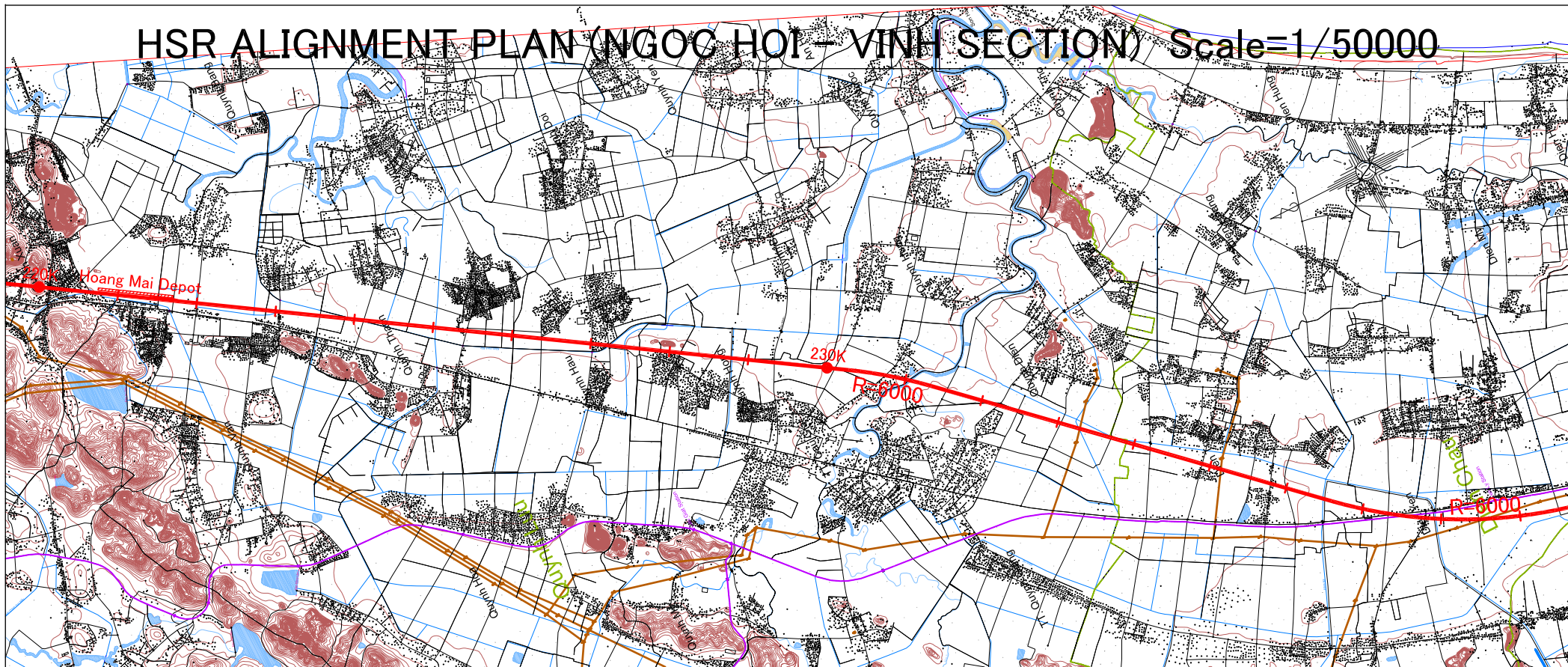
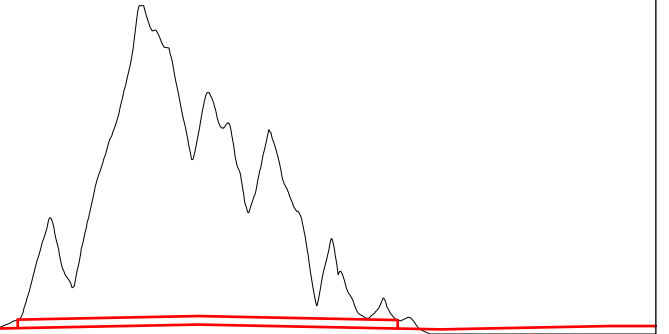
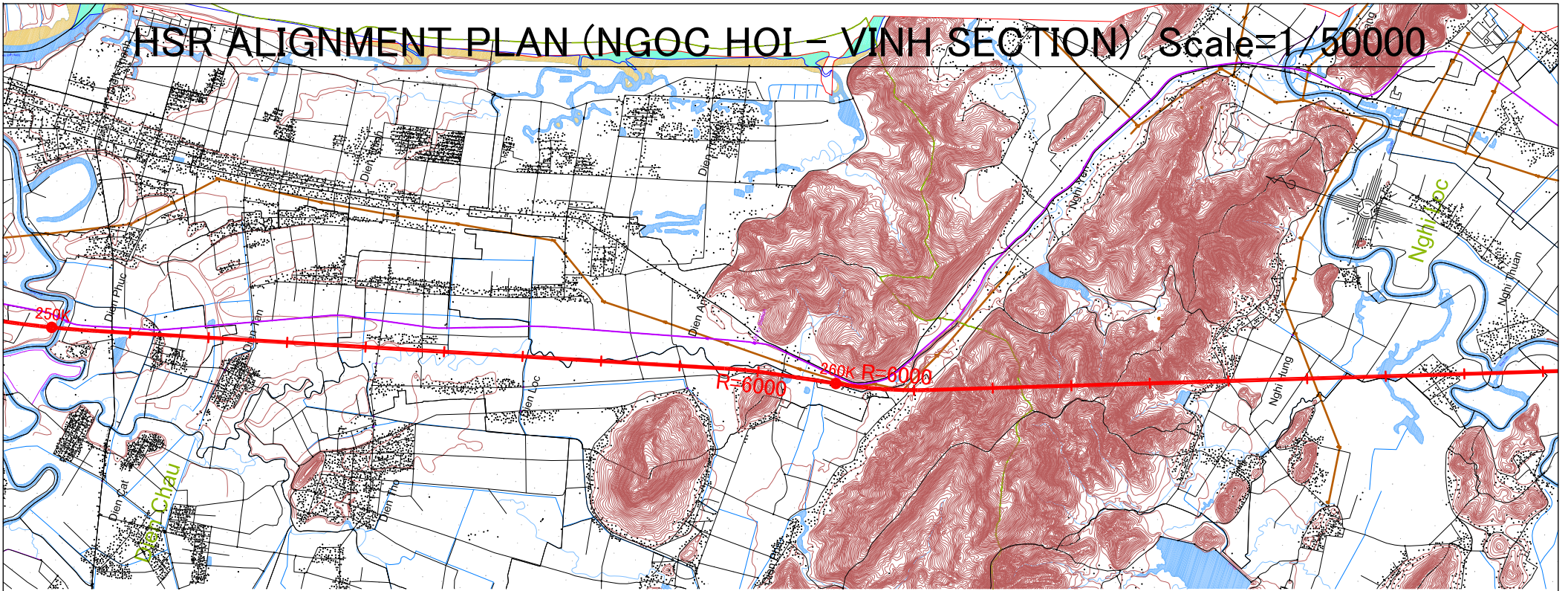


