Appendix J2

The PPA's Site Management Guideline (Conservation Action Plans)

Houay Ngua Provincial Protected Area: Conservation Action Plan – Access Road 'A' Upgrade

Prepared by Environmental Management Office
Nam Ngiep 1 Power Company

Draft v1

5th March 2014

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1. Background

ADB and stakeholders had requested a consolidation of material about the PPA management going forward through Road A upgrade. How was management of issues to proceed and who are the responsible parties? This document, the *Houay Ngua Provincial Protected Area: Conservation Action Plan – Access Road 'A' Upgrade Draft v1* (CAP) is intended to serve the purpose of outlining all strategies and work initiatives to be undertaken by NN1PC and partners for the mitigation and management of all expected and unintended impacts on the protected area during and beyond road upgrade construction. It is expected the CAP will be included in the (soon-to-be) updated ESMMP and be supplementary to the SS ESSMP AR.

The upgrade of Road-A and subsequent works through the Houay Ngua Provincial Protected Area (PPA) triggers the ADB Environmental Safeguard Policy Statement 1 (SPS1), which follows the following:

(i) If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area.
(ii) Consultations have been carried out with protected area's sponsors, local communities, and other stakeholders.
(iii) Project implements additional programs, as appropriate, to promote and enhance the conservation aims of the protected area.

On item (i) of para. 30 of the SPS1 requirement, it is noted the minutes of ADB/NN1PC consultation meeting with the Provincial Office of Natural Resource and Environment (PONRE) and other stakeholders on the 14th February 2014, outline agreement of the meeting participants with the draft PPA Site's Management Guidelines (Refer to Appendix 1of this document).These guidelines are consistent with the Houay Ngua PPA Protected Area Management Plan (PPA Management Plan) (refer to Appendix 2), and the NN1PC ESMMP-CP Access Road.

On item (ii) of para. 30 of the SPS requirement, NN1PC consultations with local communities, with the Bolikhamxai Province (June 2010) and the recent meeting (14 February 2014) are evidence of compliance with this requirement. Consultations are ongoing.

On item (iii) of para. 30 of the SPS requirement, the following activities outlined in this document represent compliance and as additional programs to promote and enhance the conservation aims of the protected area:

2. The PPA is a Natural Resource Asset

The NN1PC regards the Houay Ngua Provincial Protected Area as an asset. The forest serves as the natural gateway to the dams and facilities and its condition, particularly the road corridor and adjacent forests, will be viewed by community

and stakeholders as a reflection of the company's attitude towards the environment generally. It is in the company's primary interest to protect, enhance and restore the PPA ROW corridor.

The NN1PC recognizes that the presence of the PPA within the Nam Ngiep Catchment brings with it the opportunity for government and company scientist and land managers, environmental students and local villagers to better understand and apply sustainable forest management, and forest restoration. The PPA contains flora and fauna species that persist in other areas of the catchment, and this makes it a useful natural field laboratory that will become increasingly important as the project develops.

This document presents the current legal and management setting of the PPA, and the approach the NN1PC and GOL will adopt to manage the ROW through PPA road upgrade. It outlines ongoing management strategies that will be applied to enhance the condition of the forests in the medium long term. The current level of degradation within the forest and ROW warrants comprehensive and long-term interventions. NNP1PC believe that the Road A upgrade works plan, and the environmental management strategies outlined in this document will provide an immediate and significant improvement to the forest resources.

As the road is an upgrade of an existing road, and special mitigations have been introduced to manage anticipated impacts, no significant reduction in ecosystem diversity (flora and fauna) within the PPA is expected. To the contrary, the works are intended to improve access road drainage and reduce erosion. These works will stabilize soils and allow for rehabilitation PPA ROW to become effective. Without the road upgrade the condition of the local environment will continue to deteriorate.

3. Legal Setting and Management of the PPA

3.1. PPA Establishment

The PPA was established on 24th June 2010 under provincial decree No. 0294/BLX.It has a total area of 4,595Ha.The PPA borders five villages:B. Tha Heua, B. Sai Phou Ngou (Phou Dan Meuang) to its north;B. Houay Phern to its south; and B. Sisavath to its east. The western border runs parallel with but does not about the Nam Ngiep River. The distance between the PPA western boundary and the river is variable but approximately 500m-1000m.

The section of Road A occupied by the PPA is between STA 6+700 km to STA 18+400.

3.1.1. Houay Ngua Provincial Protected Area Management Plan

The PPA is currently subject to conditions set out within the Houay Ngua Provincial Protected Area Provincial Protected Management Plan 2011 – 1015 (Appendix 2) that was developed under provincial decree 004/BLX. The PPA Management Plan is a reference document for work plans intended to improve the condition of the forests resources, but by enlarge this document outlines

strategies for Bolikhamxai Province more so than the actual PPA. As such its use for the ROW upgrade management is limited.

For a medium term strategy, NNP1C will liaise closely with PONRE and other stakeholders to develop the plan for next five-year management period from 2015. The next manifestation of the plan (2016-2020) will provide much clearer guidance to address management issues within the PPA. This document will be the defining reference for management going forward beyond the Access Road works.

The current PPA Management Plan *Goals* are to:

i. Protect the abundance of natural resources and integrated biodiversity;
ii. Supply water resources for national socio-economic development;
iii. Meet the requirements of local populations for the sustainable use of resources within the PPA.

The current PPA Management Plans *Priority Activities* include:

i. Extension and community awareness;
ii. Livelihood Development;
iii. Law enforcement and patrolling;
iv. Biodiversity monitoring;
v. Ecotourism;
vi. Increase district and villager capacity.

3.1.2. PPA Determination Notice

A determination notice of PPA from Bolikhamxai Province (115/SA4) was issued as part of the process for its promulgation. The notice outlined *Restrictions* of use that should be applied within the PPA. The restrictions include:

- No unauthorized extraction of timber and NTFP.
- No unauthorized removal and or harvesting of fish.
- No use of mechanical tools and weapons.
- No disposal of waste and pollutants.
- No agriculture activities or livestock rearing.
- No land occupation, and
- No shifting cultivation for the purposes of plantation establishment.

These restrictions were not included in the 2011-2015 Management Plan (English version) but the spirit of the determination coupled with the *Goals*of the PPA imply that they be applied without reservation. There is a commitment by the GOL, NN1PC and stakeholders to directly address the above issues, which continue to occur and deteriorate the PPA environmental and social values.

3.1.3. Forestry School Field Centre

The PPA also serves as an education facility between Provincial/District Agriculture Office (PAFO/DAFO) and the Provincial Agriculture and Forestry School. The School plays an active role in the management of the PPA and have been involved with patrols and monitoring since the upgrade of the Road A commenced. A booth patrolled jointly between DAFO and the School is located at STA: 0+800, 6km from the PPA southern border.

3.2. PPA Conservation values

A Baseline Biodiversity Assessment Report (ERM, January 2014) was prepared for the Nam Ngiep 1 project which covered the Houay Ngua PPA. Please refer to this document for further details.

3.2.1. Flora Overview

The vegetation type of Houay Ngua PPA is a lower mixed deciduous forest. Dominant tree species are Mai peuay (Lagerstroemia sp.), Mai mee (Schima wallichii), Mai bak (Anisoptera costata), Mai yangkhao (Dipterocarpus alatus), Mai tiousom (Cratoxylum formosum), Mai kabok (Irvingia malayana), Mai kaam (Crypteronia paniculata), and other tree species. While good cover throughout the PPA remains the condition of the vegetation is modified and degraded along the ROW.

Two tree species belonging to IUCN Red List such as: Mai Yang Khao (Dipterocarpus alatus) and Mai bak (Anisoptera costata) were found within and outside the road alignment. Mai Yang Khao and Mai Bak are economic trees, and can be used for house construction. A total of 114 Mai Yang Khao have previously been recorded. Twenty-one (21) trees were cleared by the EDL (pole installation), 29 exist within the road corridor.

On the 12th February 2014 a *Valuable Tree Survey* was undertaken by a joint initiative between the Bolikhamxai GOL authorities, NN1PC and the road construction sub-contract, Obayashi Corporation. The results of the study are included in Appendix 3. Twenty four (24) valuable and or commercial trees (Mai Bak and Mai Yang) were identified. Of these 12 could be preserved by road re-alignment. All trees were marked to clearly identify their importance, and considered in road design and alignment. Trees that occur within the road corridor, if of economic value, will be salvaged by the DAFO/PAFO, and those of no value will be felled and collected by the waste management contractor who will operate through the PPA ROW with Obayashi Corporation.

3.2.2. Fauna Overview

A total of 38 terrestrial species of fauna from 19 families, and 31 genera were recorded from the field surveys undertaken in 2013 in PPA. Wildlife includes Wild Pig, Munjac, Clouded Leopard (Pardofelis nebulosa), Civet, Flying Squirrel as well as Green Peafowl (Pavo muticus), Hill Myna (Gracula religiosa), Red Junglefowl (Gallus gallus) and the Siamese Fireback (Lophura diardi).
The road upgrade coupled with proposed dam construction will facilitate an increased human population to the area, which may result in increased hunting pressure, wildlife trading and illegal logging activities. In the absence of effective management, increased pressure on forest resources will continue to impact on the biodiversity and conservation values of the PPA.

4. The PPA Access Road Upgrade

An existing road passes through Houay Ngua Provincial Preserved Area in a north-south direction connecting several up-catchment villages to Ban Nonsomboun. This road is to be upgraded along its length for access to the dam

site and facilities. Under the SSESMMP AR the PPA falls within the Road A (permanent road) jurisdiction. The PPA commences at STA: 6+800 and extends to STA: 16+500.

Potential impacts on PPA conservation values are among the most important aspects of the access road development, and may occur both directly and indirectly. The existing road will be upgraded to cater for larger traffic volumes to a width of 30m – 15m either side of centerline. One quarry site is proposed at STA: 9+400.

There are no Borrow Pits inside the PPA. The nearest is located at STA: 18+500 and has an areas of 18,760m^2.

4.1. Quarry Site Management

A quarry is proposed at STA: 9+400 to produce road base. It is expected that 37,600m^3 of road base material will be created, serviced by a mobile crusher, from 51,000m^3 of original material. The area proposed for the site is highly degraded, impacted from poorly constructed and maintained tracks, log snigs and roads, as well as die-back and over clearing.

Photo 1 Proposed quarry site at STA:9+400

Source: *Detailed Works Program for Construction of Access Road – Quarry Road A STA: 9+400,*

A *Detailed Works Program for Construction of Access Road – Quarry Road A STA: 9+400* (Quarry Works Program) was submitted by Obayashi Corporation (road upgrade contractor) to NN1PC on the 24th February 2014, and a revised works program was re-submitted on the 27th February 2014. The approved program is attached in Appendix 4.

The Quarry Works Program includes a temporary camp (STA: 4+000) and material stockyard (STA: 18+400), both outside the PPA. Environmental mitigations are included for the site for the natural environment including those for drainage, dust, noise and vibrations. The quarry site and its operations and decommissioning are also subject to criteria set out in Sections 6.7 and 6.13 of Road-A SS ESMMP. Other quarry remediation efforts are detailed later in section GOL Strategies and Activities and NN1PC Strategies and Activities.

Note: there are two abandon quarry sites between STA 15+750 and STA 16+000 According to Obayashi engineers, the quality of rock material in these quarries is low and there are no plans to re-open the sites. If the site is reopened all necessary compliance management conditions and planning requirements will be followed.

4.2. Current environmental condition of the ROW through the PPA

The overall environmental condition of the PPA along the ROW corridor is highly variable, but mostly in a degraded state. The ROW vegetation is showing signs of die-back and there has been significant over clearing. More recently significant stands of vegetation have been pushed over (by an excavator) to make way for a transmission line. The transmission line follows the ROW for the entire length of the PPA, so considerable damage has been created. The felled vegetation has been left in-situ and areas have been burned. Numerous piles of vegetation debris is scattered along the ROW. This includes quantities of commercial value timber. Logging contractors have set up camp inside the PPA to win material from felled/pushed trees. Timber milling is also occurring within the PPA. Associated with transmission line, hillside slopes have also been cleared and or burned in several ROW sections making them vulnerable to erosion. The area is susceptible to weed invasion.

Higher quality stands of vegetation occur around STA: 14+000. However, the vegetation transition from the PPA boundary outward is unremarkable. The low quality of vegetation cover inside the boundary is very similar to that outside the boundary. Current monitoring is ineffective. Local villagers were observed cutting and transporting tree sections.

The declaration of the PPA appears to have had very little impact on controlling illegal logging and other harmful practices. Its clear the PPA has suffered from a lack of coordinated management and planning. The NN1PC intervention with GOL support along the ROW presents a significant opportunity for guiding future condition and use.

The Road-A section through the PPA is not maintained. Its surface is subject to erosion with sediments being mobilized into local drainage lines. Fortunately, drainage lines are mostly 1st – order, with occasional 2ndand 3rd– order small streams. These drainage lines have considerable shrub and ground cover. The high drainage order presence of thick understory are factors that help to limit sediment movement from disturbed areas to larger waterways. There are very few permanent watercourses in the PPA ROW, as the road corridor follows a drainage divide. NN1PC recently (2013) installed culverts and pipes at major drainage lines to improve road drainage and maintain year round access. These are just temporary measures and the entire road drainage system needs to be significantly improved.

Dust pollution is a significant issue due to the very fine particles that make up large sections of the road top-surface. This dust presents a real health risk to road users, and deteriorates the quality local biodiversity values. The road in its current condition is a liability to the value and aesthetic of the PPA. The proposed NNP1PC upgrade would have an immediate and significant benefit to the PPA overall.

5. Strategies for Road-A Environmental Management through the PPA

5.1. GOL CAP Strategies and Activities

GOL stakeholders strategies and activities will be inline with the *Goals* and *Main Activities* outlined in the Protected Area Management Plan 2011-2015 and the supporting PPA Determination Notice.

On the 14th February 2014 the NN1PC representatives met with PONRE and other stakeholder (list attached in Meeting Minutes Appendix 1) to develop guidelines for the management of the PPA through the road upgrade period. The expected construction period is three months from commencement. The minutes outlined a range of actions that will be undertaken, by various stakeholders, as part of the PPA conservation management. Table 1 outlines the agreed government contribution that will be funded by the NN1PC. The official document is provided in Appendix 5. The monitoring and inspection sheets are provided in Appendix 6

Table 1 Agreed Government of Lao CAP activities

No	Main description	1st Month				2nd Month				3rd Month				4th Month			
		1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
1	Establish checkpoint booths **(x2) at PPA Boundary**			x	x	x	x										
2	Undertake regular patrols and inspection at the checkpoint booths and the PPA ROW			x	x	x				x	x	x				x	x
3	Undertake Community Awareness program for five (5) adjacent villages			x	x						x	x				x	x
4	Prepare all necessary materials for patrols and awareness campaigns.		x	x													
5	Evaluate all the activities from patrol/checking at the booths and Awareness programs.				x								x				x
6	Monthly evaluations (NN1PC/GOL)				x					x			x				x
7	Report submission (monthly / final)					x					x			x			x

5.2. NN1PC Strategies and Activities

The NN1PC regards PPA as an asset. It serves as the natural gateway to the companies dams and facilities and its condition, particularly the road corridor and adjacent forests, will be a direct reflection of the company's attitude towards the environment. NN1PC will work with GOL and stakeholders to improve the overall condition of the ROW.

The approach taken by NN1PC for the access road construction and maintenance is to ensure the *Goals* of the Protected Area Management Plan 2011-2015 are fully realized. NN1PC efforts in road design and maintenance, along with ongoing strategies with GOL and other stakeholders will:

- Minimize impacts on local flora and fauna;
- Restore biodiversity;
- Maximize potential biodiversity and conservation benefits.

Road construction works, quarry sites and the road upgrade generally will be subject to environmental controls outlined the following documents:

- Annex C (Concession Agreement) Environmental and Social Obligations: ***Rehabilitation, Decommissioning and Post-Handover Clauses 39 to 42.***
- SS ESMMP Road A, Obayashi Corp, February 2014**.** (Document Ref#: NNP1-PLN-SSESMMPA-A2)
- A ***Detailed Works Program for Construction of Access Road – Quarry Road A STA: 9+400*** (Quarry Works Program)was submitted by Obayashi Corporation, 27th February 2014 (Appendix 4)
- **ESMMP-CP Sub Plan 12.26:** Up on completion of extraction activities, quarry and borrow areas shall be dewatered and fences shall be installed, as appropriate, to minimize health and safety risks.
- **ESMMP-CP Sub Plan 12.27:** Ensure borrow areas are left in a tidy state with stable side slopes and proper drainage in order to avoid creation of water bodies favorable for mosquito breeding.
- **ESMMP-CP Sub Plan 12.28:** Restore and rehabilitate of quarry sites and borrow areas after use.

While the sub-contractor will undertake environmental management according to compliance requirements (drainage, dust, noise and vibration), a *rehabilitation plan* for quarry site STA:9+400 will be prepared as part of facility closure. The rehabilitation will be designed in such away as to mimic the local environment. Rehabilitation of the decommissioned sites within the PPA will be given the highest priority. Disused sites will be landscaped in addition to being re-vegetated to match the local aesthetic and function.

In addition, the NN1PC proposes the following management strategies to ensure protection of the PPA resources:

1. No camps, temporary or otherwise, will be established within the PPA.
2. Sub-contractor and employees conditions will be subject to Code of Conduct, which includes environmental considerations. Zero tolerance are applied to those proven to be conducting illegal logging and or wildlife trading.
3. The boundaries of the PPA will be clearly marked (with modern signs) on road approaches to advise traffic and road users that it is entering a

conservation area. Speed control signs will also be installed along with a list of banned activities.

4. A plant nursery will be established on site for the restoration efforts for the entire construction site. It will feature propagating IUCN listed species which will be included in rehabilitation works along the road corridor inside and outside the PPA. The nursery will be established earlier during the main facility construction period.

Appendix 1

Minutes from Bolikhamxai Meeting 14th February 2014 (English versions)

Lao People's Democratic Republic

Peace Independence Democracy Unity Prosperity

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Borikhamxay Province
Department of Natural Resource and Environment

Memo of minute for consultation meeting for environmental management

NNP1

- Refer to discussion of meeting held on 14-Feb-2014 (ADB 's visit)

The meeting was held on 19-2-2014 at 13:30hrs at PoNRE office with chairman by Mr. Leuan vilay CHANTHALAPHAN_ Head of PoNRE and participated by several Organization from Province and District which registered enclose herewith.

I. Purpose of this meeting

- To discus about environmental management work for NNP1
- To discus about forest and biodiversity management of Houy Ngoua PPA due to impacted from Road construction from Ban Nonsomboun to Ban HatGniun_NNP1 and other activities

II. Result of meeting

1. Discussion about Houy Ngoua PPA protected management as following:

- To be build up checking point at 2 Locations along the PPA boundary , and closely cooperate between local authority and NNP1; for expected budget shall be discussed later to clarify
- To assign patrol team at least 15 times /month, inspection sheet forms shall be provided in according to regulation rule.
- To have awareness program and incite to local community around 5 villagers, district officer and spreading information by mean of appropriate way such as by radio, and TV) to understand about important of PPA
- All action plan for PPA shall be completed within 21-2-2014.

2. Action Procedure

- Detail of action for implementation for each activity shall be complied with action plan enclosed herewith
- Responsibility is assigned to PoNRE and NNP1 (Mr. Apirat) to coordinate directly
- PoNRE will approve all budget necessary for work implementation.

3. **To be held a consultation meeting and reporting of action result**

- To be provide budget for Provincial EMU and district to conduct the activities of environmental management(ESMMP)
- Provincial EMU and District shall hold a consultation meeting with NNP1 ESM team

4. **Basically agree with PPA site management guide line (with enclosed herewith) for detail will be discuss for next stage.**

Therefore all party agree to record this MOM with NNP1 for reference, action and monitoring environmental work for next stage.

Borikhamxay, date 19/02/2014

Head of PoNRE **Recorded by**

Leuan vilay CHANTHALAPHAN Thavone

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ
ສັນຕິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນະຖາວອນ

ແຂວງ ບໍລິຄຳໄຊ
ພະແນກຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງແວດລ້ອມ

ບົດບັນທຶກ

ກອງປະຊຸມປຶກສາຫາລືກ່ຽວກັບການຄຸ້ມຄອງທາງດ້ານສິ່ງແວດລ້ອມ ຂອງໂຄງການກໍ່ສ້າງເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1

- **ອີງຕາມ** ບົດບັນທຶກຂອງກອງປະຊຸມປຶກສາຫາລື ຄັ້ງວັນທີ 14 ກຸມພາ 2014,

ໃນວັນທີ 19 ກຸມພາ 2014 ເວລາ 13 :30 ກອງປະຊຸມໄດ້ຈັດກອງປະຊຸມຂຶ້ນ ຢູ່ທີ່ພະແນກຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງແວດລ້ອມ ແຂວງ ໂດຍການເປັນປະທານຂອງ ທ່ານ ເລື່ອນວິໄລ ຈັນທະລາພົນ ຫົວໜ້າພະແນກຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງແວດລ້ອມ ແຂວງ ແລະ ໄດ້ມີຜູ້ເຂົ້າຮ່ວມຈາກຫຼາຍພາກສ່ວນທີ່ກ່ຽວຂ້ອງຂອງແຂວງ, ເມືອງ ເຊິ່ງໄດ້ມີຜູ້ເຂົ້າຮ່ວມທັງໝົດ 12 ທ່ານ ລາຍລະອຽດໄດ້ມີຕາຕະລາງລົງທະບຽນຄັດຕິດ.

I. ຈຸດປະສົງຂອງກອງປະຊຸມໃນຄັ້ງນີ້.

- ເພື່ອປຶກສາຫາລືກ່ຽວກັບວຽກງານການຄຸ້ມຄອງສິ່ງແວດລ້ອມ ຂອງໂຄງການກໍ່ສ້າງເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1.
- ເພື່ອປຶກສາຫາລື ກ່ຽວກັບການຄຸ້ມຄອງປ່າໄມ້ ແລະ ຊີວະນາໆພັນຂອງປ່າສະຫງວນຫ້ວຍງົວ ທີ່ຖືກຜົນກະທົບຈາກການກໍ່ສ້າງເສັ້ນທາງແຕ່ບ້ານ ໂນນສົມບູນ ຫາ ບ້ານ ຫາດປົ່ງ ຂອງເຂດໂຄງການເຂື່ອນໄຟຟ້ານ້ຳງຽບ.

II. ຜົນຂອງກອງປະຊຸມປຶກສາຫາລື.

1. ການສົນທະນາກ່ຽວກັບແຜນການປົກປັກຮັກສາປ່າສະຫງວນຫ້ວຍງົວ ເຊິ່ງໄດ້ມີ:

- ໃຫ້ມີການກໍ່ສ້າງຈຸດກວດກາຈຳນວນ 2 ຈຸດ ຕາມເສັ້ນທາງເຂດປ່າສະຫງວນ ການຕິດໄລຕ້ອງໄດ້ມີການປະສານສົມທົບກັນຕື່ມໃຫ້ສຳເລັດ.
- ສ້າງຕັ້ງທີມງານກວດກາລາດຕະເວນ ຢ່າງໜ້ອຍ 15 ຄັ້ງ/ເດືອນ, ການກວດກາຕ້ອງໄດ້ມີເອກະສານ ແລະ ຂໍ້ມູນອ້າງອີງໃຫ້ຖືກຕ້ອງ ແລະ ສອດຄ່ອງກັບລະບຽບການ.
- ໃຫ້ມີການສ້າງຈິດສຳນຶກໃຫ້ແກ່ປະຊາຊົນ 5 ບ້ານເປົ້າໝາຍ, ປຸກຈິດສຳນຶກໃຫ້ທາງອຳນາດການປົກຄອງຂອງເມືອງ ແລະ ການເຜີຍແຜ່ຂໍ້ມູນຜ່ານການສື່ສານຕ່າງໆໃຫ້ກວ້າງຂວາງ.
- ແຜນການປົກປັກຮັກສາປ່າສະຫງວນທີ່ກ່າວມາຂ້າງເທິງ ແມ່ນຕ້ອງໃຫ້ສຳເລັດພາຍໃນວັນທີ 21 ກຸມພາ 2014.

2. ການຈັດຕັ້ງປະຕິບັດ

- ລາຍລະອຽດຂອງການຈັດຕັ້ງປະຕິບັດແຕ່ລະກິດຈະກຳແມ່ນໃຫ້ປະຕິບັດຕາມແຜນທີ່ສະເໜີ ຄັດຕິດມາພ້ອມນີ້.
- ເລື່ອງຄວາມຮັບຜິດຊອບແມ່ນມອບໃຫ້ພະແນກສິ່ງແວດລ້ອມ ຂອງແຂວງ ແລະ ບໍລິສັດໄຟຟ້ານ້ຳງຽບ 1(ທ່ານ ອາພິລັກ)ເປັນຜູ້ປະສານໂດຍກົງຕໍ່ວຽກງານດັ່ງກ່າວ.
- ໃນການອານຸມັດແຜນງົບປະມານແມ່ນ ພຊສ ແຂວງ ເປັນຜູ້ອານຸມັດ ແລະ ປະຕິບັດຕາມແຜນທີ່ໄດ້ກຳນົດໄວ້.

3. ຕ້ອງການມີການຈັດກອງປະຊຸມ ແລະ ລາຍງານຜົນຂອງການຈັດຕັ້ງປະຕິບັດ

- ຕ້ອງໄດ້ຈັດສັນງົບປະມານໃຫ້ກັບໜ່ວຍງານ EMU ຂອງແຂວງ ແລະ ເມືອງ ເພື່ອຈະໄດ້ຈັດຕັ້ງປະຕິບັດຕາມແຜນຄຸ້ມຄອງສິ່ງແວດລ້ອມ ທີ່ໄດ້ລະບຸໄວ້(ESMMP).
- ແຕ່ລະເດືອນໜ່ວຍງານ EMUຂອງແຂວງ ແລະ ເມືອງ ຕ້ອງໄດ້ມີການຈັດກອງປະຊຸມຮ່ວມກັບ ໜ່ວຍງານຄຸ້ມຄອງສິ່ງແວດລ້ອມຂອງໂຄງການ.

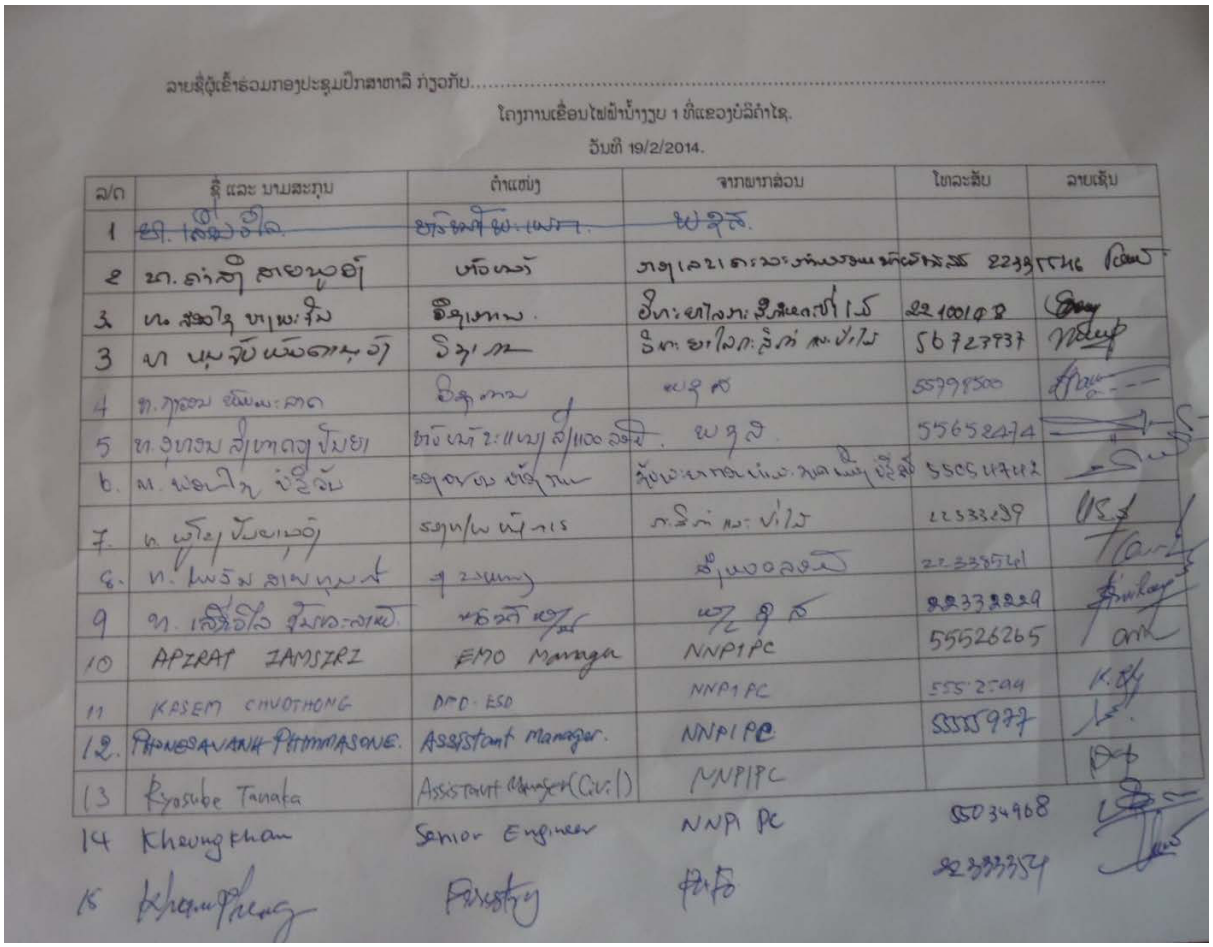
4. ການປຶກສາຫາລືຄັ້ງຕໍ່ໄປເຫັນດີທີ່ຈະປະຕິບັດຕາມຄູ່ມືການຄຸ້ມຄອງປ່າສະຫງວນ(ອີງຕາມເອກະສານທີ່ຄັດຕິດ)

ສະນັ້ນ ຈຶ່ງໄດ້ພ້ອມກັນສ້າງບົດບັນທຶກຂອງກອງປະຊຸມສະບັບນີ້ຮ່ວມກັບທາງໂຄງການກໍ່ສ້າງເຂື່ອນໄຟຟ້ານ້ຳງຽບ ໄວ້ເພື່ອເປັນຫຼັກຖານ ແລະ ເປັນຂໍ້ມູນໃນການຈັດຕັ້ງປະຕິບັດ ແລະ ຕິດຕາມກວດກາສິ່ງແວດລ້ອມໃນຄັ້ງຕໍ່ໄປ.

ບໍລິຄຳໄຊ, ວັນທີ 19 /02/2014

ຫົວໜ້າ ພະແນກຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງແວດລ້ອມ
ປະທານກອງປະຊຸມ

ຜູ້ບັນທຶກ



ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມປຶກສາຫາລື ກ່ຽວກັບ.....

ໂຄງການເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1 ທີ່ແຂວງບໍລິຄຳໄຊ.

ວັນທີ 19/2/2014.

ລ/ດ	ຊື່ ແລະ ນາມສະກຸນ	ຕຳແໜ່ງ	ຈາກພາກສ່ວນ	ໂທລະສັບ	ລາຍເຊັນ
1					
2					
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9					
10	APIRAT IAMSIRI	EMO Manager	NNP1PC	55526265	
11	KASEM CHUOTHONG	DPO. ESO	NNP1PC		
12.	PHONESAVANH PHIMMASONE.	Assistant Manager.	NNP1PC		
13	Ryosuke Tanaka	Assistant Manager (Civil)	NNP1PC		
14	Khoungkham	Senior Engineer	NNP1PC		
15	Khoungkham				

No	Name/surname	Position	Sector	Phone number	Signature
1	Mr. Khamsing sayphouvong	Head of RMU.NNP1PC	RMU secretary		
2	Mr. Sonexay Bangphachanh	Officer	Agriculture/Forest university		
3	Mr. Bounchan Phondanouvong	Officer	Agriculture/Forest university		
4	Mr. Thavone Phommalath	Officer	PoNRE.BLK		
5	Outhone Singhaduangpanya	Head of environment division	PoNRE.BLK		
6	Mr. Phonexay Bolivanh	Head of unit	Environment office of BLK district		
7	Mr. Phoukhaung Panyanouvong	Vice head of unit	Agriculture/forest unit		

No	Name/surname	Position	Sector	Phone number	Signature
8	Mr. Phaivanh Saythommy	Vice head of unit	PoNRE		
9	Mr. Leunvilay Chanhthalaphan	Head of Division	PoNRE		
10	Mr. Apirat Iamsiri	EMO manager	NNP1PC		
11	Mr. Kasem Chuthong	DMD_ESD	NNP1PC		
12	Phonesavanh Phimmasone	Assistant manager	NNP1PC		
13	Mr. Ryosube Tanaka	Assistant manager	NNP1PC		
14	Mr. Kheungkham	Senior engineer	NNP1PC		
15	Mr. Khampheng	Forestry	PAFO		

Appendix 2

Houay Ngua Provincial Protected Area Plan 2011-2015 (PAFO, 2010)

Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

Houy Ngua Provincial Protected Area
MANAGEMENT PLAN
2011 - 2015

Provincial Agriculture and Forestry Office of Bolikhamxay
December 2010

Plublized by: Provincial Conservation Division
Suport by: Lao Environment Protection Fund

Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

Bolikhamxay Province

004 - - ส
No...../BLKX
Paksane, Dated.....
04 JAN 2011

Decree
of the
Governor of Bolikhamxay Province

- Persuant to Forestry Law, No.04/NA, Dated 24 December 2007
- Persuant to Aquatic and Wildlife Law, No. 07/NA, Dated 24 December 2007
- Persuant to Priminister Decree, No.17/NA, Dated 22 September 2008
- Persuant to Provincial Environment Action Plan of Bolikhamxay.

The Governor of Bolikhamxay Province Decrees that:

Article 1. The Houy Ngua Provincial Protected Area Management is hereby promulgated

Article 2. Appointed the Provincial Agriculture and Forestry Office, Protected Area Management Division to collaborate with sectors concerned to interpret and supervise on implementation of Houy Ngua Provincial Protected Area Management Plan

Article 3. Other agencies and sections of province and district level that relate to this plan should be collaborated to accomplish the goals and objectives

Article 4. This decree shall enter into force on the dated it is signed.

Vice Governor of Bolikhamxay Province

ບຸນຍົ ສີສຸວັນນະຄອນ
Bounnhong SISOUVANNAKHONE

Acknowledgement

The current global environmental situation has become an importance issue that affects human resources and biodiversity on the earth. Human populations and urbanization are growing very fast and resulting in unsustainable use of natural resources. The environment is being damaged by human activity, and this increases poverty for rural people all around the world. From this environment situation, social-economic development must be done in a way that allows for sustainable use of natural resources by least developed and developed countries.

From this point of view, the socio-ecomonic development plan with sustainable use of natural resources base is necessary for the industrilized countries, the developing countries including the least developed countries. Therefor, Lao PDR, as well as Bolikhamxay Provincial and Bolikhan District adopts the balance socio-economic development and biodiversity protection in the Houy Ngua Provincial Protected Area and sustainable use of natural resources.

Therefor, i call upon all agencies both public, private, people and individual to contribute actively to the sustainable biodiversity protection and without threats.

The Houy Ngua Provincial Protected Area Management Plan is a reference document for setting up short-term and long-term work plans for the Houy Ngua PPA in order to strengthening the ability of government staff within the protected area as well as in District Agriculture and Forestry Office to work as a secretary protected area performance to the province.

This management plan will be used by planners, Houy Ngua PPA staff as well as other protected area staff. However, the Houy Ngua PPA management plan is also a strategic plan that can be used by biodiversity conservation partners, other projects and donors as a guideline.

I would like to acknowledge and thank the protected area staff, experts and Consultant Technical Advisor whose assistances helped to improve this management plan. Once again we also want to thank all of protected area team leaders and technicians who gave commences on the Houy Ngua PPA Management Plan and I expected that the management plan will be significantly useful to socio-economic development of Bolikhamxay Province.

Bolikhamxay Provincial Agriculture and Forestry Office

ສົມສັງງວນ ສຸວັນນະລາດ
SOMSANGOUANH SOUVANNALAD

Contents

Introduction

The Houy Ngua Provincial Protected Area (HNG PPA) Management Plan is a reference document for setting up short-term and long-term work plans for the Houy Ngua Provincial Protected Area in order to strengthening the ability of government staff within the protected area as well as providing for research site of Province Agriculture and Forestry School of Bolikhamxay and with 5 villages surroundings Bolikhan District. The Houy Ngua Provincial Protected Area PPA follows the recommendations of the District Socio-economic Development Plan of Bolikhan District and Bolikhamxay Province strategic plans as well.

The Houy Ngua Provincial Protected Area Management Plan will be used by planners, students, researchers District, and Provincial Protected Area Staffs as well. Nevertheless, the HNG PPA Management Plan is also a strategic plan that can be used by biodiversity conservation partners, other projects and donors as a guideline.

This document has three parts. Part 1 describes the Bolikhan District; Part 2 describes the HNG PPA and Part 3 the Management Plan and includes appendices.

Part I. General Context of Bolikhan District

1. Geographic and Hydrologic status

A.Topographic Features

The Bolikhamxay Province consist of 7 districts, out of with one District is Bolikhan where the significantly of provincial socio-economic zone, situated to the north of Bolikhamxay Province. There are district governance office located at Ban Vatthad and far from Pakxane District approximately 23 Km and shares border with:

- Thathome District, Xiengkhouang Province to the north
- Pakxane District to the south
- Moke District (Xiengkhouang Province), Viengthong, and Pakkading District to the east
- Home District (Vientiane Province) and Thapabath to the west with the total border length of more than 306,228 km, 70% are mountainous and still abundant of forest.

B. Hydrologic Status

The weather of Bolikhan District has influent by the southwest humid monsoon between Aprils to October. About 90% of annual rainfall falls during this time period. The dry season is during November to March most of the time there is no rain, but on the other hand sometimes there is a heavy rain influenced from Vietnamese storms or typhoons. Therefore the rainfall is differed between the Mekong River plain and the Annamite Mountains especially with higher rainfall at the higher altitudes. The period of total rainfall sometimes is 10 months; however the detailed hydrological data within this area is still insufficient.

The average annual rain fall is less than 2,000 mm around Pakxan Town and more than 3,000mm at the eastern province. The low temperature is between December and January in Pakxan Town where the average temperature is about 16.91°C. The hottest month is March with the high temperature of about 34.36°C. On the other hand, at the same period the temperature in the eastern part of the province (Laksao) is lower by 4°C.

2. *Social - Economic Situation*

A. Administration of Bolikhan District

Khamkeut District administration consists of 45 village development groups, 68 villages, 6,025 households, the total of population is 36,533 inhabitants, of with 17,980 are female, representing 49.22% and 50.78% are male. The inhabitants has increased 4,430 persons compares to year 2005, the average rate is 2.77% per year. There are 46.7% are Lao Loum, 23.9% are Tay, 11.5% are Kim moo, 14.5% are Hmong and 3.3% others.

The adult who can work effectively is 69.95%, 50.93% are male, 49.07% are female. The main occupation is rice production representing 33%, 13% are slash and burn cultivation, 3.2% are government officials, 0.3% are state enterprise employees, 1.7% are laborer service or worker, 1.7% are traders, 0.1% are transportation, 0.5% are construction, 35% are student, 1.5% are retirement, 6.2% are house wife-husband, 0.8% unemployed and 3% others.

B. Educational

The Bolikhan Distist official has focused on the enhancing of education quality and expanded schools at village development groups such as improvement of teaching skill by following the new curriculums, upgrade teachers who lack of skill.

The entirely district has 3 nurseries; there are 116 pupils, out of with 78 are female, and 12 teachers. 43 schools are primary with the total of 180 are class room. out of with 80 persons are women. The total pupils of primary schools is 6,393 persons, out of with 3,376 persons are women, the maximum number of children in school is 98%, the average dropping school is 2.83%, the average the number of

students is 35 persons per one teacher per classroom. There are 3 primary secondary schools with 10 classrooms, 17 teachers, out of with 4 persons are female, the total of pipuls is 576 persons, out of with 220 persons are female, the maximum number of student in school is 60 %, the average dropping school is 3.25%, the average number of stutent is 32 persons per teacher, the average of student is 52 persons per room, There are 3 permanent primary secondary schools with 47 classrooms, 88 teachers, out of with 29 persons are female, the total of pipuls is 3,396 persons, out of with 1,410 persons are female, the maximum number of student in school is 46 %, the average dropping school is 4.09 %, the average number of stutent is 38 persons per teacher, the average of student is 72 persons per room, the total of district teacher is 356 persons, increased 3.97% compared to year 2004 - 2005, the primary school student declined 4.34%, the primary secondary school triple in creased, the upper secondary school increasde 21.4% increased 21.4% compared to academic year 2004-2005, the students who passed the exam is 95.31%, the primary secondary school students passed the exam is 95.83%, the upper secondary school students passed the exam is 98%.

