

MONITORING FORM

During the construction of the Project bridges, the following environmental items which are described in UKL and UPL will be monitored by Directorate General of Highways (National Road Implementation Work Unit Region II, NTB Province) and the Consultant jointly and reported to BLHP in NTB and JICA Indonesia Office every 6 month.

Monitoring Item	Monitoring Method	Monitoring Result
1. Land acquisition The forest land owned by regency can be used for the project with coordination with forestry agency. However, private land should be compensated based on the deliberated rate in accordance with laws and regulations.	To check Agreement between forestry agency and NTB Provincial Government. To check agreed amount and paid amount for compensation for land acquisition by interviewing to the land owners.	Agreement: Agreed rate: Paid rate: Evaluation:
2. Employment opportunity creation Local manpower should be maximum utilized based on their skills. Wage should referred to regency minimum wage. Training is given to laborers to improve their skills.	To survey the number of local people who are employed in the bridge construction and their wage rate.	No. of local employee: Wage: Minimum wage: Evaluation:
3. Air and noise pollution mitigation To water routinely on the dusty roads, install dust-collector of plant if necessary, secure distance of base camp from residential area, regulate vehicle speed slower than 40 km/hr and ban overtime work. To clear and vegetate the area where camps were.	To survey air and noise pollution level by field observation and by interview to surrounding local people who complain on deterioration of ambient air quality and increase of the noise level by field observation with surrounding local people.	<u>Visual observation</u> Ambient air quality: Noise level: <u>Local people's complain</u> on air pollution: on noise: Evaluation:
4. Riverwater pollution prevention To treat polluted water properly, discharge muddy water after clearing, install septic tanks for every camps and treat rubbish properly and not to dump directly to river.	To survey riverwater quality by observation of sampled water visually. To investigate treatment system of polluted water arisen from the Project. To interview to local people who reside downstream of bridge site on riverwater pollution.	Visual observation of sample water: Riverwater pollution mitigation/treatment measures: Local people's complain:
5. Soil pollution prevention To store fuel and oil in a storage, collect waste oil then send to oil treatment plant, collect spilled oil immediately before it discharges to the river by rainwater and treat toxic and hazardous substances in accordance with law and regulation.	To investigate on waste oil and toxic and hazardous substance treatment methods whether they are treated properly or not.	Evaluation:
6. Traffic control and safety To install flag man for transporting heavy equipments, hold safety campaign for students, install warning signs and traffic safety signs and regulate max driving speed to be 40 km/hr.	To survey on traffic disturbance and traffic accidents occurred by hearing at around the sites.	Occurrence of Traffic disturbance: Traffic accident: Evaluation:

7. Accident prevention To require let workers to wear safety devices (helmet, musk, earplug, safety shoe, goggle, etc.)	To investigate construction sites whether workers wear safety devices or not. To investigate occurrence of accidents.	Accident occurred: Safety devices wearied: Evaluation:
8. Health control To manitain camp sanitary and prevent malaria and hemorrahagic fever by covering breeding spots and fill water ponds.	To investigate sanitary condition of camps. To survey occurrence of prevalent disease in camps and local villages by interview to contractor and health center.	Evaluation of sanitary conditin of camps: Prevalent disease occurred in camps and loca villages: Evaluation:
9. Road damage To limit the size and weight of heavy equipments which are to be used on the road and repair the road immediately when damaged.	To investigate road damage by the project and complain form the local people by field observation and interview to representative of local villages.	Road damages caused by the project related vehicles: Evaluation:
10. Disruption of utility To relocate power poles, coordinate with regency government and Sumbawa Electric Enterprise (PLN).	To investigate if there is disruption of utilities (power supply) by interview to representative of local villages.	Utility disruption occurred: Evaluation:
11. Gravel quarrying To ban quarrying river gravel within 500m from any bridge. The quarrying company should have environmental licence.	To observe whether gravel quarrying is executed within 500m from bridges exeecuted or not. To check whether quarrying company has environemtal licence.	Quarrying location: Licenced or not:
12. Preservation of forest To ban fire, cut trees, hunting animals in the forest, and install sign boards of these information.	To investigate whether fire, cut trees, hunting animal in the forest executed by the project related peopole or not by interview.	Fire: Cut trees: Hunting animals:
13. Post construction environmental management To ban construcion buildings close to bridges and control traffic operation.	To investigate whether the surrounding of the bridges sites were restored properly and traffic control is properly operated or not by observation.	Restoration: Traffic control:

Monitored by:

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Region II, NTB Province
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Regident Engineer
Consultant

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Environmental Checklist: 15. Roads and Railways (1)