HSR ALIGNMENT PLAN (NGOC HOI – VINH SECTION) Scale=1/50000



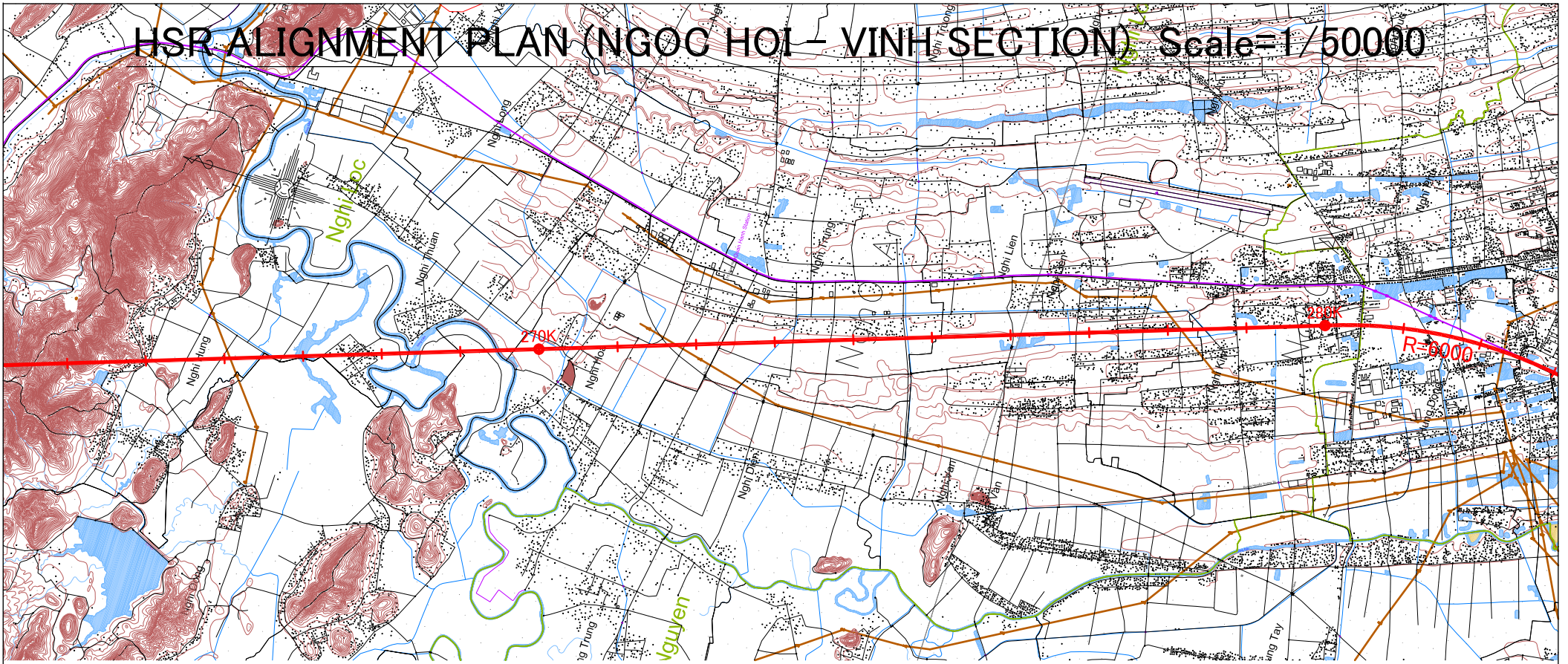
LONGITUDINAL GRADE (%) DO DOC DOC (%) (m)																				
FINISH ELEVATION (M) CAO DO THIET KE (M)	12.8 12.0	10.2	8.2	6.2	4.6	4.6	4.6	4.6	4.7	6.7	8.7	10.7	12.6	12.4	10.4	8.4	7.0	7.5	9.5	11.5
EXISTING ELEVATION (m) CAO DO TU NHEN (m)	5.0 5.0	5.0	3.6	2.5	2.4	2.4	2.4	2.3	4.5 4.4	2.5	2.5	2.5	3.5	3.7	3.4	2.5	2.5	2.5	2.5	2.5
ACCUMULATED DISTANCE (m) KHOANG CACH CONG DON (m)	221000.00 221074.00	222000.00	223000.00	224000.00	224763.00	225000.00	226000.00	227000.00	227967.00 228000.00	229000.00	230000.00	231000.00	231932.00 232000.00	233000.00	234000.00	234730.00	235000.00	236000.00	237000.00	237000.00
HORIZONTAL GEOMETRY DUONG THANG, DUONG CONG	L=10719m										R=6000m L=1064m		L=5255m							