The eradication of illiteracy is 1,276 persons, the district can eradicate adult illiterate fully in 41 villages, representing 89% of 5 year action plan, the average rate of literate of people is 82%, out of with 49.2% are women, the adult (15 - 24 year-old) is 3,551 persons, the adult (25-40 year-old) is 5,842 persons and the age more than 41 years old is 5,842 persons, out of with 3,016 are female.

C. Health

The Bolikhan District has focused on expansion of health care to the remote area. Currently, there one hospital in the town of district, with 10 patient beds and 5 health care center, the total of physician is 45 persons such as one person bachelor degree, 6 persons are diploma, 18 persons are secondary certifictate, 20 persons are primary certifictate. Beside that, there are 6 persons is health care supervision team, the average of population is 801 per physician, form 76 persons are nurse base at village level, there are 14 pharmacy shops, 32 are drug bag base in villages, 25 villages are estabkished health care fund with the total of nurse member of more than 1,013 families, 12 villages were established as model health care village, and the progresive of works representing 80% of 5 years action plan, can retreat opium smoking of 4 times, with the total of more than 86 people. Up to date, there are 43 villages were able to access clean water, with the total of 5,392 households, representing 89.5%, increased 83% compared to 2004. 75.19% are accessed to hygienic latrine, 75% are use mosquito net, the children and women get vacination in target village groups is 80%, the birth rate is 21 of male per 1,000 of female, the dead rate of chdren at age lower than 5 years old is 19 persons per 1,000 of chidren, the mother dead rate is 154 people per 1,000,000 of female. The disease infection is sick with fever, sore throat, diarrhea, stomachach and so on.

D. Agriculture and Forestry

The district official has expanded on food stuff production and 2 priority projects in food production for trade is planting such as:

- **Rice planting and quality processing**

By focusing on rainy farming and irrigation farming to use the existing area to produce rainy farmed rice and irrigated farmed rice by using the good quality of seeds to be appropriated with rice field soil fertility, improvement of irrigation system, conversion and cultivation to enlarge production area to be sufficient of rice field and including creating of small rice store warehouse at household level or appropriately household group. By 2014, district should have 4,421 ha of rice paddy of rainy farm with the yield of 5.8 tons per hectare; 1,445 ha of irrigated farm with the field of 5.8 tons per hectare, the area of rice planting garden is 2,201 ha with the yield 1.8 tons per ha, the total of rice with husk production should get 32, 263 tons, the average of amount of rice per person per year should not be 732 kg and 6,000 tons of rice with husk for trade.

- **Planting for trade project**

District has focused on planting of cassava, sweet corn and surga can which appropriate with policy and domestic market by setting up houshold group, private investment for indusrtry processing to reach the district goal as folling:

- The expected of cassava planting is 2,000 ha by focusing on Bolikhan municipality and Houy khoun
- Sweet corn planting ecpected to get 350 ha by focusing on Bolikhan municipality, Phameuang and Thasii-Xiengleu
- 77 ha are expected of sugar can planting.

Beside that, district has seted goal to plant the other agriculture corp to sufficient supply to cunsumption by seasonal doing farm, using the good practise and apply organic fertiliser. 1,830 ha are expected of irrigation farming by the year 2014, 1,592 ha are expected of rainy farming and the total of plant production are 53,483 tons.

E. Public Work and Transportation

District official has concentrated on coordination with relevant sectors at provincial and national to continue the construction of of the 1D road, and 4D and improvement of section road to village development group to be able to access two season such as rainy and dry season. The construction of road 4D started from Pakbeuk to Namtek, Pakbeuk to Hin ngone, Nonsomeboune to Thaheua and Had ngeun, Na o to Khamphay, upgrades the section road in around Bolikhan munipality, create section road of Pakbeuk insfrastructure developmen road and Nakoun. Beside that, district has built the designation of wastes or garbages in the down tow of Bolikhan and village development group such as Ban Houykhoun, Phameung, Nakoun and villages along the 1D, 4B, Namxan and Namngiep road.

Effectively of management of transportation hevhicles and driving to follow up traffic rules and to reduce accident as well, improve the products road inspection

point and move from the municipality to ouside of the district including improvement of officer skill in services to be quick performance and transparency.

Continues to expand and improvee of communication and post network to facilate and privides service to people of the whole district to be faster and more conveniance than the past.

Continue to construct and expand of the clean water supply in around municipality, Houykhoun, Somexeune and raise fund to develop more area of water supply at Ban Phameung more. Construct the village development group office, village meeting tower by using village funding or strengthen in line with laws and regulations. Proceed to more strict on management and designation of unplanned build up area in particularly in the municipality and villages along the 1D and 4D.

3. *Natural Resources Values*

A. Forestry Resource Values

Forest resources have played a central role in the economics of the province. In 2000, the peak value for production derived from the forest was 29.42% of the total economy of the province. In the near future, the way forward for the province is to lead with forest resources and production of forest products. The economy of Bolikhamxay has still not greatly increased; therefore the environmental values remain very important. Bolikhamxay Province is a place that people depend on for relaxation, ecotourism, rejuvenating the heart, and for strong health. Forest resources are a place for production and collection of food for the rural population, as well as a source for traditional medicine. Furthermore, the forest plays an important role in protecting watersheds, reducing erosion, and is something the people rely on.

☞ **Current Status:**

Bolikhamxay Province currently has more than 63% forest cover, approximately 15,996 km². There is an abundance of forest resources, high biodiversity, vegetation types, and wildlife of national and international significance. There are also wood species with high economic value: Fokenia, Agar wood, Sandalwood, *Afxylia Xylogapa* (Mai Dtae), *Hopea Odorata* (Mai Kaen), Mai Muea Ohn, and also medicinal trees.

Protected areas cover 382,404 hectares or about 24% of the province. Of this, 296,070 hectares are National Protected Areas, 52,152 hectares are Provincial Protected Areas, and 34,182 hectares are District Protected Areas. Below are more specific details for each protected area:

- National Protected Areas cover 18.5% of the province's land base
  - Nam Kading NPA is 169,000 hectares, or 10.6% of the province
  - Nakai NPA is 27,070 hectares, or 1.7% of the province
  - Phu Khao Khouay NPA is 100,100 hectares, or 6.3% of the province

- Provincial Protected Areas cover 3.4% of the province's land base
  - Phu Kurt PPA in Paksan District is 1,000 hectares, or 0.06% of the province
  - Phu Kadan PPA in Pakxan District is 728 hectares, or 0.05% of the province
  - Nam Jaad – Nam Ban in the Ngod Nam area is 37,600 hectares, or 2.4% of the province
  - Phu Ngou PPA in Paksan District and Pak Kading is 12,824 hectares, or 0.8% of the province
- District Protected Areas cover 2.1% of the province's land base
  - Phu Muang DPA to the Saan stream in Bolikhan District is 4,150 hectares, or 0.26% of the province
  - Phu Paa Saan DPA to the Nam Muang River in Bolikhan District is 4,032 hectares, or 0.25% of the province
  - Phu Muun Nam Sao DPA in Bolikhan District is 5,200 hectares, or 0.33% of the province
  - Phu Taa Sii – Siang Leu DPA in Bolikhan District is 20,800 hectares, or 1.3% of the province

☞ **Challenges**

The forest resources within Bolikhamxay Province are still undergoing a reduction. The forest resources are declining as a consequence of production and use by the population living in Bolikhamxay Province. This is resulting in a climate change, changing seasonal rain patterns, drought, flood, erosion, and loss of topsoil.

☞ **Causes**

Lack of laws and regulations enforcement, Excavation of forest resources in areas that maintain natural features which enable natural forests to grow and flourish such as:

- Clearing of the forest by local people for Sweden agriculture
- Increasing population and in-migration of people from northern provinces, Increasing land area being put into agricultural production, Increasing infrastructure development, including: highways, hydroelectric dams, and irrigation

4. Culture and Tourism

A. Culture

Focused on the increasing of the quality of media, 1,008 issues are radio and television information to provide for broadcasting of province and national station, 9,816 issues are produced for magazine and 12 villages had speaker.

11 villages are expected to establish as traditional model and 4 villages are approved. 1,828 households are culture establishment, representing 29.97% and 30.30% are succeeded of district 5 years action plan, the attention of goods

exhibition and trading of traditional is 21 times. Effectively and strict on law enforcement to prevent and reduce threats of traditional gradually.

B. Tourism

There are 16 tourist destinations, and started to develop tourism products of Nampa waterfall, Nangphomhome cave close to (Ban Phameuang) and official open for service. There are one hotel, 3 quest houses, 10 restaurants and one night club. The Bolikhan District has encouraged of tourism and traditional supervision to be in line with regulations.

5. Social- Economic Development Plan of Bolikhan District 2010 - 2015

Create new opportunity in development of agriculture and forestry production, processing, services and tourism simultaneously with social development, culture preservation, protection of natural environment, improve people livelihood to be one double better than current.

- 8% are expected to robust economic per year, LAK 365 million are expected of add value tax income and the average capita is US$ 1,000 /person/year.
- The agriculture and forestry production structure covers 40%, 21.29% are industry, and 38.71% are service.
- 31,263 tons are expected of rice production, the average is 732 kg /person/year.
- 15% are expected of household poverty reduction, and 80% are village poverty alleviated and slash and burn cultivation is stabilized.
- The maximum of students in schools is 98%.
- The chidren dead rate (of the age under 5 years old) is 18 per 1,000 persons.
- The mother dead rate is 95 per 100,000 persons.
- The clean water acces rate is 98% and 95% are accesed hygienic latrine.
- 25 villages are established as vilage development, 70% are household developed.
- Ban Nokoun and Pakbeuk are mergged in to one group and developed as a small town.
- The population growing rate is 2.7% / year. By the yera 2014 the mumber of household will increase 6,900 and 42,700 people are inhabitant.

5.1. State investment

The expected of state investment is 48 projects, with the cost of LAK 51.75 billion such as 10 projects with cost of LAK 14.65 billion for production, 12 projects, with cost of LAK 28.63 billion for services and 26 projects, with cost of LAK 8.46 billion for social and culture.

5.2. Domestic, Individuals Investment and Foreign Grant

The district officials has made an effort to encourage domestic and foreign bussinesses to invest more and more in around of district, create investment

opportunities and management, the expected of private investment about 15 projects with the total cost of licesing is LAK 85 billion and 2 projects with the cost of licesing is LAK 20 billion.

5.3. The loan of Nayobay bank

The expected of loan of Nayobay bank is totally 14 projects with the total cost of LAK 45.27billion such as 9 projects with cost of LAK 19.96 billion are short term project, one project with total cost of LAK 2.44 billion are middle and long term is 4 projects with total cost of LAK 22.97 billion.

5.4. Rural Development and Poverty Alleviation

Continue to develop infrastructure and rural development and poverty eradication by relying on village development and committee by following the 4 goals and objectives to allocate budget and reform staffs to make an effort to alleviate poverty or focal area in compliance with priority project targets.

Continue to regularly monitoring of land allocation and land use planning and land tenure effectively to be in line with government policies and projects on improving of people livelihood, reduce gradually of poverty gap of rich, poor people in district and rural area. Poverty eradicated households, the economic is stabilized and district has contued regulary to improve of management and expansion of fund establisment to the other villages and loan from bank to be effectivly and sustainable. improve the smal medium enterprise of socio-economic insfastructure development by villagers involvment such as construction of section road acces to rural area, small bridges, irrigations, schools, village towers and coordinate with Pabeuk development group to implement in line with higher level policies and meet the district goal. Continues on procting of natural resources and prevent absolutely of shifting cultivation.

By the year 2015, 25 villages to establish as developed group, 40 villages and 5,865 households (representing 85% of the total household) are expected to be able to eradicate of poverty and now district has removed from goverment poor district list.

To accomplish the goal above , district has setted up 39 projects of the village development with the total investemnt cost of LAK 47.59 billion such as LAK 13.84 are goverment, LAK 33.59 billion are private and LAK 0.13 billion are villagers.

Part II. Houy Ngua Provincial Protected Area (HNG PPA) Management Plan: 2011 - 2015

1. General Status

The Houy Ngua Provincial Protected Area (HNG PPA) is far from Provincial Administration Offic of Bolikhan approximately 6 km, there are 5 villages in the management zone such as Ban Sisavath, Nonesomboun, Sisomxeun, Hatngeun and Thaheua. The HNG PPA is established for district protected area in 1995 by agreement and endorsement of District Party Committee Meeting and upgraded to the Provincial Protected Area in 1998 with the total area of 13,500 ha and allocated of land tenure and use planning for villages in around protected area, at this time was lack of the coordination with sectors concerned such as HNG boundary was overlaped with provincial production forest (Close to Phou ngou), and provincial has approved of logging in around that area from 2006-2007. There for HNG PPA is 3,960 ha are smaller than prevoius identification and had to re-zonning, produced PA signs which support by Lao-Luxoumburg project, due to the HNG PPA still abundant of biodiversity and natural resources where is the very important to the communities livelihood of ajecent villages and district as well. HNG PPA is also significant of natural property of district to create income in the future from ecotourism and Provincial Tourism Office has determined as a tourist destination of province. On the other hand, curently, this protected area is integrated of significant biodiversity and suitable site for students of Provincial Agriculture and Forestry School (APFS) of Bolikhanxay to do field research. From 2007-2008, the Lao Environment and Social (LEnS) and Lao-Luxumburg project have granted for the first phase to protection of HNG PPA and implemented by APFS due to this project has succeeded of the phase 1, so LEnS has continued to support in phase 2 and survey biodiversity in around 3 villages more where still not completed from phase 1. Neverless, HNG PPA cleared on boundary demarcation and land allocation of villages but still have illegal activities such as destruction of natural resources or human threats to wildlife that why will not be sustainable if this protected without appropriate and effective management and budget to lon term preservation by villagers involvement.

The HNG PPA has established as a Provincial Protected Area in accordance with governor decree no. 0294/BLX, dated 24 January 2010 and its border are:

- Ban Thaheua, Phoungou PPA (Phoudenemeuang) to the north with the GPS coordinate of X: 356856, and Y: 206200.
- Ban Sisomxeun to the south with the GPS coordinate of X: 357420, and Y: 205125.
- Ban Nonesomeboune and Sisavad to the east with the GPS coordinate of X: 361375, and Y: 205525.
- Nam ngiep to the west with the GPS coordinate of X: 353400, and Y: 205475.

The Houy Ngua PPA is out of which 5 Provincial Protected Areas, and 3 National Protected Areas in Bolikhamxay Province with the total area of 354.231 ha, and 5,495 ha are the total area of Houy Nhua PPA, represents 1.3%. HNG PPA is also shared border and important of wildlife corridor with the Phoukhaokouy National Protected Area and along the Namngiep river. There for to be managed effectively in compliance with state policies of this protected area, the HNG PPA team has identified 2 conception models to achieve management goal as following:

1) Communities site- base PA management and protection
2) Effectively conservation simultaneously with rural development, livelihood improvement, ecotourism and culture.

2. Topography and Water Sources

The HNG PPA is not the biggest area in Bolikhamxay Province and the total area of 4,595 ha. The topographic is a litle bit comprise of mountain and quite flat with the elevation from sea level is 800m. This protected area is very significant of aquatice, wildlife habitate and water resources protection area such as Nam ngiep with consisting of many branches and supply for irrigated farming. There for it can provide the habitat or sources for aquatic species such as Pakot, Pakheung, Pakae, Pa Sout (*Hampala dispa*), Pa Pak (*Hypsibarbus suvattii*) and reptiles, such as soft-shell tortoise, tortoise and others.

3. Climatic and Soil Conditions

According to the 2000-2001 data of Bolikhan meteorological station, rainfall and humidity are quite different. Each year, there is rain in around Say Phoungou (Phoudenemeuang) from August to September. The air pressure causes systematic winds and the climate could be described as humid and tropical as the other parts of district. The characteristic of soil is clay sand and covers by density of forest land and abundant of biodiversity.

4. Forests

The climatic conditions of this PPA with year-round rainfalls and clouds, its low temperature, high humidity and winds, have allowed the dense growth of several plant and tree species refer to rich and density of biodiversity and high value of plants and ecosystem such as: Rose wood, Dipterocarp, Mai kene, Mai ngang, Mai dtae, Mai peuy, Maibark and so on. Beside that, plants are densed grow up along the Nam ngiep and season streams.

Given the integrity of forest products or NTFPs such as Kisi, Vaithoun, Vainoy, May Ketsana (Aquilaria carssna) and other valuable of hardwood and bamboo species as Mai heer, Mai shot, Mai Lai and medicine traditional lianas (Khuahem).

5. *Wildlife*

The fuana survey of HNG PPA has conducted by Wildlife Conservation Society (WCS) and Provincial Agriculture and Forestry of Bolikhamxay (PAFO) to establish base line information such as ajacent villages interview and automatic camera trapping as the result below: Wild pig, munjac, clouded leopard, civet, Flying Squirrel cte, and many bird species as Green Peafowl (*Pavo muticus*), Hill Myna (*Gracula religiosa*), Red Junglefowl (*Gallus gallus*), Siamese Fireback (*Lophura diardi) and so on.*

6. Socio-Economic Conditions and Impacts on the PPA

6.1. Socio-Economic Conditions

There are 5 villages with the total of population is 4,302, out of with 2,123 are women and 790 houeshols. The ethnic group is Laoloum (Phouthay, Thaimeuy), Laosoung, Keummou by order. Each ethnic group has its specific language, customs and lifestyle. Each of these ethnic groups has formed scattered settlements and generally builds huts and lives near their highland rice fields and rivers.

6.2. Impacts on the HNG PPA

In general, the Houy Ngua PPA is one of the reserve forests that have conserved their wealth in world and regional important forest resources and biodiversity. The Houy Ngua PPA management has done a formal threat assessment to biodiversity.

6.2.1. Internal Aspects

There are many internal aspects that threaten the management of the HNG PPA. These include:

- Organization of protected area: Bolikhamxay Province has unclear organization on protected areas management system, the management emphasis only on national protected area, excepted provincial and district protected areas still do not have technical protected areas management system addition for law and registration enforcement also does not effectiveness therefore there is encroachment and illegal logging inside protected areas that cause to biodiversity loss,
- Attitude and acknowledgement of staff, military, police and local communities on protected areas is still lack, especially as it relates to the corridor zone, buffer zone where there is less patrolling and monitoring, and
- Currently, will impact of Namngiep Hydropower Project due to the catchment and river branches water level will go up such as Nammouane and will have the access road by boat and bring more threats to the protected area and resettlement area as well.

6.2.2. External aspect

due to HNG PPA is located ajacend the Namngiep river and Bolikhan municipality and still rich of natural resources as following:

- The forest and wildlife are high value and market demand in the country and neighboring, there for these attraction leads to enable traders try to make an effort to destruction of natural resources and hunting of wildlife as well and rise pressure for HNG PPA management. On the other hand, this protected area is currently still abundant of resources which belong to provincial and national property.
- The fauna has also been affected by many impacts. Some highly valued species due to the social belief in their medicinal and decorative features were formerly numerous, but may presently be rarely found, while widespread species include only species of low value. Devices used in hunting include traps that may catch small wildlife species such as lesser mouse deer, civet to large animals such as tigers, bears and others. In addition to traps, guns and other devices are also used. Hunting and trapping for local and regional markets is large in HNG PPA and is the number one threat many hunters and trappers are from Vietnam so this complicates law enforcement activities.
- Due to still have threats of natural resources destruction and over harvesting of NTFPs such as Rose wood, Aguilaria cassna etc, up to date, there are the least number are remains in the HNG PPA and will bring more impact to protected area and unsustainable use of resources.

PART III: GOALS, OBJECTIVES, ORGANIZATION AND COMPONENTS OF THE HNG PPA MANAGEMENT PLAN

1. Goals

1) Protect the abundance of natural resources and integrated of biodiversity in the HNG PPA
2) Supply water resources for national socio-economic development.
3) Meet the requirements of the local population for the proper and sustainable use of resources within the HNG PPA.

2. Objectives

To meet HNG PPA management plan goals, the management team created conceptual model that described the situation and identified threats and issues that

affect the Provincial Protected Areas to be in line with the 5th resolution of Bolikhamxay Provincial Party, 206 projects of Provincial Agriculture and Forestry Office and State Investment Plan for 2010 - 2015 and 6 priority projects on protected areas in Bolikhamxay Province has set the of objectives as following:

(1) *increase capacity of district PA staffs and local villagers to make them able to do PA management and biodiversity conservation*

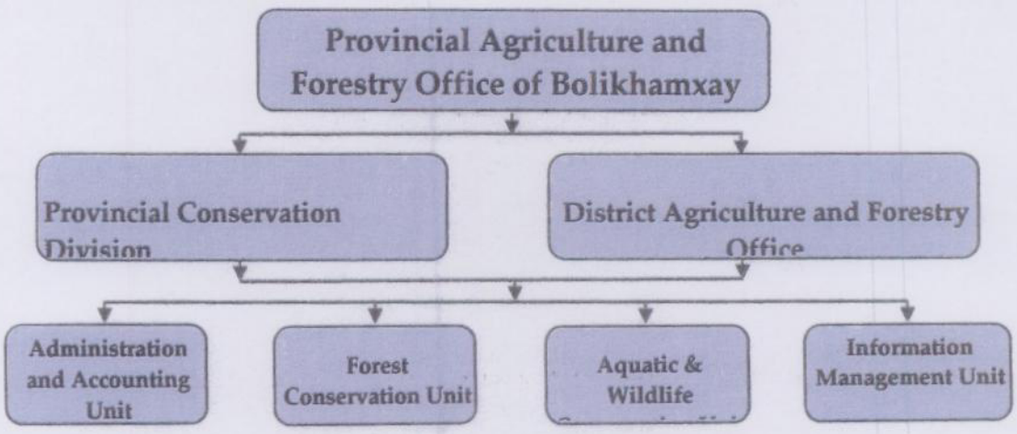
(2) *Improve alternative village livelihood in and around the PA and promote building permanent occupation.*

(3) *Encourage villagers in and around PA to involve in law and regulations enforcement in line with district policy on protected area management.*

3. *Organizational Structure and Staffing*

The organizational structure of the Houy ngua Provincial Protected Area Management Unit of a period started from 2011 to 2015.

3.1 Organizational Structure



3.2 Staffing

To accomplish the goals and objectives up to the 2015, PCV Management Unit has set up the 5 priority activities and staffing as following:

- Two persons from provincial protected area,
- One person from local authority.
- 4 persons from district (DAFO), activities implementing should follow up or adopt the model of national protected area management at provincial level and conduct training before field works

4. *The Priority Activities*

The Provincial Conservation Division will be performed as supervision of 4 units and 6 priority activities implementation to manage HNG PPA as following:

(1) Extension and communities awareness

(2) Livelihood development

(3) Law enforcement and patrolling

(4) Biodiversity monitoring

(5) Ecotourism and

(6) Increase districts and villagers capacity.

4.1 Extension and Awareness

Goal:

To raise communities awareness to enable them receives knowledge and understands about the significant of biodiversity in partnership with their livelihood by participation and to reach sustainable uses

Objectives:

- Strengthen capacity of 2 districts existing outreach team by selection 2 staffs from each to enable them can design and implement conservation activities in their district
- Enable villagers and students of 5 villages in and around the Houy Ngua Provincial Protected Area know the impacts of deforestation and wildlife trading to their livelihood present and future
- Build capacity of villages' forester about the outreach and awareness in 5 villages in around protected area.

Action Plan of Extension and Awareness

No.	Target	Activity	Responsible	Timing	Estimate Budget (US $)
1)	Strengthen capacity of staffs, districts and village forestry staffs	○ Form staffs ○ Training ○ Monitoring ○ Evaluation ○ Lesson learned	– DPO – DEO – DWUO – DAFO – VF	2011-15	25,000
2)	Disseminate natural resources conservation, laws, regulations, maintenance NPA boundary markers and core zone signs	○ Produce equipments (Posters, fables books, badges, billboards, certificates, t-shirt, dolls, no buy and sale wildlife signs) ○ Purchase outreach instruments (amplifier, speaker, microphone, etc) ○ Produce PA signs ○ Establish green cub ○ Train staffs and head of villages	– LA – 5 schools – PCD – DAFO – DEO – DWUO – VF	2012-15	25,000

		○ Conduct outreach program at villages, schools, militia camps ○ Radio spots			
3)	Outreach on core zone management and NPA boundary markers protection	○ Produce equipments (posters, fables books, badges, billboards, certificates, t-shirt, dolls, no buy and sale wildlife signs) ○ Train staffs ○ Conduct outreach program at villages, schools, militia camps. ○ Distribute aquatic and wildlife law books ○ Radio and TV spots ○ Develop conservation manuals	– DET – DEO – PCD – DAFO – LA – VF	2012-15	25,000
Total					**75,000**

Remark: DPO = District Propaganda Office, DEO = District Education Office, DWUO = District Women Union Office, DAFO = District Agriculture and Forestry Office, VF = Village Forester, LA = Local Authority, PCU = Provincial Conservation Division, DET = District Extension Team

4.2. Village Development Program in around Houy Ngua PPA

Goal:

To improve communities livelihood in and surround the Phou Chom Voy Provincial Protected Area go along with management, designation and sustainable use of natural resources

Objectives:

(1) Build communities livelihood in and surround the Houy Ngua Provincial Protected Area to get better by the year 2015.
(2) Strengthen communities in and surround the Houy Ngua Provincial Protected Area to be effective in natural resources management and reduce extraction.

Action Plan of Village Development Program in around Houy Ngua PPA

No.	Target	Activity	Responsible	Timing	Estimate Budget (US $)
1)	Manage use of NTFPs of	– Feasibility study by communities	Village	2011-15	65,00

	potential villages in and surround the Houy Ngua Provincial Protected Area	participatory – Survey and designate forest – Modeling and develop regulation for utilization	DAO DAFO DIO LA		
2)	Establish fish and frog conservation zone of potential villages in and surround the Houy Ngua Provincial Protected Area	– Survey and zoning – Design conceptual model and build regulation for management and protection	Village DAO DAFO DIO LA	2012-15	32,500
3)	Promote weaving of potential villages in and surround the Houy Ngua Provincial Protected Area	– Expand marketing network and collaborate with sector concerned in supply raw materials – Improve technical production	Village DAFO DIO	2011-15	20,000
4)	Develop agriculture production of potential villages in and surround the Houy Ngua Provincial Protected Area	– Improve rice growing technique and yield – Encourage planting industry crop – Promote domestic animal raising for sale	Village DAFO DIO		65,000
Total					**182,000**

Remark: *DAO = District Administration Office, DIO = District Industrial Office, PCU = Provincial Conservation Division*

4.3 Law Enforcement and Patrolling

Goal:

To prevent biodiversity and natural resources encroachment in the Houy Ngua Provincial Protected Area by apply the law measurement and strengthen staffs capacity

Objectives:

1) Build law enforcement network by enable communities to participate in protection of the Houy Ngua Provincial Protected Area and establish patrol team base 5 villages.
2) Strengthen the district PA suppervisers capacity by sellection 3 people from each.
3) Strengthen patrol team capacity of villages and districts to be effectiveness in law enforcement to reduce biodiversity threats in the Houy Ngua Provincial Protected Area.

Action Plan of Law Enforcement to protect natural resources of *HNG PPA*

No.	Target	Activity	Responsible	Timing	Estimate Budget (US $)
1)	Build villages informant base network	– Form staffs – Training – Develop work plan – Implementing – Monitoring – Study tour.	– VM – VG – VF – LA	2011 - 15	32,500
2)	Strengthen staffs capacity in law and regulations enforcement	– Form staffs – Training – Develop work plan – Implementing – Monitoring and Evaluation – Study tour.	– DM – District guard – DAFO – DAO – DCO	2012 - 15	20,000
3)	Reduce threats in and around Houy Ngua Provincial Protected Area	– Set up 4 road check points around the NPA. – Build 4 forest substations	– PCU – Military – DAFO – Village – LA	2011 - 15	100,000
Total					**152,500**

Remark: *VM = Village Militia, VG = Village Guard, DM = District Military, DCO* = District Court Office, DAFO = District Agriculture and Forestry Office

4.4. Biodiversity Monitoringand Research

Goal:

To conduct research and monitoring into importance ecosystems and species of plants and animals within the HNG PPA to provide accurate information to inform and guide management of boidiversity of the HNG PPA.

Objectives:

(1) By the year 2015 capacity for PA staff to collect, manage, analyze and report on monitoring data that informs on management decisions

(2) By the year 2015 detailed information on the status of ecosystems, land use change, wildlife and plants within and around the the HNG PPA

(3) By the year 2015 the Research and training centre is recognized as a center for biodiversity research within Lao.

Action Plan of Biodiversity Monitoring and Research of PCV PPA

No.	Target	Activity	Responsible	Timing	Estimate Budget (US $)
1)	Build staffs capacity	– Form staffs – Training – Study tour – Support scholarship	PCD PAFC NUoL DAFO	2011-15	20,000
2)	Provide accurate information of biodiversity within the HNG PPA	– Identify research zone – Prioritize research and experiment – Data analysis – Evaluation	PCD PAFC NUoL DAFO DFRC	2012-15	80,000

Total		**100,000**

Remark: *PCD = Provincial Conservation Division, PAFC = Provincial Agriculture and Forestry College of Bolikhamxay, NUoL = National University of Laos, DAFO = District Agriculture and Forestry Office, DFRC = Division of Forest Resources Conservation (Department of Forestry)*

4.5 Ecotourism Development

Goal:

To develop ecotourism go along with conservation by use the existing strengthen to enable communities and HNG PPA management get more benefit

Objectives:

(1) By the *year 2015, develop ecotourism within HNG PPA to be good site and attractive*

(2) By the *year 2015, create income for local communities by ecotourism involvement to help sustainable of HNG PPA management.*

Action Plan of Ecotourism Development of HNG PPA

No.	Target	Activity	Responsible	Timing	Estimate Budget (US $)
1)	Create view point of the top of HNG PPA (Trekking, Forest camping, Visiting waterfall, Boat rafting, Zip line)	– Feasibly study – Approve for open tourism site – Improve recreation and trail. – Identify tourism site – Build regulation and modeling for tourism – Open tourism service	Village DAO DTO PCD DAFO	2011-15	75,000
Total					**75,000**

Remark: *DAO = District Administration Office; DTO = District Tourism Office; PCD = Provincial Conservation Division; DAFO = District Agriculture and Forestry Office.*

5. *Estimated Budgeting and Timeline to Implement HNG PPA Management Plan*

The budgeting of this management base on the experience of real activities implemented of PCV PPA preservation.

No.	Target	Activity	Cost / 5 year (US$)	Year 1	Year 2	Year 3	Year 4	Year 5	Average (US$)
I.	**Extension and Awareness**								
1)	Strengthen capacity of staffs, districts and village forestry staffs	o Form staffs o Training o Monitoring o Evaluation o Lesson learned	25,000	5,000	5,000	5,000	5,000	5,000	5,000
2)	Disseminate natural resources conservation, laws, regulations, maintenance PPA boundary markers and core zone signs	o Produce equipments (Posters, fables books, badges, billboards, certificates, t-shirt, dolls, no buy and sale wildlife signs) o Purchase outreach instruments (amplifier, speaker, microphone, etc) o Produce PA signs o Establish green cub o Train staffs and head of villages	25,000	5,000	5,000	5,000	5,000	5,000	5,000

		○ Conduct outreach program at villages, schools, militia camps ○ Radio spots							
3)	Outreach on core zone management and PPA boundary markers protection	○ Produce equipments (posters, fables books, badges, billboards, certificates, t-shirt, dolls, no buy and sale wildlife signs) ○ Train staffs ○ Conduct outreach program at villages, schools, militia camps. ○ Distribute aquatic and wildlife law books ○ Radio and TV spots ○ Develop conservation manuals	25,000	5,000	5,000	5,000	5,000	5,000	5,000
Subtotal (I)			75,000	15,000	15,000	15,000	15,000	75,000	75,000
II.	**Village Development Program in around HNG PPA**								
1)	Manage use of	– Feasibility study by	65,000	13,000	13,000	13,000	13,000	13,000	13,000

	NTFPs of potential villages in and surround the Houy Ngua Provincial Protected Area	communities participatory – Survey and designate forest – Modeling and develop regulation for utilization							
2)	Establish fish and frog conservation zone of potential villages in and surround the Houy Ngua Provincial Protected Area	– Survey and zoning – Design conceptual model and build regulation for management and protection	32,500	6,500	6,500	6,500	6,500	6,500	6,500
3)	Promote weaving of potential villages in and surround the Houy Ngua Provincial Protected Area	– Expand marketing network and collaborate with sector concerned in supply raw materials – Improve technical production	20,000	4,000	4,000	4,000	4,000	4,000	4,000
4)	Develop agriculture production of potential villages in and surround the Houy Ngua	– Improve rice growing technique and yield – Encourage planting industry crop – Promote domestic animal raising for sale	65,000	13,000	13,000	13,000	13,000	13,000	13,000

	Provincial Protected Area								
Subtotal (II)			182,500	36,500	36.500	36,500	36,500	36,500	36,500
III	**Law Enforcement and Patrolling**								
1)	Build villages informant base network	– Form staffs – Training – Develop work plan – Implementing – Monitoring – Study tour.	32,500	6,500	6,500	6,500	6,500	6,500	6,500
2)	Strengthen staffs capacity in law and regulations enforcement	– Form staffs – Training – Develop work plan – Implementing – Monitoring and Evaluation – Study tour.	20,000	4,000	4,000	4,000	4,000	4,000	4,000
3)	Reduce threats in and around Houy Ngua Provincial Protected Area	– Set up 4 road check points around the NPA. – Build 4 forest substations	100,000	20,000	20,000	20,000	20,000	20,000	20,000
Subtotal (III)			152,500	30,500	30.500	30.500	30,500	30,500	30,500
IV	**Biodiversity Monitoringand Research**								

1)	Build staffs capacity	– Form staffs – Training – Study tour – Support scholarship	20,000	4,000	4,000	4,000	4,000	4,000	4,000
2)	Provide accurate information of biodiversity within the HNG PPA	– Identify research zone – Prioritize research and experiment – Data analysis – Evaluation	80,000	16,000	16,000	16,000	16,000	16,000	16,000
Subtotal (IV)			100,000	20,000	20,000	20,000	20,000	20,000	20,000
V.	**Ecotourism Development**								
1)	Create view point of the top of HNG PPA (Trekking, Forest camping, Visiting waterfall, Boat rafting, Zip line)	– Feasibly study – Approve for open tourism site – Improve recreation and trail. – Identify tourism site – Build regulation and modeling for tourism – Open tourism service	75,000	15,000	15,000	15,000	15,000	15,000	15,000
Subtotal (V)			75,000	15,000	15,000	15,000	15,000	15,000	15,000

VI.	**Administration and technical assistance**							
	Houy Ngua Goods (vehicles, computers etc.) maintenance	330,000	100,000	100,000	100,000	15,000	15,000	66,000
	New office	200,000		150,000			50,000	100,000
	office (expendables/utilities)	37,500	7,500	7,500	7,500	7,500	7,500	7,500
Subtotal (VI)		75,000	567,500	107,500	257,500	107,500	90,000	72,500
Grand total (I + II + III + IV + V+ VI)		1,152.500	341,500	491,500	341,500	324,000	306,000	407,500

The expected donors to support this management plan or activities: ; Lao - Luxemburg Development Project in Bolikhamxay Province (LUX); Lao Environment Protection Fund or Lao Environment and Social Fund (LEnS); Department of Forestry (DoF); Wildlife Conservation Society Lao Program (WCS); and so on.

Reference:

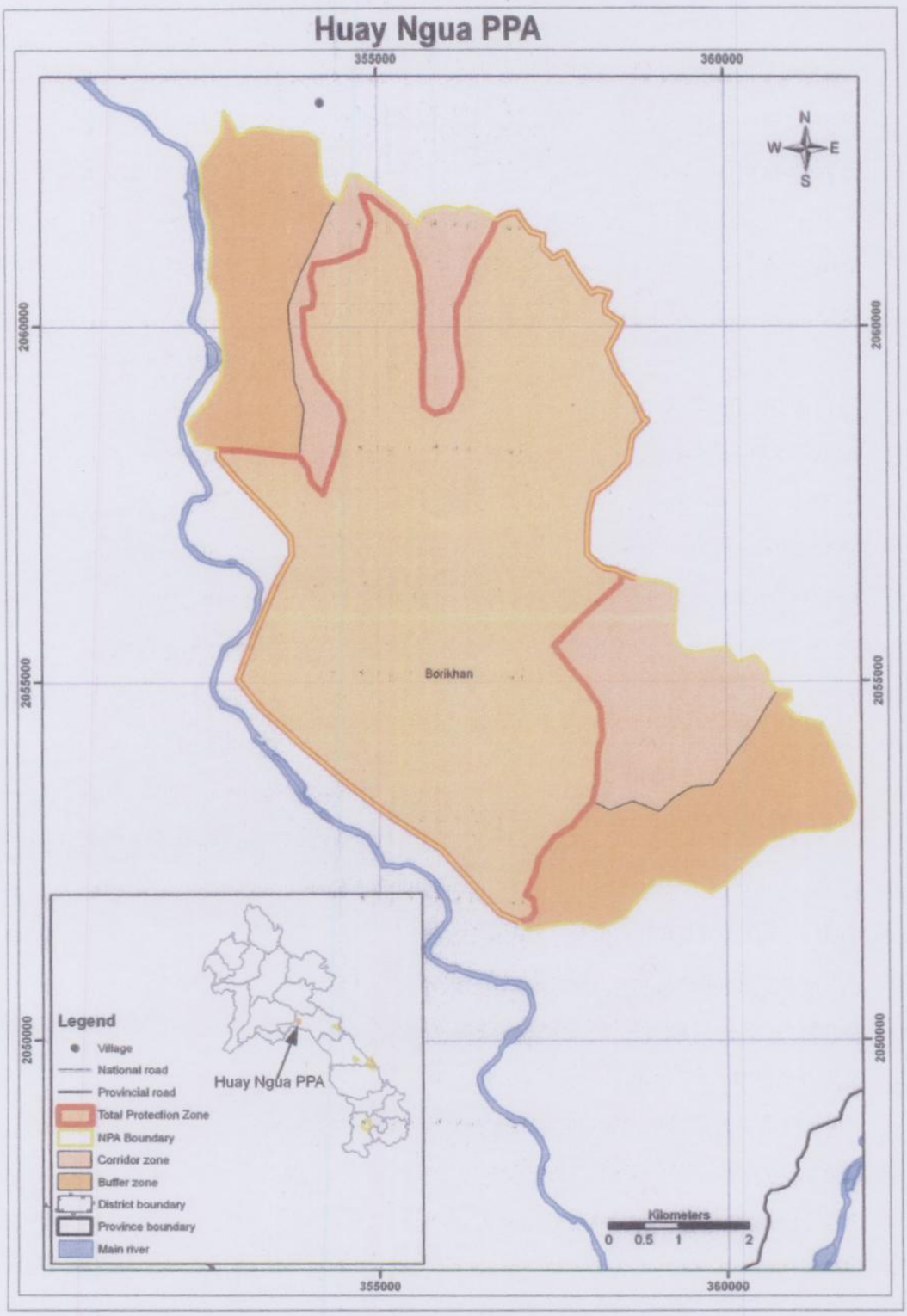
Governor of Bolikhamxay Province, Provincial Socio-econimic Development Strategy up to 2010 and Development Action Plan for 2006 - 2010, issue ref. 47/BLX, dated February7th, 2006.

Provincial Conservation Division, Namkading National Protected Area Management Plan for 2010 - 2015, issue ref. 0157 / DoF, dated January 1th, 2010.