Annex-7

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1 Permits and Explanation	(1) EIA and Environmental Permits	① Have EIA reports been officially completed? ② Have EIA reports been approved by authorities of the host country's government? ③ Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? ④ In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	① The UKL and UPL reports instead of EIA have been officially completed. ②③ The authority BLHP in NTB has approved UKL and UPL on 11 November 2008. It was confirmed by BLHP that this UKL and UPL is valid for Phase 3 of the Project (Phase 3 bridge are covered by Phase 2 UKL and UPL). ④ No other environmental permit is required.
	(2) Explanation to the Public	① Are contents of the project and the potential impacts adequately explained to the public based on appropriate procedures, including information disclosure? Is understanding obtained from the public? ② Are proper responses made to comments from the public and regulatory authorities?	① The local public consultation meetings were conducted at the basic design study stage in October 2008 and the consent of local people has obtained as attached in the basic design study report. ② No comments was made by public. Everybody welcomes the project. BLHP discloses information and accepts query from local people at any time.
2 Mitigation Measures	(1) Air Quality	① Is there a possibility that air pollutants emitted from various sources, such as vehicle traffic will affect ambient air quality? Does ambient air quality comply with the country's ambient air quality standards? ② Where industrial areas already exist near the route, is there a possibility that the project will make air pollution worse?	① There is no possibility that significant pollutants emitted from various sources. Because emission is limited due to the traffic volume is very small and the site is very rural island. ② There are no industrial areas near the route.
	(2) Water Quality	① Is there a possibility that soil runoff from the bare lands resulting from earthmoving activities, such as cutting and filling will cause water quality degradation in downstream water areas? ② Is there a possibility that surface runoff from roads will contaminate water sources, such as groundwater? ③ Do effluents from various facilities, such as stations and parking areas/service areas comply with the country's effluent standards and ambient water quality standards? Is there a possibility that the effluents will cause areas that do not comply with the country's ambient water quality standards?	① Filled and cutting soil will be protected by grouted riprap and turfing, so there is no possibility of soil runoff and water quality degradation in downstream water area. ② The surface runoff water from roads and bridges is designed to be drained to river which will not contaminate water sources. ③ There is no facility near the project bridges.
	(3) Noise and Vibration	① Do noise and vibrations from vehicle comply with the country's standards?	① During construction period, generation of noise and vibration can be minimized by the followings: using low noise heavy machineries and construction vehicles, construction with noise and vibration equipment undertaken from 08:00 am to 04:00 pm, making public announcement of construction plan prior to construction and obliges the field workers to wear the standard safety devices (ear plug, etc.). During operation period, noise and vibration caused by vehicle is negligible since there is no residence close to the bridges and roads. The project site is very rural area.

Environmental Checklist: 15. Roads and Railways (2)

Category		Environmental Item	Main Check Items	Confirmation of Environmental Considerations
3 Natural Environment	(1) Protected Areas		① Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas? ① Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? ② Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? ③ If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?	① There are no protected areas in and around the site. The forest is categorized as production forest and other use, and it allows development with coordination with forestry agency. ② The forest along the route is not protected forest. There are no ecological valuable habitats in and around the site. ③ The protected habitats of endangered species designated by the country's laws or international treaties and conventions have not been identified in the site.
	(2) Ecosystem		④ Are adequate protection measures taken to prevent impacts, such as disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock? ⑤ Is there a possibility that installation of roads will cause impacts, such as destruction of forest, poaching, desertification, reduction in wetland areas, and disturbance of ecosystems due to introduction of exotic (non-native invasive) species and pests? Are adequate measures for preventing such impacts considered? ⑥ In cases where the project site is located at undeveloped areas, is there a possibility that the new development will result in extensive loss of natural environments?	④ No significant ecological impact is anticipated. ⑤ Since the road is existing gravel road and vehicle speed is very slow, no disruption of migration routes, habitat fragmentation, and traffic accident of wildlife and livestock is anticipated. ⑥ Since the project is installing bridges and re-graveling of existing roads, it will not cause destruction of forest and wetland and disturbance of ecosystems and introduction of exotic species. ⑦ No significant development which will result in extensive loss of natural environment is anticipated.
	(3) Hydrology		① Is there a possibility that alteration of topographic features and installation of structures, such as tunnels will adversely affect surface water and groundwater flows?	① Installation of bridges will not cause any significant adverse affect on surface water and groundwater flows.
	(4) Topography and Geology		① Is there a soft ground on the route that may cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides, where needed? ② Is there a possibility that civil works, such as cutting and filling will cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides? ③ Is there a possibility that soil runoff will result from cut and fill areas, waste soil disposal sites, and borrow sites? Are adequate measures taken to prevent soil runoff?	① There is not soft ground which may cause slope failure or landslide on the route. ② ③ There is no possibility of slope failure, landslide or soil runoff since the cutting and filling slopes are protected with riprap or turfing.