HSR ALIGNMENT PLAN (NGOC HOI - VINH SECTION) Scale=1/50000



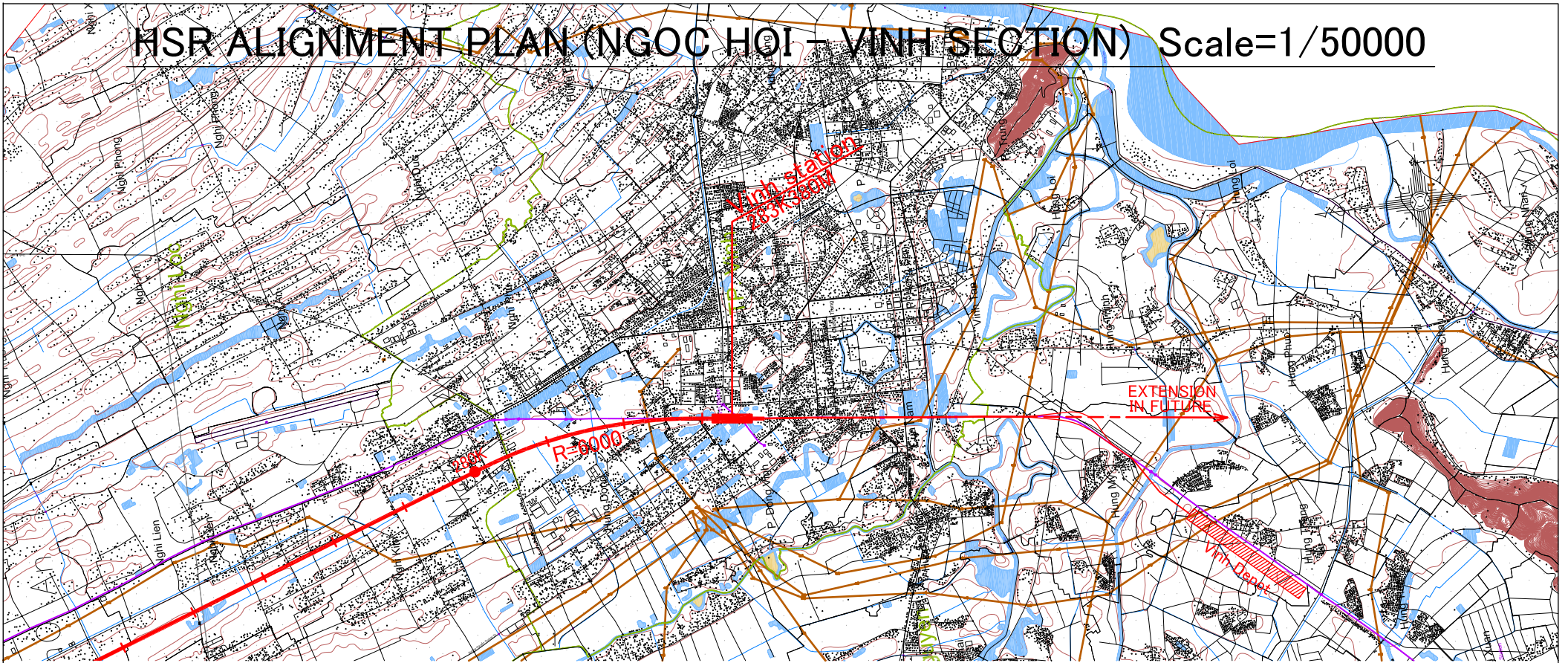
LONGITUDINAL GRADE (%) DO DOC DOC (%) (m)	i=0.2% L=90.00m		F=0.0% L=2067.00m			i=0.2% L=1881.00m			F=0.0% L=5046.00m			i=0.2% L=2306.00m		i=0.2% L=2294.00m		i=0.2% L=1606.00m								
FINISH ELEVATION (M) CAO DO THIET KE (M)	6.7	5.5	5.5	5.5	5.5	6.2	8.2	9.3	9.3	9.3	9.3	9.3	10.1	12.1	13.9	13.7	11.7	9.7	9.3	10.9	12.5	12.5		
EXISTING ELEVATION (m) CAO DO TU NHEN (m)	1.0	1.7	1.0	2.9	2.6	2.2	4.7	4.8	4.7	4.9	5.0	6.8	5.0	5.0	10.0	166.1	191.9	232.9	41.8	9.3	5.0	5.0	5.0	
ACCUMULATED DISTANCE (m) KHOANG CACH CONG DON (m)	251000.00	251600.00	252000.00	253000.00	253667.00	254000.00	255000.00	255548.00	256000.00	257000.00	258000.00	259000.00	260000.00	260594.00	261000.00	262000.00	262900.00	263000.00	264000.00	265000.00	265194.00	266000.00	266800.00	267000.00
HORIZONTAL GEOMETRY DUONG THANG, DUONG CONG	L=7963m						R=6000m L=554m		L=982m		L=1092m R=6000m													

HSR ALIGNMENT PLAN (NGOC HOI - VINH SECTION) Scale=1/50000



LONGITUDINAL GRADE (%) DO DOC DOC (%) (m)	F=0.2% L=1606.00m		F=0.0% L=2773.00m		F=0.2% L=3707.00m		F=0.2% L=3588.00m		F=0.0% L=4197.00m		F=1.0% L=1070.00m											
FINISH ELEVATION (M) CAO DO THIET KE (M)	10.9	12.5	12.5	12.5	12.5	11.6	9.6	7.6	5.6	5.1	6.5	8.5	10.5	12.3	12.3	12.3	12.3	12.3	12.3	12.3	21.7	
EXISTING ELEVATION (m) CAO DO TU NHIEU (m)	5.0	5.0	5.0	3.7	3.0	1.6	3.0	2.3	3.0	2.8	2.8	2.9	3.0	3.0	3.1	3.1	4.0	4.0	4.2	4.8	4.8	5.0
ACCUMULATED DISTANCE (m) KHOANG CACH CONG DON (m)	266000.00	266800.00	267000.00	268000.00	269000.00	269573.00	270000.00	271000.00	272000.00	273000.00	273274.00	274000.00	275000.00	276000.00	276863.00	277000.00	278000.00	279000.00	280000.00	281000.00	281060.00	282000.00
HORIZONTAL GEOMETRY DUONG THANG, DUONG CONG	L=18900m																				R=6000m L=2779m	

HSR ALIGNMENT PLAN (NGOC HOI – VINH SECTION) Scale=1/50000



Vinh station
283790+00

LONGITUDINAL GRADE (%) DO DOC DOC (%) (m)	F=0.0% L=1197,00m		F=1.0% L=1070,00m		Railway F=0.0% L=1660,00m	
	FINISH ELEVATION (M) CAO DO THIET KE (M)	12.3	12.3	12.3	12.3	21.7 23.0
EXISTING ELEVATION (m) CAO DO TU NHIEU (m)	4.0	4.0	4.2	4.8 4.8	5.0 5.0	5.0 4.7
ACCUMULATED DISTANCE (m) KHOANG CACH CONG DON (m)	2780000.00	2790000.00	2800000.00	2810000.00 2810600.00	2820000.00 2821300.00	2830000.00 2837900.00
HORIZONTAL GEOMETRY DUONG THANG, DUONG CONG			R=6000m L=2779m		L=910m	

APPENDIX 8A

Estimate of Staff Requirement

1) Station

- Assignment – ticket issuance, ticket barrier, platform train operation, passenger guidance and etc.
- Calculation method of staff number
 - ①-1、Managers and administrators are calculated based on station scale which are classified into six patterns of A (80,000 or more passengers / day), B (80,000 ~50,000 passengers /day), C (50,000 ~ 30,000 passengers /day), D (30,000 ~ 10,000 passengers /day), E (10,000 ~ 5,000 passengers /day), and F (5 ,000 or lesspassengers /day)
 - ①-2、platform staffs: They are calculated based on the equipment conditions and train stop numbers at platform.
 - ①-3、ticket sale staffs and ticket gate staffs are calculated based on passengers number of entrainment and detrainment at each station

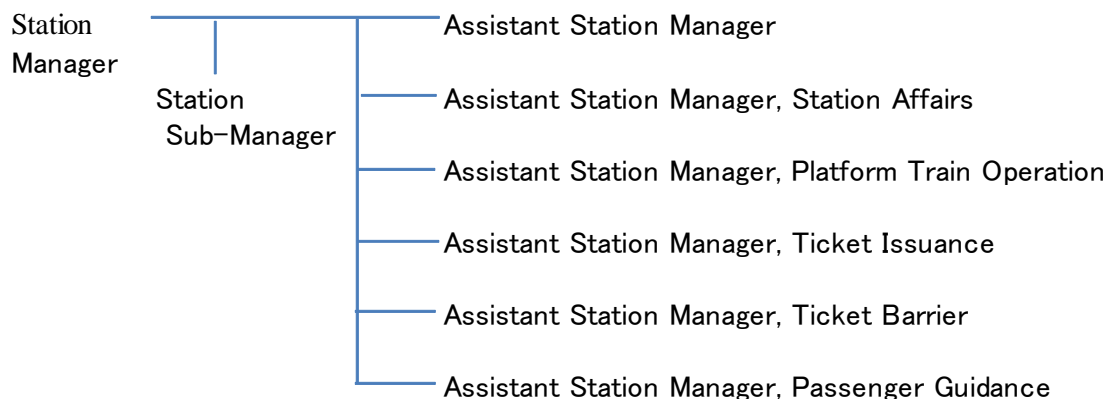
Table 8A.1 Passengers Number of Boarding and Alighting at each station