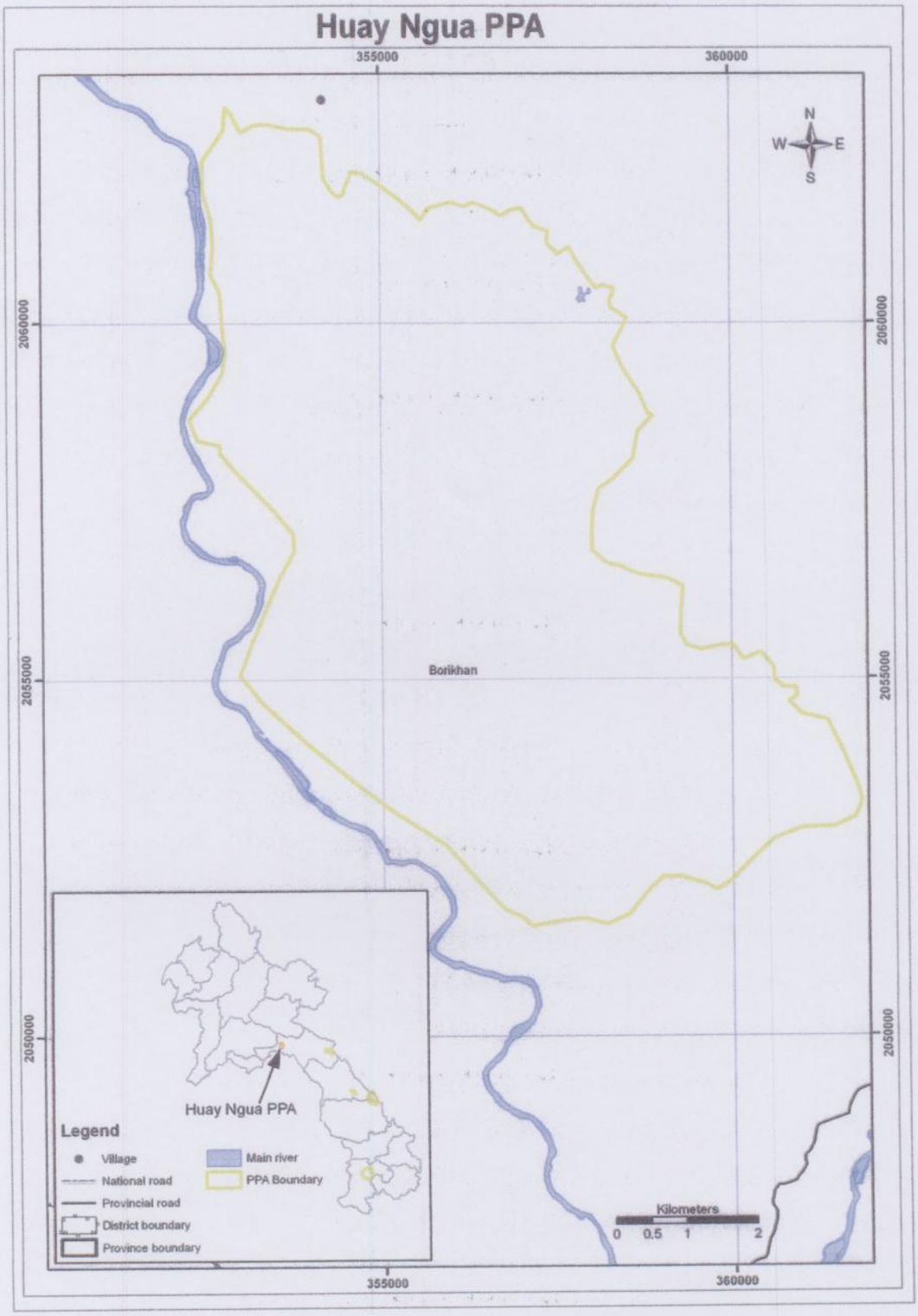
Spense K. and Somvongsa C. (2010). Draft training report on protected area management in 4 provincial protected areas, Wildlife Conservation Socieity, Vientiane

Appendices

Annex 1: Houy Ngua PPA zoning



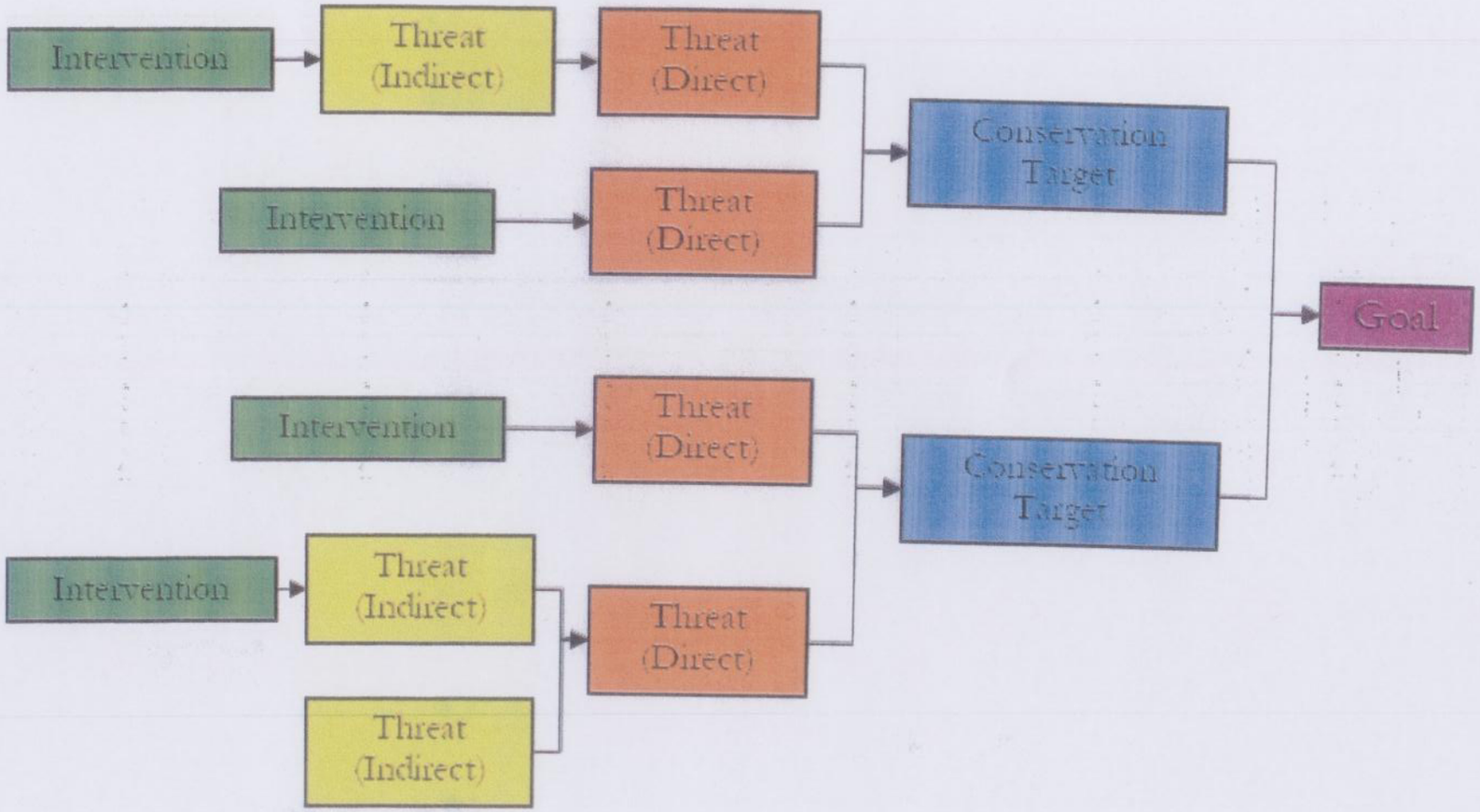
Huoy Ngua PPA boundary

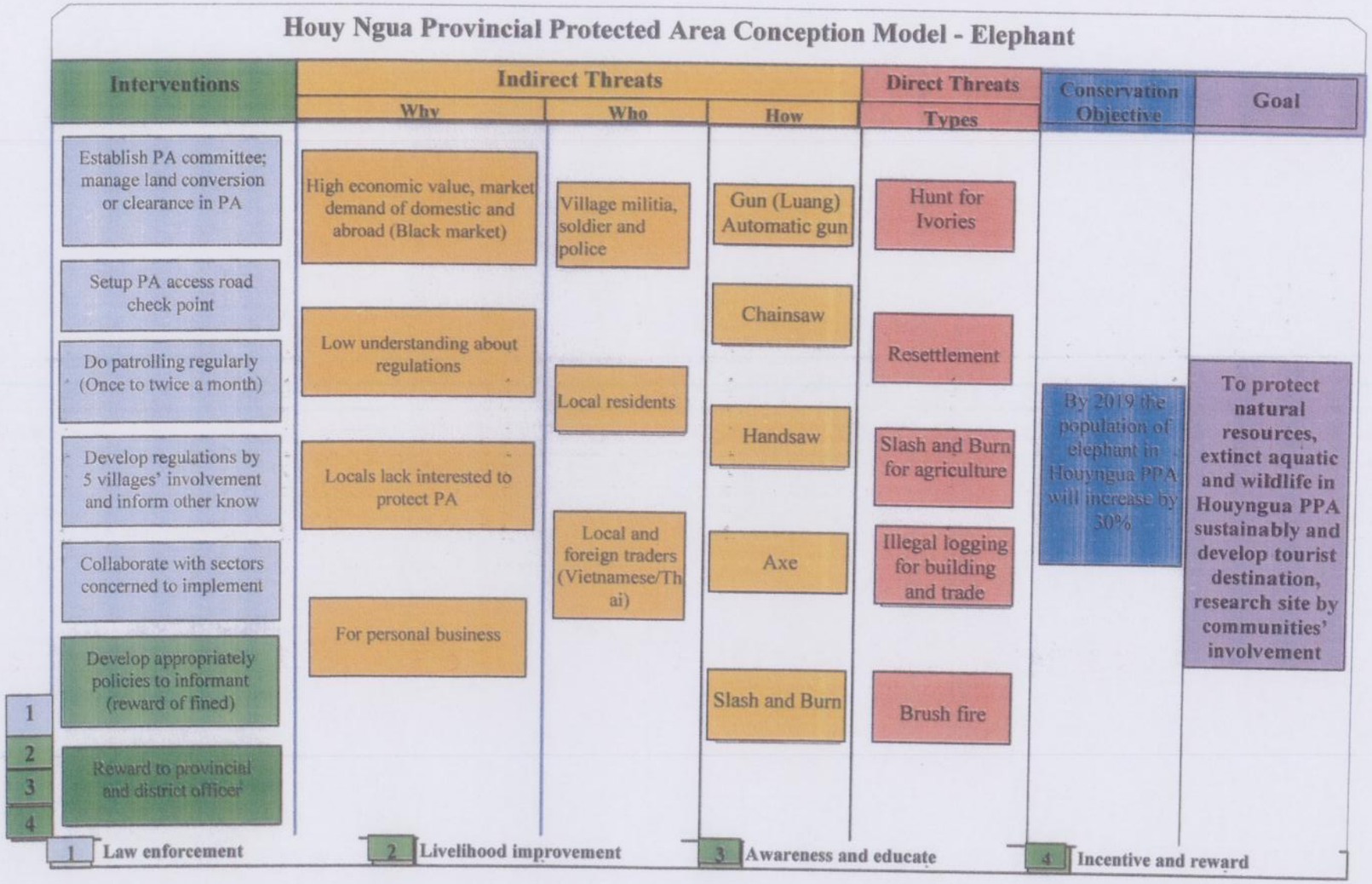


Houyngua PPA boundary marker post

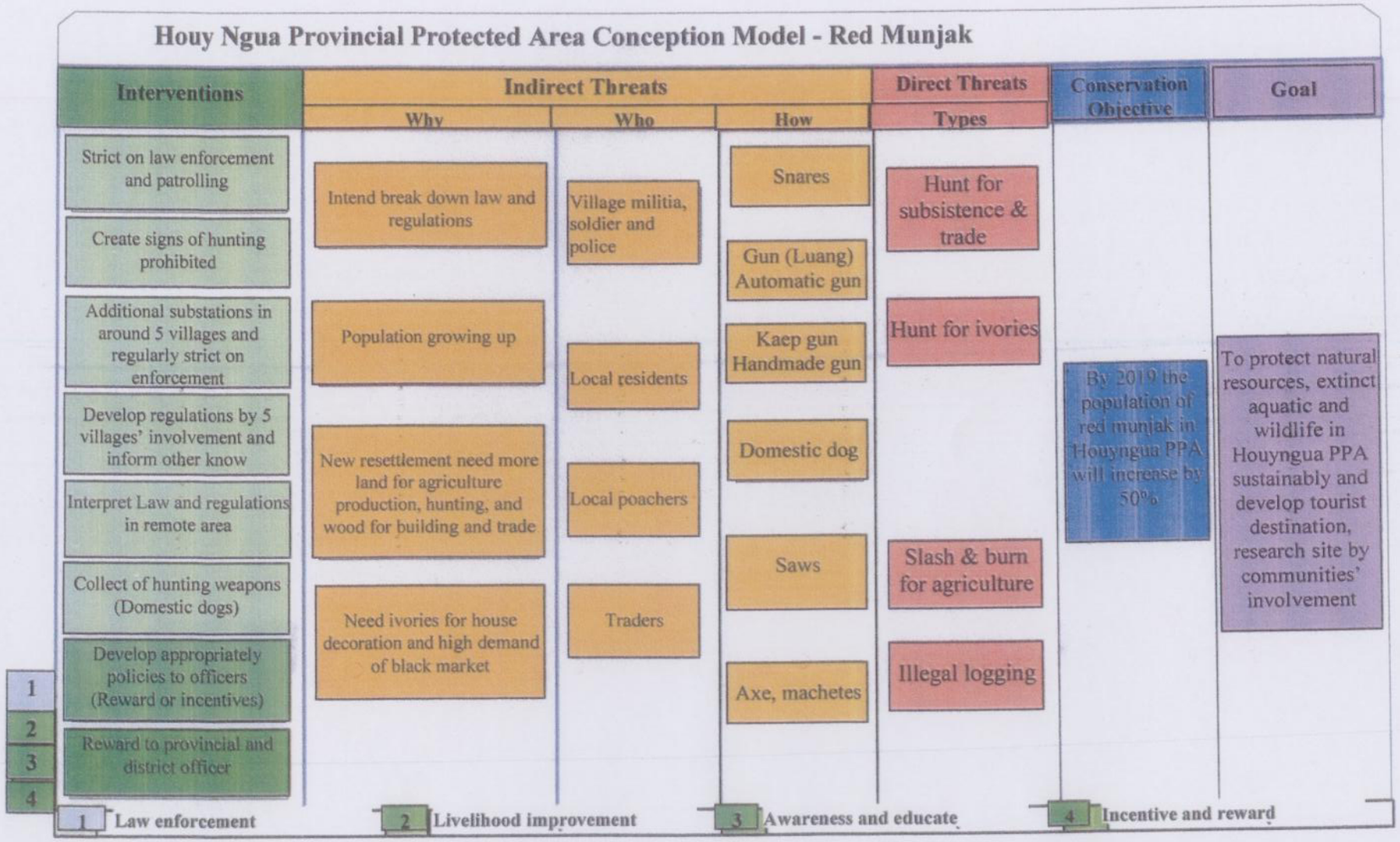
Houy ngua PPA check point

Annex 2: Conception modelling

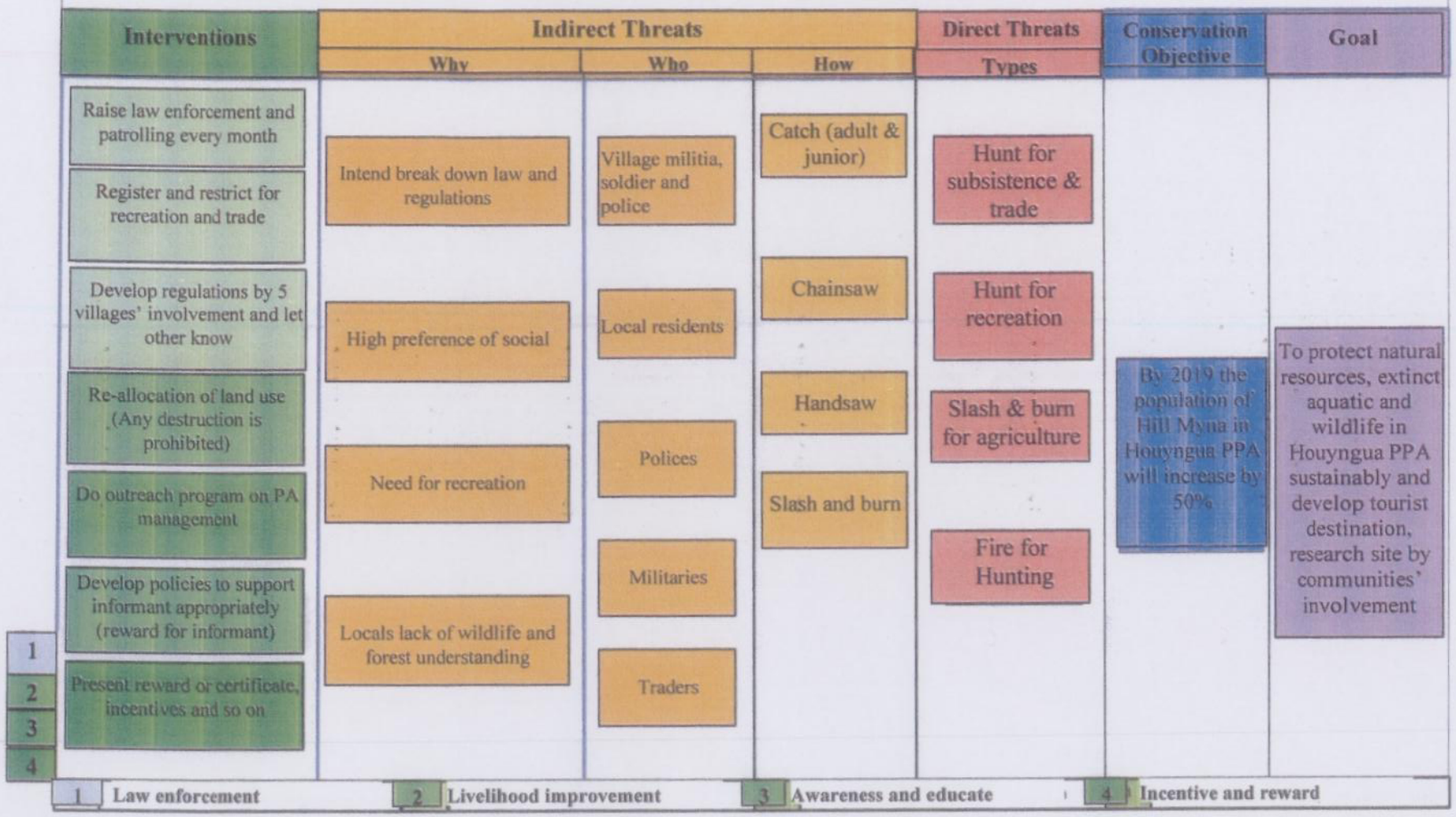



Houy Ngua Provincial Protected Area Conception Model - Elephant
Interventions
Indirect Threats
Why
Who
How
Direct Threats
Types
Conservation Objective
Goal
Establish PA committee; manage land conversion or clearance in PA
Setup PA access road check point
Do patrolling regularly (Once to twice a month)
Develop regulations by 5 villages' involvement and inform other know
Collaborate with sectors concerned to implement
Develop appropriately policies to informant (reward of fined)
Reward to provincial and district officer
1
2
3
4
High economic value, market demand of domestic and abroad (Black market)
Low understanding about regulations
Locals lack interested to protect PA
For personal business
Village militia, soldier and police
Local residents
Local and foreign traders (Vietnamese/Thai)
Gun (Luang) Automatic gun
Chainsaw
Handsaw
Axe
Slash and Burn
Hunt for Ivories
Resettlement
Slash and Burn for agriculture
Illegal logging for building and trade
Brush fire
By 2019 the population of elephant in Houyngua PPA will increase by 30%
To protect natural resources, extinct aquatic and wildlife in Houyngua PPA sustainably and develop tourist destination, research site by communities' involvement
1 Law enforcement
2 Livelihood improvement
3 Awareness and educate
4 Incentive and reward

Houy Ngua Provincial Protected Area Conception Model - Red Munjak



Houy Ngua Provincial Protected Area Conception Model - Hill Myna



Houy Ngua PPA species listed

No.	Lao name	Common name	*Sc.name*
1	ปาเค็ง		**Mystus microphthalmus**
2	ปาซวยแย้ว		*Pangasianodon hypophthalmus*
3	ปาเอิมขาว		*Probarbus labeamajor*
4	ปาลูน		*Wallago leeri*
5	ปาแดง		*Tor sp.*
6	ปาบางแดง		*Hemisilurus mekongensis*
7	ปาพอน		*Cirrhinus microlepis*
8	ปาหมากหวาย		*Luciosoma bleeker*
9	ปาแกง		*Cirrhinus molitorella*
10	ต่ำหิวเสือ		*Above*
11	งูสิงดิง		*Zamenis sp.*
12	จิ้งไภะ		*Scincidae sp.*
13	ปาแย้		*Bagarius Yarrelli*
14	ปา บาเงิน		*Micronema bleekeri*
15	ปา ภะไท		*Catlocarpio siamensis*
16	ปา ตองกาย		*Chitala blanci*
17	ปา ตองบา		*Notopterus notopterus*
18	ปากิดหม้อ		*Hermibagrus wycki*
19	ปา ป่ง		*Pangasius larnaudiei*
20	ปาบู่		*Oxyeleotris mos morata*
21	นิภาะอุม ทุก ชะนิด	All adjutants	*Leptoptilos sp.*

22	ເຈຍ	All bat species	*Chiroptera*
23	ແມງກະເບື້ອ	All Butterflies Species	
24	ງູກະບາ ທຸກຊະນິດ	All cat snake species	*Bioga sp.*
25	ກັບແກ້ທຸກຊະນິດ	All gekko species	*Gekkonidae*
26	ງູຂຽວ ທຸກຊະນິດ	All green snake species	*Trimeresurus sp.*
26	ລີງລົມ ທຸກຊະນິດ	All loris species	**Nycticebus sp.**
27	ລີງທຸກຊະນິດ	All macaques	*Macaca sp.*
28	ຈອນຟອນ ທຸກຊະນິດ	All mongoose species	*Herpestes sp.*
29	ນາກທ້ ທຸກຊະນິດ	All otters	*Lutra sp.*
30	ນົກເຄາ	All owls	*Tytonidae and Strigidae*
31	ກຸ້ງ ທຸກຊະນິດ	All Shrimp Species	
32	ຫອຍ ທຸກຊະນິດ	All Snail Species	
33	ແຮ້ງ	All species of vulture	*Gyps, Aegyplus,Sarcogyps sp.*
34	ຊ້າງ	Asian Elephant	*Elephas maximus*
35	ເສືອໄຟ	Asian Golden Cat	*Catopuma temmincki*
36	ນົກ ກະຈາບຄ່ໍ	Asian Golden Weave	*Ploceus hypoxanthus*
37	ນົກກະເຫວ່ໍ	Asian Koel	*Eudynamys scolopacea*
38	ໝີຄວາຍ (ໝີດ່ໍ)	Asiatic Black Bear	*Ursus thibetanus*
39	ຫອນ	Asiatic Brush tailed Porcupine	*Atherurus macrourus*
40	ນົກ ຄູ້ມ	Barred Buttonquail	*Tumix susciter*
41	ແມງຄາມ	Beetle Family	
42	ແມງຂັບເຄື່ອງ	Beetle Family	
43	ກະຈ້ອມ	Berdmore's Squirrel	*Menetes berdmorei*
44	ເຕ່ົາກຸຍ, ຫົວໃຫຍ່ (ປູລູ)	Big-headed Turtle	*Platysternon megacephalum*
45	ບ່າງຫູດ່ໍ	Black Flying Squirrel	*Aeromys tephromelas*
46	ກະຮອກໜ້	Black Giant Squirrel	*Ratufa bicolor*
47	ປ້ ງ	Black Widow	*Above*

48	ແຫລວຫົວຂາວໂຕແດງ	Brahminy Kite	**Haliastur indus**
49	ເສືອຕະກູດ (ເສືອລາຍເມກ)	Clouded Leopard	*Pardofelis nebulosa*
50	ຄັນຄາກ	Common Asiatic Toad	*Bufo melanostictus*
51	ແຍ້	Common Butterfly Lizard	*Leiolepis sp.*
52	ນົກເຕັນຊິວ	Common King fisher	*Alcedo atthis*
53	ກົບ - ຂຽດ	Common Lowland Frog	*Rana rugulosa*
54	ນົກອ້ຽງໂມ່ງ	Common Myna	*Acridotheres tristis*
55	ນົກ ເປັດປ່ອງ	Cotton Pygmy Goose	**Nettapus coromandelianus**
56	ນົກຈູ່ວ່າວ (ນົກຍຸ້ງ ທອງ)	Crested Argus	*Rheinardia ocellata*
57	ນົກແຊວ	Drongo Species	*Dicrurus sp.*
58	ເໜັ້ນ	East Asian Porcupine	*Hystrix brachyura*
59	ເສືອແມວກິນປາ	Fishing Cat	*Prionailurus viverrinus*
60	ກະປອມ	Forest Crested Lizard	*Calotes emma sp.*
61	ປາຝາອອງ	Fresh water turtles	*Amyda sp.*
62	ນົກເປັດລາຍ	Garganey	*Anas querquedula*
63	ເມີຍ - ກະທິງ	Gaur	*Bos gaurus*
64	ນົກ ຕ້ຽລໍ	Great Barbet	*Megalaima virens*
65	ນົກ ກົກຄໍຄ່ຳ	Great Hornbill	*Buceros bicornis*
66	ນົກ ກົດປີດ	Greater Coucal	*Centropus Sinensis*
67	ນົກຍຸ້ງ	Green Peafowl	*uticus*
68	ນົກ ກ້ຽກອດ	Grey Peacock-Pheasant	*Polyplectron bicalcaratum*
69	ແຫລວປາຫົວໜິ້ນ ໃຫຍ່	Grey-headed Fish Eagle	*Ichthyophaga ichthyaetus*
70	ນົກສາລິກາ	Hill Myna	*Gracula religiosa*
71	ນົກໄຂ່ (ນົກ ຫອມຂວານ)	Hoopoe	*Upupa epops*
72	ແຫລວປານ້ອຍ	Imperial Eagle	**Aquila heliaca**

73	ເຕົ່າ ເຜົ້ຽ (ເດືອຍ)	Impressed Tortoise	*Manouria impressa*
74	ບ່າງລົ້ວ	Indian Giant Flying Squirrel	*Petaurista philippensis*
75	ກະເລນ	Irrawaddy Squirrel	*Callosciurus pygerythrus*
76	ແມວໂພ	Jungle Cat	*Felis chaus*
77	ອີ້ນ ໃຫຍ່	Large Bamboo Rat	*Rhizomys sumatrensis*
78	ເຫງ້ັນຫາງກ່ານ	Large Spotted Civet	*Viverra megaspila*
79	ເສືອດາວ	Leopard	*Panthera pardus*
80	ແຫລວປາຫົວໝີ້ນ ນ້ອຍ	Lesser Fish Eagle	*Ichthyophaga humilis*
81	ໄກ້	Lesser Mouse Deer	*Tragulus javanicus*
82	ນົກ ກາມ້ຳນ້ອຍ	Little Commorant	**Phalacrocorax niger**
83	ແມງ ດາ	Meang Da	
84	ອີ່ງ	Narrow-mouthed Frog	*Kaloula mediolineeata*
85	ນົກກາບບົວ	Painted Stork	*Mycteria leucocephala*
86	ກະຮອກທ້ອງແດງ	Pallas's Squirrel	*Callosciurus erythraeus*
87	ງູສາ	Radiated Ratsnake	*Elaphe radiata*
88	ໄກ່ປ່າ	Red Junglefowl	*Gallus gallus*
89	ນົກເຂົ້າທອງ	Red collared Dove	*Streptopelia tranquebarica*
90	ກະປູ ແດງ	Red Crab	
91	ฟานเล้า	Red Muntjac	*Muntiacus muntjac*
92	ນົກແຂກເຕົ້າ (ນົກ ແກ້ວເອິກແດງ)	Red-breasted Parakeet	*Psittacula alexandri*
93	ກະຮອກດິນແກ້ມ ແດງ	Red-cheeked Squirrel	*Dremomys rufigenis*
94	ນົກກະແຕ ແວ້ດ	Red-wattled Lapwing	*Vanellus indicus*
95	ງູເຫລືອມ	Reticulated Python	*Python reticulatus*
96	ฟานดิง	Roosevelts' Muntjac	*Muntiacus rooseveltorum*
97	ກວາງ	Sambar	*Cervus unicolor*
98	ນົກຂຸ່ມ	Crane	*Grus antigone*
99	ນົກ ກະທາ	Scaly-breasted Partridge	*Arborophila chloropus*

100	ไก่ฮ่านิน	Siamese Fireback	*Lophura diardi*
101	ไก่ฮ่าพูอๆ (ไก่ฮ่าหู้ๆฮาว)	Silver Pheasant	*Lophura nycthemera*
102	นิก เค้า (นิก หิดหี่ใหย่)	Spot-bellied Eagle Owl	**Bubo nipalensis**
103	นิกเฮ่าฮัม	Spotted Dove	*Streptopelia chinensis*
104	จอมฟอมหลัๆ ฮาว	Striped-back Weasel	**Mustela strigidorsa**
105	เหมือย	Sun Bear	*Ursus malayanus*
106	ภะท้าๆ	Water Dragon	*Pysignathus cocincinus*
107	เห้ย	Water Monitor	***Varanus salvator***
108	นิกไก่มา	White Breasted Waterhen	*Amauromis phoenicurus*
109	นิกเป็ดก่า	White-winged Duck	*Cairina scutulata*
110	หมูป่า	**Boar**	*Sus scrofa*
111	นิกคำก่าม	Woolly-necked Stork	*Ciconia episcopus*

Strategy Development of Houy Ngua PPA Management

1. Meeting Objevtives

To enable participants and sectors concerned about monitoring and management of aquatic and wildlife and biodiversity in Houy Ngua PPA to discuss on threats which identified in conception model to contribute of strategic for long term management and monitoring of Houyngua PPA.

"The strategy of protection of Hoyungua PPA is to determine and prioritize threats of negative impact to stable of its distribution of population including design management activities to reduce threats by exactly of time flame."

2. Goal

The goal of Houy ngua PPA is to protect natural resources, extinct aquatic and wildlife in Houyngua PPA sustainably and develop tourist destination, research site by communities' involvement

3. Objective of Strategy Development of Houy Ngua PPA Management

To develop and increase the understanding of threats to key species of Houyngua PPA by raise awareness of target communities in around protected area.

4. Methodology

Step 1: objective agreement

The developed of each key species conception model are presented and illustrated to participants for exchange ideas.

Reviewed the 3 key species conception model or living landscape spcies of Houyngua PPA to determine direct and indirect threats including target communities.

Step 2: Lesson learned from the other PAs

The discussion has mentioned and learned from The Nam Et Phouy Leuy and Namkading National Protected Area.

Step 3: Setting up of key species goal

The selections of 3 living landscape species are as following:

Elephant:

By 2019 the population of elephant in Houyngua PPA will increase by 30%

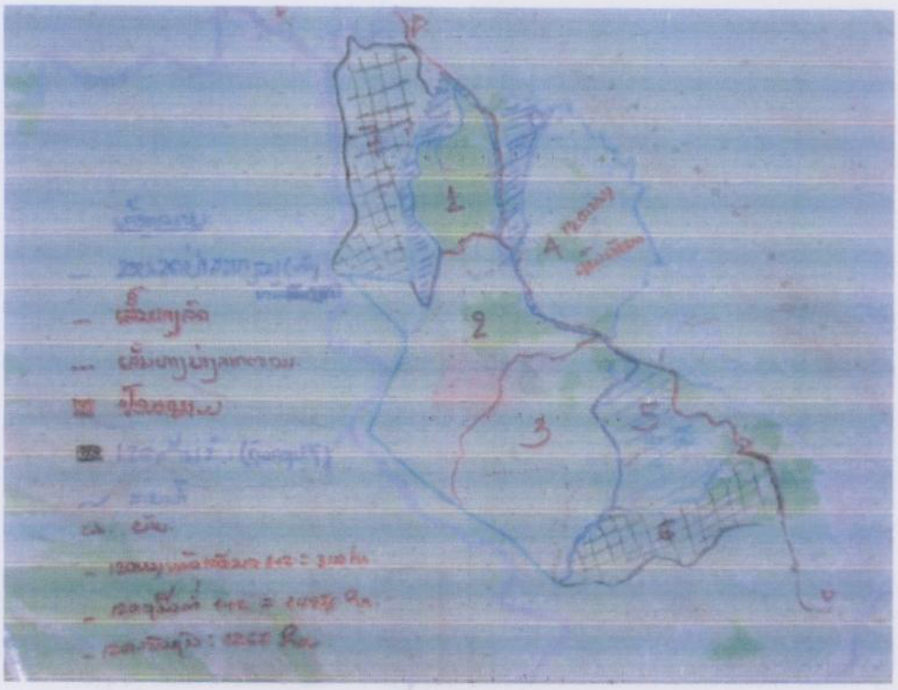
Red munjak:

By 2019 the population of red munjak in Houyngua PPA will increase by 50%

Hill Myna:

By 2019 the population of Hill Myna in Houyngua PPA will increase by 50%

Step 4: Research zoning



Step 5: the increasing of understanding on key species threats:
The discussion has base on conception model threats to 3 indicator key species which representatives of habitat in Houyngua PPA. The target communities have determined and zoning of patrol, the result has showed in the flip map.

Step 6: summarize the relationship between threats and target communities

Step 7: Designing of intervention
The designing of intervention to reduce threats and target community's newroking of indicator species.

Step 8: Evaluation and recommendation
To improve the strategic for protecting of Houyngua PPA has based on outcome from discussion:

5. Result

The prioritizing of direct threats of 3 indicators species (elephant, red munjak and hill myna) as following:

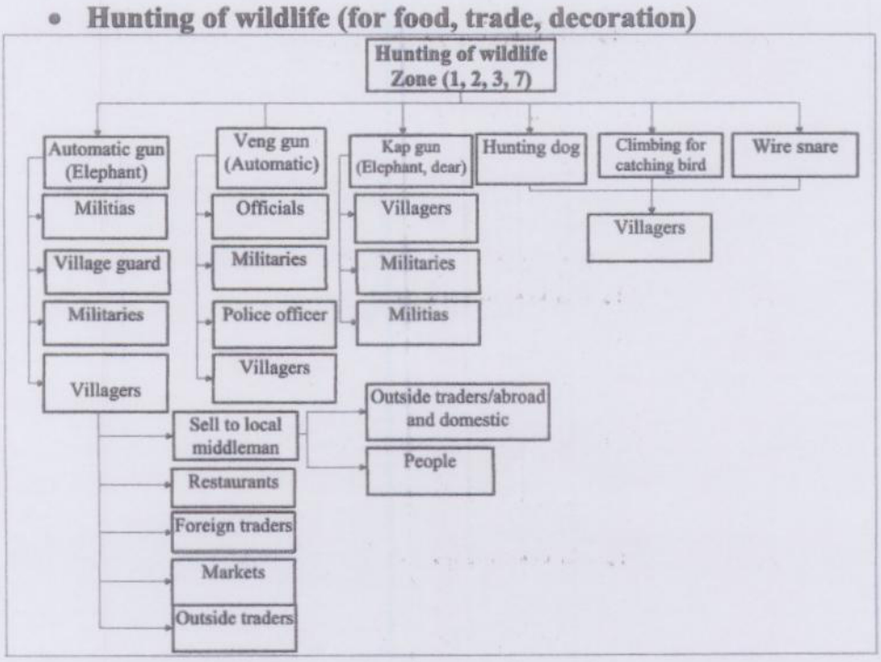
#	Direct Threats	Area	Risk level	Period	Total
1	Hunting of wildlife	4	4	3	11
2	Slash and burn	2	2	2	6

3	Illegal logging	3	3	4	10
4	Brush fire	1	1	1	3

Prioritized by scoring

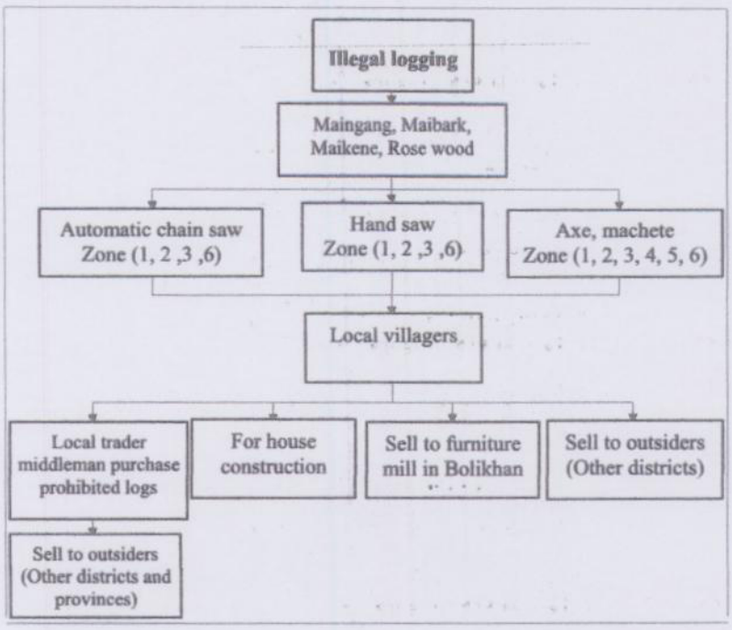
(1) Hunting of wildlife
(2) Illegal logging
(3) Slash and burn
(4) Brush fire

- **Hunting of wildlife (for food, trade, decoration)**



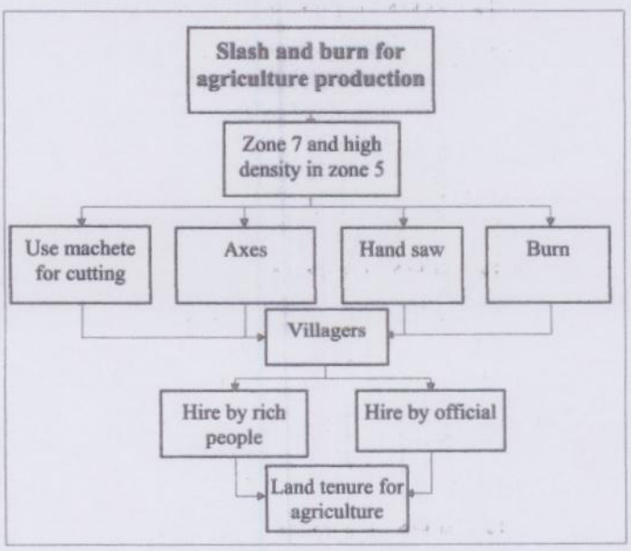
The hunting of wildlife has occurred in zoning 1, 2, 3 and 7. The out of the 3 key species still have others are hunted such as squirrel, water monitor, red munjak, wild pig, tortoise, Mekong stingray, birds, sun bear, Asiatic Black Bear , snakes, monkey, rat, mouse dear and so on. The equipment of hunting, there automatic guns and prohibited weapons such as automatic guns, kap gun, and wire snares. The main hunters are villagers, militaries, and police officers. The purpose of hunting is to sell to local middle man, restaurants, and neighboring country traders.

- **Illegal logging**



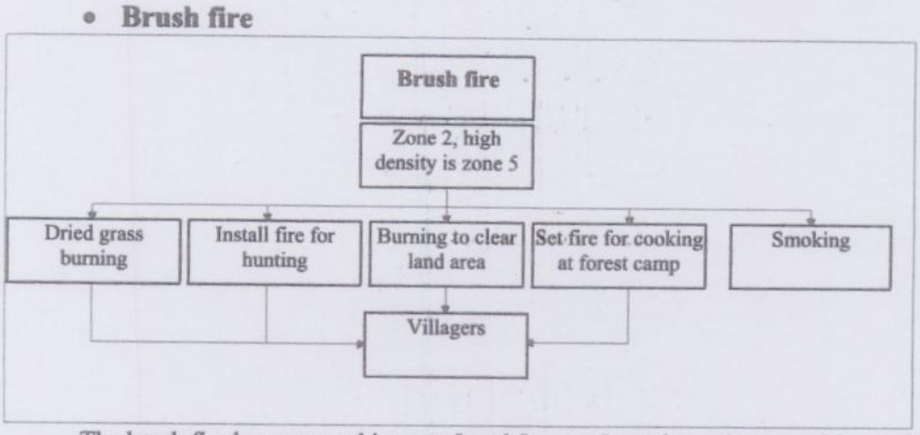
The illegal logging of villagers has occurred in zone 1 to 6, the equipments for these activities are automatic chain, axe, machetes, and hand chain, the purpose of illegal logging is for house construction and trade to local black market, saw mill, furniture in Bolikhan District and outsiders

- **Slash and burn for agriculture production**



The Slash and burn for agriculture production has found in zone 7 and 5. The majority has happened in zone 5. The equipments are axe, hand saw and machete. The persons who do these activities are local villagers hired by rich people to do illegal activities in around protected area and occupy land area for agriculture crop plantation such as rubber, eagle wood, eucalyptus and saplings.

- **Brush fire**



The brush fire has occurred in zone 2 and 5, zone 5 are the main area of forest fire due to this area is dried grass land and the cause is villagers installing fire to burn dries grass in their area without controlling, hunting, slash and burn and people not aware with installation of fire. The frequency is 1-2 times a year.