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Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(1) Resettlement	① Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? ② Is adequate explanation on relocation and compensation given to affected persons prior to resettlement? ③ Is the resettlement plan, including proper compensation, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? ④ Does the resettlement plan pay particular attention to vulnerable groups or persons, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous people? ⑤ Are agreements with the affected persons obtained prior to resettlement? ⑥ Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? ⑦ Is a plan developed to monitor the impacts of resettlement?	① There is no involuntary resettlement. Land acquisition only necessary. ②③④ Adequate socialization on land acquisition and reasonable compensation will be given to the land owners prior to the land acquisition by Sumbawa Regency Government in accordance with Indonesian regulations and laws and JICA Guidelines for Environmental and Social Consideration. ⑤ Agreement between the land owners Sumbawa Regency Government will be made prior to the land acquisition. Consent on the land acquisition from the landowners has already obtained through the local stakeholder meetings. ⑥ There is no resettlement required. ⑦ No impact is anticipated by the land acquisition.
	(2) Living and Livelihood	① Where roads or railways are newly installed, is there a possibility that the project will affect the existing means of transportation and the associated workers? Is there a possibility that the project will cause significant impacts, such as extensive alteration of existing land uses, changes in sources of livelihood, or unemployment? Are adequate measures considered for preventing these impacts? ② Is there a possibility that the project will adversely affect the living conditions of inhabitants other than the affected inhabitants? Are adequate measures considered to reduce the impacts, if necessary? ③ Is there a possibility that diseases, including communicable diseases, such as HIV will be introduced due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary? ④ Is there a possibility that the project will adversely affect road traffic in the surrounding areas (e.g., by causing increases in traffic congestion and traffic accidents)? ⑤ Is there a possibility that roads and railways will impede the movement of inhabitants? ⑥ Is there a possibility that structures associated with roads (such as bridges) will cause a sun shading and radio interference?	①②④⑤ No adverse impact on transportation, livelihood and socioeconomic conditions in the area is anticipated by the project since the project is improvement of existing road and replacement of broken temporary bridges. ③ No significant possibility of communicable disease is anticipated. HIV awareness-raising through education and workshop for workers will be taken in the project. ⑥ The project bridges will not cause sun shading and radio interference.
	(3) Heritage	① Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the country's laws?	① There are no archeological, historical, cultural and religious heritage near the site.
	(4) Landscape	① Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	① There is no possibility of adverse affect on local landscape by the construction of the bridges project.

Environmental Checklist: 1.5. Roads and Railways (4)

Annex-7

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(5) Ethnic Minorities and Indigenous People	① Where ethnic minorities and indigenous peoples are living in the rights-of-way, are considerations given to reduce the impacts on culture and lifestyle of ethnic minorities and indigenous people? ② Does the project comply with the country's laws for rights of ethnic minorities and indigenous people?	①② There is no ethnic minorities and indigenous people having unique culture and lifestyle near the site.
	(1) Impacts during Construction	① Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? ② If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? ③ If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts? ④ If necessary, is health and safety education (e.g., traffic safety, public health) provided for project personnel, including workers?	① Yes. Adequate measures such as periodical water spray and sheet cover on track will be employed to reduce dust. Provides the proper waste water treatment plant (septic tank), sediment pond to control the run off water, collects the wet and dry solid wastes on separated places in final dumping places and prohibits to dispose the garbage directly into the river. Work will be allowed only daytime. Equipment will be maintained in good condition by proper maintenance. ② No significant adverse affect on natural environment (ecosystem) is anticipated by the construction. The surrounding of the construction site will be restored as before. ③ No significant adverse affect on social environment by the construction activities is anticipated ④ The contractor will provided health and safety education for project personnel including workers.
5 Others		① Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? ② Are the items, methods and frequencies included in the monitoring program judged to be appropriate? ③ Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? ④ Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	① Yes. The proponent Directorate General of Highways (National Road Implementation Work Unit Region II, NTB Province) developed monitoring program on environmental items that are considered to have potential impacts such as air, water, noise, soil. ② Yes. Items, methods and frequencies (every 6 months) in the monitoring program are judged to be appropriate. ③ Yes. DGH will implement the monitoring jointly with the consultant and the contractor of the project. ④ Yes. Monitoring format is proposed as attached. The DGH will monitor the environment items and report to authority BAPEDALDA and JICA monthly during the construction.
	(2) Monitoring		

Environmental Checklist: 15. Roads and Railways (5) Annex-7

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
6 Note	Reference to Checklist of Other Sectors	① Where necessary, pertinent items described in the Forestry Projects checklist should also be checked (e.g., projects including large areas of deforestation). ② Where necessary, pertinent items described in the Power Transmission and Distribution Lines checklist should also be checked (e.g., projects including installation of power transmission lines and/or electric distribution facilities).	—
	Note on Using Environmental Checklist	① If necessary, the impacts to trans boundary or global issues should be confirmed, if necessary (e.g., the project includes factors that may cause problems, such as trans boundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	

1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are made, if necessary.