Ngoc Hoi - Vinh

	2030		2035		2040	
	Passengers number of boarding	Passengers number of alighting	Passengers number of boarding	Passengers number of alighting	Passengers number of boarding	Passengers number of boarding
Ngoc Hoi	36,426	35,861	46,423	45,703	59,165	58,247
Phu Ly	4,162	3,935	5,304	5,002	6,760	6,375
Nam Dinh	10,702	10,683	13,639	13,615	17,383	17,352
Ninh Binh	5,552	5,526	7,076	7,043	9,018	8,976
Thanh Hoa	9,515	10,048	12,126	12,806	15,455	16,320
Vinh	14,257	14,571	18,170	18,570	23,157	23,667

Source: JICA Study Team, 2012

- **Organization**



- **Number of employees**
- **Service – Day service under a one-shift service system**

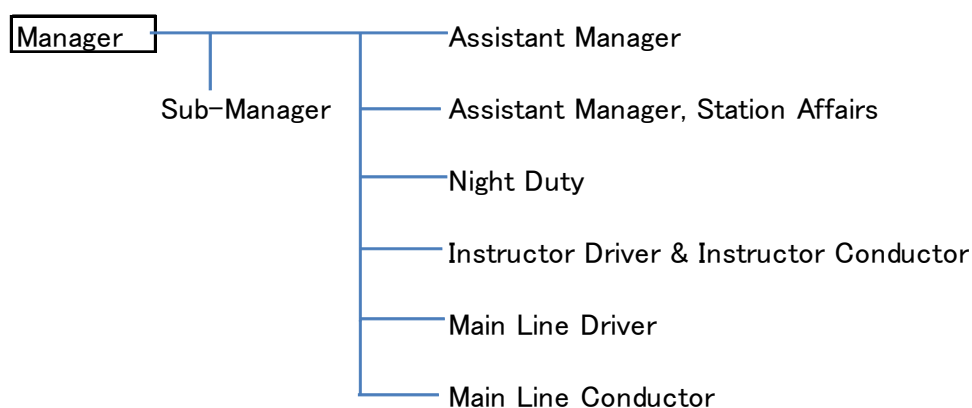
Table 8A.2 Number of Employees at Station

Section	Station	2030 year		2035 year		2040 year	
		Size of a station	Number of employees	Size of a station	Number of employees	Size of a station	Number of employees
Northern section	Ngoc Hoi	B	111	A	128	A	142
	Phu Ly	E	38	D	49	D	53
	Nam Dinh	D	56	D	60	C	68
	Ninh Binh	D	49	D	53	D	53
	Thanh Hoa	D	53	D	56	C	65
	Vinh	D	60	C	68	C	75
Total			367		414		456

Source: JICA Study Team, 2012

2) Train driver and conductor depot

- Assignment – Driver and conductor services
- A driver and two conductors are assumed to be on duty per train
- An instructor driver is assumed to be assigned per 20 main line drivers and an instructor conductor per 30 main line conductors.
- A train operation station and a conductor station are placed in each of the northern and southern sections.
- Organization



- Number of employees – We referred to the case of Tohoku and Joetsu Shinkansen.

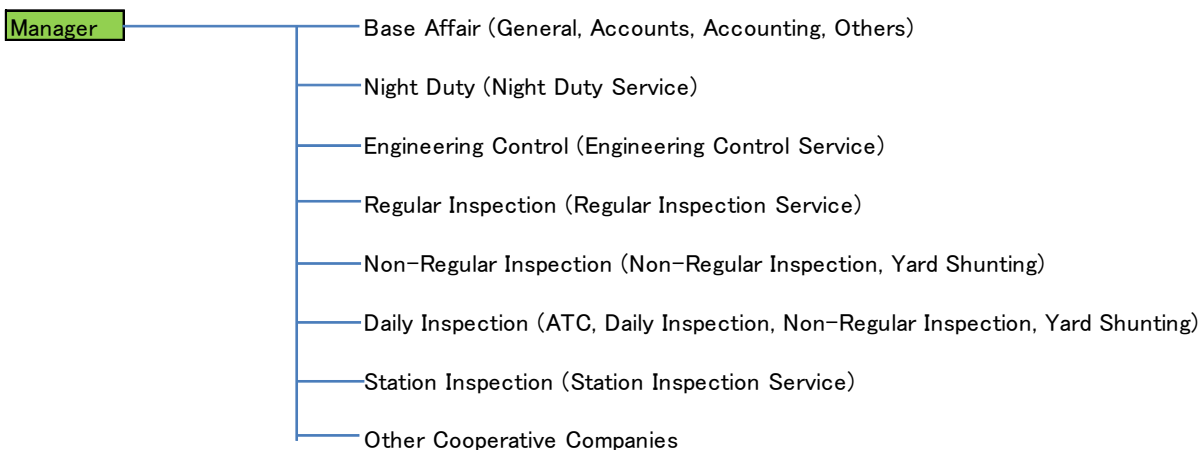
Table 8A.3 Number of Employees at Train Driver and Conductor Depot

	Depot	2030	2035	2040
Northern Section	Train driver	90	109	131
	Train Conductor	138	172	214
Total		228	281	345

Source: JICA Study Team, 2012

3) Inspection Base

- Assignment - Daily inspection and regular inspection
- Maintenance in and by the base in principle, but cleaning of rolling stock shall be outsourced.
- We assumed daily inspection for six train sets per day and regular inspection for two train sets per day.
- Organization



- Number of employees – We referred to the case of Tohoku Shinkansen.

Table 8A.4 Number of Employees at Inspection Base

		2030	2035	2040
Northern Section	Vinh Depot	82	90	98

Source: JICA Study Team, 2012

- Service – Day service under a one-shift service system
- Outsourcing costs of cleaning rolling stock

Number of rolling stock for outsourcing costs is as follows.

Table 8A.5 Number of Cleaning Rolling Stock

unit : number of train set

	2030	2035	2040
Northern Section (Ngoc Hoi ~Vinh)	23	27	32

Source: JICA Study Team, 2012

Referring to outsourcing costs of cleaning rolling stock in Japanese Tohoku Shinkansen , It was calculated as follows, considering manpower cost, rolling stock operation and etc. This price is at present and does not expect the inflation rate.