Day 3, Janury 20, 2019

1. Discussion

The drafting of Houy Ngua Strategy

The Key issues

☞ **Threats cause**

- Wildlife parts are high valuable and demand from black market in domestic and abroad especially ivories and dear horns
- Intend to break down laws and regulations
- Lack of management of local villagers
- Personal benefit
- The growing of population lead to expand agriculture production area and human elephant conflict
- Resettlement area from immigration and needed of land area for agriculture production, hunting of wildlife, wood for house construction and trade
- High social preference of Hill Myna for house recreation
- Not aware of natural forest and wildlife.

☞ **Solution**

- Investigate / collect data on illegal activities

- Arrange meeting at village level to disseminate on new coming of regulations, decrees, orders etc to village authorities, villagers, militias, village polices.
- Collaborate with related sectors on law enforcement or measurement to violators in compliance with forestry, aquatic and wildlife law, protected area regulations, village rules
- Set up committee on PA management, land use planning and anti any PA encroachment.
- Set up road check point in around PA
- Do regularly patrolling twice a weak
- Develop PA regulation for 5 target villages and pass it on to other villages
- Additional more forest substations at strategic area in around villages to be effectively in implementation and continuously
- Interpret law and regulations reach to remote area, especially PA surrounding villages
- Collect of all type of hunting weapons, domestic hunting animals
- List and restrict on wildlife farming or reproduction for trade
- Reward outstanding performance in line with the real situation such as benefit for fine and present certificate from district and provincial level.

☞ Hunting Tools

– **Automatic guns (Peunluang and Peunveng)**

Suggest to district military and police office of Bolikhan, the 642 Army Cluster to collaborate with 5 village authorities in around PA to collect information, list of weapons and manage in accordingly with role and responsibility of weapons using with deployed by higher level and PA unit should support fund on implementation.

– **Kep gun:**

Coordinate and collaborate with village authorities to focusing on target communities about hunting weapons uses in around Houy Ngua PA.

– **Snares:**

o Do PA outreach program on laws, regulations, decrees, orders and notifications enforcement

o Collect and organize destroy ceremony of snares by collaboration with sectors concerned and strict measure to violators.

– **Domestic dogs:**

Develop billboard on prohibited hunting equipments to use in core zones (including placing PA signs at priority area)

– **Chain saw/hand saw:**

o Deploy to DAFO to do chain saw registration.

o Do mobile patrolling team in and outside PA

o Permit only one the access road to PA which has inspection Ban Nonesomboun check point to regularly monitoring

o Assign to village authorities to licensing of chain saw and manage strict in line with regulations and get permission before using.

- **Human**

Villagers, officials, militaries and police officers:

- Form extension mobile team to raise villagers, officials, militaries, police officers, pupils and teachers awareness on natural resources conservation.
- Arrange workshop for local authorities, village authorities and sectors concerned on basic conservation awareness programs.

Middleman/trader:

Collecting of information on wildlife trading (at local area) to do educate, conduct measure and monitoring of illegal activities in line with PA regulations and procedures and every activities implementing should coordinate with villages, district and provincial.

- **Market and Restaurant:**

Form extension team raise entrepreneurs, traders, and restaurant services awareness.

- **Brush fire:**

Surveillance on people behavior and installation fire season by do regularly of communities' awareness.

Appendix 3

Valuable Tree Survey Report

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ

ສັນຕິພາບ ເອກກະລາດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ

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<u>ບົດບັນທຶກການກວດກາພາກສະໜາມກ່ຽວກັບຕົ້ນໄມ້ຢູ່ຕາມເສັ້ນທາງສາຍ(A)</u>

<u>ບ້ານ ໂນນສົມບຸນ ຫາ ບ້ານ ຫາດ ຍົ້ນ</u>

1. ວັນທີ: 12-ກຸມພາ-2014, ເວລາ: 14:00 – 17:00
2. ຜູ້ເຂົ້າຮ່ວມ
    - ທ່ານ ຄຳຜິງ ແກ້ວມະນີໄຊ_ ຂະແໜງປ່າໄມ້ ເມືອງ ບໍລິຄັນ
    - ທ່ານ ທານາກະ, ທາ່ນ ເຂີງຄຳ, ທ່ານ ແກ້ວອຸດອນ_ ບໍລິສັດ ໄຟຟ້າ ນ້ຳ້ງງຽບ1
    - ທ່ານ ອິໂຢຕະ, ທ່ານ ພັດທະນາ_ບໍລິສັດ ໂອບາຢາຊິ ຄໍປໍເຣຊັນ
3. ຈຸດປະສົງການລົງກວດກາ

    ເຖິງແມ່ນວ່າບໍລິສັດລັດວິສາຫະກິດໄຟຟ້າລາວໄດ້ອານາໄມພືດພັນນາໆຊະນິດຕາມເສັ້ນທາງລະຫວາ່ງບ້ານໂນນສົມບຸນ ຫາ ບ້ານຫາດຍົ້ນ(ທາງສາຍA)ແລ້ວກໍ່ຕາມ,ບໍລິສັດໄຟຟ້ານ້ຳ້ງງຽບ1 ສັນລະສູດວ່າ ປະເພດຕົ້ນໄມ້ບາງຈຳນວນທີ່ໄດ້ຂຶ້ນບັນຊີຂອງອົງການສາກົນເພື່ອອານຸລັກທຳມະຊາດ(IUCN)ແມ່ນຍັງເຫຼືອຢູ່ໃນເຂດທີ່ຈະອານາໄມແລວທາງລວມທັງໃນເຂດປ່າສະຫງວນຫ້ວຍງົວ.ຕົ້ນໄມ້ບາງຈຳນວນແມ່ນໄດ້ຕັດ ແລະ ຖືກຄຸ້ມຄອງໂດຍແຂວງບໍລິຄຳໄຊຫວ່າງບໍ່ດົນມານີ້.

    ອົງໃສ່ມາດຕະການການຫຼຸດຜ່ອນຜົນກະທົບທາງສະພາບແວດລ້ອມຂອງແຜນການ ການຫຼຸດຜ່ອນຜົນກະທົບແລະຕິດຕາມກັບບັນຫາສັງຄົມ-ສິ່ງແວດລ້ອມ ຂອງໂຄງການ ຂອງວຽກງານກໍ່ສ້າງທາງ,ພວກເຮົາຈຶ່ງໄດ້ດຳເນີນການເພື່ອກວດກາພາກສະໜາມກ່ອນການເລີ່ມວຽກອານາໄມແລະບຸກເບີກແລວທາງ ເພື່ອເປັນການຮັບຮອງວ່າ: 1) ພວກເຮົາສາມາດຮັກສາຕົ້ນໄມ້ທີ່ມີຄ່າ ດ້ວຍການປ່ຽນແປງແລວທາງໃໝ່, 2) ຕົ້ນໄມ້ທີ່ມີຄ່າຊຶ່ງເປັນສັນສິນບັດຂອງແຂວງບໍລິຄຳໄຊຄວນຈະຕັດ ຫຼືຮັກສາໄວ້ແມ່ນອົງໃສ່ຄວາມຄິດເຫັນຂອງຝ່າຍລັດຖະບານ.

4. ການສະຫຼຸບການກວດກາ
    - ມີຕົ້ນໄມ້ຈຳນວນ 24 ຕົ້ນ(ໄມ້ຍາງ, ໄມ້ບາກ) ໃນນັ້ນ ມີຕົ້ນໄມ້ເປັນລາຄາ ຊື້-ຂາຍໄດ້ ຈຳນວນ 6 ຕົ້ນ ແລະ ມີຕົ້ນໄມ້ທີ່ມີຄ່າສູງ18 ຕົ້ນ ຊຶ່ງຍັງມີຢູ່ ໃນຂອບເຂດທີ່ຈະອານາໄມແລວທາງ ແລະຢູ່ໃນ

ເຂດທີ່ໝາຍດ້ວຍເຊືອກຟ້າງຕາມແລວທາງຈາກ ກ ມ 6+400 ຫາ 15+500 ລວມທັງເຂດປ່າ ສະຫງວນຫ້ວຍງົວ ຂອງສາຍທາງ (A).

- ຂະແໜງປ່າໄມ້ເມືອງບໍລິຄັນ ເຫັນດີ ໃຫ້ ບໍລິສັດໄຟຟ້ານ້ຳ ້ງຽບ1 ສາມາດຣັກສາຕົ້ນໄມ້ເປັນລາຄາ ຊື້-ຂາຍຈຳນວນ 6 ຕົ້ນ ເພາະວ່າເຂົາເຈົ້າບໍ່ໄດ້ຕັ້ງໃຈເພື່ອຈະຕັດຕົ້ນໄມ້ທັງໝົດນັ້ນ ເນື່ອງຈາກວ່າມີ ຈຳນວນໜ້ອຍ. ນອກຈາກນັ້ນ ໃນກໍລະນີທີ່ບໍລິສັດ ໄຟຟ້ານ້ຳ ້ງຽບ 1ຕັດໄມ້ຈຳນວນດັ່ງກ່າວນັ້ນ ທາງ ປ່າໄມ້ຂອງເມືອງແມ່ນເຫັນໃຫ້ປະໄວ້ຕາມແຄມທາງຂອງແຕ່ລະຈຸດ.
- ມີຕົ້ນໄມ້ຈຳນວນ 12 ຕົ້ນ ໃນຈຳນວນ ຕົ້ນໄມ້ທັງໝົດ 24 ຕົ້ນຊຶ່ງໃນນັ້ນມີ ຕົ້ນໄມ້ເປັນລາຄາ ຊື້-ຂາຍໄດ້ 4 ຕົ້ນ ແລະ ມີຕົ້ນໄມ້ທີ່ມີຄ່າສູງ 8 ຕົ້ນ ສາມາດຣັກສາໄວ້ ດ້ວຍການຍັບ ປ່ຽນແລວທາງ ໃ ໝ່.
- ອີກປະການໜຶ່ງ,ມີຕົ້ນໄມ້ຈຳນວນ 12 ຕົ້ນ ໃນຈຳນວນ ຕົ້ນໄມ້ທັງໝົດ 24 ຕົ້ນນັ້ນ ຊຶ່ງໃນນັ້ນມີ ຕົ້ນໄມ້ເປັນລາຄາ ຊື້-ຂາຍໄດ້ 2 ຕົ້ນ ແລະ ມີຕົ້ນໄມ້ທີ່ມີຄ່າສູງ 10 ຕົ້ນ ບໍ່ສາມາດຫຼີກເວັ້ນການຕັດໄດ້ ເນື່ອງຈາກການພິຈາລະນາສຸດເຫຼືອວິໃສ່ແລ້ວ ທີ່ຈະອອກແບບແລວທາງໃໝ່ໂດຍອີງໃສ່ສະພາບຕົວ ຈິງຂອງພື້ນທີ່ໃນສະໜາມ ແລະບັນຫາອື່ນໆ ອີກ.

ຫ້ອງການກະສິກຳແລະ ປ່າໄມ້ ເມືອງບໍລິຄັນ	ບໍລິສັດໄຟຟ້ານ້ຳ ້ງຽບ1	ບໍລິສັດໂອບາຢາຊິ ຄຳປ໋ເຮ ຊັນ	ຄະນະກຳມະການ ກວດກາ
ພູວຽງ ພູວງສຸວັນນະວິ	R. Tanaka Khounkham	k. tamura	Khamphong

ພະແນກກະສິກຳ ແລະ ປ່າໄມ້ແຂວງບໍລິຄຳໄຊ	ພະແນກພະລັງງານແລະບໍ່ແຮ່ ແຂວງບໍລິຄຳໄຊ (ກອງເລຂາໜ້າທີ່ງານຍົກຍ້າຍແລະຈັດສັນ)
ພະແນກ ກະສິກຳ ແລະ ປ່າໄມ້ ແຂວງ ບໍລິຄຳໄຊ ພົນສະຫວັນ ຫອມນະບຸນລັດ Mr Phonsavanh HOMNABOUNLATH	ກົມພະລັງງານ ແລະ ບໍ່ແຮ່ ປະຊາຊົນລາວ ແຂວງ ບໍລິຄຳໄຊ ຄຳສິງ ສາຍພູວົງ Khamsing SAYPHOUVONG

Minutes of Joint Site Inspection for Valuable Tree along Road A

1. Date; 12 Feb 2014 14:00-17:00

2. Participants

   Bolikhan District; Mr.Khampong KEOMANEEXAY
   NNP1PC; Mr. Tanaka, Mr. Kheungkham, Mr. Keo U done
   Obayashi; Mr. Iyota, Mr.Phathana

3. Purpose of site inspection

   Even though EDL already cleared vegetation along Road A, NNP1PC identified that some valuable trees of endangered IUCN listed species exists within planned clearance area along Road A including Houay Ngua PPA. Some of valuable trees are regarded as the commercial timbers concurrently by Bolikhamxay Province. In accordance with environmental mitigation measures of ESMMP-CP for Access Road, we conducted the joint site inspection prior to any vegetation clearance in order to confirm i) whether we could retain the valuable tress by means of changing road alignment and ii) whether the commercial tress regarded as property of Bolikhamxay Province should be cut or preserved considering the government's opinion.

4. Result

   - **24** valuable trees of Mai Bak and Mai Yang, of which are **6** commercial trees and **18** non-commercial tress, are located in planned clearance area with marking tape along its boundary from STA 6+400 to STA 15+500 including Houay Ngua PPA along Road A.
   - Bolikhan District agreed that NNP1PC could retain all **6** commercial trees because they don't have any intention to cut all commercial trees by themselves due to a small number of commercial timbers. In addition, Bolikhan District agreed that we could leave logged commercial timbers along each roadside in case NNP1PC cut them.
   - **12 v**aluable trees out of total **24**, of which **4** commercial trees and **8** non-commercial trees, can retain by means of shifting of road alignment.
   - On the other hand, **12** valuable tress out of total **24**, of which **2** commercial trees and **10** non-commercial trees, cannot avoid to cut even though carefully considering design of road alignment, etc.

Attachment; Site Inspection Sheet

Signature

Bolikhamxay Province (PoAF)

พลสะหวัน หอมนะบุนลัด

Mr. Phonsavanh HOMNABOUNLATH

Bolikhamxay Province (RMU)

คำสิง สายพูวง

Khamsing SAYPHOUVONG

Bolikhan District (DoAF)

พูวง ขวางสุวันมะวง

Inspected commission

Khamphong

NNP1PC R. Tanaka

Khoung Kham

Obayashi

K. Tamura

Summary of Commercial trees along Road A And Houay Ngua PPA

Seq No	Station	General Information					Registered status	Inspection result	Reason
		N (m)	E (m)	Height (m)	Girth (m)	Kind of Valuable Tree			
1	6+400/6+500	2,055,537	360,488	5	1.38	T49-MaiBak	Commercial timber	Cut	Road curve radius is too steep
2	7+200/7+500	2,055,932	359,785	7	1.15	TN1-MaiBak	Non-commercial timer	Preserve	
3		2,056,012	359,668	5	1.90	TN6-MaiBak	Non-commercial timer	Preserve	
4	7+600/7+700	2,056,169	359,551	9	1.43	T155-MaiBak	Commercial timber	Preserve	
5	8+600/8+800	2,056,595	358,564	8	1.45	TN4-MaiBak	Non-commercial timer	Preserve	
6	9+300/9+400	2,056,958	358,141	13	1.41	T201-MaiBak	Commercial timber	Cut	Obstructed with quarry site
7		2,056,925	358,147	5	1.35	TN3-MaiBak	Non-commercial timer	Cut	Obstructed with quarry site
8		2,056,963	358,132	5	1.35	TN2-MaiBak	Non-commercial timer	Cut	Obstructed with quarry site
9	10+400/10+500	2,057,231	357,269	5	3.00	T291-MaiBak	Commercial timber	Preserve	
10		2,057,293	357,188	7	1.53	TN8-MaiBak	Non-commercial timer	Preserve	
11	10+700/11+000	2,057,283	356,925	6	1.45	TN9-MaiBak	Non-commercial timer	Preserve	
12		2,057,265	356,862	5	1.50	T22-Mai Yang	Commercial timber	Preserve	
13	15+100/15+200	2,061,132	355,673	8	0.96	T88-Mai Yang	Non-commercial timer	Cut	*If we shift the road alingment, the existing area will be disturbed for additional embankment area due to steep slope condition. * In order to keep minimum of clearance area, we need to cut these trees
14		2,061,141	355,675	8	0.76	T89-Mai Yang	Non-commercial timer	Cut	
15		2,061,153	355,686	5	0.7	T95-Mai Yang	Non-commercial timer	Cut	
16		2,061,148	355,687	8	1.32	T96-Mai Yang	Non-commercial timer	Cut	
17		2,061,151	355,689	7	1.07	T97-Mai Yang	Non-commercial timer	Cut	
18		2,061,165	355,692	10	1.44	T98-Mai Yang	Non-commercial timer	Cut	
19	15+300/15+500	2,061,190	355,692	6	1.2	T441-Mai Bak	Non-commercial timer	Cut	
20		2,061,289	355,697	9	1.25	T101-Mai Yang	Non-commercial timer	Cut	
21		2,061,302	355,720	4	1.60	T488-MaiBak	Commercial timber	Preserve	
22		2,061,406	355,651	7	96	107-Mai Yang	Non-commercial timer	Preserve	
23		2,061,397	355,685	9	1.09	106-Mai Yang	Non-commercial timer	Preserve	
24		2,061,380	355,704	7	89	T103-Mai Yang	Non-commercial timer	Preserve	

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014

Inspector Keodone

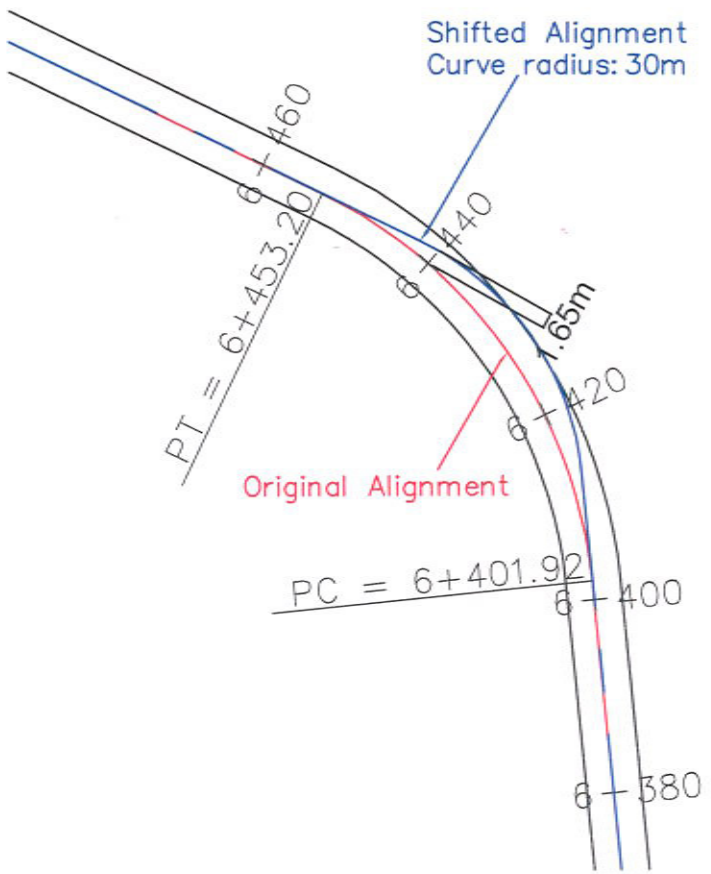
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Sak	
2 Registered Number	T 19	
3 Diameter / Height	Diameter; 1.38	Height; 5.00 M
4 Location	Road name A	STA 6+400 - 6+500
5 Commercial timber	- Commercial timber; (Yes) or Not In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / (b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: ✓ Curve radius is too steep to move - Others See plan and cross-section ( )
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

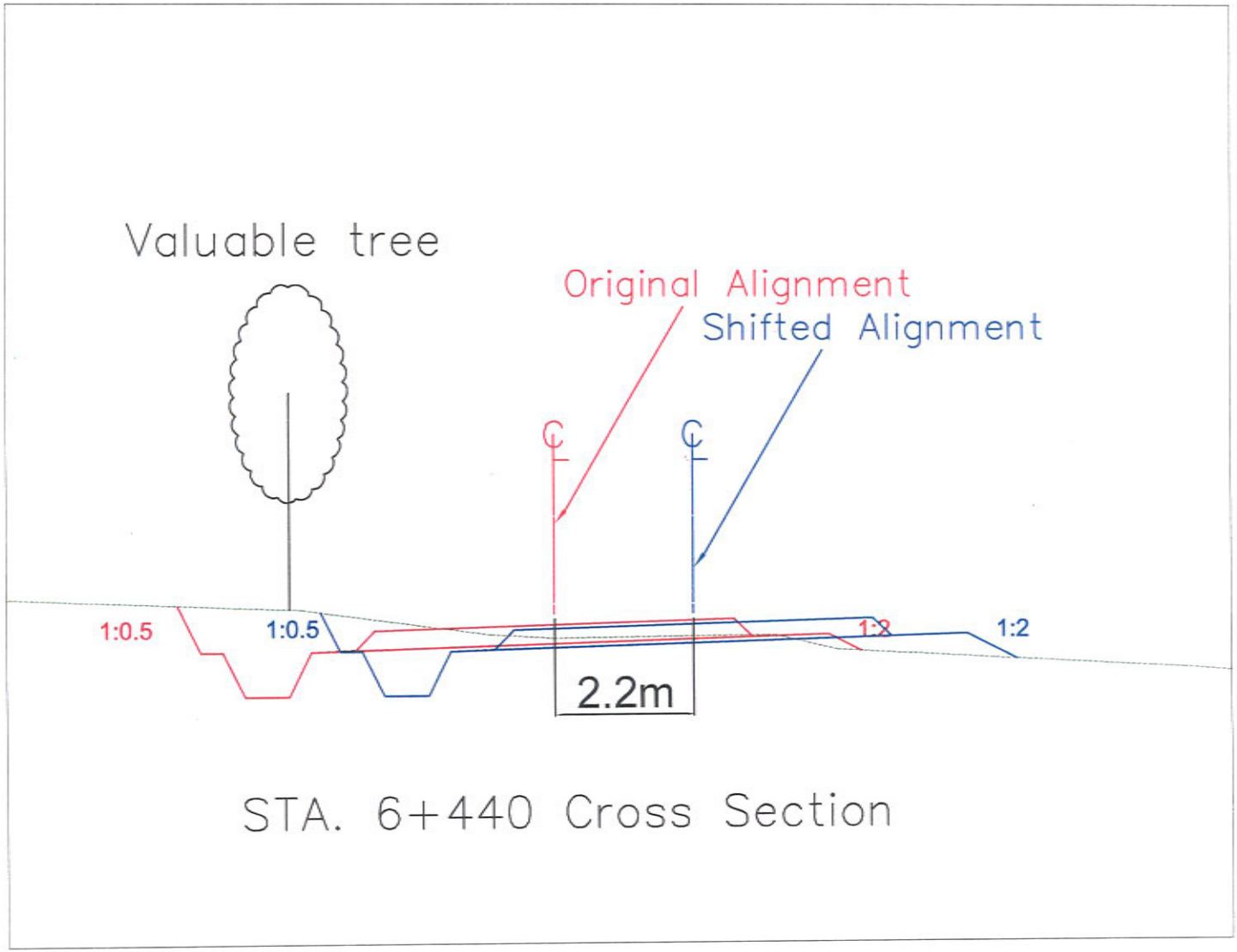
Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~



STA. 6+440 Plan View



STA. 6+440 Cross Section

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014
Inspector Keodone
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai bak	
2 Registered Number	TN 1	
3 Diameter / Height	Diameter; 1.15	Height; 7:60
4 Location	Road name A	STA 7+900 – 7+500
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014
Inspector Keodone
Bolikahmxay province Khamphong
6m²

Items	Contents	
1 Kind of tree	Mai Sak	
2 Registered Number	TN6	
3 Diameter / Height	Diameter; 1.90	Height; 5
4 Location	Road name A	STA 7+200 - 7+500
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓ Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / (c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) Slip road around 1,5 M => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014

Inspector Kerrdone

Bolikahmxay province Khamduang

Items	Contents	
1 Kind of tree	Mai Sak	
2 Registered Number	T155	
3 Diameter / Height	Diameter; 1.43 Height; 9;00	
4 Location	Road name A STA 7+600 - 7+700	
5 Commercial timber	- Commercial timber; (Yes) or Not In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / (b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) Shift road around 2 m => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014
Inspector Boudone
Bolikahmxay province Khamphong
ormx

Items	Contents	
1 Kind of tree	TN4 Mai Sak	
2 Registered Number	TN 4	
3 Diameter / Height	Diameter; 1.45	Height; 8:00
4 Location	Road name A	STA 8: 600 - 8+800
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / (b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) Slipwood around 2-3M => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/2/2014
Inspector Keo Udone
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Sak	
2 Registered Number	TN 2	
3 Diameter / Height	Diameter; 0.43 m	Height; 5 m
4 Location	Road name A	STA 9+400
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway Inside planned Quarry Site => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others (obstructed with quarry site)
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/2/2014

Inspector Keo Udone

Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Sak	
2 Registered Number	TN3	
3 Diameter / Height	Diameter; 1.35	Height; 5.00
4 Location	Road name A	STA 9+300 – 9+480
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway (inside planned Quarry site) => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others (obstructed with quarry site)
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12-2-2014
Inspector Keo Udone
Bolikahmxay province Kham phong

Items	Contents	
1 Kind of tree	T201 Mai Sak	
2 Registered Number	T201	
3 Diameter / Height	Diameter; 1.41	Height; 23.00
4 Location	Road name A	STA 94360
5 Commercial timber	- Commercial timber; (Yes) or Not - In case that Bolikhamxay province agrees to preserve it, go to Item 6. - In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway e) inside quarry area => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others (Obstructed with quarry site
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/2/2014
Inspector Keo Udone
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	TNT Mai Sak	
2 Registered Number	TNY	
3 Diameter / Height	Diameter; 1.35	Height; 7.00
4 Location	Road name A	STA 10+400 - 10+500
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross-sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014
Inspector Keaodone
Bolikahmxay province Kham Phong
Dmd

Items	Contents	
1 Kind of tree	TN 9 Mai Sale	
2 Registered Number	TN 9	
3 Diameter / Height	Diameter; 0.46 m Height; 6.00 m	
4 Location	Road name A STA 10+700 ~ 11+00	
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014

Inspector Kouxbone

Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	TQ2	
2 Registered Number		
3 Diameter / Height	Diameter; 1.50 Height; 5.00	
4 Location	Road name A STA 10+300 - 11+00	
5 Commercial timber	- Commercial timber; Yes or Not In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	Preserve

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12-2-2014
Inspector Keo udone
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Sak	
2 Registered Number	1291	
3 Diameter / Height	Diameter; 3.00	Height; 5.00
4 Location	Road name A	STA 10+400 – 10+500
5 Commercial timber	- Commercial timber; (Yes) or Not In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

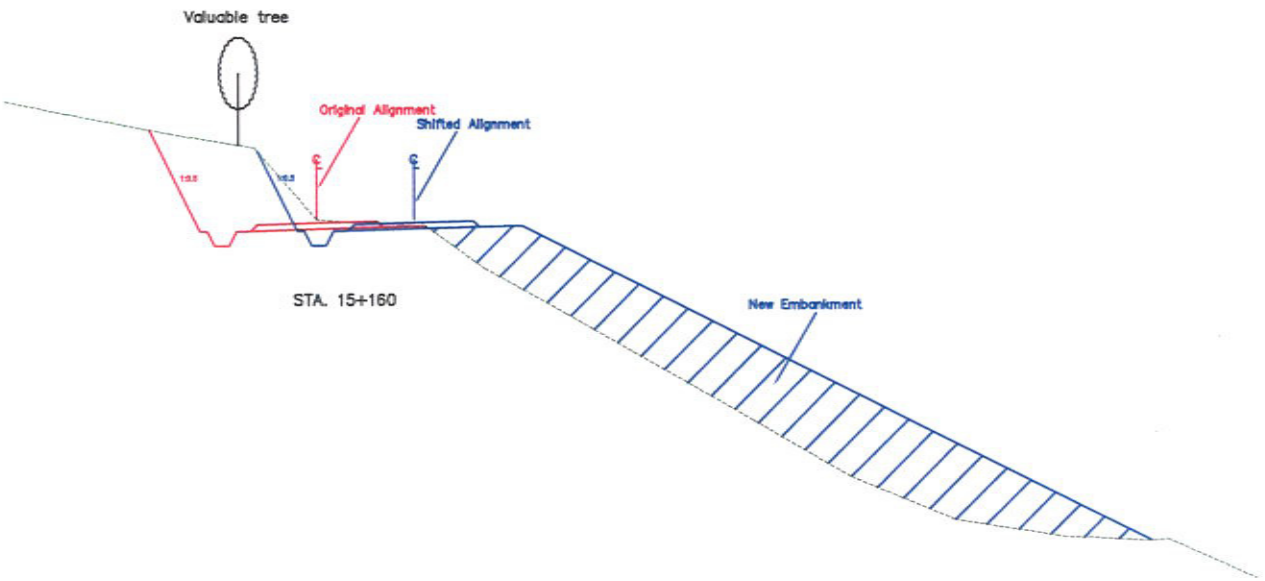
Inspection date 12/02/2014
Inspector Keandone
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Yang	
2 Registered Number	T96	
3 Diameter / Height	Diameter; 1.92	Height; 8.00
4 Location	Road name A	STA 15+100 – 15+200
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / (c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

* If we shift the road alignment the existing area will be disturbed for additional embankment area due steep slope condition.
* In order to minimum of clearance area, we need to cut.

See cross-section.


Valuable tree
Original Alignment
Shifted Alignment
STA. 15+160
New Embankment

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014

Inspector Keoudone

Bolikahmxay province Khamphouay

Items	Contents	
1 Kind of tree	Mai Yang	
2 Registered Number	149	
3 Diameter / Height	Diameter; 0,24 m	Height; 8.00 m
4 Location	Road name A	STA 15+100 - 15+200
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / (c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others (if we shift The Road Alignment The Existing Area will be disturbed for Additional Embankment Area, In Oder to keep minimum clearance area we need to cut This Tree.
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 19/02/2015
Inspector Keodara
Bolikahmxay province Khan phouy

Items	Contents	
1 Kind of tree	Mai yang	
2 Registered Number	T 98	
3 Diameter / Height	Diameter; 1.44	Height; 10.00
4 Location	Road name A	STA 15+100 - 15+200
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / (c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others * (if we shift, we need to disturd more existing area)
	(Impossible) => Go to ~~"Cut"~~ of Item 8	
8 Result	(Cut)	for additional Preserve embankment due to steep slope condition * ~~Fad~~ in order to keep minimum of clearance area we need to cut.

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014

Inspector Keadone

Bolikahmxay province Champhong

Items	Contents	
1 Kind of tree	Mai Sak	
2 Registered Number	T441	
3 Diameter / Height	Diameter; 1.20	Height; 6:00
4 Location	Road name A	STA 10+200 – 11+400
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓ Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / (c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others (if we shift the road Alignment
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	The existing ~~Area will be disturbed~~ Preserve due to steep slope condition. in order to keep minimum clearance area we need to cut This tree.

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014
Inspector Keaudone
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai yang	
2 Registered Number	T107	
3 Diameter / Height	Diameter; 96	Height; 7.00
4 Location	Road name A	STA 15+300 – 15+500
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓ Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014

Inspector Keoudone

Bolikahmxay province Champhouay

Boom

Items	Contents	
1 Kind of tree	Mai Yang	
2 Registered Number	T88	
3 Diameter / Height	Diameter; 96 0,3 m	Height; 6:00
4 Location	Road name A	STA 15+100 - 15+200
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others (if we shift The road Alignment The Existing Area will be disturb for Additional Embankment, due to Existing slope is steep. In oder to keep minimu clearance area we need to cut This tree.)
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014
Inspector Keaodone
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Yang	
2 Registered Number	T106	
3 Diameter / Height	Diameter; 8	Height; 7.00
4 Location	Road name A	STA 15+300 - 15+500
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓ Non-commercial timber; Go to Item 6.	
6 Cross section	a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/02/2014

Inspector Keodara

Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Lang	
2 Registered Number	T 103	
3 Diameter / Height	Diameter; 89	Height; 7.00
4 Location	Road name	STA 15+300 – 15+500
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓ Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12 /Feb/ 2013
Inspector Keo Vdone
Bolikahmxay province Kham phong

Items	Contents	
1 Kind of tree	Mai Yang	
2 Registered Number	97	
3 Diameter / Height	Diameter; 0.34 m	Height; 7.0 m
4 Location	Road name A	STA 15+100 ~ 15+200
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓ - Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map

Attachment-2 Photograph

~~Attachment-3 Sketch on cross sectional drawings~~

※ If we shift the road alignment
The Existing area will be disturbed for additional embankment area, due to steep slope condition
※ In order to keep minimum clearance area, we need to cut.

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12-Feb 2014
Inspector Keo Udone
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Yang	
2 Registered Number	T95	
3 Diameter / Height	Diameter; 0,2 m	Height; 5
4 Location	Road name A	STA 15+100 ~ 15+200
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓ Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

** IF we shift the road alignment The existing area will be disturbed for Embankment area
* In order to keep minimum area of site clearance, we need to cut

NAM NGIEP1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/Feb/2014
Inspector Keo U done
Bolikahmxay province Khamphong

Items	Contents	
1 Kind of tree	Mai Bak	
2 Registered Number	T488	
3 Diameter / Height	Diameter; 0,54 m Height; 4,0 m	
4 Location	Road name A STA 15+300 ~ 15+500	
5 Commercial timber	- Commercial timber; (Yes) or Not In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 - Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	(Possible) => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	Impossible => Go to "Cut" of Item 8	
8 Result	Cut	(Preserve)

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

NAM NGIEP 1
POWER COMPANY

INSPECTION SHEET FOR VALUABLE TREE

Inspection date 12/Feb/2014
Inspector Keo Udone
Bolikahmxay province Thaphong

Items	Contents	
1 Kind of tree	Mai Yang	
2 Registered Number	101	
3 Diameter / Height	Diameter; 0,39 m Height; 9,0 m	
4 Location	Road name A STA 15+300 ~ 15+500	
5 Commercial timber	- Commercial timber; Yes or (Not) In case that Bolikhamxay province agrees to preserve it, go to Item 6. In case that Bolikhamxay province disagrees to preserve it, go to "Cut" of Item 8 ✓Non-commercial timber; Go to Item 6.	
6 Cross section	(a) Inside buffer zone / b) Inside ditch / c) Inside slope and embankment / d) Inside roadway => After checking, go to Item 7	
7 Possibility Shift alignment	Possible => Go to "Preserve" of Item 8	Reason in case of impossible: - Curve radius is too steep to move - Others ( )
	(Impossible) => Go to "Cut" of Item 8	
8 Result	(Cut)	Preserve

Attachment-1 Location map
Attachment-2 Photograph
~~Attachment-3 Sketch on cross sectional drawings~~

※ If we shift the road alignment, The existing area will be disturbed for additional Embankment area. due to steep slope condition.
※ In order to keep minimum side clearance area. we need to cut

STA: 6+220 - 7+720,16+500 - 16+600

01

02,

03

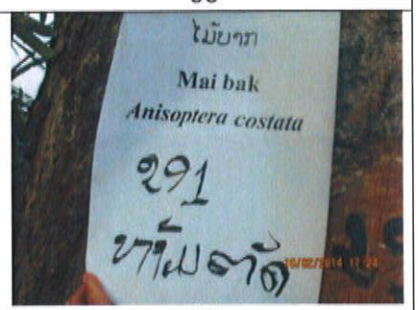
04

05

06

07

08



09

10


ไม้ยาง 101
Mai Gnang.
Dipterocarpus
alatus.
ยางพันอาต้า

20


Mai bak
Anisoptera costata
488
ยางพันลาต้า

21


Mai Gnang.
Dipterocarpus
alatus.
ยางพันลาต้า
107

22


ไม้ยาง 106
Mai Gnang.
Dipterocarpus
alatus.
ยางพันลาต้า

23


ไม้ยาง 103
Mai Gnang.
Dipterocarpus
alatus.
ยางพันลาต้า

24

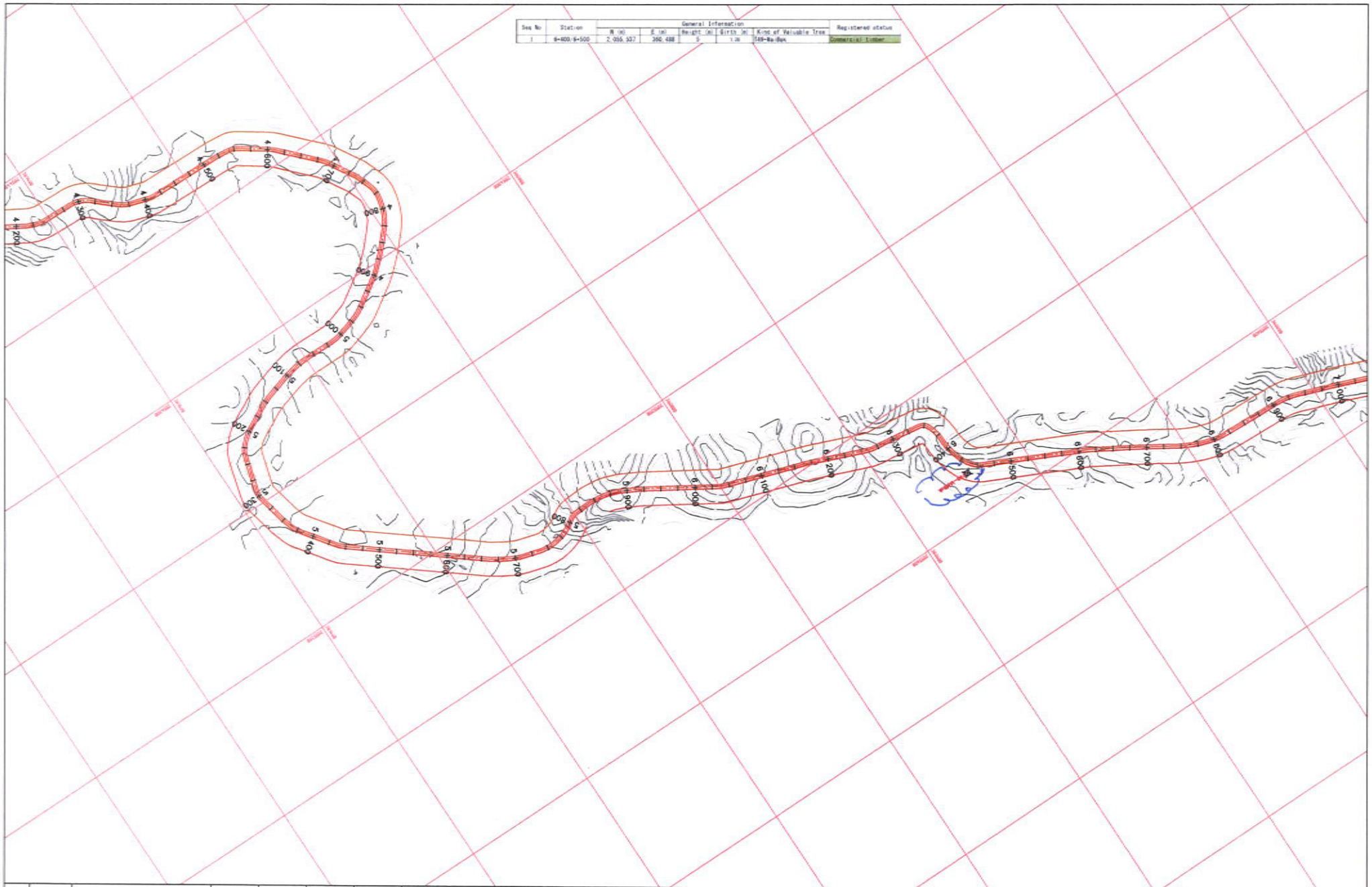
NAM NGIEP 1
POWER COMPANY

DETAILS OF VALUABLE TREES

Section km 0+000 - km 21+500
(Nonsomboun - Hat Nguin)

Feb, 2014

Seq No	Station	General Information					Registered status
		N (m)	E (m)	Height (m)	Girth (m)	Kind of Valuable Tree	
1	6+600/6+500	2,055,527	360,488	5	1.26	ไม้พะยูง/Pa-Yung	Commercial timber



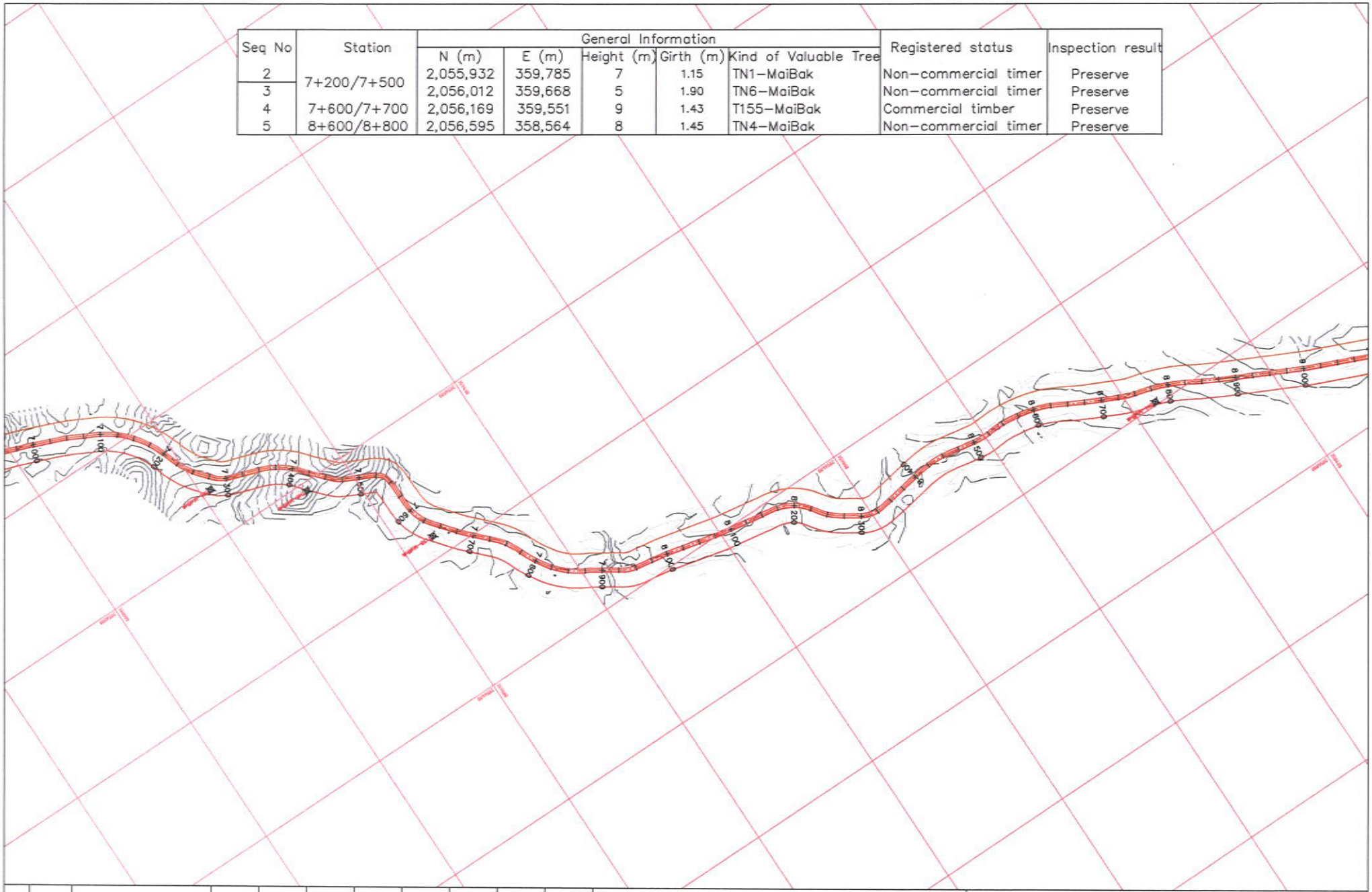
NO.	JOB NO.	JOB DESCRIPTION	DRAWN	DESIGNED	VERIFIED	VALIDATED	RECOMMENDED	CONCURRED	APPROVED	DATE

THE KANSAI ELECTRIC POWER CO.,INC
EGAT International Co., Ltd
LAO HOLDING STATE ENTERPRIZE

NAM NGIEP 1 HYDROPOWER PROJECT

DRAWN	VALIDATED	DRAWING NAME: VALUABLE TREE Road A - km 5+000 - km 7+000
DESIGNED	RECOMMENDED	
VERIFIED	CONCURRED	
APPROVED DATE :	SCALE: A3:1/5,000	REPLACING DWG. NO.
	JOB NO.	DWG. NO: VT-001
		REV.

