of Lac Long Quan Road.
- The route 473 of the E1.21 Nhat Tan SS crosses the 5m road and An Duong Vuong dyke and then turns to Alley No. 464 on Au Co Road.
- The route 480 of the E1.21 Nhat Tan SS crosses Lac Long Quan Road to the even-numbered side of Lac Long Quan Road and then goes along Lac Long Quan Road.
- The route 471 of E1.21 Nhat Tan SS and two interconnecting cable routes cross Lac Long Quan Road to the Au Co dyke road.

b. Alignment of the cable line

24. At the Lac Long Quan T-junction, the 110 kV Tay Ho-Yen Phu underground cable goes inside the existing cable trench and runs in parallel with the cable routes no. 471 E1.21 and two interconnecting cable routes of the E1.21 Nhat Tan SS and then crosses to reach the existing Au Co dyke road. The distance from the proposed cable line to these 22 kV cable routes is always more than 0.5m to ensure the safety for these cables lines.

25. At the intersection with the 22 kV cables lines, namely 478 and 480 of the E1.21 110 kV Nhat Tan SS, the proposed 110 kV underground cable line will be arranged under the medium voltage cable lines. The distance between the 110 kV cable line to the nearest medium voltage cable is 0.6m to ensure the safety distance for these cables during operation.

5. 5m frontage road from Lac Long Quan T-junction to Xuan Dieu-Au Co T-junction

a. Current state of the 5m frontage road from Lac Long Quan T-junction to Xuan Dieu-Au Co T-junction (in the direction from Lac Long Quan T-junction)

26. The 5m frontage road at this section is asphalted and concrete road. To the left side of the frontage road is Au Co dyke road whereas to the right side is residential houses. The underground cable lines and works on this road section are listed below:

- The 22 kV cable line, route 471 E1.21, runs under the sidewalk in front of people's houses along the 5m frontage road and then turns to Xuan Dieu Road. Two interconnecting cable routes go in the middle of the 5m frontage road and then turn to Xuan Dieu Road. The depth of these routes to the road surface is about 1m in accordance with the design.
- Under this road are about 30 low voltage underground cables from the pillar, which cross the 5m frontage road to people's houses. The distance of these low voltage cable lines to the road surface is about 0.3m to 0.5m.
- Along the left side of the frontage road is a drainage ditch with a width of 0.8m and a depth of about 0.6m. Along the frontage road, there are about 10 locations where the drainage ditch cuts across the road to people's houses.
- Along and 1m from the right side of the frontage road is a clean water pipeline (f

160mm). The pipeline is located 0.7m under the road surface.

b. Alignment of the cable line

27. Due to the narrow road with several underground works along and across the road, to ensure the distance between the proposed 110 kV Tay Ho-Yen Phu cable line and other underground works, the cable line will be arranged in a triangular shape. The size of the cable trench is expected to be 1.5m in width and 2.2m in depth from the road surface. At the narrow locations, the cable will be arranged in a vertical direction; the width of the cable trench is 1m while the distance of the trench to the road surface is 2.5m. From the location No. 7 to location No. 8, the proposed cable line is arranged to go in the same direction with the existing 22 kV cable line.

28. Specifically, the cable will go along the right side of the 5m frontage road and about 0.1m to 0.2m from the road side. Therefore, the distance from the 110 kV cable line to the nearest 22 kV medium voltage cable line stills ensure the safety for both cable lines.

29. At the locations crossing with the low-voltage cable and drainage ditch, the cable line is arranged to run under these underground works. The cable trench will be shifted to the edge of the right roadside. Hence, the horizontal distance between the 110 kV cable line and 22 kV cable line still ensures at 0.5m; and the vertical distance between the 110 kV cable line and low-voltage cable lines is still more than 0.5m. The vertical distance from the 110 kV cable line to the drainage ditch still meets the safety requirements.

30. On the entire road section, four (04) ducts will be built to connect cables to ensure technical requirements of the cable line as well as convenience during construction.

6. 5m frontage road from Xuan Dieu-Au Co T-junction to Au Co-Nghi Tam-Yen Phu crossroad

a.Current state of the 5m frontage road from Xuan Dieu-Au Co T-junction to Au Co-Nghi Tam-Yen Phu crossroad (in the direction from Xuan Dieu-Au Co T-junction).