Table 8A.6 Outsourcing Costs of Cleaning Rolling Stock

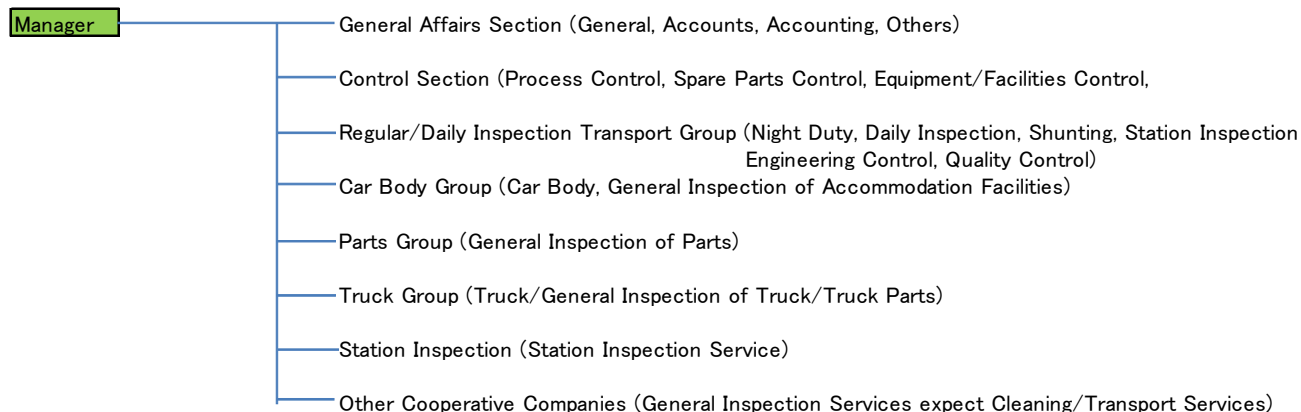
[unit : ten thousand yen]

	2030年	2035年	2040年
north section (Ngoc Hoi ~Vinh)	18,400 (2.36millionUS\$)	21,600 (2.77millionUS\$)	25,600 (3.28millionUS\$)

Source: JICA Study Team, 2012

4) Rolling Stock Workshop

- Assignment - Daily inspection, regular inspection, general inspection and important parts inspection
- Maintenance in and by the workshop in principle
- We assumed daily inspection for six train sets per day, regular inspection for two train sets per day and general and important parts inspections to a capacity approximately 40% that of the Sendai Shinkansen Integrated Rolling Stock Center.
- Organization



- Number of employees – We referred to the case of Tohoku Shinkansen.

Table 8A.7 Number of Employees at Rolling Stock Workshop.

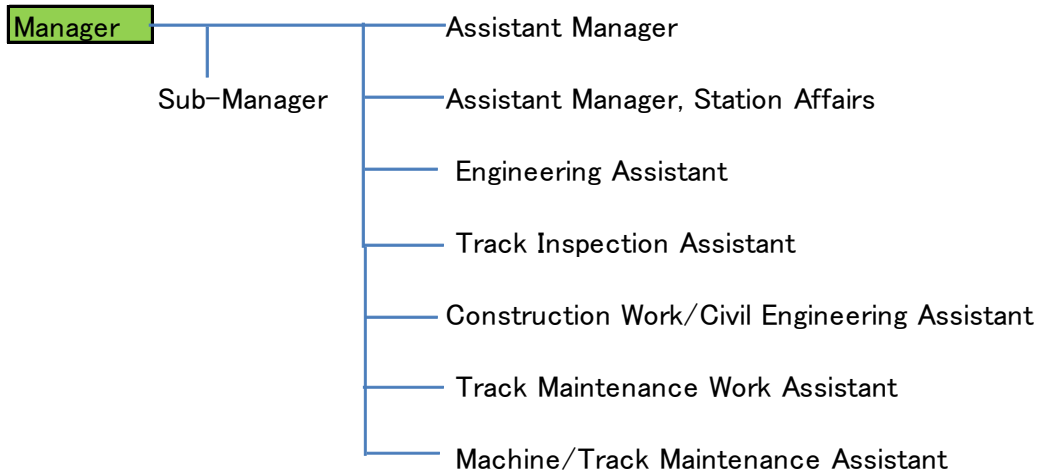
	2030 年	2035 年	2040 年
north section (Ngoc Hoi ~ Vinh)	18,400 (2.36millionUS\$)	21,600 (2.77millionUS\$)	25,600 (3.28millionUS\$)

Source: JICA Study Team, 2012

- Service – Day service under a one-shift service system

5) Equipment/Facilities Depot

- Assignment – Maintenance of tracks, structures and architectures
- Maintenance by the Depot in principle except some equipment/facilities such as ballast track to be maintained by outside organizations.
- We assumed Railway track is composed of the north section (50% ballast track, slab track 50%)
- We assign the Equipment/facilities dispatching to OCC.
- We place equipment/facilities depots at intervals of approximately 40 to 50 km (seven depots in the northern sections.)
- Organization



- Number of employees – Estimated with reference to the cases of Tokaido and San-yo Shinkansen railways and reflecting the improvement of the ballast track maintenance method thereafter.

Table 8A.7 Number of Employees at Equipment/Facilities Depot

	2030	2035	2040
Ngoc Hoi ~ Vinh (284 km)	496	- 545	595

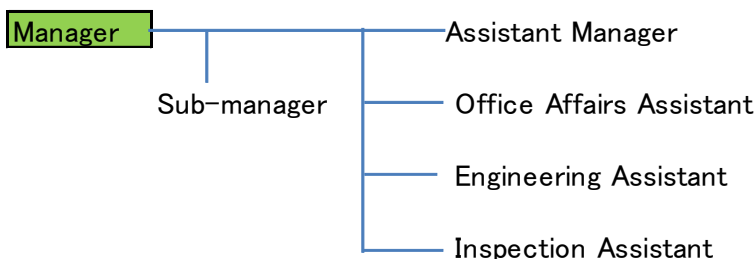
(Note) The number of employees in 2035 and 2040 are assumed to have increased 10% and 20%, respectively, from that in 2030 reflecting the increases in the number of trains.

Source: JICA Study Team, 2012

- Service – Day service in principle, with the nighttime work dealt with as a special service under a changed time schedule.

6) Power supply Depot

- Assignment – Maintenance of power supply equipment/facilities
- Maintenance by the depot in principle except some equipment/facilities such as visual inspection of overhead contact line and cleaning of insulators to be maintained by outside organizations.
- We assign the power supply dispatching to OCC.
- We locate power supply depots approximately 50 km intervals (six stations in the northern section and seven in the southern section)
- Organization



- Number of employees – Estimated as the number of employees per kilometer as 1/km with reference to the number of employees at the inauguration of Tokaido Shinkansen.

However, in the case of Vietnam, since electrification was the first time, it was considered the 20% increase in personnel.

Table 8A.9 Number of Employees at Power Supply Depot

	2030	2035	2040	remarks
Ngoc Hoi ~Vinh (284 km)	340	374	408	

[unit : person]

(Note) The number of employees in 2035 and 2040 are assumed to have increased 10% and 20%, respectively, from that in 2030 reflecting the increases in the number of trains.