Seq No	Station	General Information					Registered status	Inspection result
		N (m)	E (m)	Height (m)	Girth (m)	Kind of Valuable Tree		
2	7+200/7+500	2,055,932	359,785	7	1.15	TN1–MaiBak	Non–commercial timer	Preserve
3		2,056,012	359,668	5	1.90	TN6–MaiBak	Non–commercial timer	Preserve
4	7+600/7+700	2,056,169	359,551	9	1.43	T155–MaiBak	Commercial timber	Preserve
5	8+600/8+800	2,056,595	358,564	8	1.45	TN4–MaiBak	Non–commercial timer	Preserve



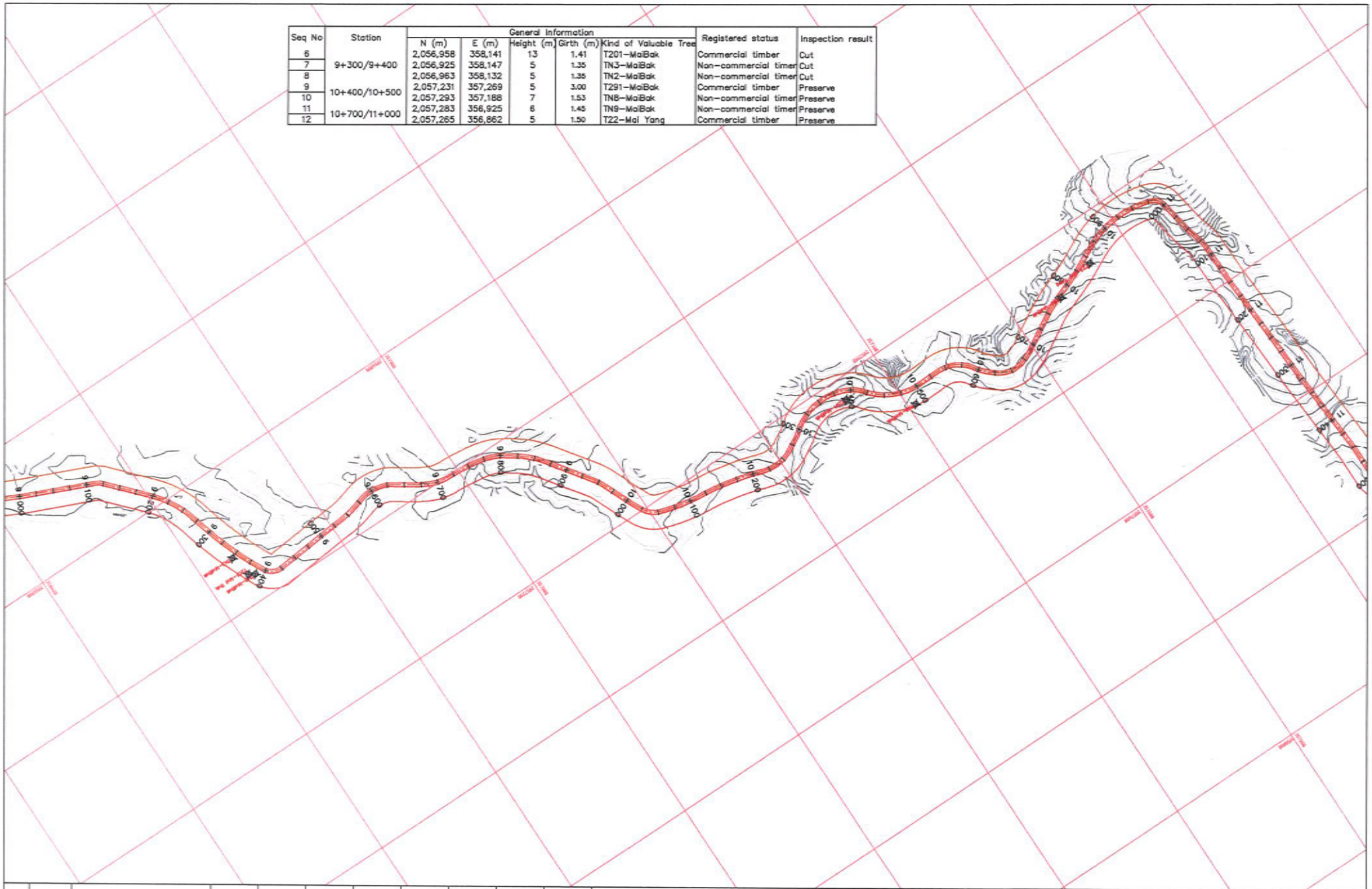
REV.NO.	JOB NO.	JOB DESCRIPTION	DRAWN	DESIGNED	VERIFIED	VALIDATED	RECOMMENDED	CONCURRED	APPROVED	DATE

THE KANSAI ELECTRIC POWER CO.,INC
EGAT International Co., Ltd
LAO HOLDING STATE ENTERPRIZE

NAM NGIEP 1 HYDROPOWER PROJECT

DRAWN	VALIDATED	DRAWING NAME
DESIGNED	RECOMMENDED	VALUABLE TREE Road A - km 7+000 - km 9+000
VERIFIED	CONCURRED	
APPROVED	DATE :	SCALE: A3:1/5,000 / REPLACING DWG. NO. / DWG. NO: VT-002 / REV.
		JOB NO.

Seq No	Station	General Information					Registered status	Inspection result
		N (m)	E (m)	Height (m)	Girth (m)	Kind of Valuable Tree		
6	9+300/9+400	2,056,958	358,141	13	1.41	T201–MaiBak	Commercial timber	Cut
7		2,056,925	358,147	5	1.35	TN3–MaiBak	Non–commercial timer	Cut
8		2,056,963	358,132	5	1.35	TN2–MaiBak	Non–commercial timer	Cut
9	10+400/10+500	2,057,231	357,269	5	3.00	T291–MaiBak	Commercial timber	Preserve
10		2,057,293	357,188	7	1.53	TN8–MaiBak	Non–commercial timer	Preserve
11	10+700/11+000	2,057,283	356,925	6	1.45	TN9–MaiBak	Non–commercial timer	Preserve
12		2,057,265	356,862	5	1.50	T22–Mai Yang	Commercial timber	Preserve



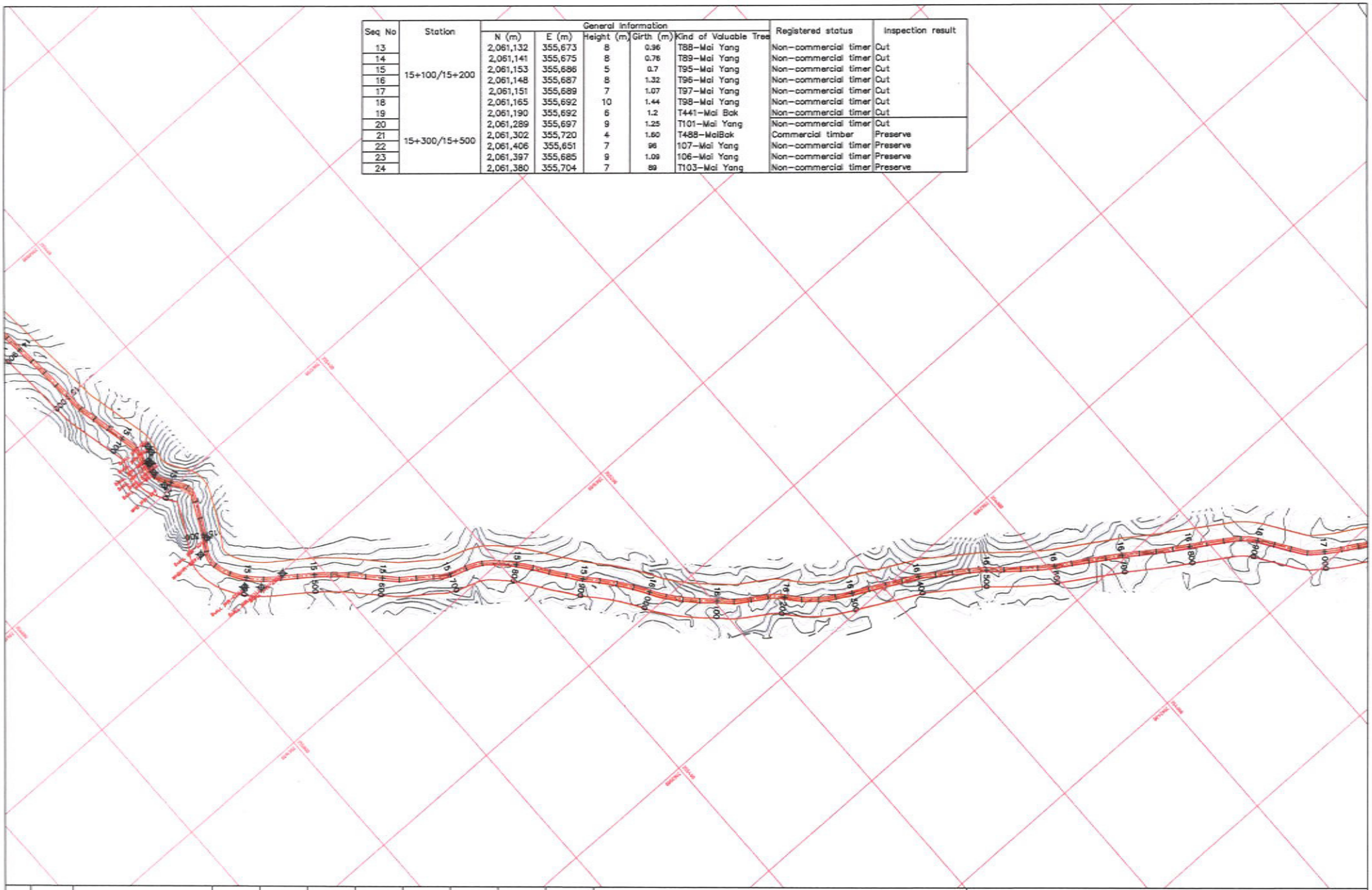
REV.NO.	JOB NO.	JOB DESCRIPTION	DRAWN	DESIGNED	VERIFIED	VALIDATED	RECOMMENDED	CONCURRED	APPROVED	DATE

THE KANSAI ELECTRIC POWER CO.,INC
EGAT International Co., Ltd
LAO HOLDING STATE ENTERPRIZE

NAM NGIEP 1 HYDROPOWER PROJECT

DRAWN	VALIDATED	DRAWING NAME: VALUABLE TREE Road A - km 9+000 - km 11+000
DESIGNED	RECOMMENDED	
VERIFIED	CONCURRED	
APPROVED	DATE:	SCALE: AS VELINE / REPLACING DWG. NO. / DWG. NO.: VT-A05 / REV.
		JOB NO.

Seq No	Station	General Information					Registered status	Inspection result
		N (m)	E (m)	Height (m)	Girth (m)	Kind of Valuable Tree		
13	15+100/15+200	2,061,132	355,673	8	0.96	T88–Mai Yang	Non–commercial timer	Cut
14		2,061,141	355,675	8	0.76	T89–Mai Yang	Non–commercial timer	Cut
15		2,061,153	355,686	5	0.7	T95–Mai Yang	Non–commercial timer	Cut
16		2,061,148	355,687	8	1.32	T96–Mai Yang	Non–commercial timer	Cut
17		2,061,151	355,689	7	1.07	T97–Mai Yang	Non–commercial timer	Cut
18		2,061,165	355,692	10	1.44	T98–Mai Yang	Non–commercial timer	Cut
19		2,061,190	355,692	6	1.2	T441–Mai Bak	Non–commercial timer	Cut
20	15+300/15+500	2,061,289	355,697	9	1.25	T101–Mai Yang	Non–commercial timer	Cut
21		2,061,302	355,720	4	1.60	T488–MaiBak	Commercial timber	Preserve
22		2,061,406	355,651	7	96	107–Mai Yang	Non–commercial timer	Preserve
23		2,061,397	355,685	9	1.09	106–Mai Yang	Non–commercial timer	Preserve
24		2,061,380	355,704	7	89	T103–Mai Yang	Non–commercial timer	Preserve



REV.NO.	JOB NO.	JOB DESCRIPTION	DRAWN	DESIGNED	VERIFIED	VALIDATED	RECOMMENDED	CONCURRED	APPROVED	DATE

THE KANSAI ELECTRIC POWER CO.,INC
EGAT International Co., Ltd
LAO HOLDING STATE ENTERPRIZE

NAM NGIEP 1 HYDROPOWER PROJECT

DRAWN	VALIDATED	DRAWING NAME: VALUABLE TREE Road A - km 15+000 - km 15+000
DESIGNED	RECOMMENDED	
VERIFIED	CONCURRED	
APPROVED / DATE :	SCALE: A3: 1/5,000	REPLACING DWG. NO. / JOB NO. / DWG. No. NT-006 / REV.

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ
ສັນທິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນະຖາວອນ
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ແຂວງບໍລິຄຳໄຊ
ຄະນະກຳມະການຍົກຍ້າຍຈັດສັນ ແລະ ປັບປຸງຊີວິດການເປັນຢູ່
ກອງເລຂາໂຄງການເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1

ເລກທີ 26 /ກລຂ.ນງ1
ບໍລິຄຳໄຊ, ວັນທີ 12 FEB 2014

ໃບສະເໜີ

ຮຽນ: - ທ່ານຫົວໜ້າພະແນກກະສິກຳ ແລະ ປ່າໄມ້ແຂວງ.
- ທ່ານຫົວໜ້າຫ້ອງການກະສິກຳ ແລະ ປ່າໄມ້ເມືອງບໍລິຄັນ.

ເລື່ອງ: ບໍລິສັດໄຟຟ້ານ້ຳງຽບ 1 ຂໍພະນັກງານລົງກວດກາໄມ້ທີ່ໄດ້ສຳຫລວດ ແລະ ຂຶ້ນບັນຊີແລ້ວແຕ່ຍັງບໍ່ທັນໄດ້ຂຸດຄົ້ນອອກເພາະເປັນໄມ້ນ້ອຍ ແລະ ໄມ້ຢາງຂາວ ຕາມແລວທາງເຂົ້າເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1 ຈາກບ້ານໂນນສົມບຸນ ຫາ ບ້ານຫາດຍົ້ນ.

- ອີງຕາມ: ສັນຍາສຳປະທານລະຫວ່າງລັດຖະບານ ແຫ່ງ ສປປ ລາວ ກັບບໍລິສັດໄຟຟ້ານ້ຳງຽບ 1 ສະບັບລົງວັນທີ 27 ສິງຫາ 2013.
- ອີງຕາມ: ໃບສະເໜີຂອງບໍລິສັດໄຟຟ້ານ້ຳງຽບ 1 ຈຳກັດສະບັບລົງວັນທີ 11 ກຸມພາ 2014.

ກອງເລຂາຄະນະກຳມະການຍົກຍ້າຍຈັດສັນ ແລະ ປັບປຸງຊີວິດການເປັນຢູ່ປະຊາຊົນໂຄງການເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1 ຂໍຖືເປັນກຽດຢ່າງສູງຮຽນສະເໜີມາຍັງທ່ານ: ເພື່ອຂໍພະນັກງານປ່າໄມ້ພາກສ່ວນລະ 01 ທ່ານ ເຂົ້າຮ່ວມໃນການກວດກາຄືນກ່ຽວກັບໄມ້ທີ່ໄດ້ສຳຫລວດ ແລະ ຂຶ້ນບັນຊີແລ້ວແຕ່ຍັງບໍ່ທັນໄດ້ຂຸດຄົ້ນອອກເພາະເປັນໄມ້ນ້ອຍແລະ ໄມ້ຢາງຂາວ ຕາມແລວທາງເຂົ້າເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1 ຈາກບ້ານໂນນສົມບຸນ ຫາ ບ້ານຫາດຍົ້ນເພາະທາງໂຄງການຈະໄດ້ຕັດອອກ ແລະ ເກັບມ້ຽນໄວ້ແລ້ວຈຶ່ງມອບໃຫ້ພາກສ່ວນທີ່ໄດ້ຮັບອະນຸຍາດໄປເກັບກູ້ເອົາຕາມພາຍຫລັງ. ຄະນະດັ່ງກ່າວຈະໄດ້ລົງເຮັດວຽກ**ໃນເວລາ 13:30 ໂມງ ຂອງວັນທີ 12 ກຸມພາ 2014** (ການໄປມາແມ່ນນຳໃຊ້ລົດຂອງໂຄງການ).

ດັ່ງນັ້ນ, ຈຶ່ງຮຽນສະເໜີມາຍັງທ່ານເພື່ອພິຈາລະນາຕາມຄວາມເໝາະສົມດ້ວຍ.
(ຮຽນມາດ້ວຍຄວາມເຄົາລົບ ແລະ ນັບຖືຢ່າງສູງ)

ຫົວໜ້າກອງເລຂາໂຄງການເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1

ຄຳສິງ ສາຍພູວົງ
Khamsing SAYPHOUVONG

ໝາຍເຫດ:
ພົວພັນ ສະຫາຍ ຄຳສິງ ສາຍພູວົງ
ໂທ: 020-22335546, 020-91334444

Appendix 4

A Detailed Works Program for Construction of Access Road – Quarry Road A STA: 9+400

Date: 27th February 2014

Ref: NNP1-PCL-00141

OBAYASHI CORPORATION

Ban Phonsay, Nouy-17, Pakxan district, Bolikhamxay Province, Lao P.D.R.
Tel: +856-54-790-686 Fax: +856-54-790-688

To: Mr. Takashi TADA
Deputy Managing Director
Nam Ngiep 1 Power Company Limited

Subject: Re-Submission of Detailed Works Program for Construction of Access Road Quarry
(Road A 9+400km)

Dear Sir,

Referring to your letter ref, NNP1/0044-014/OBA/EPC-CE dated 25th February 2014, we would like to herewith provide the Corrected Detailed Works Program for Construction of Access Road Quarry (Road A 9+400km) (Rev A2) in accordance with Sub-clause 2.1.6 Contractor's Documents of Schedule 12 of Civil Works Contract for your approval.

Your prompt approval would be highly appreciated.

Sincerely Yours,

OBAYASHI CORPORATION

Kazuhiko CHABAYASHI
Project Manager
Nam Ngiep Project Office
OC/KT

Attachment: NNP1-MS-RW022-A2 with checklist

Detailed Works Program for Construction of Access Road

Quarry
(Road A 9+400km)

for

Nam Ngiep 1 Hydropower Project

Document No. : NNP1-MS-RW022-A2

OBAYASHI Corporation

Submitted By:

.....

Kazuhiko CHABAYASHI
Project Manager
Nam Ngiep Project Office

CONTENT

REVISION STATUS

Rev. No.	Description	Issue Date	Remarks
A1	1st Submission for Owner's review	24 Feb 2014	Revised comments.
A2	2nd Submission for Owner's review	27 Feb 2014	

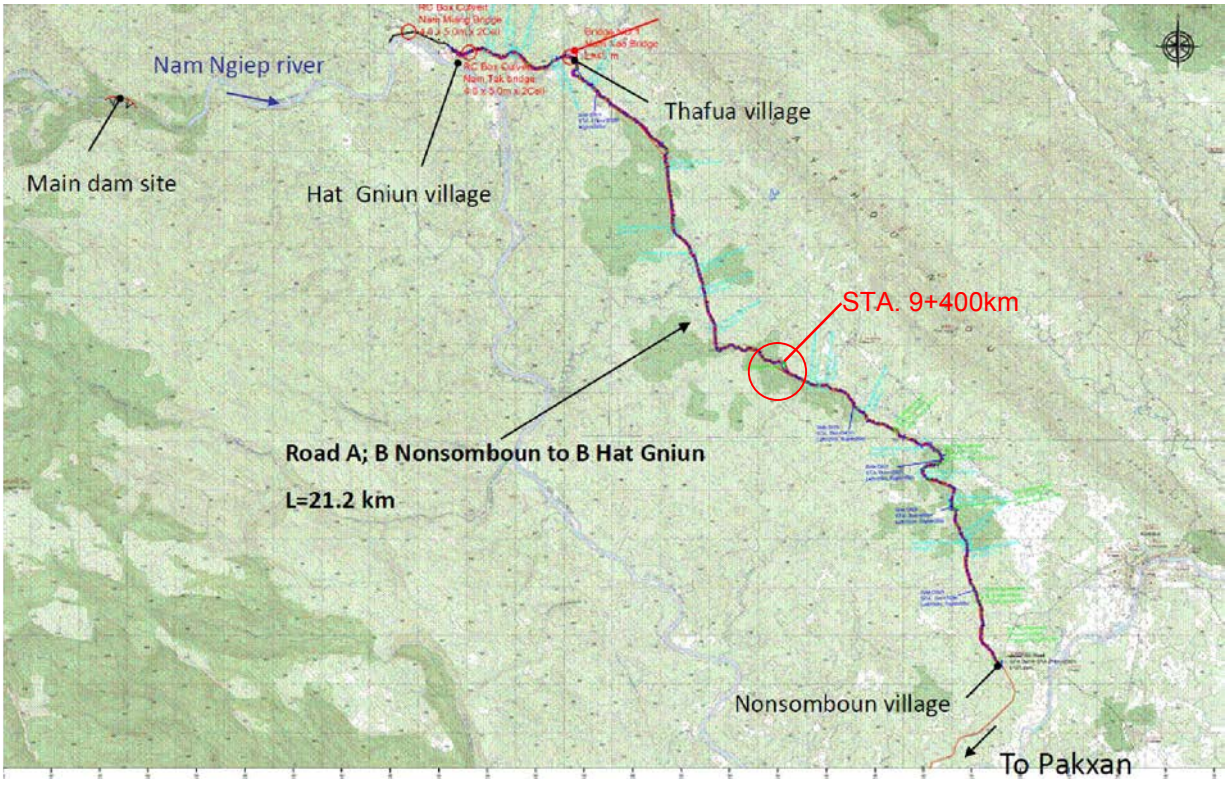
1. GENERAL

Large amount of crushed stone will be used for the construction of access roads, for instance subbase course, improvement of road foundation, etc. Therefore the Quarry should be developed in order to ensure those material.

This detailed works program (Document No.NNP1-MS-RW022) as volume focuses on the Quarry at STA.9+400km of Road A. It standardizes construction procedures and material application for the road.

The construction shall be carried out in accordance with normal practice unless otherwise specified.

The location of Quarry is shown in below.



The major quantities for the construction of the Quarry are shown in table below.

No.	Description	Quantity	Unit	Remark
1	Clearing	20,000	m2	
2	Excavation of topsoil	4,000	m3	
3	Excavation of rock	47,000	m3	
4	Production of Crush Stone	37,600	m3	
5	Open ditch	650	m	
6	Sedimentation Pond	2	Site	

Current site photograph is shown in below.

2. REFERENCE

Referenced Specifications:

- Earthwork : TS 2.2, 2.3, 2.4
- Drainage : TS 8.6, 9.3
- Incidentals : TS 9.4, 9.8

3. MATERIAL

Blasting materials shall be used for the development of Quarry. The main materials are shown as follows.

No.	Description	Use for
1	ANFO	Blasting
2	Dynamite	Blasting
3	Detonator	Blasting
4	Sign Plate & Post	Traffic Sign

4. RESOURCES TO BE USED

4.1 Equipment and tool

No.	Equipment / Tool	Capacity	Nos	Purpose
1	Excavator	0.7~1.0 m3	2	Excavation/ Accumulation/ Loading
2	Mobile Crusher	50~240 ton/h	1	Producing Crush Stone
3	Giant Breaker with Excavator	1300kg	1	Breaking Boulder
4	Drilling machine	220kg	1	Blasting
5	Bulldozer	13ton	1	Accumulating rock

4.2 Nominated Subcontractor and Manpower distribution

Nominated Subcontractor: **"Phoukhong Construction Sole Company".**

In general, the subcontractor will be nominated, concerning not only price/rate but also following items, totally.

1) Technical competence
2) Financially stable
3) Administrative competence
4) Past project experience and reference
5) Ability to meet schedule
6) Quality and skill of work
7) Capacity (equipment, staff, worker) and organization
8) Ability to meet safety and environment requirements

And then, the evaluation for subcontractor will be done and recorded.

Manpower distribution for this work is planned as below.

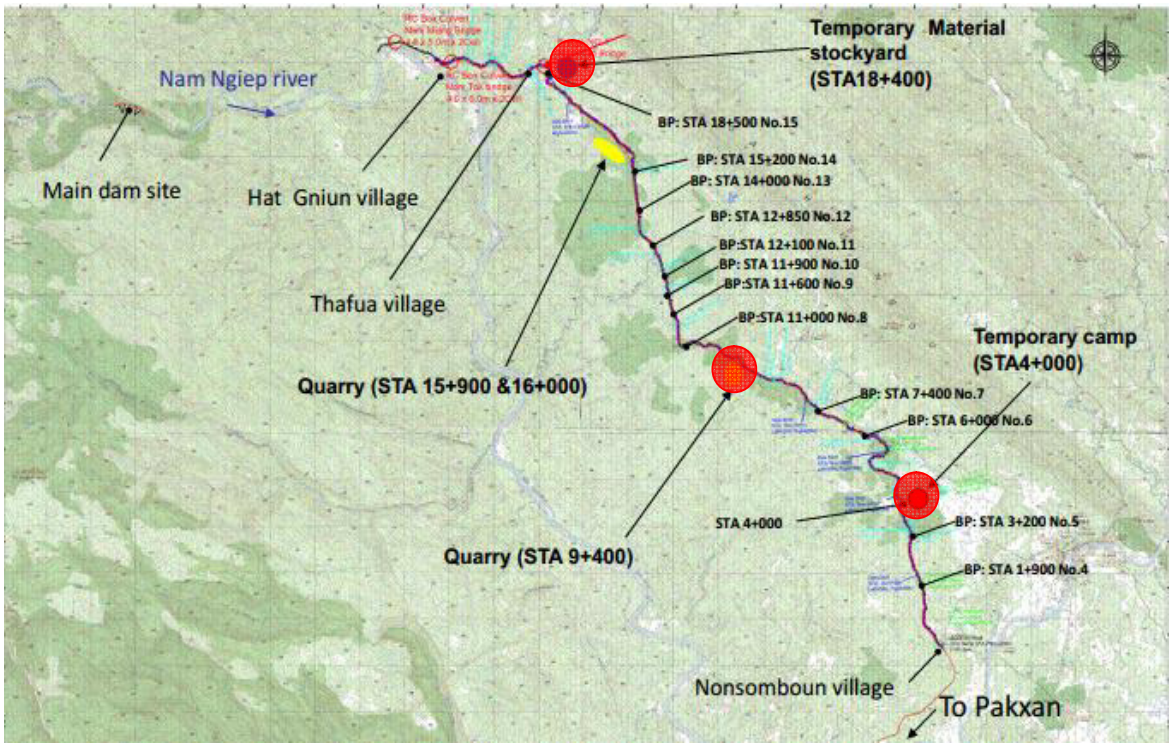
No.	Manpower	Planned Number	Duty
1	Site Engineer	1	Site Management
2	Foreman	1	Work Management
3	Equipment Operator	5	Operation of Equipment
4	Skilled Worker	6	Assist operator, Primer
5	Common Worker	6	Assist Skilled worker, Watchman, Security
6	Mechanic	1	Maintenance of equipment
7	Surveyor	1	Survey

4.3 Temporary Facilities

Location of temporary facilities and figure along the Road A are shown below.

No.	Facilities	Location
1	Borrow Pit No.4	STA.1+900
2	Borrow Pit No.5	STA.3+200
3	Temporary camp	STA.4+000
4	Borrow Pit No.6	STA.6+000
5	Borrow Pit No.7	STA.7+400
6	Quarry	STA.9+400
7	Borrow Pit No.8	STA.11+000
8	Borrow Pit No.9	STA.11+600
9	Borrow Pit No.10	STA.11+900
10	Borrow Pit No.11	STA.12+100
11	Borrow Pit No.12	STA.12+850
12	Borrow Pit No.13	STA.14+000
13	Borrow Pit No.14	STA.15+200
14	Quarry	STA.15+900&16+000
15	Temporary Material Stockyard	STA.18+400
16	Borrow Pit No.15	STA.18+500

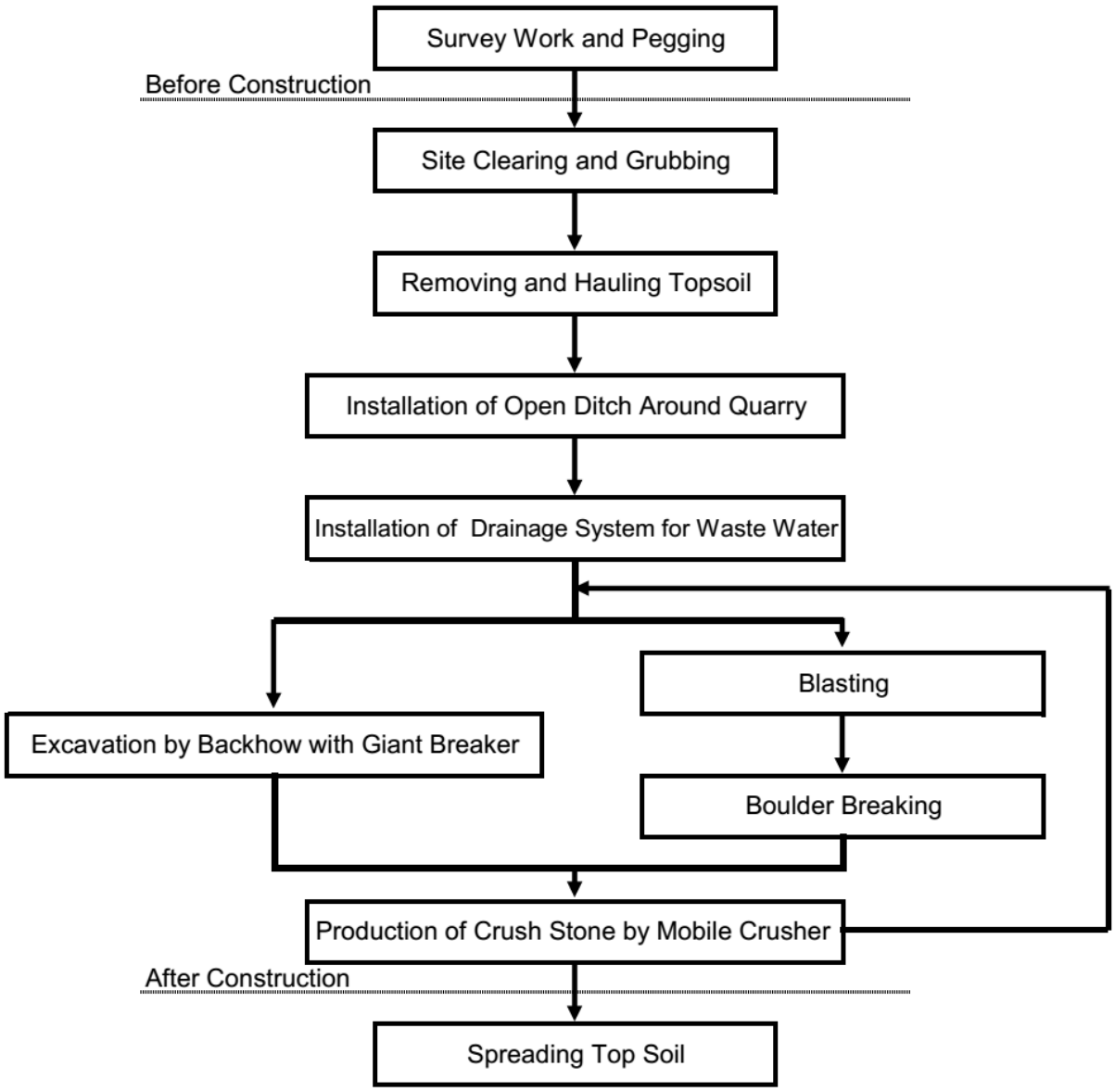
; Area to be used



; Area to be used

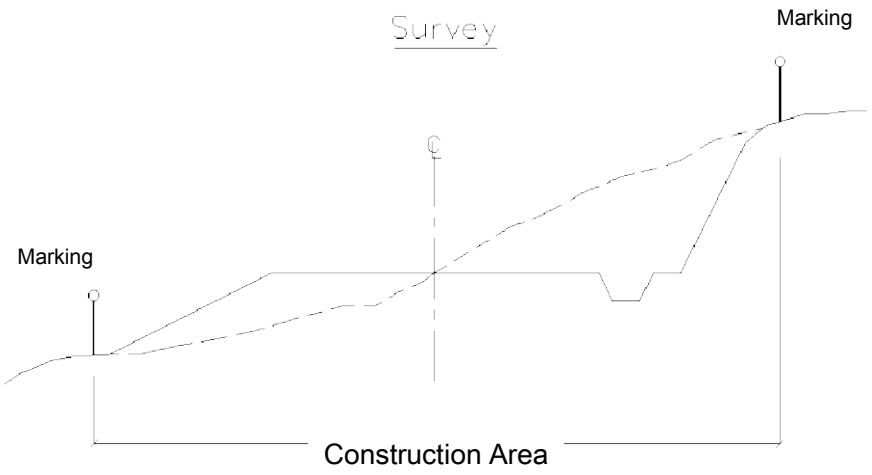
5. CONSTRUCTION PROCEDURES

The procedure of construction Quarry is shown below.



The layout of Quarry at STA.9+400km is attached as Appendix9.1.

5.1 Survey Work



1) Benchmarks and coordinate which has been already established for construction of Road A are used for survey.

2) Work area shall be clearly pegged and shall be conformed and approved by the Owner prior to commencement of Clearing.

3) In case of that Owner's instruction at site inspection, OC shall modify the boundary line accordingly.

Survey instruments shall be calibrated in accordance with the section 5.3.3 testing equipment and facilities of the Quality Assurance Program (Document No. NNP1-PRG-DrQAP-A3) in the NNP1-PCL-00056, dated 16th JAN 2014.

5.2 Earthwork

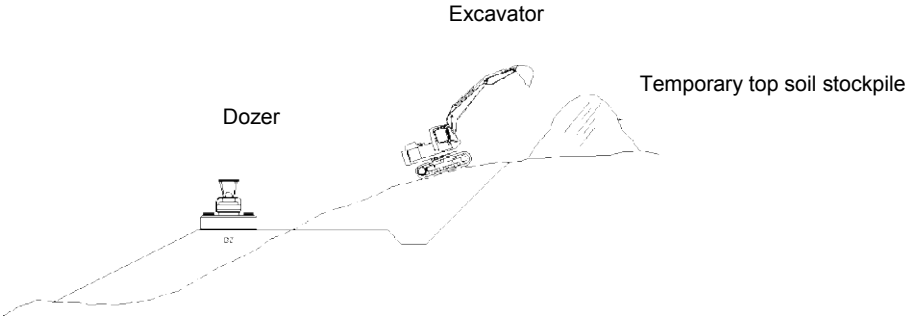
5.2.1 Clearing

1) Clearing shall consist of the removal and collection of trees, stumps, logs, bush, undergrowth, grass, crops and loose vegetable matter above a ground level.

2) If commercial timber is found on site, the branch shall be trimmed, and shall be cut into a suitable size and stored in the vicinity of the site. Because the Quarry will be commenced before developing disposal area, they shall be placed near site temporarily.

3) The trees stands on the area where between the Road A and Quarry, the trees will be remained in order to minimize the clearing area.

5.2.2 Topsoil Removal



1) Basically, the topsoil including stumps and roots shall be removed. Any suitable topsoil which is free from roots and vegetable matter shall be stockpiled around Quarry used for planting and/or embankment after production period of crushed stone.

2) Basically, the topsoil shall be removed until surface of rock. At first rock appearances, rock properties is inspected by TS6.5.2 & 8.3.2 (Appendix.9-8). If the rock properties would not be met the material requirement, removal of soft rock should be continued until rock properties would be met the requirement.

5.2.3 Excavation

1) Excavation
The excavation will be carried out by blasting mainly after the removal of existing topsoil. The detailed blasting procedure is described at sub-clause 5.2.4.
After blasting works, if the boulder diameter would be larger than 50cm, the boulder should be crushed by excavator with giant breaker.

2) Slope Excavation
All slope excavation shall be carried out the designed gradient (i.e.1:0.3) of cutting slope. This is based on Road Design Policy (NNP1-DST-RW002-A1), dated 20th Feb 2014.
Loose part of the cutting slope shall be removed by giant breaker.

3) Summary of balance volume.
Summary of balance volume is shown below.

Item	Excavation (m3)	Fill (m3)
Topsoil (=Area×20cm)	4,000 m3	4,000 m3
Excavated Volume	56,000 m3	
Blasted Volume (=Excavated Volume/1.2)	47,000 m3	-
For subbase course (=Blasted Volume/1.25)	37,600 m3	-
Disposal	18,400 m3	18,400 m3
total	60,000 m3	22,400 m3
	Total	-37,600m3

*The each volume are assumed visual inspection.