In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located.

5. テクニカルノート

THE PREPARATORY SURVEY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES IN THE PROVINCE OF NUSA TONGGARA BARAT, PHASE-3

TECHNICAL NOTES

The Public Works of Sumbawa Regency and JICA Survey Team discussed and confirmed the followings:

1. Undertaking of Sumbawa Regency

The responsible undertakings of Sumbawa Regency Government for the Project are as follows as it was agreed in the basic design stage in 2008. These undertakings shall be executed before the start of the construction, in case the Project will be implemented.

- Land acquisition of private lots which are necessary for the construction of Project Bridges
Land acquisition is necessary at the following 4 bridge sites. The land acquisition areas necessary are the bridge and approach roads construction areas which are shown in the attached Site Plans.

- BR-32 Petain III
- BR-33 Molong
- BR-34 Emang
- BR-35 Kalbir

- Land rent of private lots which are necessary to construct temporary detour during the construction for 2 years period
Land rent is necessary at the following 2 bridge sites. The land rent areas necessary are the detour construction areas which are shown in the attached Detour Plans.

- BR-34 Emang
- BR-35 Kalbir

- Relocation of public utilities, if necessary (nothing was identified as of now)
- Removal of encroachments, if necessary (nothing was identified as of now)

2. Land Acquisition Procedure

The Public Works of Sumbawa Regency shall execute the abovementioned land acquisition with proper procedure and appropriate price of compensation. The land acquisition shall be executed in accordance with the laws and regulations of Indonesia (as shown in the attached sheet). JICA and BLHP will monitor the land acquisition.

3. Securing of Budget

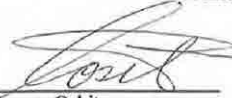
The Public Works of Sumbawa Regency shall secure the budget for the above land acquisition and land rent. The approximate cost was estimated as follows:

- Land acquisition of 4,200 sq. m.: Rp. 150 M
- Land rent of 1,300 sq. m. for 2 years: Rp. 10 M