Source: JICA Study Team, 2012

- Outsourcing costs of visual inspection of overhead contact line and cleaning of insulators

Referring to outsourcing costs of visual inspection of overhead contact line and cleaning of insulators in Japanese Shinkansen, It was calculated as follows, considering manpower cost, usage of maintenance machine and etc.

This price is at present and does not expect the inflation rate.

Table 8A.10 Outsourcing Costs of Visual Inspection of Overhead Contact Line and Cleaning of Insulators

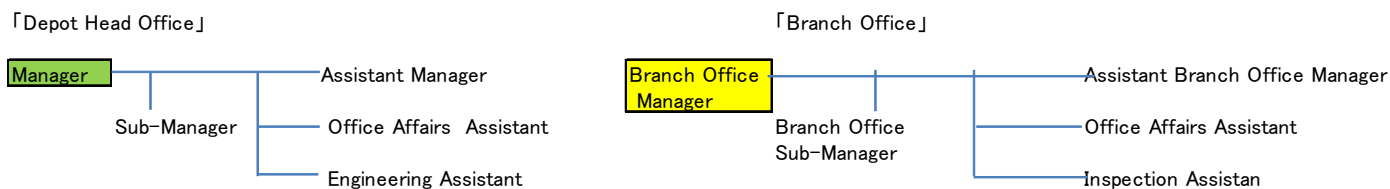
[unit : ten thousand yen]

	2030	2035	2040
north section (Ngoc Hoi ~Vinh)	3,660 (0.47millionUS\$)	4,026 (0.52millionUS\$)	4,392 (0.54millionUS\$)

- Service – Day service in principle, with the nighttime work dealt with as a special service under a changed time schedule.

7) Signal/Telecommunication Depot

- Assignment – Maintenance of signal, telecommunication and information systems
- Maintenance by the depot in principle except the replacement of electric point machines, etc. to be outsourced to outside organizations.
- We assign the signal/telecommunication dispatching to OCC.
- A base station shall be placed in the northern and southern sections each, with branch stations placed approximately at 50 km intervals (six in the northern)
- Organization



- Number of employees – Estimated as the number of employees per kilometer as 1/km with reference to the number of employees at the inauguration of Tokaido Shinkansen

Table 8A.11 Number of Employees at Signal/telecommunication Depot

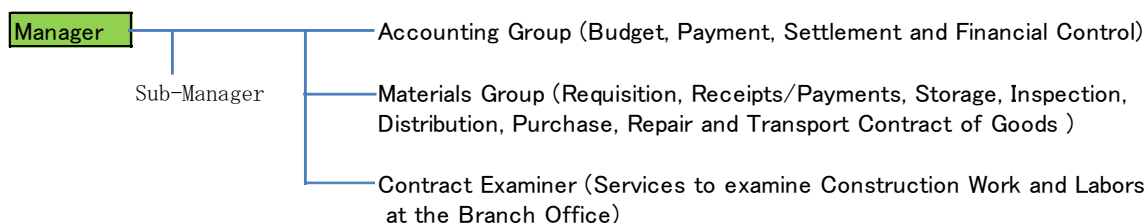
	2030	2035	2040
Ngoc Hoi ~Vinh (284 km)	290	290	290

Source: JICA Study Team, 2012

- Service – Day service in principle, with the nighttime work dealt with as a special service under a changed time schedule.

8) Materials Center

- Assignment – Requisition, receipts and payments, storage, inspection, delivery, procurement, repair and transport contracts for the goods required at the Vietnamese HSR worksite offices.
- Four materials center shall be placed: one each at Ngoc Hoi and Thang Hoa in the northern section. Then basic organization of a materials center is as follows.
- Organization



- Number of employees

See the following Table for the number of employees based on the above concept estimated with reference to the case of Tokaido Shinkansen at its inauguration. The numbers of employees at Thanh Hoa reflect the existence of the rolling stock workshops that are in charge of general inspection.

Table 8A.12 Number of Employees at Materials Center

		2030	2035	2040
Northern Section	Ngoc Hoi	20	22	24
	Thanh Hoa	30	33	36
Total		50	55	60

(Note) The number of employees in 2035 and 2040 are assumed to have increased 10% and 20%, respectively, from that in 2030 reflecting the increases in the number of trains.

Source: JICA Study Team, 2012

- Service – Day service in principle

APPENDIX 10A

Detailed Data on Funding Options

To consider funding options, profitability of the operator of (a) Hanoi–Vinh section and (b) HCMC–Nha Trang section was examined.

Most of the preconditions were employed from economic and financial analysis. Specific conditions for the funding options are as follows;

- (a) HSR Company carries out the operation of high speed railways.
- (b) HSR Company owns rolling stocks and also carries out the maintenance of them.
- (c) The government owns traffic control system and the infrastructure, and develops them by its own funding.
- (d) HSR Company carries out the maintenance of the system and the infrastructure, and the maintenance costs are provided from state budget.
- (e) The government carries out the land acquisition and resettlement.
- (f) The government provides financial support, if HSR Company cannot achieve sufficient profits.
- (g) HSR Company finances the investment of the rolling stocks by equity (20%) and debt (80%).
- (h) The debt is provided by financial institutions for 7 years and the interest rate is 7%.
- (i) HSR Company starts repayment upon the commencement of the commercial operations.
- (j) HSR Company pays 50% of profit as dividend to shareholders. The amount of the dividend cannot exceed the surplus.
- (k) HSR Company receives financial supports from the government, if it cannot achieve minimum profits due to the limited ridership. Minimum profits is set as 10% operating profit.
- (l) HSR Company pays 25% of net profit as corporate tax.
- (m) HSR Company also pays rental fee of the traffic control system and infrastructure to the government. The rental fee level is determined as [Rental fee rate (30%)] x [EBIT (Earnings before interest and tax) – Repayment for banks loans–Interest Payments].

Based on the conditions mentioned above, income statements for (a) Hanoi–Vinh section and (b) HCMC–Nha Trang section are examined for the following cases.

- (a) State budgets are NOT allocated for the maintenance of infrastructure, and financial supports for ridership are NOT provided to HSR Company.
- (b) State budgets are allocated for the maintenance of infrastructure, but financial supports for ridership are NOT provided to HSR Company.
- (c) State budgets are allocated for the maintenance of infrastructure, and financial supports for ridership are provided to HSR Company.