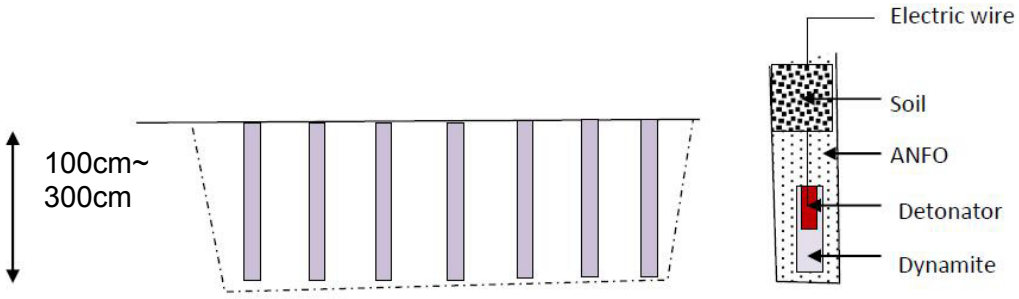
5.2.4 Blasting

Typical work procedure is as follows.

1) All blasting material will be kept in the specific location and control by safety man, the store hut will be kept 4km camp and use service truck for delivery to site.

2) Drilling work will be carried out by drilling machine basically.

3) After completion of drilling, the blasting material will be charged into the hole immediately, there are ANFO, dynamite, detonator. Typical drilling section is shown in below.



*The depth of drilling shall be adjusted based on the actual situation.

Estimated total consumption of Blasting material for Blasted rock 47,000m3 is show below.

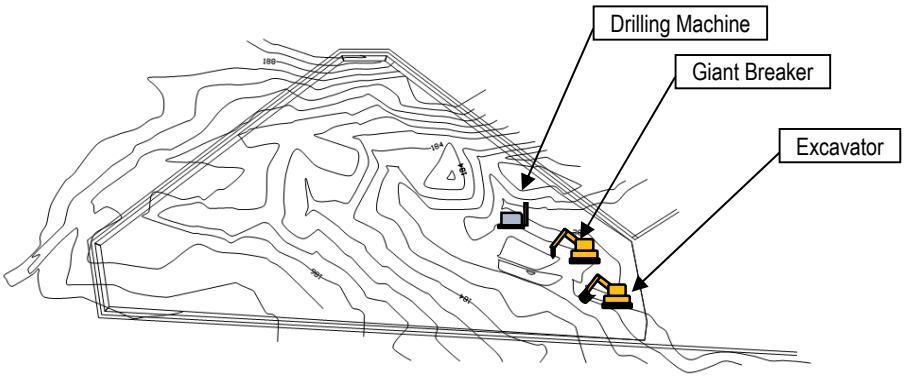
No.	Description	Quantity
1	ANFO	23,500 kg
2	Dynamite	1,880 kg
3	Detonator	1570 Nos

4) Blasting method will be used electric shot method. The operation of electric shot will be done at the bunker is located far 200m from blasting.

5) Progress view of Blasting is shown below.

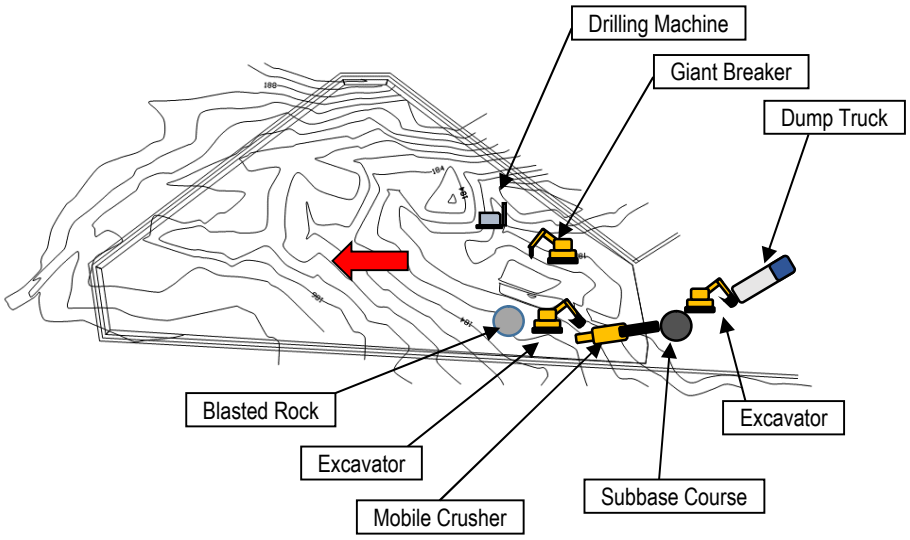
- Periods 1

The shallow layer of rock is excavated by excavator.
At first sediment pond will be blasted.



- Periods 2

Blasting proceeds in the direction of the arrow, as shown in the following figure:



5.3 Production of Crushed Stone

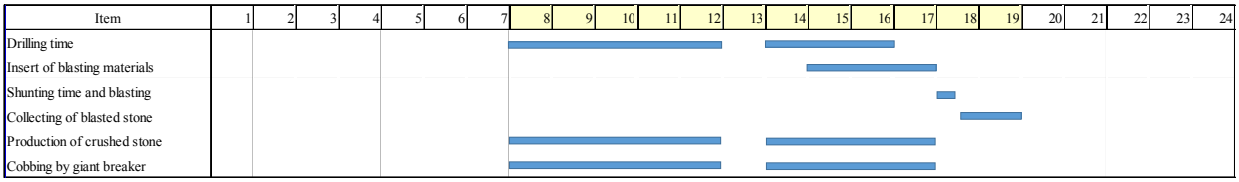
1) After blasting, large stone (>500mm) will be separated and accumulated by excavator. The large stone will be crushed by excavator with giant breaker.

2) Mobile crusher will be set at accumulation of blasted rocks. The blasted rocks will be loaded to mobile crusher by excavator. The mobile crusher's brochure is attached Appendix 9.10.

3) In case of diameter of crushed stone by mobile crusher, diameter would be greater than the requirement (>50mm), the stones will be loaded mobile crusher once again.

4) At the initial crushed stone shall be inspected according to TS 6.5.2 & 8.3.2 before full-scale production.

5) The daily construction schedule is shown as follows.



- Crushed stone shall be inspected according to TS 6.5.2 & 8.3.2 periodically. (specified in Appendix9.9)

5.4 Drainage

5.4.1 Open Ditch

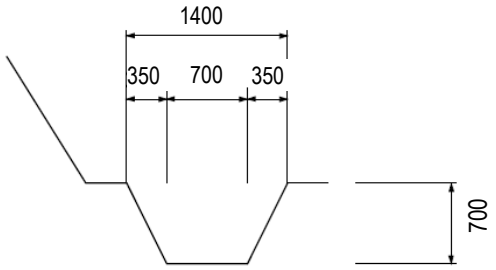
1) There are 2 types of the open ditch, type 1 is open ditch without lining, type 2 (longitudinal profile more than 4.5%) is that with masonry drain ditch if necessary.

2) The outside ditch around Quarry will be installed to separate clean natural water. The inside ditch will be installed to collect waste water and connected to sedimentation pond.

3) The ditch without lining will be maintained during construction period, if a drainage surface is seriously damaged by water flow, the ditch surface is repaired.

4) Inside of a ditch shall be clearing and repair before rainy season if necessary.

5) In order to insure the passage of vehicles, inside of Quarry open ditch will be filled up with cobble stone at the entrance.



Typical Open Ditch (* the dimension is tentative)

5.4.2 Sedimentation Pond

1) Two sedimentation pond shall be installed to protect against flowing out waste water from construction area (Appendix9-1). The waste water from Quarry flow through the open ditch to sedimentation pond.

2) Necessary capacity of primary capacity of sedimentation pond is calculated as follows;

Rainfall; 56.3mm/day (1.5-year probability)

Quarry Area; 20,000m2

Runoff Coefficient; 0.8

Qtotal = 56.3/1000×0.8×20,000＝900.8m3/day

From the above, the capacity of sedimentation pond is assumed that the capacity is required more than 900.8m3 for waste water shall not be overflowed to other area directly. Therefore in consideration with some sedimentation , pond is designed 1,000m3(=25m×20m×2m).

3) Secondary sedimentation pond shall be installed at downstream of sedimentation pond. The purpose is to prevent remains soil articles.

5.5 After Construction

After construction of Quarry, inside area of Quarry will be covered by topsoil which removed on stockpiled.

5.6 Incidentals

5.6.1 Sign

1) The sign board of “NO ENTRY of third party” in English & in Lao shall be installed at the entrance of Quarry.

2) During blasting work, security or watchman shall be set at the Quarry

5.6.2 Slope Protection

All slope will be adjusted to appropriate gradient of the cutting slope, and loose part of rock shall be removed.

6. Safety control

Safety control for site works shall be followed to the Safety and Security Program (Document No. NNP1-PRG-SSP-A2) in the Contractor letter NNP1-PCL-00044, dated 10th December 2013.

Especially, during Quarry works area, the following issues shall be concerned.

1) Accident by heavy equipment
- For all staffs and workers, the safety training shall be carried out.
- Warning sign board will be arranged.
- Don’t approach the working radius of heavy equipment
- In case that the worker needs to approach the equipment, he shall request the operator to stop operation and confirm the stopping.
- When equipment parks on site, stopper shall be set.

2) Accident to third party
- For all staffs and workers, the safety training shall be carried out.

・Warning sign board will be arranged.
・Watch man shall be arranged and pedestrian way will be displayed.

3) Blasting (See Appendix 9.2)

・The blasting materials shall be stored at the rigid house and isolated from a village, and the house shall be built with embankment surrounding at the inside of camp 4+000km Road A.
・Before execution of blasting work, OC shall inform villager near the blasting location of this work schedule and plan.
・Execution of blasting work shall be provided warning sign board to inform a detail of blasting schedule:(date, time).
・Daily blasting time will be fixed at (e.g.18:00PM) for every blasting.
・Safety radius shall be set out on site min. 100m (for equipment) and 200m (for people) from blasting points.
・In order to prevent the diffusion of blasted rock, sand bag and seat will be placed on the drilled hole as necessary.
・Before the blasting time, it shall be set limits to enter within 200m radius from blasting points. For instance as follows,
  I. 30 minutes before blasting time , the safety man shall be arranged for each point , and provide signal voice (whistle, and or some siren)
  II. 15 minutes before blasting time, all vehicles and people shall be stopped at the point that safety man shall be controlling and provide signal voice by siren or whistle.

・All equipment worked at blasting location shall be removed from blasting location at 100m radius.

・30minutes, 10min, 5min, 1min and 10 second before blasting time, siren voice shall be provided.

・After blasting, blasting man confirmed that view will be not bad by blasting dust ,then traffic will be allowed to pass nearby blasting area.

・The safety control for blasting will be changed, revised and added time by time in accordance with site conditions.

Before commencement work, safety training shall be carried out to relevant staffs and workers. And the emergency action plan is attached in Appendix 9-5.

7. Environmental mitigation plan

Environmental mitigation plan shall be followed to the Site Specific ESMMP-CP for Access road that will be submitted separately.
In order to reduce the impact to the nature environment, OC shall visual site inspection at internally. For instance OC will check the Erosion, Noise, Waste, and etc.

Especially, Quarry, the following issues shall be concerned.

(Social Environment)

1) Air Pollution Control
   - All vehicles and machineries will be maintained in accordance with manufacturer's specifications.
2) Noise Pollution Control
   - The transportation hour will be limited to 8:00-18:00 basically near the village (Ban Thaeua, Ban Hat Gnuin, Ban Nonsomboun).
3) Vibration Pollution Control
   - Daily blasting time will be fixed at (e.g.18:00PM) for every blasting.

(Natural Environment)

1) Erosion and Sediment Control
   - The extent of areas to be cleared will be minimized into the construction area.
   - The sediment pond with enough capacity shall be installed prior to commencement of this work.
2) Spoil Disposal
   - Each spoils (excavated soil and rock, cut vegetation, removed pavement, etc.) shall be immediately transported to disposal sites approved by local authorities, spread and compacted .
   - The underdrain shall be installed at the bottom of the disposal site.
3) Water Pollution Control
   - Water tight receptacles should be provided in all the equipment maintenance shops for waste oil, oily rags, spent oil filters, solvents and oily containers. Disposal should be through authorized waste handlers and recyclers.

The detailed environmental control referred the SS-ESMMP-CP for Quarry at STA. 9+400km as separately submitted.

The Environmental mitigation plan will be changed, revised and added time by time in accordance with the occurrence of adverse impact to the surrounding environment and social environment and the Owner's comments.

8. Quality Assurance

The material properties of crushed stone from Quarry shall be inspected each 2000m3 during construction periods by on-site laboratory. And the proposed Inspection and Test Plans (ITP) are as shown in the Appendix 9.8 as reference only.

On the other hand, the dimensions of As-built will be measured and As-built drawings will be developed for submission to the Owner.

The inspection and test on site shall be informed of the Owner before the implementation.

9. Appendix

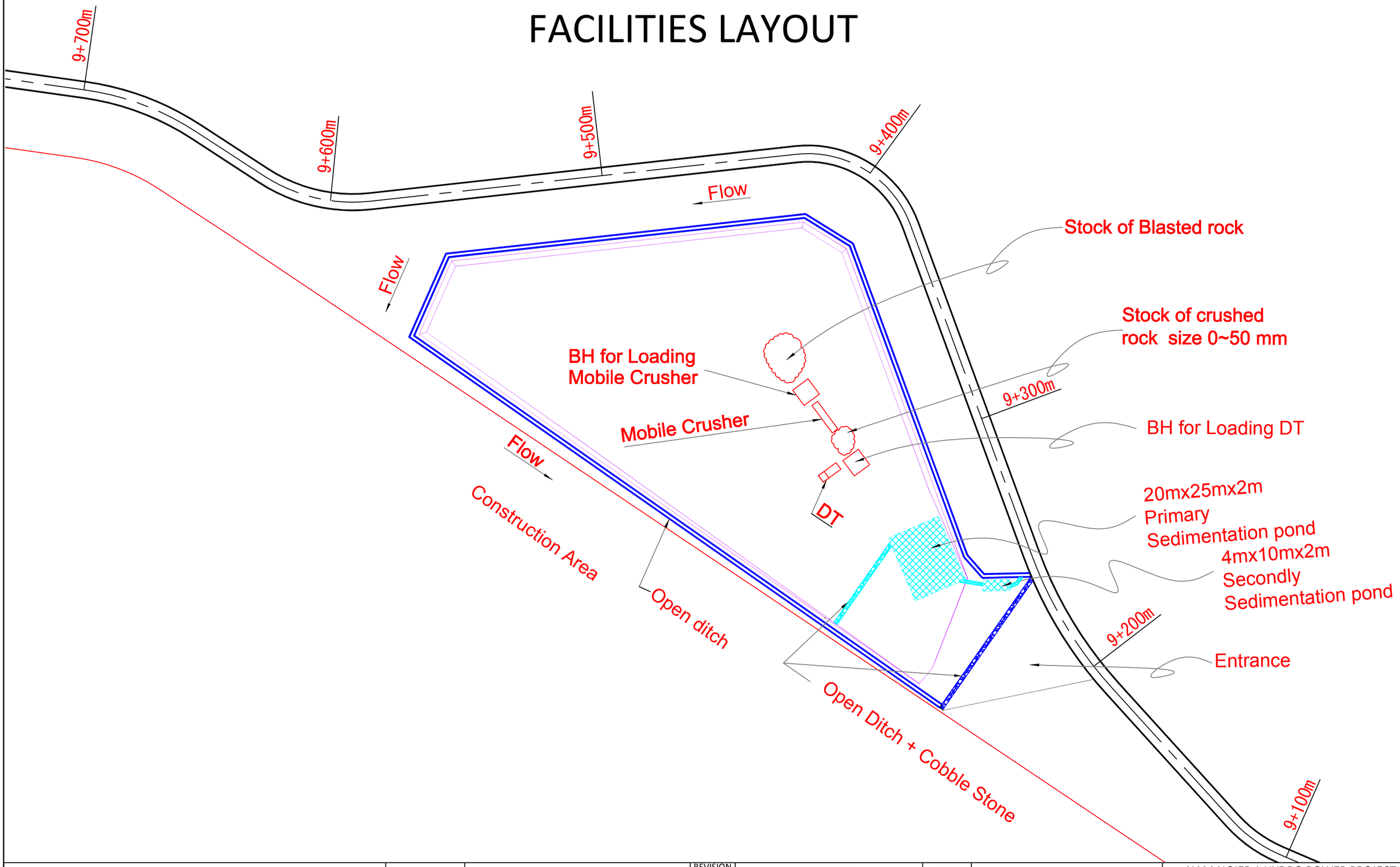
9.1 Layout of Facilities(Quarry 9+400km)
9.2 Layout of Security for Blasting (Quarry 9+400km)
9.3 Organization of Road Work (Quarry 9+400km)
9.4 Construction Schedule (Quarry 9+400km)
9.5 Working Drawings (Quarry 9+400km)
9.6 Emergency Action Plan
9.7 Resource (Quarry 9+400km)
9.8 Procurement Schedule (Quarry 9+400km)
9.9 Inspection and Test Plan
9.10 The Brochure of Mobile Crusher

Appendix 9.1

Layout of Facilities

for Quarry (Road A 9+400km)

FACILITIES LAYOUT



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						TITLE	NAME	DATE	ISSUE FOR CONSTRUCTION
						DESIGNED			TITLE: FACILITIES LAYOUT Quarry at Road A 9+400km
	CONTRACTOR:	OBAYASHI CORPORATION				DRAWN			
						CHECKED			SCALE: DRAWING NO. REV
						APPROVED			

Appendix 9.2

Layout of Security for Blasting

for Quarry (Road A 9+400km)

LAYOUT OF SECURITY FOR BLASTING

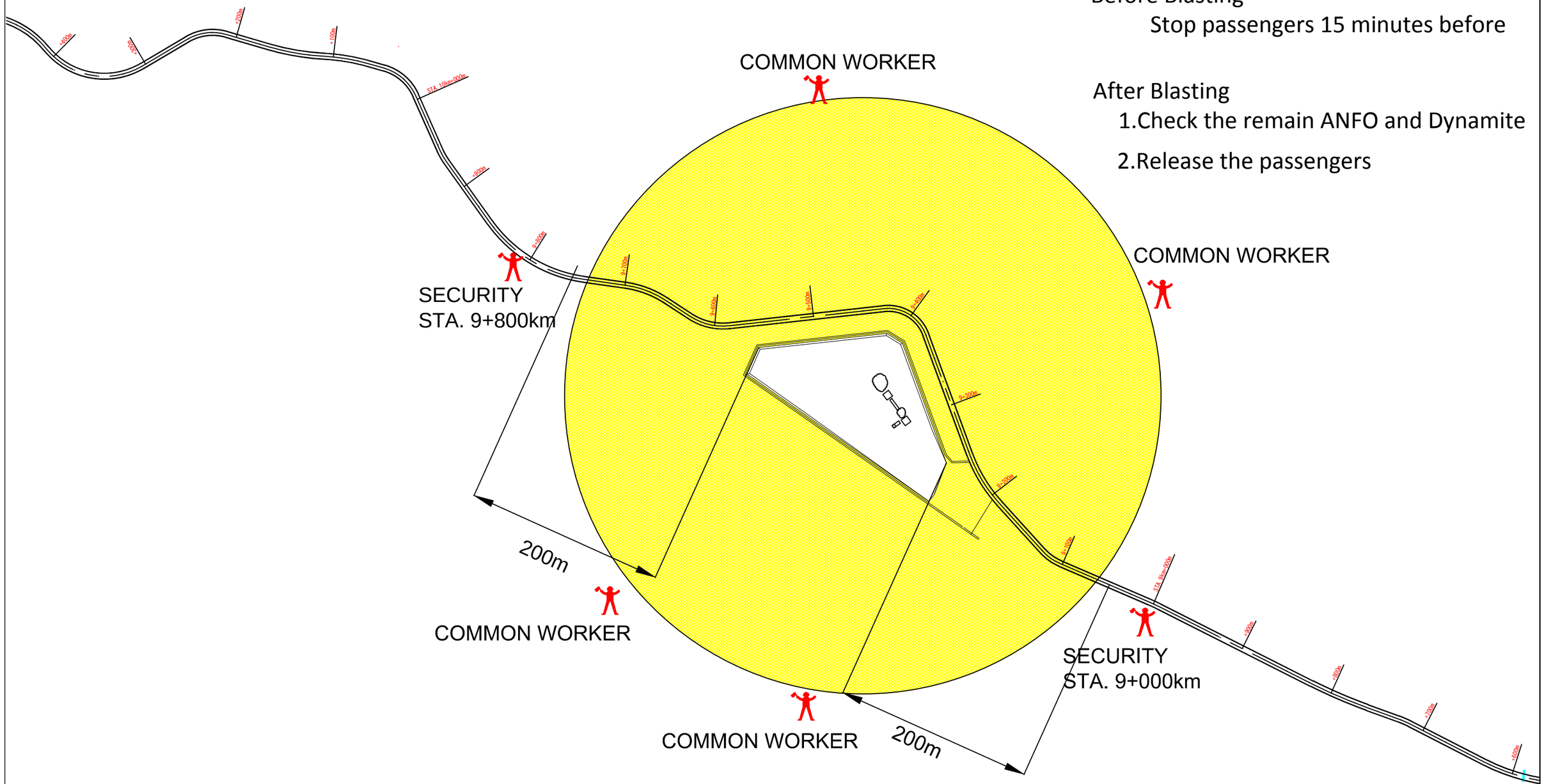
Before Blasting

Stop passengers 15 minutes before

After Blasting

1.Check the remain ANFO and Dynamite

2.Release the passengers



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						TITLE	NAME	DATE	
						DESIGNED			TITLE: THE QUARRY (Road A 9+400 km) Layout of Security (Blasting)
	CONTRACTOR:	OBAYASHI CORPORATION				DRAWN			
						CHECKED			SCALE: DRAWING NO. REV
						APPROVED			

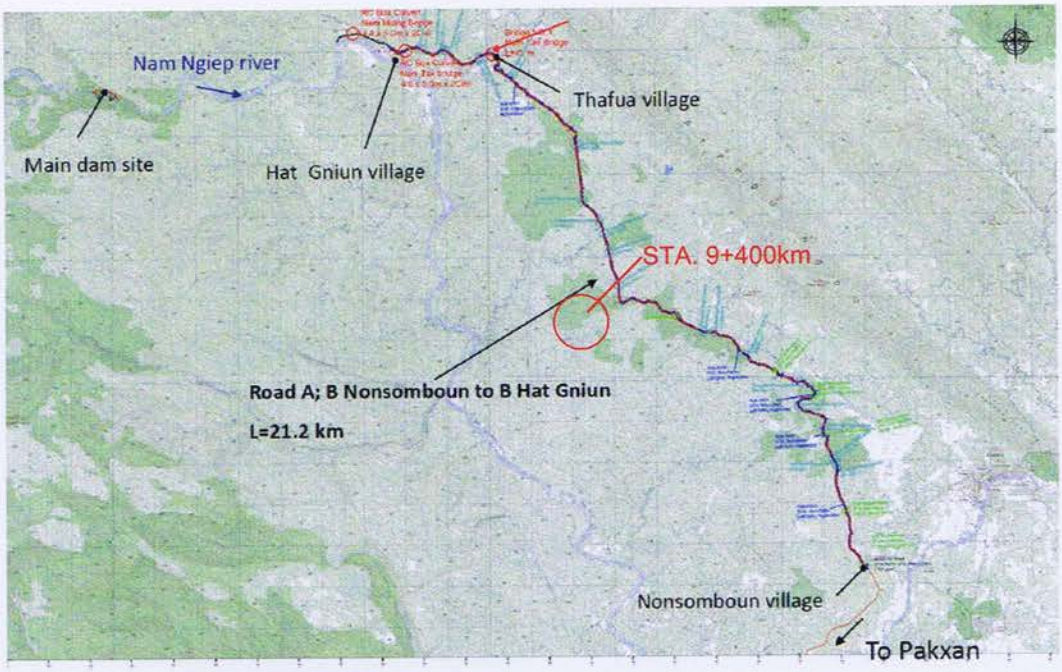
Appendix 9.2

Nam Ngiep Hydropower Project 1

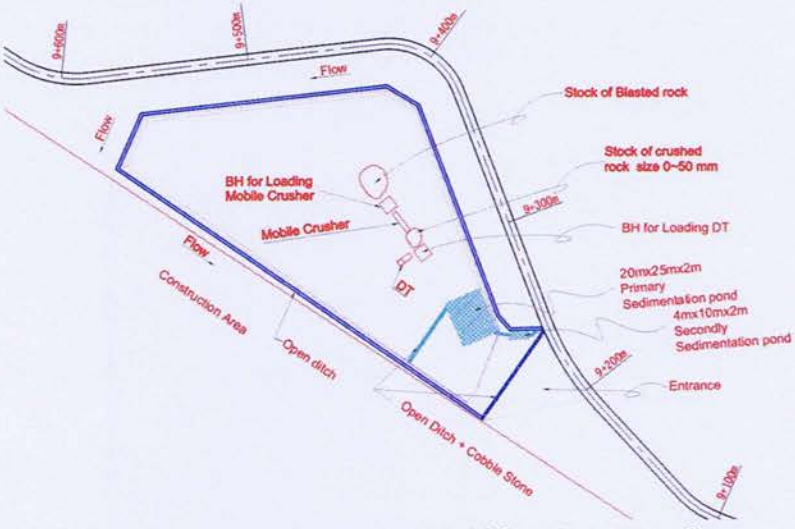
The procedure and Safety Plan for Blasting Works

1. Purpose

This document describes safety implementation procedure for blasting works at the Quarry Road A 9+400km. The blasting location is shown in figure below.



General location



Layout Proposed blasting Locations

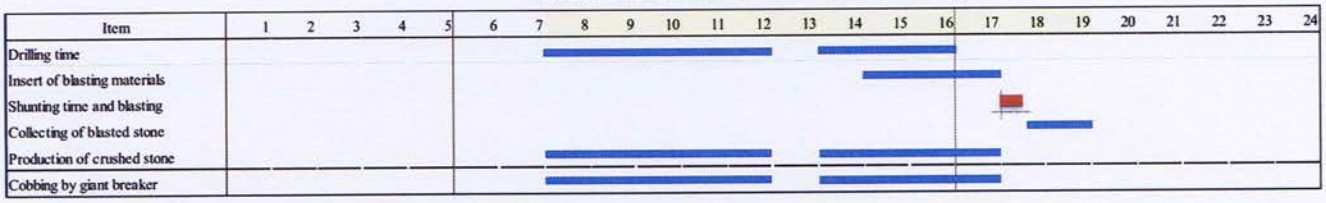
2. Safety and environmental protection

Blasting Time

[Daily time schedule for blasting]

- ✓ Daily blasting time will be set at 18:00pm for every blasting.

Daily Time Schedule for Construction of Quarry



[Notice to villager before blasting]

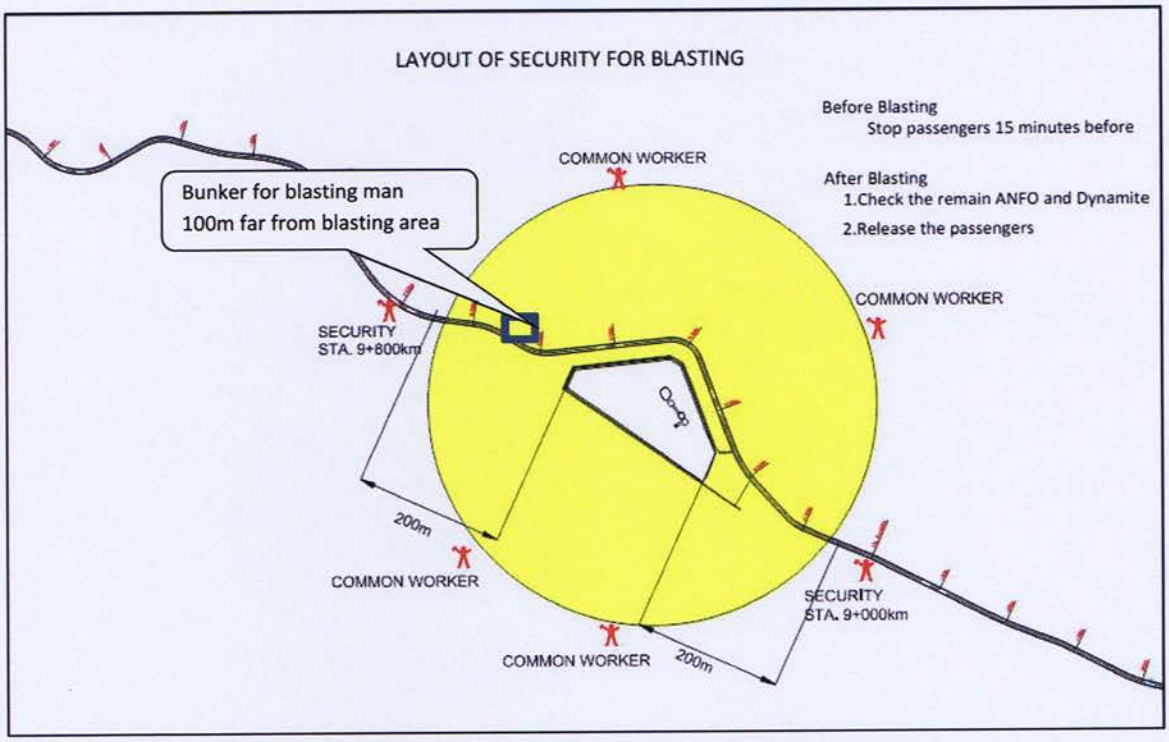
- ✓ The blasting area is installed by using caution tape with warning signboard.
- ✓ 1 hour before conduction of blasting work the Contractor will inform Head of village of its implementation (**Nonsomboun Village, Hat Gniun and Thaheua Village). (refer to 4 Safety Control Network)**
- ✓ 30 minutes before blasting time, the safety man shall be arranged for each point, and provide signal voice, whistle, and or some siren (see at the blasting sketch layout).
- ✓ 15 minutes before blasting time, all vehicles and people shall be stopped at the point that safety man shall be controlling and provide signal voice by siren or whistle.
- ✓ Before conduction of blasting work shall be provided warning sign board to inform a detail of blasting schedule:(date, time)
  On: Nonsomboun Village, Road A, Thaheua Village.
- ✓ After response from blasting man and after blasting dust decreasing then traffic will be allowed to pass blasting area.

[Safety measures]

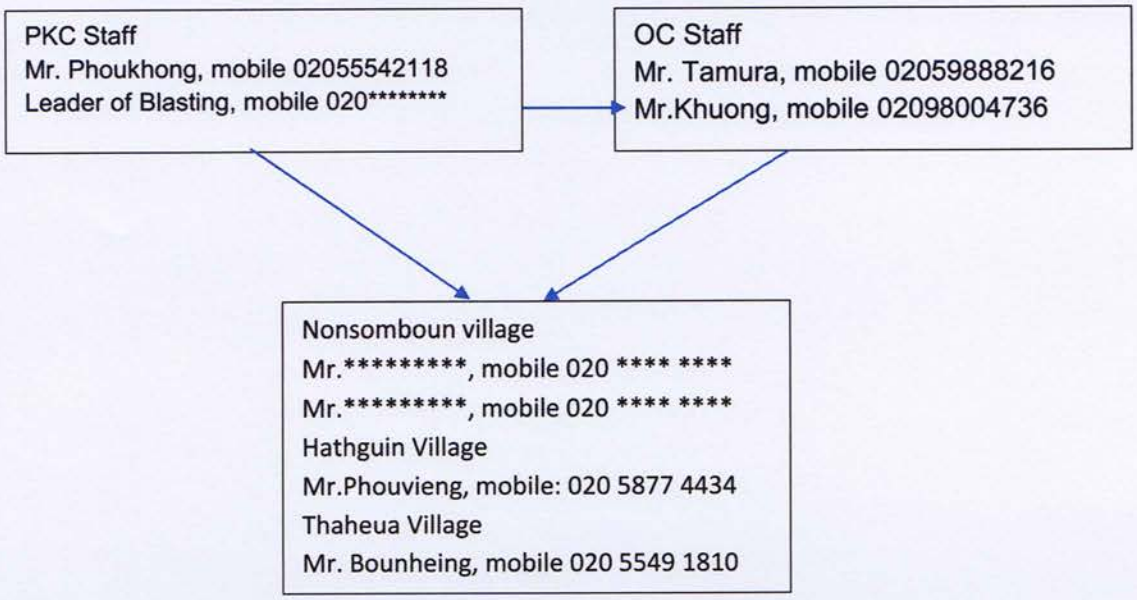
- ✓ Safety radius shall be set out on site min. 100 m (for equipment) and 200 m (for all people) from the blasting points.
- ✓ All blasting material will be kept in the specific location and control by safety man, the store hut will be kept 4km camp and use service truck for delivery to site.
- ✓ In case of lightning, the works shall not be done.
- ✓ Removed top soil shall be stock at specific location, or make properly landscaping to avoid any destroyed to the river.

3. Layout sketch of blasting area

Layout of blasting area is shown below.



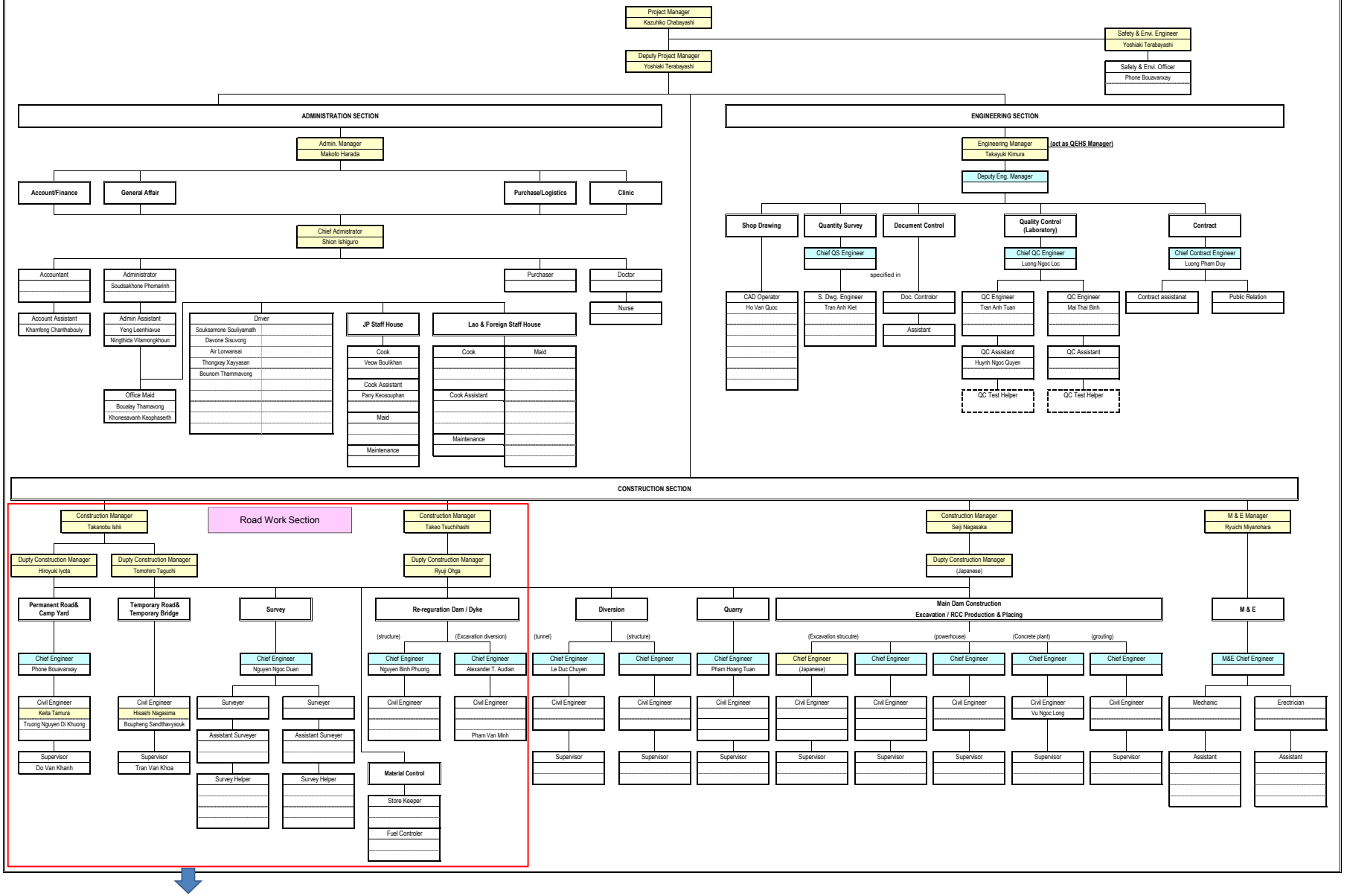
4. Safety Control Network



Note:

-in case cancel or the time of blasting is changed, we will immediately inform that situation to villager or other people.