31. The 5m frontage road at this section is asphalted and concrete road. To the left side of the frontage road is Au Co dyke road whereas to the right side is residential houses. The underground cable lines and works on this road section are listed below:

- At the end of the road that meets Nghi Tam-Au Co (about 200m from the Au Co-Nghi Tam-Yen Phu crossroad) is a 22 kV cable line including route 471 of the E8 110 kV Yen Phu SS which goes along the odd-numbered side of Xuan Dieu Road and then turns to 5m frontage road. The cable line runs under the sidewalk in front of people's houses along the 5m frontage road and then turns to Alley No. 1 on Au Co Road. Two interconnecting cable routes go in the middle of Xuan Dieu Road and then turn to 5m frontage road. The routes then run in the middle of the 5m frontage road to Yen Phu Street.
- Under this road are about 22 low voltage underground cables from the pillar, which cross the 5m frontage road to people's houses. The distance of these low voltage cable lines to the road surface is about 0.3m to 0.5m.
- Along the right side of the frontage road is a drainage ditch with a width of 1m and a depth of about 0.6m. Along the frontage road, there are about 3 locations where the drainage ditch cuts across the road to people's houses.
- Along and 1m from the right side of the frontage road is a clean water pipeline (f 160mm). The pipeline is located 0.7m under the road surface.

b. Alignment of the cable line

32. For this section, there is almost no cable line along the 5m frontage road, except for the end of the road section where there are some medium voltage cable lines. To facilitate the construction and reduce construction cost, the cable line is mainly arranged in triangular shape. The cable trench is 1.5m in width and about 2.2m in depth.

33. The cable line will be 0.7m to 1m from the right edge of the road. At the intersections with the drainage ditch and low-voltage cable line, the cable line will be placed under these underground works. Such arrangement will make the intersections easier and more convenient. The minimum distance to ensure safety for these underground works is 0.5m.

34. To the end of the road, about 200m from Au Co-Nghi Tam-Yen Phu crossroad, the cable line is arranged in a vertical direction and the same alignment with the existing 22 kV cable line to ensure the safety distance of 0.5m at the minimum. With the cable arrangement in a vertical distance, the trench will be only 1m in width, which always meet the distance requirement of 0.5m and above from the 110 kV underground cable to the existing 22 kV cable line.

35. On the entire road section, two (02) ducts will be built to connect cables to ensure technical requirements of the cable line as well as convenience during construction.

7. Nghi Tam 5m frontage road from Au Co-Nghi Tam-Yen Phu crossroad to Nghi Tam-Yen Phu-Thanh Nien T-junction

a. Current state of the Nghi Tam 5m frontage road from Au Co-Nghi Tam-Yen Phu crossroad to Nghi Tam-Yen Phu-Thanh Nien T-junction (in the direction from Au Co-Nghi Tam-Yen Phu crossroad)

36. The 5m frontage road at this section is asphalted road. To the left side of the frontage road is Nghi Tam dyke road whereas to the right side is residential houses. The underground cable lines and works on this road section are listed below:

- The 22kV medium-voltage cable line (route 471) of the E1.8 Yen Phu SS from 3B An Duong SS to the beginning of Nghi Tam alley runs under the sidewalk in front of people's houses.
- Under this road are about 15 low voltage underground cables from the pillar, which cross the 5m frontage road to people's houses. The distance of these low voltage cable lines to the road surface is about 0.3m to 0.5m.
- Along the left side of the frontage road is a drainage ditch with a width of 0.8m and a depth of about 0.6m. Along the frontage road, there are about 6 locations where the drainage ditch cuts across the road to people's houses.

b. Alignment of the cable line

37. From the location No. 16 to location No. 18: cable is arranged in triangular shape with the width of 1.5m and the depth of 2.2m. The cable line will be 0.1m from the right edge of the road. At the intersections with the drainage ditch and low-voltage cable line, the cable line will be placed under these underground works. The minimum distance to ensure safety for these underground works is 0.5m.

38. The distance between the 110 kV underground cable and the existing 22 kV cable line is about 3m, which will ensure safety for the medium-voltage cable line.

39. From the location No. 18 to location No. 19: the cable line is arranged in a vertical direction with the width of 1m and the depth of 2.5m. The cable line is 0.2m from the left side of the road.

40. On this road section, two (02) ducts will be built to connect cables to ensure technical requirements of the cable line as well as convenience during construction.

41. The cable route will run to the end of Nghi Tam frontage road and then veer to the right (at 30°) and cross Nghi Tam-Yen Phu-Thanh Nien T-junction to reach Yen Phu dyke road. At this important and crowded intersection, the construction activities must be carried out promptly and at nights to avoid disturbance to the traffic. In the mornings, the cable trench will be covered by a thick steel plate and the site will be returned.

8. At Yen Phu dyke road

a. Current state of Yen Phu dyke road (in the direction from Nghi Tam-Yen Phu-Thanh Nien T-junction)

42. Yen Phu dyke road is a two-lane asphalted road. The width of each lane is about 6m; along the sidewalk are large mahogany (Khaya senegalensis) trees.To the right side of the road is a drainage ditch of about 0.4m in width.

43. There is no underground cable on Yen Phu dyke road.

b. Alignment of the cable line

44. The cable line is arranged in a triangular shape and about 1.5m from the right edge of the road. The cable line on this road section will not cross any underground work.

45. The route will run on Yen Phu dyke road for about 200m and then turn to Pho Duc Chinh Road. As the Yen Phu dyke road is about 2.5m to 3m higher than Pho Duc Chinh Road, and to ensure the safety distance from the cable to the perennial tree, which is 2m, at this turning point, an automated robotic drilling will be used to install the cable. This will also ensure technical requirements as well as the landscape of the area.

46. On this road section, one (01) duct will be built to connect cables to ensure technical requirements of the cable line as well as convenience during construction.

9. At Pho Duc Chinh Road

a. Current state of Pho Duc Chinh Road

47. Pho Duc Chinh Road is asphalted road with the width of 5m to 6m. To the left side of the road are Yen Phu dyke road and people's houses and to the right side are people's houses. The underground works on the road are listed below:

- Two (02) 22 kV interconnecting cable routes at 1.2m to 1.8m from the right edge of the road, the distance of the cable to the road surface is about 1.1m in accordance with the engineering design.
- 0.8m from the left side of the road is a drainage along the road, the culvert is about 0.8m in width and 1m in depth.

b. Alignment of the cable line

48. After using automated robotic drilling from Yen Phu dyke road to Pho Duc Chinh Road to install the cable, the line will go along the right side of Pho Duc Chinh Road and be 1.2m to 2.4m to the right edge of the road, depending on each road section with different width. The cable line is arranged in a vertical direction; the width of the trench is about 1.0m while the depth from the cable to the road surface is about 2.5m. The cable line is placed in a parallel with the existing 22 kV cable line.

49. The distance from the proposed 110 kV cable line to the existing 22 kV cable line ensures a minimum distance of 0.5m.

50. The road section has a conduct to connect cable. From which the cable line will turn right to Chau Long Street.

10. At Chau Long Street

a. Current state of Chau Long Street

51. Chau Long Street is asphalted and about 6m in width. Along both sides of the street are people's houses.

52. Currently under the street are drainages with the size of LxWxD=1.2x1x1m in the middle and to the left side of the street.

b. Alignment of the cable line

53. At Chau Long Street, the cable is arranged in triangular shape with the width of 1.5m and the depth of 2.2m.

54. From the location No. 23 to Truc Bach T-junction, the road will run about 0.7m from the right edge of the road.

55. From Truc Bach T-junction to the location No. 24, the cable line will go along the left side of the road to avoid the culvert.

56. On Chau Long Street, a duct to bend cable will be built to connect the cable line to the 110 kV Yen Phu SS.

11. At the ending point (EP) 110 kV Yen Phu SS

57. Currently there is a project to renovate the 110 kV Yen Phu SS into a GIS substation. Therefore, all of the 110 kV equipment is invested and synchronized. The cable trench system is built from the substation fence to the 110 kV GIS distribution room.

58. After the cable line from Chau Long Street turns to 110 kV Yen Phu SS, the cable line will go inside the available cable trench to the 110 kV GIS distribution room. Here the cable will be paired with the 110 kV equipment module by a terminal block.

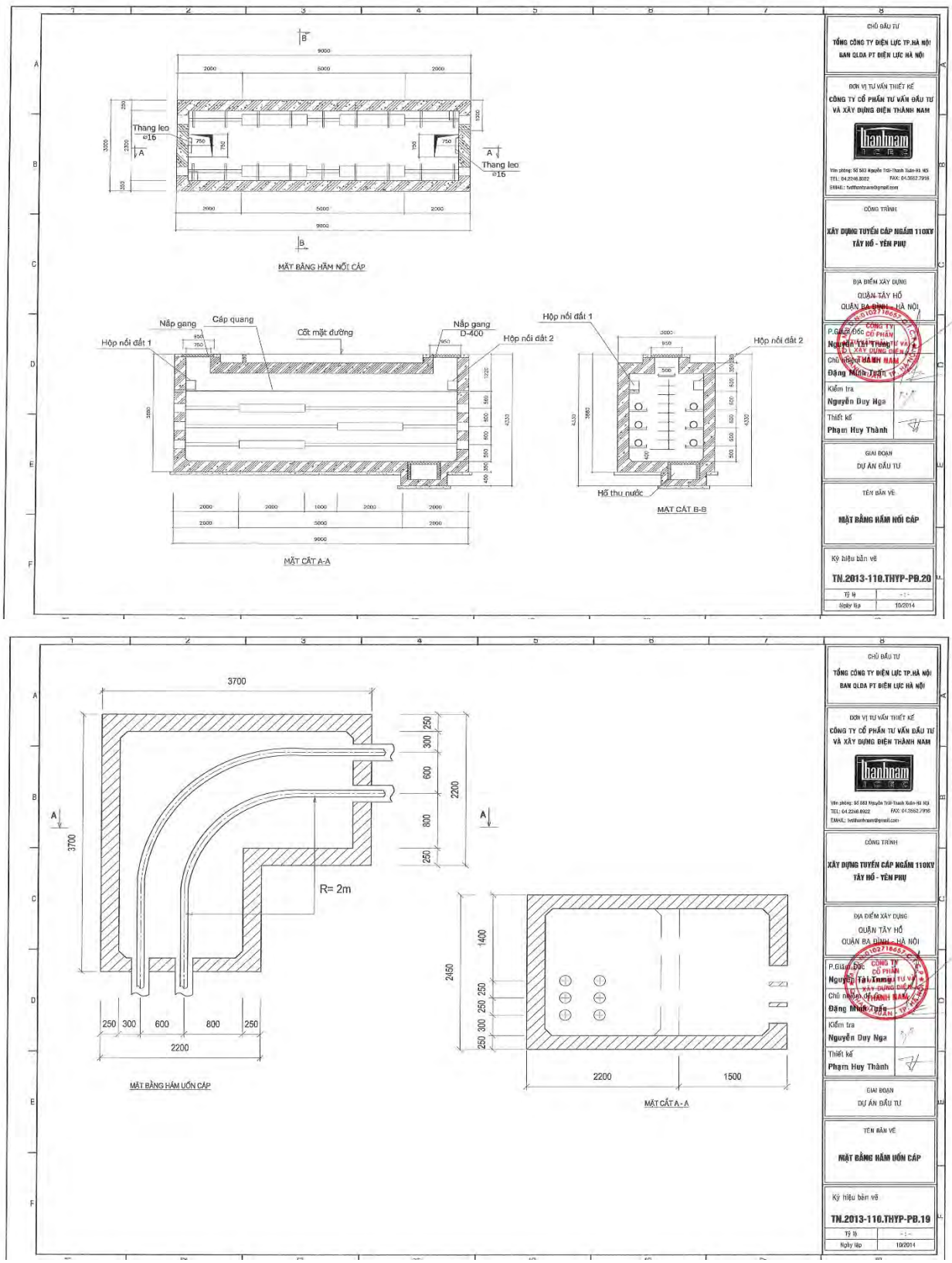

Figure 2. Cable arrangement option inside the cable trench

59. As the cable line is arranged inside the underground technical boxes which are already existing or will be built beneath the roads, the construction of the 110 kV Tay Ho-Yen Phu underground cable line will not cause any land acquisition or social safeguard impact.

60. Furthermore, the alignment of the cable line has been approved by the local authorities and Department of Industry and Trade via the following documents:

- Official document No. 3056/SCT-QLDN dated July 30, 2013 by the Department of Industry and Trade confirming the consistency with the power development planning;
- Official document No. 667/UBND-QLDT dated August 4, 2014 by Tay Ho District People's Committee on the alignment of the 110 kV Tay Ho-Yen Phu underground cable;
- Official document No. 2014 by Ba Dinh District People's Committee commenting the alignment of the 110 kV Tay Ho-Yen Phu underground cable line;
- Official document No. 4730/QHKT-P7 Hanoi, dated November 4, 2014 by Hanoi Department of Architecture and Planning on the alignment of the 110 kV Tay Ho-Yen Phu cable line.
- Official document No. 2529/SNN-DD dated November 26, 2014 by the Department of Agriculture and Rural Development on the engineering design of the 110 kV Tay Ho-Yen Phu cable line.
- Official document No. 997/PCTH-P.KTAT dated July 9, 2014 by Tay Ho Power Company specifying the medium-voltage cable lines along the 110 kV Tay Ho-Yen Phu cable line.

IV. Conclusions

61. The construction of the cable line will not cause land acquisition impact as well as disruption to the businesses of the stores along the roads.

62. Although the construction activities will cause short-term nuisances to the traffic, the construction unit will carry out successive construction method and avoid peak hours to minimize traffic obstruction.

Appendix

Pictures of the underground cable alignment by sections.

1. Starting point at the 220 kV Tay Ho SS

2. Alley No. 15 An Duong Vuong

3. At the 5m frontage road from An Duong Vuong to Lac Long Quan T-Junction

4. At Lac Long Quan T-Junction

5. 5m frontage road from Lac Long Quan T-junction to Xuan Dieu-Au Co T-junction

6. 5m frontage road from Xuan Dieu-Au Co T-junction to Au Co-Nghi Tam-Yen Phu crossroad

7. Nghi Tam 5m frontage road from Au Co-Nghi Tam-Yen Phu crossroad to Nghi Tam-Yen Phu-Thanh Nien T-junction

8. At Yen Phu dyke road

9. At Pho Duc Chinh Road

10. At Chau Long Street

11. At the ending point (EP) 110 kV Yen Phu SS