Hanoi-Vinh Section

(a) State budget NOT allocated for maintenance, financial supports NOT provided for ridership

Income Statement	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
A Operating income				162.5	174.8	187.9	202.0	217.2	233.6	251.2	270.1	290.4	312.2	335.7	357.9	381.5	406.7	433.5	462.1	492.6	525.1	559.8	596.7	
B Operating expenses				214.2	217.6	226.0	229.0	232.1	241.3	244.7	248.2	258.2	262.1	266.2	277.2	281.7	293.5	298.5	311.7	325.5	331.2	346.1	352.5	
- Maintenance of Infrastructure				36.7	37.8	38.9	40.1	41.3	42.5	43.8	45.1	46.5	47.9	49.3	50.8	52.3	53.9	55.5	57.1	58.9	60.6	62.4	64.3	
- Depreciation of rolling stock				37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	
C EBITDA: Earning before Interest, Tax and Depreciation)				-14.0	-5.1	-0.4	10.7	22.9	30.0	44.2	59.6	69.9	87.8	107.2	118.4	137.5	150.9	172.7	188.1	204.8	231.6	251.4	281.9	
D EBIT: Earning before Interest and tax (after depreciation)				-51.7	-42.8	-38.1	-26.9	-14.8	-7.7	6.5	21.9	32.2	50.1	69.5	80.7	99.8	113.2	135.0	150.4	167.1	193.9	213.7	244.2	
E Interest Expenses	13.7	41.0	68.3	58.5	48.8	39.0	29.3	19.5	9.8	0.0	0.0													
F Net profit (after interest and depreciation) before tax	-13.7	-41.0	-68.3	-110.2	-91.5	-77.1	-56.2	-34.3	-17.4	6.5	21.9	32.2	50.1	69.5	80.7	99.8	113.2	135.0	150.4	167.1	193.9	213.7	244.2	
G Rental Fee: Profit base x Rate	30%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	9.6	15.0	20.9	24.2	29.9	34.0	40.5	45.1	50.1	58.2	64.1	73.3	
H Net profit (before subsidy, after rental fee)		-13.7	-41.0	-68.3	-110.2	-91.5	-77.1	-56.2	-34.3	-17.4	6.5	15.3	22.5	35.1	48.7	56.5	69.9	79.2	94.5	105.3	117.0	135.7	149.6	170.9
Corporate tax	25%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	3.8	5.6	8.8	12.2	14.1	17.5	19.8	23.6	26.3	29.3	33.9	37.4	42.7
Financial support by the government		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K Net profit after tax (after subsidy)		-13.7	-41.0	-68.3	-110.2	-91.5	-77.1	-56.2	-34.3	-17.4	4.9	11.5	16.9	26.3	36.5	42.4	52.4	59.4	70.9	79.0	87.8	101.8	112.2	128.2
L Dividend	50%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	56.1	64.1
Financing																								
Repayment (Years)	7			139.3	139.3	139.3	139.3	139.3	139.3	139.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loan Balance		195.0	585.1	975.2	835.9	696.6	557.3	417.9	278.6	139.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest (Interbank rate + Margin)	7%	13.7	41.0	68.3	58.5	48.8	39.0	29.3	19.5	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dividend																								
Surplus / Deficit (before dividend)		-13.7	-54.6	-122.9	-233.1	-324.6	-401.7	-457.9	-492.3	-509.7	-504.8	-493.3	-476.4	-450.1	-413.6	-371.3	-318.9	-259.5	-188.6	-109.6	-21.8	79.9	152.2	224.3
Dividend	50%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	56.1	64.1
Surplus / Deficit (after dividend)		-13.7	-54.6	-122.9	-233.1	-324.6	-401.7	-457.9	-492.3	-509.7	-504.8	-493.3	-476.4	-450.1	-413.6	-371.3	-318.9	-259.5	-188.6	-109.6	-21.8	40.0	96.1	160.2
Equity																								
Cash outflow		48.8	97.5	97.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash inflow		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	56.1	64.1
Net Cash Flow		-48.8	-97.5	-97.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	56.1	64.1
Equity IRR		-0.3%																						
Financial support by the government																								
Maintenance budget for infrastructure				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum profit				16.3	17.5	18.8	20.2	21.7	23.4	25.1	27.0	29.0	31.2	33.6	35.8	38.1	40.7	43.3	46.2	49.3	52.5	56.0	59.7	
Actual Net profit (=F)				-110.2	-91.5	-77.1	-56.2	-34.3	-17.4	6.5	21.9	32.2	50.1	69.5	80.7	99.8	113.2	135.0	150.4	167.1	193.9	213.7	244.2	
Financial support				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(b) State budget allocated for maintenance, financial supports NOT provided for ridership

Income Statement	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
A Operating income				162.5	174.8	187.9	202.0	217.2	233.6	251.2	270.1	290.4	312.2	335.7	357.9	381.5	406.7	433.5	462.1	492.6	525.1	559.8	596.7	
B Operating expenses				177.6	179.8	187.1	188.9	190.8	198.7	200.9	203.1	211.8	214.3	216.9	226.4	229.4	239.6	243.0	254.5	266.6	270.6	283.6	288.2	
- Maintenance of Infrastructure				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
- Depreciation of rolling stock				37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	
C EBITDA: Earning before Interest, Tax and Depreciation)				22.7	32.7	38.5	50.8	64.1	72.5	88.0	104.7	116.3	135.6	156.5	169.1	189.8	204.7	228.2	245.3	263.7	292.2	313.8	346.2	
D EBIT: Earning before Interest and tax (after depreciation)				-15.0	-5.0	0.8	13.1	26.5	34.9	50.3	67.0	78.6	97.9	118.8	131.5	152.1	167.0	190.5	207.6	226.0	254.5	276.1	308.5	
E Interest Expenses		13.7	41.0	68.3	58.5	48.8	39.0	29.3	19.5	9.8	0.0	0.0												
F Net profit (after interest and depreciation) before tax		-13.7	-41.0	-68.3	-73.5	-53.8	-38.2	-16.1	6.9	25.1	50.3	67.0	78.6	97.9	118.8	131.5	152.1	167.0	190.5	207.6	226.0	254.5	276.1	308.5
G Rental Fee: Profit base x Rate	30%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.1	23.6	29.4	35.6	39.4	45.6	50.1	57.1	62.3	67.8	76.3	82.8	92.5	
H Net profit (before subsidy, after rental fee)		-13.7	-41.0	-68.3	-73.5	-53.8	-38.2	-16.1	6.9	25.1	50.3	46.9	55.0	68.6	83.2	92.0	106.5	116.9	133.3	145.3	158.2	178.1	193.3	215.9
Corporate tax	25%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	6.3	12.6	11.7	13.8	17.1	20.8	23.0	26.6	29.2	33.3	36.3	39.5	44.5	48.3	54.0
Financial support by the government		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K Net profit after tax (after subsidy)		-13.7	-41.0	-68.3	-73.5	-53.8	-38.2	-16.1	5.2	18.8	37.7	35.2	41.3	51.4	62.4	69.0	79.8	87.7	100.0	109.0	118.6	133.6	145.0	162.0
L Dividend	50%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	39.9	43.8	50.0	54.5	59.3	66.8	72.5	81.0
Financing																								
Repayment (Years)	7			139.3	139.3	139.3	139.3	139.3	139.3	139.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loan Balance		195.0	585.1	975.2	835.9	696.6	557.3	417.9	278.6	139.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest (Interbank rate + Margin)	7%	13.7	41.0	68.3	58.5	48.8	39.0	29.3	19.5	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dividend																								
Surplus / Deficit (before dividend)		-13.7	-54.6	-122.9	-196.4	-250.2	-288.4	-304.5	-299.3	-280.5	-242.7	-207.6	-166.3	-114.9	-52.5	16.5	88.1	135.9	192.0	251.0	315.2	389.4	467.6	557.1
Dividend	50%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	39.9	43.8	50.0	54.5	59.3	66.8	72.5	81.0	
Surplus / Deficit (after dividend)		-13.7	-54.6	-122.9	-196.4	-250.2	-288.4	-304.5	-299.3	-280.5	-242.7	-207.6	-166.3	-114.9	-52.5	8.2	48.2	92.0	142.0	196.5	255.8	322.6	395.1	476.1
Equity																								
Cash outflow		48.8	97.5	97.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash inflow		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	39.9	43.8	50.0	54.5	59.3	66.8	72.5	81.0	
Net Cash Flow		-48.8	-97.5	-97.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	39.9	43.8	50.0	54.5	59.3	66.8	72.5	81.0	
Equity IRR		4.7%																						
Financial support by the government																								
Maintenance budget for infrastructure				36.7	37.8	38.9	40.1	41.3	42.5	43.8	45.1	46.5	47.9	49.3	50.8	52.3	53.9	55.5	57.1	58.9	60.6	62.4	64.3	
Minimum profit				16.3	17.5	18.8	20.2	21.7	23.4	25.1	27.0	29.0	31.2	33.6	35.8	38.1	40.7	43.3	46.2	49.3	52.5	56.0	59.7	
Actual Net profit (=F)				-73.5	-53.8	-38.2	-16.1	6.9	25.1	50.3	67.0	78.6	97.9	118.8	131.5	152.1	167.0	190.5	207.6	226.0	254.5	276.1	308.5	
Financial support				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