ORGANIZATION CHART



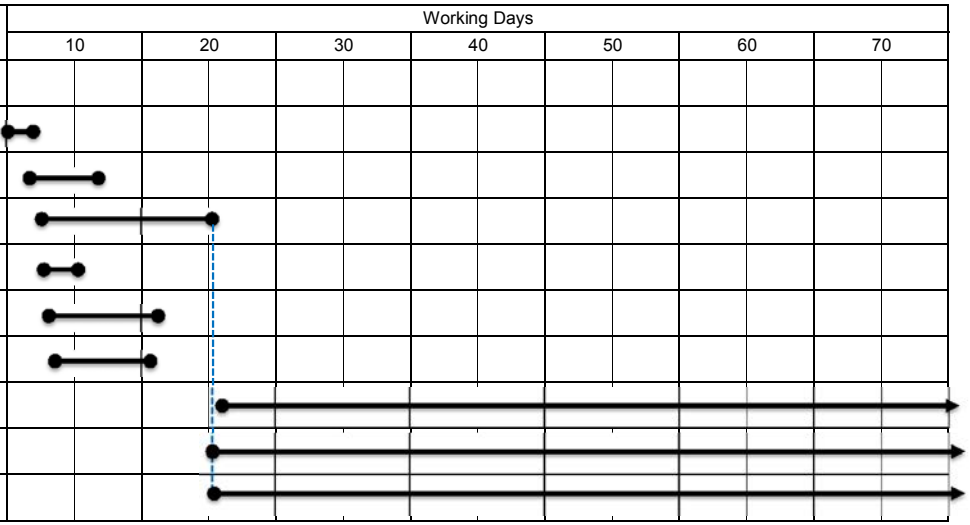
Sub-contractor for construction of Quarry at the Road A

<u>Phoukhong Construction Sole Company.</u>
(Refer to the section 4.2 Nominated Subcontractor and Manpower distribution

9.4 Construction Schedule of Quarry

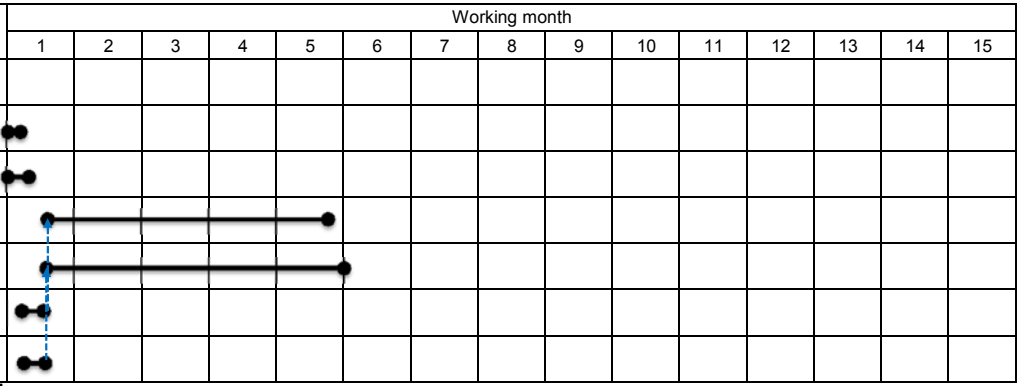
Preparation Work

No.		Description	Q'ty	Unit
1	1	Survey & Pegging	20,000	m2
	2	Top Soil Removal	4,000	m3
	3	Sedement Pond ①	1,000	m3
	4	Sediment Pond ②	80	m3
	5	Open Ditch	650	m
	6	Yard Development	441	m3
2	1	Production of Crushed Stone	38,000	m3
	2	Excavation by Blasting	59,000	m3
	3	Excavation by Giant Breaker	59,000	m3



Monthly Schedule

No.		Description	Q'ty	Unit
1	1	Survey & Pegging	20,000	m2
	2	Site clearance	19,100	m2
2	1	Excavation	59,000	m3
	2	Production of Crushed Stone	38,000	m
3	1	Openditch of Outside	680	m
4	1	Sedimentation Pond	1	LS



【Excavation work】
Blusting work 198 m3/day *average drilling length 3m
By breaker 63 m3/day
【Production of crushed stone】
mobile crusher 222 m3/day *loss 15%

Appendix 9.5

Working Drawings

for Quarry (Road A 9+400km)

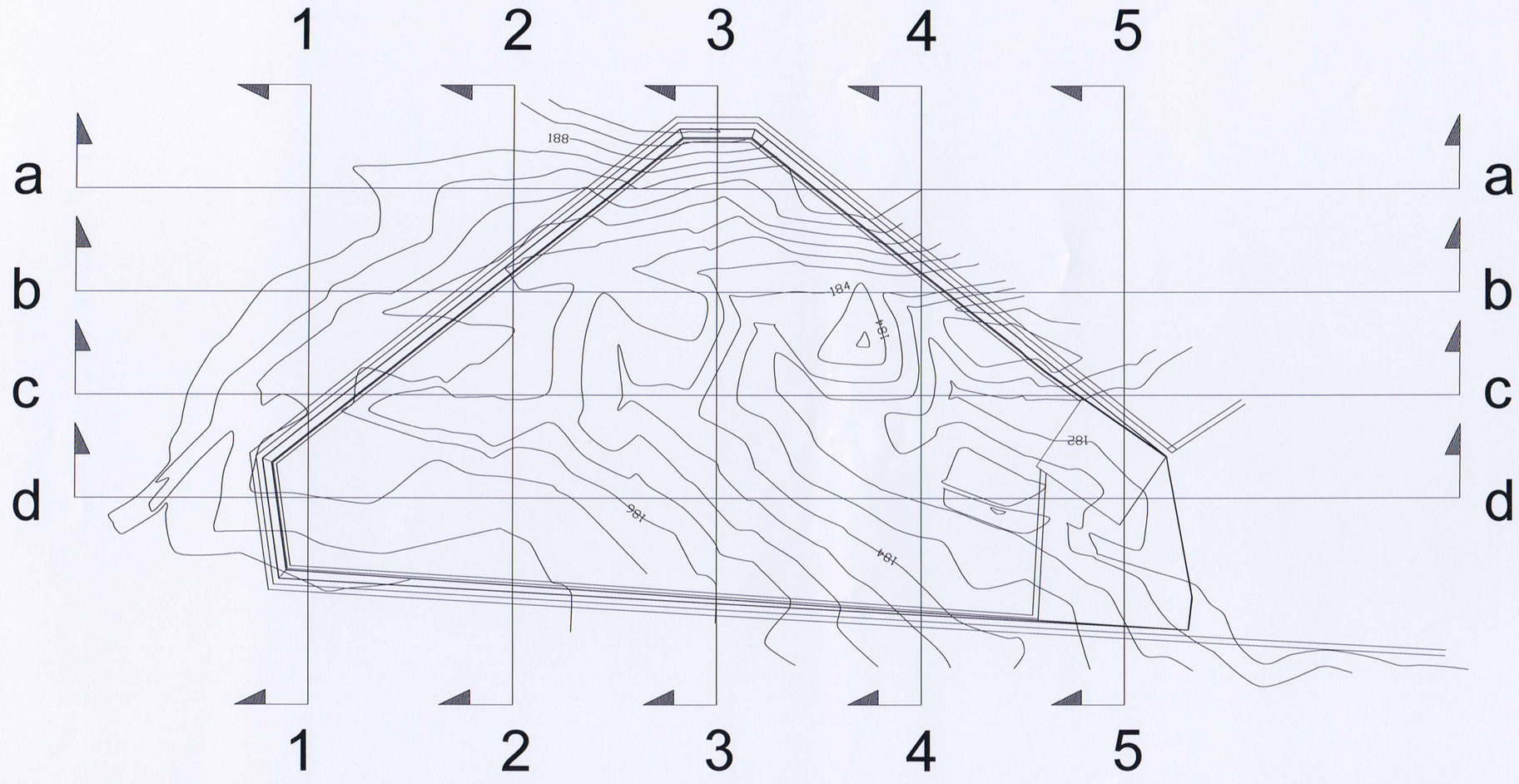
Summary List of Drawings for Quarry at Road A 9+400km

DRAWING NO.	Rev. No.	DRAWING NAME	DRAWING NO.	Rev. No.	DRAWING NAME
1. GENERAL					
NNP1 - WD - RW - TRD - 03229	A2	Summary List of Drawing for Quarry			
2. PLAN AND PROFILE		**Quarry**			
NNP1 - WD - RW - TRD - 03230	A1	Quarry Plan			
3. CROSS SECTION		**Quarry**			
NNP1 - WD - RW - TRD - 03231	A2	Quarry Cross Section			
NNP1 - WD - RW - TRD - 03232	A1	Quarry Cross Section			

OBAYASHI

		REVISION No.	DESCRIPTION	DATE	ENGINEER:			NAM NGIEP 1 HYDRO POWER PROJECT	
OWNER:	NAM NGIEP 1 POWER COMPANY	A1	Subbmision	21/02/2014	TITLE	NAME	DATE	ISSUE FOR CONSTRUCTION	
		A2	Revised	26/02/2014	DESIGNED			TITLE: Summary of Drawing Quarry at Road A 9+400km	
CONTRACTOR:	OBAYASHI CORPORATION				DRAWN				
					CHECKED			SCALE:	DRAWING NO. NNP-WD-RW-TRD-03229 / REV A2
					APPROVED				

PLAN



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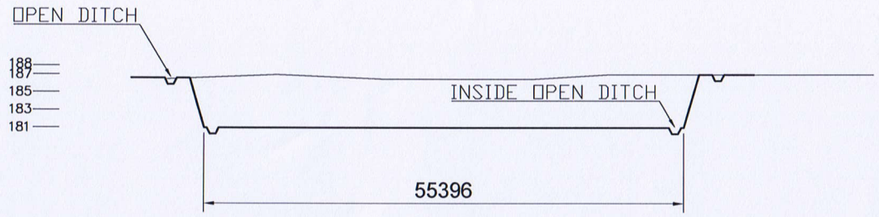
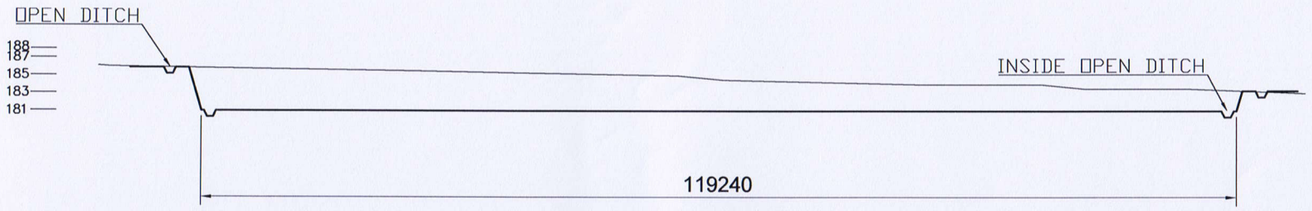
			A2	Revised	26/02/2014	DESIGNED			TITLE: PLAN Quarry at Road A 9+400km
	CONTRACTOR:	OBAYASHI CORPORATION				DRAWN			
						CHECKED			SCALE: DRAWING NO. NNP-WD-RW-TRD-03230 REV A2
						APPROVED			

CROSS SECTION

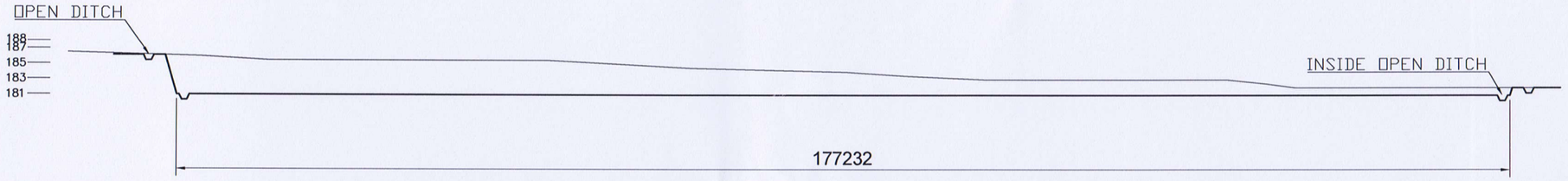
a-a



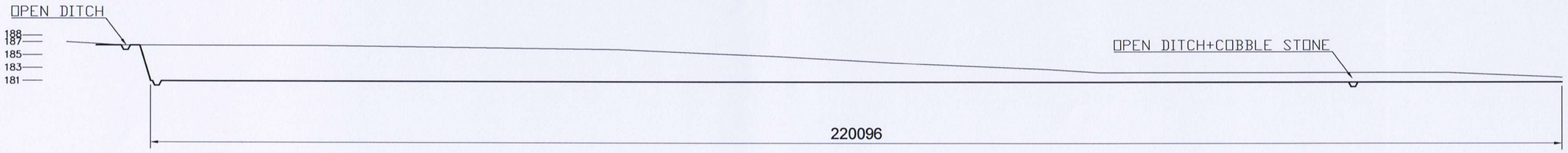
b-b



c-c



d-d



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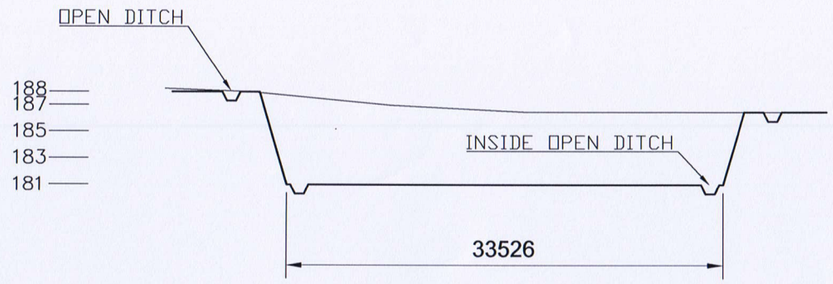
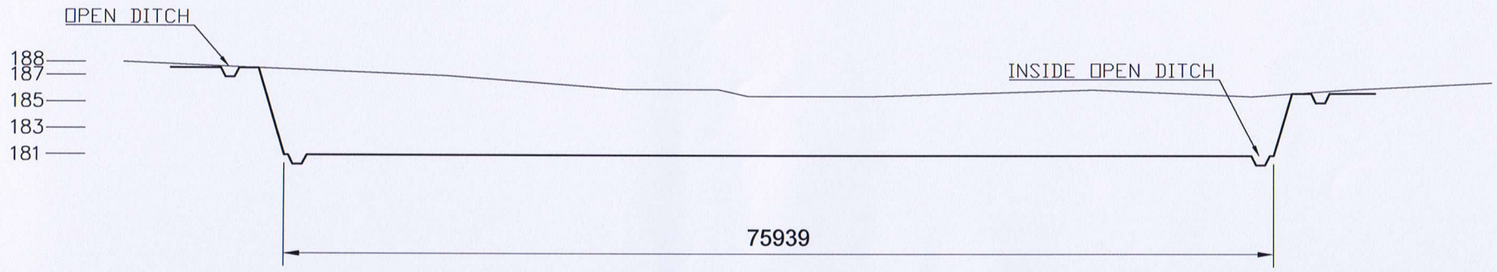
			A1	Subbmision	21/02/2014	TITLE	NAME	DATE	ISSUE FOR CONSTRUCTION
			A2	Revised	26/02/2014	DESIGNED			TITLE: CROSS SECTION Quarry at Road A 9+400km
	CONTRACTOR:	OBAYASHI CORPORATION				DRAWN			
						CHECKED			SCALE: DRAWING NO. NNP-WD-RW-TRD-03231 REV A2
						APPROVED			

CROSS SECTION

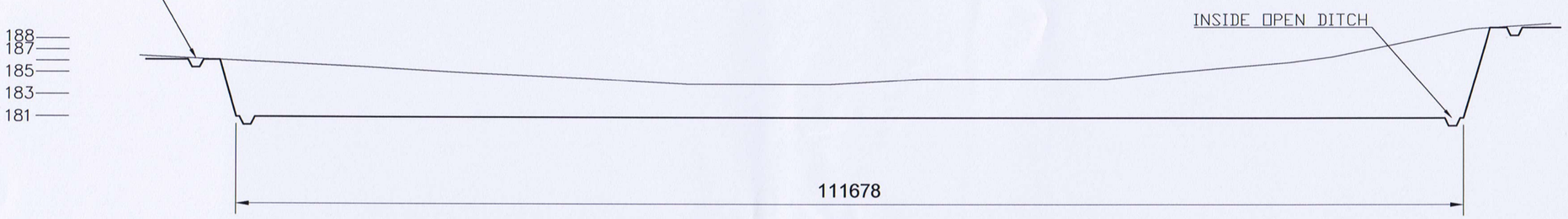
1-1



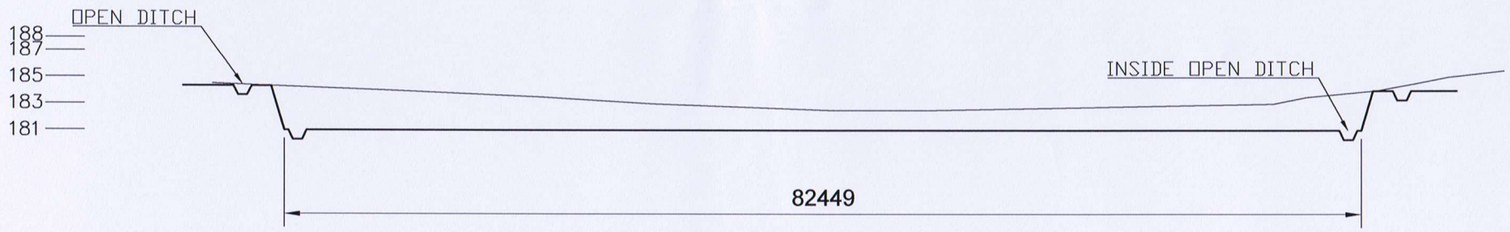
2-2



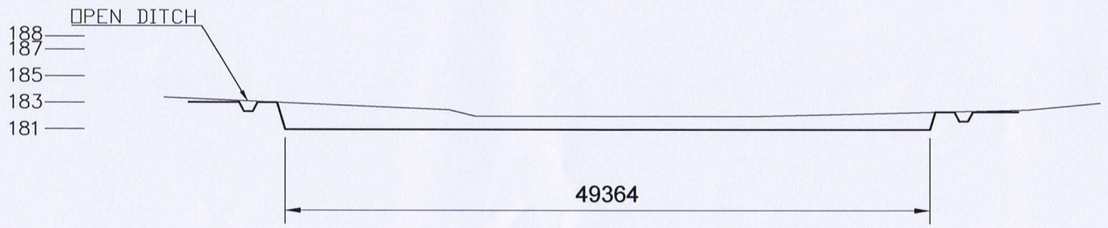
3-3



4-4



5-5



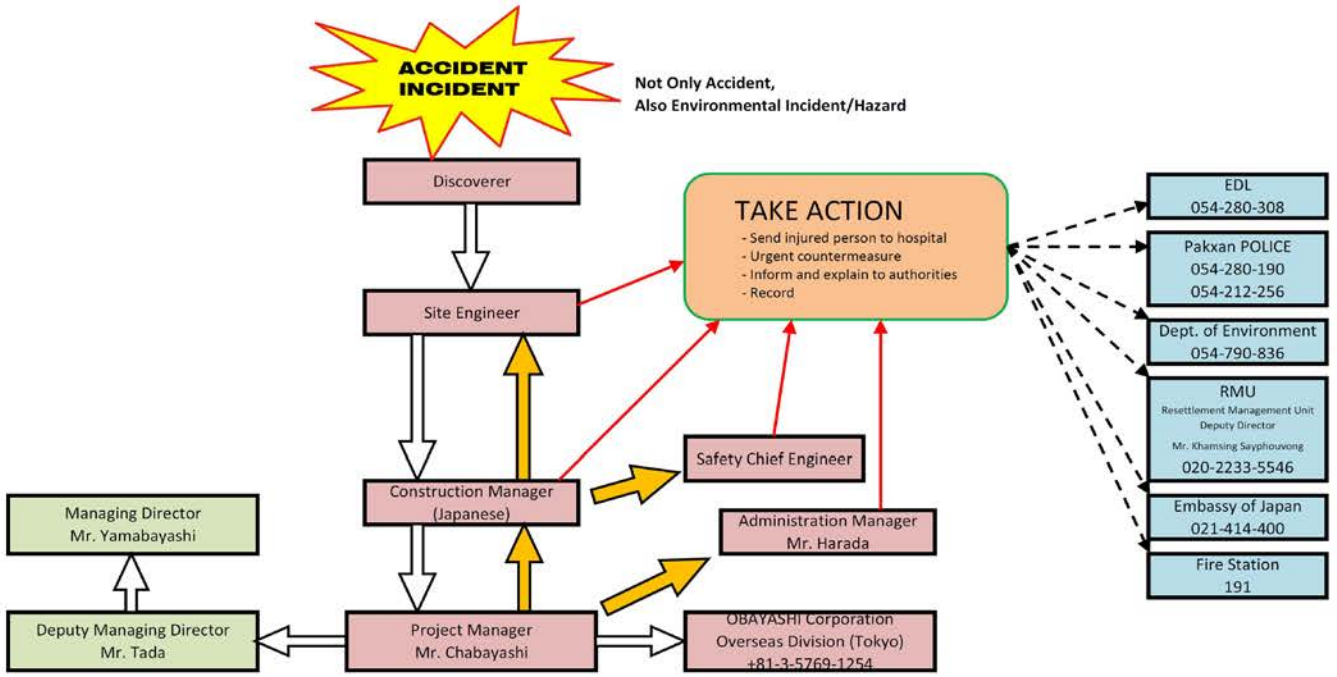
OBAYASHI

OWNER:	NAM NGIEP 1 POWER COMPANY	REVISION No.	DESCRIPTION	DATE	ENGINEER:			NAM NGIEP 1 HYDRO POWER PROJECT	
		A1	Subbmision	21/02/2014	TITLE	NAME	DATE	ISSUE FOR CONSTRUCTION	
		A2	Revised	26/02/2014	DESIGNED			TITLE: CROSS SECTION Quarry at Road A 9+400km	
CONTRACTOR:	OBAYASHI CORPORATION				DRAWN				
					CHECKED			SCALE:	DRAWING NO. NNP-WD-RW-TRD-03232 / REV A2
					APPROVED				

9.6 Emergency Action Plan

Emergency Plan for Nam Ngiep 1 Hydropower Project

OBAYASHI Corporation



Nam Ngiep 1 Power Company Pakxan Office 054-280-168	
VTE Office	021-265-185
Mr. Yamabayashi	020-59-565-888
Mr. Tada	020-55-544-678

Obayashi Corporation Pakxan Office 054-790-686	
Mr. Chabayashi	020-59-888-201
Mr. Terabayashi	020-59-888-203
Mr. Harada	020-59-888-208
Mr. Ishii	020-59-888-213
Mr. Nagasaka	020-59-888-205
Mr. Tsuchihashi	020-59-888-206
Mr. Kimura	020-59-888-204
Mr. Ishiguro	020-59-888-217
Mr. Dodo	020-22-422-582
Emergency Assistance Japan	+81-3-3811-8153

Hospital / Immigration / Embassy / Others	
Hospital (Lao) Bolikhamxay Provincial Hospital	054-212-154 (8:00 - 16:00) **Emergency 24Hrs.** Tel : 054-212-099
Ambulance Bolikhamxay Provincial Hospital	054-212-149 (8:00 - 16:00) **Emergency 24Hrs.** Tel : 020-5508-4966
Hospital (Thai) Bueng Kan Hospital	+66-42-491-161～3 (ext. 295) (24hrs) **Emergency** :Ms.Sunan Nokthong (Chief Nurse) Mobile: +66-86-857-8279
Hospital (Thai) Bangkok Hospital Udon Thani	+66-42-343-111 **Emergency** : Mr.Prayoon Thavon(John) (International Marketing Executive) Mobile: +66-85-010-6338
Immigration (Lao)	Mr.Sykhamxay Mobile: 020-2343-4666
Immigration (Thai)	Pol.Lt.Col. Wallop Khunmuan Mobile: +66-81-616-1100
Boat	Mr.Mone Mobile : 020-2233-9943
Helicopter	Lao Skyway Tel : 021-512-027
Embassy of Japan Urgent Case	020-5551-4891
Embassy of Japan Medical Attaché	Dr. Rie Ogiwara Mobile : 020-5559-9502

Head of Villagers of Relevant Villages		
Name of Village	Name of Head	Contact No.
Nonsomboun	Mr. Touy Inthavong	020-5614-9468
Thaheua	Mr. Boonhieng	020-5549-1810
Hat Gniun	Mr. Phouvieng	020-5977-4434
Hatsaykham	Mr. Phonsysong	030-5738-860

Rev. A2 As of 10th December 2013

9.7 RESOURCES

Item	Location	Resource	Party	Year	Working Month																															
				Month	1				2				3				4				5				6				7				8				9			
				Week	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Developing Quarry	Excavator	1		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2																				
		Mobile Crusher			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																				
		Giant Breaker			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																				
		Drilling Machine			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																				
		Bulldozer			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																				
		Manpower (Ex. Operator)			16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16																				

9.8 PROCUREMENT SCHEDULE

Quarry at Road A 9+400km

No.	Item	Remarks	Unit	Amount	Working Month								
					1	2	3	4	5	6	7	8	9
1	ANFO	For Blasting	kg	23,500	6,500	6,500	6,500	4,000					
2	Dynamite	For Blasting	kg	1,880	520	520	520	320					
3	Detonator	For Blasting	Nos	1,570	500	500	500	270					
4	Sign Plate & Post	Traffic and Caution	LS	1	1								

1) The Contractor will check the quantity and quality of delivered materials.

INSPECTION AND TEST PLAN FOR MATERIALS AND CONSTRUCTION FOR INITIAL WORKS

Testing / Inspection Items	Description (Properties to be tested)	Specification	Inspection and Test Method	Acceptable Criteria	Inspection by			Testing Location	Frequency	Verifying Document	Remarks
					S/C	OC	Own				
ROAD WORKS											
Materials											
Subbase	Sieve Analysis including Finess Modulus	TS 6.5.2 & 8.3.2	ASTM C136 (AASHTO T27)	As required by ASTM C33 & C136	N/A	I	R	Field Labo.	Once prior to commencement; and then 1time/2,000m3	Test Report	
	Specific Gravity & Absorption	TS 6.5.2 & 8.3.2	ASTM C128 (AASHTO T84)	As required by ASTM C33 & C128	N/A	I	R	Field Labo.	Once prior to commencement; and then 1time/2,000m3	Test Report	
	Soaked CBR	TS 8.3.2	ASTM D1883 (AASHTO T193)	As required by ASTM D1883	N/A	I	R	Field Labo.	Once prior to commencement; and then 1time/2,000m3	Test Report	

Legend:

S/C:	Subcontractor & Supplier
OC:	The Contractor (Obayashi)
Own:	The Owner (NNPC)
H:	Hold Point
I:	Inspection
W:	Witness by Owner (optional)
R:	Document Review

Accredited Laboratories:

Name	Address
1. TBA	
2. TBA	
3. TBA	

Appendix 9.10

Brochure of Mobile Crusher

for Quarry (Road A 9+400km)

HORSEPOWER
Gross: 149 kW 200 HP @ 2050 rpm
Net: 140 kW 187 HP @ 2050 rpm

OPERATING WEIGHT
34000 kg 74,960 lb

KOMATSU®

BR380JG-1E0

ecot3

BR 380 JG

MOBILE CRUSHER

Photo may include optional equipment.

WALK-AROUND

HORSEPOWER
Gross: 149 kW 200 HP @ 2050 rpm
Net: 140 kW 187 HP @ 2050 rpm

OPERATING WEIGHT
34000 kg 74,960 lb

he newly designed Komatsu BR380JG-1E0 mobile rusher looks simple but is very powerful.
he upgraded Komatsu designed crusher offers you mazing production capacity of ***50 – 240 ton/h*** 55 – 265 U.S. ton/h).

lewly designed vibrating grizzly feeder
he vibrating grizzly feeder moves the material lliptically, so the material can be effectively separated nd evenly fed into the jaw.

lydrauMind hydraulics and ll-hydraulic drive system
ully hydraulic drive system gets you orking right away. The HydrauMind ystem supplies the optimal amount f oil through load-sensing and ressure-compensated valves. ptional equipment can be connected t the hydraulic outlets on the chassis ption).

arge-capacity hopper
he **2500 mm** 8'2" x **3770 mm** 12'4" feedhopper is ccessible from three sides for material loading.

High-performance jaw
The KCJ4222 large-capacity jaw crusher guarantees maximum crushing capacity in this class along with ease of maintenance. In addition, Komatsu's locking cylinder mechanism allows you to change the discharge clearance with a simple one-touch adjustment and also facilitates the removal of clogged foreign material from the discharge side.

High-speed, large-capacity conveyor belt
A **1050 mm** 42" (**1000 mm** 40") wide conveyor belt travels at **120 m** 394' per minute.
The discharge height is **2800 mm** 9'2".

Photo may include optional equipment.

SAA6D107E-1 turbocharged after-cooled diesel engine
provides **140 kW** / 187 HP for superior crushing power. EPA Tier 3 and EU stage 3A emissions certified.

Emergency shut-off buttons are installed on both the left and right sides of the chassis, on the control panel, and on the remote control (option).

Sprinkler nozzles
and a **connector** are standard at the jaw entry.

Outstanding mobility
Hydraulic steering and high-travel speed make the machine easy to relocate. The BR380JG-1 uses the same track undercarriage as Komatsu's hydraulic excavators.

Hydraulic conveyor lifter in the up position ensures adequate ground clearance, and safe driving even on rough ground.
The mobile crusher uses a new interlock system that controls the travel operation, to prevent the conveyor from being dragged or colliding with the ground depending on the conveyor's position.

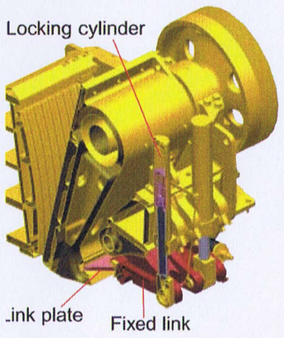
PRODUCTIVITY FEATURES

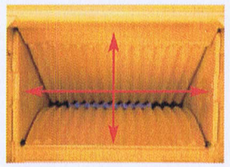
quipped with an eco-friendly engine

quipped with the SAA6D107E-1 engine, this new mobile usher has a nominal output as high as 140 kW (187 HP). he latest KOMATSU engine technology for construction achinery, "ecot3", greatly reduces NOx emissions. This ngine is EPA Tier 3 and EU Stage 3A emissions certified.

ew Komatsu Jaw Crusher largest in its class

he large-capacity jaw crusher, KCJ4222, is another uccessful example of Komatsu's development efforts. rushing efficiency is improved dramatically with the stallation of a load-presetting semiautomatic feeder system nd the increased crusher rotation speed.





KCJ4222 Jaw

Feed opening:
1065 mm x 550 mm
42" x 22"

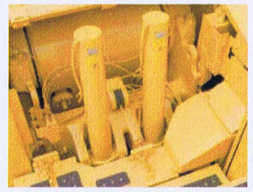
igh-speed, large-capacity conveyor belt

he high discharge height of 2800 mm (9'2") makes it easy configure a system with stock pile conveyor and screens. /ith its width of 1050 mm (42") and a belt speed of 120 m 394') /min., the belt conveyor has a high volume capacity. In ddition, the conveyor reverse mode is provided to facilitate e removal of jammed foreign material.

2800 mm
(9'2")

The first hydraulic crusher protection mechanism in the world

Jaw crushers typically protect themselves by bending toggle plates when they are clogged or jammed with metal or wood debris. The KCJ4222 protects itself by allowing the locking cylinders to fully open the discharge port, which makes it easy to remove clogged foreign material from the crusher. (Patent pending)

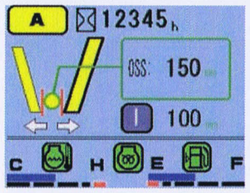


Large production capacity

Komatsu's original large-capacity jaw crusher and the most advanced control systems have considerably increased its output capacity, making it easy to manage large workloads.

Fully automatic discharge setting adjustment system

The jaw crusher is equipped with an automatic discharge setting adjustment system that makes it easy to change the opening of the discharge port. Even as both of the jaw plates or one wear, you can adjust the discharge setting with a simple one-touch operation (adjustable within several minutes) with this automatic system. On the monitor panel, you can choose one of the three adjustment modes. (Patent pending)



Mode A: Input a desired value for the discharge setting.
Mode B: Increase or decrease the current discharge setting.
Mode C: Press the manual switch to increase or decrease the present discharge setting.

High mobility

The conveyor elevation system insures a high minimum ground clearance, which provides the crusher with outstanding maneuverability at any crushing site. In addition, improved configuration location of the guide handle makes it much easier to operate the conveyor lifter.
The mobile crusher uses a new interlock system that controls the travel operation, to prevent the conveyor from being dragged or colliding with the ground depending on the conveyor's position.

Conveyor Elevation System

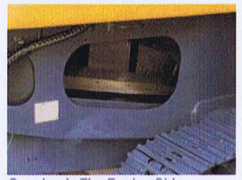
Minimum ground clearance
Traveling:
200/300 mm (7.9"/12")
Crushing:
100/200 mm (3.9"/7.9")

* "Traveling" is prohibited by interlock when the ground clearance is 100mm (3.9").

EASY MAINTENANCE AND SAFETY

Maximum reliability and minimal maintenance

In addition to the spacious clearance of 530 mm (1'9") between the jaw crusher and the conveyor belt, the crusher's bottom area is sealed with covers. This construction design prevents re-bar from being caught by the crusher's member structure. Wide openings on the side frames also ensure easy access to the space below the crusher to remove clogged foreign material.



Opening In The Engine Side

Opening In The Crusher Side (both sides of undercarriage)

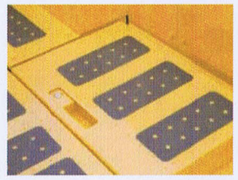
Comfortable design

- To prevent dust, sprinkler nozzles are provided as a standard attachment at the top of the jaw crusher (the water tank & spraying system is option).

Sprinkler Nozzle

Safety

- **Slip-resistant plates**
  Highly durable slip-resistant plates maintain superior traction.



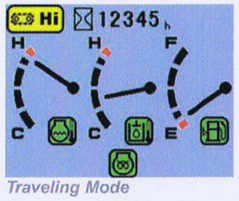
- **Thermal and fan guard**
  Thermal and fan guards are placed around high-temperature parts of the engine and fan drive.

Ease of operation

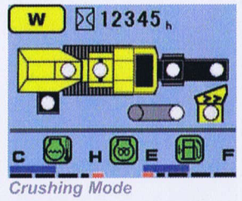
- All the switches necessary for operation are located on the main control panel, making it easier for the operator standing on the ground to reach and safely control the operation. As the control system is equipped with the one-touch start feature, all you have to do is press the start switch. This simple operation will sequentially start the operation of the magnetic separator, belt conveyor, jaw crusher and feeder.

Main Control Panel

- The multi-function monitor displays the status of all components in real time. With this monitor, you can easily identify the location of a problem.



Traveling Mode



Crushing Mode

- **Radio remote controller (Option)**
  With this controller, you can change the mode between "Travel" and "Operation", while remaining onboard the excavator. You can also use it to operate the one-touch start feature.

Photo may include optional equipment.

SPECIFICATIONS

ENGINE

odel . . . . . .Komatsu SAA6D107E-1
ype . . . . . .4-cycle, water-cooled, direct injection
spiration . . . . . .Turbocharged and air to air aftercooled
umber of cylinders 6
ore . . . . . .**107 mm** 4.21"
roke . . . . . .**124 mm** 4.88"
ston displacement . . . . . .**6.69 ltr** 408 in³
orsepower
SAE J1995 . . . . . .Gross **149 kW** 200 HP
ISO 9249/SAE J1349 . . . . . .Net **140 kW** 187 HP
Rated rpm . . . . . .2050 rpm
overnor . . . . . .All-speed, electrical
PA Tier 3 and EU Stage 3A emissions certified.

HYDRAULIC SYSTEM

ype . .HydrauMind (Hydraulic Mechanical Intelligence New Design) system
Closed-center system with load-sensing and pressure-compensated valves
ain pump:
Type . . . . . .Variable-displacement piston pumps
Pump for hydraulic system
Travel, crusher, feeder, conveyor and 4 equipment options
aximum flow . . . . . .**2 x 230 ltr/min** 2 x 60.8 U.S. gal/min
aximum pressure . . . . . .**37.3 MPa** 380 kg/cm² 5,400 psi
aximum travel speed . . . . . .**3 km/h** 1.9 mph
ystem oil flow (travel, crusher, feeder, conveyor, and option):
Travel . . . . . .**2 x 160 ltr/min** 2 x 42.3 U.S. gal/min
Crusher . . . . . .**230 ltr/min** 60.8 U.S. gal/min
Feeder . . . . . .**58 ltr/min** 15.3 U.S. gal/min
Conveyor . . . . . .**38 ltr/min** 10.0 U.S. gal/min
Option . . . . . .**28 ltr/min** 7.4 U.S. gal/min

OPERATING WEIGHT

perating weight, including 500 mm shoes . . . . .**34000 kg** 74,960 lb

UNDERCARRIAGE

eal of track . . . . . .Sealed track
ack adjuster . . . . . .Hydraulic
umber of shoes . . . . . .45 each side
umber of carrier rollers . . . . . .2 each side
umber of track rollers . . . . . .5 each side

CRUSHER

Jaw . . . . . .Komatsu KCJ4222
Inlet size . . . . . .**1065 mm x 550 mm** 42" x 22"
Discharge setting (O.S.S.) . . . . . .**50 mm to 150 mm** 2.0" to 5.9"
Rotating speed (variable) . . . . . .170 – 330 rpm

Production Capacity

Maximum treatment capacity (with a muck content of 30%). Unit: **ton/h** U.S. ton/h

Material	Crusher Discharge Setting (open side)			
	50 mm 2.0"	**80 mm** 3.1"	**120 mm** 4.7"	**150 mm** 5.9"
Natural stone	**50 – 70** 55 – 77	**80 – 115** 88 – 127	**125 – 180** 138 – 198	**170 – 240** 187 – 265
Concrete debris	**60 – 85** 66 – 94	**90 – 130** 99 – 143	**125 – 175** 138 – 193	— —

Note: The production capacity is the sum of the quantity of the material crushed by the crusher and the quantity of the material that passed through the grizzly bar. It depends on the type and properties of the material and the working conditions.

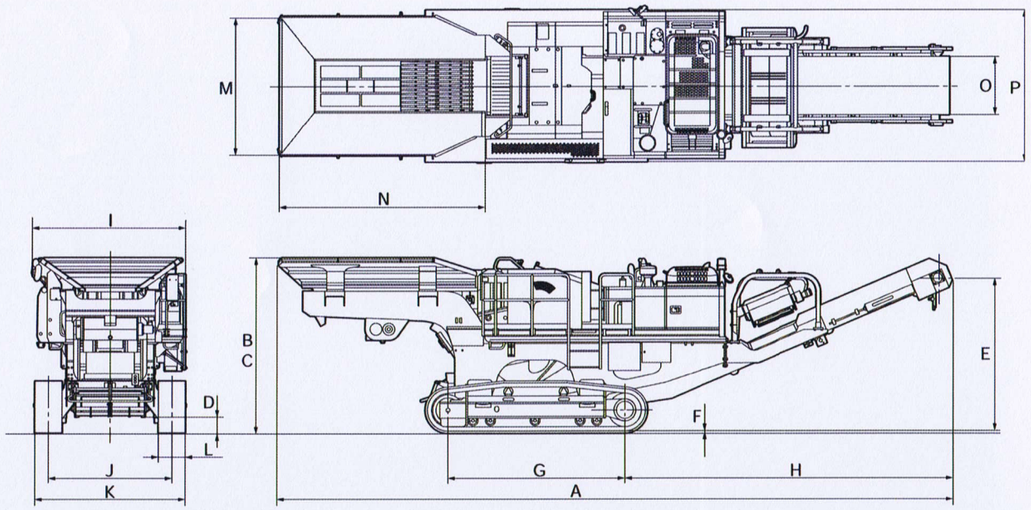
GRIZZLY FEEDER

Frequency . . . . . .Maximum 1100 cpm
Size . . . . . .**1000 mm x 3070 mm** 3'3" x 10'1"
Amplitude (not loaded, all amplitude) . . . . . .**8.0 mm** 0.3"
Drive type . . . . . .Direct drive with hydraulic motor

COOLANT AND LUBRICANT CAPACITY

Fuel tank . . . . . .**400 ltr** 105.7 U.S. gal
Radiator . . . . . .**28 ltr** 7.4 U.S. gal
Engine . . . . . .**26 ltr** 6.9 U.S. gal
Final drive, each side . . . . . .**4.5 ltr** 1.2 U.S. gal
Hydraulic system . . . . . .**209 ltr** 55.2 U.S. gal

DIMENSIONS



A	Overall length	**12500 mm**	41'
B	Overall height	**3200 mm**	10'6"
C	Feed height—side	**3200 mm**	10'6"
D	Minimum ground clearance (traveling)	**300 mm**	12"
E	Discharge height	**2800 mm**	9'2"
F	Grouser height	**26 mm**	1"
G	Length of track on ground	**3275 mm**	10'9"
H	Discharge from final drive center	**6080 mm**	19'11"

I	Overall width	**2870 mm**	9'5"
J	Track gauge	**2280 mm**	7'6"
K	Track width	**2780 mm**	9'1"
L	Shoe width	**500 mm**	20"
M	Hopper width	**2500 mm**	8'2"
N	Hopper length	**3770 mm**	12'4"
O	Discharge conveyor belt width	**1050 mm**	3'5"
P	Transport width	**2810 mm**	9'3"

STANDARD EQUIPMENT

- Alternator, **35 ampere** 24 V
- Automatic deaeration system for fuel line
- Automatic engine warm-up system
- Dry type air cleaner, double element
- Electric horn
- EMMS monitoring system
- Engine, Komatsu SAA6D107E-1
- Engine overheat prevention system
- Fan guard structure
- Hydraulic track adjusters (each side)
- Multi-function color monitor
- Power maximizing system
- PPC hydraulic control system
- Radiator and oil cooler dust proof net
- Rearview mirror, LH
- Shoes, triple grouser: **500 mm** 20"
- Slip-resistant plates
- Starting motor, **5.5 kW** 24 V x 1
- Travel alarm

OPTIONAL EQUIPMENT

- Batteries, large capacity
- Conveyor protective plate
- Torque up pulley

- **MAGNETIC SEPARATOR:**
  Magnetic separator for primary conveyor, **900 mm** 35" wide

- **MUCK CONVEYOR:**
  Muck conveyor assembly can be folded by hydraulic cylinder, **3000 mm x 500 mm** 9'10" x 1'8"

- **WATER TANK & SPRAYING SYSTEM:**

- **RADIO REMOTE CONTROLLER:**

Function:
- Travel
  Left/Right
  Forward/Reverse
- Feeder
  On/Off
- Work equipment
  Start/Stop
- Mode selection
  Operation/Travel

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CEN00175-04

Check List of Detailed Works Program

Title : Detailed Works Program for Construction of Access Road Quarry (Road A 9+400km)

Items		Contents	Check	Remarks
1. General	(1) Outline	Program name, work period, work contents	1	
	(2) Location Map		1	
	(3) Drawing	Plan, profile, section of the work area in each work item	9.5	
	(4) Amount	Specification and amount of the main work items	1	
2. Site Management Plan	(1) Organization chart		9.3	
	(2) Manpower Distribution Plan	Including nominated subcontractor	4.2	Refer Weekly and Monthly Progress Report Progress chart
	(3) Emergency Action Plan	Contact procedure and contact number	9.6	Refer the NNP1-SSP-A3 appendix 8.2.2 1)
3. Construction Schedule	(1) Basic Concept	Target	—	Refer Level2 Working Schedule
	(2) Coordination	Periodical meetings	—	Refer the NNP1-WP-A2 5.2 Site Management Meetings and Work Instruction
	(3) Overall Schedule	CPM schedule	9.4	
	(4) Schedule in each work	Progress chart and future plan	—	Refer Weekly and Monthly Progress Report Progress chart
4. Temporary Facilities	(1) Temporary Accommodation	Location map and specification	—	Submission separately
	(2) Temporary Facility	Location map, specification Including power supply, water supply and safety signboard	9.1	If necessary
	(3) Prevention of impact for third party	Monitoring method for third party's safety	6,9.2	If necessary
5. Work plan	(1) Basic concept		—	Refer the NNP1-WP-A2 "Project Management Policy"
	(2) Daily Report	Weather record and manpower record	—	Refer the Daily Report
	(3) Work Procedure	Work flow chart	5	
	(4) Program in each Work	Work guidelines	5	

Items		Contents	Check	Remarks
6. Material	Material List to be used	Including procurement schedule	3,9.8	
7..Heavy Machinery and Equipment	(1) Heavy Machinery List	Mentioned in which work items heavy machinery are used	4.1,9.7	
	(2) Equipment List	Including procurement schedule	9.7	
8. Quality Assurance Program	(1) Basic Concept	Policy and Target (mentioned in QAP 2.1, 2.2)	—	Refer the NNP1-DrQAP-A3 2. Quality Policy and Objectuves/Targets
	(2) System	Management program and strategy (mentioned in QAP 2.3, 2.4)	—	Refer the NNP1-DrQAP-A3 Attachment PMP
	(3) Material	Traceability (mentioned in QAP 5.2.3)	—	Refer the NNP1-DrQAP-A3 5.2.3 Traceability
	(4) QC	Quality Control Program	—	Refer the NNP1-DrQAP-A3 5 Project Quality Control Procedures
	(5) Inspection and Test Plan	Item, procedure, criteria and frequency (mentioned in QAP 5.3)	9.9	
9.Safety and Security Program	(1) Countermeasures in each work	To prevent possible accidents from occurring	6	SS-ESMMP-CP for Quarry at STA9+400km
	(2) Safety for third party	Countermeasures for safety of third party (mentioned in SSP 9.1)		If necessary
	(3) Safety control	Coordination, patrol, training	—	Refer NNP1-SSP-A3 6 Project General Safe Work Procedures
	(4) Health control	Occupational Health Program	—	Refer NNP1-SSP-A3 5 Health and Safety Operational Control Procedures
10. Social / Environmental Monitoring Plan	(1) Mitigation measures	Based on sub-plan of ESSMM-CP by owner	7	
	(2)Environmental monitoring	Based on sub-plan of ESSMM-CP by owner	7	
11. others		Calculation basis, etc.	—	

Yellow color means the statement required in subclause 2.1.6 of CWC schedule 12" Owner's Requirement"

Attachment-1 Comments for Detailed Works Program for Construction of Access Road Quarry (Road A 9+400km)

Item No	Page	Section &Title	Comment by NNP1 PC	Reply comment and due date for completion by Obayashi	Remarks
1	3	1 General	**[Major comments for approval]** **- Summary of balanced volume of blasted volume, backfill volume, backfill material from outside and inside of Quarry shall be included.** **- The Quarry will be used during rainy season and has a deep excavation. Dewatering plan in the blasted area shall be included.** **- Detailed procedure for a) blasting, b) extracting and delivering material, c) temporary stock, d) Backfilling shall be illustrated and included by using plan map for each stage.** - For the Quarry area of STA 9+400 inside Houay Ngua PPA, the Contractor shall pay attention and try to protect natural environmental as much as possible in accordance with the related environmental documents (EIA, ESMMP, SS-ESMMP-CP). - The Contractor can use not only the Quarry at STA 9+400 but also STA 15+900 & 16+000 outside of PPA. - Removed topsoil shall be stockpiled inside side ditch or reasonable measure for erosion of the removed topsoil shall be implemented. - English shall be checked again. - Some description of environmental monitoring should be included. - Backfill volume after construction of the Quarry shall be included.	See clause 5.2.3 See Appendix 9-1,9-5 See clause 5.2.4 Consider training program STA. 15+900, STA.16+000 will be submitted separately. Consider mitigation measure (e.g. compacting, seeding) Checked See clause 7 See clause 5.2.3	

Item No	Page	Section &Title	Comment by NNP1 PC	Reply comment and due date for completion by Obayashi	Remarks
2	13	5.4.2 Sedimentation Pond	- Please include the design calculation of sediment pond.	See clause 5.4.2	
3	14	5.5 After construction	- The excavated and blasted Quarry hole shall be backfilled for securing safety for villager/ natural animal / livestock. Plan drawings after construction shall be included.	Consider mitigation measure. (e.g. guide post, sign board)	
4	14	6 Safety control	- Explanation document for safety and blasting procedure, how to inform villager shall be attached in the Appendix same as temporary bridge construction. - Appendix 9-5 “Emergency action plan” shall be included.	See Appendix 9.2 See Appendix 9.6	
5		Appendix 9.2 Layout of Security for blasting	- The number of security person seems to be small, please add more. - Explanation document commented in the Item No.5 shall be included.	See Appendix 9.2 See Appendix 9.2	
6		Appendix 9.3 Working drawings	- Drawings after construction shall be included.	Quarry area will be backfilled by topsoil and unsuitable material. Plan of after construction is depend on the topsoil and the unsuitable material volume. Prior backfilling that area, drawing shall be submitted.	