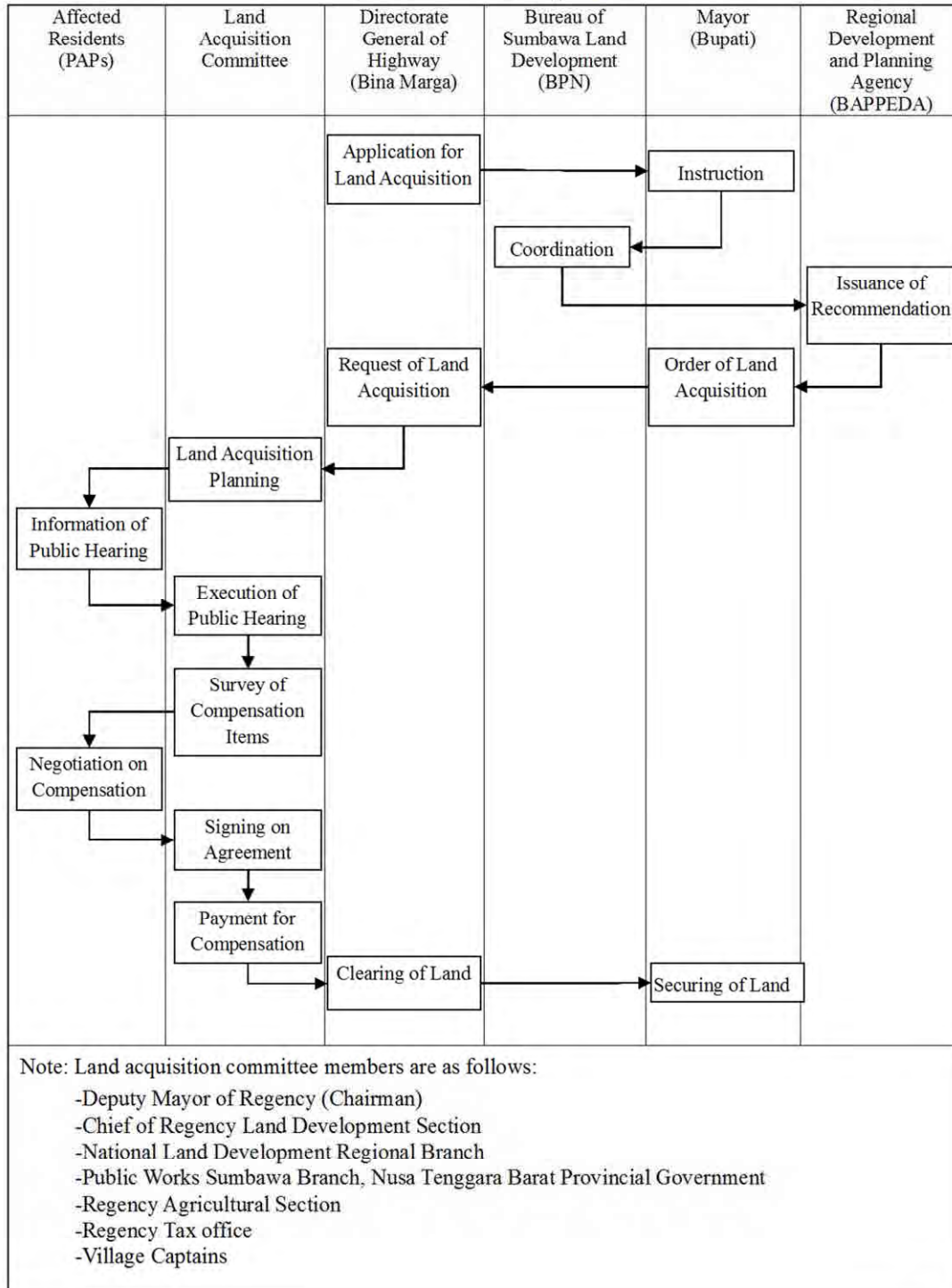


H. M. Saad Abdullah
Head of Public Works
Regency Government of Sumbawa

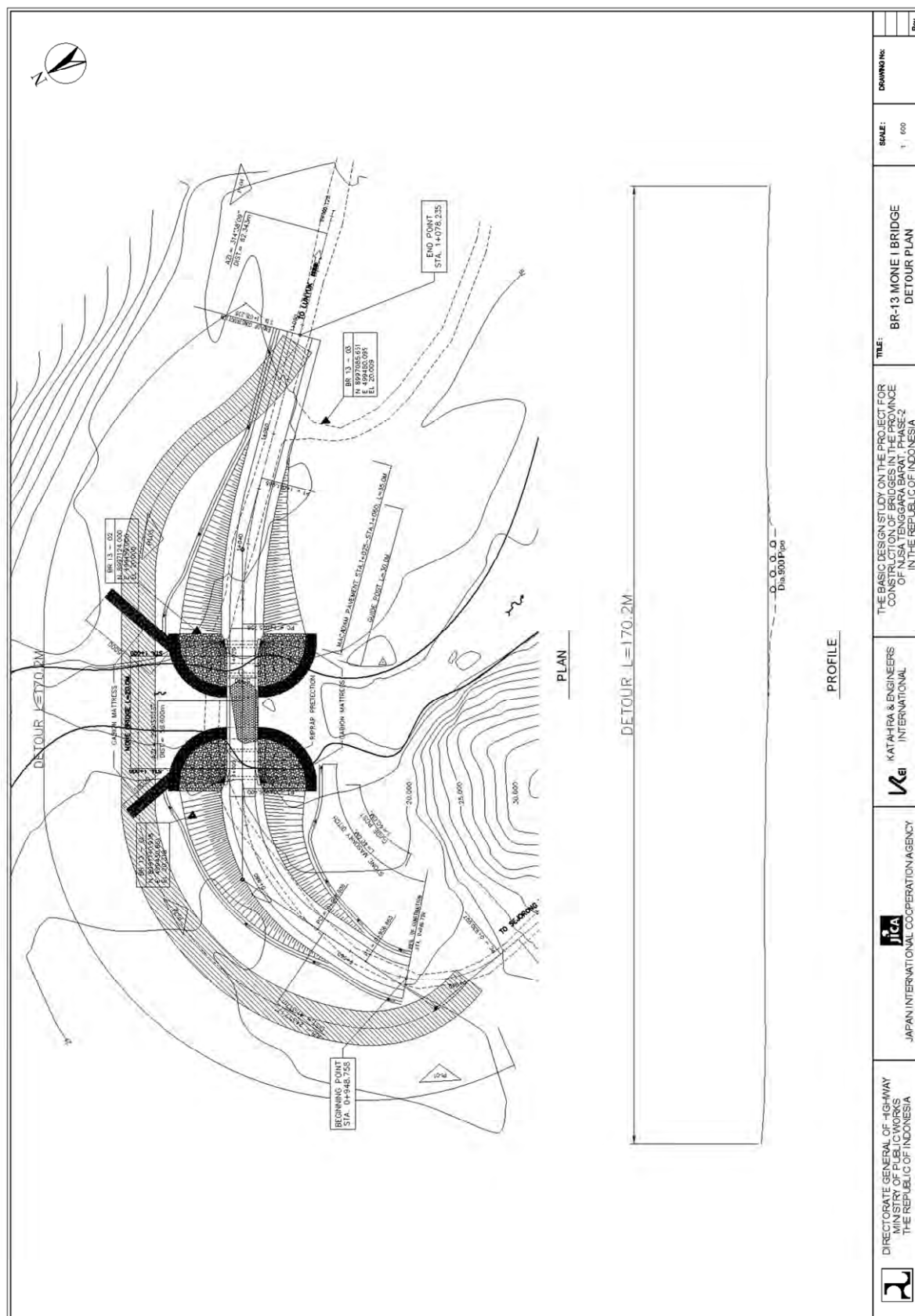
November 18, 2011


Soemu Oshita
Chief Consultant
JICA Survey Team

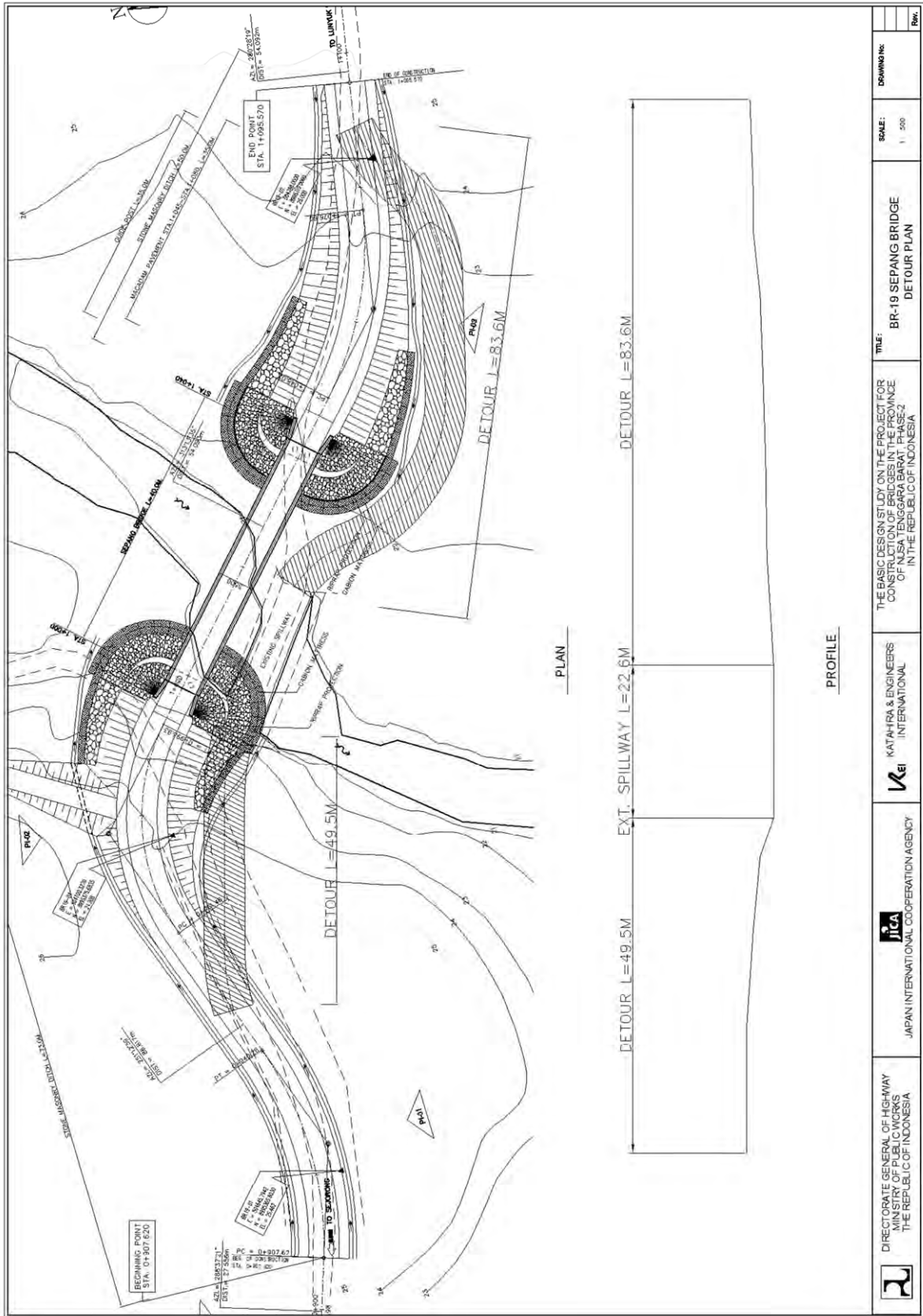
Procedure of Land Acquisition



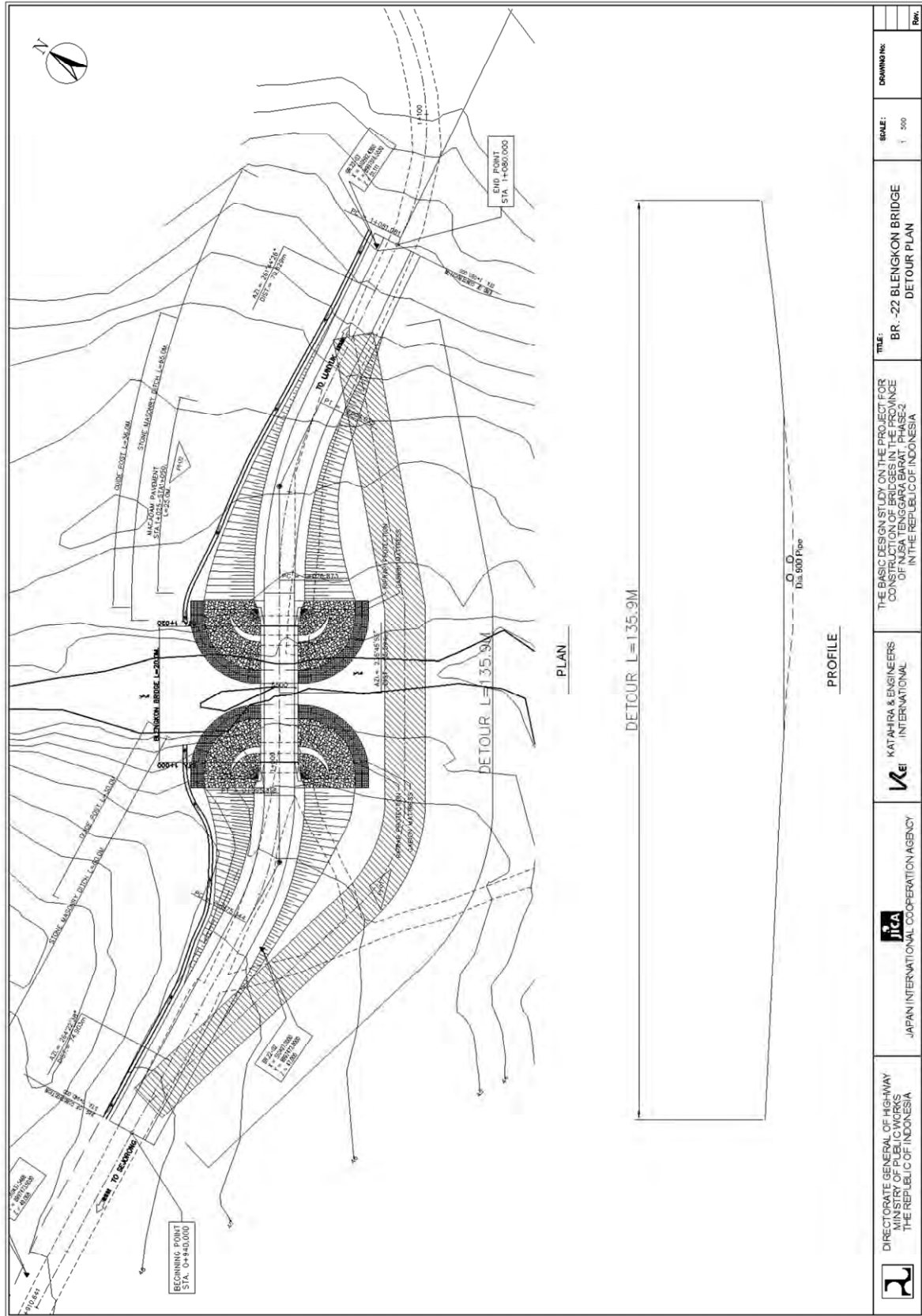
6. 迂回路計画



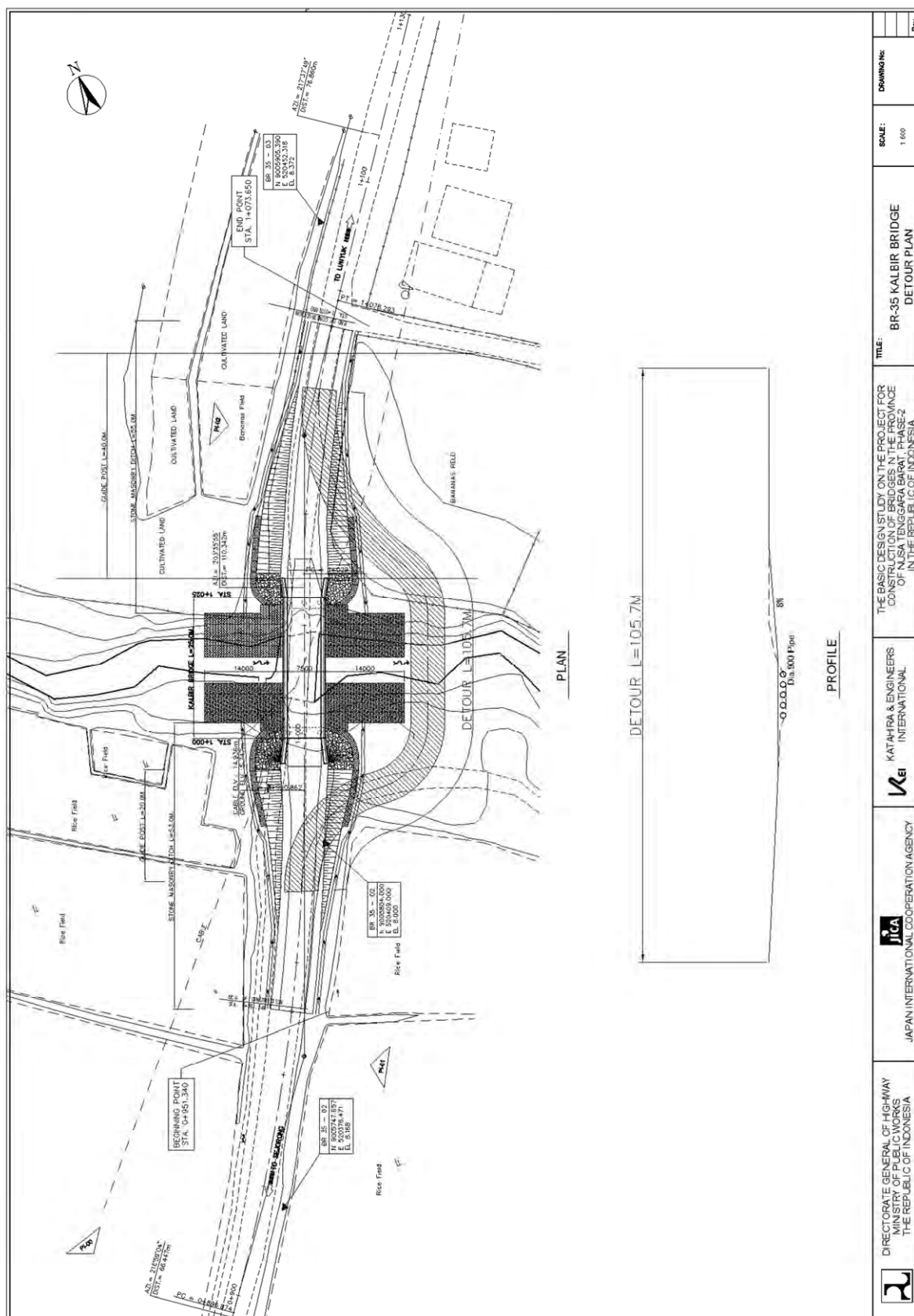




	JAPAN INTERNATIONAL COOPERATION AGENCY 		THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES IN THE PROVINCE OF NUSA TENGGARA BARAT, PHASE-2 IN THE REPUBLIC OF INDONESIA	TITLE: BR-19 SEPANG BRIDGE DETOUR PLAN	SCALE: 1 : 200	DRAWING NO. Rev.
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Rev.	DRAWING No.	SCALE: 1:500	TITLE: BR-22 BLESKON BRIDGE DETOUR PLAN	THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES IN THE PROVINCE OF NUSA TENGGARA BARAT, PHASE-2 IN THE REPUBLIC OF INDONESIA	KATAHIRA & ENGINEERS INTERNATIONAL	JICA	JAPAN INTERNATIONAL COOPERATION AGENCY	DIRECTORATE GENERAL OF HIGHWAY
Rev.	DRAWING No.	SCALE: 1:500	TITLE: BR-22 BLESKON BRIDGE DETOUR PLAN	THE BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES IN THE PROVINCE OF NUSA TENGGARA BARAT, PHASE-2 IN THE REPUBLIC OF INDONESIA	KATAHIRA & ENGINEERS INTERNATIONAL	JICA	JAPAN INTERNATIONAL COOPERATION AGENCY	DIRECTORATE GENERAL OF HIGHWAY
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7. 参考資料

番号	名 称	形態	オリジナル・コピー	発行機関	発行年
1	Nusa Tenggara Barat Dalam Angka 2010	CD	コピー	Badan Pusat Statistik, NTB	2010
2	Nusa Tenggara Barat Dalam Angka 2011	CD	コピー	Badan Pusat Statistik, NTB	2011
3	Rencana Strategies 2010-2014	CD	コピー	Direktorat Jenderal Bina Marga	2010
4	Statistik Indonesia	図書	コピー	Bandan Pusat Statistik	2009