(c) State budget allocated for maintenance, financial supports provided for ridership

Income Statement	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
A Operating income				162.5	174.8	187.9	202.0	217.2	233.6	251.2	270.1	290.4	312.2	335.7	357.9	381.5	406.7	433.5	462.1	492.6	525.1	559.8	596.7	
B Operating expenses				177.6	179.8	187.1	188.9	190.8	198.7	200.9	203.1	211.8	214.3	216.9	226.4	229.4	239.6	243.0	254.5	266.6	270.6	283.6	288.2	
- Maintenance of Infrastructure				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
- Depreciation of rolling stock				37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	
C EBITDA: Earning before Interest, Tax and Depreciation)				22.7	32.7	38.5	50.8	64.1	72.5	88.0	104.7	116.3	135.6	156.5	169.1	189.8	204.7	228.2	245.3	263.7	292.2	313.8	346.2	
D EBIT: Earning before Interest and tax (after depreciation)				-15.0	-5.0	0.8	13.1	26.5	34.9	50.3	67.0	78.6	97.9	118.8	131.5	152.1	167.0	190.5	207.6	226.0	254.5	276.1	308.5	
E Interest Expenses	13.7	41.0	68.3	58.5	48.8	39.0	29.3	19.5	9.8	0.0	0.0													
F Net profit (after interest and depreciation) before tax	-13.7	-41.0	-68.3	-73.5	-53.8	-38.2	-16.1	6.9	25.1	50.3	67.0	78.6	97.9	118.8	131.5	152.1	167.0	190.5	207.6	226.0	254.5	276.1	308.5	
G Rental Fee: Profit base x Rate	30%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.1	23.6	29.4	35.6	39.4	45.6	50.1	57.1	62.3	67.8	76.3	82.8	92.5	
H Net profit (before subsidy, after rental fee)		-13.7	-41.0	-68.3	-73.5	-53.8	-38.2	-16.1	6.9	25.1	50.3	46.9	55.0	68.6	83.2	92.0	106.5	116.9	133.3	145.3	158.2	178.1	193.3	215.9
Corporate tax	25%	0.0	0.0	0.0	0.0	0.0	0.0	1.7	6.3	12.6	11.7	13.8	17.1	20.8	23.0	26.6	29.2	33.3	36.3	39.5	44.5	48.3	54.0	
Financial support by the government		0.0	0.0	0.0	89.8	71.3	57.0	36.3	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
K Net profit after tax (after subsidy)		-13.7	-41.0	-68.3	16.3	17.5	18.8	20.2	20.0	18.8	37.7	35.2	41.3	51.4	62.4	69.0	79.8	87.7	100.0	109.0	118.6	133.6	145.0	162.0
L Dividend	50%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	17.6	20.6	25.7	31.2	34.5	39.9	43.8	50.0	54.5	59.3	66.8	72.5	81.0	
Financing	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
Repayment (Years)	7			139.3	139.3	139.3	139.3	139.3	139.3	139.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Loan Balance	195.0	585.1	975.2	835.9	696.6	557.3	417.9	278.6	139.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Interest (Interbank rate + Margin)	7%	13.7	41.0	68.3	58.5	48.8	39.0	29.3	19.5	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Dividend	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
Surplus / Deficit (before dividend)	-13.7	-54.6	-122.9	-106.6	-89.1	-70.4	-50.1	-30.2	-11.3	26.4	48.4	72.0	102.8	139.5	177.3	222.7	270.4	326.6	385.6	449.7	524.0	602.2	691.7	
Dividend	50%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	17.6	20.6	25.7	31.2	34.5	39.9	43.8	50.0	54.5	59.3	66.8	72.5	81.0	
Surplus / Deficit (after dividend)	-13.7	-54.6	-122.9	-106.6	-89.1	-70.4	-50.1	-30.2	-11.3	13.2	30.8	51.4	77.1	108.3	142.8	182.7	226.6	276.6	331.1	390.4	457.2	529.7	610.7	
Equity	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
Cash outflow	48.8	97.5	97.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cash inflow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	17.6	20.6	25.7	31.2	34.5	39.9	43.8	50.0	54.5	59.3	66.8	72.5	81.0	
Net Cash Flow	-48.8	-97.5	-97.5	0.0	0.0	0.0	0.0	0.0	0.0	13.2	17.6	20.6	25.7	31.2	34.5	39.9	43.8	50.0	54.5	59.3	66.8	72.5	81.0	
Equity IRR	6.6%																							
Financial support by the government	Year -3	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
Maintenance budget for infrastructure				36.7	37.8	38.9	40.1	41.3	42.5	43.8	45.1	46.5	47.9	49.3	50.8	52.3	53.9	55.5	57.1	58.9	60.6	62.4	64.3	
Minimum profit				16.3	17.5	18.8	20.2	21.7	23.4	25.1	27.0	29.0	31.2	33.6	35.8	38.1	40.7	43.3	46.2	49.3	52.5	56.0	59.7	
Actual Net profit (=F)				-73.5	-53.8	-38.2	-16.1	6.9	25.1	50.3	67.0	78.6	97.9	118.8	131.5	152.1	167.0	190.5	207.6	226.0	254.5	276.1	308.5	
Financial support				89.8	71.3	57.0	36.3	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	