Appendix 5

Official GOL contribution to the PPA CAP – Access Road Construction Period

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ

ສັນຕິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນາຖາວອນ

ꪖꪖꪖꪖꪖꪖꪖꪖ

ພະແນກຊັບພະຍາກອນທຳມະຊາດແລະສິ່ງແວດລ້ອມ ແຂວງ ບໍລິຄຳໄຊ

ຂະແໜງຄຸ້ມຄອງຊັບພະຍາກອນປ່າໄມ້

ແຜນການກວດກາລາດຕະເວນ ແລະ ສ້າງປ້ອມ ປ່າສະຫງວນ ຫ້ວຍງົວ ເມືອງບໍລິຄັນ ແຂວງ ບໍລິຄຳໄຊ

- ອີງຕາມ ຂໍ້ຕົກລົງຂອງທ່ານ ເຈົ້າແຂວງໆ ບໍລິຄຳໄຊ ວ່າດ້ວຍ ການກຳນົດຂອບເຂດ ປ່າສະຫງວນຫ້ວຍງົວ ເປັນປ່າສະຫງວນຂອງແຂວງ ສະບັບເລກທີ **0294 /** ຂບຊ ລົງວັນທີ **24 / 06 / 2010**
- ອີງຕາມ ບົດລາຍງານຂອງພະແນກຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງແວດລ້ອມ ສະບັບ ເລກທີ 523 / ພຊສ.ຂບຊ ລົງວັນທີ 23 / 1 / 2014
- ອີງຕາມ ກອງປະຊຸມປຶກສາຫາລື ກ່ຽວກັບຜົນກະທົບທີ່ມີຕໍ່ປ່າສະຫງວນ ຫ້ວຍງົວ ຮ່ວມກັບ ໂຄງການ **ADB** ຄັ້ງວັນທີ 14 / 2 / 2014

I ຈຸດປະສົງ

- ເພື່ອກວດກາ ສະພາບຜົນກະທົບທີ່ເກີດຂຶ້ນໃນຂອບເຂດປ່າສະຫງວນຫ້ວຍງົວ ກໍ່ຄື ການສ້າງທາງ ແລະ ແລວສາຍໄຟ້າ
- ເພື່ອສ້າງຈຸດກວດກາ ຖາວອນ 2 ຈຸດ ໃນຂອບເຂດປ່າສະຫງວນ ຫ້ວຍງົວ

II ດ້ານຈຳນວນຄົນເຂົ້າຮ່ວມ

ຈຳນວນຄົນເຂົ້າຮ່ວມໃນການກວດກາ ລາດຕະເວນ ເຄື່ອນທີ່ ແລະ ປະຈຳປ້ອມ ທັງໝົດ ແມ່ນ 10 **ຄົນ**

ລ/ດ	**ພາກສ່ວນ**	**ຫົວໜ່ວຍ**	**ຈຳນວນ**	**ລວມ**	**ໝາຍເຫດ**
1	ພະແນກຊັບພະຍາກອນ ທຳມະຊາດ ແລະ ສິ່ງແວ້ດລ້ອມ	ຄົນ	2	2	
2	ວິທະຍາໄລກະສິກຳ ແລະ ປ່າໄມ້	ຄົນ	**6**	6	
3	ທະຫານເມືອງບໍລິຄັນ	ຄົນ	**2**	2	
4	ຫ້ອງການຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງແວດລ້ອມ ເມືອງ	ຄົນ	**1**	1	
5	ຫ້ອງການກະສິກຳ ແລະ ປ່າໄມ້ ເມືອງ ບໍລິຄັນ	ຄົນ	**1**	1	
ລວມ				**12 ຄົນ**	

III ກຳນົດເວລາ ການຈັດຕັ້ງປະຕິບັດ

ເວລາໃນການຈັດຕັ້ງປະຕິບັດ ແມ່ນ **3** ເດືອນ ການຈັດຕັ້ງປະຕິບັດ ແຕ່ລະເດືອນ ປະຕິບັດ **15** ວັນ ລວມທັງໝົດ **45** ວັນ ການກວດກາ ແມ່ນກວດກາປະຈຳປ້ອມ ແລະ ກວດກາເຄື່ອນທີ່

IV **ເນື້ອໃນບົດລາຍງານ ແລະ ການປະຊຸມປະຈຳເດືອນ**

ບົດລາຍງານ ແລະ ການຈັດປະຊຸມຕ້ອງ ຈັດເປັນປະຈຳເດືອນ ໂດຍການຮວມການປະຊຸມກັບທຸກພາກສ່ວນທີ່ກ່ຽວຂ້ອງ.

ໃນບົດລາຍງານຕ້ອງປະກອບມີ ລາຍລະອຽດຂອງແຕ່ລະກິດຈະກຳ ລວມທັງ ການກວດກາຢູ່ຈຸດປ້ອມຍາມ, ການກວດກາລາດຕະເວນ, ຜົນການແກ້ໄຂບັນຫາຈາກການກະທຳຜິດຂອງຜູ້ກະທຳຜິດ, ການເຜີຍແຜ່ ແລະ ການປູກຈິດສຳນຶກໃຫ້ປະຊາຊົນອ້ອມຂ້າງ, ຕ້ອງປະກອບ ດ້ວຍຮູບພາບຂອງທຸກກິດຈະກຳ, ແຜນທີ່ແລະຈຸດ **GPS**, ຜົນການສະຫຼຸບໃນກອງປະຊຸມຮວມຂອງແຈ່ລະເດືອນຕ້ອງຄັດຕິດເຂົ້ານຳ ແລະ ການລາຍງານອື່ນໆ ທີ່ກ້ອງຂ້ອງ.

V ແຜນງົບປະມານ ກວດກາພາກສະໜາມ ແລະ ປະຈຳ ປ້ອມ ໜຶ່ງງວດ

ລ/ດ	ລາຍການ	ຫົວໜ່ວຍ	ຈຳນວນ	ອັດຕາກີນ (ກີບ)	ລວມ (ກີບ)	ລວມທັ້ງໝົດ	ໝາຍເຫດ
ອັດຕາກີນ ປະຈຳປ້ອມ ແລະ ພາກສະໜາມ							
1	ອັດຕາກີນ ພ/ງ ປະຈຳປ້ອມ	ຄົນ	4 ຄົນ / 21 ວັນ	190.000/ວັນ	3,990,000	15,960,000	
2	ອັດຕາກີນ ພ/ງ ພາກສະໜາມ	ຄົນ	8 ຄົນ / 15 ວັນ	190.000 / ວັນ	2,850,000	22,800,000	
3	ນ້ຳມັນລົດ	ຄັນ	4 ຄັນ / 15 ວັນ	50,000ກີບ / ຄັນ / ວັນ	250,000	3,750,000	ລົດຈັກ
4	ຖ່ານ GPS	ຄູ່	20 ຄູ່ /15 ວັນ	15,000	150,000	300,000	
	ເງິນແຮ(ຊື້ຢາພາກສະໜາມ, ຖ່ານກ້ອງຖ່າຍຮູບ)					1,000,000	
ລວມ						43,510,000	

(ສີ່ສິບສາມລ້ານຫ້າແສນສິບພັນກີບ)

- ລວມງົບປະມານການກວດການລາດຕະເວນ 1 ງວດ 43,510,000 X 3 ງວດ = ***130,530,000 ກີບ***

(ຮ້ອຍສາມສິບລ້ານຫ້າແສນສາມສິບກີບ)

VI ແຜນງົບປະມານ ສ້າງປ້ອມຍາມປ່າສະຫງວນຫ້ວຍງົວ 1 ປ້ອມ

ລ/ດ	ລາຍການ	ຫົວໜ່ວຍ	ຈຳນວນ	ລາຄາ (ກີບ)	ລວມທັງໝົດ	ໝາຍເຫດ
ຂະໜາດປ້ອມຍາມ 4 x 4 ແມັດ						
1	ເສົາຊີມັງ 20 x 20 x 300 cm	ເສົາ	4	350,000	1,400,000	ເສົາສຳເລັດ
2	ດິນຈີ່ ກ້ອນນ້ອຍ	ກ້ອນ	10.000	500	5,000,000	
3	ຊີມັງ	ໂຕ່ນ	3	850,000	2,550,000	ກ່ຳ ແລະ ເທພື້ນ
4	ປະຕູ 80 x 200 cm	ຊຸດ	1	500,000	500,000	
5	ປ້ອງຢ້ຽມ 100 x 100 cm	ຊຸດ	2	300,000	600,000	
6	ໄມ້ຂາງ 5 x 15 x 500 cm	ໂຕ	6	100,000	600,000	
7	ໄມ້ສີຍ5 x 12 x 300 cm	ໂຕ	10	45,000	450,000	
8	ໄມ້ຂ້າວ 4x8 x500 cm	ໂຕ	8	50,000	400,000	
9	ສັງກະສີ 8 ຟຸດ	ແຜ່ນ	25	45,000	1,125,000	
10	ສັງກະສີແຜ່ນລຽບ	ແຜ່ນ	2	30,000	60,000	ລຽບ
11	ໄມ້ປ້ານລີມ2 x 20 x 500 cm	ແຜ່ນ	5	50,000	250,000	
12	ຖຸຊີມັງ	ໜ່ວຍ	6	10,000	60,000	
13	ຄ້ອນຕີ	ດວງ	2	35,000	70,000	
14	ຕະປຸ 10	ໂລ	3	20,000	60,000	
15	ຕະປຸ 8	ໂລ	3	15,000	45,000	
16	ຕະປຸ 6	ໂລ	4	15,000	60,000	
17	ຕະປຸຕອກສັງກະສີ	ໂລ	2	30,000	60,000	

18	ຈຽງກໍ່	ອັນ	3	15,000	45,000	
19	ຊ້ອນ	ດວງ	2	35,000	70,000	
20	ແມັດ 5 ແມັດ	ກ້ໍ	2	20,000	40,000	
21	ສັງກະສີປ້ານລິມ	ແຜ່ນ	4	30,000	120,000	
22	ຫີນ - ຊາຍ	ລິດ	2	500,000	1,000,000	
23	ໂຕະ	ຊຸດ	1	600,000	600,000	
24	ຕຽງນອນ	ໜ່ວຍ	3	300,000	900,000	
	ຄ່າແຮງງານ				5,000,000	
ລວມ					21,065,000	

(ຊາວເອັດລ້ານຫົກສິບຫ້າພັນກີບ)

5.1 ຫ້ອງນ້ຳ

ລ/ດ	ລາຍການ	ຫົວໜ່ວຍ	ຈຳນວນ	ລາຄາ (ກີບ)	ລວມທັງໝົດ	ໝາຍເຫດ
ຂະໜາດ 2 ແມັດ						
1	ເສົາຊີມັ້ງ 10 x10 x 250 cm	ເສົາ	4	200,000	800,000	ເສົາສຳເລັດ
2	ດິນຈີ່ ກ້ອນນ້ອຍ	ກ້ອນ	4,000	500	2,000,000	
3	ຊີມັ້ງ	ໂຕ່ນ	1	850,000	850,000	ກ່ໍ ແລະ ເທພື້ນ
4	ປະຕຸ 80 x 200 cm	ຊຸດ	1	500,000	500,000	
5	ໄມ້ຂາງ 5 x 15 x 300 cm	ໂຕ	4	60,000	240,000	
6	ໄມ້ຂ້າວ 4 x 8 x 300 cm	ໂຕ	5	50,000	250,000	
7	ສັງກະສີ 8 ຟຸດ	ແຜ່ນ	10	30,000	300,000	
8	ໄມ້ປ້ານລິມ2 x 20 x 300 cm	ແຜ່ນ	4	30,000	120,000	

9	ຕະປູ 10	ໂລ	1	20,000	20,000	
10	ຕະປູ 8	ໂລ	1	15,000	15,000	
11	ຕະປູ 6	ໂລ	1	15,000	15,000	
12	ຕະປູຕອກສັງກະສີ	ໂລ	2	30,000	60,000	
13	ສັງກະສີປ້ານລົມ	ແຜ່ນ	2	30,000	60,000	
14	ຫົວວິດ	ຫົວ	1	300,000	300,000	
15	ທໍ່ຊີມັງ 80	ແທ່ງ	3	100,000	300,000	
16	ທໍ່ PBC 20	ທໍ່	1	80,000	80,000	
17	ຄ່າແຮງງານ				2,500,000	
ລວມ					**8,410,000**	

(ແປດລ້ານສີ່ແສນສິບພັນກີບ)

5.2 ໄຟຟ້າ ແສງຕາເວັນ

ລ/ດ	ລາຍການ	ຫົວໜ່ວຍ	ຈຳນວນ	ລາຄາ (ກີບ)	ລວມທັງໝົດ	ໝາຍເຫດ
1	ເຄື່ອງຮັບພະລັງງານ ໄຟຟ້າ	ເຄື່ອງ	1	8,000,000	8,000,000	
2	ສາຍໄຟ 2 x 2,5 mm	ກໍ້	1	300,000	300,000	
3	ດອກໄຟ	ຊຸດ	4	40,000	160,000	
4	ສະວິກ	ອັນ	4	5000	20,000	
5	ປັກສຽບ ສາມຕາ	ອັນ	2	10,000	20,000	
6	ກໍ້ປັ້ນສຽບ	ກໍ້	1	60,000	60,000	
ລວມ					8,560,000	

(ແປດລ້ານຫ້າແສນຫົກພັນກີບ)

ລວມງົບປະມານການ ສ້າງປ້ອມຍາມ , ຫ້ອງນ້ຳ ແລະ ໄຟຟ້າ 1 ປ້ອມ 38,035,000 x 2 ປ້ອມ = ***76,070,000 ລ້ານກີບ***

(ເຈັດສິບຫົກລ້ານເຈັດສິບພັນກີບ)

5.3 ພາຫະນະຮັບໃຊ້ ການກວດກາລາດຕະເວນ

ລ/ດ	ລາຍການ	ຫົວໜ່ວຍ	ຈຳນວນ	ລາຄາ (ກີບ)	ລວມທັງໝົດ	ໝາຍເຫດ
1	ລົດຈັກ (Wave 125)	ຄັນ	4	13,000,000	42,000,000	
2	ເງິນແຮງລະນະລົດ	ກີບ /ເດືອນ		500,000	500,000	
ລວມ					42,500,000	

(ສີ່ສິບສອງລ້ານຫ້າແສນກີບ)

ສັງລວມງົບປະມານທັງໝົດ : ກວດກາລາດຕະເວນ 3 ງວດ + ສ້າງປ້ອມຍາມ 2 ປ້ອມ + ພາຫະນະຮັບໃຊ້ການກວດກາ ລາກຕະເວນ

130,530,000 + 76,070,000 + 42,500,000 = 249,100,000 ກີບ

ລວມທັງໝົດ : 249,100,000 ລ້ານກີບ

(ສອງຮ້ອຍສີ່ສິບເກົ້າລ້ານໜຶ່ງແສນກີບ)

ທີ່ ບໍລິຄຳໄຊ ວັນ ທີ ……../ ……. / …….

ໂຄງການໄຟຟ້ານ້ຳງຽບ 1(NNP1)

ຫົວໜ້າຂະແໜງຄຸ້ມຄອງຊັບພະຍາກອນປ່າໄມ້

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ
ສັນຕິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນາຖາວອນ
----------❁❁❁❁----------

ພະແນກຊັບພະຍາກອນທຳມະຊາດແລະສິ່ງແວດລ້ອມ ແຂວງ ບໍລິຄຳໄຊ
ຂະແໜງຄຸ້ມຄອງຊັບພະຍາກອນປ່າໄມ້

ແຜນໂຄສະນາປຸກຈິດສຳນຶກປະຊາຊົນ
ອ້ອມຂ້າງປ່າສະຫງວນຫ້ວຍງົວ

- ອີງຕາມ ບົດບັນທຶກກອງປະຊຸມກ່ຽວກັບການຊົດເຊີຍຊີວະນາໆພັນຂອງປ່າສະຫງວນຫ້ວຍງົວ,ແຂວງ ບໍລິຄຳໄຊ ທີ່ຖືກຜົນກະທົບຈາກການກໍ່ສ້າງທາງແຕ່ບ້ານໂນນສົມບູນຫາບ້ານຫາດຢົ້ນຂອງເຂດໂຄງ ການເຂື່ອນໄຟຟ້ານ້ຳງຽບ 1 ຄັ້ງລົງວັນທີ 14/02/2014

I. ຈຸດປະສົງ

- ເພື່ອປຸກຈິດສຳນຶກໃຫ້ແກ່ປະຊາຊົນໃຫ້ມີຄວາມຮູ້ແລະເຂົ້າໃຈກ່ຽວກັບຄວາມໝາຍຄວາມສຳຄັນຂອງ ຊີວະນາໆພັນຕໍ່ການຕິດພັນຊີວິດປະຈຳວັນແບບມີສ່ວນຮ່ວມແລະກ້າວໄປເຖິງການຄຸ້ມຄອງນຳໃຊ້ແບບຍືນຍົງ

- ເພື່ອໃຫ້ປະຊາຊົນແລະນັກຮຽນ 5 ບ້ານອ້ອມຂ້າງປ່າສະຫງວນຫ້ວຍງົວຮູ້ຜົນກະທົບຂອງການທຳລາຍ ປ່າໄມ້ແລະການຊື້ຂາຍສັດປ່າທີ່ມີຕໍ່ເຂົ້າເຈົ້າໃນປະຈຸບັນແລະອານາຄົດ

II. ດ້ານຈຳນວນພົນແລະໄລຍະເວລາ

1) ຂະແໜງຄຸ້ມຄອງຊັບພະຍາກອນປ່າໄມ້ 3 ທ່ານ
2) ໂຄສະນາເມືອງ 1 ທ່ານ
3) ສຶກສາເມືອງ 1 ທ່ານ
4) ຫ້ອງການຊັບພະຍາກອນທຳມະຊາດແລະສິ່ງແວດລ້ອມເມືອງ 1 ທ່ານ
5) ກະສິກຳເມືອງ 1 ທ່ານ
6) ວິທະຍາໄລກະສິກຳແລະປ່າໄມ້ 2 ທ່ານ

ສະເພາະໄລຍະເວລາແມ່ນບ້ານລະ 3 ວັນ,ລວມ 15 ວັນ ຕໍ່ເດືອນ ,ເດືອນລະ 1 ຄັ້ງ

III. ສະຖານທີ່ໃນການລົງໂຄສະນາເຜີຍແຜ່

1.) ບ້ານ ທ່າເຮືອ
2.) ບ້ານຫາດຢົ້ນ
3.) ບ້ານຊຶມຊື່ນ
4.) ບ້ານ ໂນນສົມບູນ
5.) ບ້ານ ສີສະຫວາດ

IV. ກິດຈະກຳຂອງການໂຄສະນາ

1) ຫຼິ້ນເກມ

2) ຮ້ອງເພັ້ງ
3) ອະທິບາຍແຜ່ນພາບ(ໂປຣຊເຕ)
4) ຫຼິ້ນລະຄອນກ້ອມ
5) ກິດຈະກຳບອກໃບ້
6) ກິດຈະກຳຕິດຮູບພາບ
7) ລົມກັບຊາວບ້ານເພື່ອໃຫ້ຮູ້ເຖິງກິດຈະກຳຂອງເຂົາເຈ້ົາທີ່ນຳໃຊ້ພື້ນທີ່ປ່າສະຫງວນຫ້ວຍງືວທີ່ຜ່ານມາ, ເພື່ອຖາມເອົາແນວຄວາມຄິດຂອງເຂົາເຈ້ົາທີ່ຈາກຈະເຮັດຫຍັງໃນອານາຄົດຕໍ່ໜ້າໃນພື້ນທີ່ປ່າສະຫງວນຫ້ວຍງືວນີ້. ເພື່ອນຳເອົາຜົນດັ່ງກ່າວມາເປັນໂຕຜັນຂະຫຍາຍເຂົ້າໃນແຜນການປັບປຸງປ່າສະຫງວນດັ່ງກ່າວ.

V. ງົບປະມານເດືອນ 3 /2014

ລ/ດ	ລາຍການ	ຫົວໜ່ວຍ	ຈຳນວນ	ລາຄາ	ເປັນເງິນ	ໝາຍເຫດ
1	ອັດຕາກິນທີ່ມງານ	ວັນ	15	190.000	25.650.000	
2	ອຸປະກອນ					
	-ໂປຣຊເຕ	ແຜ່ນ	5	1000.000	5.000.000	
	-ເຄື່ອງສຽງ	ຊຸດ	2	2.500.000	5.000.000	
	-ເສື້ອທີ່ມງານ	ຊຸດ	15	250.000	3.750.000	
	-ເສື້ອໃຊ້ໃນການໂຄສະນາ	ຜືນ	150	50.000	7.500.000	
	-ປິ້ມຂຽນ	ຫໍ່	15	40.000	600.000	
	-ເຂັ້ມໜີ່ມ	ຫໍ່	30	12.000	360.000	ໃຊ້ຫຼິ້ນເກມ
	-ກ້ອງຖ່າຍຮູບ	ໜ່ວຍ	2	2.500.000	5.000.000	
3	ນ້ຳມັນລົດ				3.000.000	
	ລວມ				55.860.000	

ໝາຍເຫດ: - ງົບປະມານໂຄສະນາເຜີຍແຜ່ເດືອນທີ 1 ເທົ່າກັບ 55.860.000 ກີບ
- ເດືອນທີ 2 ເທົ່າກັບ 40.860.0000 ກີບ
- ເດືອນທີ 3 ເທົ່າກັບ 40.860.000 ກີບ
ລວມທັງ 3 ເດືອນແມ່ນເທົ່າກັບ 137.580.000 ກີບ

ທີ່ ບໍລິຄຳໄຊ ວັນ ທີ ……/ ……. / …….

ໂຄງການໄຟຟ້ານ້ຳງຽບ1(NNP1) ຫົວໜ້າຂະແໜງຄຸ້ມຄອງຊັບພະຍາກອນປ່າໄມ້

ຕາຕະລາງດຳເນີນ ໃນແຕ່ລະໄລຍະ (ໃນຊ້ວງ ໄລຍະ 3 ເດືອນ)

ລ/ດ	ໜ້າວຽກ	ເດືອນ 3				ເດືອນ 4				ເດືອນ 5				ເດືອນ 6			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	ສ້າງປ້ອມຍາມ(ຈຸດກວດກາ 2 ຈຸດ)			X	X	X	X		X								
2	ກວກກາລາດຕະເວນ ແລະ ປະຈຳປ້ອມ			X	X	X			X	X	X				X	X	
3	ໂຄສະນາປຸກຈິດສຳນຶກ 5 ບ້ານອ້ອມຂ້າງ			X	X						X	X				X	X
4	ຈັດຊື້ພາຫານະຮັບໃຊ້ວຽກງານກາກວດກາລາດຕະເວນ		X	X													
5	ປະເມີນຜົນກວດກາລາດຕະເວນແລະກະກຽມແຜນກິດຈະກຳໃນງວດຕໍ່ໄປ(ເປີດ ກອງປະຊຸມຮ່ວມພາກສ່ວນກ່ຽວຂ້ອງ)					X							X				X
6	ສິ່ງບົດລາຍງານໃຫ້ພາກສ່ວນທີ່ກ່ຽວຂ້ອງ					X							X				X

ໝາຍເຫດ : ໄລຍະເວລາໃນການຈັດຕັ້ງປະຕິບັດການກວດກາ ອາດມີການປ່ຽນແປງ ຂຶ້ນກັບສະພາບ ແລະ ປະກົດການຕົວຈິງ

- ການປະເມີນຜົນ(ປະຊຸມ)ຕ້ອງຮ່ວມກັນລະຫ່ວາງໂຄງການນ້ຳງຽບາແລະໜ່ວຍງານຮັບຜິດຊອບຂອງພະແນກຊັບພະຍາກອນທຳມະຊາດແລະສິ່ງແວດລ້ອມ

ຕາຕະລາງດຳເນີນ ງານ ເດືອນ 3/2014

ລ/ດ	ໜ້າວຽກ	ເດືອນ 3/2014																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	ສ້າງປ້ອມຍາມ(ຈຸດກວດກາ)																X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	ກວດກາລາດຕະເວນເຄື່ອນທີ່ແລະ ປະຈຳປ້ອມ																X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	ຈັດຊື້ພາຫານະຮັບໃຊ້ວຽກງານ ກວດກາລາດຕະເວນ															X	X	X	X	X	X	X	X	X	X							
4	ໂຄສະນາເຜີຍແຜ່ປຸກຈິດສຳນຶກ -ບ້ານ ທ່າເຮືອ - ບ້ານຊຶມຊື່ນ -ບ້ານໂນນສົມບູນ -ບ້ານສີສະຫວາດ -ບ້ານຫາດຍີ້ນ													X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	ສະຫຼຸບລາຍງານປະຈຳເດືອນ (ເປີດ ກອງປະຊຸ່ມຮ່ວມພາກສ່ວນ ກ່ຽວຂ້ອງ)																													X	X	X

ຕາຕະລາງດຳເນີນ ງານ ເດືອນ 4/2014

ລ/ດ	ໜ້າວຽກ	ເດືອນ 4/2014																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1	ສ້າງປ້ອມຍາມ(ຈຸດກວດກາ)	X	X	X	X	X	X	X	X	X	X														X	X	X	X	X	X	X	X
2	ກວດກາລາດຕະເວນເຄື່ອນທີ່ ແລະປະຈຳປ້ອມ	X	X	X	X	X	X	X																	X	X	X	X	X	X	X	X
3	ສະຫຼຸບລາຍງານປະຈຳເດືອນ(ເປີດ ກອງປະຊຸມຮ່ວມ ພາກສ່ວນກ່ຽວຂ້ອງ)					X	X	X	X	X	X																				
4	ສິ່ງປົດລາຍງານ										X	X	X																		

ຕາຕະລາງດຳເນີນ ງານ ເດືອນ 5/2014

ລ/ດ	ໜ້າວຽກ	ເດືອນ 5/2014																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	ກວດກາລາດຕະເວນເຄື່ອນທີ່ ແລະປະຈຳປ້ອມ	X	X	X	X	X	X	X	X	X	X	X	X	X	X																	
2	ໂຄສະນາເຜີຍແຜ່ປຸກຈິດສຳ ນຶກ -ບ້ານ ທ່າເຮືອ - ບ້ານຊຶມຊື່ນ -ບ້ານໂນນສົມບູນ -ບ້ານສີສະຫວາດ - ບ້ານຫາດຢົ້ນ											X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
3	ປະເມີນຜົນກວດກາລາດຕະ ເວນແລະກະກຽມແຜນກິດຈະ ກຳໃນງວດຕໍ່ໄປ																										X	X	X	X		
4	ສິ່ງປົດລາຍງານ																														X	X

ຕາຕະລາງດຳເນີນ ງານ ເດືອນ 6/2014

ລ/ດ	ໜ້າວຽກ	ເດືອນ 6/2014																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	ກວດກາລາດຕະເວນເຄື່ອນທີ່ ແລະປະຈຳປ້ອມ										X	X	X	X	X	X	X	X	X	X	X	X	X	X								
2	ໂຄສະນາເຜີຍແຜ່ປຸກຈິດສຳ ນຶກ - ບ້ານ ທ່າເຮືອ - ບ້ານຊຶມຊື່ນ - ບ້ານໂນນສົມບຸນ - ບ້ານສີສະຫວາດ - ບ້ານຫາດຢົ້ນ														X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
3	ປະເມີນຜົນກວດກາລາດຕະ ເວນແລະກະກຽມແຜນກິດຈະ ກຳໃນງວດຕໍ່ໄປ																												X	X	X	
4	ສິ້ງປິດລາຍງານ																														X	X

Appendix 6

GOL Monitoring and Inspection Sheets

Form 6.1.A

Lao People's Democratic Republic

Peace Independence Democracy Unity Prosperity

======000========

Nam Ngiep 1 Hydropower Project
No……\HNG.PPA_NNP1PC

Monitoring Team…….. At……., date……..

Record of confiscated Wildlife Release

In reference to the agreement of the concerned authority dated ……\.....\.....

We:

Name and Surname	section
1	
2	
3	
4	
5	
6	

Gotten the wildlife type: 1)……., Number:……or……kg

2)……., Number:……..or……..kg

From the persons who have the following name

Name& surname	Current village	District	Province	occupation	age	Ethnic Group

To release it in PPA on date……\.....\.....time…….o'clock by the transportation mean:……brand……plate number……..based on the agreement. Therefore we vow to non-discloser non-persuade other persons to catch the wildlife released to eat or re-trade. If we didn't respect the law, we are pleased to accept the guilt of the law

Therefore, this report is made to be evidence.

Signature of participant in the released wildlife

1)…….. 5)……

2)…….. 6)……

3)…… 7)……..

4)…… 8)……

Form 6.1.B

Lao People's Democratic Republic

Peace Independence Democracy Unity Prosperity

======000========

Nam Ngiep 1 Hydropower Project
No……\HNG.PPA_NNP1PC

Monitoring Team…….. Date……..

Memo on the prosecution to wrong doer

- In reference to the forest law No.06\NRE dated 24 December 2007
- In reference to the aquatic life and wildlife law No.07\NRE, dated 24 December 2007
- In reference to the regulation on the Houy Ngoa PPA management No.92\ dated 6 August 2009
- In reference to the result of the monitoring of confiscated forest resources and gears use for wrong doing No. ……..dated……

The wrong doer is prosecuted by the Patrol monitoring team for the PPA management rule such as the forest, aquatic and wildlife law as the following name below:

1. Name &surname……age……year old, occupation……..current village……District……Province……..

2. Name &surname……age……year old, occupation……..current village……District……Province……..

3. Name &surname……age……year old, occupation……..current village……District……Province……..

4. Name &surname……age……year old, occupation……..current village……District……Province……..

5. Name &surname……age……year old, occupation……..current village……District……Province……..

6. Name &surname……age……year old, occupation……..current village……District……Province……..

The wrong doer violated the Houy Ngoa PPA management rule as the
article……
……
……
…….

Based on the above wrong doing, the Patrol monitoring team agreed unanimously to impose the education and fine in accordance with each case as mentioned above:

1……

2……

3……

4……
5……

Total cash from the fine……..(in letter and figure)

We vowed to the team as below:

1. We will not do wrong to violate the Houy Ngoa PPA management rule as the forest, aquatic and wildlife law of Lao PDR.
2. We agree to cooperate with the authorities to disseminate the rule and laws to the villagers for understanding
3. We respect the rule and laws strictly

This memo was made based on the confession and agreed by the wrong doer without the threat of the team.

Therefore, This memo was made to be evidence.

The Patrol monitoring team	Certified by authority	The wrong doer
1		1
2		2
3		3
4		4
5		5

Form 6.1.C

Lao People's Democratic Republic

Peace Independence Democracy Unity Prosperity

======000========

Nam Ngiep 1 Hydropower Project
No……\HNG.PPA_NNP1PC

The Monitoring team……

Warning on the wrong doing to the Houy Ngua PPA management rule

-In reference to the forest law No.06\NRE dated 24 December 2007

-In reference to the aquatic life and wildlife law No.07\NRE, dated 24 December 2007

I am: name & surname……..age…….year old, date\month\year of birth……..

Occupation……current village…….District……province, ID number……..

Dated……issued, son of Mr…….Mrs……current village…….District……Province……..

I confess, dated……

I did wrong as:

1)

2)

3)

Which violated the Houy Ngoa PPA management rule……

……

……

I vow to the concerned authorities as:

1. I will not do anything to violate the management rule of collage conservation forest, as the aquatic life- wildlife and forest law of Lao PDR

2. We agree to cooperate with the authorities to disseminate the rule and laws to the villagers for understanding

3. If I do wrong in the next time and will be prosecuted by the concerned authorities strictly.

Therefore, this memo is made to be evidence

Certified by Certified by

Forest Resource Management section village head list of Monitoring team Witness Wrong doer

Form 6.1.D

The number of patrol team (PIN): Area code\ beginning date, month, year \ first consonant of team leader name

Approval form for the patrol

1. Name of team
2. Name of Reporter
3. Name and position of the Patrol Team
4. Patrol Transport

   Walk ☐ Motorbike ☐ Speedboat ☐ Boat ☐ on spot ☐

   Other ☐

5. Patrol type

   Patrol for keeping of stealing ☐ Patrol for investigation ☐ Patrol to follow up the case ☐

   Others ☐ checking in the passing Vehicle checking in the market ☐
6. Purpose of Patrol

7. Start on (date\month\year): Starting GPS (48Q\UTM)……\.....

8. End on (date\month\year): Ending GPS (48Q\UTM)……\.....

9. Number of person in the Patrol

Name & surname	section	Armed
Total		

10. Name and signature of Approver…….

11. Name and signature of team leader…….

MIST Patrol ID (to be filled in during data entry): Date Received: Date entered into MIST: Entered by:

Form 6.2.A

Code

Monitoring Form along the road, market and restaurant

Date\month\year Location monitoring type X

Monitoring Team Team leader Reporter Y

No.	Time	Observation	Observation type	Number	Come across\suspect	Registration number	Additional comment

Observation:
Activities of Person
Position:(1) Please fill in the observation column only
(2) Please fill in the observation type column

Observation type:
Thing to be found : wildlife, wood, NTFP
Position: (1) beginning, rest, resumption, end:
Position (2) person, motorbike, pick up, truck

MIST Patrol ID (to be filled in during data entry): Date Received: Date entered into MIST: Entered by:

Observation Form **PIN number**

Form 6.2.B

Record data found in the field	Wild life	found	confiscation	destruction	allow	people	Hold weapons	No weapon	Unknown	Weapon	found	confiscation	allow	Tools	found	confiscation	Destruction	Camp	Observation	Destruction
Date	Kind					Local people				Heard the gun shot ☐				Trap				Still use		
														Wire trap				No use		
						Town man				Found the bullets ☐										
Time	Alive animal					Others								Thread trap				Camp builder		
	Dead animal					Hmong				Gun				Hole trap				Grill net		
	Some parts					Lao therng				Hand made gun				Hole						
No	meat					Lao				Shotgun				Fishing net				logging		
	bone					Vietnamese				Firelock										
	bile					Chinese				Others				Wooden Bow						
Road No	horn					Others				Bullets										
	hide					Village soldier				Gun				Iron trap				Type 1		
	ivory					Village police				Hand made gun				Arch						
	fang					Government officer				Shotgun				Hunting dog				Type 2		
	belly					Soldier				Firelock				Knife						
Record	Blood					Police				Others				Axe				Type 3		
	bill					Others				Travelling				Hand saw						
	Turtles shell					Found: ☐ Faced to: ☐								Chain saw				Type 4		
	scale									Bicycle				Fishing net						
	Other:					Punishment:				Bike				Fishing trap				NTFP		
	Agricultural growing area					Seminar: ☐				Cart				Fishing rod						
	Plants found: slashed ☐ ☐					Warning: ☐				Tractor				Fish electric shocker						
						Fine: ☐														
						Arrest: ☐				Car				Cable						
	growth ☐ size:									Engine Boat				Poison				Type 1		

logging	observation	confiscation	Number of tree	Number of log	M^3
Type 1					
Type 2					
Type 3					
Type 4					

NTFP	Observation	confiscation	kg

			Boat				Bomb fuse							
		Case No;					Fish gun				Type 2			
							Lamp on the mask							
	livestock	Forest fire	Wild life hunting				Gold panning tool				Type 3			
							hoe							
	Number of cow	Forest fire☐ grazing fire ☐	Burn for wild life hunting ☐				Spade							
	Number of pig	Burning ☐Smog ☐					Weeding							
	Number of goat	Char ☐young grazing ☐	Area size: (ha)				Others							
	Area: (ha)	Burning area size: (ha)												

Form 6.2.C

PIN number | Date | of total number of day

Movement record Form

Date\Month\ year | Team leader name | GPS user's name | GPS No.

No.	Waypoint No.	GPS point		Location	Time	Observation	Observation type	Total	old		Young	Additional comment
		X	Y						Female	Male		

Observation consists of:
Mammal: Bengal tiger, panther, tiger cat, Gaur, deer, elephant ,big hornbill, small hornbill, serow, muntjac, Wild pig, bear, wild dog, gibbon
Activities of person: Person
GPS point: location
Important Point : mineral licks, street cave, new house area

Mammal type: see, footprint, feces, carcass
Person type : hunting, fishing, logging, NTFP collecting, slash for rice growing, crop growing, livestock, forest burning, gold panning, other (Please mention clearly):.....
Location type: beginning, rest ,resumption, GPS position (every 30 mn), end
Important Point type: mineral licks (water\soil), street (use\no use)

MIST Patrol ID (to be filled in during data entry): Date Received: Date entered into MIST: Entered by: