添付資料２　改訂したADNマニュアル(テトン語版)

AGÉNCIA DE DESENVOLVIMENTO NAÇIONAL
REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MANUAL ADN

(Polítika, Prosessu & Prosedimentu, Produtu)

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AGÉNCIA DE DENSEVOLVIMENTO NACIONAL (ADN)

Lia-Dahuluk

ADN Establesidu iha Março de 2011 husi Dekretu-Lei No.11/2011. Desde Nia inaugurasaun ADN involvidu ona iha dezenvolvimentu infraestrutura, prinsipalmente iha prosessu sira husi verifikasaun ba dokumentus tenderizasaun no inspesaun ba pedidu pagamentu. Manual ADN ne'e mak formuladu liu husi arranja prosedimentu obra atual no aumenta várius melhorias ba implementasaun ne'ebé di'ak husi prosessu hirak iha leten. Nia aponta atu ajuda laos de'it ba funsionáriu ADN maibé mos funsionáriu Liña Ministérial (LM) ne'ebé tenke hala'o obra iha prosessu hirak ne'e.

Esbosu Manual ADN mak preparadu no introduz ona iha Seminário Internal loron 25 Outubru 2012, no Manual ADN mós korrijidu no introduz tiha ona iha Workshop kona-ba Kontrolu Kualidade através Servisu ADN nian iha loron 20 Setembru 2013.

Manual ida ne'e mak kompostu husi sesaun tolu : Jeneralidade, avaliasaun projetu molok ajudikasaun kontratu; no, inspesaun projetu no rekomendasaun ba pagamentu. Manual ne'e kobre kategoria hat katak projetus sira ne'ebé husi Fundus Infraestrutura, PDID, Programa Eléktrifikasaun Nasional (PEN) no Fundu LM. Entretantu, kada kategoria mak reprezentadu husi seitor espesifiku ida. Haktuir ba Lista-revista (Checklist) Téknika, Fundu Infraestrutura toma-konta ho seitor estrada & ponte, PDID ho Fornesementu Be-mos, Programa Eletrifikasaun Nasional ho Eletrisidade no Fundu LM ho Edifisiu. Hirak ne'ebé husi Projetu Espesial iha ADN nia okos no Fundu Emerjênsia, Sefope, and ADDT mak la inkluidu iha ne'e.

Komponentes chave ida husi manual ne'e mak atu fornese Lista-Verifikasaun(Checklist) no Formatu(Forms). Lista-Verifikasaun(checklist) mak atu halo servisu ADN nian sai klaru no Formatu(Forms) mak atu halo kommunikasaun klaru entre ADN no LM, basá atu klarifika sira nia papel no responsabilidades. Sira na'in rua hamutuk mak projetada atu halo prosessu hirak ne'e lidera sai própriu no furak liu.

Manual ADN husik hela assuntus téknika núdar Padraun no espesifikasaun ba kada LM's(Liña Ministériais). Manual ne'e sei bele halo revizaun hodi akomoda melhoramentu ruma husi kolaborasaun servisu entre ADN no LM.

Abreviatura

AASHTO	American Association of State Highway and Transportation Officials
ADB	Asian Development Bank / Banco Desenvolvimento Asiático
ADN	Agencia de Desenvolvimento Nacional
APORTIL	Port Administration of Timor-Leste / Autoridade Porto Marítima de Timor Leste
AS	Australian Standard (for Building) / Padraun Australianu ba Konstrusaun Edifisiu
AS/NZS	Australian / New Zealand Standard (for Building) / Padraun Australianu/Nova Zelándia ba Konstrusaun Edifisiu
BCA	Building Code of Australia/Kódigu Edifisiu Australianu
BOQ	Bill of Quantities / Lista Kuantidades
CAFI	Conselho de Administracão do Fundo das Infra-estruturas
CKP	Charles Kendal & Partners
DC	District Committee/Commissão Distrital
DNSA	National Directorate of Water Supply/ Direcção Nacional das Àguas e Saneamento (Organizasaun Tu'an)
DNSAS	National Directorate of Water and Sanitation/Direcção Nacional dos serviços de Água e Saneamento
DRBFC	National Directorate of Road, Bridge and Flood Control/Direcção Nacional dos Estradas,Pontes e Controlo de Cheia
EDTL	Electricity of East Timor/Eletricidade de Timor Leste
ESTATAL	Ministry of State Administration and Territorial Management (MAEOT)
FAQ	Frequently Asked Question/Nafatin;Frequentemente Husu perguntas
FI	Infrastructure Fund/Fundo das Infraestruturas
JICA	Japan International Cooperation Agency
KDD	Development District Commission/Komissaun Dezenvolvimentu Distrital
LM	Line Ministry/Linha Ministériais
MAEOT	Ministry of State Administration and Territorial Management (ESTATAL)
MDG	Millennium Development Goal/Meta do Desenvolvimento Milénio
MOF	Ministry of Finance/Ministério das Finanças
MOI	Former Ministry of Infrastructure/Ministério das Infra-estruturas
MPS	Major Project Secretariat
MPW	Ministry of Public Works/Ministério das Obras Públicas
NPC	National Procurement Commission/Commissão de Aprovisionamento Nacional
PDD I	Package of Decentralized Development I/Pakote dezenvolvimentu nasional I
PDD II	Package of Decentralized Development II/ Pakote dezenvolvimentu nasional II
PDIDS	Integrated Development Project in Suco/Projeto Integrado Distrital em Suco
PDL	Programa de Desenvolvimento Local
PEN	Programa da Eletrificação Nacional

PO	Purchase Order/ Ordem Compra(Procura)
RDTL	The independent Democratic Republic of Timor-Leste/República Demócratica de Timor Leste
RWS	Rural Water Supply/Fornesementu Be-mos Rural
SDP	Timor-Leste Strategic Development Plan 2011-2030/Plano Estratégico de desenvolvimento Nacional
SGP	Secretariat of Large Project
SNI	Serviços Nacional de Inteligência
Suco	Village in Timor-Leste
TPO	Treasury Payment Order/Ordem Pagamento do Tesouro
UNDP	United Nations Development Program/Programa Desenvolvimento Nação Unidas
WB	World Bank/Banco Mundial
W/C	Water Cement Ratio/Rasio we'e no sementu
BPA	Banking & Payments Authority/Autoridade Bankária & Pagamentu

MANUAL ADN (Polítika, Prosessu & Prosedimentu, Produtu)

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Jeneralidade

(Antesedentes)

ADN estabelesidu husi Dekretu-Lei No.11/ 2011 nu'udar inisiativa ida husi governu atu estabelese reformasaun no hametin estrutura organizasional husi administrasaun pública.

ADN mak responsabiliza ba revizaun estrita husi projetus kapital dezenvolvimentu hanesan tuir mai:

- Avalia méritu/valor no viabilidade husi projetus kapital dezenvolvimentu;
- Superviziona, inspesiona no sertifika projetus kapital dezenvolvimentu;
- Jere projetus konstrusaun iha PDDII nia okos; no
- Fornese apoiu ba programa MDG Sucos.

(Âmbitu)

Manual ADN aponta ba ADN atu hala'o nia knar ho propriamente no efisientemente mandatu hirak-ne'ebé mak espesifikadu iha Dekretu-Lei. Manual ne'e mós aponta ba LMs (Liña Ministeriais) no organizasaun seluk ké involvidu hodi suporta korretamente sira nia papel no responsabilidade durante aprovizionamentu ba projetus kapital dezenvolvimentu.

Manual ne'e espesialmente fokaliza iha prosesu hirak tuir mai durante sira okupadu teb-tebes hala'o knar iha tempu agora daudaun.

- Verifikasaun ba Dokumentus Tenderizasaun
- Inspesaun ba Pedidu Pagamentu

(Kategoria husi Projetus/Fundus)

Kategoria projetu iha ADN mak hatudu iha Tabela 1, Kategoria Projetu iha ADN hanesan husi 2012, Tabela 2, Kategoria Projetu iha ADN hanesan husi 2013, no Tabela 3, Kategoria Projetu iha ADN hanesan husi 2014.

Manual ne'e separadamente formuladu bazea ba kategoria husi projetus iha konsiderasaun ba prosedimentu diferente no iha favorese ba Uza-na'in (Uzuáriu) sira.

Manual ne'e mós toma-konta ho Projetu Fundu da Infra-estrutura, Projetu Fundu Liña Ministeriais, Projetu Fundu PDID, no Programa Eletrifikasaun Nasional (PEN). Manual ne'e la toma-konta ba Emerjênsia, Adisional, SEFOPE, MDG, no Projetu Espesial iha ADN nia mahon.

Tabela 1. Kategoria Projetu iha ADN hanesan husi 2012

Klassifikasaun husi Projetu	**Fundu da Infra-estrutura**	**Liña Ministeriais**	**PDD I & II**	**PDID**	**PDL**	**MDG**	**Fundu Emerjênsia**	**Programa Elektrifikasaun Nasional (PEN)**	**Fundu Kontinjênsia**	**Projetus Espesial iha ADN nia okos**
Notifikasaun				[TBC]	Aprovizionamentu ne'ebé inteiramente iha Distritu	Uma Edifísiu	Só-de'it iha kazu emerjênsia	Dekretu Lei No: 40/2012	Apenas uja ba projetus la previstu iha orsamentu	Hafoin de instrusaun no aprovadu husi PM
Fonte Finansiamentu	Fundu Infra-estrutura	Orsamentu Liña Ministeriais	PDD I – MAEOT PDD II - ADN	[TBC]	MAEOT 1) no Administrasaun Distritu	ADN	Fundu Emerjênsia jere husi MoF	Fundu Infra-estrutura	Fundu Kontinjênsia jere husi MoF	Fundus alokadu ba ADN
Variedade Orsamentu	Bo'ot Liu-husi US$1.000.000	US$500.000 to'o US$1.000.000	PDD I to'o ba 150.000 PDD II 150.001 to'o ba 500.000	[TBC]	1 to'o US$100.000	Laiha Limitasaun	US$100.000 to'o US$150.000	US$100.000 to'o US$4.500.000	Máximu 2.000.000 (Prátika Normal)	Até 10.000.000

1) MAEOT: Ministério das Administração Estatal e Ordenamento Território

Tabela 2. Kategoria Projetu iha ADN hanesan husi 2013

Klassifikasaun husi Projetu	**Fundu da Infra-estrutura**	**Liña Ministeriais**	**PDD I & II**	**PDID**	**PDL**	**MDG**	**SEFOPE**	**Fundu Emerjênsia**	**Programa Elektrifikasaun Nasional (PEN) (PEN)**	**Adisional**	**Projetus Espesial iha ADN nia okos**
Notifikasaun					Aprovizionamentu ne'ebé inteiramente iha Distritu	Uma Edifísiu	Dekretu Lei LM	Só-de'it iha kazu emerjênsia	Dekretu Lei No: 40/2012	Apenas uja ba projetus la previstu iha orsamentu	Hafoin instrusaun no aprovadu husi PM
Fonte Finansiamentu	Fundu Infra-estrutura	Orsamentu Liña Ministeriais	PDD I – MAEOT PDD II ADN	ADN	MAEOT 1) no Administrasaun Distritu	ADN	SEFOPE	Fundu Emerjênsia jere husi MoF	Fundu Infra-estrutura	Fundu Kontinjênsia jere husi MoF	Fundus alokadu ba ADN
Variedade Orsamentu	Bo'ot Liu-husi US$1.000.000	US$500.000 to'o US$1.000.000	PDD I to'o ba 150.000 PDD II 150.001 to'o ba 500.000	PDD I to'o ba 150.000 PDD II 150.001 to'o ba 500.000	1 to'o US$100.000	Laiha Limitasaun	Laiha Limitasaun	US$100.000 to'o US$150.000	US$100.000 to'o US$4.500.000	Máximu 2.000.000 (Prátika Normal)	Até 10.000.000

Tabela 3. Kategoria Projetu Antisipada iha ADN hanesan husi 2014

Klassifikasaun husi Projetu	**Fundu da Infra-estrutura**	**Liña Ministeriais**	**PDID**	**MDG**	**SEFOPE**	**Fundu Emerjênsia**	**Programa Elektrifikasaun Nasional (PEN)**	**Adisional**	**Projetus Espesial iha ADN nia okos**
Notifikasaun				Uma Edifísiu	Dekretu Lei LM	Só-de'it iha kazu emerjênsia	Dekretu Lei No: 40/2012	Apenas uja ba projetus la previstu iha orsamentu	Hafoin instrusaun no aprovadu husi PM
Fonte Finansiamentu	Fundu Infra-estrutura	Orsamentu Liña Ministeriais	ADN	ADN	SEFOPE	US$100.000 to'o US$150.000	Fundu Infra-estrutura	Fundu Kontinjênsia jere husi MoF	Fundus alokadu ba ADN
Variedade Orsamentu	Bo'ot Liu-husi US$1.000.000	US$500.000 to'o US$1.000.000	PDD I to'o ba 150.000 PDD II 150.001 to'o ba 500.000	Laiha Limitasaun	Laiha Limitasaun	00 to'o US$150.000	US$100.000 to'o US$4.500.000	Máximu 2.000.000 (Prátika Normal)	Até 10.000.000

(Papel no Responsabilidade)

Manual ne'e iha espektativa prinsipal relasionadu ba organizasaun relevante sira atu toma responsabilidade hanesan:

- ADN tenke verifika no inspesiona ba dokumentus haktuir mensiona iha leten ne'ebé submetidu husi LM (Iha ne'e refere hanesan LM)/Projetu Na'in. ADN bele solisita LM/Projetu Na'in atu fornese dokumentus adisionais no aprezenta esplikasaun detalhadu, karik nesesáriu, durante verifikasaun no inspesaun;
- LM/ Projetu Na'in, tenke produz dokumentus reklamadu para verifikasaun no/ka inspesaun iha nia responsabilidade. LM/Projetu Na'in sei submete dokumentu ba ADN ho karta ida katak nia konfirma ona dokumentus hirak-ne'e hanesan na'in ba projetu. Nune'e mós aplika ba dokumentus adisionais ne'ebé solisitadu husi ADN; no
- Kontraktor/emprezariu tenke submete dokumentus reklamadu ba LM/Projetu Na'in bazea ba kontratu.

(Variedade husi Aplikasaun ba Kada Seitor)

Haktuir seitor sira, manual ne'e inklui Lista-Verifikasaun(Checklist) téknika ba Estrada & Ponte iha Fundu da Infra-estrutura, Fornesementu Be-mos iha PDID, no Eletrisidade iha PEN. Checklist téknika sei bele atu uza parsialmente ba kategoria seluk.

Favor notifika hanesan tuir-mai, wainhira aplikasaun iha kategoria seluk.

- Haktuir ba Estrada & Ponte, checklist téknika aponta hodi verifika dokumentus tenderizasaun no atu inspesiona ba pagamentu, utiliza teknolojia parte-sentral kona-ba sira ne'e.

Checklist la inklui Projetu Espesial. Projetu Espesial persija checklist téknika sobre dezeñu detaillu, supervizaun ba obra konstrusaun. Projetu PDID iha obra reparasaun wa'in. Checklist la inklui reparasaun dezeñu/obra.

- Relata ba Fornesementu/abastesimentu Be-mos, checklist téknika aponta atu verifika dokumentus tenderizasaun no atu inspesiona ba pagamentu sobre Projetus Abastisimentu Be-mos Rural, Checklist téknika ne'e mak prinsipalmente aplikável ba kategoria husi PDID no MDG kona-ba Fornesementu Be-mos Rural husi ESTATAL. Checklist téknika ne'e mak la aplikável ba kategoria husi FI no LM kona-ba Abastesimentu Be-mos Urbana husi DNSA. Checklist ida ne'e inklui dezeñu husi kadoras(pipeline). Checklist ne'e la inklui reparasaun ou hadi'a dezeñu/obra (Obras operasaun & manutensaun).
- Haktuir Eletrisidade, checklist téknika aponta hodi verifika tenderizasaun no atu inspesiona ba pagamentu sobre PEN, ida-ne'ebé mak projetu distribuisaun ba

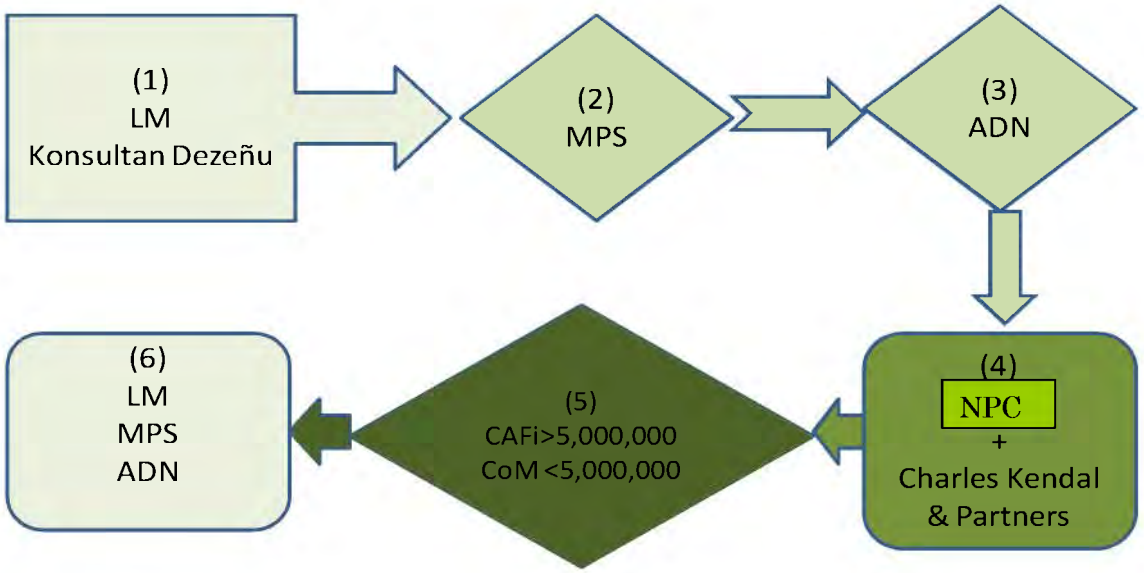
eletrisidade. Checklist téknika ne'e la aplikável ba projetu jerasaun (generation project) hanesan FI & LM, projetu transmissaun(transmission project) hanesan FI & LM, no projetu koneksaun ba uma (home connection project) hanesan MDG.

1. Projetu Fundu da Infra-estrutura (FI)

1.1. Avaliasaun Projetu molok Adjudikasaun Kontratu

1.1.1. Fluxograma

Figura 1-1. Fluxograma Projetus Fundu da Infra-estrutura



(1) LM/Konsultan Dezeñu
LM fornese TOR ba Konsultan ida atu dezeña hatuir ba programa hanesan projetu Ponte ká Estrada.
Konsultan Dezeñu kompleta Dokumentus Tender no submete ba ADN.

(2) MPS (Sekretaria Grande Projetu)
LM passa dokumentus hirak ne'e ba MPS atu verifika viabilidade husi projetu.

(3) ADN
ADN verifika dokumentus hotu-hotu, espesialmente sobre kustu nomós konstrusaun. Wainhira verifikasaun kompleta hafoin ADN sei passa ba NPC + CKP. Ida-ne'ebé NPC nudar Komissaun Aprovizionamentu Nasional, no CKP mak Charles Kendal & Partners.

(4) NPC + CKP
NPC, hamutuk ho CKP sei halo Tender.

(5) CAFi>5,000,000, CoM<5,000,000
CAFi sei foti desizaun, sé maka sei manan projetu ne'e.

(6) LM, MPS, ADN
LM, MPS, ADN ne'ebé responsabiliza ba projetu ne'e enkuantu projetu mak sei-iha prosesu implementasaun.

1.1.2. Orário husi Obra

(1) Rekerementu Tempu baVerifikasaun iha ADN
ADN kompleta verifikasaun ba dokumentus tender iha loron sanulu (10) kalendáriu nia laran depois de simu ofisialmente dokumentus rekeridu husi ADN.

(2) Tempu ba submissaun adisional, resubmissaun ká responde ba perguntas ADN LM tenke submete, resubmete ká responde ba ADN saída mak reklama ona husi ADN durante loron sanulu (10) kalendáriu nia laran depois de simu notifikasaun husi rekerimentu informasoens adianta-liu tan.

(3) Iha assuntu husi sub-klauza (2) iha leten, tempu ba ADN atu kompleta verifikasaun tenke ser atrazada tamba iha tempu hanesan wainhira LM gasta tempu ba submissaun adisional, resubmissaun ká responde.

1.1.3. Konfirmasaun ba dokumentus ne'ebé submete ona:

ADN sei verifika karik dokumentus reklamadu hotu-hotu manda tiha ona. Iha kazu buat ruma mak falta, ADN sei informa ba LM kona-ba ida ne'e no informa LM atu submete iha tempu espisifikadu nia laran.

(1) Karta Pedidu ba Verifikasaun Dokumentus Tender

(2) Rezumu projetu prepara husi LM; **Formatu – A**

(3) Dokumentus Tender : ADN sei konfirma rekerementu dokumentus ne'ebé submete ona, utiliza **Lista-Verifikasaun(Checklist) – A.**

1.1.4. Verifikasaun ba kondisaun pagamentu

ADN sei verifika kondisaun pagamentu ne'ebé adekuadu, utiliza **Lista-Verifikasaun /checklist– B** hanesan mensiona iha okos.

(1) Tempu Kompleta/ Periodu Konstrusaun
ADN sei verifika Tempu Kompleta ká Periodu Konstrusaun iha maneira ruma,
1) Verifika orário konstrusaun detallada fornese husi LM,
2) Hetan esplikasaun husi LM oinsá sira deside tempu ká periodu,
3) Kompara tempu kompleta ho obra seluk ne'ebé hanesan.
*Notifikasaun: Dadus passadu husi kondisaun kontratu hanesan tempu ba kompleta obra nian mak hatudu iha **Anexu(Attachment) A** anexada iha ne'e.*

(2) Periodu Manutensaun/Periodu Notifikasaun ba Estragu /Periodu Responsabilidade Estragu
1) Hetan esplikasaun husi LM oinsá sira deside tempu ká period,
2) Kompara tempu Kompleta ho obra seluk ké hanesan.

(3) Lei Governu nian
Lei Governu mak lei husi Demokrátika República de Timor Leste.

(4) Regulamentu Língua
Regulamentu Lingua mak Inglês.

(5) Garantia ba Exekusaun/ Garantia ba Exekusaun Diak
Montante Mínimu husi Garantia Exekusaun Diak mak persentajen husi Montante Kontratu hanesan ho dadus passadu ké hatudu iha **Anexu (Attachment) A** ne'ebé anexada iha ne'e.

(6) Atraza estragus ba obra / Multas
Liquidasaun Estragus/multas ba obras tomak mak 0.1% husi Presu Kontratu final kada loron, nu'udar hatudu iha dadus pasadu iha **Anexu/Attachment A** ké anexada iha ne'e,

(7) Montante Máximu ba Atraza Estragus
Montante Máximu ba Atraza Estragus / Multas ba projetu pasadu mak hatudu iha **Anexu (Attachment) A** ne'ebé anexada iha ne'e.

(8) Montante Provizóriu
Montante Provizóriu ba projetu pasadu mak hatudu iha **Anexu (Attachment) A** ne'ebé anexada iha ne'e.

(9) Total Pagamentu Adiantadu
Total Pagamentu Adiantadu ba projetu pasadu mak hatudu iha **Anexu (Attachment) A** ne'ebé anexada iha ne'e.

(10) Prosentajen ba Retensaun
Prosentajen husi Retensaun ba projetu pasadu mak hatudu iha **Anexu (Attachment) A** ne'ebé anexada iha ne'e.

(11) Limitasaun Husi Orsamentu Retensaun
Limitasaun Husi Orsamentu Retensaun ba projetu pasadu mak hatudu iha **Anexu (Attachment) A** ne'ebé anexada iha ne'e.
[Ezemplu A] Ponte Baer: 10% husi Montante Kontratu Aseita
[Ezemplu B] Projetu Reabilitasaun Estrada ADB: 10% husi Montante Kontratu Aseita

(12) Montante mínimu husi Sertifikasaun Pagamentu Provizóriu
Montante mínimu husi Sertifikasaun Pagamentu Provizóriu ba projetus pasadu mak hatudu iha **Anexu (Attachment) A** ne'ebé anexada iha ne'e.
[Ezemplu A] Ponte Baer: 5% Montante Kontratu Aseita
[Ezemplu B] Projetu Reabilitasaun Estrada ADB: La Aplikável

1.1.5. Verifikasaun Téknika utiliza lista-verifikasaun/Checklist

ADN sei verifika teknikamente dokumentu hirak ne'e hanesan BOQ, dezeñu no espesifikasaun, utiliza **Lista-verifikasaun/Checklist C.**

Lista Verifikasaun/checklist C1 ma uza ba projetu pontes no **C2** ba projetu estradas.

1.1.5.1. Projetu Ponte (*Lista verifikasaun- C 1)*

(1) Klassifikasaun Estrada

Konfirma klasse husi estrada ké konekta ho ponte;

1) Estrada National,
2) Estrada Distritu ká
3) Estrada Rural

(2) Karga Direta/ Beban Langsung

Konfirma katak Kategoria Karga Direta utiliza iha dezeñu ne'ebé adekuadu ba klasse estrada.

Iha assuntu estrada nasional nian, pontes mak preferível dezeñada Klase A husi Indonézia "Kódigu Dezeñu Pontes MBS" hatudu iha tabela tuir mai;

Klasse Estrada	Luan (m)			Karga Direta
	Trotoar/La'o ain fatin iha Liman Karuk	Estrada lolon	Trotoar/la'o ain fatin iha Liman Loos	
Klasse A	1.0	7.0	1.0	BM-100
Klasse B	0.5	6.0	0.5	BM-100
Klasse C	0.5	4.5	0.5	BM-70

Notifikasaun; Luan ké hatudu iha-leten ne'ebé Mínimu.

(3) Ponte nia Luan

Ne'e Preferível ba dezeñu iha konkordânsia ho tabela iha leten.

(4) Limitasaun kontra Planu Ponte

1) Fiu Aéreo (Kabel Udara)

Karik iha fiu sira ne'ebé bele impede konstrusaun ponte ká tráfiku depois de kompleta, konfirma ba LM katak fiu sira ne'e bele hasai ká muda fatin tiha,

2) Fiu / Pipa Hakoi

Karik iha pipa be'e/komunikasaun ida-ne'ebé bele efeita durante ká depois de kompleta, konfirma ba LM katak pipa sira ne'e bele hasai ká muda fatin tiha.

3) Akquizasaun Rai

Konfirma ba LM katak la iha rai privadu ne'ebé bele efeita ba konstrusaun.

(5) Levantamentu Jeotékniku no Topógrafu

1) Levantamentu Jeotékniku

ADN sei konfirma katak levantamentu Geográfiku kompletada tiha ona no rezultadu refletada ba dezeñu detalladu.

2) Levantamentu Topógrafu

ADN sei konfirma that levantamentu Topógrafu kompleta tiha ona no rezultadu refletada ba dezeñu detailladu.

(6) Materiais

(1) Estrutura Konkretu

Refere ba espesifikasaun iha-okos ká espesifikasaun seluk ruma ne'ebé utilizada jeralmente;

i. ITEM 506-Estrutura Konkretu,"Standard Specifications, Roads, Bridges and Airport, MTCPW, 2005"

ii. Sesaun 7.1 Konkretu & Sesaun 7.2 Prestressed Concrete, "General Specifications, August 2010, Projetu Melloramentu Estrada Nasional Indonesia Leste"

(2) Besi-Reforsamentu/Reinforcement Steel

Refere ba espesifikasaun iha-okos ká espesifikasaun seluk ruma ne'ebé utilizada jeralmente;

i. ITEM 505-Reinforcing Steel,"Standard Specifications, Roads, Bridges and Airport, MTCPW, 2005"

ii. Sesaun 7.3 Reinforcing Steel,"General Specifications, August 2010, "Projetu Melloramentu Estrada Nasional Indonesia Leste"

(7) Rezolvementu Kontra Susulin Mota

1) Protesaun ba Sasatan;abutment/Pilar;pier.

Husu ba LM oinsá sasatan no pilares mak adekuadu protejidu.

2) Liña-livre/Freeboard

Husu ba LM katak barak ká lae liña-livre/Freeboard, apuramentu/clearance entre nivel bee-ass no padiera/soffit husi ponte. Depende ba diskarga husi mota; maibe nia tenke ser liu husi 1.0m kontra inundasaun.

(8) Dezeñu

1) Dimensaun Maioria

Verifika dimensaun maioria hanesan ponte no espasu/span nia naruk, seksaun-kruzada/cross – section no kuatru ulun vertikal livre/vertical free head room hanesan iha-okos;

- Ponte and Espasu/Span Nia Naruk
  Sé relasaun entre ponte nia naruk no espasu/span nia naruk loloos?
- Seksaun-kruzada/ cross –section
  Sé luan husi trotoar/footway no Estrada-lolon/roadway tebes-duni ba klasse Estrada?
- Kuatru Ulun Vertikal/Vertical Head Room
  Iha assuntu através ponte hanesan ponte warren truss, tenke iha fatin ne'ebé nataton ba veíkulu sira passajen iha ponte ne'e. Baibain preferível hodi iha apuramentu/clearance vertikál liu husi 5.0m iha laletek husi pavimentu/pavement.

Klasse Estrada	Luan (m)		
	La'o Ain nia Fatin/trotoar Liman Karuk	Estrada Lolon	La'o Ain nia Fatin/trotoar iha Liman Loos
Klasse A	1.0	7.0	1.0
Klasse B	0.5	6.0	0.5
Klasse C	0.5	4.5	0.5

Notifikasaun; Luan ké hatudu iha-leten ne'ebé Mínimu.

2) Konteúdu husi Dezeñu

Jeralmente estruktura ponte nia dezeñu iha konteúdu hanesan tuir-mai:

- Vizaun Jeral
- Mapa Lokalizasaun
- Detallu husi Superestrutura
- Detallu husi Junta Expansaun
- Detallu husi Aguenta (Bearings)
- Detallu husi Sistema Drenajen
- Detallu husi subestrutura(Abutments;sasatan/Piers;pilares)
- Detallu husi Fundasaun
- Detallu husi Banku Protesaun, Revestimentu(revetment),
- Detallu husi Assessu Estrada.

3) Notifikasaun

Toma atensaun kona-ba "Notifikasaun" hatudu tiha ona iha dezeñu no verifika sira ne'e, wainhira hetan deskrisaun bei-beik:

- Grau Konkretu,
- Konteúdu sementi mínimu
- Rasio W/C Máxima
- Sasan husi Besi-betaun(Rebar)
- Kobertura Konkretu Mos
- Standard/padraun Naruk husi Rebar/besi-betaun.

(9) Lista kuantidades (BOQ)

Jeralmente Lista Kuantidade (BOQ) konsiste husi item sira iha-okos:

1) Rekerementu Jeral
2) Obra Atteru
3) Nanahe Superfisie Aspal
4) Fundasaun-Okos no Fundasaun Superfisie-Leten
5) Konstrusaun Ponte
6) Drenajen no Protesaun Deklive;Hali'is(Slope)
7) Estrutura de Diversos
8) Servisu Lor-loron

- Fora husi item sira ne'e, hili item maioria balun no husu LM oinsá sira hare kuantidades, presu unidade no montantes.

(10) Padraun Dezeñu

Husu LM padraun dezeñu ne'ebé mak utiliza ba dezeñu,

- AASHTO Code" Standard Specifications for Highway Bridges", Edisaun 16^0, 1996,
- Sistema Jestaun Ponte – Kódigu Dezeñu Pontes (Indonesia), ká
- Padraun Seluk

(11) Espesifikasaun Téknika

Husu LM Espesifikasaun Téknika ne'ebé mak utiliza ba konstrusaun,

- Ministériu das Obras Públiku "Standard Specifications, for Roads, Bridges and Airport, 2005", ká
- Espesifikasaun Seluk

1.1.5.2 Projetu Estrada (Lista-Verifikasaun/Checklist C2)

(1) Klasifikasaun Estrada

Verifika Klasse estrada ho nia luan. Liuliu Klasse A korresponde ba Estrada, Klasse B
ba Estrada Nasional, Klasse B ba Estrada distritu, no Klasse C ba Estrada rural.

Klasse Estrada	Luan (m)			
	Kabas	Estrada-lolon	Kabas	Total
Klasse A	1.0	7.0	1.0	9.0
Klasse B	1..0	6.0	1.0	8.0
Klasse C	1.0	4.5	1.0	6.5

Notifikasaun; Luan ké hatudu iha-leten ne'ebé Mínimu.

(2) Dezeña Karga

Sé karga roda ne'ebé mak utiliza ba dezeña própria? Husu LM oinsá sira deside karga ne'e.

(3) Orário Konstrusaun

Iha Dokumentus Tender, tenke iha deskrisaun ida husi Períodu Konstrusaun.
Husu LM atu hatudu orário konstrusaun sobre Períodu Konstrusaun ida-ne'ebé deside tiha ona, no konfirma katak konsiderada ba tempu udan.

(4) Ámbitu husi Obra

Verifika iha pontu hahú nian, pontu remata no distánsia total.

(5) Dezeñu Jeométriku

1) Kurvature(lengkungan) Mínimu
Sé kurvature mínimu nataton ba Projetu nia objetivu?
Husu ba LM ida-ne'ebé iha Padraun Dezeñu Geométriku ké desidi ona kurvature.
Refere ba "Road Geometry Design Standard, MOI, Jullu 2010".

2) Rai-lolon Subida Teb-tebes(Steepest Gradient)
Sé rai-lolon subida nataton ba Projetu nia objetivu?
Husu LM ida-ne'ebé iha Padraun Dezeñu ba Subida ké desidi tiha ona.
Refere ba "Road Geometry Design Standard", MOI, Jullu 2010.

(6) Sistema Drenajen

Verifika katak tipu, dimensaun, no arranju husi sistema drenajen mak Dezeñada própria ona.

(7) Moru Protesaun

Verifika katak Moru Protesaun ho tipu própriu no dimensaun mak arranjadu iha lokalizasaun adequadu.

(8) Baleta Rai-okos(Culvert)

1) Konfirma katak rai taka tomak baleta rai-okos(culvert) mak sufisiente.
2) Konfirma katak tipu no dimensaun husi culvert mak própriu ona.

(9) Estrada Alternativa

Konfirma oinsá atu tráfiku passa durante servisu iha assuntu husi rehabilitasaun ba estrada existe-hele, ká existe estradas alternativas.

(10) Akquizasaun Rai

Konfirma katak hetan rai hotu ké presija ba obra.

(11) Kondisaun Jeolojika

Konfirma katak laiha Kondisaun Jeolójika mak desfavorável. Kuandu iha problema ruma hanesan bele rezulta ba rai-halai ká rai-mamar, husu LM kontramedida/rezolvementu saida mak sira konsidera.

(12) Dezeñu

Verifika katak dimensaun maioria hanesan naruk husi Estrada-lolon, luan husi estrada-lolon no nia kabaas haktuir ho klasse estrada no dokumentu tender sira seluk. Nomós konfirma katak iha konteúdu dezeñu sufisiente atu konstrui ponte?.

(13) Lista Kuantidades (BoQ)

Verifika kuantidades, presu unidade sira no montante husi item maioria sira. Ida-ne'e rekomenda katak kustu unidade per kilómetru konstrusaun husi kada obra konstrusaun estrada mak rejista ona ba Evaluasaun grossu projetu iha futuru husi projetu estrada ké hanesan.

1.1.6. Rona husi LM

ADN sei rona husi LM oinsá sira atenji solusaun final ida-ne'e, iha lia fuan seluk, karik sira prepara ona ho alternativus seluk.

Ida-ne'e difisil tebes atu Verifika Dokumentus barak-liu ké simu iha loron oitoan-de'it. Nune'e maka rekomenda teb-tebes ba Enjeñeiru Foin-sa'e ADN sira atu estuda dokumentus tender no prepara perguntas iha akordânsia ho utilizaun manual ida-ne'e uja lista-verifikasaun ne'ebé anexada iha-ne'e antesipadamente husi nia-an rasik, hodi bolu Enjeñeiru LM no Konsultan dezeñu mai iha ADN, no husu perguntas no adjudika.

Ne'e sei ajuda Enjeñeiru ADN sira atu salva tempu ba verifikasaun, no hasa'e sira nia kapasidade.

1.1.7. Orário Verifikasaun:

ADN sei prepara orário, iha-ne'ebé disponivel ba funsionário ADN hodi kompleta verifikasaun obra iha tempu mak termina.

Orário Verifikasaun ba Dokumentus Tender mak apertada tebes, iha loron 10 kalendário deit hafoin simu dokumentus ne'ebé sei fó.

Ne'e rekomenda hodi prepara orário ba verifikasaun, mós haktuir orário, kontinua tuir ida ba ida, loron ba loron.

Ezemplu husi Orário Verifikasaun mak hatudu iha-okos ba operasaun loron 10.

[Loron 1 to'o 3)

(1) Verifika sé-karik dokumentus rekeridu hotu-hotu mak hatama utiliza **Lista-verifikasaun/checklist A**.

Karik lae, informa ba LM katak dokumentus la sufisiente, no verifikasaun sei

hahú husi loron tuir-mai bainhira simu dokumentus adekuadu.

(2) Wainhira dokumentus hotu-hotu mak submete ona, hahú verifika Kondisaun Pagamentu/apêndise ba Tender/ Kondisaun partikular, iha akordânsia ho Manual ne'e utiliza **Lista-Verifikasaun/Checklist B**.

(3) Prepara perguntas hatuir ba Manual ida-ne'e utiliza **Lista-Verifikasaun/checklist C, C1** ba Projetu Pontes, **C2** ba Projetu Estrada.

(4) Arranja intervista ho LM no nia Konsultan hodi husu perguntas téknika iha Loron Segundu.

[Loron 4 to'o 6]

(1) Husu perguntas sobre assuntu téknika ne'ebé ita-bo'ot prepara ona.

(2) Karik sira nia resposta mak la satisfatóriu ká k responde mak la klaru tamba dadus Ké falta, afirma ba sira atu prepara dadus sufisiente hodi esplika, hafoin arranja intervista tuir-mai. Loron tuir-mai husi intervista ikus-mai mak Loron Segundu husi verifikasaun.

(3) Husu LM atu kompleta korreksaun hotu-hotu, no submete fila-fali.

[Loron 7 to'o 10]

(1) Verifika de'it parte korrije ona, no manda dokumentu sira ba NPC, wainhira dokumentus korrijidu nian mak submete ona.

(2) Iha kazu katak korreksaun mak la satisfatóriu, halo hanesan pontu (3) iha leten.

1.1.8. Remédiu/Reparasaun

Iha kazu katak problema ruma mak hetan tiha ona hanesan rezultadu ida husi verifika Dokumentus Tender, ADN sei informa problem ne'e ba LM no oinsá atu hadi'a.

Obra verification sei demora husi lakon tempu ba resubmissaun.

1.1.9. FAQ (Frequetemente/Nafatin Husu Perguntas)

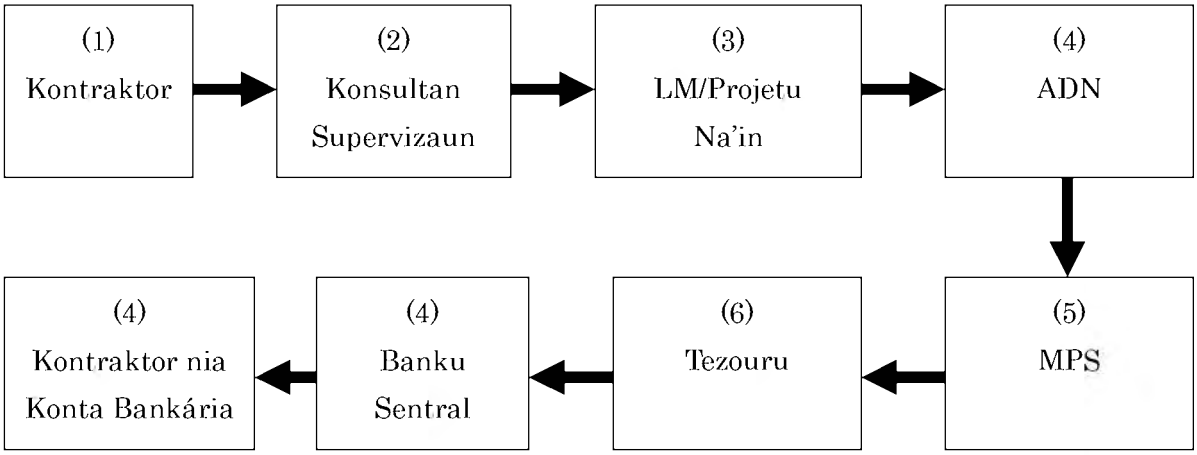
Iha kursu husi verifikasaun dokumentus tender, Enjeñeiru ADN sira sei iha perguntas no problema oi-oin, no rezolve problema hirak ne'e ho ajudu husi sira nia Enjeñeiru senior sira. Ida-ne'e rekomenda ba Enjeñeiru sira, sé-mak sei rezolve problemas sira ne'e, mantein inskrisaun iha "Livru FAQ".

Livru FAQ ne'e, nu'udar ezemplu ida ne'ebé anexada iha-ne'e hanesan "**Anexu/attachment B"**, bele ajuda enjeñeiru sira seluk ké hasoru problema hanesan.

1.2. Inspesaun Projetu & Rekomendasaun ba Pagamentu

1.2.1. Fluxograma

Figura 1-2. Floxograma husi Dokumentus Tederizasaun



(1) Kontraktor
Kontraktor prepara dokumentus ne'ebé presiza ba pagamentu, no haruka dokumentus hirak nee ba Konsultan Supervizaun.

(2) Konsultan Supervizaun
Supervizaun Konsultan reve dokumentus, emite/hasai Sertifikadu ida ba Pagamentu wainhira nia simu dokumentus sira ne'e, no haruka nia ho dokumentus pagamentu seluk ba LM/Projetu Na'in.

(3) LM/Projetu Na'in
LM/Projetu Na'in reve dokumentus, aprova Pagamentu wainhira nia simu dokumentus sira ne'e, no haruka orijinal ida no kopia tolu husi dokumentus pagamentu sira hotu ba ADN.

(4) ADN
ADN nia papel mak atu inspesiona projetus bazea ba dokumentus no situasaun iha terrenu.

(5) MPS
MPS emite enkarseramentu, Bilete Sertifikadu Pagamentu (CPV) no Ordem de Compra/Purchase Order (PO) no haruka ba Tezouru.

(6) TEZOURU
Tezouru ordena ba Banku Sentral (BPA) hodi selu ba Kontraktor.

(7) BANKU SENTRAL
Banku Sentral selu montante ba Kontraktor nia Konta Bankária iha-okos.

(8) Kontraktor nia Konta Bankária
Kontraktor simu pagamentu iha nia Konta Bankária.

1.2.2. Oráriu husi Obra

(1) Rekerementu Tempu ba verifikasaun iha ADN
ADN tenke kompleta inspesaun ba pedidu pagamentu iha
Loron (10) sanulu kalendáriu nia laran hafoin simu ofisialmente dokumentus ké rekere husi ADN.

(2) Tempu submissaun adisional, resubmissaun ká responde baperguntas ADN nia LM tenke submete, resubmete ká responde ba ADN saida mak rekere ona husi ADN iha loron 10 kalendáriu nia laran hafoin simu notifikasaun husi rekerementu informasaun adianta liu-tan.

(3) Enkuantu husi sub-klauza (2) iha leten, tempu ba ADN atu kompleta
Inspesaun tenke ser demora wainhira LM halo hela submissaun adisional, resubmissaun ká responde iha tempu hanesan.

1.2.3. Inspesaun Dokumentus

(1) Konfirmasaun ba Dokumentus ké submete ona: ADN sei simu dokumentus pagamentu original ida no kopia tolu husi LM/Projetu Na'in, no verifika karik dokumentus rekeridu hotu-hotu mak entrega tiha ona ké hatudu iha-okos utiliza **Lista-Verifikasaun/checklist D**. Iha kazu buat ruma falta, ADN sei informa LM kona ba ida-ne'e no informa LM atu submete dokumentus iha tempu espesifikadu nia laran.
   1) Karta Pedidu Orijinal (Invoice) husi Kompañia
   2) Submete Sertifikadu Pagamentu Orijinal ida-ne'ebé aprova ona husi Ministru ká Sekretáriu Estadu husi Liña Ministeriais
   3) Hatama kopia dokumentu husi Kontratu ké válidu hela no kompleta ho nia anexu
   4) Hatama kopia tolu husi Relatóriu Progressu Fíziku ne'ebé aprova ona husi Projetu Na'in
   5) No. TIN (Identificação do contribuite Registo Imposto)
   6) Kopia Númeru husi Konta Bankária husi Kompañia
   7) Submete "Sertidaun Dívidas" Kompañia nian ké válidu no tenke ser legalizada
   8) Hatama "Lisensa de Aktividades Kommérsiu" ké válidu no tenke ser legalizada
   9) Submete "Para Quem Interessado" ne'ebé válidu
   10) Karik, Pagamentu ba progressu fisiku 100%, tenke hatama karta "Termo Pre-HandOver/Entrega (PHO)
   11) Karik, Pagamentu ba Retensaun, tenke anexa "Termo de Entrega Final/Final HandOver (FHO)
   12) Lista Kuantidades (BoQ).

(2) Konfirmasaun ba Kondisaun Pagamentu hanesan pagamentu adiantadu no retensaun: Inspetór ADN halo serteza ba kondisaun pagamentu para kalkulasaun montante ne'ebé atu selu mak tebes haktuir ba deskrisaun husi dokumentu kontratu.

(3) Kalkulasaun iha folha lisitasaun

Uluk-nana'in, inspetór ADN refere ba BoQ iha dokumentus ne'ebé entrega ona husi LM, no mós prosentajen husi obra kompleta ona iha períodu ida-ne'e, exijidu husi kontraktor iha Pedidu/invoice. No mós nia halo dadus-apoiu/ backup data haktuir ba medida/sasukat ké nia halo ona iha ninian inspesaun terrenu, no hafoin kalkula kuantidade husi kada item. Nia formulasaun mak Progresu X Total Válor Kontratu.

(4) Konfirmasaun ba obra ké kompleta ona iha BoQ laran

Inspetór ADN kompara montante exijidu husi pedidu/invoice ho montante kalkualadu ona husi nia bazea ba inspesaun terrenu. Iha kazu katak montante Kalkuladu diferênsia hosi ne'ebé mak husi invoice, ADN sei kontakta kontraktor hodi hatudu rezultadu Kalkuladu no fó ba nia oportunidade ida atu esplika tamba-sá nia hasai konkluzaun ida-ne'e to'o halo desizaun final.

(5) Konfirmasaun ba orário obra

Inspetór ADN verifika Relatóriu Menssal Konsultan nian no kompara progresu husi orário planeadu tiha ona ho orário atual.

1.2.4. Inspesaun Terrenu

(1) Preparasaun

ADN manda Pedidu Preparasaun Inspesaun Terrenu ba LM utiliza **Formatu/Form B,** *loron* 7 iha loron servisu molok Inspesaun.

1) Assistente

LM sei konvida ema sira iha-okos iha inspesaun terrenu.

- Inspetór hosi ADN
- Enjiñeiru hosi Liña Ministériais
- Konsultan Supervizaun
- Kontraktor

2) Preparasaun

LM sei arranja buat-hirak iha-kraik iha inspesaun terrenu.

- Inskrisaun kona-ba Kontrola Kualidade
- Dezeñu
- Detalha husi Bill of Quantities (BoQ)
- Ekipamentu Medisaun/sukat
- Assistente ba Sukat/Medisaun

(2) Orário Verifikasaun

Inspetór ADN verifika progresu atual haktuir ba Relatóriu Progresu Menssal/ Monthly Progress Report.

(3) Kontrolu Kualidade/Quality Control

Inskrisaun husi kontrola kualidade ne'ebé avalia ona husi Inspetór ADN utiliza **Lista-Verifikasaun/checklist E.**

Item Verifikasaun iha checklist nu'udar ezemplu deit, nune'e item apropriadu tenke ser aumenta depende ba situasaun.

(4) Medisaun ba obra Kompleta ona

Objetivu husi medisaun mak atu konfirma katak kuantidade atual husi ítem ké kompleta mak igual hanesan ho kuantidade exijidu iha invoice.

Kuantidade husi item obra ké kompleta ona mak sukat utiliza ***Lista Verifikasaun/checklist F.***

Item iha checklist no esplikasaun hirak ne'e nu'udar ezemplu deit, no sira sei bele truka no/ká depende ba item sira iha tempu inspesaun.

(5) Remédiu/reparasaun(Hadi'a)

Bainhira ADN hetan buat ruma la konfirmadu ká obra la satisfeitu, ADN tenke ordena/haruka remédiu.

1.2.5. Notifikasaun husi Julgamentu kona-ba Pagamentu

Finalmente ADN julga montante pagamentu adekuadu,, notifika rezultadus no rekomendasaun pagamentu ba MPS, utiliza **Formatu/form C.**

ADN manda orijinal ida no kopia rua husi dokumentus pagamentu ba MPS, no mantein kopia ida iha eskritóriu ADN.

1.2.6. FAQ (Frequetemente/Nafatin Husu Perguntas)

Iha kursu husi inspesaun ba pagamentu, enjiñeiru ADN sei iha perguntas no problema oi-oin, no rezolve sira ne'e ho apoiu husi sira nia senior enjineiru sira. Ida-ne'e rekomenda tebes ba enjiñeiru sira, ba sé mak sei rezolve problema hirak ne'e, atu mantein inskrisaun iha "Livru FAQ".

Livru FAQ ne'e, nu'udar ezemplu ida ne'ebé anexada iha-ne'e hanesan "**Anexu/attachment B"**, bele ajuda enjeñeiru sira seluk ké hasoru problema hanesan.

FORMATU-A1 (Rezumu Projetu ba Projetu Pontes)

Data Submisaun/hatama						
Naran husi Projetu						
Ajénsia Implementador				Kontaktu Pessoál		
Konsultan Dezeñu				Kontaktu Pesoál		
Lokalizasaun/Fatin Projetu						
Mota						
Kategoria husi Fundu	Fundu da Infra-estrutura					
Kategoria husi Estrada	Estrada Nasional		Estrada Distritu		Estrada Rural	
Akquizasaun Rai/Pembebasan tanah						
Levantamentu kondisaun natural/ Natural Conditions Survey	Survei Topográfia			Survei Jeotékika		
Karga Direta/ Beban Langsung/Live Load						
Tipu Superestrutura/Type of Superstructure						
Tipu Subestrutura/Type of Substructure						
Tipu Fundasaun/Type of Foundation						
Espesifikasaun Téknika						
Padraun Dezeñu/Design Standards						
Nivel altura bee iha Liña-livre nia leten /Freeboard above High Water Level		m				
Orário Projetu ne'ebe hein-hela	Hahú		Ramata		Periódu Konstrusaun	Loron
Total montante husi Folin estimativa						
Ponte nia Dimensaun/Dimension of Bridge	Ponte nia Naruk	m	Espasu/Span	m	Luan	

Nota: 1)LM tenke enxe formatu ne'e, no anexa Dokumentu Tender para verifikasaun husi ADN.
2)Formatu ida ne'e aplikavel ba projetus ponte iha kategoriu seluk hanesan Projetus Fundus Liña Ministeriais.

FORMATU A2 (Rezumu Projetu ba Projetu Estrada)

Data Submissaun/hatama							
Naran Projetu							
Ajénsia Implementador				Kontaktu Pesoál			
Konsultan Dezeñu				Kontaktu Pesoál			
Lokalizasaun Projetu							
Fundu nia Kategoria	Fundu Infraestrutura						
Estrada nia Kategoria	Estrada Nasional		Estrada Distrital		Estrada Rural		
Tipu husi Pavimentu/Pavement							
Distánsia Mil/Mileage	Hahú		Ramata		Total Distánsia		km
Espesifikasaun Téknika							
Padraun/standart Dezeñu							
Padraun Dezeñu Jeométrika							
Laletek subida maka'as/Steepest Gradient		%					
Kurvatura minimu		m					
Oráriu ne'ebe hakarak ba projetu	Hahú		Ramata		Perlodu Konstrusaun		Loron
Total Montante husi estimasaun presu							

Nota 1) LM tenke enxe Formatu nee, no anexa ba Dokumentus Tender para verifikasaun husi ADN
2)Formatu ida ne'e aplikavel ba projetus ponte seluk iha kategoria seluk hanesan Projetus Fundu liña Ministeriais

Formatu B (Pedidu Preparasaun ba Inspesan terrenu)

REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE DO PREMÉIRO MINISTRO
AGÉNCIA DE DESENVOLVIMENTO NAÇIONAL

DATA

(Hato'o ba Sé)
LM

(ASSUNTU) PEDIDU PREPARASAUN BA INSPESAUN TERRENU

Nu'udar responde ba pedidu pagamentu ké submete ba ADN, ADN informa katak ..... ADN rekere ba LM atu prepara hirak-tuir-mai para hala'o inspesaun terrenu ho própriu no haktuir-orden.

1. Naran husi Projetu
2. Data husi Inspesaun Terrenu
3. Rekere prezensa husi
   1) Supervisor no Enjiñeiru(s) responsabelizada hosi LM
   2) Konsultan Supervizaun
   3) Jerente Terrenu hosi Kontraktor.
4. Preparasaun iha terrenu arranjada husi LM
   1) Inskrisaun/Records kona-ba Kontrolu Kualidade
   2) Drawings with completed construction included
   3) Detaillu husi BOQ
   4) Ekipamentu sukat, karik persija Teste Destrutivu/harahun(Destructive Testing)
   5) Assistente ba Medisaun/sukat(Measurement)

Husi ADN

CC.
Ba organizasaun relevante karik iha.

FORM C

REPUBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

No	RELATORIO INSPECSAUN NO RECOMENDASAUN BA PAGAMENTO			
1	Projecto nia Naran	*Sculpturing and installation of statues for santa cruz, Memorial Monument and King Dom Boaventura*		
2	Ministerio/Dono de Projecto	*Agencia Dezenvolvimento Nacional*		
3	Fontes de Fundos : (PDD I, PDD II,PDL,FI,Emergencia,MDG Suco,etc)			
4	Contractor	*PT. Siluet Nyoman Nuarta*		
5	Numero PO (Purchase Order)			
6		a. Distrito : Dili b.Sub distrito : c.Suco/Aldeia :		
a	Valor Contracto	a	$	738,888.00
b	Progreso fisico iha fulan kotuk	b		0.00%
c	Progreso fisico ate agora	c		50.00%
d	Valor Pagamento foer ate agora (gross)	(c-b)*a	$	369,444.00
e	Osan adiantamento nebe simu ona ....%	....%*a	$	-
f	Deducsaun adiantado ba pagamento ida ne'e ..%	(c-b)*e	$	-
g	Deducsaun retensaun ba pagamento ida ne'e 10%	0.1*d	$	36,944.40
h	Net pagamento depois de deducsaun ba retensaun	d-g	$	332,499.60
i	Net pagamento nebe atu selu ba pagamento ida ne'e	h-f	$	332,499.60
j	Total Net pagamento ate agora		$	332,499.60
k	Balansu depois de pagamento ida ne'e	(100%-c)*a	$	369,444.00
7	Observasaun ou komentario seluk :			

8	Recomendasaun ba MPS-MdF/Tezouro-MdF/Ministerio/Agencia Tutela Selu ho Montante (USD)		332,499.60		
9	Observasaun :		SIM	Komentarios Ruma	LAE
a	Tuir Dezenho ?				
b	Tuir BOQ ?				
c	Tuir Espesifikasaun ?				
d	Tuir Schedule curva S ?				
e	Tuir Termos de Contracto ?				
10	Data Inspecsaun		Data:	Fulan:	Tinan:
11	Enginheiro Nebe Halo Inspecsaun :	Assinatura:			Data :
	1. Naran : Eng. Jaquelina da Costa Sales				
	2.Naran :	Assinatura:			Data :
12	Verifikado Hosi :	Assinatura:			Data :
	Eng. Aleixo A. do Carmo				
13	Q.A	Assinatura:			Data :
	Ir. Esron St. Henuk MM, MPU				
14	Approvado Hosi :	Assinatura:			Data :
	Sr. Samuel Marçal Directur Geral - ADN.				

Checklist A

REPÚBLICA DEMOCRÁTICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL

Checklist husi Verifikasaun Dokumentu ba Dezeñu no BOQ

Naran husi Projetu :
Projetu Na'in :
Númeru Kontratu :
Data Simu dokumentu :

1. Karta Akumpañamentu..... ☐
2. Dezeñu tenke ser kompleta no hetan assinatura husi Obras Públika..... ☐
3. BOQ no Estimasaun Kustu hetan assinatura husi Obras Públika ..... ☐
4. Análiza Presu Unidade/Unit Price Analysis..... ☐
5. Soft copy husi dokumentus ida-ne'ebé mensiona iha-leten..... ☐
6. Espesifikasaun Téknika ..... ☐
7. Ida-ne'e tenke iha mós Análiza Kalkulasaun Estrutura no Hidrolójia, nomós dadus Topográfia..... ☐

Notifikasaun: Checklist ida-ne'e utiliza hodi konfirma katak dokumentus rekeridu hotu-hotu submetidu ona para verifikasaun dokumentu husi Projetu Fundu da Infra-estrutura baEstrada, Ponte, Portu & Irrigasaun.

Checklist A

REPÚBLICA DEMOCRÁTICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL

CHECKLIST DOKUMENTU TENDER BA PROJETUS KONSTRUSAUN EDIFÍSIU & MORU HALE'U ESKRITÓRIU

1. Dezeñu tenke ser aprovadu husi Obras Públika _____ ☐
2. Bill of Quantity (BoQ) tenke ser aprovadu husi Obras Públika _____ ☐
3. Estimasaun Kustu tenke ser aprovadu husi Obras Públika _____ ☐
4. Espesifikasaun Téknika tenke ser hetan husi Obras Públika _____ ☐
5. Submete file elektrónika ne'ebe salva iha CD laran _____ ☐
6. Karik Edifisiu mak nia ass mak liu andar 2, tenke ser anexada Estudu Viabilidade husi Rai ká rezultadus invertigasaun rai _____ ☐
7. Karik Edifisiu nia ass mak liu andar 2, tenke ser anexada Análiza Kalkulasaun Estrutura _____ ☐

Notifikasaun: Checklist ida-ne'e utiliza hodi konfirma katak dokumentus rekeridu hotu-hotu submetidu ona para verifikasaun dokumentu husi Projetu Fundu da Infra-estrutura ba <u>Edifisiu.</u>

Fundu Infrastructural	Checklist B (Kondisaun ba Pagamentu			Verifika husi	Aprova husi
Tipu Projetu	Jerál	Klasse Obra	Kondisaun husi Kontratu		

No. Kontratu		Data entrega	
Naran Projetu		Nivel	Verifikasaun ba Dokumentus Tenderizasaun
Ajénsia Implementasaun			

Lista Material	Pontus Verifikasaun	Data Verifikasaun	Marka Verifikasaun	Observasaun
	Ida nee atu konfirma katak dokumentus hotu-hotu entrega ona husi LM			**Dadus Passadu Baibain**
1	Tempu ba kompletu/ periodu konstrusaun (Time for completeion/Construction Period)			Orariu tempu detalliu rona husi LM
2	Periodu Manutensaun/Periodu Notifikasaun Estragu(Maintenance Period/Defect Notification Period)			Rona dadus passadu LM nian
3	Lei Governu/Governing Law			Lei husi RDTL
4	Regulamentu Lingua / Ruling Language			Ingles
5	Garantia Exekusaun/ Garantia Exekusaun Diak (Performance Security/Perfirmance Bond)			5-10% husi montante kontratu
6	Demora estragu ba obra/Multas (Maximum amount of delay damages)			0.1%/loron
7	Montante Máximu Ba Demora Estragu (Maximum amount of delay damages)			5-10% husi montante kontratu
8	Montante Provizóriu /Provisional Sum			15% husi kontratu
9	Total Pagamentu Adiantadu (Total Advance Payment)			10-20% husi kontratu
10	Persentajen ba Retensaun (Percentage of Retention)			5-10% husi kontratu
11	Limitada ba Orsamentu Retensaun/Limit of Retention Money			5-10% husi kontratu
12	Kuantidade mínimu husi Sertifikadu Pagamentu Provizóriu/ Minimum Amount of Interim Payment Certificates			1-5%

Notifikasaun: Dadus passadu ba kondisaun kontratu bele uja hanesan referensia ba Projetu Fundu da Infra-estrutura seluk alein estrada & Ponte.

	A	B	C	D	E	F	G	H	I	J
1										
2		Fundu Infrastructura	Checklist C1(Checklist Téknika ba Ponte)						Verifika husi	Aprova husi
3										
4		Tipu Projetu	Ponte	Objetivu	Verifikasaun Tékniku ba ponte					
5										
6		No. Kontratu					Data Submete	, 2012		
7		Naran Projetu					Faze	Verifikasaun ba Dokumentus Tenderizasaun		
8		Ajénsia Implementador								
9		Item Avaliasaun	Pontus Verifika				Data Verifika	Marka Verifikasaun	Obserbasaun	
10									Dadus Referidu	
11	1	Klassifikasaun Estrada/Road Classification	Klassifikasaun estrada Konfirma ona ka lae?						Rona husi LM	
12	2	Karga Direta/ Beban Langsung/Live Load	Sé-Karik karga direta adekuadu ba klassifikasaun karga?						Rona husi LM	
13	3	Ponte nia Luan/Bridge Width	Sé-karik viatura nia luan no númeru husi pista -trafiku(Lane) adekuadu?						Rona husi LM	
14			Sé-karik Passeiu(footway) nia luan apropriadu?						Rona husi LM	
15	4	Limitasaun kontra Planu Ponte/ Constraints against bridge plan	Sé konfirma katak laiha fiu eletrisidade/kabel kommunikasaun iha ponte nia leten?						Rona husi LM	
16			Sé konfirma katak laiha fiu ká kanu hakoi iha rai okos?						Rona husi LM	
17			Sé konfirma katak laiha problema akquizasaun rai?						Rona husi LM	
18	5	Levantamentu Jeotékniku & Topográfiku (Geotechnical & Topographical Survey)	Sé-karik levantamentu topográfiku hala'o ona, presiza dezeñu detailladu?						Rona husi LM	
19			Sé-karik levantamentu Jeotékniku, hala'o ona,presiza dezeñu detailladu?						Rona husi LM	
20	6	Materiais/Materials	Sé-karik betaun konkretu nia forsa adekuadu? Sé-karik forsa husi besi anilha homan reforsamentu adekuadu/reinforcement steel bar?						Rona husi LM	
21	7	Rezolvementu hasoru Mota nia Suli /Countermeasures against River Flow	Sé-karik Protesaun ba Sasatan(Abutment)/pilar(Pier)konsiderada própriu?						Rona husi LM	
22			Sé-karik liña-livre(Freeboard), apuramentu (clearance)ponte okos ba nivel altura husi bee, natoon?						Rona husi LM refere ba máteriais husi Lissaun Aula-laran kona-ba	
23	8	Dezeñu/Drawings	Verifika dimensaun bo'ot-liu						Dezeñu	
24			Sé iha konteúdu nataton husi dezeñu atu konstrui ponte?						Refere ba má Lissaun Sala-laran (5)	
25			sé apuramentu (clearance) vertikal entre plataforma/deck no estrutura kruzada ida-leten liu natoon ba víkulu entantu ba tipu-plataforma ponte-							
26	9	Lista kuantidades/ BoQ	Verifika kuantidades, presu unidade no montante husi item bo'ot-liu ruma?						BOQ/ Rona husi LM Refere ba Refere ba máteria Lissaun Sala-	
27	10	Padraun Dezeñu /Design Standards	Verifika Padraun Dezeñu ida-ne'ebé mak uza/adopta?							
28	11	Espesifikasaun Téknika /technical Specification	Verifika Espesifikasaun Téknika ida-ne'ebé mak uza/adopta?						Refere ba máteria Lissaun Sala-laran (5)	
29		*Notifikasaun: Checklist ida-ne'e bele uja hanesan referensia ba Projetu Fundu da Infra-estrutura seluk alein estrada & Ponte.*								
30										

Fundu Infrastructura	Checklist C2 (Teknika Verifikasaun ba Estrada)			Verifika husi	Aprova husi
	Tipu projetu	Estrada	Objectivu	Verifikasaun Téknika ba Estrada	

	No Kontratu			Data Submete	,2012
	Naran Projetu			Faze	Verifikasaun Dokumentu Tenderizasaun
	Ajênsia Implementador				

	Item Verifika	Pontu Verifika	Data Verifika	Marka Verifika	Referénsia
1	Klassifikasaun Estrada	Klasse saida mak husi estrada ne'e?			Rona husi LM
2	Dezeñu Karga	Karga Dezeñu saida mak uza ba Dezeñu estrada ne'e?			Rona husi LM
3	Orário Konstrusaun	Sé-karik periode konstrusaun apropriau?			Rona husi LM Orário Tempu Detaillu
4	Ámbitu husi obra	Konfirma original nian, Estrada nia rohan no naruk.			Rona husi LM Dezeñu
5	Dezeñu Jeométrika	Sé-karik volta kurvature/lengkungan belok mínimu própriu?			Rona husi LM Refere ba Lissaun aula-laran kona-ba ponte (7)
		Sé-karik subida rai-lolon makas(steepest gradient) própriu?			
6	Sistema Drenajen(drainage)	Karik sistema drenajen(drainage system) di'ak ona?			Rona husi LM
7	Moru Retesaun	Karik lokalizasaun, tipu, altura husi moru retensaun di'ak ona?			Rona husi LM Dezeñu
8	Baleta rai-okos/perit(Culvert)	Karik rai taka tomak baleta -rai-okos(culvert) ká lae?			Rona husi LM Dezeñu
		Karik tipu no dimensaun husi baleta-rai-okos(culvert) di'ak ona?			Rona husi LM Dezeñu
9	Estrada Alternativa	Entantu rehabilitasaun ba estrada ke existe-hela, Iha ká lae dalan alternativu ida?			Rona husi LM Dezeñu
10	Akquizasaun Rai	Karik hetan ona rai ne'ebe persija?			Rona husi LM
11	Kondisaun Jeolójika	Karik konsidera ona rai-mamar no rai-halai?			Rona husi LM
12	Dezeñu	Verifika dimensaun maioria/bo'ot			Dezeñu
		Karik iha konteúdu husi deseñu atu harii ponte?			Dezeñu
13	Lista Kuantidades/ BoQ	Verifika kuantidade, presu unidade no montante husi item maioria/bo'ot balun?			Dezeñu,BoQ Rona husi LM

Notifikasaun: Checklist ida-ne'e bele uja nu'udar referensia ba projetu estrada iha kategoria seluk hanesan Projetu Fundu Ministeriais.

Checklist D

REPÚBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL

Checklist Pagamentu ba Dokumentu husi Konsultan Supervizaun

Projetu nia Naran :

Na'in husi Projetu :

Número husi Kontratu :

Data Simu dokumentu :

1. Invoice iha Orijinal hatama husi Konsultan..... ☐
2. Sertifikadu Pagamentu iha Orijinal ne'ebé hetan aprovasaun husi Ministru ká Sekretáriu Estadu..... ☐
3. Submete kopia kompleta husi Kontratu Válidu ho nia anexu..... ☐
4. Hatama Relatóriu Menssal ne'ebé hetan aprovasaun husi Projetu Na'in..... ☐
5. Submete No. TIN (Identificação do Contribuite Registo Imposto)..... ☐
6. Número husi Konta Bankária..... ☐
7. Submete Sertidaun Dividas ne'ebé válidu no tenke ser legalizadu..... ☐
8. Submete Licença Actividades de Commercio e Económico ne'ebé válidu no legalizada..... ☐
9. Submite Para Quem Interessado ne'ebé válidu ..... ☐

Notifikasaun: Checklist ida-ne'e utiliza hodi konfirma katak dokumentus rekeridu hotu-hotu submetidu ona para dokumentu pagamentu husi Projetu Fundu da Infra-estrutura ba Estrada, Ponte, Portus & Irigasaun

Checklist D

REPÚBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL
CHECKLIST FUNDU DA INFRA-ESTRUCTURA BA PAGAMENTU

Naran husi Projetu :
Naran husi Kompañia :
Número Kontratu :
Valor husi Kontratu : US$
Valor husi Invoice/Pedidu : US$

No	Dokumentus ne'ebé submetidu iha Invoice laran	Resultadu		OBS
		Sim	Lae	
1	Kontratu sei moris hela (mais menus fulan ida antes data prazu hotu/ expired date). Valor kontratu mak liu husi >500,000 tenke ser sujeitada hodi hetan Karta Justifikasaun husi Tribunal das Contas, Tribunal Superior das Administrativas de Timor Leste.			
2	Submete Sertidaun Dívidas ne'ebé válidu no tenke ser legalizadu			
3	Submete No. TIN (Identificação do Contribuite Registo Imposto)			
4	Submite Para Quem Interessado ne'ebé válidu			
5	Submete Licença Actividades de Commercio e Económico ne'ebé válidu no legalizada			
6	Submete Invoice Orijinal 1 (kopia 5) no hetan aprovasaun husi Tékniku LM			
7	Pedidu husi Karta Pagamentu			
8	Sertifikadu Pagamentu aprovada husi Liñe Ministriais			
9	Número Konta Banária husi Kompañia			
10	Recommendasaun Pagamentu hosi ADN			
11	Garantia ba Exekusaun di'ak tenke ser rai iha banku nu'udar garantia, ida-ne'e hanesan ho Valor Adiantadu ká bazea Termos husi Kontratu			
12	Invoice tenke ser anexada ho Relatóriu Progressu Mensal			
13	Kompañia Internasional tenke anexa sertifikadu hosi Organizasaun Padraun Internasional (ISO)			

Notifikasaun: Checklist ida-ne'e utiliza hodi konfirma katak dokumentus rekeridu hotu-hotu submetidu ona para dokumentu pagamentu husi Projetu Fundu da Infra-estrutura ba Edifisiu, Estrada, Ponte, Portu, Irigasaun, etc.

	Fundu Infraestrutura	Checklist E (Kontrolu Kualidade)			Verifika husi	Aprova husi
	Tipu Projetu	Estrada & Pontes	Objetivu	Kontrolu Kualidade		

	No. Kontratu		Data Submete		
	Naran Projetu		Faze	Inspesaun ba Pedidu Pagamentu	
	Ajénsia Implementador				

	Item Verifika	Pontus Verifikasaun	Data Verifika	Marka Verifika	Referénsia
1	Konkretu/Concrete	Forsa Kompressivu/to'os iha loron 28			506.4.1 Tabela 506.2 LIVRU MEAN, MTCPW, 2005
2		Lakon Frakeza/Slump Loss			506.4.1 Tabela 506.2 LIVRU MEAN, MTCPW, 2005
3		Medida/ukuran deseñada ba massa grossu/Coarse aggregate			506.4.1 Tabela 506.2 LIVRU MEAN, MTCPW, 2005
4	Besi-betaun/Rebar	Baibain silu besi-betaun/bar ba reforsamentu konkretu ké utiliza iha relasaun ho AASHTO M 31 (Grau 400)			911.1 LIVRU MEAN, MTCPW, 2005
5	Barkakas/lubang berongga-rongga (Weep Holes)	Weep holes iha moru nia distansia baibain la liu husi 2 Sentimetru iha klaran ba sentru no nia diametru mak 50mm .			606.3.7 LIVRU MEAN, MTCPW, 2005
6	Cement/ Sementi	Sementi Portland, AASHTO M85 mak nafatin utiliza ba Konkretu Strutura			901.1 LIVRU MEAN, MTCPW, 2005
7	Piling/Pilar	Âmbitu , teste pilares no teste karga/naha			ITEM 501, LIVRU MEAN, MTCPW, 2005
8	Superfisie-okos/Subgrade	Tolerânsia superfisie-okos nia lolon			206.3.2 LIVRU MEAN, MTCPW, 2005
9	Fundasaun-okos/Subbase	Rekerementus material ba subbase			302.2 LIVRU MEAN, MTCPW, 2005
		Toleransia subbase nia lolon			302.3.5 LIVRU MEAN, MTCPW, 2005
10	Nanahe superfisie aspal/Base Course	Masa nahe superfisie aspal lolon/Aggregate Surface Course			401 LIVRU MEAN, MTCPW, 2005
		Tratamentu Alkatraunlolon/Bituminous Surface Treatment			405 LIVRU MEAN, MTCPW, 2005
		Penetrasaun Alkatraun Pavimentu Macadam/Bituminous Penetration Macadam Pavement			406 LIVRU MEAN, MTCPW, 2005
		Alkatraun Estrada kahur ba Nanahe superfisie aspal/Bituminous Road Mix Surface Course			407 LIVRU MEAN, MTCPW, 2005

Notifikasaun: 1) Wainhira Utilizasaun Checklist ne'e, ne'e mos refere ba materiais husi Lisaun Sala-laran Ponte (5).

2) Checklist ida-ne'e bele uja nu'udar referensia ba projetu ponte iha kategoria seluk hanesan projetus Lina Ministeriais.

	Fundu Infraestrutura	Checklist F (Medisaun/Sukat)			Verifika husi	Aprova husi
	Tipu Projetu	Estrada & Pontes	Objetivu	Medisaun/Sukat		

	No. Kontratu		Data Submete	
	Naran husi Projetu		Faze	Inspesaun ba Pedidu Pagamentu
	Ajénsia Implementasaun			

	Item Verifika	Pontus Verifikasaun	Data Verifika	Marka Verifika	Referânsia
1	Fundasaun Superfisie Lolon/Leten(Base Course)	Sukat naruk no luan husi obra remata ona iha periódu ida-ne'e, Kalkula volume base course utiliza dezeñu nia mahar husi baze.			Desenu & Lista kuantidade (BoQ)
2	Pavimentu(Pavement)	Sukat naruk no luan husi obra remata ona iha periódu ida-ne'e, Kalkula area pavimentu(pavement)			Desenu & Lista kuantidade (BoQ)
3	Drenajen Limpa(Drainage Cleaning)	Sukat naruk no luan husi obra drenajen Limpa ne'ebé remata ona iha periódu ida-ne'e			Desenu & Lista kuantidade (BoQ)
4	Plester Fatuk Baleta sorin(StoneMasonry Side Ditch)	Sukat naruk nesesáriu husi kada sorin no nia luan, Kalkula volume obra remata ona iha periódu ne'e.			Desenu & Lista kuantidade (BoQ)
5	Lutu seguransa iha estrada ninin(Railing)	Sukat total naruk no númeru/jumlah husi Postu Gia/matadalan			Desenu & Lista kuantidade (BoQ)
6	Markasaun estrada (Road Marking)	Sukat total naruk			Desenu & Lista kuantidade (BoQ)
7	Sinál estrada (Road Sign)	Sura númeru/jumlah husi sinál estrada			Desenu & Lista kuantidade (BoQ)
8	Moru Satan Anin (Wing Wall)	Sura dimensaun no kompara ho deseñu			Desenu & Lista kuantidade (BoQ)
9	Balok plataforma/lantai (Deck Slab)	Sura dimensaun no kompara ho deseñu			Desenu & Lista kuantidade (BoQ)
10	Balok Aproxima/hakbesik (Approach Slab)	Sura dimensaun no kompara ho deseñu			Desenu & Lista kuantidade (BoQ)

Notifikasan: Checklist ida-ne'e bele uja hanesan referensia ba projetus estrada no ponte iha kategoria seluk hanesan Projetu Liña Ministeriais.

Naran husi Projetu	Eskema Irrigasaun Tono	Projetu Altu Estrada Suai-Beaço	Ponte Comoro 2	Ponte Baer	Projetu ADB	Projetu Irrigasaun Caraulun	**Alkansamentu Kómun iha Projetu Passadu**
Ajênsia Implementador	Ministériu de Agrikultura	Ministériu das Obras Públikas	ADN	Ministériu das Obras Públikas			
Tempu para Kompleta	-	-	Loron 270	Loron 480			
Periódu Manutensaun	Loron 90	Loron 365	Loron 90	Loron 540	Loron 365		**90-540**
Lei Governu nian	Lei husi Timor Leste	Lei husi Timor Leste	Lei husi Timor Leste	Lei husi Timor Leste	Lei husi Timor Leste		**Lei husi Timor Leste**
Regulamentu Língua	Inglês	Inglês	Inglês	Inglês	Inglês		**Inglês**
Garantia ba Exekusaun	10%	5%	5%	10%	5%	7.50%	**5-10%**
Demora hadi'a estragu	0.1%/Loron	0.1%/Loron		0.1%/Loron	0.1%/Loron	0.1%/Loron	**0.1%/Loron**
Montante Máximu husi Demora hadi'a Estragu	10%	5%		10%	10%		**5-10%**
Montante Klausula/ Provisional Sum				15%	15%		**15%**
Total Pagamentu Adiantadu/Advance Payment		15%	20%	10%	15%		**10-20%**
Porsentajen husi Retensaun		5%	5%	10%	10%		**5-10%**
Limitasaun husi Orsamentu Retensaun		5%		10%	10%		**5-10%**
Montante Mínimu ba Pagamentu Provizóriu		1%		5%			**1-5%**

Notifikasaun: Data passadu hirak-ne'e husi kondisaun kontratu bele mos uja nu'udar referensia ba projetus Fundu da Infra-estrutura seluk alein estrada & Ponte.

Anexu B1, Livru FAQ

Livru FAQ

Sé mak hasoru problema ká perguntas, no hetan ona solusaun/respostas tenki tau rejistus hodi ajuda kolega sira ne'ebé bele hasoru problema hanesan iha futuru.

Naran husi Projetu	Ponte Tono			
☐ Estrada	☑Ponte	☐Irigasaun	☐Portu	☐Sira seluk
Verifikasaun ba DokumentusTender		☐Inspesaun ba Pagamentu Provizóriu		
Naran	XXX	Data	04 Sept. 2013	
Problemas ká Perguntas ne'ebé hasoru				
Problem/Question Dezeñu husi ponte hatudu katak ponte nia naruk maka metrus 360, maibé iha parte luan husi husi mota hakur ba haré hela-oitoan metrus 500. Oinsá tenke ser desidi ponte nia naruk?				
Solusaun ká resposta ne'ebé hetan				
Solusaun/Resposta Baibain ne'e mak magnétiku katak ponte mak igual ba ká naruk-liu duké mota nia luan. Maibé tau iha konsiderasaun faktu katak harí ponte naruk ne'e karun, forte no asegura protesaun mota-ninin dalaruma bele razoável. Antes desidi ponte nia naruk, iha alternativu rua, ponte naruk-liu ká asegura protesaun mota-ninin, tenke ser kompara.				
Naran husi Enjiñeiru Senior ne'ebé konsulta ba	Mr. YYY			

Anexu B2. Livru FAQ

Livru FAQ

Sé mak hasoru problema ká perguntas, no hetan ona solusaun/respostas tenki tau rejistus hodi ajuda kolega sira ne'ebé bele hasoru problema hanesan iha futuru.

Naran husi Projetu	Ponte XXX			
☐Estrada	☑Ponte	☐Irigasaun	☐Portu	☐Sira seluk
Verifikasaun ba Dokumentus Tender		☐Inspesaun ba Pagamentu Provizóriu		
Naran	XXX	Data	04 Sept. 2013	
Problemas ká Perguntas ne'ebé hasoru				
Problema/Pergunta Iha Dezeñu husi ponte, elevasaun ba estrada leten ne'ebé hatudu. Oinsá ita tenke verifika elevasaun ne'ebé razoável?				
Solusaun ká resposta ne'ebé hetan ona				
Solusaun/Resposta Mais-menus pontu tolu mensiona iha-okos tenke ser verifika; 1) Kurva Vertikal ba elevasaun Estrada iha ponte lolon tenke konekta kaber ho assesu estrada? 2) Elevasaun husi Estrada lolon iha ponte altura/aas nataton duké ba assessu estrada. Kazu-kontráriu, dalaruma bele iha bee-nalihun iha Estrada klaran husi ponte hafoin udan. 3) Baze husi estrutura ponte tenke ser mais-menus metru ida altura/aas-liu duké altura nivel bee husi mota.				
Naran husi Enjiñeiru Senior ne'ebé konsulta ba	Mr. YYY			

Anexu B3. Livru FAQ

Livru FAQ

Sé mak hasoru problema ká perguntas, no hetan ona solusaun/respostas tenki tau rejistus hodi ajuda kolega sira ne'ebé bele hasoru problema hanesan iha futuru.

Naran husi Projetu	Ponte Tono			
☐ Estrada	☑Ponte	☐ Irigasaun	☐Portu	☐sira seluk
Verifikasaun ba DokumentusTender		☐Inspesaun ba Pagamentu Provizóriu		
Naran	XXX	Data	04 Sept. 2013	
Problemas ká Perguntas ne'ebé hasoru				
Problema/Perguntas Sé iha métodu di'ak ruma ba revista besik-liu kustu konstrusaun husi ponte ida ne'ebé haruka tiha ona ba ADN hosi LM para verifikasaun ba Dokumentus Tenderizasaun?				
Solusaun ká resposta ne'ebé hetan ona				
Solusaun/Resposta Presu Unidade, total kustu konstrusaun desidi ba area Estrada lolon husi ponte, ba ponte Comoro fo'un mak liu duké $8000 kada metru eskuadradu husi area Estrada lolon. Ne'e hare-hanesan karun hosi experiensia uluk nian. Ida-ne'e rekomenda katak ADN sei kolekta kustu unidade husi ponte sira, ho kustu unidade ida-ne'ebé husi ponte fo'un ida mak kompara ba no verifika karik ne'e la do'ok liu hosi dadus ne'ebé akumula ona.				
Naran husi Enjiñeiru Senior ne'ebé konsulta ba	Mr. YYY			

2. Projetu PDID

2.1 Evaluasaun Projetu antes adjudikasaun Kontratu

2.1.1 Fluxugrama

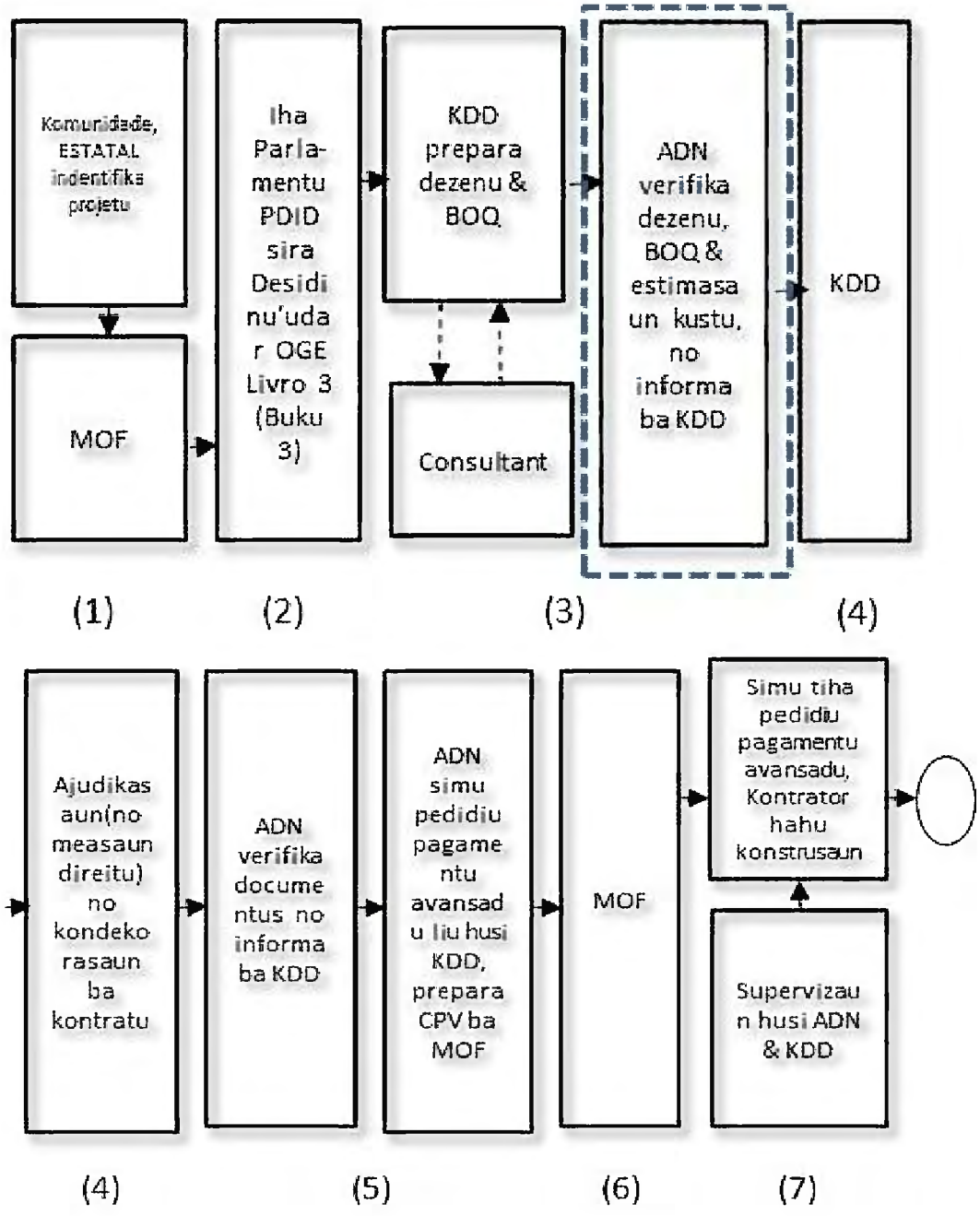


Figura 2-1. Fluxugrama ba Evaluasaun projetu antes ajudikasaun kontratu

(1) Indentifikasaun projetu husi ESTATAL atu submete ba MoF
Komunidade fo proposta ba ESTATAL halo identifikasaun ba projetu PDID. Depois de identifikasaun ESTATAL submete ba MoF (Divizaun planu orsamentu) atu tau hamutuk iha lista prijetu PDID.

(2) Approvasaun Parliamentu
MoF, (Divizaun Planu e Orsamentu) prepara hotu lista Projeitu no sei submete ba iha Parlamentu atu halo aprovasaun ba Projetu PDID II hodi implementa iha Distrito.

(3) Verifikasaun Dezeñu no BoQ husi KDD
KDD ho Konsultant Prepara dezeñu no BoQ hafoin submete mai ADN para halo verifikasaun ba volume, kustu no dezeñu. Verifikasaun hotu ADN submete direta ba iha KDD hodi prepara prosesu ba adjudikasaun
(4) Rezultadu Verifikasaun.
Rezultadu verifikasaun submete ba KDD (Komisaun Dezenvolvimentu Distritu) ne'be atu prepara dokumentu kontratu no kontinua tuir ajudikasaun kontratu ho kontrator ba inisiu projetu.
(5) Verifkasaun Dokumentus Kontratus husi ADN
ADN (Eng. ADN iha Distritu) sei Verifika dokumentus kontratus no informa ba AND Nasional atu bele prepara CPV(pagamentu de kompromisu vale) hodi prosesu ba pagamentu adiantamentu 25 %.
(6) ADN no MoF
ADN prepara hotu CPV no PO (orden kompara) atu submete ba MoF (Treasury) atu sira hare no MoF sei haruka ba BC (Bankun Central), BC halo pagamentu ba iha konta Bankaria kontrator nian ida-idak iha Banku.
(7) Kontrator no AND
Kontrator simu tiha orsamentu Adiantamentu husi banko sei hala'o konstrusaun tuir tempu nebe determina ona iha kontratu no ADN sei halo monitorizasaun no supervisaun ba Projetu PDD II.

2.1.2 Orarío husi Obra

(1) Presiza tempu ba verifikasaun iha ADN
ADN tenke kompletu verifikasaun dokumentu ba pedidu pagamentu iha loron tolu 3 depois simu ofisialmente husi KDD.

(2) Tempu ba submisaun adisiona, halo submisaun fila fali ka resposta ba AND pergunta, KDD sei submete, submete fila fali ka resposta ba ADN iha semana ida (1) depois emisaun notísia husi ADN ne'ebé husu informasaun kontinuidade.

(3) Iha kazu pontu (2) iha leten, tempu ba ADN atu halo kompletu verifikasaun sei ajusta ho KDD ne'ebé foti submisaun adisiona, halo submisaun fila fali ka resposta.

2.1.3 Konfirmasaun ba Dokumentus ne'ebé submete ona: (aplikavel fornesementu bee mos ba area rurais)ADN sei verifika se dokumentus hotu ne'ebé presiza simu tiha ona. Karik iha buat falta, ADN sei informa KDD kona bá ne'e no intruza KDD atu submete iha tempu espesífika ona.

(1) Ezbosa Projetu prepara husi KDD
Ne'e informasaun baziku nebe nesesariu ba ADN nia verifikasaun.KDD sei prepara esbosu projetu, iha formatu -A no Formatu –B.
(2) Ezbosu Dokumentus Kontratu: ADN sei konfirma dokumentus hotu ne'ebé submete *ona, uza* Lista Verifikasaun-A

1) Projetu Adverstimentu
2) Kondisaun Kontratu
3) Dadus Kontratu
4) Kuantidade Projetudelei
5) Espesifikasaun Téknika
6) Dezeñu
7) Buat seluk ne'ebé se presiza

2.1.4 Verifikasaun Téknika Utiliza Lista verifikasaun: (aplikavel ba setor fornesementu bee mos ba area rual)

AND sei verifika teknikamente dokumentus hotu BOQ, dezenu no espesifikasaun sira, usa lista verifikasaun B1 to B3 ba setor fonesementu bee moos ba rural.

Lista verifikasaun B1 no B3, prepara ona atu hare fila fali no kontrola konteudu espesifikasaun téknikau no BOQ repetivamente, husi pontu de vista enjeñeiru nian.

Nuudar orientasaun revizaun tuir padraun espesifiku tékniku nian, BOQ no dezeñu husi RWS (Fornese bee moos ba rural) atualmente iha DNSA nia mahon. lista verifikasaun ida ne'e sei hare fali bainhira kompletu ona.

Lista verifikasaun B3-1 to'o B3-2 relasiona ho aspetu planu no dezenu RWS.

Lista verifikasaun B3-1 Espesifikamente ba RWS depende ba tempu udan bee mota nian sai bee matan, enkuantu B3-2 ba sira nebe depende ba bomba liman ka posu nebe ke'e ho liman.

2.1.5 Rona husi KDD

ADN sei rona husi KDD oinsa atu foti solusaun ikus, iha liafuan seluk mesmu sira kompara ho alternativu seluk. Data no informasaun nebe presiza ba verifikasaun ezbosu dokumentu kontratu espesifika ona iha tabele formatu no lista verifikasaun iha leten.

2.1.6 Orario verifikasaun

ADN sei verifika ezbosu dokumentus kontratu nian iha loron tolu (3) nia laran (3) loron servisu nian uza formatu A ba B no lista verifikasaun A ba C. Iha kazu ne'e se dokumentu submete la kompletu ka la tuir manual ADN nian, ADN sei foti prosedimentu nesesariu ba klarifikasaun inklui emisaun husi karta klarifikasaun, ka planu enkonrtu ida atu bele halo konfirmasaun ho KDD.

2.1.7 Remédiu/Reparasaun

Iha kazu ne'e se hetan problema iha ezbosu dokumentus kontratus, ADN tenke informa ba KDD kona ba problema refere no oinsa hadi'ak. Prosesu sei atraza konforme verifikasaun nee

2.1.8 FAQ (Frequentamente/nafatin Husu perguntas)

Iha kursu verifkasaun ezbosu dokumentu, enjiñeiru ADN sei hetan varius perguntas no problema sira. Perguntas no problema ne'e sei supera ho ajuda husi enjiñeiru senior sira. Ne'e dezejavel atu manten nafatin rejistu iha " Livru FAQ " husi enjiñeiru sira. Livru FAQ bele ajuda enjiñeiru seluk ne'ebe karik hetan problema hanesan.

2.2 Project Inspesaun ba pagamentu & Recomendasaun ba pagamentu

2.2.1 Fuxograma (Flow Chart)

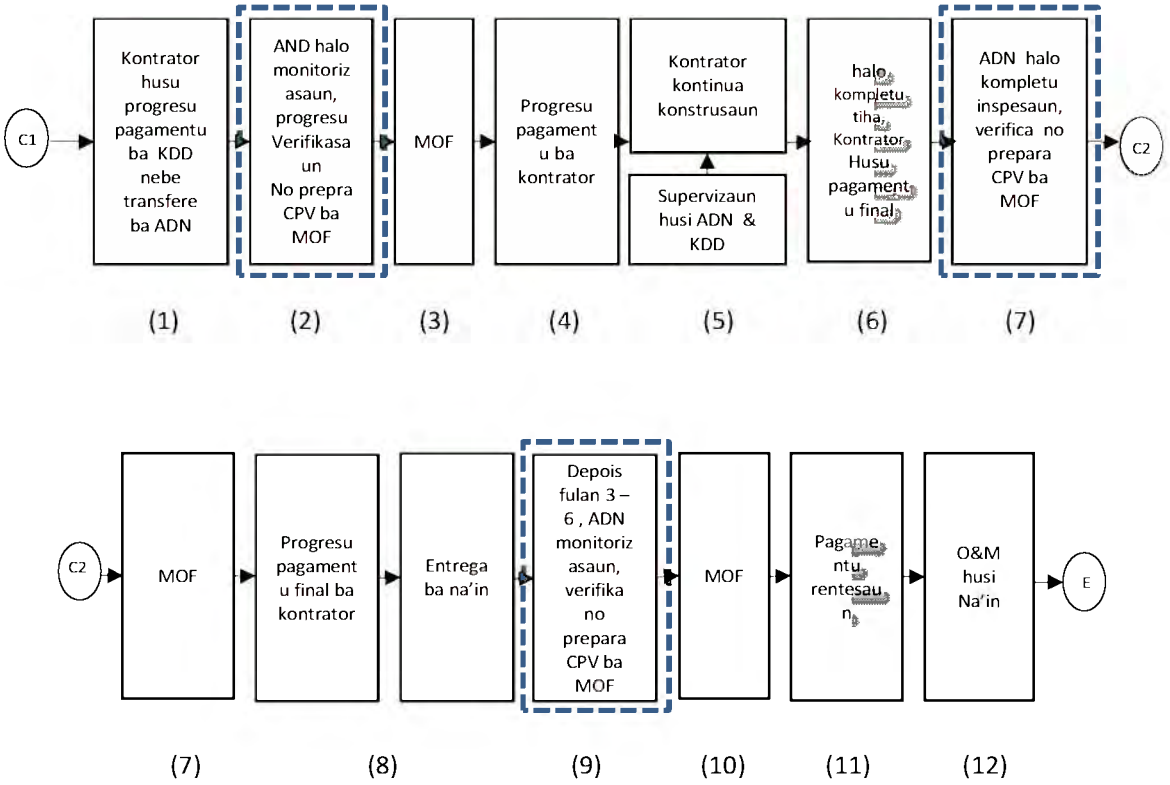


Figure 2-2. Fluxograma ba pagamentu

(1) Pedidu Pagamentu Progresu Husi Kontrator

Kontrator halo pedidu pagamentu ba progresu liu husi KDD nebe sei submete ba ADN.

(2)ADN Halo Monitorizasaun

Kontrator husu pedidu pagamentu progresu ba KDD ne'ebe sei transfere ba ADN. Simu husi ADN,Enjiñeiru ADN monitór no inspesaun ba progresu servisu iha terrenu, no sei prepara verifika sertifikadu pagamentu ba progresu, bainhira verifikasaun razoavel ona no halo rekomendasaun ba ADN (finansa) atu prosesu pagamentu.

(3) ADN (Finansas ADN) Prepara CPV no Submete ba MoF

Engeñeiru ADN iha distritu submete karta rekomendasaun pagamentu progresu ba ADN Nasional, ADN (Finansas ADN) prepara CPV bazeia ba rekomendasaun husi ADN engeñeiru distritu no submete ba MoF (treasury).

(4) MoF Halo Pagamentu

MoF simu dokumentus husi ADN (Finansas ADN) bazeia ba pedidu Progresu husi kompañia no relatoriu husi enjeñeiru ADN iha distritu, MoF sei submete ba BPA no BPA sei selu ba kompañia tuir konta bankaria nebe kompañia iha.

(5) Kontinuasaun obra husi kontraaktor

Kontraktor simu progresu pagamentu hosi Banku, ba kontuasaun husi obra. Durante periodu konstrusaun, ADN & KDD copera atu monitoriza no

superviziona ba obra.

(6) Submisaun ba pedido pagamentu progresu final husi kontraktor

Karik progresu fiziku husi konstrusaun atinzi to'o 100%,kontraktor sulisita pagamentu progresu final ba AND liu husi KDD enjeñeiruADN hala'o inspesaun terrenu ba verifikaasaun no rekomendasaun ba AND(finansa), ida-nebe sei perpara COV para prosesu pagamentu final.

(7) ADN & MoF

Bazeia ba pedidu husi kontraktor no rekomendasaun husi enjeñeiru ADN(Finansas ADN) prepara CPV submete ba MoF (Treasury) no prosesu ba Pagamentu final.

(8) Hand Over (Entrega Final)

Wainhira Konstrusaun atinji ona 100% no progresu pagamentu mós atinji ba 100%, maka fasilidade tomak profisionalmente entrega ba projetu na'in (Owner).

(9) Retensaun

Karik iha defekta ka falyansu ruma nebe lahetan iha period nia laran husi fulan 3-6 depois konstrusaun entrega ba projeto na'in (Owner), kontraktor bele halo pedidu pagamentu retensaun ba KDD no KDD submete ba ADN hodi halo inspesaun ba tempu retensaun nian. Enjeñeiru AND prepara rekomendasaun ba pagamentu retensaun no submete ba AND(finansa).

(10) ADN Nasional Prepara CPV

Bazeia ba rekomendasaun husi enjeñeiru ADN iha distritu maka ADN Nasional (Finansas ADN) prepara CPV no submete ba MoF (Treasury) atu prosesu pagamentu retensaun ba kontraktor.

(11) Operasaun no Manutensaun

Projetu na'in(Owner) sei halo operasaun no manutensaun ba konstrusaun nebe kontrator entrega ona ba projetu na'in (Owner).

2.2.2 Orário Obra

(1) Presiza tempu ba verifikasaun iha AND

ADN sei halo kompletu verifikasaun dokumentu ba pedidu pagamentu iha loron sanulu (10), loron serbisu nian depois simu ofisialmente dokumentus.

(2) Tempu ba submisaun adisiona, halo submisaun fila fali ka resposta ba ADN nia perguntas,KDD sei submete, submete fila fali ka resposta ba ADN iha loron sanulu(10), loron serbisu nian depois emisaun notísia husi ADN ne'ebé husu informasaun kontinuidade.

(3) Iha kazu pontu (2) iha leten, tempu ba ADN atu halo kompletu verifikasaun sei ajusta ho KDD ne'ebé foti submisaun adisiona, halo submisaun fila fali ka resposta.

2.2.3 Inspesaun Dokumentus (Aplika ba setor Bee Moss iha Rural)

(1) Konfirmasaun ba Dokumentu sira nebe entrega ona: ADN sei verifika dokumentus hotu ne'ebé presiza simu tiha ona, uza lista verifikasaun-C. Karik iha buat falta, ADN sei informa KDD kona bá ne'e no intruza KDD atu entrega iha tempu nebe espesífika ona.

1)Karta pedidu pagamentu husi kontrator

2)karta pedidu verifikasaun husi KDD ba AND
3)Parte dokumentus kontratu nian, hatudu montante kontratu no kondisun pagamentu
4) Kuantidade Projetudelei hatudu unidade presu no kuantidade
5)Relatoriu progresu hatudu progresu no planu servisu aktul no variasaun, progresu fotografia no dokumentus legal kontrator nian.
6)Relatoriu inspesaun terenu husi KDD
7)Sertifikadu lisensa ba negosiasaun no dividendu
8)Dadus dijital husi BOQ nian

(2) Konfirmasaun pagamentu kondisionál ba pagamentu avansadu no retensaun:
Inspetór ADN sei halo klaru kondisaun pagamentu uza ba kalkulasaun montante nebe atu selu konformidade ho deskrisaun dokumentu kontratu nian.

(3) Kálkulu iha surat tahan fatura projetudelei.
Inspetór ADN refere ba BOQ iha dokumentus sira nebe entrega husi ESTATAL,no mos porsentu servisu kompletu nian iha periode ida nee.ezijensia husi kontrator iha fatura. No nia mos halo arkibu data bazeia ba medidas nebe iha ona no ninia inpesaun terenu, no kalkua kuantidade item ida-idak. Formula mak progresu x Total valor kontratu.

(4) Konfirmasaun obra kompletu iha BOQ, dezeñu no figura
Inpetor ADN iha kooperasaun ho enjiñeiru KDD kompara fatura pedidu montante ne'ebe nia kalkula tiha ona iha inspesaun terenu. Iha kazu ne'e kalkulasaun montante la hanesan ho ida ne'ebe iha fatura laran, ADN sei bolu kontrator atu hatudu sezultadu kalkulasaun no fo ba nia opurtunidade atu esplika tanbasa nia halo konkluzun ne'e too foti desizaun final.

(5) Konfirmasaun orariu servisu
Inspetór ADN verifika relatoriu fulan kontrator nian no kompara progresu orariu planeada tiha ona ho orário aktual.

2.2.4 **Inspesaun terrenu** (aplikavél ba setor fornesementu bee moos iha iha area rural)

(1) Preparasaun

1) Asisténsia
KDD sei konvida sira hotu tuir mai nee iha Inspesaun terrenu.
- Inspetór husi ADN
- Enjeñeiru husi KDD
- Kontraktor

2) Preparasaun
KDD sei konvida sira hotu tuir mai nee iha Inspesaun terrenu.
- Rejistu Kualidade Kontrola
- Dezeñu
- Detalla Kuantidade Projetudelei
- Medida Aparellu.
- Asisténsia ba Medida

(2) Kualidade Kontrolu
Rejistu Kualidade Kontrolu mak husi ADN atu hare fila fali uza *Lista Verifikasaun- D.* Verifika item, iha lista verifikasaun mostra ezemplu item

ne'ebe adekuadu depende ba situasaun.

(3) Medida Obra Kompletu

Objetivu ba medida mak atu konfirma kuantidade aktual ba kada item, kompletu hanesan ho kuantidade eziste fatura. Kuantidade servisu material, kompletu ho nia medidas, uza lista ***verifikasaun-E***, item ne'ebe iha lista verifkasaun ezemplu deit, no sira sei troka ka depende ba item, iha tempu inspesaun nian.

(4) Rona husi enjeñeiru KDD

ADN sei rona husi KDD se bainhira presiza

(5)Remédiu

Karik iha kazu ruma ne'ebé ADN hetan nu'udár obra nia defeitu ka la satisfeitu, ADN bele intruza atu remédiu.

(6) Relatóriu Inspesaun no Rekomendasaun

ADN sei prepara Relatóriu Inspesaun no Rekomendasaun

Pagamentu ba MoF: ***Formatu B***

2.2.5 Notifika iha Julgamentu kona-ba Pagamentu

Ikus liu ADN sei julga ba kuantidade pagamentu. Bazeia iha AND nia rekomendasaun, enjiñeiru ADN (finansa) hasai notísia (CPV) ba MOF atu kompromisu ba fundu.

2.2.6 FAQ (Nafatin Husu Perguntas)

Iha kursu verifkasaun ezbosu dokumentu, enjiñeiru ADN sei hetan varius perguntas no problema sira. Perguntas no problema ne'e sei supera ho ajuda husi enjiñeiru senior sira. Ne'e dezejavel atu manten nafatin rejistu iha " Livru FAQ " husi enjiñeiru sira. Livru FAQ bele ajuda enjiñeiru seluk ne'ebe karik hetan problema hanesan.

Anex 2. (PDID)
Formatu-A (Rezumu Projetu prepara husi LM)

PDID	FIXA A			Verifika Husi	Aprova Husi
Tipu Projetu	Bee Moos	Objetivu	Hases/outline husi liňe projetu		

No. Kontratu/Projetu		`Data submisaun	_____, 201_
Naran Projetu/Fatin		Etapa	Verification of Draft Contract Documents
Konsultan	Implementing Agency		

(Kondisaun Eziste)

Númeru Uma Kain:	
Bee Matan Prinsipál:	
Fonte Rendimentu Prinsipál:	
Kondisaun Saúde:	
Karakteristika Markante seluk:	

(Órariu Konstrusaun)

Supervizór Husi:	
Kustu Projetu:	
Periodu Konstrusaun:	
Exetua Data Hahu:	
Exetua data Kompletu :	

(Fotografia Bee Matan)

(Planu Fornesimentu Bee)

Tarjetu tinan:	
Bee Matan:	
Produsaun:	
Númeru Uma kain ne'ebe uza:	
Modelu Fornesimentu(Konesaun Uma no/Torneira Publiku):	
Unidade Konsuma Bee:	
Ezijénsia Bee iha Futuru:	
Modu de Konsume:	
Numeru Tanke,BTPs, Rezervatóriu ne'ebe Konstrui ona:	
Tranzmisaun Prinsipál nia naruk:	
Redi Distribuisaun nia naruk:	
Númeru torneira públiku	

(Kondisaun Kontratu)

Exetua Data Anúnsiu	
Pagamentu Avansa (%):	_____(%)
Retensaun (%):	_____(%)
Ezamina Dokumentus husiADN:	Iha loron tolu (3) nia laran
Resposta ka submisaun fila fali husi KDD/LM depois pedidu ofisiál:	Iha Semana ida(1)nia laran
Verifikasaun husi ADN depois resibu pagamentu:	Iha loron sanulu (10) loron serbisu nian
Reply or resubmission by KDD/LM after receipt of official request:	Iha loron sanulu (10) loron serbisu nian

(Fotografia Projetu Area)

(Ezbosu Projetu)

Formatu -B (Relatoriu Inspesaun no Recomendasaun ba Pagamentu)

FIXA B

REPÚBLICA DEMOCRÁTICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

NO	RELATÓRIO INSPECSAUN NO RECOMENDASAUN BA PAGAMENTO				
1	Projecto nia Naran				
2	Ministerio/Dono de Projecto				
3	Fontes de Fundos				
4	Contractor				
5	Numero PO (Purchase Order)				
6	Localizasaun Projecto :	a. Distrito : Covalima b. Sub distrito : Fatumea c. Suco/Aldeia : Belulic Leten			
a	Valor Contracto	a	$		180,000.00
b	Progreso fisico iha fulan kotuk	b			83.00%
c	Progreso fisico ate agora	c			90.00%
d	Valor Pagamento foer ate agora (gross)	(c-b)*a	$		12,600.00
e	Osan adiantamento nebe simu ona .....%	...%*a	$		-
f	Deducsaun adiantado ba pagamento tomak	e	$		-
g	Deducsaun retensaun ba pagamento ida ne'e 10%	0.1*d			
h	Net pagamento depois de deducsaun ba retensaun	d-g	$		12,600.00
i	Net pagamento nebe atu selu ba pagamento ida ne'e	h-f	$		12,600.00
j	Total Net pagamento ate agora		$		162,000.00
k	Balansu depois de pagamento ida ne'e	(100%-c)*a	$		18,000.00
7	Observasaun ou komentario seluk : Bazeia ba inspesaun nebe ekipa ADN halo ba Projeito Konstrusaun Aqua potavel ho sistema solar panel Fatumea katak agora Projeito ne'e atinji ona 95 % ne duni ami rekomenda atu halo pagamento ba progresso fisiku 90 % nian.				
8	Recomendasaun ba Tezouro-MdF/Ministerio/Agencia Tutela Selu ho Montante (USD)				12,600.00
9	Observasaun :		SIM	Komentarios Ruma	LAE
a	Tuir Dezenho ?		√		
b	Tuir BOQ ?		√		
c	Tuir Espesifikasaun ?		√		
d	Tuir Schedule curva S ?		√		
e	Tuir Termos de Contracto ?		√		
10	Data Inspecsaun		Data:	Fulan:	Tinan:
11	Enginheiro Nebe Halo Inspecsaun :	Assinatura:			Data :
	1. Naran : Lourdes Pereira				
	2. Naran : Manuel Martins	Assinatura:			Data :
	Verifikado Hosi :	Assinatura:			Data :
	Sònia Freitas Moreira				
12	Q.A	Assinatura:			Data :
	Esron St. Henuk				
13	Approvado Hosi :	Assinatura:			Data :
	Sr. Samuel Marçal				
	Director Geral - ADN.				
14	Annexo :	Fotografias Ruma Hosi Terreno			

PDID	LISTA VERIFIKASAUN A			Verifika Husi	Aprova husi
Tipu Projetu	Bee Moos	Obejetivu	Dokumentus presiza atu entrega		

No. Kontratu/ Projetu		Data submisaun	_____,201____
Naran Projetu		Etapa	Verifikasaun ba esbozu dokumentus kontratu
Ajênsia Implementasaun			

Lista Material	Pontus Verifikasaun	Data verifikasaun	Marka	Informasaun
	Ida nee atu konfirma katak dokumentus hotu entrega husi KDD			Razaun la entrega
1	Anúnsiu Projetu			
2	Kondisaun kontratu			
3	Dadus Kontratu			
4	Kuantidade Projetudelei			
5	Espesifikasaun sira			
6	Dezeñu			
7	Buat seluk ne'ebé se presiza			

PDID	LISTA VERIFIKASAUN B1			Verifika Husi	Aprova Husi
Tipu Projetu	Bee Moos	**Objetivu**	Espesifikasaun Téniku		

No. Kontratu/Projetu		Data submisaun	_____, 201___
Naran Projetu		**Etapa**	Verifikasaun ba esbozu dokumentus kontratu
Ajénsia implementasaun			

Lista Material	Pontus verifikasaun	Data verifikasaun	Marka	Informasaun
Finalidade no uza	Espesifikasaun Projetu tenke kobre/taka aspetu hotu serbisu sivil neebe nesesáriu ba implementasaun projetu .			
Kódigu no Padraun	Padraun no Kódigu prátika neebe uza iha espesifikasaun mak ida ne'ebe aseita internasionalmente ho ninia estadu fontes referensia ne'ebe klaru.			
Naran no Abreviatura	Naran no abreviatura husi ajénsia relevante, Komisaun sira, organizasaun no/ padraun neebe estipula iha espesifikasaun téniku tenke atualiza atu bele resente nafatin (hafoun bei-beik).			
Rezultadu peskija , Medidas no Teste	Rezultadu husi peskija iha terenu, medidas no teste ezekusaun iha kursu dezeñu projetu, tenke aneksa iha dokumentus, atu kumpri ho garantia kualidade no kontrolu rekizitu neebe espesifika iha kondisaun géral kontratu nian.			
Seguransa	Serbisu hotu sei ezekuta ho di'ak atu bele kumpre rekizitu seguransa ne'ebe hakerek iha kontratu no regras espésifiku seguransa ne'ebe iha.			
Asesu	Asesu ba estrada temporáriu ne'é tó'o husi projektu fatin.			
Kuadru Sinal	Kuadru sinál sei fornese no hari tiha ona husi Kontratór, kuadru sinal ida ne'e tenke adisionál ba seguransa ne'ebe deit no sai sinál aviza.			
Figura no Tabela	Figura no tabela ne'ebe hatudu espesifikasaun tekníku, tenke aneksa iha testu ka hatudu klaru sira nia fontes.			
Rekizitu Ambientál	Serbisu hotu tenke ezekuta atu bele kumpre rekizitu ambientál ne'ebe hakerek tiha ona iha rekizitu espesifikasaun ambientál nian.			

PDID	Lista Verifikasaun B2			Verifika Husi	Aprova Husi
Tipu Projetu	Bee Mos	**Objetivu**	Kuantidade selu nian(Bill of Quantity)		

No. Kontratu/Projetu		Data submisaun	_____, 201___	
Naran Projetu		Etapa	Verifikasaun ba esbozu dokumentus kontratu	
Ajénsia Implementasaun				
Lista material	**Pontus Verifikasaun**	**Data Verifikasaun**	**Marka Verifikasaun**	**Informasaun**
Materiál servisu	Iha BoQ nia laran halista material hirak nebee konaba konstrusaun Sívil no/ka materiais nebee presiza hodi fasilita konstrusaun projetu nee,inklui mos mobilizasaun,preparasaun servisu , operasaun teste ho demolisaun(demolition)			
	Matería servisu tomak/refere kualidade ba klase espesifika materiaís neé,haforsa estandar/standards no conforme ba exigéncias neé hatur iha espesifikasaun tékniku ka?			
Kuantidade	Nee kualidade Konstrusaun sivil nian, no materiais bazeia iha dezeñu,sasukat no resultadu nian foo husi kontrator sira.			
Presu Unidade	Nee kualidade Konstrusaun sivil nian, no materiais bazeia iha dezeñu,sasukat no resultadu nian foo husi kontrator sira.			

PDID	LISTA VERIFIKASAUN B3-1			Verifika husi	Aprova husi
Tipu projetu	Fornese bee -bee matan moris rasik/leio fluvial	Objetivu	Planu no Dezeñu		

N0.kontratu/projetu		Date of Submission	_____, 201___
Naran projetu		Stage	Verifikasaun ba esbozu dokumentus kontratu
Ajénsia Implementasaun			

Lista Materal	Pontus verifikasaun	Data verifikasaun	Marka	Informasaun
Konseptu projetu	Iha proposal projetu akordu nian laran ho estratejia Governu (rural no urban estratejia desenvolvimentu fornese bee)			
Koordenasaun	Halo koordenasaun tomak entre Ajénsias relevantes.			
Projetu Areal	data/informasaun avelabel(available), inklui; ☐ presenti populasaun no uma kain, ☐ fonte rendimentu, ☐ historia dezenvolvimentu konaba suku/sidade, ☐ udan been?			
	Hanesan iha areal sira afektu beibeik husi desaster naturais. ☐ bee sae ka ☐ rai monu?			
Projetu tarjet	Tarjet ba tinan:_____			Anexu: Projetu tarjet No.1
	Númeru uma kain hodi serví ba:_____			
kondisaun eziste	Hanesan data avelabel(available)iha :			
	☐ Saida mak bee matan agora da-dauk ba ema sira uza moris lor-loron nian?			
	☐ Saida mak problema boot liu ba sira (☐kuantidade, ☐kualidade, ☐distansia)?			
	☐ Kondisaun saúde ba ema sira nee mak saida? (media(rate)mortalidade moras tanba bee)			
Planu bee matan	Bee matan sufisienti iha kuantidade no kualidade? Kuantidade:_____ L/sec, Kualidade: ☐bee foe(turbid), ☐ Bee la'foer(not turbid)			Anexu: Planu bee matan No.1 Planu bee matan No.2
	Liu husi tinan-tinan produsaun estabel ? ☐los, ☐lae			
	Ne'e aplika sistema graviti bee suli sai konaba transmisaun bee? ☐ los, ☐ lae			Anexu: Planu bee matan No.3
	Iha catchment area bee hu'un/matan sufisienti?: ☐los, ☐lae			Annex: Planu bee matan No.4

PDID	LISTA VERIFIKASAUN B3-1			Verifika husi	Aprova husi
Tipu projetu	Fornese bee -bee matan moris rasik/leio fluvial	Objetivu	Planu no Dezeñu		

N0.kontratu/projetu		Date of Submission	_____, 201___
Naran projetu		Stage	Verifikasaun ba esbozu dokumentus kontratu
Ajénsia Implementasaun			

Lista Materal	Pontus verifikasaun	Data verifikasaun	Marka	Informasaun
Futuru bee mos	Fornese bee konaba via ema sira nia □ torneira uma nian ka □ torneirapubliku?			Anexu: Bee mos ba futuru No.1
	Dezeñu valor komsumi bee per kapita kada loron :_____L/c/d			Anexu: Bee mos ba futuru No.2
	Kalkulasaun konaba bee mos ba futuru husi servi ba populasaun halo ka lae ? □los, □lae			Anexu: Bee mos ba futuru No.3
Dezeñu kadoras	Kanu/kadoras bee suli sai estimasaun ninian diametru uza formula no variabel(variables) ba distánsia, todan ho média sasuli □los, □lae			Anexu: Dezeñu kadoras No.1
	Deze ñu bazeia ba survei iha terenu hydraulic profile anexu. □los, □lae			Anexu: Dezeñu kadoras No.2
	Hanesan kadoras asesores(accessories)balbu odamatan, balbu anin nian, dezenu pr ó pria fase bee fakar sai(wash-outs) □los, □lae			Anexu: Dezeñu kadoras No.3
Dezeñu reservador hodi serví	Materiál reservador ho □ balbu inlet , □balbu outlet , □ kanu dreinajen, □kanu bee sulisai (overflow) , □Anin kuak.			Anexu: Dezeñu reservador hodi serví
	Ne'e konkretu estruktura(structure) ho dezeñu símples bar reinformentu(reinforcement) : □los, □lae			
Torneira publiku	N úmeru konaba torneira materiál ba torneira:____torneira			Anexu: Torneira publiku No.1
	Numeru uma kain ne'ebe serví husi torneira ida:_____uma kain			
	Deze ñu própria hanesan apron konkretu apron : □los, □lae			
	Materiál hanesann kanu besi hodi halo dreinajen ba konkretu apron: □los, □lae			

PDID	LISTA VERIFIKASAUN B3-1			Verifika husi	Aprova husi
Tipu projetu	Fornese bee -bee matan moris rasik/leio fluvial	**Objetivu**	Planu no Dezeñu		

N0.kontratu/projetu		**Date of Submission**	_____, 201___
Naran projetu		**Stage**	Verifikasaun ba esbozu dokumentus kontratu
Ajénsia Implementasaun			

Lista Materal	Pontus verifikasaun	Data verifikasaun	Marka	Informasaun
Operasaun & manuntensaun depois konstrusaun	Ne'e planu komisaun uza bee hodi organiza iha suku/sidade: □los, □lae			
	Ne'eplanu operasaun (hamos,kontrula balbu, etc.) prepara: □los, □ lae			
	Sei hadia montante konaba osan selu bee nian ba O&M ne'ebe kolekta (collected) husi uma kain sira: US$_____ /fulan ida/uma kain			
Ema sira nia konsiénsia	Ema sira ne"e mos iha konsiénsia atu selu taxa konaba O&M: □los, □lae			
	Ema sira ne'e iha laran kaman hodi serví/selu: _____ sai uman kain ba _____ uma kain			

PDID	LISTA VERIFIKASAUN B3-2			Verifika husi	Aprova husi
Tipu Projetu	Fornese bee - bomba liman ka bee posu uza bomba liman	Objetivu	Planu no Dezeñu		

No. Kontratu/Projetu		Data submisaun	_____, 201___
Naran Projetu		Etapa	Inspesaun regular konaba pagamentu
Ajénsia Implementasaun			

Lista material	Pontus verifikasaun	Data verifikasaun	Marka verifikasaun	Informasaun
Konseptu projetu	Iha proposal projetu akordu nian laran ho estratejia Governu (rural no urban estratejia desenvolvimentu fornese bee)			
koordanasaun	Halo koordenasaun tomak entre Ajénsias relevantes.			
Projetu areal	data/informasaun avelabel(available), inklui; ☐ presenti populasaun no uma kain, ☐ fonte rendimentu, ☐ historia dezenvolvimentu konaba suku/sidade, ☐ udan been?			
	Hanesan iha areal sira afektu beibeik husi desaster naturais. ☐ bee sae ka ☐ rai monu?			
Projetu targetu	Númeru uma kain hodi serví ba:_____			
kondisaun eziste	Hanesan data avelabel(available)iha :			
	☐ Saida mak bee matan agora da-dauk ba ema sira uza moris lor-loron nian?			
	☐ Saida mak problema boot liu ba sira (☐kuantidade, ☐kualidade, ☐distansia)?			
	☐ Kondisaun saúde ba ema sira nee mak saida? (media(rate)mortalidade moras tanba bee)			
	☐ Iha areal, fasilidades sanitáriu, sentru saúde, ka klinik ne'ebe avelabel(available)?			
Planu bee matan	Dala ruma bomba liman bee posu ka konstrusaun fura bee planu besik iha projetu fatin. ☐yes, ☐no			
	Karik data ne'e avelabel(available), produsaun sira nian mos estabel duranti tina-tinan? ☐los, ☐lae			
	karik la'avelabel(available),Kondisaun topographical haleukonsidera mos katak diak konaba konstrusaun fura bee: ☐los, ☐lae			
	bomba liman hanesan ba tipu:_____, halo iha:_____.			
Operasaun & manuntesaun depois konstrusaun	Ne'e planu komisaun uza bee hodi organiza iha suku/sidade: ☐los, ☐lae			
	sei hadia montante konaba osan selu bee nian O&M ne'ebe kolekta(collected) husi uma kain sira: US$_____/fulan/uma kain			
Ema sira nia konsiénsia	Ema sira ne"e mos iha konsiénsia atu selu taxa konaba O&M: ☐los, ☐lae			
	Ema sira ne'e iha laran kaman hodi serví/selu: _____ sai uman kain ba _____ uma kain			

Verifikasaun-C (Kondisaun pagamentu)

REPÚBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL
CHECKLIST FUNDU DA INFRA-ESTRUCTURA BA PAGAMENTU

Naran husi Projetu :

Naran husi Kompañia :

Número Kontratu :

Valor husi Kontratu : **US$**

Valor husi Invoice/Pedidu : **US$**

No	Dokumentus ne'ebé submetidu iha Invoice laran	Resultadu		OBS
		Sim	Lae	
1	Kontratu sei moris hela (mais menus fulan ida antes data prazu hotu/ expired date). Valor kontratu mak liu husi >500,000 tenke ser sujeitada hodi hetan Karta Justifikasaun husi Tribunal das Contas, Tribunal Superior das Administrativas de Timor Leste.			
2	Submete Sertidaun Dívidas ne'ebé válidu no tenke ser legalizadu			
3	Submete No. TIN (Identificação do Contribuite Registo Imposto)			
4	Submite Para Quem Interessado ne'ebé válidu			
5	Submete Licença Actividades de Commercio e Económico ne'ebé válidu no legalizada			
6	Submete Invoice Orijinal 1 (kopia 5) no hetan aprovasaun husi Tékniku LM			
7	Pedidu husi Karta Pagamentu			
8	Sertifikadu Pagamentu aprovada husi Liñe Ministriais			
9	Número Konta Banária husi Kompañia			
10	Garantia ba Exekusaun di'ak tenke ser rai iha banku nu'udar garantia, ida-ne'e hanesan ho Valor Adiantadu ká bazea Termos husi Kontratu			
11	Invoice tenke ser anexada ho Relatóriu Progressu Mensal			
12	Kompañia Internasional tenke anexa sertifikadu hosi Organizasaun Padraun Internasional (ISO)			

REPÚBLICA DEMOCRATICA DE TIMOR LESTE

GABINETE DO PRIMEIRO MINISTRO

AGÊNCIA DE DESENVOLVIMENTO NACIONAL

CHECK LIST PAGUMENTU PDID

PAGUMENTU ADIANTAMENTU

No.	Dokumentu Nia Naran	Kondisaun						Remarks
		Iha	La Iha	Kompletu	La Kompletu	Los	La Los	
1	Pedidu Pagamentu husi kompanhia ba KDD(Original)							
2	Karta Emkamnihamentu husi koordenador KDD (Original)							
3	Dokumentu Kontratu (Original)							
4	Foto copy dokumentu Licenca Para Actividade Economicas nabe sei moris, minimu to'o fulan 1 husi data hatama Pedidu Pagamentu (Legalizadu)							
5	Foto copy dokumentu Certidão de Dívidas nebe sei moris, minimu to'o fulan 1 fusi data hatama Pedidu Pagamentu (Legalizadu).							
6	Foto copy dokumentu TIN.							
7	Foto copy dokumentu Para Quem é Interdssado							
8	Foto copy Konta Bankaria kompanhia							
9	Foto copy Kartaun Eleitoral director kompanhia							

REPÚBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL

CHECKLIST PAGAMENTU PDL/PDD/PDID

PAGAMENTU RETENSAUN **(10 %)**

No.	Dokumentu Nia Naran	Kondisaun						Remarks
		Iha	La Iha	Kompletu	La Kompletu	Los	La Los	
1	Pedidu Pagamentu husi kompanhia ba KDD (Original)							
2	Karta Enkamnihamentu husi koordenador KDD (Original)							
3	Foto copy Dokumentu kontratu/ sekarik projetu entrega wainhira kontratu mate ona, tangke aneksa ho dokumentu original ka foto copy emenda kontratu nebe validu minimu ate data entrega projetu .							
4	Certifikadu Pagamentu nebe preparadu husi Gastor Obras Publiku/ Tekniku KDD, Verifikadu husi ADN Distritu no aprovadu husi Koordenador KDD(original) –**ba pagamentu Projetu PDDII2012 no PDID deit**							
5.	Termo Entregue de Projecto Final(original)							
6	Final Inspection Sheet ba retensaun(original)							
7	Foto copy Termo Entregue de Projecto Provisional/Primeiru							
8	Foto copy dokumentu Licenca Para Actividade Economicas nebe sei moris, minimu to'o fulan 1 husi data hatama Pedidu Pagamentu(Legalizadu)-**la aplika ba KIK**							
9	Foto copy dokumentu Certidão de Dívidas nebe sei moris, minimu to'o fulan 1 husi data hatama Pedidu Pagamentu (Legalizadu)-**la aplika ba KIK**							

10	Foto copy dokumentu Tin-**la aplika ba KIK**							
11	Foto copy dokumentu Para Quem é Interssado **-la aplika ba KIK**							
12	Foto copy konta Bankaria kompanhia							
13	Foto copy Kartaun Eleitoral director kompanhia							
14	Dokumentasaun (Fotografia tuir progressu fiziki)							
15	As built Drawing/Dezenho bazea ba rezultadu implementasaun **ba pagamentu Projetu PDID deit**							
16	Foto copy Dezenho no BOQ nebe aprovadu **–ba projetu PDD 2012 deit**							

PDID	LISTA VERIFIKASAUN D			Verifika husi	Aprova husi
Tipu projetu	Fornese bee	**Objetivu**	Kontrola kualidade		

N0. Kontratu/Projetu		**Data submisaun**	_____, 201___
Naran projetu		**Stage**	Inspeksaun Regular konaba Pagamentu
Naran Kontraktór		**Ajénsia implementasaun**	

Lista materiál	Pontus verifikasaun	Data verifikasaun	Marka	Informasaun
Technical dimensions	Are technical dimensions of all project facilities including tanks, reservoir, BPT, equipment, pipelines, fittings, etc. are in accordance with the technical specification and drawings?			
Materials	Are all materials new and of the kinds and qualities described in the Contract?			
Concrete	Is good quality cement used? Is stored cement randomly reweighed to check the quality?			Annex: Concrete No.1
	Is best quality sand that contains no organic materials and less fine materials (dust) procured? Isn't sea beach sand used?			Annex: Concrete No.2
	Does the aggregate (gravel) have no organic material in it? Isn't sea aggregate used? Is maximum allowable aggregate size 25mm?			
	Is slump test carried out? Is the slump between 70 to 90mm (Guideline CWSS)?			Annex: Concrete No.3
	Is Hammer test conducted at representative parts of all concrete structure to confirm its strength in accodance with the Contract?			
Reinforcement Bars	Is steel for reinforcement of concrete a hot rolled deformed bar in accordance with internationally accepted standards? Are copies of test certificate provided to the Engineer?			
	Are all bars supplied in the straight form from the manufaturing plant?			
	Free of loose mill scale, rust, oil grease, mud or other materials.			Annex: Reinforcement bars No.1

PDID	LISTA VERIFIKASAUN D			Verifika husi	Aprova husi
Tipu projetu	Fornese bee	Objetivu	Kontrola kualidade		

N0. Kontratu/Projetu		Data submisaun	_____, 201___
Naran projetu		Stage	Inspeksaun Regular konaba Pagamentu
Naran Kontraktór		Ajénsia implementasaun	

Lista materiál	Pontus verifikasaun	Data verifikasaun	Marka	Informasaun
Pipa/kanu no kadeli koneksaun nian(Fittings)	Hanesan materiál Kanu ne'ebe fo'o tuir akordu exigénsia espesifika ne'ebe iha kontratu laran? Kopia abrikantes sertifikadus fo'o Enjineiru hodi aprova ?			
	Kanu sira hotu tenke kompletu ho válvula komporta/ekluza, válvula kontrolu, válvula ár, fase liur, blokus konkretu tuir akordu ne'ebe iha kontratu?			Anexu: Kanu no kadeli koneksaun(Fittings) No.1,
	Instelesaun hotu tiha , hanesan kanu hirak ne'e kokok(tested) presaun nian, detekta keta iha kuak ruma ba reparasaun ne'e no (re-tested) kokok hikas kadoras			
Tanke sira	Hanesan Tanki sira hotu inklui reservador, BPTs, sedimentasaun tanki sira nian seluk-seluk tan,teste konaba kuak depois de konstrusaun?			
	Kanu inlet & válvula,kanu outlet & válvula, kanu bee suli sai liu, kanu ba dreinajén & válvula, anin kuak no kuak prinsipal nebe hanesan instelasaun lolos nian.			Anexu: Tanke sira No.1
Aventál(Aprons) & dreinajén	Avental iha posu, tanke komunidade no fontanárius labele nakfera. Bee suli liu husi avental no suli tun ba ezgotu/kanu fo'er/baleta?			Anexu: Aventál(Apron) & dreinajén No.1

PDID	LISTA VERIFIKASAUN E			Verifika Husi	Aprova Husi
Tipu Projetu	Bee Moos	Objetivu	Sasukat kona ba servisu kompletu		

No. Kontratu/Projetu		Data submisaun	_____,201____
Naran Projetu		Etapa	Inspesaun konaba pagamentu regular
Naran Kontrator		Ajénsia Implementasaun	

Lista Material	Pontus Verifikasaun	Data Verifikasaun	Marka Verifikasaun	Informasaun
Tanke	Tanke nia Medidas, Rezervatoriu no STPN, atu bele konfirma nia númeru, luan, naruk no aas			
Kadoras	Medida kanu nia naruk, husi fotorafia no medida ho roda			
Kontrétu	Númeru Saku Semente tenke bazeia ba dadus lójistika			
Besi Reforsamentu	Númeru bár reforsamentu bazeia ba dadus lójistika			

Verifikasaun-E (Medisaun/sukat ba Obra Kompleta ona)

【Attachment1】 Aneksu ba Verifikasaun

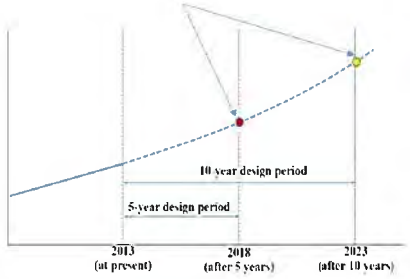
Tarjetu ba projetu No.1

Tarjetu ba tinan:

Tarjetu ba tinan(DEZEYNA PERIODO)

Iha komersial utiliza ho modelu, dezeyna normal ba periodo espasu naruk involve dekade(dasawarsa) ho nunee hahu ho modal/orsamentu nebe sai ho susesu atu habelar ho hetan rehabilitasaun rasional duni. Kona-ba atu utiliza bee uitoan , inkluindu mos ba nain sira husi governo lokal, nunee la haluan/hirak nee la prepara ho la'hetan iha kontestu husi populasaun rural ninia kapasidade atu selu. Ba razaun sira nee,dezeynu periodo ka horizontal ihaManual laran hakerek ona ba tinan 5 ka 10 . Iha faktu, dezeynu periodo hirak nee deside permanente husi agrementu nebe forte entre, implementasaun Agensia. Dezeynu periodo iha ona, planu finansial tenke hatama ba iha rekenin termus paket ho potensial ba kosumedores sirra' cakapabilidade ho prontu presiza atu entre atu suporta selu hukas fali.(WB Manual)

Tarjet ba tinan



	Vantagen	Desvantagen
Tinan 5- dezeyna periodo	Hahu selu nencik ona.	Presiza hafoun selu ba gastu depois tinan (5) ba kapasidade atu hadi'an.
tinan-sanulu dezeyna periodo	Fasilidades sistema bee nee kapbilidade kona-ba ezezensia bee suli sai ba periodo naruk.	Hahu selu kustu nebe as.s.

TLRWSG by DENSA

Dezeyna periodo:tinan 10 (Minimum requirementus) , tinan 20 (Recommenda estandar)

Planu ba bee matan No.1

Bee matan sufisiente quantidade ho qualidade?

Quantidade:_____ L/sec,

Sasukat quantidade kona-ba bee

Check kuantidade klimatiku tempu udan ho klimatiku tempu bai loron

1. Metodu Volumetrika

Determina yield(terbentur) kona-ba uza methodu volumetrika ba bee posu

Data:

Volume of oil drum used : 200 liters

Number of drums used : 1

Time to fill the drum : 30 seconds

Required: Well yield

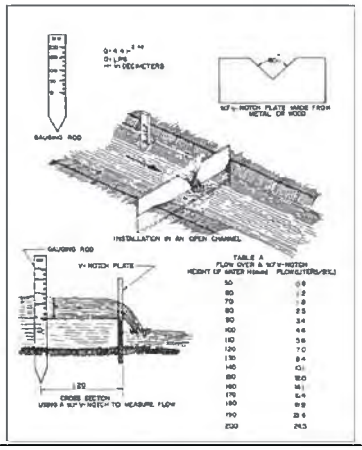
1. Calculate the total volume of water collected, V

$$V = Volume\ of\ container\ used = 200\ liters$$

2. Calculate the yield of well, Q

$$Q = \frac{Volume\ of\ water\ collected}{time\ in\ seconds} = \frac{200\ l}{30\ s} = 6.67\ lps$$

2. V-Indentasaun(takik) repreza



Planu ba bee matan No.2

Nee bee matan sufisiente in quantidade ho qualidade?
Qualidade: ☐ la'dun mos/keruh, ☐ la'os la'dunmos

Kualidade bee: Prioridade As (critical) Parameteros

Parameteros
1. Microbiological : (Total Coliform, Fecal Coliform)
2. Bee foer/kekeruhan
3.Kor
4. pH
5.Besi
6. Manganese
7. Chloride
8. Arsenic
9. Cadmium/sejenis logam yang putih
10. Nitrate/sejenis garam
11. Sulfate/sulfat(garam asam belerang)
12.Total kahu'ur Solido (TDS)

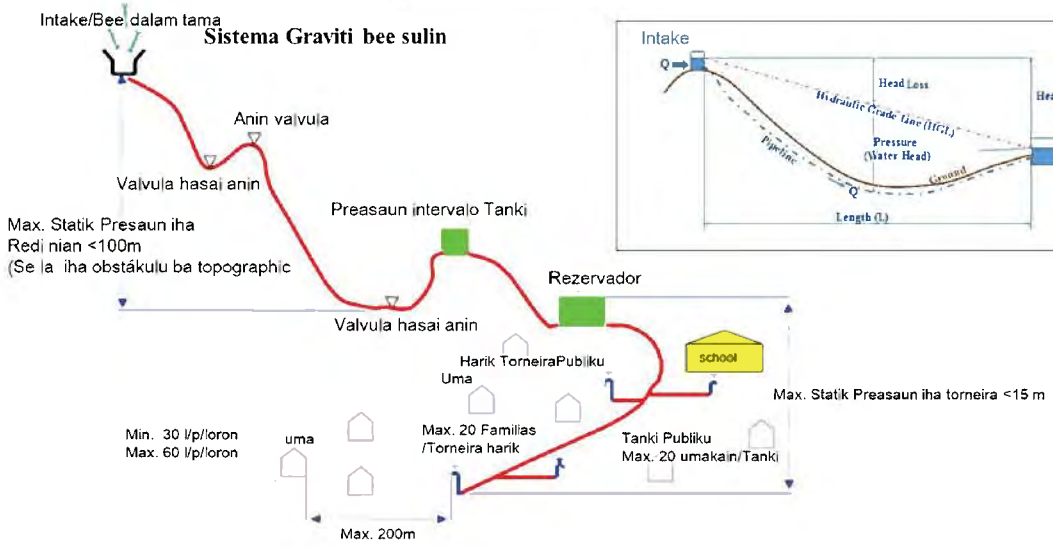
TLRWSG husi DENSA
Kualidade bee ho pontu kelesaun bee nian

(Rekerementu Minimum)
La abu-abu, la iis, koko ka koris.
Bee tenke nono molok atu hemu.
Peskiza ba Sanitasaun nian halo kompletu ona nomos minimiza riska balun.

(Standarte be Recomendasaun)
Hasoru mos WHO hodi hetan orientasaun hanesa indikador husi gevernu

Planu ba bee matan No.3

Nee graviti sistema aplika bee kon-ba transmisaun bee?
☐ sim, ☐ não



Planu ba bee matan No.4

Nee waduk areal sufisiente kona-ba bee matan?
☐ sim, ☐ não

Baliza dataran pemisah(areal waduk))

Sa ida mak dataran pemisah?

Ba definesaun, areal ida nebe iha dataran pemisah udan tau be-beik kolekta iha fatin neba hanesan bain-bain.Hanesan iha fatin bain-bain korente bee nian, debu, mota, etc.

Bee ulun kona-ba kona-ba mota uluk mak halo korente/arus aliran air . Ba dataran pemisah haruka kona-ba korente/aliran bee la'at tu'un tama ba krai'ik tanba primeiro mak bee bee korenti nia suli diretamente.Bele mos bee origen rasik duni tu'un husi udan ben ka hanesan bee rai okoos bee posu bsa leten haktuir bee iha rai leten. Ba rai, tipe vegetasaun, tipe rai, rai lolon, microorganisme, pH, DO (ka'ur Oxygen), ho temperatura hirak nee afeta bee iha dataran pemisah

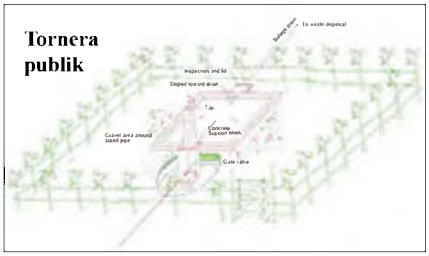
As/elevasi = kuntur/garis bentuk 1800 ba bee MatanA, B and C.

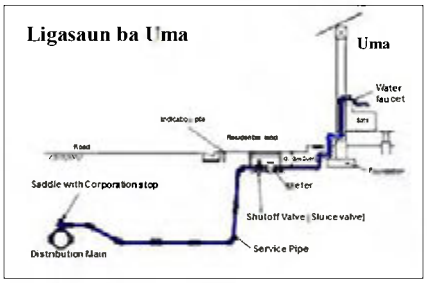
Areal waduk: B > C > A

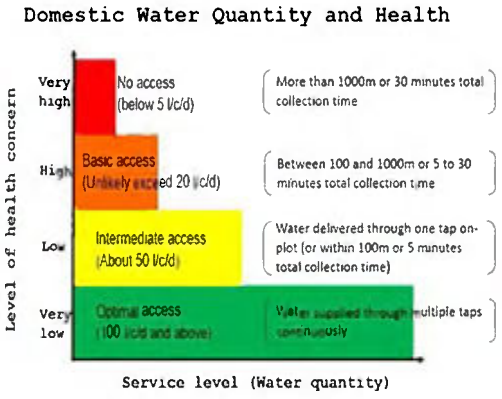
Ezezensia bee mos nia future, No.1

Fornese bee mos ba komunidade liu husi via
☐ Tornera Uma kain ka tornera publik?

Public tap or House connection







PONTO NEBE PERSIZA HANOIN:

Iha kestaun ida katak tornera publiku sei konsumi husi vizinyu balun nebe lori husi tornera publiku ba iha sira nian uma,kestaun ne'e tenki halo husi ema ida. Husi se ? / to'o bain hira

Ezezensia bee mos nia futuru No.2

Dezenya ba unidade bee nebe konsumedores sira uza per kapita ba loron ida nian: _____L/c/d

TLRWSG husi DENSA

Kuantidade bee	Rekerementu Minimum	Estandarti rekomenda nian
Umakain nia persiza:		
Hemu	2 litres per day	Litru 5 ba loron ida
Te'in	5 litres per day	15
fase	10 litres per day	20 litres per day
Haris	13 litres per day	20 litres per day
Total	Litru30 ba loron ida	Litru 60 ba loron ida

Individuals: 15-20 Lpcd (sustentabel ba fulan badak)
- Hodi hemu 3-4 Lpcd
- Perparasaun ba hahan, Hamos ka fase 2-3 Lpcd
- Hygene personalidade nian 6-7 Lpcd
- Fase ropa nian 4-6 Lpcd

Animal hakiak no agrikultura nian
- Karau, kuda, kuda buru 20-30 kada litru
- Bibi Timur, Bibi malae, fahi 10-20 kada litru
- Manu, 10-20 kada litru 100
- To'os hodi halo kantreru. 3-6 litres kada kuadradu.

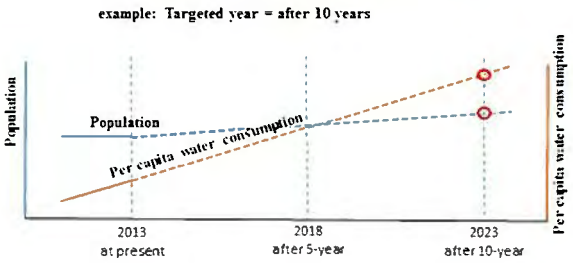
Husi "Minimum Kunatidade bee nebe persiza ba iha umakain hodi uza"
WHO Regional Office for South-East Asia

Ezezensia bee mos nia futuru No.3

Kalkulasaun ezezensia bee nia futuru halo husi populasaun sira ka lae? ☐ **Los,** ☐ **Lae**

Water Demand = Per capita water consumption × Population + NRW

Water Demand Projections = Water Demand at Targeted year



Water Demand for Design of Facilities

Example: Community A
- **Households (HHs) = 100, average 1 HH = 6 persons**
- **Total served Population = 100 × 6 = 600**
- **Average Water demand = 600 × 50 lpcd = 30,000 l/d**

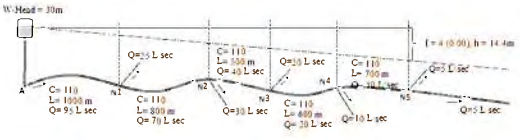
NRW (Leakage ratio) = 15 %
Distributed amount including Leakage
= 30,000 l/d / (1 – 0.15) / 86400 sec/d = 0.41 l/sec

Maximum Water demand
= Average Water demand (including NRW) × 1.30
= 0.41 l/sec × 1.30 = 0.53 l/sec

Dezenya instelasaun pipa No.1

Nee diametru estimasaun uza formula pipa bee suli ho varidade kona-ba distansia , as ho media bee suli ka?
☐ **Los,** ☐ **Lae**

Pipa diametru tenki uza estimasaun formula pipa bee suli (hanesan Formula Hazen-Williamsho varidade kona-ba distansia, as ho media bee suli. Nunee,atu halo kalkulasan ba resultadu tenki ho nia ezemplo anexu, oinsa atu deside pipa diametru(D)kona-ba seksaun id-idak wainhira bazeia ba bee ulun(A iha nee), GL ba nodos, bee uitoan nebee suli sai husi nodus (konsume), pipa kle'an(L), koefisiente ho bee suli(C_{HW}) nebee fo. Ba razaun instelasaun pipa hydraulic-gradient (h/L) tenki asume..
Uza 'PIPECAL' ou 'EPANET'.



Nee exemplu kona-ba kalkulasaun ba resultadu

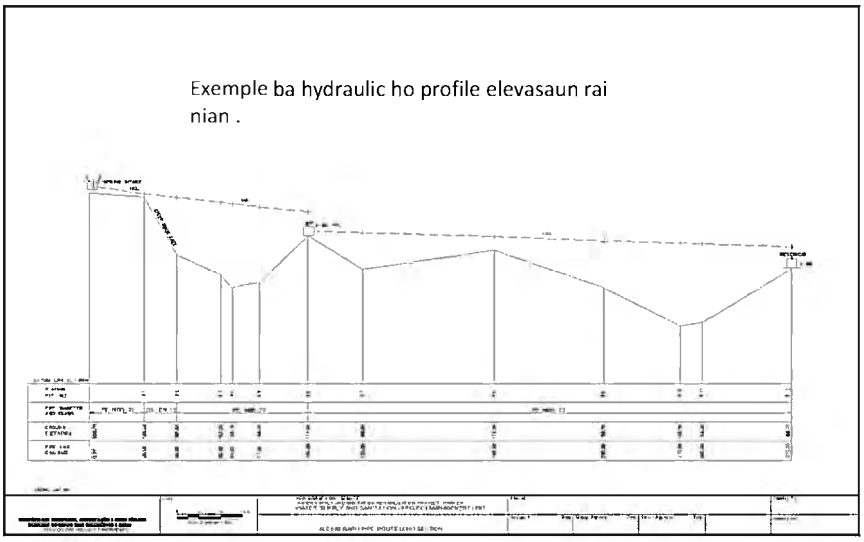
Node	Gl.(m)	Qout	W.Head	Pipeline	D(mm)	L(m)	C	Q(low	I(0/00)	loss (m)
A	10	-	30.00		-	-	-	-	-	-
Node.1	10	25	26.0	A - N1	345.9	1000	110	95	4	4.0
Node.2	12	30	20.8	N1 - N2	307.6	800	110	70	4	3.2
Node.3	8	20	22.8	N2 - N3	248.7	500	110	40	4	2.0
Node.4	7	10	21.4	N3 - N4	195.3	600	110	20	4	2.4
Node.5	5	5	20.6	N4 - N5	146.9	700	110	10	4	2.8
To Down	-	5	-	N5 -	-	-	-	5		-

Dezenya instelasaun pipa No.2

Dezeynu hirak nee ba hydraulic bazeia profile iha kampu de trabalho anexu ka ?

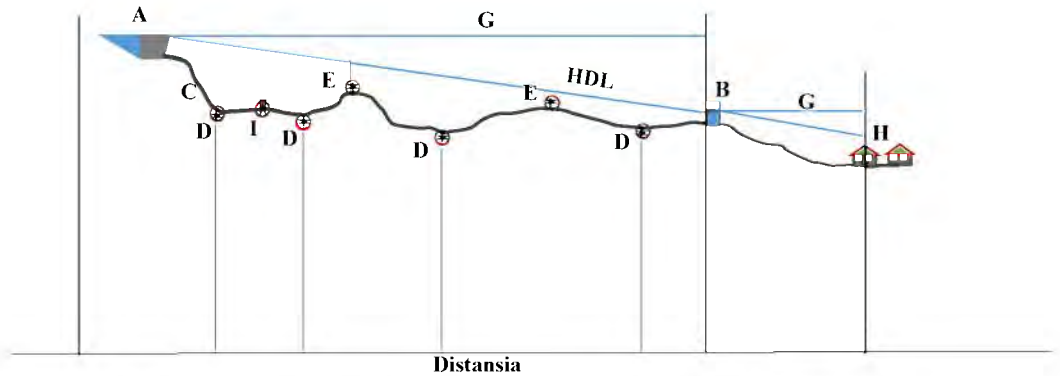
☐ Sim, ☐ Não

Exemple ba hydraulic ho profile elevasaun rai nian .



Dezenya instelasaun pipa No.3

Hirak nee acesoris pipa hanesanas odan matan balvu, balvu anin, dezeyna ba prope duni ka fase soe sai ? ☐ Sim, ☐ Não

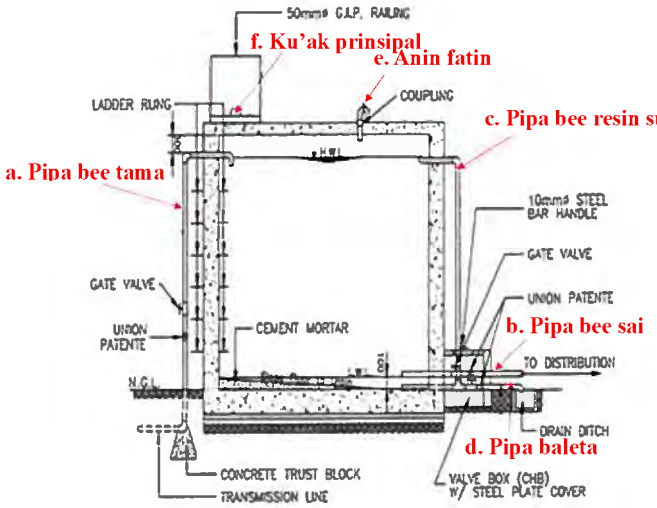


A = Konstrusaun Intake
B = Rezervador
C = kadoras
D = Valvula hois anin sai
E = Balvu ajuda anin

HDL = Hydraulic fatuk musan
G = Estatistika leten
H = Sidade rural ou Suku
I = Fahe balvu (id-idak 1.5 km)

Dezenya servi ba reservador No.1

Hirak nee acesoris pipa hanesan odan matan balvu, balvu anin, dezeyna ba prope duni ka fase soe sai? ☐ **Sim,** ☐ **Não**



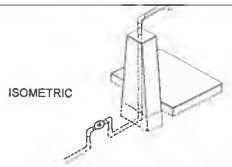
GROUND LEVEL RESERVOIR
(CONCRETE)

Pontu revista

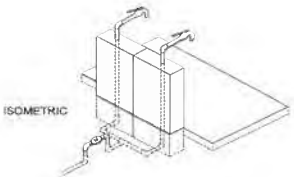
a. Pipa bee tama
Valvula odan matan nian
b. Pipa bee sai
Valvula odan matan nian
c. Pipa bee resin/ suli sai
ligasaun ho pipa baleta nian
d. Pipa baleta
Balbu odan matan nian, baleta saluran
e. Anin fatin
Screen Insetus
f. ku'ak prinsipal
g. I ndikador level ba bee nian

Torneira publika No.1

Numeru kona-ba torneira ulun kompletu ho loke taka:
Loke-taka



PUBLIC FAUCET INSTALLATION
SINGLE TYPE FAUCET



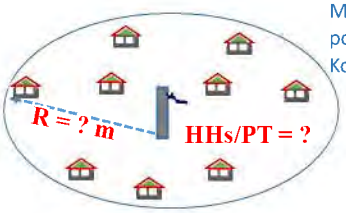
PUBLIC FAUCET INSTALLATION
DOUBLE TYPE FAUCET

Numeru husi Uma kain nebe uza husi torneira ida.
_____ **Uma kain**

TLRWSG husi DENSA

Minimum requirementos

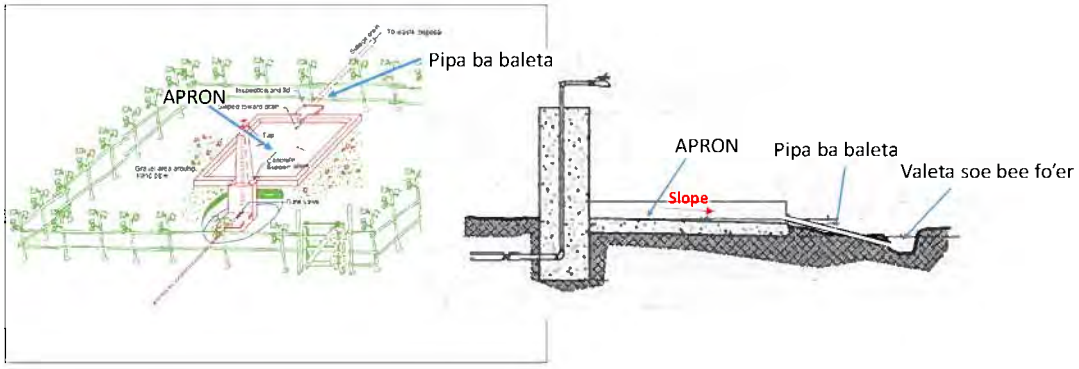
200 metrus / mais ou menus 5 menutus
Por volta tempu be la'o.
Standarti Rekomenda nian
100 metrus



Maximum numeru servi ba populasaun
Kolekta pontus
requeremento maximun
populasaun 100
Rekomenda estandar
populasaun 50

Torneira Publiku No.2

Hirak nee propio duni ho dizenya baiha koncreto nahe nian/ celemek?: ☐Los, ☐ Lae	Bee dalan/drainpipe kompleta duni ho konkreta nahe nian: ☐ Los, ☐ Lae



Konkretu No.1

Semente nebe atu uza ne'e ho kulidade? Semente nebe rai,halo ona testu ba iha kualidade?

Saku semeti ka Storing Bagged Cement

1. Simenti iha saku laran nebe hatama iha karon nia laran tenke rai iha armazen,hodi prevene anin ka bokon nebe halo estraga sementi ,falun ho lona/terpal hodi hamenus sirkulasaun anin nian no is bokon nian husi bee matan.
2. Sementi nebe hatama ona iha saku laran tenki rai iha armazen, karik laiha armazen ,bele uza ai dalas hodi rai sementi no falun halo diak ho lona atu prevene bee ka udan been labale kona ba iha sementi

3. Hodi nune saku sementi nebe rai husi okasionalidade " Pakote Armazen "kondisaun no rezultadu huis saku sementi ki'ik/klot. Retains husi semente se menti nian nee,kualidade no nebe normalmente halo no bele roling saku ninian nee iha rai leten.

Konkretu No.2

Semente nebe atu uza ne'e ho kulidade? Semente nebe rai,halo ona testu ba iha kualidade?

Hetan hun/abut Aggregates ka Raihenek - Hasai ou haketak husi rai no tahu

1. Rai no tahu mosu maka,as liu bele prova detekta husi tuir mai ne,e :

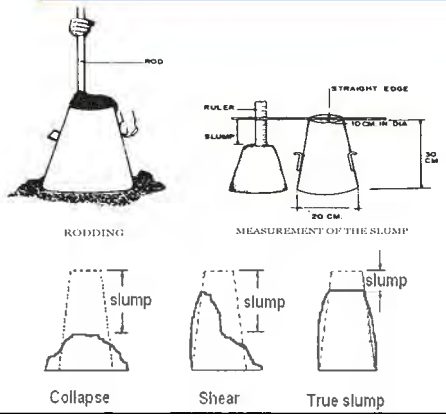
Ense bee iha botir (1.14ru lit)erlenmeyer iha rai henek to'o nia klean 5.0cm(2 ince);

2. Aumenta bee iha botir ka termos to'o ¾ no halo nakonu;
3. Doko botir ne'e durante menutu ida ho ninia getaran to'o pontu nebe didika;
4. Mantein hela stik no pozisaun hari, to'o menutu 30;
5 Observe ba iha raihenek ne'e karik liu husi 3,2mm ba ninia lapisan sedimental nian, hodi hetan raihenek ia sempel laran katak ne,e labele uza iha servisu konstrusaun nian, maibe Agregat hirak ne,e bele uza wainhira fase halo momos husi fo,er hirak nebe lao tuir iha rai henek laran.

Konkretu No.3

Hala'o ona kemerostan ou lae? Kemerosotan nee entre 70 to 90mm (husi Guideline CWSS)?

Notifikasaun minus liu husi frakeza katak nee liu husi waterproof wainhira halo ninia mistura.



- Kahur nian nee tenke halo maran ba frakeza nian husi 0 – 25 mm hodi halo dalan/ konstrusaun dalan
- Abilidade servisu nian nebe kahur ba frakeza nian husi 10 – 40 mm nebe uja ba fundasi kaman iha reinforcement
- Mediu ba workability nian sei kahur tuir frakeza nian husi 50 – 90 mm nebe uja iha beton bertulag biasa
- Kakahur ba workability nia as ba frakeza nian ho getaran liu husi 100 mm.

Bar Reinforcement nian No.1

Livre husi eskalasaun nebe dulas hodi naklosu, ferujen, oli massa, tahu ka material sira seluk.

Molok no durante fabrication of rebar's, Tenke inspesaun tuir:

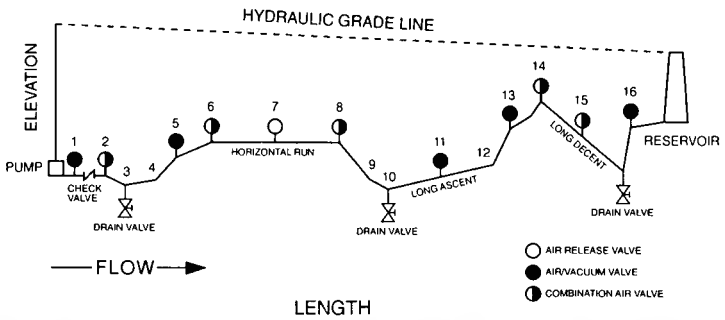
1. Mudah ka halakon ba feruziu hirak nee nebe relasaun ho materials. Iha feruziu balun ho skalasaun katak hamenus buat hirak nee wainhira parti bar nia nakleuk ou halos ho martelu no tenke hasai.

2. Karik feruziu makas liu iha bar nia hun, persiza atu husik iha fali ou lalika kontinua If the rust is firmly attached to the bar, it is recommended to leave it intact. This may improve the holding capacity of the bar and increase the bar-concrete bond.

3. Karik feruziu mosu makas liu tenke hamenus no liu husi area cross-sectional nian siknifika katak bele redus no halo rezeta.
4. Hamenus/ halakon objeksionalidade hirak nee hodi ko'a hanesan/hamenus oli, bomba massa, hamaran tahu hodi didika ba besi tranka nian nebe nahe iha konkretu nia leten tanba bele indika ba iha konkretu nia leten hanesan bainbain.

Pipa no Fitting No.1

Material pipeline nian monta hamutuk ho sluice valvula, kontrola valvula, anin valvula, pusa sai anain/wash-outs, no blok nebe hada nee mentin tuir dadus dizenya no kontratu?



NO.	DESCRIPTION	RECOMMENDED TYPES
1	Pump Discharge	Air/Vacuum for Pumps
2	Incr. Downslope	Combination
3	Low Point	No Valve Required
4	Increase Upslope	No Valve Required
5	Decrease Upslope	Air/Vac or Combination
6	Beginning Horizontal	Combination
7	Horizontal	Air/Rel or Combination
8	End Horizontal	Combination

NO.	DESCRIPTION	RECOMMENDED TYPES
9	Decrease Downslope	No Valve Required
10	Low Point	No Valve Required
11	Long Ascent	Air/Vac or Combination
12	Increase Upslope	No Valve Required
13	Decrease Upslope	Air/Vac or Combination
14	High Point	Combination
15	Long Descent	Air Release or Combination
16	Decrease Upslope	Air/Vac or Combination

Pipa no Fitting No.1-2

Lokasaun Valvula Anin iha pipa nia naruk

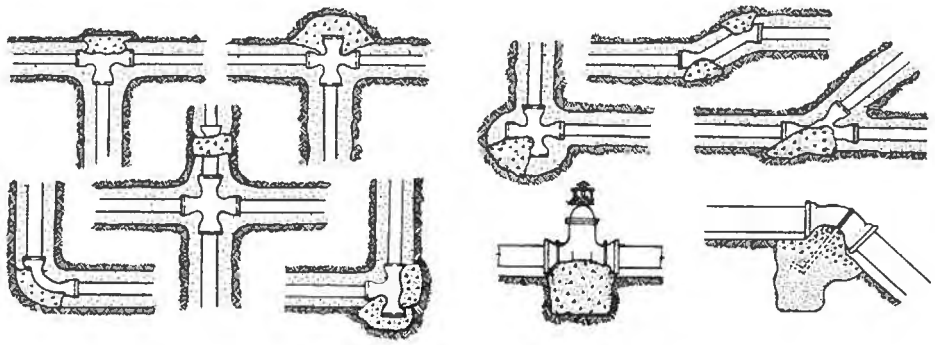
Valvula anin instala iha linya pipa nian atu eskuta anin no prevene ba iha vacuum nia kondisaun no hodi haforsa. Ba AWWA Steel Pipe nia manual hodi halo rekommenda,Valvula Anin tenke tuir pontu linya pipa nian.

1. **As pontu nian: K**ombinasaun ho Valvula Anin
2. **Naruk Horizontal nian hodi Halai: Hasai Anini ka** Kombinasaun Valvula iha 380 to 760 m ba ninia intervalu.
3. **Hamenus ninia Desentus: K**ombinasaun Valvula iha 380 to 760 m ba ninia intervalu.
4. **Ascents nia naruk: Anin**/Vacuum Valvula iha 380 to 760 m ba ninia intervalau.
5. **Sasulin nia As:** Anin/Vacuum Valvula
6. **Sasulin nia minus: K**ombinasaun ho valvula Anin

Husi "Theoria, Aplikasaun, no medida iha Valvula anin"
(Val-Matic Valve and Manufacturing Corporation)

Pipa no Fitting No.1-3

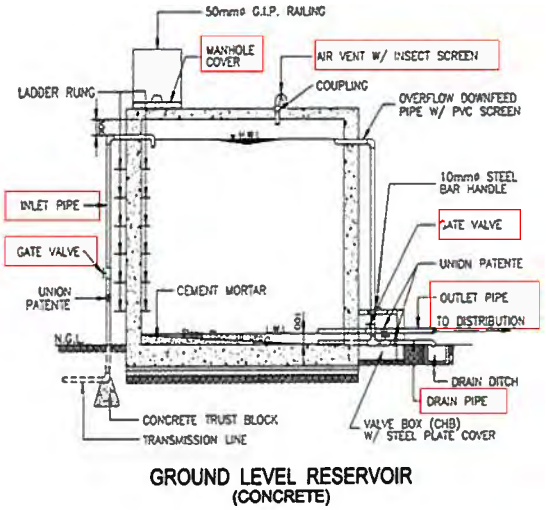
Hametin kaixa Block & Anchors



THRUST BLOCKS and ANCHORS

Tanki No.1

Pipa Inlet & valvula, pipa outlet & valvula, pipa overflow , valeta & valvula, anin ventilasaun no tampaun matan/manhole hirak nee insatala diak .?



GROUND LEVEL RESERVOIR
(CONCRETE)

(1) Inlet Pipe & Valve

(2) Outlet Pipe & Valve

(3) Overflow Pipe

(4) Drain Pipe & Valve

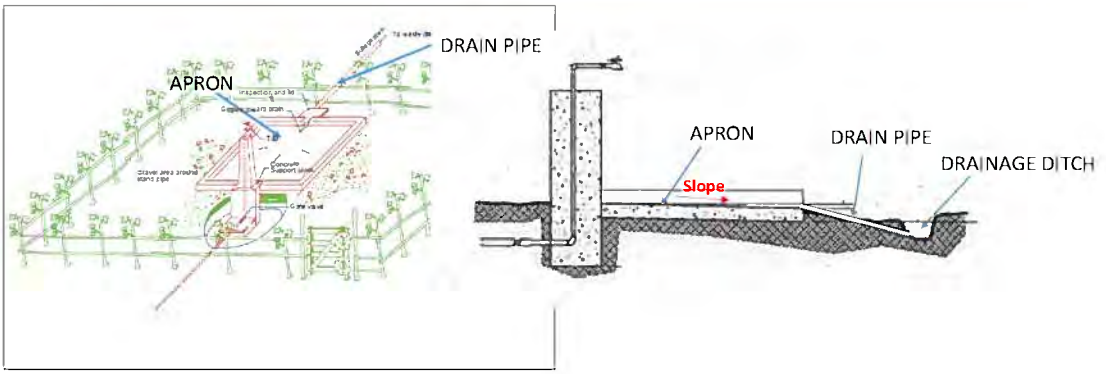
(5) Air Vent

(6) Manhole

(7) Water Level Indicator

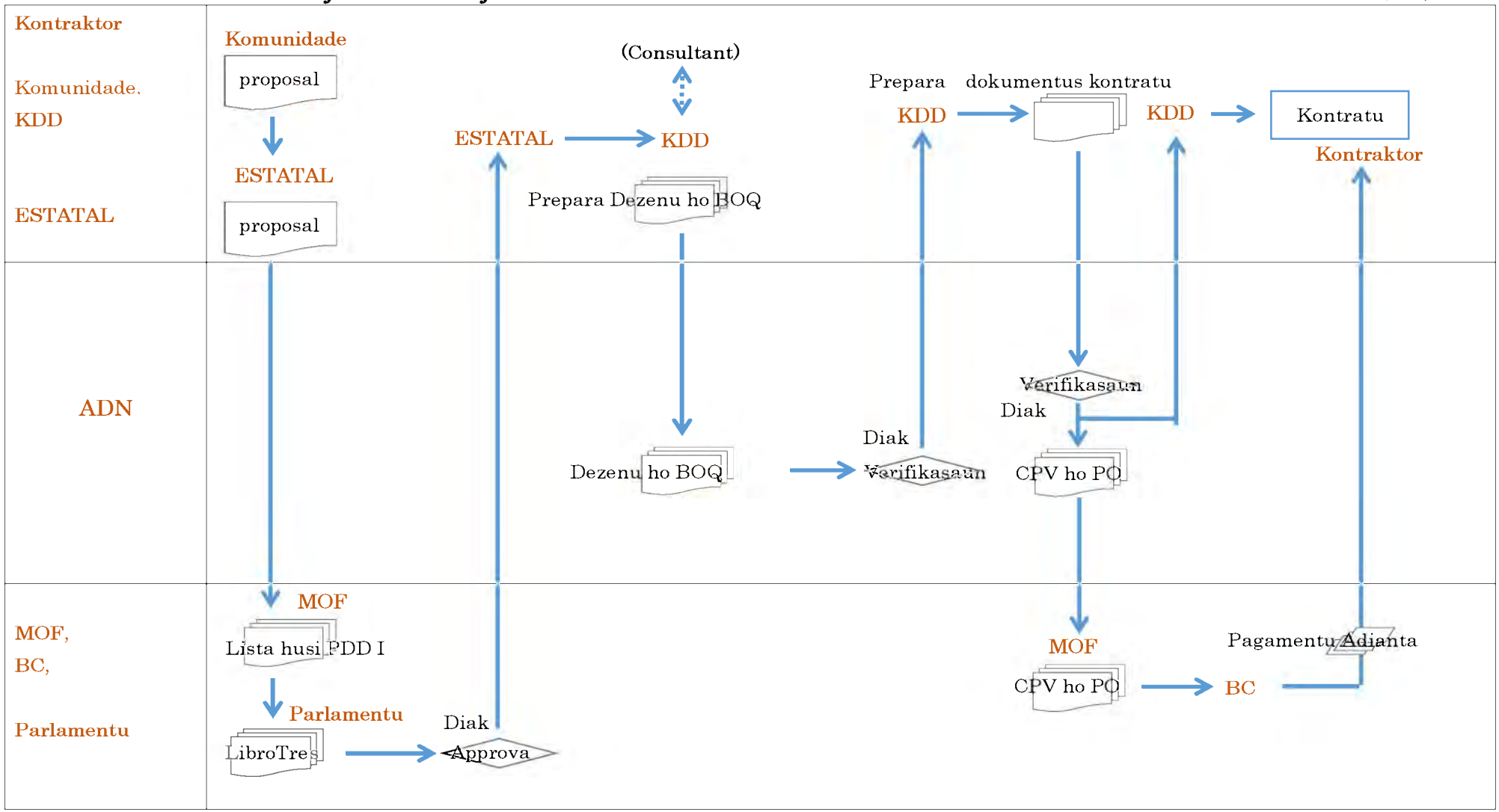
Apron & valeta bee dalan.1

Kondisaun Apron dian diak, tanki komunidade no pipa hari la iha sinal ruma? Sasulin bee nia husi apron ne la'o tuir valeta?

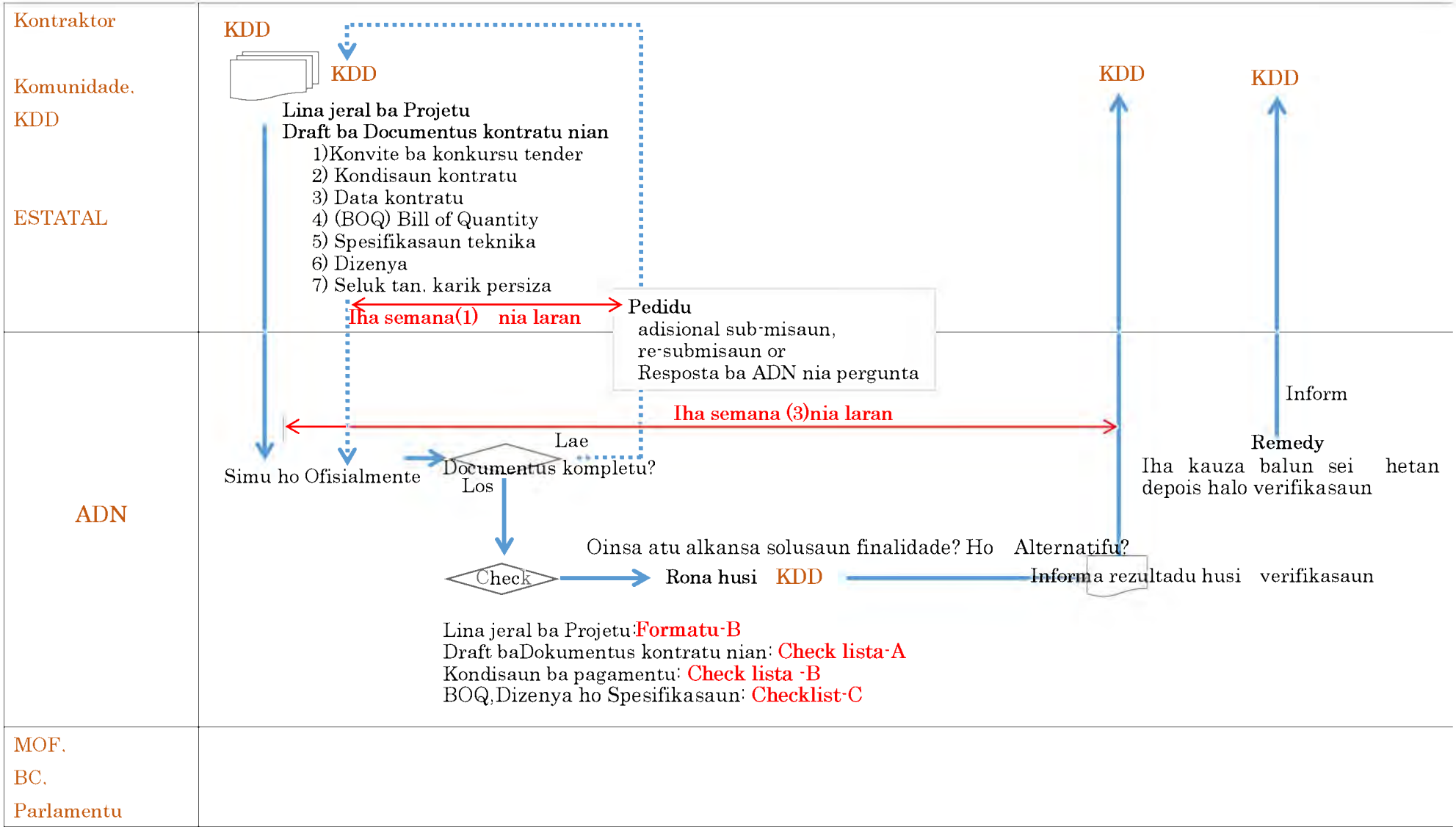


【Attachment 2】Aneksu Verifikasaun

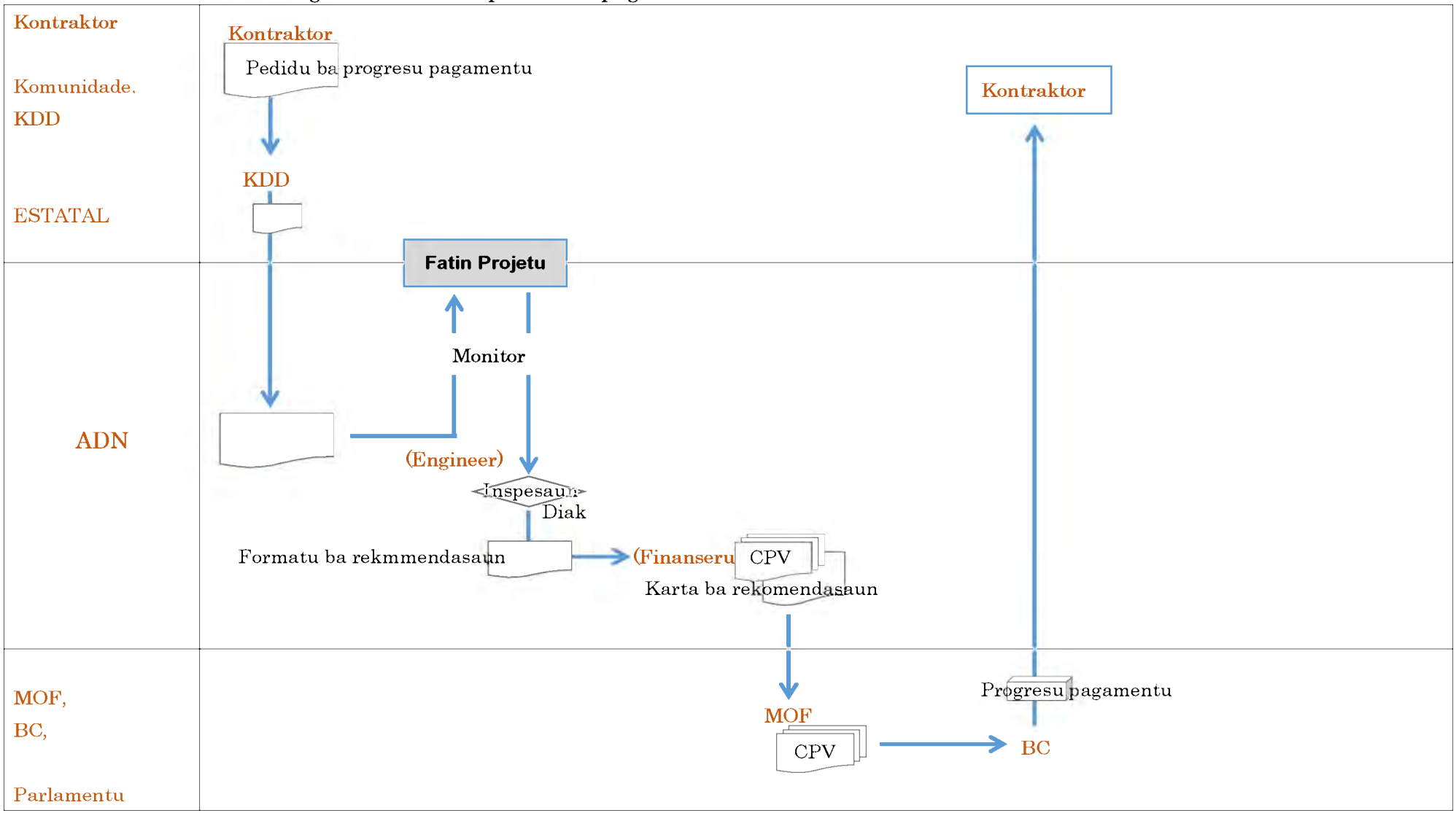
PDID EVALUASAUN **Projetu Antes AjudikasaunKontratu** (1/5)



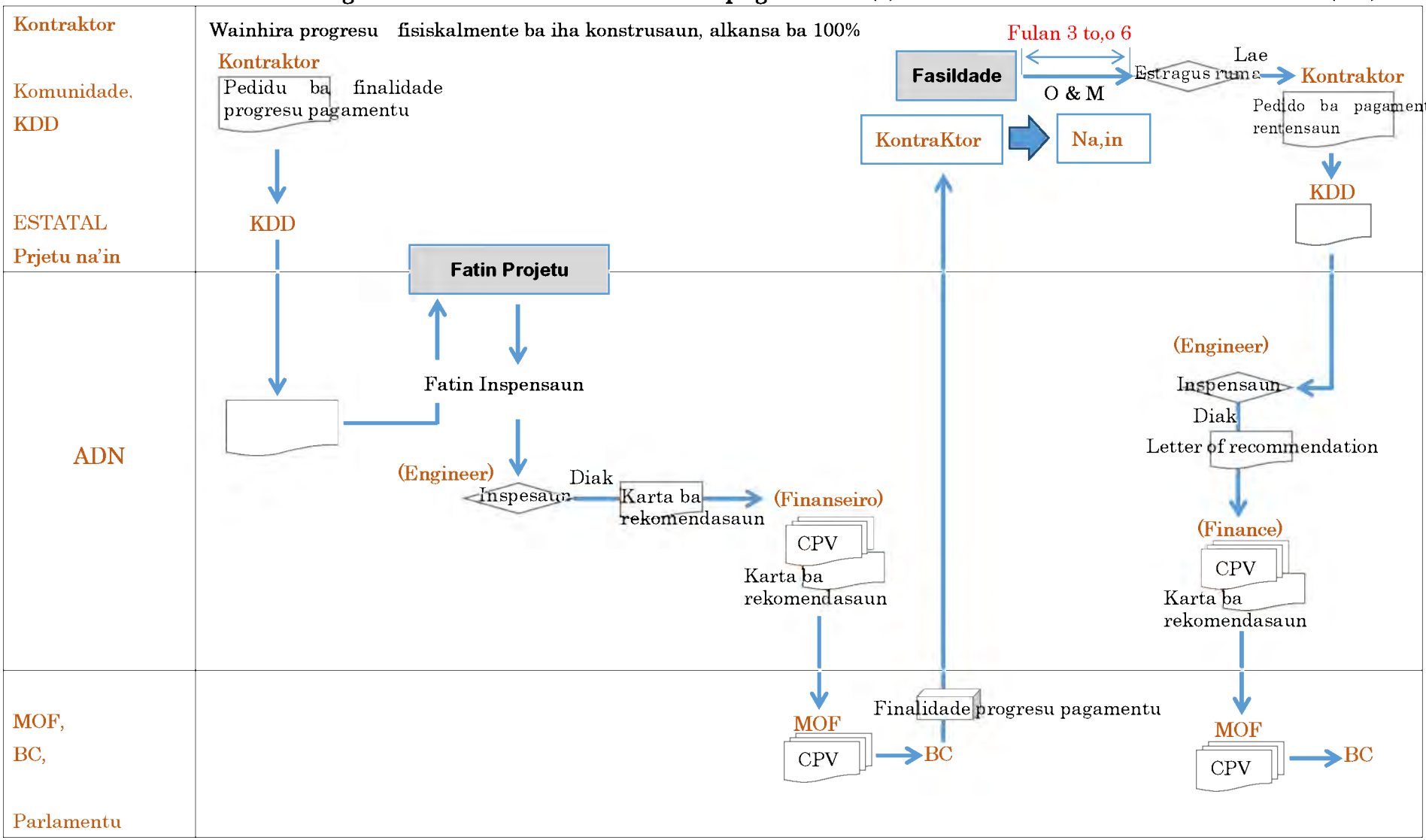
PDID Orario husi ba Verifikasaun (2/5)



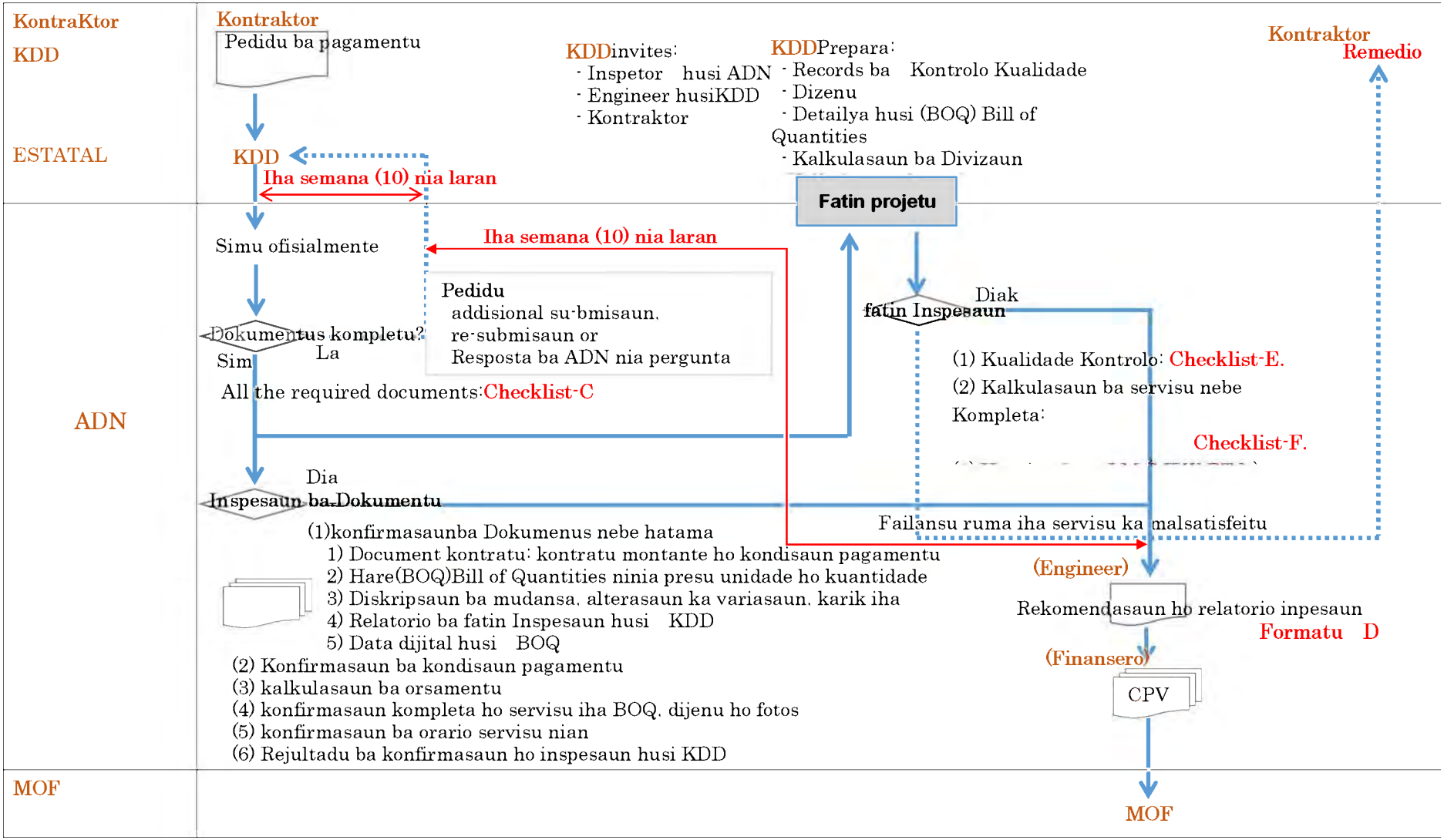
PDID Rekomendasaun ba Pagamentu ho Inspesaun ba pagamentu (1) (3/5)



PDID **Rekomendasaun ba Pagamentu & Rekomendasaun ba pagamentu (2)** (4/5)



PDID Horario ba Verifiasaun (5/5)



3. Programa Eletrifikasaun Nasional

3.1 Avaliasaun Projetu molok Adjudikasaun Kontratu

3.1.1 Jeneralidade

Programa Eletrifikasaun Nasionál maka hanaran (PEN) programa idane'e hanesan promosaun disséminasaun ba eletrifikasaun rurál ho méus estensaun distribusaun liña sira (20kV no 380V) ba nasionál Timor Leste nian.

Dekretu-Lei Nú: 40/2012 5 Setembru[1] hatutan katak;

Dezenvolvimentu lokál no maioria aumenta kompañia iha distritu sira nebe promove ona liuhosi servisu ne'ebé sei rehabilita no instala distribuisaun liña sira hosi enerjia elétriku ho koñesementu no responsabilidade.

Programa Eletrifikasaun Nasionál mak asaun ida urjente no essensiál hodi hasa'e ekonómiku, atu kria servisu no mós hasa'e kapasidade kompañia lokal sira nian. Aleindisu, implementasaun hosi programa sira hanesan iha tinan kotuk sei kapasita efetivu liután implementasaun husi Lei ida-ne'e.

"Artigu1.Objetu" preeskreve katak;

1. Lei ida-ne'e regula prosedimentu espesiál ba adjudikasaun obra rehabilitasaun no instalasaun foun hosi distribuisaun liña sira hosi valór elétriku hosi U.S. $ 100,000 to'o U.S. $ 4, 500,000, maka hanaran Programa Electrificacão Nasional (PEN).
2. Konsellu administrasaun nian hosi fundu infra-estrutura iha responsabilidade másimu ba PEN, no bele delega responsabilidade kon-ba administrasaun iha área eletrisidade nian no implementasaun hosi PEN ba membru governu nian ida.
3. Ajensia Dezemvolvimetu Nasionál, (National Development Agency, ADN), ne'ebé iha koordenasaun diak ho Governu, nebe responsabiliza iha área elétriku nian hodi hala'o kontrolu no supervizaun implementasaun nian hosi PEN.

"Artigu 6. Komisaun Jestaun no Implementasaun" preeskreve katak;

Komisaun Jestaun no Implementasaun (depois hanaran "Komisaun

[1] Dekretu-Lei ida-ne'e deskrebe deit iha lian-Português no tradús tuir projetu JICA.

PEN") konsiste husi:

1. Xefe ida husi Komisaun nebe hili husi membru Guvernu nian responsabiliza kona-ba área eletrisidade nian;
2. Reprezentativu ida husi Komisaun Aprovizionamentu Nasionál, hanesan Sekretáridu;
3. Reprezentativu ida husi Administrasaun Ministériu das Infra-estrutura;
4. Reprezentativu ida husi MPS (Major Project Secretariat);
5. Reprezentativu ida husi Departementu Prokuramentu EDTL;
6. Enjiñeru eletrisidade nain rua husi Guvernu rensponsabiliza ba área eletrisidade nian;
7. Reprezentativu ida husi Departmentu Finansas EDTL nian;
8. Reprezentativu ida husi sub-distritu iha ne'ebé projetu konsentra;

Responsabilidade no aktividade sira husi Komisaun PEN nebe hatudu iha baze husi Dekretu-Lei Nú. 40/20/2012 hanesan tuir mai ne'e.

1. Komisaun PEN aranza lista projetu sira nian hodi realizada
2. Komisaun PEN formula projetu no projetu publika atravesa jornal púbriku
3. Komisaun PEN, no MPS hala'o engkontru hodi halo selesaun ba Kompañia. Komisaun PEN halo selesiona Kompañia ba projetu.
4. Komisaun PEN hala'o enkontru ho Kompañia selesionadu tuir orden atu hetan akordu ba termu husi kontratu.
5. Pedidu pagamentu sei submete ba Komisaun PEN.
6. Komisaun PEN no ADN hala'o verifikasaun ba progresu obra nian, no submete pedidu pagamentu ba MPS.

3.1.2 Fluxu Prosedimentu kona-ba Kualidade Sertifikasaun hosi dokumentus kontratu

Iha Dekretu-Lei Nú. 40/2012, Kualidade Sertifikasaun hosi dokumentus kontratu hosi ADN nebe espesífika hanesan parte ida hosi prosedimentu kona-ba selesaun hosi kompañia sira.

Fluxu Prosedimentu hodi atinje Kualidade Sertifikasaun molok asina kontratu nebe hatudu iha figura 3-1

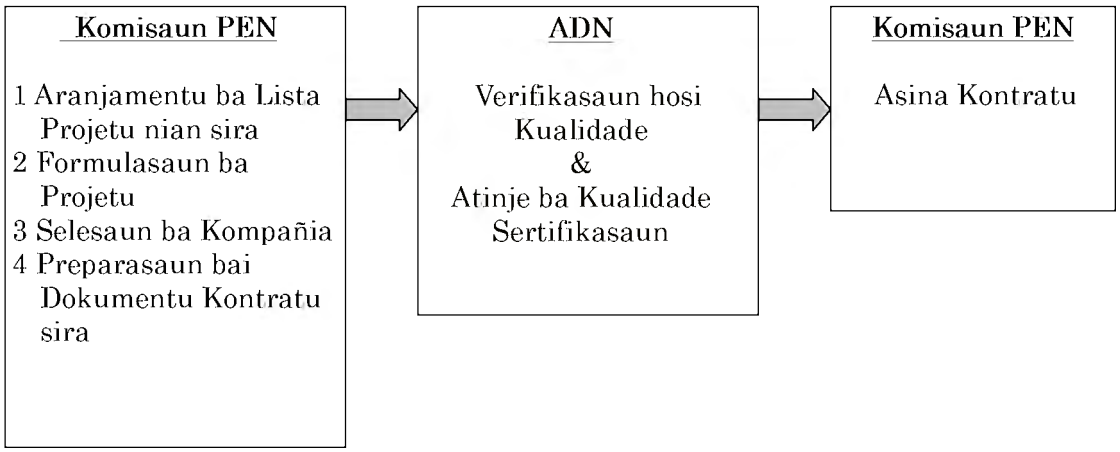


Figure 0-1 Fluxu Prosedimentu ba Kualidade Sertifikasaun hosi Dokumentus Kontratu

3.1.3 Orário ba Emite Sertifikasaun Kualidade

(1) Orário baziku

Atinje Kualidades Sertifikasaun (rezultadu verifikasaun nian hosi dokumentus kontratu) antes asina kontratu tenke kompleta iha loron 10 nia laran depois de simu dokumentus sufisiente maka hanesan iha fluxugrama iha Figura 3-2. (Kontratu tenke asina iha loron 8 nia laran depois atinje Kualidade Sertifikasaun).

(2) Konfirmasaun hosi dokumentus nesasáriu ba verifikasaun

Iha loron 4 depois de simu dokumentus husi Komisaun PEN, ADN tenke istrui ba Komisaun PEN atu submete dukumentus nebe falta iha karta no husu pergunta ba Komisaun PEN, karik iha.

(3) Verifikasaun ba dokumentus kontratu

Iha loron 10 depois husi simu dokumentus sufisiente no responde ba ADN-nia perguntas husi Komisaun PEN, ADN tenke submete rezultadu verifikasaun nian iha hakerek. Karik rezultadu verifikasaun nian maka aprova, dukumen nebe submete hosi ADN sei konsidera hanesan atinje kualidade sertifikasaun hosi ADN.

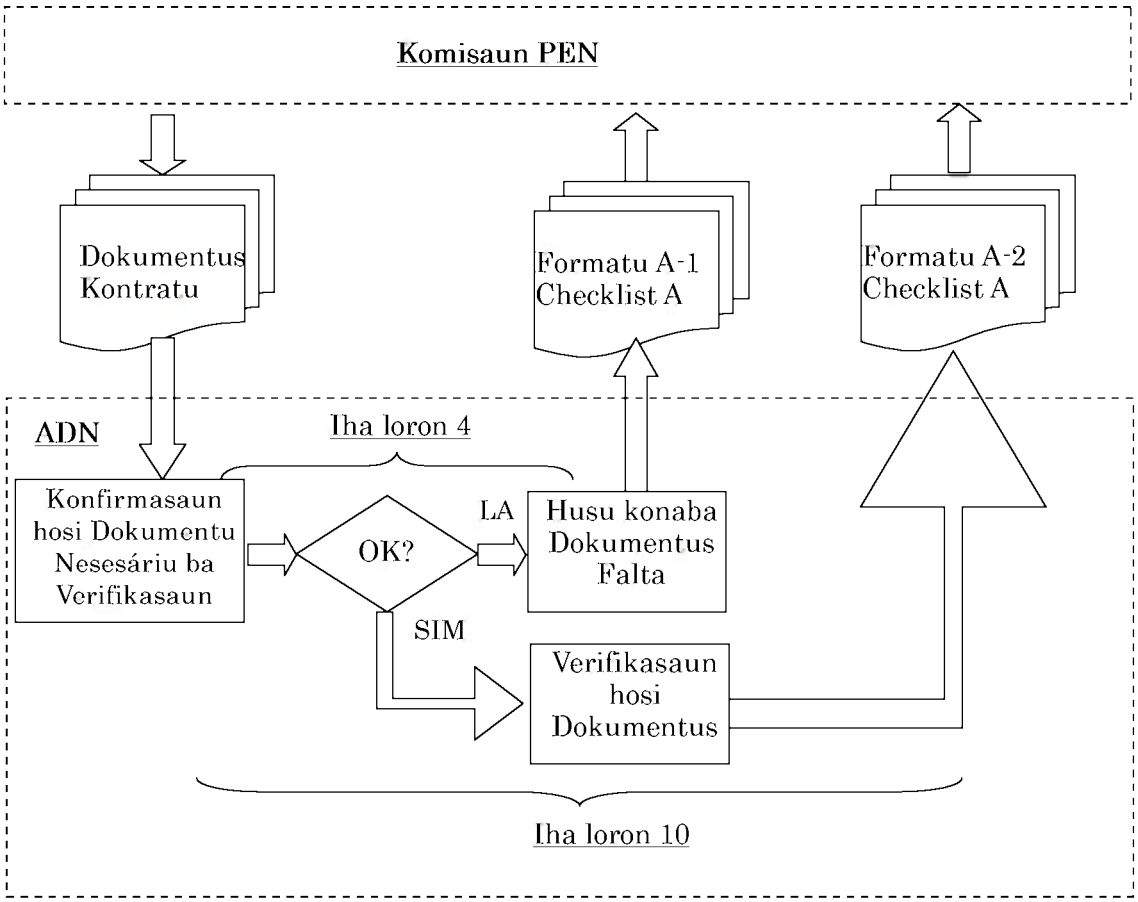


Figura 0-2 Orário Atinje ba Kualidade Sertifikasaun

3.1.4 Verifikasaun ba Kualidade Sertifikasaun

(1) Dokumentus Nesesáriu atu submete ba Kualidade Sertifikasaun

ADN tenke izame dokumentus nebe konsentra ba verifikasaun and atinje Kualidade Sertifikasun. Dokumentus nesesáriu atu submete husi Komisaun PEN ba ADN hatudu iha kraik no ninia ponturevista hatudu iha anexa -3 hanesan "**Checklist A**". Karik dokumentus husi Komisaun PEN la natoon, AND tenke instrui ba Komisaun PEN atu submete dokumentus natoon hodi uza "**Formatu A-1**".

1) Lista Projetu
- Prioridade kona-ba Implementasaun Projetu
- Informasaun kona-ba Sucos non eletrifikadu
- Informasaun kona-ba planu no liñas eziste

2) Formulasaun Projetu
- Justifikasaun kona-ba projetu
- Área obra nian
- Ezbosu husi Sucos nebe presiza eletrisidade
- Ezbosu husi Projetu

- Aproximadamente. Naruk husi distribuisaun liñas hosi 20kv no 380v
- Prospetiva loron komesa hala'o projetu
- Publisidade Projetu

3) Seleksaun Kompañia
- Justifikasaun Kompañia
- Minutu enkontru kona-ba selesaun
- Impostu Kompañia
- Lista kona-ba esperénsia obras nian hanesan ho uluk
- Lista enjiñerus nian iha Kompañia kona-ba obras

4) Dokumentus Kontratu
- Akordou Kontratu
- Kondisoins Jerál ho Dadus Kontratu
- Espesífikasaun tékniku
- Padraun Konstruksaun
- Dezeñu Projetu
- BoQ

(2) Atinje Kualidade Sertifikasaun

Asina Kontratu tenke hala'o depois atinje Kualidade Sertifikasan husi ADN tuir Dikretu-Lei Nú.40/2012.

ADN tenke verifika items hirak ne'e ho inisiativu husi ezaminasaun ba dokumentus nesesáriu atu submete husi Komisaun PEN hodi uza anexa "**Checklist A**".

The ADN tenke atenji resultadu husi verifikasaun dokumentus ba Komisaun PEN uza "**Form A-2**".

3.2 Inspesaun Projetu & Rekomendasaun ba Pagamentu

3.2.1 Fluxu Prosedimentu ba Pagamentu

Fluxu Pagamentu husi PEN maka hatudu iha Figura 3-3 hanesan fluxugrama ida bazéia ba Dekritu-Lei Nú.40/2012.

Dekritu-Lei preeskreve katak;

Pedidu pagamentu husi conpanha submete ba Komisaun PEN. Depois de verifikasaun husi Komisaun PEN, ADN hala'o verifikasaun ba progressu obras no submete pedidu rekomendasaun ba pagamentu ba MPS.

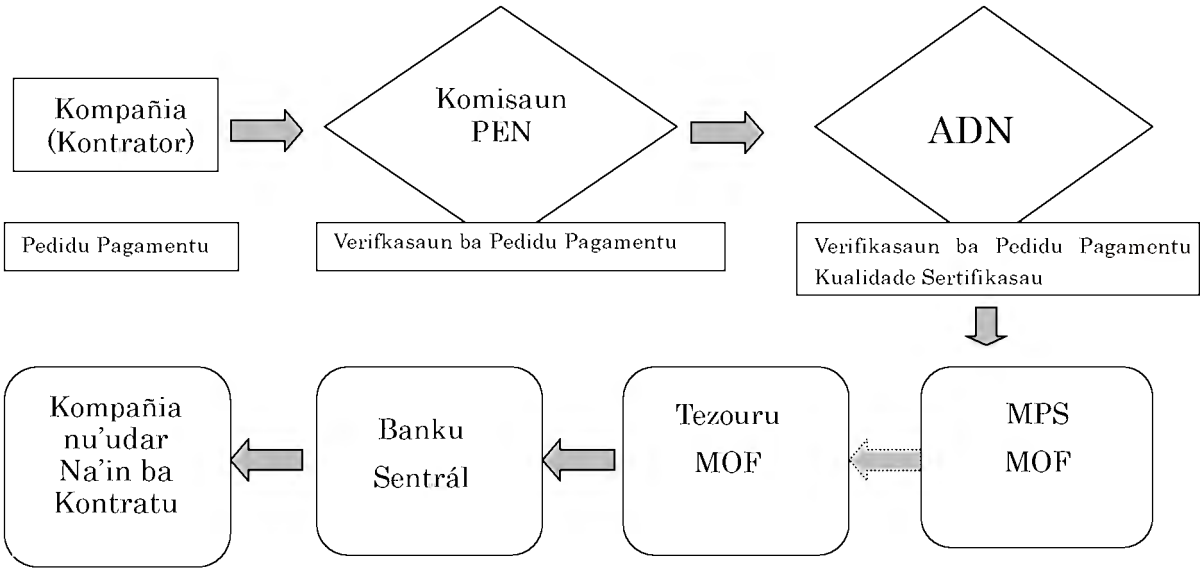


Figura 3-3 Fluxu Pagamentu ba PEN

3.2.2 Orário Verifikasaun ba Pagamentu

(1) Orário Baziku

Verifikasaun ba Pagamentu tenke kompleta iha loron 10 nia laran depois simu dokumentus sufsiente hanesan hatudu iha fluxugrama iha Figura 3-4 iha kraik ne'e. Durasaun ba loron hatudu iha data deadline nian.

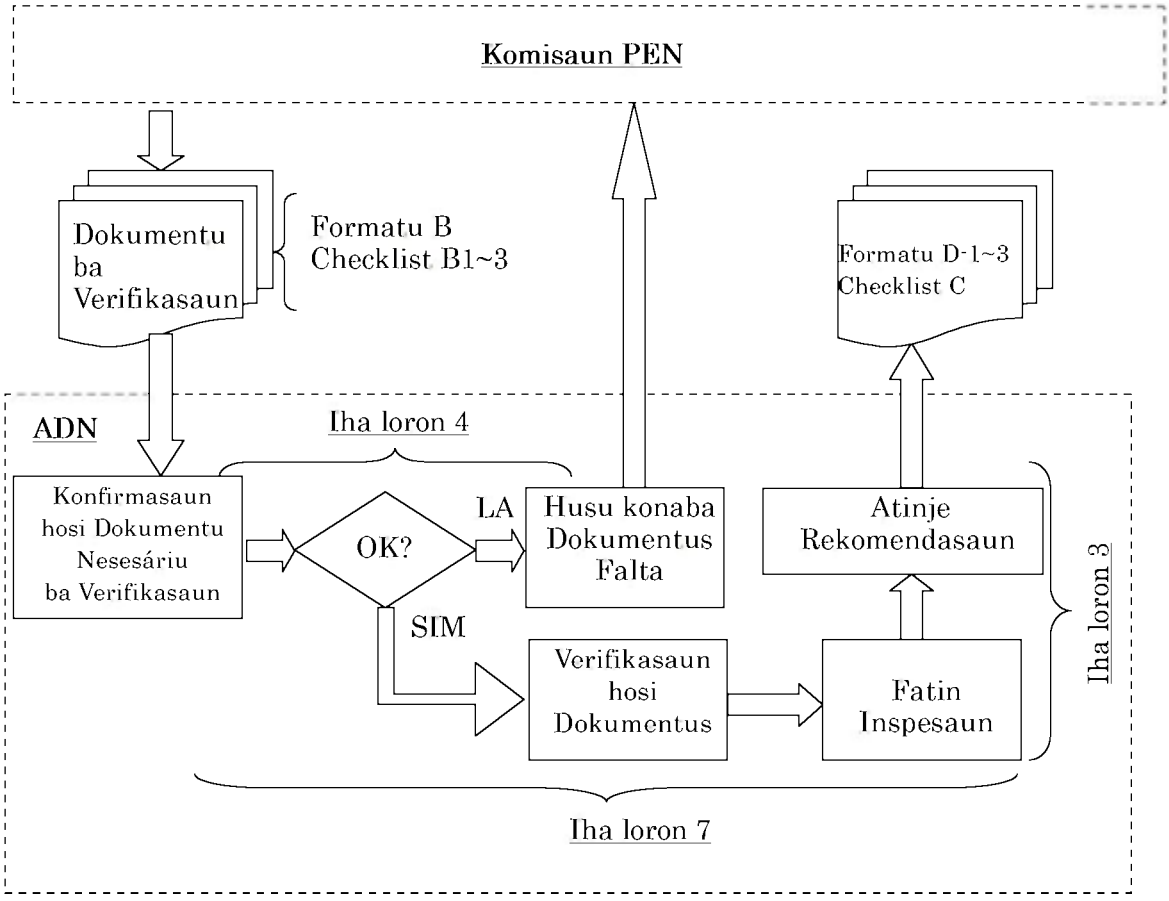


Figure 3-4 Orário Verifikasaun ba Pagamentu

(2) Kofirmasaun hosi dokumentus nesesáriu ba verifikasaun

Iha loron 4 nia laran depois simu Sertifikadu ba Pagamentu husi Komisaun PEN, ADN tenke instrui ba Komisaun PEN atu submete dokumentus nebe mak falta iha hakerek no husu pergunta ba Komisaun PEN, karik iha.

(3) Dokumentu inspesaun no fatin inspesaun

Iha loron 7 depois simu dokumentus sufisiente no resposta husi

Komisaun PEN, ADN tenke tún ba fatin Inspesaun, karik nesesáriu, ho koodenasaun loron ba vizita terrenu ho Komisaun PEN iha orden atu rona tuir no fó instrusaun.

(4) Atinje rekomendasaun pagamentu

Iha loron 10 nia laran depois simu dokumentus sufisiente no resposta ba ADN-nia pergunta husi Komisaun PEN, ADN tenke atinje rekomendasaun pagamentu kona-ba verifikasaun ba MPS iha MOF.

3.2.3 Dokumentus Nesesáriu atu submete husi Komisaun PEN

Relatoriu inspesaun husi Komisaun PEN tenke submete ba ADN depois de verifikasaun husi Komisaun PEN ba pagamentu.

Relatoriu ba pedidu pagamentu interim pagamentu tenke inklui tuirmai ne'e:

- "Sumariu Verifikasaun ba Pedidu Pagamentu husi Komisaun PEN"
- "Dokumentus kompañia nian ho Asinatura Hakerek fila fali husi Komisaun PEN iha Kada Pajina"
- "Resultadu ba supervisaun husi Komisaun PEN"

Relatoriu ba Pedidu Pagamentu husi Provizional Handover tenke inklui adesaun tuirmai.

- "Resultadu Teste Funsional ho kriteria"

Relatoriu pedidu ba Pagamentu Final Handover tenke inklui adesaun tuirmai.

- "Relatoriu ba operasaun no manutensaun"

ADN tenke prova katak relatoriu inspesaun husi Komisaun PEN inklui items sufisiente ba verifikasaun. Formatu ba sumariu relatoriu inspesaun nian husi Komisaun PEN nebe hatudu iha Anexa-3 hanesan "Formatu B" no no nesesáriu items iha relatoriu ne'e hatudu iha Anexa-3 hanesan "**Checklist B-1~3**".

3.2.4 Dokumentu Inspeksaun

(1) Jeneralidade

Komisaun PEN tenke submete sira-nia relatoriu hanesan sira-nia rezultadu ba verifikasaun. Relatoriu ida-ne'e tenke inklui Kompañia-nia relatoriu ho asinatura hakerek husi Komisaun PEN.

Verifikasaun husi ADN tenke hahu husi inspesaun dokumentu bainhira relatoriu husi Komisaun PEN ho nesesáriu items to'o iha ADN.

(2) Inspesaun ba Pagamentu Interim

Verifikasaun ba pedidu pagamentu interim dala ruma hala'o deit ba Dokumentu Inspesaun karik iha markante problemas nebe deskoñesidu. Iha tempu inspeksaun terrenu ba pagamentu interim hala'o, tenke iha razaun loloos no mensiona iha relatoriu inspesaun.

Verifikasaun Items ho razaun atu implementa ba inspesaun terrenu ba pagamentu interim maka hanesan tuir mai ne'e.

1. Valor nebe bo'ot (karik liu husi 100,000 USD) husi fatura kada pagamentu interim
2. Relatoriu husi Komisaun PEN sei la sufisiente atu verifka kuantidades.

Verifikasaun ba pedidu pagamentu interim tenke ezame importante ba kalkulasaun husi fatura ho kondisoens pagamentu no kuantidades aproximadamente husi kompletasaun ba obras.

Ezaminasaun tenke fukus ba importante tékniku items nebe route ba liña tenke koresponde dezeñu ka tipu fundasaun ba ai-rin tenke hasoru rekerementu ba espesifikasaun tékniku nst

.

Items nesesáriu ba verifkasaun tenke inklui iha relatoriu Komisaun PEN nian maka hanesan tuirmai no checklist nebe hatudu iha anexada-3 hanesan "ChecklistB-1".

3. Rezumu verifikasaun ba pedidu pagamentu husi Komisaun PEN
4. Revizaun ba Obras no investigasaun detalla relasiona jeográfika no aspetu jeolójika
5. Dokumentus Kompañia nian ho asinatura hakerek husi Komisaun PEN iha kada pájina
6. Resultadu ba supervisaun husi Komisaun
7. Dadus digitál husi fatura iha pedidu pagamentu

(3) Inspeksaun pagamentu ba Provisional Handover

Nesesáriu items ba verifikasaun tenke inklui iha relatoriu husi Komisaun PEN hanesan tuirmai ne'e. Checklist ba verifkasaun anexa-3 hanesan "**Checklist B-2**" no checklist ba inspeksaun tékniku nebe hatudu iha "**Checklist C**" ho inklui "Guideline of Technical Inspection for Distribution Line".

Inspesaun tenke fokus ba dokumentus husi Komisaun PEN atu nune'e kompleta servisu obra no mós ba remediu ba defeitus.

8. Rezumu husi verifikasaun ba pedidu pagamentu husi Komisaun PEN
9. Revizaun ba obras no investigasaun detalla relasiona jeográfika no aspetu jeolójika
10. Dokumentus kompañia nian tenke hetan asinatura hakerek husi Komisaun PEN iha kada pájina
11. Rezultadu ba Supervisaun husi Komisaun PEN
12. Rezultadu Funsionál Teste no sukat ho kriteria
13. Dadus digital husi fatura iha pedidu pagamentu

(4) Inspesaun ba Pagamentu Final Handover

Items nesesáriu para verifika tenke inklui iha relatoriu Komisaun PEN hanesan tuirmai ne'e. Checklist ba verifikasaun nebe hatudu iha Anexa-3 hanesan "**Checklist B-3**" no checklist ba inspesaun tékniku nebe hatudu iha "**Checklist C**" ho "Guideline of Technical Inspection for Distribution Line".

Inspeksaun tenke fokus ba dokumentus husi Komisaun PEN kona-ba obra kompletu no mós ba remediu ba defetus.

a. Rezumu verifikasaun ba pedidu pagamentu husi Komisaun PEN
b. Revizaun ba obra no investigasaun detalla relasiona jeográfika no aspektu jeolójika
c. Dokumentus compañia ho asinatura hakerek husi Komisaun PEN iha kada pajina
d. Relatoriu husi operasaun no manutensaun
e. Dadus digitál husi fatura iha pedidu pagamentu

3.2.5 Inspeksaun terrenu

(1) Jeneralidade

Verifikasaun ba pedidu pagamentu ba Provizionál no Final Handover tenke hala'o iha ispesaun terrenu depois inspesaun ba dokumentus.

Implementasaun koreta no efisien husi inspesaun tékniku iha konkluzaun fiziku husi obra, Provizionál no Final Handover, tenke realizada bazeia ba "**Checklist C**" nebe hatudu iha Anexa-3 "Guideline of Technical Inspection for Distribution Line".

(2) Preparasaun

Verifika Items hanesan tuir mai ne'e.

a. Preparasaun ba tempu orário kona-ba fatin vizita
b. Koordensaun ho Komisaun PEN-nia atendementu iha fatin vizita
c. Husu xefe Komisaun PEN atraveza karta hakerek cc ba MPS, karik laiha atendementu husi Komisaun PEN
d. Selesaun ba investigasaun items/komponentes iha BoQ, hanesan komponentes importante atu funsíona no no kuantidade items nebe mak boot

(3) Aktividades iha terrenu

Verifika Items ba aktividades iha terrenu para inspesaun hanesan hatudu tuirmai ne'e.

a. Outline husi komponentes kompletu
b. Kuantidades kompletu husi mediasaun lokál
    - Diferente entre valór kompletu loloos no hirak ne'e iha BoQ
c. Kualidade materiais no instalasoens
    - Referesia ba "**Checklist C**" no "Guideline of Technical Inspection for Distribution Line"
    - Resultadu Teste husi Komisaun PEN tuir kriteria
d. Aspectu seluk tan
    - Orário husi Obras
    - Aktividades Konstrusaun
    - Situasaun husi Benifisiarius
    - Problemas entre viziñus, etc.

3.2.6 Evaliasaun no Relatóriu

Depois implementasaun hosi inspesaun no evaluasaun ba obras kompletu, "rekomendasaun ba pagamentu" no "rekomendasaun ba remediu" ba defeitus husi obras nian, karik iha, tenke hato'o liuhosi karta ba MPS ho lais.

Prosedimentu husi submisaun ba relatoriu hanesan hatudu tuirmai ne'e.

1) Inspetur husi ADN tenke verifika Pedidu Pagamentu relasiona ba dokumentus no inspesaun ba terrenu. Rekomendasaun ba pagamentu nebe hato'o utiliza "**Formatu C**" nebe hatudu iha Anexa-3.

2) Karik ADN la simu dokumentus sufisiente no resposta husi Komissaun iha loron razuavel nia laran (karik semana 1) AND tenke hato'o verifikasaun defetivu husi Komisaun PEN ba MPS.

3) Karik iha defeitus ruman husi obras nebe observa hela, rekomendasaun ba remediu tenke instrui ba Komisaun PEN no Kompañia ho hakerek. ADN tenke hetan asinatura husi parte rua iha anexa "**Formatu D-1**", "**Formatu D -2**" no "**Formatu D-3**".

Rekomendasaun ba pagamentu ne'ebé inklui redusaun ba pedidu pagamentu ka pending ba loron pagamentu atu bele hein ba koresaun ba defeítus husi kompañia, tenke hato'o ba iha MPS.

Iha Anexa ida-ne'e, formatus no checklists nebe uza iha obra deskrebe iha'3. Programa Eletrifikasaun Nasionál' nebe hatudu.

Relasaun entre formatus/checklists no tempu uza sira hatudu iha tabela tuirmai.

Tabela Anexa-3-1 formatus/checklists no sira-nia tempu utilizasaun

Formatus/Checklist	Tempu Utilizasaun	Utilizadór
Formatu A-1	Atinje rezultadu konfirmasaun dokumentus ba kualidade verifikasaun hosi kontratu	ADN
Formatu A-2	Atinje rezultadu verifikasaun ba kualidade sertifikasaun hosi kontratu	ADN
Formatu B	Atinje Sertifikadu ba Pagamentu	PEN/C
Formatu C	Atinje rekomendasaun ba pagamentu	ADN
Formatu D-1	Atinje rekomendasaun ba pagamentu interim	ADN
Formatu D-2	Atinje rekomendasaun ba pagamentu provisional	ADN
Formatu D-3	Atinje rekomendasaun ba pagamentu finál	ADN
Checklist A	- Konfirmasaun dokumentus ba kualidade verifikasaun hosi kontratu - Verifikasaun ba kualidade sertifikasaun hosi kontratu	ADN
Checklist B-1	Atinje sertifikadu ba pagamentu interim	PEN/C
Checklist B-2	Atinje sertifikadu ba pagamentu provisional	PEN/C
Checklist B-3	Atinje sertifikadu ba pagamentu final	PEN/C
Checklist C	Fatin inspesaun / Inspesaun terrenu	ADN

PEN/C : Komisaun PEN

Anexada, 'Guideline of Technical Inspection for Distribution Line' ne'e ba utilizasaun inspesaun tékniku 'Checklist C'.

Formatu A-1 (Konfirmasaun ba Pedidu Pagamentu husi Komissaun PEN)

REPUBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÉNCIA DE DESENVOLVIMENTO NACIONAL

Formatu A-1

Data : 25 de Outubro, 2012

Hato'o Ba : Sr. Kassius Klei
Chefe Komisaun Jestaun no Implementasaun - PEN

Hosi : Sr. Samuel Marcal
Diretor Geral da Agencia de Desenvolvimento Nacional

CC : S.E. Januario da Costa Pereira
Secretario de Estado da Electricidade

Ref : _____RDTL/GPM/ADN/X/2012

Assunto : Nessesariu Dokumentus atu Submete husi Komisaun PEN

Ho Respeitu,

Bazeia ba Decretu lei Agéncia Desenvolvimentu Nacional (ADN) No. 11/2011 nomos Decretu Lei No. 40/2012 Programa Eletrificacão Nacional (PEN) nebe fo papel ba ADN nudar quality control & auditing ba projetu hotu-hotu nebe financia husi osamento estado. Ho nune ekipa halao tiha ona prosesu Komfirmasaun ba dokumentus hirak nebe ita submete husi Comissao de Gestao e Implementacao ba ADN

Resultadu ba komfirmasaun ba nessesariu dokumentus atu submete hatudu tuir mai ne'e ho resultadu husi Checklist A (Aneksu):

Naran Projetu :_____

Fatin Projetu :_____

Naran Companha :_____

Tipu Verifikasaun :
1. Lista Projetu ☐
2. Formulasaun Projetu ☐
3. Seleksaun Companha ☐
4. Documentus Contratu ☐

Rezultado komfirmasaun Documentus : APROVA/APROVA HO NOTA/PENDENTE/REZEITA

RECOMENDASAUN ADN

Mak ne'e deit ba ita boot nia atensaun no kolaborasaun diak ami hato'o Obrigado Wain.

Formatu A-2 (Verifikasaun ba Pedidu Pagamentu husi Komisaun PEN)

REPUBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL

Formatu A-2

Data : 25 de Outubro, 2012

Hato'o Ba : Sr. Kassius Klei
Chefe Komisaun Jestaun no Implementasaun - PEN

Hosi : Sr. Samuel Marcal
Diretor Geral da Agencia de Desenvolvimento Nacional

CC : S.E. Januario da Costa Pereira
Secretario de Estado da Electricidade

Ref : _____RDTL/GPM/ADN/X/2012

Assunto : Rezultado Verifikasaun Dokumentus Projetu PEN

Ho Respeitu,

Bazeia ba Decretu lei Agéncia Desenvolvimentu Nacional (ADN) No. 11/2011 nomos Decretu Lei No. 40/2012 Programa Eletrificacão Nacional (PEN) nebe fo papel ba ADN nudar quality control & auditing ba projetu hotu-hotu nebe financia husi osamento estado. Ho nune ekipa halao tiha ona prosesu verifikasaun ba dokumentus hirak nebe ita submete husi Comissao de Gestao e Implementacao ba ADN Rezultado verifikasaun ba dokumentus mak tuirmai ne'e ho rezultado iha **Cheklist 1 (Aneksu)**:

Naran Projetu :_____

Fatin Projetu :_____

Naran Companha :_____

Tipu Verifikasaun : **1. Lista Projetu** ☐
2. Formulasaun Projetu ☐
3. Seleksaun Companha ☐
4. Documentus Contratu ☐

Rezultado Verifikasaun Documentus : **APROVA/APROVA HO NOTA/PENDENTE/REZEITA**

RECOMENDASAUN ADN

Mak ne'e deit ba ita boot nia atensaun no kolaborasaun diak ami hato'o Obrigado Wain.

Formatu-B (Rekomendasaun ba Pagamentu hosi Komisaun PEN)

Verifikasaun ba Pedidu Pagamentu husi Comisaun

Formatu B

1	Naran Projetu				
2	Tipu Prejetu	Programa Eletrifikasaun Nacional			
3	Numeru PO (Purchase Order)				
4	Naran Kontratour				
5	Tipu Pedidu Pagamentu	Pagamentu Interem (First, Second, Third), Provisional Handover, Final Handover			
6	Orariu husi Obra	Loron Halu: Intended Completion day: Defect Library Period :			
7	Kondisoins Pagamentu	Pagamentu Adiantadu (%), Retensaun (%), Prepagu ba retensaun (% iha loron Kompletasaun), etc.			
8	Fatin Projetu: District & Sub-district				
	Village/Hamlet				
9	Valor husi Kontratu			$	1,000 000.00
10	Brutu Pagamentu to agora			$	500,000.00
11	Fatura Iha invoice husi Kontarour			$	200,000.00
12	Fatura Verifikadu husi Inspetour			$	100,000.00
13	Pagamentu adiantadu : (10 %) husi valor Contratu	(9)x10%		$	100,000.00
14	Redusaun ba Pagamentu adiantadu	(13)x((12]/(9])		$	10,000.00
15	Redusaun ba Retensaun (10 %)	(12)x10%		$	10,000.00
16	Pagamentu depois husi Redusaun	(12)-(14)-(15)			)
17	Release ba Retensaun anterior			$	-
18	Pagamentu ba fulan ida ne'e	(14)+(15)			#VALUE!
19	Balanse depois husi Pagamentu	(9)-(10)-(18)			#VALUE!
20	Progressu ba Pagamentu anterior (%)	(10)/(9)			50%
21	Progress for this payment (%)	(12)/(9)			10%
22	Inspesaun ba Dokumentus	Dokumentus		Problemas rumun & Comentarius	
a	Dukumetus Kontratu	Sim/Nao			
b	BOQ husi Kuantidades kompletu	Sim/Nao			
c	As-build Drawing iha Handover	Sim/Nao			
d	Programa Orariu husi Obra	Sim/Nao			
e	Resultadu testu ba handover	Sim/Nao			
f	Relatoriu Inspesaun	Sim/Nao			
g	Fotografia husi obra kompletu/prontu	Sim/Nao			
24	Resultadu Inspesaun husi EDTL				
	(Resultadu husi Inspesaun Dokumetus)				
	(Resultadu husi Inspesaun iha Terrenu)				
	(Julgamentu ba Pagamentu)				
25	Proposta Pedidu Pagamentu husi Kontratour				
26	Rekomendasaun ba Pagamentu			#VALUE!	
27	Loron Inspesaun ba Terrenu	Data:	Fulan:	Tinan:	
28	Inspetour	Asinatura:		Data :	
		Asinatura:		Data :	
29	Verifika husi :	Asinatura:		Data :	
30	Approva husi :	Asinatura:		Data :	

Formatu-C (Relatoriu Inspesaun no Rekomendasaun ba Pagamentu)

AGÊNCIA DE DESENVOLVIMENTO NAÇIONAL
GABINETE DO PRIMEIRO MINISTRO
REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE

Formatu C

RELATORIU INSPESAUN NO REKOMENDASAUN BA PAGAMENTU

1	Naran Prozetu				
2	Tipu Prozetu	Programa Elektrifikasaun Nacional			
3	Numeru PO (Purchase Order)				
4	Naran Kontratour				
5	Tipu Pedidu Pagamentu	Pagamentu Interim (First, Second, Third), Provisional Handover, Final Handover			
6	Orariu husi Obra	Loron Komesa:	Pretendidu loron Kompletu	Defect Liblary Peariod :	
7	Kondisoins Pagamentu	Advance payment (%), Retention (%), Repay of Retention (% at Completion day), etc			
8	Fatin Prozetu	Distritu & Sub-distritu			
		Suco/Aldeia			
9	Presu Kontratu			$	1,000,000.00
10	Pagamentu Brutu to agora			$	500,000.00
11	Fatura iha Invoice husi Kontratour			$	200,000.00
12	Fatura ne'be verifika ona husi Inspetour			$	100,000.00
13	agamentu Adiantadu: (10 %) Valor Kontratu	(9)x10%		$	100,000.00
14	Redusaun ba Pagamentu Adiantadu	(13)x[(12)/(9)]		$	10,000.00
15	Redusaun ba Retensaun (10 %)	(12)x10%		$	10,000.00
16	Pagamentu depois de redusaun	(12)-(14)-(15)		$	80,000.00
17	Release ba Retensaun anterior			$	-
18	Pagamentu ba fulan ida ne	(14)+(15)		$	80,000.00
19	Balanse depois de pagamentu ida ne'e	(9)-(10)-(18)		$	420,000.00
20	Progresu ba Pagamentu anterior (%)	(10)/(9)			50%
21	Progresu ba Pagamentu ida ne'e (%)	(12)/(9)			10%
22	Inspesaun ba Dokumentus	Dokumentus	Problemas ruman & Kommentarius		
a	Dokumentus Kontratu	Sim/Nao			
b	BOQ Kompletu ho Kuantidade	Sim/Nao			
c	As-build Drawing iha Hndover	Sim/Nao			
d	Programa Orariu ba Obra	Sim/Nao			
e	Resultadu Teste ba handover	Sim/Nao			
f	Relatoriu Inspesaun	Sim/Nao			
g	Fotografia ba servisu kompletu/Prontu	Sim/Nao			

21	Resultadu husi Inspesaun			
	(Resultadu husi Dokumentus Inspesaun)			
	Verifika Items refere: * Dokumentus ba invoice preparadu ho korektu ? * pedidu pagamentu ida ne hasoru kondisoins pagamentu hanesan retensaun no taxa? * Kalkulasaun ba fatura ne'e korektu? * Manteng nafatin loron kompletasaun? * Ordem remediu ruman husi Comisaun? * Resultadu teste hasoru kriteria?			
	(Resultadi Inspesaun ba Terrenu)			
	Verifika Items refere: * Comisaun atende iha terrenu no f'o isplikasaun? * Komponentes importante ba funsaun no valor bo'ot husi kuantidades iha BoQ laran verifikadu ? * Problemas ruman iha kuantidades (kualidade ladun diak husi materiais no instalaoins, etc)? * Problemas ruman iha kuantidades (Diferenti entre aktuais no BoQ nia laran) ?			
	(Julgamentu ba Pagamentu)			
	Resultadu ba verifikasaun: APPROVA/ APPROVA ho NOTA /REDUSAUN/PENDENTE			
22	Proposta Pagamentu iha Invoice husi Kontratour (USD)			
23	Rekomendasaun Pagamentu ba MPS-MoF (USD)			80,000.00
24	Loron Inspesaun ba Terrenu	Data	Fulan	Tinan:
25	Inspetur	Asinatura:		Data :
	1. Maximos dos Santos			
	2. Ana Maria Guterres			Data :
	Verifika husi :	Asinatura:		Data :
	Miguel Marques Monteiro de Jesus			
26	Q.C.	Asinatura:		Data :
	Esron ST. Henuk			
27	Approva husi :	Signature:		Date :
	Sr. Samuel Marçal			
28	Diretour Geral - ADN.			
27	Annex : Employer'			

Formatu D-1 (Rekomendasaun ba Remediu)

REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

Formatu D-1

RECOMMENDATION FOR REMEDY IN INTELIM PAYMENT

Data : _____
Kompanha : _____
Fatin Projetu : _____
Naran Projetu : _____

Bazeia ba inspeksaun nebe ekipa ADN ho Supervisor Kompanha halao, mak ekipa ADN hatoo ba companha rezultado recomendasaun tuir mai :

1 Medium Voltage

.....
.....
.....
.....
.....

2 Low Voltage

.....
.....
.....
.....
.....

3 Home Connection

.....
.....
.....
.....
.....

Recomendasaun hirak ne'ebe mensiona iha leten tuir duni realidade iha terenu e Kompanha pronto kolabora ou follow up rekomendasaun husi ekipa ADN,

Ekipa ADN

(_____)

Supervisor EDTL

(_____)

NB:

1. Orijinal depois asinadu tenke entrega ba AND
2. Fotokopia tahan ida ba EDTL no Companha

Supervisor Companha

(_____)

Formatu D-2 (Rekomendasaun ba Remediu)

REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

Formatu D-2

RECOMMENDATION FOR REMEDY IN PROVISIONAL HANDOVER

Data : _____
Kompanha : _____
Fatin Projetu : _____
Naran Projetu : _____

Bazeia ba inspeksaun nebe ekipa ADN ho Supervisor Kompanha halao, mak ekipa ADN hatoo ba companha rezultado recomendasaun tuir mai :

1 Medium Voltage

.....
.....
.....
.....
.....

2 Low Voltage

.....
.....
.....
.....
.....

3 Home Connection

.....
.....
.....
.....
.....

Recomendasaun hirak ne'ebe mensiona iha leten tuir duni realidade iha terenu e Kompanha pronto kolabora ou follow up rekomendasaun husi ekipa ADN,

Ekipa ADN

(_____)

Supervisor EDTL

(_____)

Supervisor Companha

(_____)

NB:

1. Orijinal depois asinadu tenke entrega ba AND
2. Fotokopia tahan ida ba EDTL no Companha

Formatu D-3 (Rekomendasaun ba Remediu)

REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

Formatu D-3

RECOMMENDATION FOR REMEDY IN FINAL HANDOVER

Data : _____
Kompanha :_____
Fatin Projetu :_____
Naran Projetu :_____

Bazeia ba inspeksaun nebe ekipa ADN ho Supervisor Kompanha halao, mak ekipa ADN hatoo ba companha rezultado recomendasaun tuir mai :

1 Medium Voltage

.....
.....
.....
.....
.....

2 Low Voltage

.....
.....
.....
.....
.....

3 Home Connection

.....
.....
.....
.....
.....

Recomendasaun hirak ne'ebe mensiona iha leten tuir duni realidade iha terenu e Kompanha pronto kolabora ou follow up rekomendasaun husi ekipa ADN,

Ekipa ADN

(_____)

Supervisor EDTL

(_____)

NB:

1. Orijinal depois asinadu tenke entrega ba AND
2. Fotokopia tahan ida ba EDTL no Companha

Supervisor Companha

(_____)

REPUBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

Checklist A

Checklist ba Necessários Dokumentus atu submete husi Comisaun					Inspeksaun husi	Aprova husi
Naran Projetu						
Etapa	**Emitir Sertifikado Kualidade antes assina Kontratu**			Data Inspeksaun husi ADN		
Fundu	Fundu Infraestruktura	Tipo Projetu	Programa Electrifikasaun Nasional	Agencia Implementar	EDTL	
Fatin Projetu	a) Distrito:	b) Sub distrito		c) Suco/Aldeia:		

	Verifika konfirmasaun ba dokumentus		Ponto Verifikasaun	Verifika (sim/Nao)		Remedio & Komentarius
1	Lista Projeto					
	1 Lokasaun husi Mapa no diagramas husi linhas		Mapa ba Projetus	Sim/Nao		
			Diagramas ba plano no distribuisaun linha 20kv maka existe	Sim/Nao		
	2 Foline husi lista projetu		Naran no aproksimadu kada populasaun non elektrifikasaun iha suku ba kada projetu	Sim/Nao		
			Rate husi populasaun no mantein husi linha efeitus no custu	Sim/Nao		
	3 Kriteria prioridade ba seleksaun		Razaun foti ordem prioridade	Sim/Nao		
2	Formulasaun projetu					
	(1) Justifikasaun projeto		Razaun husi prioridade projetu iha distrito no sub-distrito	Sim/Nao		
			Resumo ba custus no benefisius (effect)	Sim/Nao		
	(2) Lokalizasaun mapa		Mapa ba area obra no sucos no linha existe	Sim/Nao		
	3 Outline husi sucos sebe hetan elektrifikasaun		Naran,numeru uma kain populasaun no rendimentus	Sim/Nao		
	4) Saliente futuru ba projetu		Lokalizasaun, Naran husi Sub Distritu no Distritu nanarik husi linha 20kv no 380v,numeru husi uma kain,bensamentu,companha nia r	Sim/Nao		
3	Seleksaun ba companha					
	(1) Publisidade ba projetu		Dokumentus relasionadu sei publista atravesa jornal publiku			
	(2) Justifikasaun projeto		Inclui evaluasaun husi seleksaun ho kriteria husi Comisaun	Sim/Nao		
	3 Formula de reisaun para halo seleksaun		Grava minuta iha distritu no mos MPS hanesan sira nia atendimentu	Sim/Nao		
	4) Imposto companha		Prova pagamento ba taxa iha ultimo trimestre no sertifikado ba registrasaun	Sim/Nao		
	5 Lista similar esperensia anteriu		Naran, preso contrato, tipo obras, tinan implementasaun, etc	Sim/Nao		
	6) Lista engiheiros ba projetu		Eletrisidade no engiheiru civil requerimentu ho naran,tinan ho lista ba esperensia	Sim/Nao		
4	Dokumentus Kontratu					
	1 Saliente fururu ba Projetu		Lokasaun, Naran husi Sub Distritu no Distritu nanaru- husi linha 20kv no 380v, numeru uma kain,budget no naran companha	Sim/Nao		
	2) Acordo Contratu (seing and date)		Preso contrato, forun comesa no pretendido forun completo/pronto	Sim/Nao		
	3 Kondisaun geral husi contratu		Kondisaun pagamentos hanesan pagamento adiantamento, retensaun, Banko seguransa	Sim/Nao		
	4) Spesifikasaun tecniko		Prescribsaun husi kualidades husi materias no componentes listadu ka BoQ nia laran	Sim/Nao		
	5 Standar konstruksaun		Metodo construcsaun ba componentes dalicopias	Sim/Nao		
	6) Design Drawings		Discrisaun items importante iha BOQ iha drawings nia laran	Sim/Nao		
	7) BOQ		Estimatu kuantidades no unit price	Sim/Nao		

Nota. Numeru ho sinbula hatudu katak requerementu minimu ba dokumentus submetidu husi Comisaun atu verifika husi ADN

Checklist A(Dokumentu Submetidu)

REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NAÇIONAL

Checklist B-1

Checklist para Necessários Items iha Relatorio Inspeksaun husi Comisaun					Inspeksaun husi	Aprova husi
Naran Projetu						
Etapa	Verification for Interim Payment Request (1st and 2nd Pagamento)			Data Inspeksaun husi ADN		
Fundu	Fundu Infrastruktura	Tipo Projetu	Programa Electrifikasaun Nasional	Agencia Implementar	EDTL	
Fatin Projetu	a) Distrito	b) Sub distrito		c) Suco/Aldeia		

	Verifika Item		Ponto inspesaun	Verifika (Sim/Nao)	Comentarios ba Items ne b'e maka la iha
1	Resume verifikasaun ba Pedido Pagamentu husi Comisaun				utiliza "**Format 1**"
	1	Outline ba Projetu no pedido pagamento	Kategoria pagamentu hanesan interim provisional no final handover	Sim/Nao	
	2	Kalkulasaun Pagamentu	Kalculasaun pagamento ho kondisoins pagamento	Sim/Nao	
	3	Letter with signature for verification	Asinatura husi Supervisor no chefe da comissao	Sim/Nao	
2	Revisaun ba obra no Ivestigasaun detalha accordu ba geografica no aspeto geologica				
	1	Revisaun ba route linha nian, se karik iha	Razaun husi revisaun	Sim/Nao	
	2	naruk husi linha 20 kv and 220v	Resultado detalha husi investigasaun	Sim/Nao	
	3	Numero uma kain ne'be halo koneksaun	Resultado detalha husi investigasaun	Sim/Nao	
	4	Numero husi transformer	Resultado detalha husi investigasaun	Sim/Nao	
	5	Aprova revisaun husi Comisaun		Sim/Nao	
3	Dokumentos companha nian ho asinatura husi Comisaun iha kada pajina				ho Inspector nia naran
	1	Fatura	Kalculasaun pagamento ho kondisoins pagamento	Sim/Nao	
	2	BOQ	Kompletado kuantidade ne b'e bele refere ba drawings	Sim/Nao	
	3	Dizenhu	Marka ho ko'r mean ba servicu ne'be maka completo ona	Sim/Nao	Obra kompletu/prontu tenke coresponde ho kuantidades iha BOQ
	4	"Programa"	inclui "orariu husi kurva S planu no kompletasaun obra	Sim/Nao	
	5	Fotografias	Hatudu katak servicu completo ona/pronto	Sim/Nao	
4	Resultadu ba supervisaun husi Comisaun				
	1	Instruksaun ba companha	Instruksaun remedio ba defectos obras husi Comissao	Sim/Nao	
	2	Emitir sertifikado	Sertifikasaun obras nia kompletu husi Companha kona ba remedio	Sim/Nao	
5	Dados digital iha fatura ba pedido pagamento			Sim/Nao	

REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NAÇIONAL

Checklist B-2

Checklist para Necessários Items iha Relatorio Inspeksaun husi Comisaun					Inspeksaun husi	Aprova husi
Naran Projectu						
Etapa	**Verifikasaun ba Pedido Pagamento iha Provisional Handover**			Data Inspeksaun husi ADN		
Fundu	Fundu Infrastruktura	Tipo Projetu	Programa Electrifikasaun Nasional	Agencia Implementar	EDTL	
Fatin Projetu	a) Distrito:	b) Sub distrito:		c)Suco/Aldeia :		

	Verifika Item		Ponto inspesaun	Verifika (Sim/Nao)	Problemas / Defectos & Remedio
1	Resume ba verifikasaun husi pedido pagamento husi Comisaun				utiliza "**Format 1**"
	1	Outline husi projetu no pedidu pagamentu	Kategoria ba pagamento hanesan interim, provisional no final handover	Sim/Nao	
	2	Kalkulasaun ba Pagamentu	Kalculasaun pagamento ho condisoins pagamento	Sim/Nao	
	3	Karta ho asinatura para halo verifikasaun	Asinatura husi Supervisor no chefe da comissao	Sim/Nao	
2	Revisaun ba obra no investigasaun detalha accordo ba geografica no aspeto geologica				
		Revisaun ba rute linha nia, se karik iha	Razaun husi revisaun	Sim/Nao	
		Nuruk husi linha 20 kv and 220v	resultado husi detail invesitgasaun	Sim/Nao	
		Numero husi transformer	resultado husi detail invesitgasaun	Sim/Nao	
		Numero uma kain ne'be halo koneksaun	resultado husi detail invesitgasaun	Sim/Nao	
		Approva ba revisaun husi Comisaun		Sim/Nao	
3	Dokumentos companha nian ho asinatura husi Comisaun iha kada pagina				ho Inspector nia naran
	1	Fatura	Calculasaun ba pagamento	Sim/Nao	
	2	BOQ	Completus ho quantidades atravesa medisaun resultado obras	Sim/Nao	
	3	As-build Drawings	Obras completo	Sim/Nao	
	4	"Programa"	inclui orario curve S ba palanu no kompletasaun obra	Sim/Nao	
	5	Fotografia	Hatudu katak servicu completo ona/pronto	Sim/Nao	
4	Relatorio supervisaun husi Comisaun				
	1	Instruksaun ba companha	Instruksaun remedio ba defeitus obras husi Comissao	Sim/Nao	
	2	Emitir sertifikado	Sertificasaun obras nia completu husi Companha kona ba remedio	Sim/Nao	
5	Resultadu ba funsional teste no medisaun ho kriteria			Sim/Nao	Refferensia lista verificasaun 3"
6	Dados digital iha fatura ba pedido pagamento			Sim/Nao	

REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NAÇIONAL

Checklist B-3

Checklist para Necessários Items iha Relatorio Inspeksaun husi Comisaun

						Inspeksaun husi	Approva husi
Naran Projetu							
Etapa	Verifikasaun ba Pedido Pagamento iha Final Handover			Data Inspeksaun husi ADN			
Fundu	Fundu Infrastruktura	Tipo Projetu	Programa Electrifikasaun Nasional	Agencia Implementar	EDTL		
Fatin Projetu	a) Distrito:	b) Sub distrito:		c) Suco/Aldeia :			

	Verifika Item		Ponto inspesaun	Verifika (Sim/Nao)	Problemas / Defectos & Remedio
1	Resume ba verifikasaun husi pedido pagamento husi Comisaun				utiliza "Format 1"
	1	Outline husi projetu no pedidu pagamentu	Kategoria ba pagamento hanesan interim, provisional no final handover	Sim/Nao	
	2	Kalkulasaun ba Pagamentu	Kalculasaun pagamento ho kondisoins pagamento	Sim/Nao	
	3	Karta ho asinatura para halo verifikasaun	Asinatura husi Supervisor no chefe da comissao	Sim/Nao	
2	Revisaun ba obra no investigasaun detalha accordo ba geografica no aspeto geologica , karik iha mudansa				
		Revisaun ba rute linha nia, se karik iha	Razaun husi revisaun	Sim/Nao	
		Nanik husi linha 20 kv and 220v	Resultado husi detail investigasaun	Sim/Nao	
		Numero husi transformer	Resultado husi detail investigasaun	Sim/Nao	
		Numero husi uma nebe halo koneksaun	Resultado husi detail investigasaun	Sim/Nao	
		Aprova ba revisaun husi Comisaun		Sim/Nao	
3	Dokumentos companha nian ho asinatura husi Comisaun iha kada pagina, karik iha mudansa depois de Provisional Handover				ho Inspector nia naran
	1	Fatura karik iha mudansa	Kalculasaun ba pagamento	Sim/Nao	
	2	BOQ, karik iha mudansa	Kompletus ho quantidades atravesa medisaun resultado obras	Sim/Nao	
	3	As-build Drawings, karik iha mudansa	Obras kompleto	Sim/Nao	
	4	"Programa", karik iha mudansa	inclui orariu husi Kurva S ba planu no Kompletasaun obra	Sim/Nao	
	5	Photographs, karik iha mudansa	Hatudu katak servicu completo ona/pronto	Sim/Nao	
4	Relatorio ba supervisaun husi Comisaun , karik iha servisu ruman				
	1	Instruksaun ba companha	Instrucsaun remedio ba defectos obras husi Comissao	Sim/Nao	
	2	Emitir sertifikado	Certificasaun obras nia completu husi Companha kona ba remedio	Sim/Nao	
5	Relatorio ba operasaun no manutensaun			Sim/Nao	Dificuldades ruman no Problemas ho Remedio
6	Dados digital iha fatura ba pedido pagamentu			Sim/Nao	

REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE
GABINETE PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

Checklist C

Checklist ba Nessesariu Items ba Teknico Inspesaun				Inspeksaun husi	Approva husi
Naran Projetu					
Etapa	**Verifikasaun ba Pagamentu**		Data Inspeksaun husi ADN		
Fundu	Fundu Infrastruktura	Tipo Projetu	Programa Electrifikasaun Nasional	Agencia Implementar	EDTL
Fatin Projetu	a) Distrito:	b) Sub distrito:		c) Suco/Aldeia :	

	Verifika Dokumentus	Ponto Verifikasaun	Verifika (Sim/Nao)	Problemas / Dedectos & Remedio
1	Verifika Exame esternal iha terrenu			
1	Stabilidade husi ai ring	Tipu fundasaun: ba rai no fatuk		
		Kle'an iha rai nia okos		
		Supurta ba kritikal ai ring: Guy/Shaft support		
2	Pinta ba ai ring	Dalas ba pinta		
3	Conductor/Kondotour	Folga		
		Naruk husi MV/LV Circuits		
4	Insulator			
5	Transformer/ Travo			
6	A's husi linha iha leten			
7	Folga entre Linhas Aéreas (Overhead Lines) no Objetus			
8	Linha korta husi Liñas despeza jéral	Distansia ba linhas		
2	Verifika Dokumetus husi standar tekniko			
1	Resisténsia trasaun husi kondutores no Fiu rai-okos			
		Resisténsia trasaun depois Koneksaun		
2	Kondoutor	Konneksaun husi Kondutour		
3	Insulator/Izolador	kapasidade izolamentu depende ba voltage		
4	Sistema Eléktrika Rai-okos	Valor husi rai okos		
5	Despozitivus Proteksaun	Korrente Maka' as liu no Falhansu Rai-Okos Sirkuitu Kebradores		
		Hapará Sobretensaun		
6	Standar tensaun			
3	Verifika Dokumentus no Medisaun iha terreno			
1	Resistênsia Ligasaun-Rai	Sistema Ligasaun-Rai ba substasaun		
		Protectivu Ligasaun-Rai ba transformers		
		Hapará Sobretensaun Earthing		
2	Izolamentu Resistênsia	liña voltage 20kV		
		Transformer		
		Hapará rai-lakan		
4	Seluk tan			
1	Sertifikado husi suppliers/fabrikas	Mill Certifikado ba materiais		
		Performa Sertifikadu ba Komponentes		

{Anexu}

Matadalan husi Inspesaun Téknika ba Liña Distribuisaun

1. Objetivu

"Padraun husi Inspesaun Téknika ba Liña Distribusaun" ne'e mak estabelesidu hodi fasilita no implementasaun efisiente ba inspesaun téknika durante konkluzaun fiziku husi konstrusaun liña distribusaun elektrisidade

2. Âmbitu

Padraun ne'e mak alista item prinsipal balun no criteria hirak ne'e atu aplika ba aspektu ténika ba inspesaun iha handover/Entrega.

3. Objektu husi inspesaun handover/Entrega

Inspesaun téknika tenke ser hala'o hodi verifika karik instalasoens distribusaun elektrisidade mak haktuir konstrusaun korretamente iha akordansia ho volume dezeñu no espesifikasaun téknika iha kontratu. Reparasaun/Remedy ba defeitus tenke ser esklarese nu'udar baze husi inspesaun.

5. Auto-inspesaun husi Contractor/Emprezáriu

Contractor/Emprezáriu tenke ser submete relatóriu auto-inspesaun ba LM liu-husi hato'o auto-inspesaun depois de konkluzaun husi obras. As-built Drawing/Haktuir Dezeña, BOQ husi obra ne'ebé kompleta ona no fotográfia projetu tenke ser anexa.

6. Inspesaun husi LM

LM tenke prepara no submete relatóriu inspesaun ba ADN liu-husi hala'o inspesaun depois de simu relatóriu inspesaun husi emprezáriu.

7. Inspesaun Handover/Entrega

7-1 Exame Dokumentáriu

Rezultadu inspesaun husi Contractor/Emprezáriu no LM tenke ser examina. Karik konteúdu husi inspesaun hirak ne'e mak la adequadu, ADN tenke informa sira atu hala'o inspesaun adisional ka remedy/reparasaun ba defeitus.

7-2 Métudu no Kritériu Inspesaun

Kondisoens Instalasaun iha terrenu tenke hasoru padraun téknika ne'ebé bai-bain utiliza hanesan Padraun PLN Indonésia.

Sasukat hirak iha okos tenke ser hala'o ba Instalasoens hotu-hotu.

(1) Verifikasaun liu-husi exame Externu

(2) Verifikasaun liu-husi padraun Téknika/Technical Standard

(3) Verifikasaun ba medisaun/Measurement

Lista Verifikasaun ba Aspektu Téniku iha Inspesaun Terrenu

(1) Verifikasaun liu-husi exame Externu

Estabilidade husi Ai-rin/Pole
Profundidade/Depth iha underground/Rai-okos
Guy/kara
Conductor/kondutor
Clearance/folga
Length/Nanaruk husi MV/LV Circuits (sirkuitus)
Insulator/Izolador
Transformer/Transformador
Height/Altura husi Liñas Overhead/despezas jérais
Estrada ka seluk-seluk
Clearance/Folga entre Liñas Overhead/despezas jérais no Objektus
Ai-hun; liu husi 5m ba liñas foun overhead/despezas jérais
Crossing/Atravessa liu-husi Liñas Overhead/despezas jérais
Distánsia husi liñas

(2) Verifikasaun liu-husi padraun Téknika/Technical Standard

Tensile Strength/Resisténsia trasaun husi Conductors/kondutores no Fiu rai-okos/Ground Wires
Fator Seguransa/Safety factor
Tensile Strength/Resisténsia trasaun depois de koneksaun
Conductor/Kondutor
Koneksaun husi Kondutor
Kapasidade izolasaun/Insulation Capacity depende ba tensaun
Power System Grounding/sistema elétrika rai-okos
Valor tenke labele liu husi 10 ohms.
Protective Devices/ Dispozitivus Protesaun
Over Current Circuit Breakers/Sirkuitu Kebradores Korrente Superior
Ground Fault Circuit Breakers/Sirkuitu Kebradores Falhansu Rai-okos
Surge Arresters/ Hapará Sobretensaun
Sertifikadu Aquizisaun husi fornesedores/fábrika
Sertifikadu Mill ba materiais
Sertifikadu verifikasaun dezempeñu/Performance ba Komponentes
Standard Voltage/Padraun Tensaun

(3) Verifikasaun ba medisaun/Measurement

Earthing Resistance/Resisténsia Ligasaun Rai (pilas)
System Earthing/sistema Ligasaun-Rai ba subestasaun/substations
Protective Earthing/protesaun ligasaun-Rai ba transformador/transformers
Surge Arrester/ Hapará Sobretensaun ba Earthing/ligasaun-rai
Insulation Resistance/Resisténsia Izolasaun
Liña Tensaun 20kV
Transformador
Lightning/Rai-lakan(pilas) arrester/Hapará

1 VERIFIKASAUN liu-husi EXAME EXTERNU

1.1 Pole/Ai-rin

Item	Método Inspesaun	Kritériu
Tipu	Inspesaun Visual ba material, medida	Konstrui haktuir hanesan kontratu
Ajusta Profundidade (klean)	Verifika liu-husi marka ba profundidade/depth(klean) Verifika liu-husi fotográfia	Konstrui haktuir hanesan Kontratu Depth/klean 2m ba pole/ai-rin 12m iha fondasi rai Depth/klean 1.5m ba pole/ai-rin 9m iha fondasi rai
Inklinasaun (enkosta)	Inspesaun Visual	Laletek husi Ai-rin/pole tenke labele sai husi liña liu husi 2ft.
Pintura	Inspesaun Visual	Pelu menus, Kamadas/layer rua tenke ser pinta Kamada baze/Base layer husi pintura tenke labele mosu/aparese iha partes ruma husi estrutura

[exemplu husi inklinasaun/enkosta]

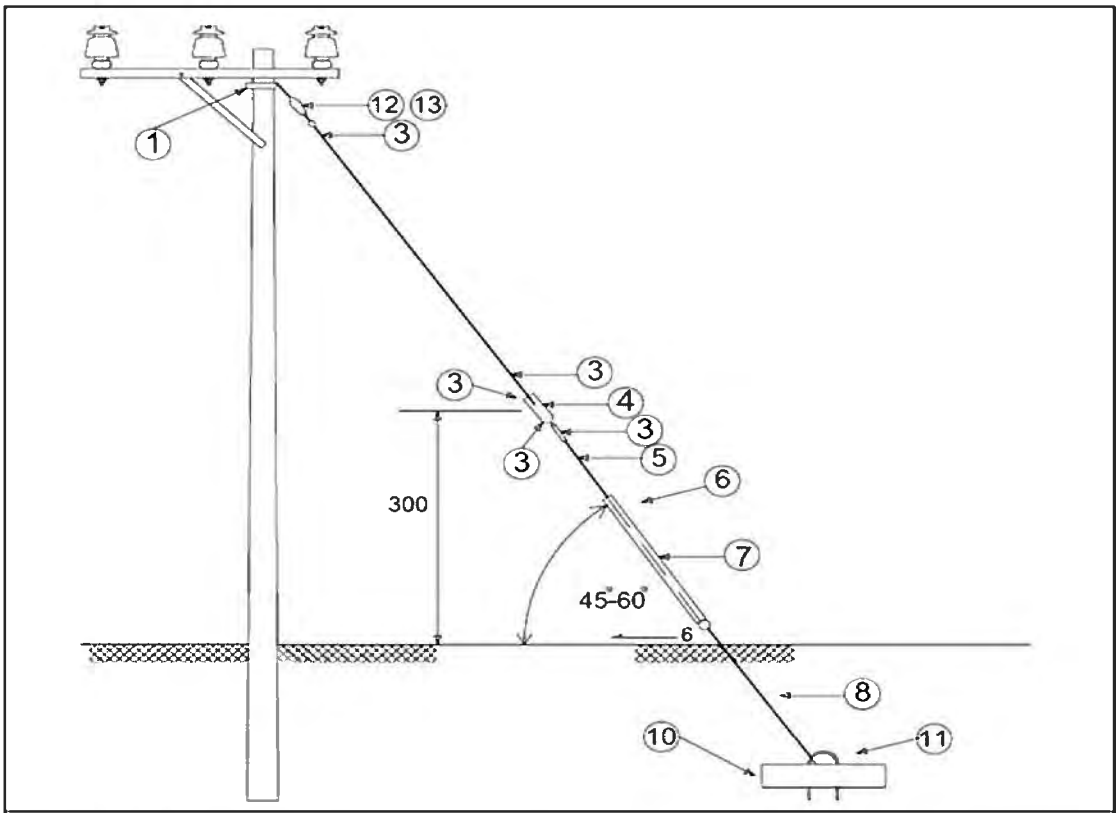
Kazu Di'ak	Kazu A'at
	
Inklinasaun mak menus husi 2ft.	Inklinasaun mak liu husi 2ft iha laletek.

Guy/kara

Item	Métodu Inspesaun	Kritériu
Julga ba adopsaun	Inspesaun Visual	Liña rua iha pole iha mais 5 graus husi ângulo/sudut
Instalasaun	Inspesaun Visual	Instaladu iha pole/ai-rin korrektamente
Fondasi	Inspesaun Visual	Instaladu firmemente para nia bele suporta adequadu ba karga tensaun
Globu inzolador	Inspesaun Visual	Inserida iha parte a'as-liu/superior husi guy

Construsaun Ai-rin Suporta

Tipu 1. Fiu Guy/kara



Keterangan : ○ Konstruksi topang tarik (Guy Wire) jika komponen no 3 di pakai, tidak perlu memakai komponen no. 6

NO	NOMOR SAP	NAMA MATERIAL	SATUAN	JUMLAH	
				TM	TR
1		Guy Wire Band + Bolt & Nut M16 X 50	Set	1	1
2		Terminating Thimble	Pcs	1	-
3		Preformed Grit 22/35/70	Pcs	4	2
4		Guy Insulator	Pcs	1	-
5		Galv Steel Stranded Wire 22/35/70 Sqmm	Mtr	X	X
6		Wire Clip	Pcs	1	1
7		Pipa Pelindung 3/4"-2Mtr	Pcs	1	1
		-	Pcs	-	-
8		Guy Rod (2.5 / 1.8) Mtr	Pcs	1	1
9		U Bolt & Nut M16	Pcs	1	1
10		Anchor Block 400 X 400 mm/Epending Anchor	Pcs	1	1
11		Turn Buckle 5/8"	Pcs	-	1
12		Turn Buckle 3/4"	Pcs	1	-

ADN

KONSTRUKSI TOPANG TARIK / GUY WIRE
PADA TIANG BETON BULAT

FOTO

DIGAMBAR PPST UI

DISETUJUI : DIV. DISTRIBUSI IT, IB, JB

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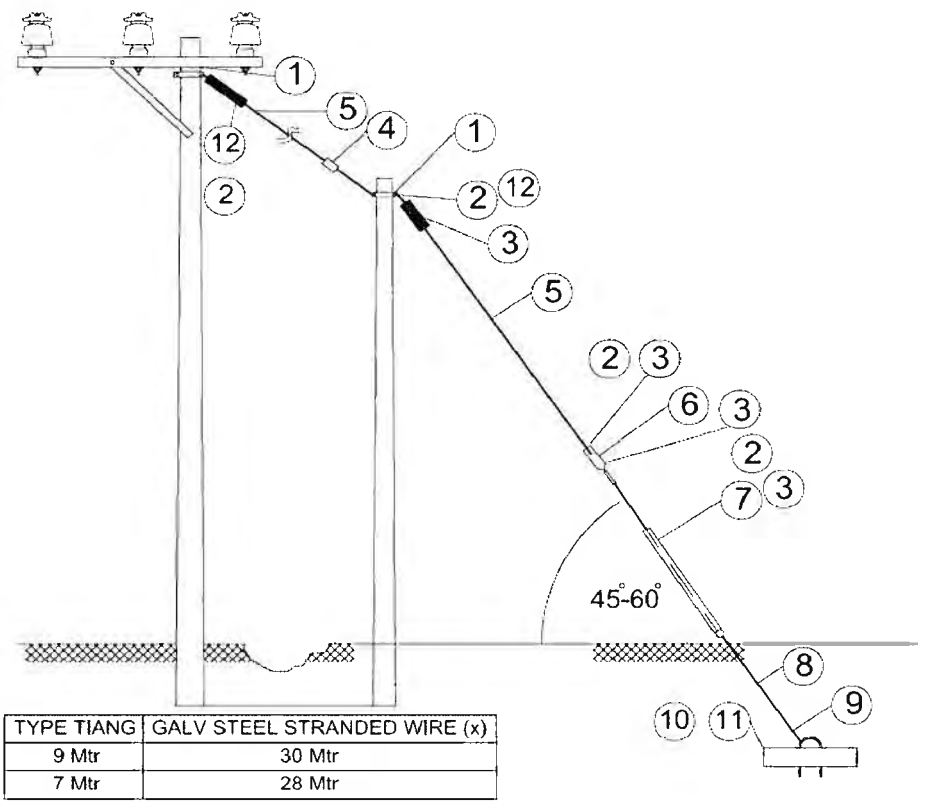
Konstrusaun Ai-rin suporta

Tipu 1. Kontramast



TYPE TIANG	GALV STEEL STRANDED WIRE (x)
9 Mtr	30 Mtr
7 Mtr	28 Mtr

Keterangan ; Konstruksi topang tarik khusus (supported Guy Wire - kontramast)

NO	NOMOR SAP	NAMA MATERIAL	SATUAN	JUMLAH	
				TM	TR
1		Guy Wire Band + Bolt & Nut M16 X 50	Set	1	1
2		Terminating Thimble	Pcs	1	-
3		Preformed Grip 22/35/70	Pcs	4	2
4		Guy Insulator	Pcs	1	-
5		Galv Steel Stranded Wire 22/35 Sqmm	Mtr	X	X
6		Wire Clip	Pcs	1	1
7		Pipa Pelindung 3/4"-2Mtr	Pcs	1	1
8		Guy Rod (2,5 / 1,8) Mtr	Pcs	-	-
9		U Bolt & Nut M16	Pcs	1	1
10		Anchor Block 400 X 400 mm	Pcs	1	1
11		Expanding Anchor	Pcs	1	1
12		Turn Buckle 5/8" atau 3/4"	Pcs	-	1

ADN

KONSTRUKSI TOPANG TARIK KONTRAMAST

FOTO

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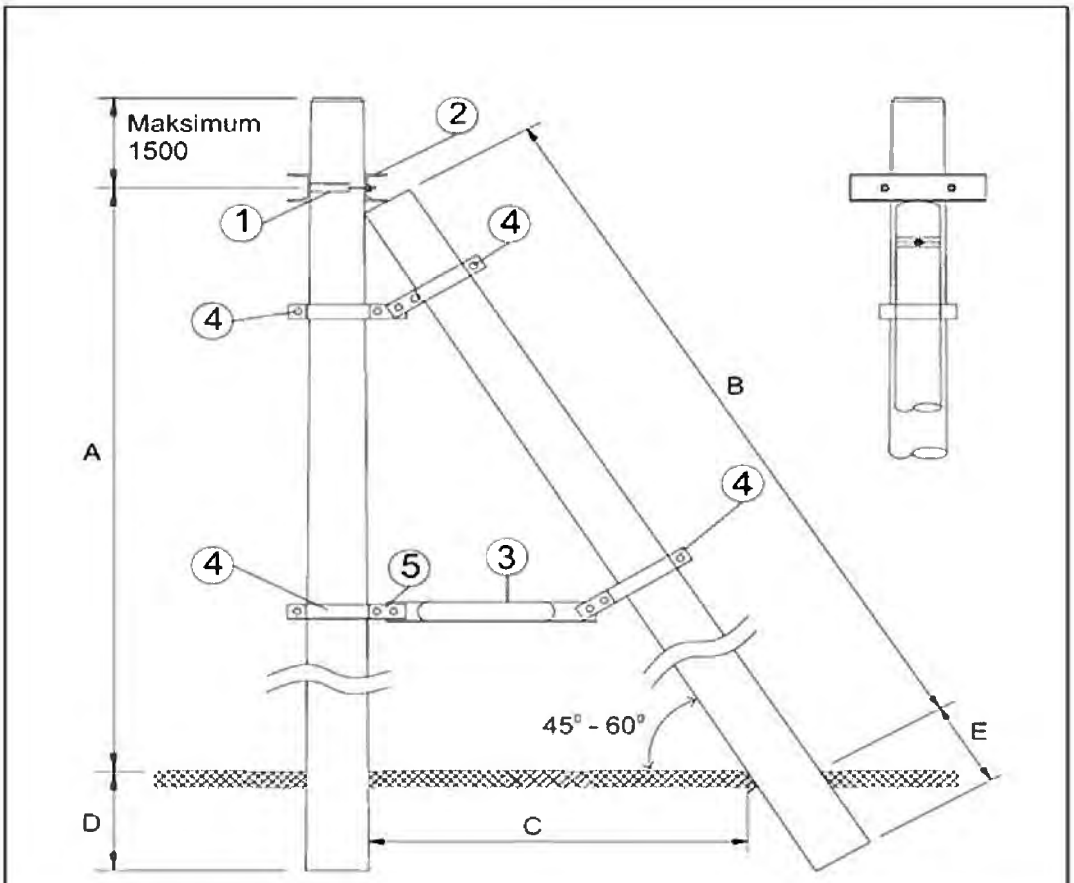
Konstrusaun Ai-rin Suporta

Tipu 1. Ai-rin suporta



NO	NOMOR SAP	NAMA MATERIAL	SATUAN	JUMLAH
1		Single Arm Band & Nut M16 + Washer	Set	1
2		Strut Arm UNP. 8 x 300	Pcs	1
3		Strut Tie 1200 s/d 1500	Pcs	1
4		Double Pole Band + Bolt & Nut M 16 X 50	Set	4
5		Bolt & Nut M 16 X 140 + I6 X50	Set	11

NO	TYPE TIANG BESI		SATUAN DALAM METER				
	UTAMA	STRUT POLE	A	B	C	D	E
1	13	11	8.4	10	5.42	1.83	1
2	11	9	7.7	8.4	3.3	1.83	0.6
3	9	9	6.75	8	4.2	1.5	1
4	7	7	5.3	6.5	3.7	1.16	0.5

ADN

[redacted]

KONSTRUKSI PENOPANG TIANG
(STRUT POLE)

FOTO

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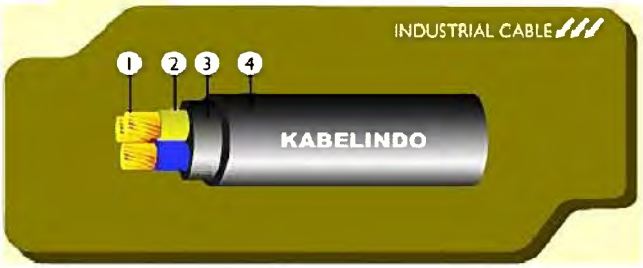
1.2 Kondutor

NYY 0.6/1 kV

Copper Conductor, PVC Insulated,PVC Sheated



1. Conductor : Annealed Copper wire
2. Insulation : Extruded PVC
3. Filler : Extruded PVC
4. Sheath : Extruded PVC

PVC LOW VOLTAGE CABLE

TECHNICAL DATA

Spec — Specification : SPLN 43 -1 : 1994,
IEC 60502 - 1 : 1997

APL — Used for indoor in ducts installation or for laying in the ground where not sustain mechanical damage

Cu — Conductor Shape : re = Circula
rm = Circul

DCV — DC Test Voltage : 8,5 kV for 5

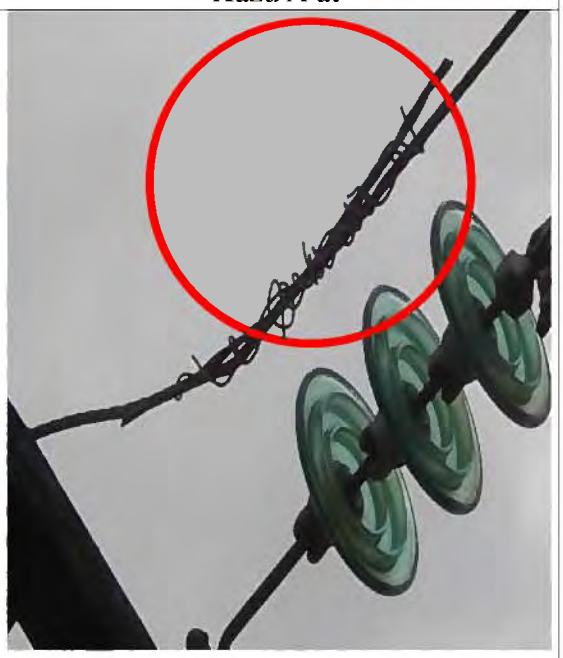
DIMENSIONAL DATA

5 CORES

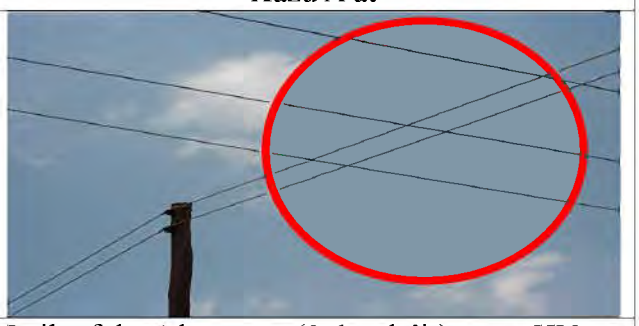
SIZE	No.of wire and Shaped Of Conductor		Nominal Thickness		Approximately		Min. Bending Diameter	Std. Length per reel
			Insulation	Outer Sheath	Overall Diameter	Net. Weight		
mm^2	pcs	shape	mm	mm	mm	kg/km	mm	m
1.5	1	re	0.8	1.8	12.8	255	230	1000
	7	rm			13.3	268	239	
2.5	1	re			14	329	252	
	7	rm			14.6	352	263	
4	1	re	1		16.3	470	293	
	7	rm			17.1	505	308	
6	1	re			17.7	602	319	
	7	rm			18.6	650	335	
10	7	rm			21	912	378	
16	7	rm			23.8	1279	428	
25	7	rm	1.2		28.3	1914	509	
35	7	rm			31.5	2505	567	
50	19	rm	1.4	1.9	36.4	3273	655	

Item	Métodu Inspesaun	Kritériu
Tipu	Inspesaun Visual iha pontu konektadu no instalasaun husi izolador	Konstrui haktuir hanesan Kontratu
Pontu Konektadu	Inspesaun Visual	Laiha Pontu Konektadu entre ai-rin ida ho ai-rin tuir mai
Dip (Sag)	Inspesaun Visual	Sedauk iha extraordináriu folgas ka aperta
Clearance/Folga	Inspesaun Visual no medisaun husi clearance/folga	Tenke ser kumpri ba Padraun/standard Téknika
Nanaruk husi MV/LV Circuits	Inspesaun Visual ba Medisaun Nanaruk husi meius kilometrazen viajen kareta nian etc.	Konstrui la liu husi radius 500m husi subestasaun.

[exemplu husi Instalasaun Global]

Kazu Di'ak	Kazu A'at
	
Fiu Jumper mak konektadu husi Konektor.	Fiu Jumper mak konekta folga, la aperta.

[exemplu husi clearance/folga]

Kazu Di'ak	Kazu A'at
	
Iha folga/clearance sufisiente entre HV no LV.	Laiha folga/clearance (0.6m de'it) entre HV no LV, nomos laiha guarda fiu/guard wires.

1.3 Insulator/Izolador

Tipu izolador ne'ebé uja iha liña transmisaun mak parceling/tipu vidro.
Klasifikasaun izolador maka:

a. cotter pin insulator/ isolator jenis pasak.
b. pos-transmission isolator /isolator tipu pos-transmisaun.
c. hang isolator/ isolator gantung.

Izolaor tipu cotter pin no izolador tipu pos-transmisaun mak utiliza ba transmisaun ho servisu relativu baixa tensaun (mais-menus husi 22-33 kV), enquantu hang/ isolator gantung bele okupladu/ digandeng sai nu'udar suite izolador mak-ne'ebé númeru bele ajusta haktuir ba nesesidade.
Iha tipu izolador rua ne'ebé bele uja komforme ba nia funsoens :

1. Liña Izolador iha variedade em termos: Liña post Izolador/ line post insulator, post insulator, insulator pin. Izolador ne'e utiliza ba apoiu hodi kondukta forsa mékanikal ba izolador ida ne'e hodi realiza tahan todan karga iha ai-rin.
2. Izolador suspensaun (Suspension isolator), iha tipu 2 mak : izolador despeza (Umbrella Insulator) no long rod insulator.

Karakteristika Izolador

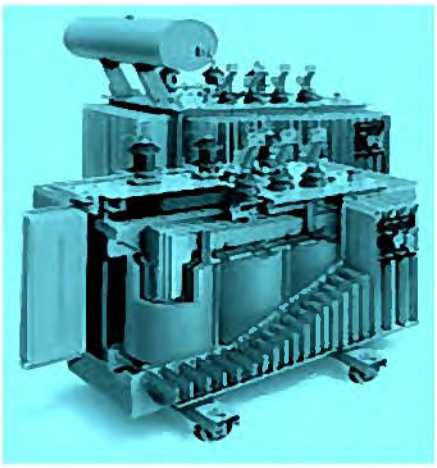
No	karakteristika	Tipu Izolador		
		Line Post	Pin Post	Pin
1	Servisu Tensaun Máximu	24 kv	24 kv	22 kv
2	Tensaun suportável/Withstand voltage (bokon)	65 kv	65 kv	75 kv
3	Tensaun Impolso supertável/Impulse withstand Voltage	125 kv	125 kv	125 kv
4	Forsa mékanika/Mechanical Strenght	1250 daN	1250 kv	850 daN
5	Distansia fuga/Creepage distance	480 mm	534 mm	583 mm
6	Todan	8,34 kg	10 kg	6,4 kg

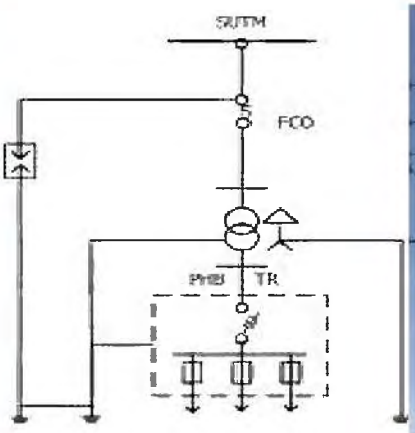
Ba 1 nu'udar tipu suspensaun konsiste husi pedasuk 2/bikan 2 entantu tipu long rod pedasuk 1. Karga/todan izolador mékanika ne'e mak karga mékanika hanesan haktuir ba ai-rin izolador nia ulun / ai-rin hahu nian.

Item	Métodu Inspesaun	Kritériu
Tipu, Voltage/Tensaun	Inspesaun Visual ba tipu	Korresponde ba liña Tensaun
Instalasaun Global	Inspesaun Visual ba instalasaun global husi izoladores	Laiha mak la haktuir bain-bain hanesan rahun/retak

1.4 Transformer/transformador

Jeralmente konfigurasaun husi ai-rin transformador ne'ebé enerjia husi SUTM mak T section ho ekipamentu seguransa Cut-Out (FCO) hanesan koneksaun seguransa badak ba transformador ho element fuser/harahun (fuzaun/harahun tipu link expulsaun) no hapara pilas/*Lightning Arrester* (LA) hanesan ekipamentu hodi prevene tensaun maka'as iha transformador kauza husi rai-lakan/pilas.





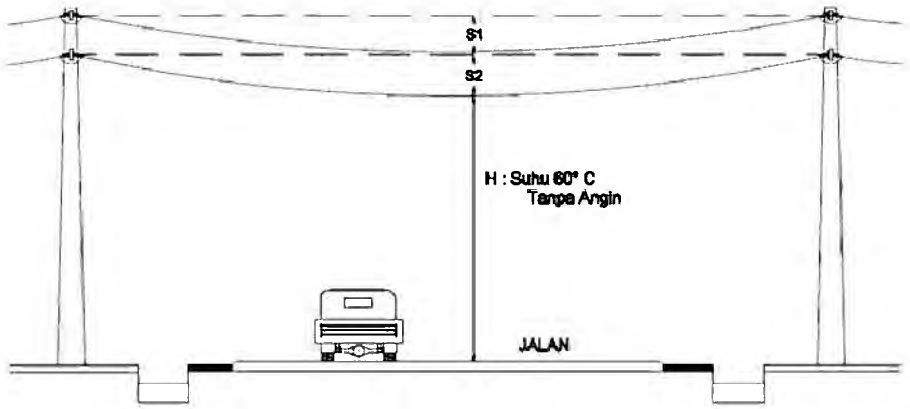
Tabel 2.1. Vektor Group dan Daya Transformator

NO	Vektor Group	Daya (kVA)	Keterangan
1	Yzn5	50 100 160	Untuk sistem 3 kawat
2	Dyn5	200 250 315 400 500 630	Untuk sistem 3 kawat
3	Ynyn0	50 100 160 200 250 315 400 500 630	Untuk sistem 4 kawat

Distansia Seguru husi rede

No.	Uraian	Jarak Aman
1.	Terhadap permukaan jalan raya	≥ 6 meter
2.	Balkon rumah	≥ 2,5 meter
3.	Atap rumah	≥ 2 meter
4.	Dinding Bangunan	≥ 2,5 meter
5.	Antena TV/ radio, menara	≥ 2,5 meter
6.	Pohon	≥ 2,5 meter
7.	Lintasan kereta api	≥ 2 meter dari atap kereta
8.	Underbuilt TM – TM	≥ 1 meter
9.	Underbuilt TM – TR	≥ 1 meter

Item	Métodu Inspesaun	Kritériu
Tipu, Kapasidade	Inspesaun Visual ba tipu no kapasidade husi transformador	Konstrui haktuir hanesan Kontratu
Konneksaun	Inspesaun Visual ba konneksaun	Konnekta hanesan rekerementu
Fiasaun Subestasaun	Inspesaun Visual	Laiha Pontus konnektidu iha kondutores
Instalasaun transformador	Inspesaun Visual ba instalasaun	Laiha mak la bai-bain
Instalasaun ba dispozitivus protesaun	Inspesaun Visual ba instalasaun	Persija dispozitivus/perangkat protesaun tenke ser instala iha parte dahuluk husi transformador
Instalasaun Ligasaun rai/Earthing wire	Inspesaun Visual ba instalasaun global husi ligasaun rai/earthing wire	Laiha mak la bai-bain



PENJELASAN

S1 : Panjang andongan (sag) jaringan tegangan rendah tidak kurang dari 60 Cm

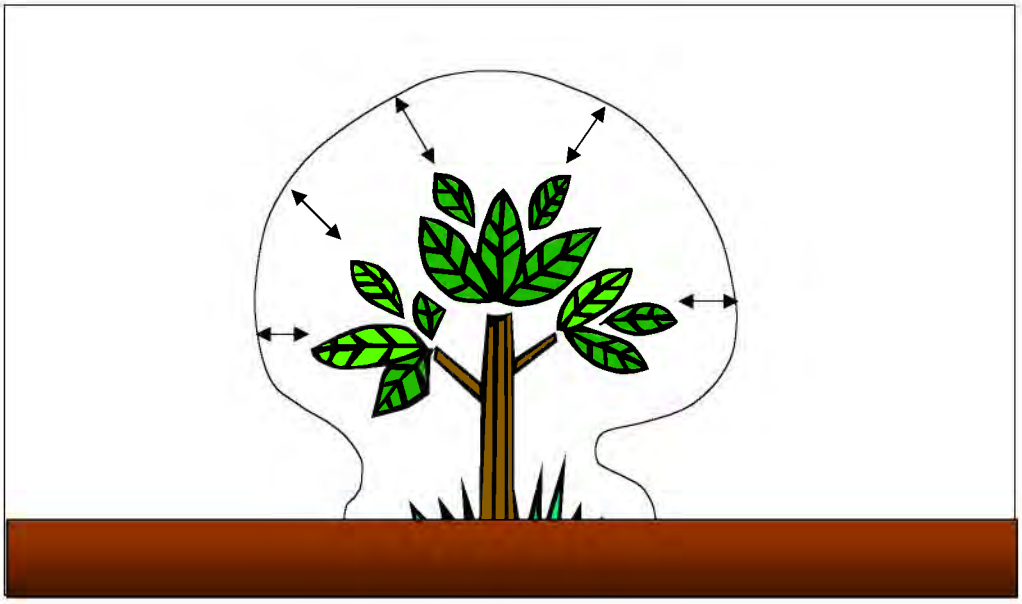
S2 : Jarak saluran udara tegangan rendah dengan kabel optik telekomunikasi tidak kurang dari 1000 Cm

H : Jarak aman kabel optik terhadap permukaan jalan

- Jalan umum tidak kurang dari 6 meter
- Jalan lingkungan tidak kurang dari 5 meter
- Tanah pekarangan pribadi tidak kurang dari 4 meter

ADN	SALURAN UDARA TEGANGAN RENDAH JARAK AMAN	
DIGAMBAR PPST UI	STANDAR KONSTRUKSI JARINGAN DISTRIBUSI	No. GAMBAR : JTR/SUTR/05
DISETUJUI DIV DISTRIBUSI IT, IB, JB		EDISI : 1 — 2010 — 64

Títulu	Folga/Clearance entre liña despeza jéral/Overhead Line no Ai-hun



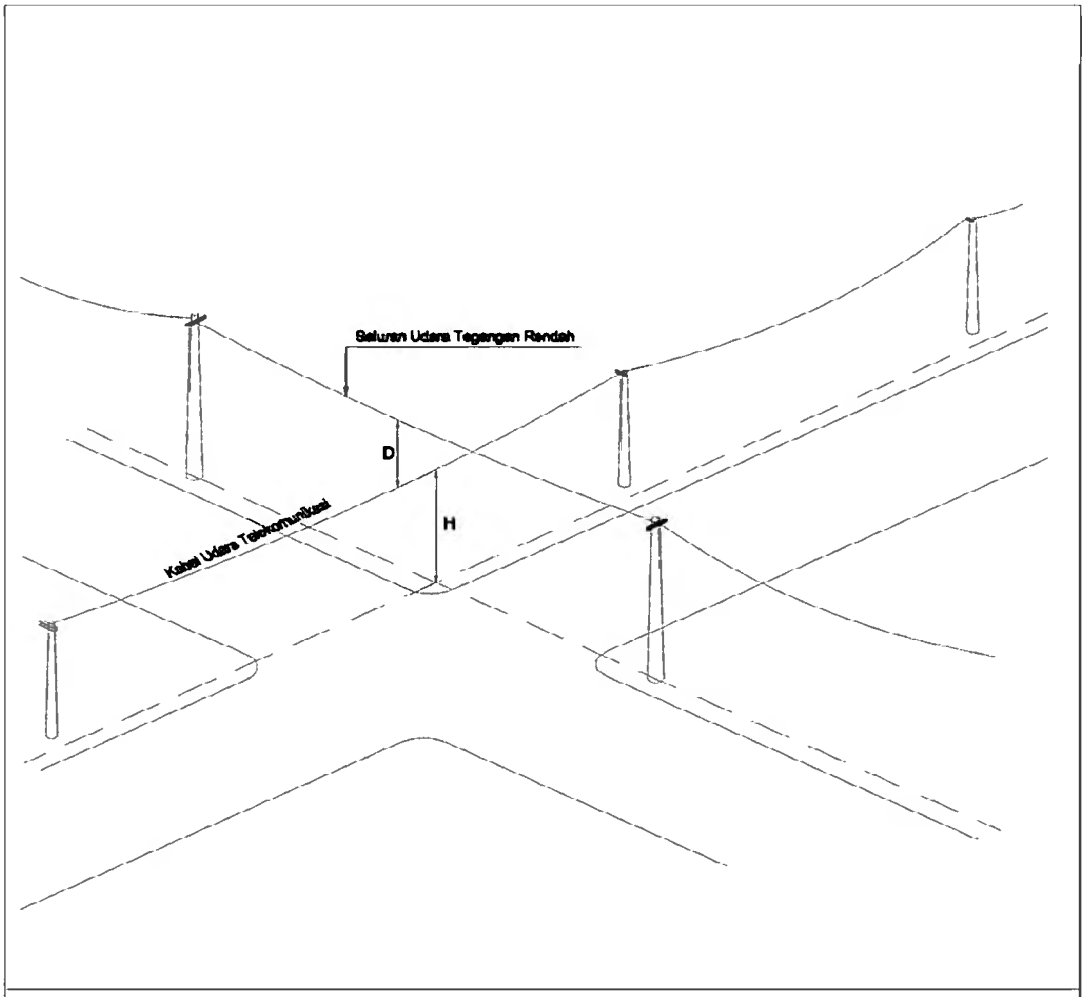
(Unidade: m)

Folga/Clearance Mínimu

Médiu & Baixa-tensaun	***Alta-tensaun***
Tenke labele kontakta diretamente	Menus husi 0.9m

Folga/clearance tenke ser liu husi 5m ho liña overhead foun.

Observasoens	Revizoens	



PENJELASAN :

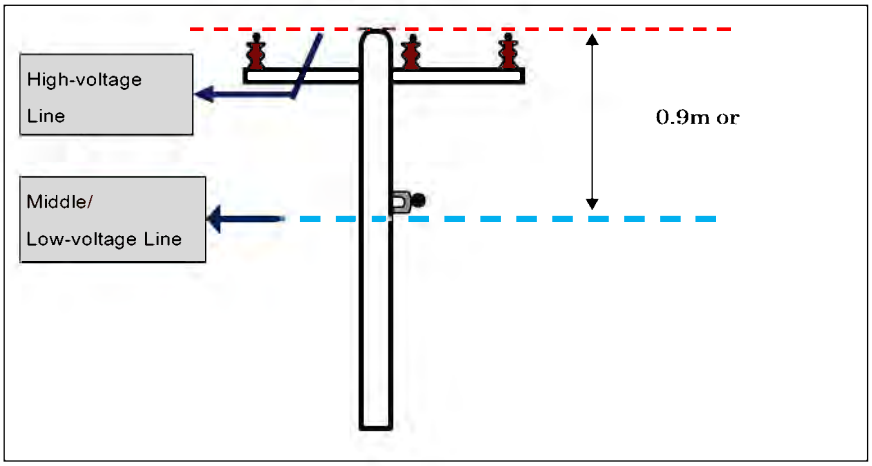
- Perlintasan kabel telekomunikasi dengan saluran tenaga listrik dengam jarak -D
- Dengan saluran udara dengan tegangan menengah tidak kurang dari 250 Cm
- Dengan saluran udara dengan tegangan rendah tidak kurang dari 100 Cm
- Dengan saluran udara dengan tegangan menengah tidak kurang dari 250 Cm
- Jarak aman H tidak kurang dari 600 Cm

ADN	KONSTRUKSI PERLINTASAN DENGAN KABEL TELEKOMUNIKASI	
DIGAMBAR: FPST UI	STANDAR KONSTRUKSI JARINGAN DISTRIBUSI	NO. GAMBAR: JTR/SUTR/24
DISETUJUI: DIV DISTRIBUSI IT, IB, JB		EDISI 1 — 2010 — 63

FOLGA/CLEARANCE IHA UTILIZASAUN PARTE IDA BA IDA NO UTILIZASAUN JUNTA LIÑA

Clearance on Side by Side Use and Joint Use of Lines

The minimum clearance of each lines at a supporting structure is give by the following fig and table. The clearance is dicided taking working space into consideration.



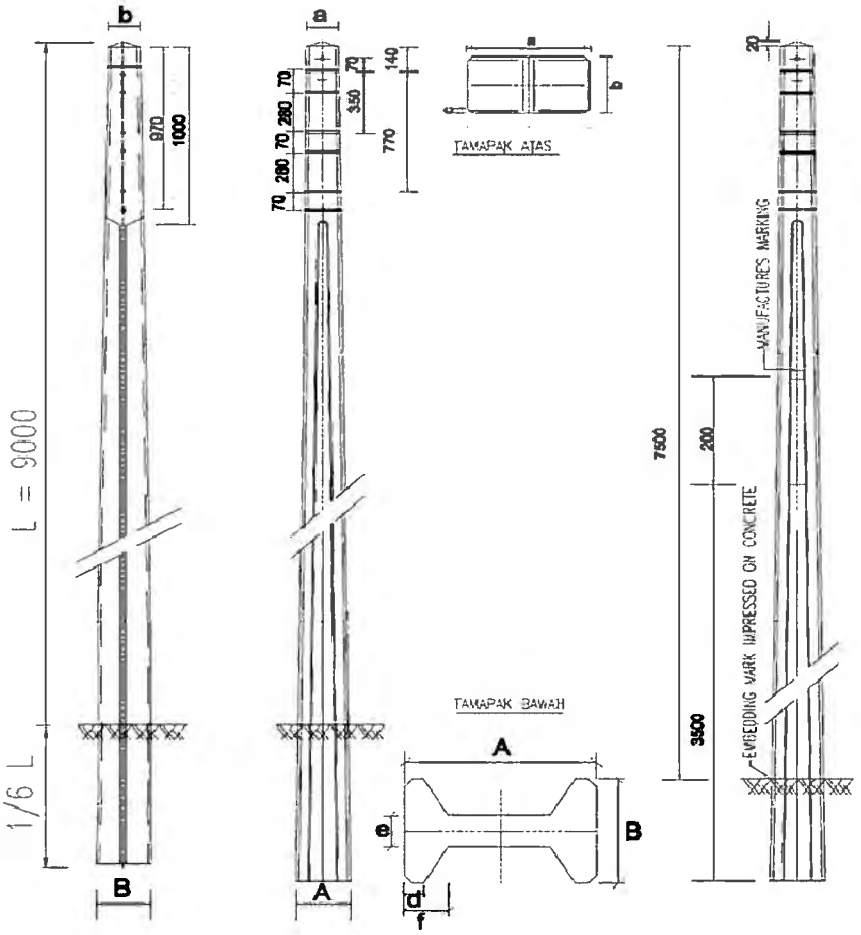
(Unit: m)

Recommended Minimum Clearance

A	*High-Voltage Line*	*Medium /Low-Voltage Line*	0.9m

Remarks	Revisions	

Titulu: Ajusta Kle'an/Setting Depth ba estrutura suporta/Supporting Structure



KETERANGAN

L / UKURAN Tinggi Tiang (m)	Beban Rancana (daN)	Top(beg atas) (mm)		Bottom(beg bawah) (mm)		Ukuran (mm)			
		a	b	A	B	c	d	e	f
9	200	165	110	315	235	15	55	52	72
9	500								

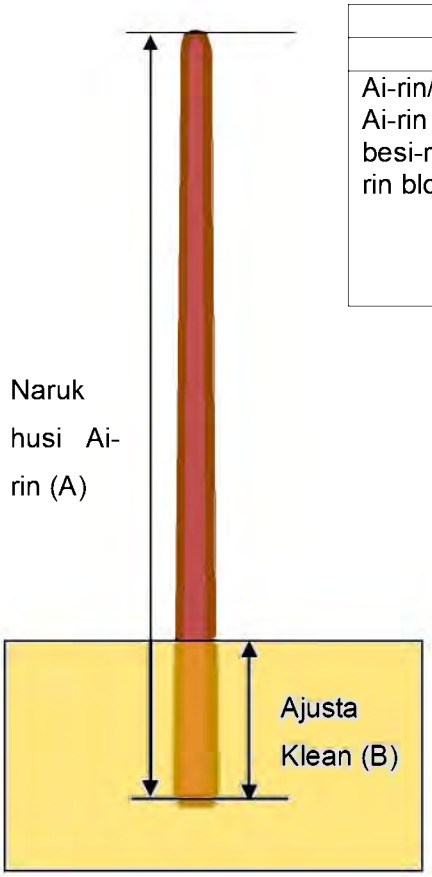
ADN

TIANG BETON TYPE - H

DIGAMBAR PPST UI	STANDAR KONSTRUKSI JARINGAN DISTRIBUSI	No GAMBAR JTR/SUTR-SKUTR/02
DISETUJUI : DIV DISTRIBUSI I, II, III, JB		EDISI : 2010 / 103

Títulu	Ajusta Klean/profundidade ba estrutura suporta

Ajusta Klean/profundidade ba estrutura suporta define ona iha Artigu No.X-X husi Standard /PadraunTéknika mak tui-mai;

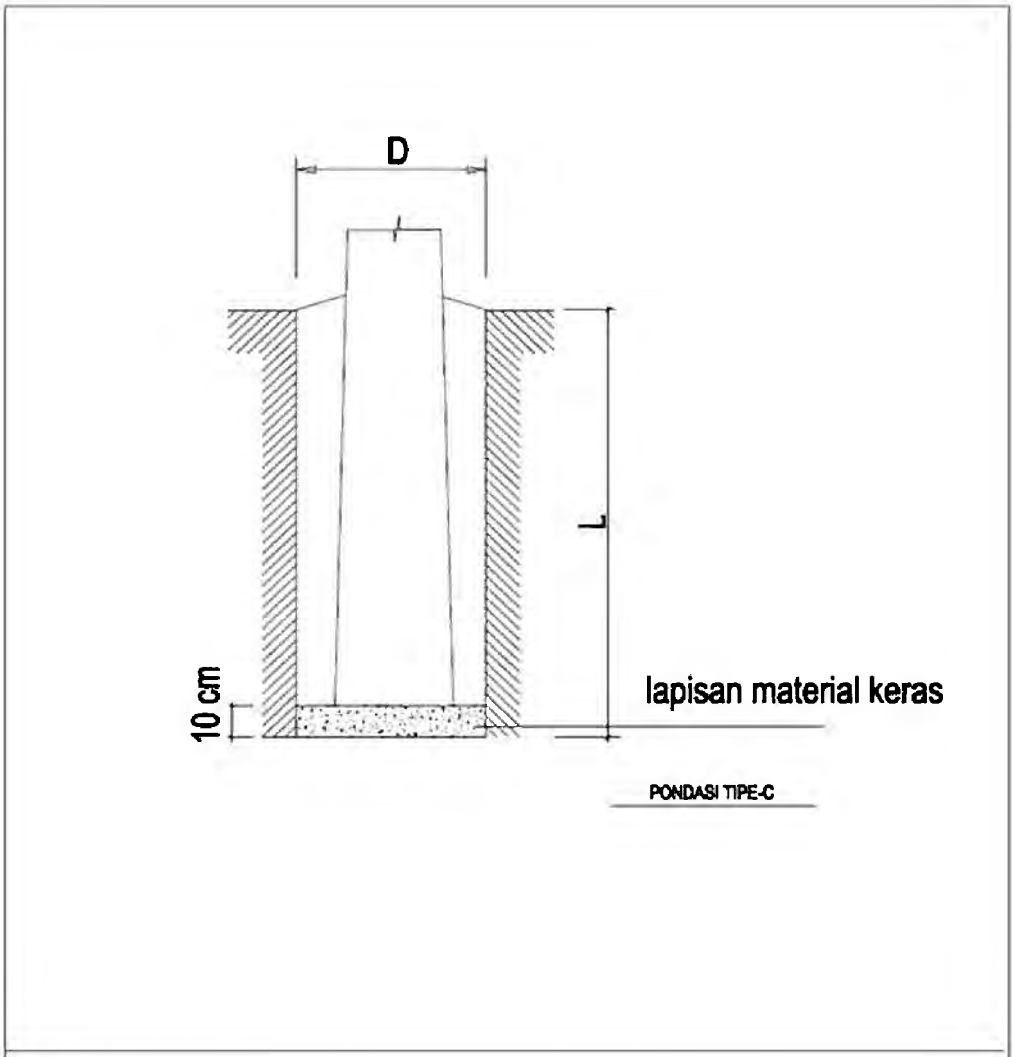


	A (m)	**B (m)**	
	Naruk	**Iha rai**	**Iha fatuk**
Ai-rin/pole Ai, Ai-rin besi, besi-reforsa Ai-rin bloku	7.5	1.5	1.0
	9.0	1.7	1.0
	10.8	2.0	1.2
	12.3	2.0	1.2
	13.5	2.0	1.4
	15	2.1	1.4
	16	2.1	1.4

* Valor husi B mak deside bazeia ba kalkulasaun konsidera ba situasaun pior husi kada kondisaun.

Observasoens	Revizoens	

Foundasaun

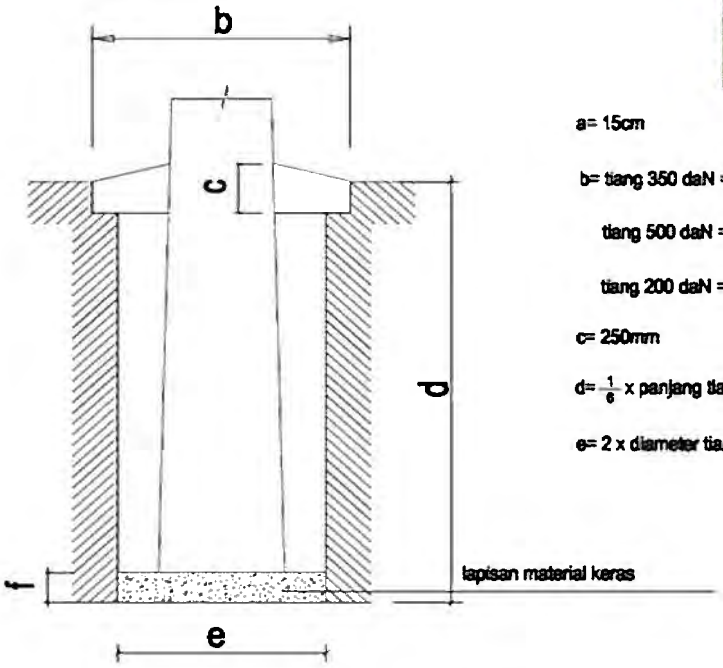


KETERANGAN :

- Pondasi Tipe-C = pemakaian untuk tanah berpasir,tanah liat
- Campuran beton = 1 semen + 3 pasir + 5 koral

ADN	REKOMENDASI PONDASI TIANG TIPE C	
DISETUJUI : DIV. DISTRIBUSI IT, IB, JB	STANDAR KONSTRUKSI JARINGAN DISTRIBUSI	No. GAMBAR : JTR/SUTR/45 EDISI 1 — 2019 93

t= 40 cm
1:2:3



a= 15cm

b= tiang 350 daN = 50cm

tiang 500 daN =

tiang 200 daN =

c= 250mm

d= $\frac{1}{6}$ x panjang tiang

e= 2 x diameter tiang bagian bawah

Type foundation In rock

PONDASI TIPE-D

KETERANGAN :

- Pondasi Tipe-d = pemakaian pada tanah lunak, endapan lumpur
- Campuran beton = 1 semen + 3 pasir + 5 koral

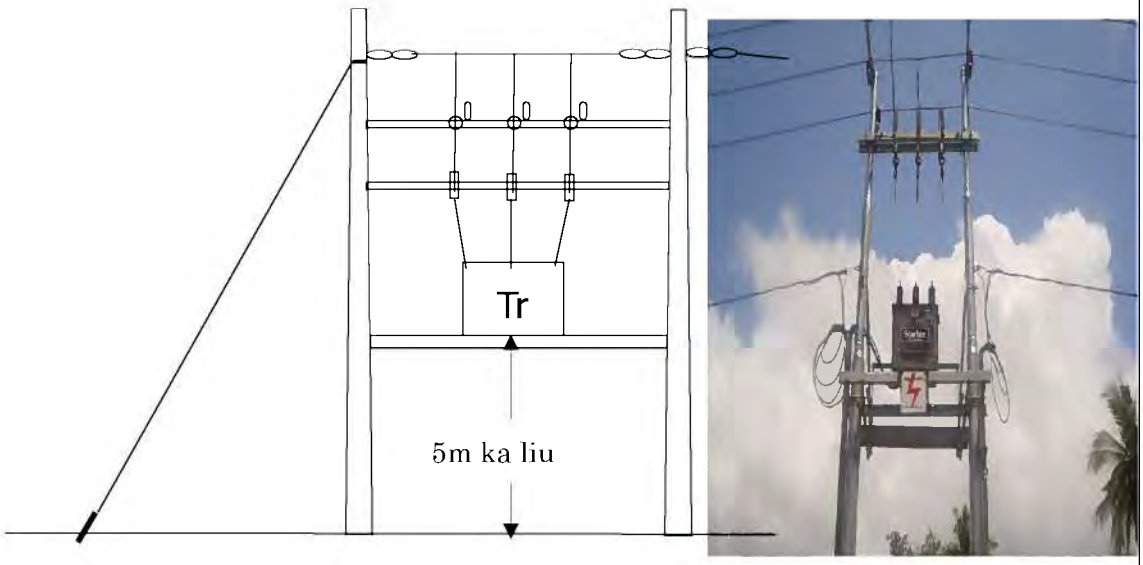
ADN	REKOMENDASI PONDASI TIANG TIPE D	
PST UI	STANDAR KONSTRUKSI JARINGAN DISTRIBUSI	No GAMBAR JTR/SUTR/45A
DISETUJUI DIV DISTRIBUSI IT, IB, JB		EDISI 1 / 2010
		94

1.4 Transformer/transformador

Títulu	Kondisoens Instalasaun husi Transformadores HV(alta) / MV(Médiu) & LV(baixa)

Transformadores HV(alta) / MV(Médiu) & LV(baixa) tenke ser instala iha maneira ruma husi método tuir-mai karik sira la instaladu no savi iha kabina exklusivu.

Instalasaun ba ai-rin/pole iha altura husi 5.0m ka liu



Observasoens	Revizoens	

2 VERIFIKASAUN ba PADRAUN / STANDARD TÉKNIKA

2.1 Altura husi Liñas Despeza Jéral/Overhead

Altura husi Liñas distribusaun despeza jéral/overhead tenke ser la menus husi valores iha tabela tuir-mai;

	Médiu & Baixa tensaun	Altura Tensaun
Atravessa estrada	5.4m(18ft)	5.7m(19ft)
Atravessa Dalan kombioneta	7.5m(25ft)	7.5m(25ft)
Seluk-seluk	4.8m(16ft)	5.1m(17ft)

2.2 Folga/Clearance entre Liñas Overhead no Objektus seluk

Liñas despeza jéral/Overhead tenke atravessa mais objektus ho folga/clearance ne'ebé nesessáriu. Folga Mínimu entre liña ida ho objektus sira seluk tenke ser valorize iha tabela tuir-mai;

(Unidade: m)

				Médiu ka baixa tensaun	Alta tensaun
Estrutura husi Konstrusaun	Laletek Adjasênsia /Kbesik	Ho possibilidade ba ema atu sa'e ba	Bare/fiu-molik Kondutor	2.5m	3m
			Kondutor Inzoladu	2m	2.5m
			Cable/fiu	1m	1.2m
		Seluk-seluk	Bare/fiu-molik Kondutor	2m	3m
			Kondutor Inzoladu	1.2m	1.5m
			Cable/fiu	0.4m	0.5m
	Lateral no desvantajem Adjasênsia/Kbesik		Bare/fiu-molik Kondutor	2m	3m
			Kondutor Inzoladu	1.2m	1.5m
			Cable/fiu	0.4m	0.5m
Ai-horis			Bare/fiu-molik Kondutor	5m iha konstrusaun fo'un	Henesan ho karuk
			Kondutor Inzoladu	Tenke labele kontakta diretamente	
			Cable/fiu	Tenke labele kontakta diretamente	

2.3 Resisténsia Trasaun husi Kondutores no Fiu Rai-okos

Hanesan ba tensile strength/ Resisténsia trasaun husi kondutores /conductors no Fiu rai-okos/Ground Wires ba liñas eléktrika despeza jéral/overhead la inkliu ho fiu/cables, Fator seguransa/safety factor tenke ser labele menus husi 2.5.

2.4 Resisténsia Trasaun depois de Koneksaun

(1) Métodu Koneksaun husi Kondutores despeza jéral/Overhead Conductors

Resisténsia trasaun/tensile strength husi kondutores tenke ser labele reduz husi 20% ka liu, wainhira kondutores eléktrika konekta hela.

(2) Sanak(Branching) husi Liñas despeza jéral(Overhead Lines)

Sanak/Branching Liñas despeza jéral/Overhead Lines tenke ser halo ba pontu suporta husi Liñas.

2.5 Kapasidade Izolamentu

Fiu sira no kondutores izoladu tenke iha kapasidade izolamentu (insulation capacity) sufisiente apropriadu ba kondisoens husi tensaun aplikadu (applied voltage).

2.6 Koneksaun husi Kondutores

Kondutores tenke ser konekta hanesan métodu tui-mai;

1. Kondutores tenke ser konekta firmemente atu evita aumenta iha resistênsia.
2. Kapasidade izoladu husi fiu/cables no kondutor izoladu tenke ser labele hatun.
3. Elektrokimia korosi(electrochemical corrosion) tenke labele akuntese konekta kondutores ba differente tipu husi materiais.

2.7 Grounding/Fiu Rai-okos

1. Grounding ka sasukat apropriadu seluk tenke ser fornese ba ekipamentu eléktriku prevene husi choke eléktriku, perigu ba ema nia isin lolon, ahi, no seluk-seluk tan.
2. Grounding ba ekipamentu eléktriku tenke ser instala para halo fluxu korrente(current flow) salva no seguru tama ba rai.

2.8 Sistema Eléktrika Rai-okos (Power System Grounding)

Sistema Eléktrika Rai-okos tenke ser aplika ba transformador katak konekta liña distribusaun alta-tensaun no médiu/baixa-tensaun atu prevene asidente ruma, ne'ebé bele akuntese tamba kontakta sala. Valor husi grounding/rai-okos tenke ser labele liu husi **10 ohms**.

2.9 Proteksaun kontra Korrente mais superior (Over-current)

Ekipamentu Proteksaun kontra korrente mais superior/maka'as liu (over-current) tenke ser instala iha fatin apropriadu husi sirkuitus eléktrikus (electrical circuits) atu prevene ekipamentu eléktriku husi Manas-liu (over-heating) tamba korrente ne'ebé mais superior(maka'as liu) no la hamosu ahi-han.

2.10 Proteksaun kontra Falhansu Rai-okos (Ground Faults)

Ekipamentu Proteksaun kontra falhansu rai-okos(ground faults) ka sasukat apropriadu seluk tenke ser fornese hodi prevene estragu husi ekipamentu eléktriku, choke eléktriku no ahi-han.

2.11 Instalasaun ba Despozitivus Proteksaun(Protective Devices)

(1) Sirkuitu Kebradores (Circuit Breakers) Korrente Maka'as liu (Over Current)

1. Iha liñas alta-tensaun, sirkuitu kebradores (circuit breaker)Korrente maka'as liu tenke ser instala iha pontu korrente sai (outgoing point) husi subestasaun ka fatin hanesan ruma no iha parte dahuluk husi transformador (transformer).
2. Katak kebradores sirkuitu maka'as liu (over current breakers) tenke iha abilidade atu kebra/hapara korrente sirkuitu badak (short circuit current) ne'ebé atravessa husi kebradores (breakers).

(2) Sirkuitu Kebradores (Circuit Breakers) Falhansu Rai-Okos (Ground Fault)

Sirkuitu Kebrador falhansu rai-okos tenke ser instala iha pontu korrente sai (outgoing point) husi subestasaun ka fatin hanesan. Katak sirkuitu kebra/hapara (breaks circuit) automatikamente wainhira falhansu rai-okos akuntese iha liñas.

(3) Hapará Sobretensaun (Surge Arresters)

Atu prevene ekipamentu eléktrika ne'ebé estragu hela husi rai-lakan(pilas), Hapará Sobretensaun (surge arresters) tenke ser instala iha fatin krítika sira husi liñas hanesan tuir mai;

1. Lidera ba liña despeza jéral (overhead) husi subestasaun.
2. Pontu koneksaun husi despeza jéral (overhead) liñas alta-tensaun ba transformador prinsipal.

2.12 Transformadores Distribusaun

Transformadores Distribusaun tenke ser instala laos deit iha fatin perigu kontra choke elétrika iha métodu hirak tuir mai.

1. Transformadores Distribusaun tenke ser instala iha Altura husi 5.0m ka a'as liu rai para nune'e ema labele bo'ok sira ho fasíl.
2. Lutu Apropriadu tenke ser halo hale'u fatin Transformadores Distribusaun. Maneira seluk, partes kobradu husi transformadores distribusaun labele nakloke para prevene husi bo'ok.

2.13 Standar Tensaun (Standard Voltage)

Standar Tensaun tenke ser mantein mínimu entre 94% no máximu 106% husi Tensaun nominal.

Liña 150kV tenke ser mantein entre 141kV no 159kV.

Liña 20kV tenke ser mantein entre 18.8kV to'o 21.2kV.

Liña 220V tenke ser mantein entre 216.2V to'o 243.8V.

3 VERIFIKASAUN liu-husi MEDISAUN (MEASUREMENT)

3.1 Resistênsia Ligasaun-Rai (Earthing Resistance)

KONSEITU BAZE BA LIGASAUN-RAI

Objetivu Ligasaun-Rai iha sistema tensaun eléktrika jeralmente mak :

1. Fornese protesaun perigu ba ema ne'ebé uza eléktrik no ambiente.
2. Hetan distribusaun konfiabilidade iha sistema diak husi termus de qualidade, konfiabilidade no kontinuidade distribuisaun enerjia eléktrika.
3. Limita aumenta tensaun ba fasa/Ligasaun-Rai ne'ebé laiha ligasaun ba rai no válor mínimu tensaun servisu.

Iha rede distribusaun enerjia eléktrika iha pontus númeru Ligasaun rai diak ba médiu tensaun no ba parte baixa tensaun mak:

1. Ligasaun-Rai ba konstrusaun rede distribusaun
   a.Ligasaun-Rai pontu neutral transformador iha sentral transformador
   b.Ligasaun-Rai pontu neutral transformador iha parte baixa tensaun(sekundariu) iha distribusaun transformador
   c.Ligasaun-Rai kondutor neutral iha parte médiu tensaun no baixa tensaun
   d. Ligasaun-Rai ba kondutor rai-laran (*shield wire*) iha parte baixa tensaun
   e.Kamada protetora Ligasaun-Rai hanesan cobre/tembaga, aço/baja iha fiu rai-okos
2. Ekipamentu protetora Ligasaun-Rai no Medisaun
   a. Ligasaun-Rai *Lightning Arrester*
   b. Ligasaun-Rai CT/PT
3. Ligasaun-Rai iha parte kondutor nakloke noEkstra (BKT and BKE)

a.Ligasaun-Rai isin (panel) PHB-TM, PHB-TR,Kabel Tray/Rak Kabel
b. Ligasaun-Rai kruz (*cross arm/travers*)
c.Ligasaun-Rai parte husi metal ne'ebé laos parte instalasaun exemplu odamatan transformador, lutu besi.

LIGASAUN-RAI PONTU NEUTRAL PARTE SEKUNDÁRIU HUSI TRANSFORMADOR FORSA IHA TRANSFORMADOR PRINSIPAL KA GENERADOR

Enrolamentu transformador eléktrika iha transformador principal ka gerador parte sekunder (20 kV) iha forma pontu sirkuitu estrela. Pontu estrela mak liga ho maneira :

1. Liu husi resisténsia :
   a. Resisténsia baixa 12 Ohm, 40 Ohm
   b. Resisténsia baixa liu (Ligasaun dereta /solid grounded)
   c. Resisténsia alta 500 Ohm
2. La liga ba rai(Ligasaun-rai flutuante),exemplu ba rede médiu tensaun iha PLTD ki'ik

Valor Ligasun-rai inklui várius tipus konstrusaun rede,sistema protesaun no aproximasaun ba servisu rede distribuisaun.

Ligasaun-Rai ho valor baixa resisténsia 12 Ohm no 40 Ohm

Ligasaun-Rai ho valor baixa resisténsia mak utiliza iha transformador prinsipal/subestasaun iha sistema :

1. Resisténsia 12 Ohm ba transformador ne'ebé serve rede fiu rai-okos. Valor sirkuitu korrente máximu rai-okos 1000 Ampere.
2. Resisténsia 40 Ohm ba transformador ne'ebé especialmente serve b aliña aero médiu tensaun. Valor korrente máximu ba sistema tensaun 20 kV mak máximu 300 Ampere.

Valor korrente bo'ot sirkuitu husi Ligasaun-Rai fasilita protesaun obra atraza no permite protesaun atraza obra ho relativu baratu. Valor korrente sirkuitu la sufisiente atu hakotu fuse cut out karik iha kazu parte mak badak ba sirkuitu rai-okos iha parte ne'ebé protezidu.

Ligasaun-Rai ho valor resisténsia 12 Ohm especialmente utiliza transformador eléktrika mak-ne'ebé fornese enerjia eléktrisidade ba iha fiu rai-okos iha area PLN/EDTL.

10.2.2 Ligasaun_rai ho valor resisténsia ne'ebé ki'ik liu (solid grounded)

Iha parte sistema valor Ligasaun-rai 20 kV husi transformador principal konekta diretamente ba rai okos. Sistema ne'e fornese benefisiu ba rede distribusaun mak :

1. Korrente falhansu ne'ebé luan tebes, nune'e fasil para koordena retransmiti. *Fuse cut-out* (FCO) utilize hanesan seguransa rede fasa rai okos ne'ebe bele servisu ho efektivu.

2. Koveransa rede distribusaun ne'ebé extensivu.
3. Ho sistema multigrounded common neutral iha rede MT/TM, posibilidade ba sistema fasa-1 iha redeMT/TM atu enerjia areia remotu ho kustu investimentu ne'ebé barratu.

Sistema Liagasaun-Rai ne'e utilizada iha areia distribusaun PT. PLN Persero central Jawa no Jogjakarta. Nune'e atu utiliza sistema *multi- grounded common neutral*, konstrusaun iha rede laran husi kada sistema konstrusaun mak differente oitoan iha fatin balun que spesial ba rede liña aero husi médiu tensaun, espesifikasaun tranformador no sistema liña aero ba baixa tensaun. Korrente falhansu rai-okos mak maka'as tebes, haktuir ba parte ki'ik husi disorder impedementu. Ai-rin no parte kondutor hotu-hotu nakloke iha rede ne'ebé konnekta ona ho hamutuk kondutor neutral ne'ebé iha kada ai-rin ne'ebé konnekta ba rai laran. Valor máximu husi Ligasaun-rai mak máximu 5 Ohm.

Ligasaun-Rai ho valor resisténsia a'as

Iha sistema ne'e valor resisténsia ligasaun-rai iha sikun 20 kV transformador enerjia iha transformer prinsipal ka gerador máximu 500 Ohm.

Ligasaun-Rai ho valor resisténsia a'as hodi nune'e impede dizorden tama iha rai-laran maka relativu ki'ik oan, valor maximu mak 25 Ampere. Valor korrente hanesan ne'e sei fornese tensaun maximu 125 Volt karik akuntese kotu ba liña rede aero iha médiu tensaun no kona rede baixa tensaun nune'e seguransa jeral maka seguru liu.

Ligasaun-Rai Flutuante

Ligasaun-rai flutuante agora dadaun iha PLN uza de'it hodi enerjia ba sistema eléktrisidade area rural nu'udar fonte enejia, no laiha ligasaun-rai ba transformador 20 kV, maibé iha ligasaun-rai existe ba

lightning arrester (LA) iha parte transformador sekundáriu no iha parte husi rede kondutor ne'ebé nakloke/molik. Ligasaun-Rai ba rede baixa tensaun utiliza sistema TN-C, maibé só iha de'it ba ai-rin 1(ida) antes ai-rin feeder prinsipal no kondutor ne'eb"e bo'ot liu.

LIGASAUN-RAI PONTUS NEUTRAL HUSI TRANFORMADOR DISTRIBUSAUN

- Pontus neutral husi transformador parte husi baixa tensaun hakoi tiha ho kondutor cobre ne'ebé ho medida hanesan ho kondutor neutral husi fiu transformador hatama ba PHB-TR9baixa tensaun). Karik akunteserede fasa ida de'it labele hasa'e tensaun ba fasa sira seluk.
- Valor resisténsia elektorada Ligasaun-rai labele liu husi 1 Ohm

Pontus Ligasaun-rai neutral iha betaun transformador neutral bele utiliza dalan rua:

a. Kondutor Pontus Neutral husi transformador hakoi tiha iha liur husi instalasaun transformador Liagasaun-rai ne'ebé bele iha ai-rin primeiru husi dalan aero baixa tensaun ka iha primeiru husi PHB husi fiu ligasaun-rai ba baixa tensaun iha kondutor neutral. Massa trafo no panel PHB hakoi separadu tiha.

b. Kondutor Pontus neutral husi transformador hakoi tiha iha ekipamentu sirkuitu ba baixa tensaun. Ligasaun-rai utiliza kondutores cobre/tembaga ho cross section mai menus 50 mm^2 no konekta hamutuk ho ligasaun-rai konduktivu ne'ebé nakloke/molik (massa trafo, kubikel/panel dll)

LIGASAUN-RAI BA REDE DISTRIBUSAUN BAIXA TENSAUN

1. Ligasaun-rai proteje ba rede baixa tensaun utiliza padraun TN-C. Rede kondutor neutral hakoi tiha iha kada ai-rin 5 (+/- 200 meter) ho pontus ligasaun-rai primeiru iha ai-rin segundu husi ai-rin ne'ebé háhu no ai-rin 1 (ida) antes ai-rin final/ikus-liu.
2. Valor bo'ot ba Ligasaun-rai elektroda máximu ida 10 Ohm. Resisténsia total ba ba transformador no JTR máximu 5 Ohm
3. Iha sistema *multi grounded common neutral* ba sistema kondutor neutral husi médiu tensaun mos sai nu'udar sistema husi kondutor

neutral ba médiu tensaun. Provizaun husi standar konstrusaun iha PLN distribusaun sentral Jawa ba kada ai-rin, kondutor mak konekta ho terminal husi ai-rin ligasaun-rai nian, maibe koneksaun ho elektroda ligasaun-rai konstrui/harii iha kada ai-rin 5(lima).

LIGASAUN-RAI BA TRANSFORMADOR DISTRIBUSAUN

Parte sira ne'ebé hakoi iha transformador distribusaun mak:

1. Parte kondutor hotu-hotu ne'ebé nakloke/molik (BKT) no parte husi kondutor Ekstra (BKE) exemplu mak odamatan transformador, panel kubikel.
2. Terminal neutral iha parte husi transformer distribusaun ba baixa tensaun
3. Kamada protektivu fiu eléktika husi médiu tensaun iha parte husi kubikel
4. *Lightning Arrester* iha portal husi transformador

Keta hakoi ketak-ketak ba kada parte sira ne'e, além husi Ligasaun-rai ba lightning arrester/hapara rai-lakan. Partes husi kondutor ligasaun-rai sei bele konekta ba sesaun kondutor rai-lakan mak ligasaun ho ekipotensial hamutuk ida, ikus-mai ligasaun ekipotensial hakoi tia , nune'e gradiente tensaun sa'e hasoru rai tamba distrubansia iha parte hotu husi instalasaun ba magnitude ne'ebé hanesan.
Valor resisténsia Ligasaun-rai la bo'ot liu husi1 Ohm (1,7 Ohm iha livru padraun konstrusaun DJBB).

LIGASUN-RAI KONDUTOR RAI (*SHIELD WIRE/EARTH WIRE*)

Jeneralidade kondutor rai ka *earth wire/shield wire* mak la uja ida. Kondutor ne'e monta iha rede SUTM(Liña aero ba médiu tensaun) nia leten iha area husi akuntese frequentamente rai-lakan ka area ne'ebé nakloke no diretamente konekta no hakoi iha ai-rin. Utilizasaun husi kondutor rai tenke ser diak iha iha revista hanesan nivel existe hela. Monta iha area husi edifisiu/ai-hun mak-ne'ebé a'as liu husi rede ne'ebé ladun efektivu.

HAPARA RAI-LAKAN/LIGHTNING ARRESTER HUSI LIGASAUN-RAI

Lightning Arrester (LA) hakoi ketak-ketak tiha ho elektroda . Iha tipu portal husi transformador distribusaun, ligasaun-rai pontu neutral husi transformador mak ketak-ketak ho elektroda ligasaun-rai husi

Lightning Arrester.

Nune'e atu hetan tensaun hanesan ho gradient tensaun iha rai, kondutor ligasaun-rai husi *Lightning arrester* ho parte husi pontu neutral iha baixa tensaun transformador distribusaun mak mekanikamente konekta (iha ligasaun) iha rai-okos.

Ba transformador (portal) no transformador (eskápulu) kondutor ligasaun-rai husi *lightning arrester* sai ida de'it ho transformador nia isin-lolon no hafoin hakoi tiha.

Resistensia Ligasaun-rai tenke ser sukat liu-husi métodu inspesaun ne'ebé mak hatudu iha okos haktuir ba sistema ligasaun-rai/ earthing system (hakerek iha IEC 60364-5-54). Ida ne'e la persija atu sukat ligasaun-rai hotu-hotu, maibe amostra/sample medisaun tenke ser realizadu/hatudu.

Item	Métodu Inspesaun	Kritériu
Sistema Ligasaun-rai iha parte sekundáriu husi transformador/subestasaun ligasaun-rai klasse _ B	Measurement by earth Metru resisténsia	10Ω ka menus
Ligasaun-rai protektiva ba equipamentu HV inklui transformadores Ligasaun-rai klasse _ A	Ditto	10Ω ka menus
Surge Arrester Earthing/Hapara pilas	Ditto	10Ω ka menus

3.2 Resisténsia Izolamentu

OVERHEAD TRANSMISSION LINE
ALUMINIUM ALLOY CONDUCTOR AND XLPE SHEATHED

Type of Cable : **AAAC-S** **SPECIFICATION** : **SPLN 41-10**
SPLN 41-8

CONSTRUCTION

Size of Cable	Number / Diameter of Wire	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Weight of Cable	Standard Length per Drum
mm²	n. / mm	mm	mm	kg/km	m
35	7 / 2.50	3.0	13.9	204	2,000
50	19 / 1.75	3.0	15.2	244	2,000
70	19 / 2.25	3.0	17.7	353	2,000
95	19 / 2.50	3.0	18.9	415	2,000
120	19 / 2.75	3.0	20.2	483	2,000
150	19 / 3.23	3.0	22.6	628	1,000
150	37 / 2.25	3.0	22.2	594	1,000
185	37 / 2.50	3.0	23.9	707	1,000
240	61 / 2.25	3.0	26.7	900	1,000

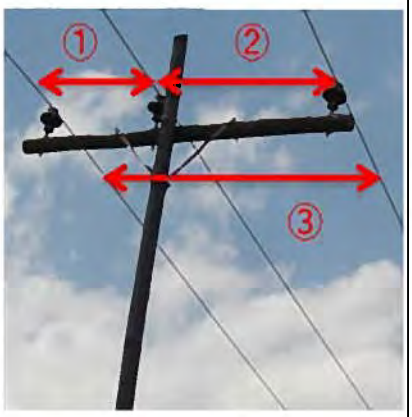
CHARACTERISTICS

Size of Cable	Maximum DC Conductor Resistance at 20 °C	Maximum Current Carying Capacity		Calculated Breaking Load of Conductor	AC Voltage Test
		at 30°C	at 40°C		
mm²	ohm/km	A		N	kV / 5 min.
35	0.958	167	150	9,615	13
50	0.724	200	180	12,750	13
70	0.438	275	246	21,090	13
95	0.355	315	282	26,095	13
120	0.293	356	319	31,590	13
150	0.210	423	378	44,045	13
150	0.225	423	378	41,105	13
185	0.183	484	432	50,755	13
240	0.139	586	523	67,785	13

Medisoens resistênsia Izolamentu konfirma ba adequasaun husi liña distribusaun.

Item	Métodu Inspesaun	Kritériu
Liña tensaun 20kV	Resistênsia Izolamentu mak sukat haktuir tester resistênsia izolamentu1,000V. Valor medisaun tenke ser adopta ba valor 1-min. Karik indikasaun mak la stabel tamba-de'it kapasidade karrega bo'ot husi medisaun sirkuitu, valor medisaun tenke ser adopta hafoin valor sai stabel. (Ne'e la persija atu mantein medisaun bo'ot liu husi 3min.)	Izolamentu husi fazes-Rai okos no faze-faze tenke ser adequadu (2,000M Ω ka liu)
Ekipamentu tensaun 20kV	Ditto	Ditto
Subestasaun	Ditto	Ditto

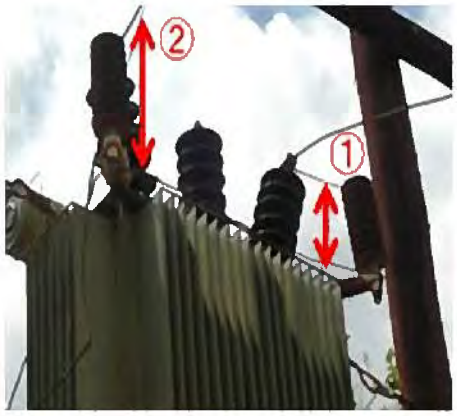
[exemplu husi medisaun liña tensaun 20kV]

	Sukat Fatin	
Fiu ba Rai	Measure the insulation resistance between wire to earth which is connected to a transformer, a lightning arrester, or a switch.	(Agora laiha fotográfia.)
Fiu ba fiu faze seluk	Sukat resistênsia izolamentu entre fiu ida ho fiu faze seluk antes trasformadores konekta ba liña sira ne'e.	

[exemplu husi medisaun transformador]

	Fatin Sukat	
Fiu Primeiru ba transformador Rai nian	Sukat resistênsia izolamentu husi fiu primeiru ba transformador Rai nian, husi fiu segundu ba fiu transformador nian, no husi fiu primeiru ba fiu segundu.	(Agora laiha fotográfia.)
Fiu Segundu ba fiu transformador nian		
Fiu Primeiru ba fiu segundu		

[exemplu husi medisaun hapará rai-lakan/pilas (lightning arrester)]

	Fatin Sukat	
Fiu Primeiru ba Hapará Rai-lakan nian (lightning arrester's earth)	Sukat resistênsia izolamentu husi fiu primeiru ba ekipamentu rai nian mak-ne'ebé konekta transformador, hapará rai-lakan (lightning arrester), ka switch.	Laiha Hapará rai-lakan rua (lightning arresters) iha fotográfia ida-ne'e. Karik iha Hapará Rai-lakan tolu (lightning arresters), Ita-bo'ot tenke sukat sira ne'e hotu. 

4. Liña Ministériais

4.1 Avaliasaun Projetu molok Adjudikasaun Kontratu

4.1.1 Fluxograma

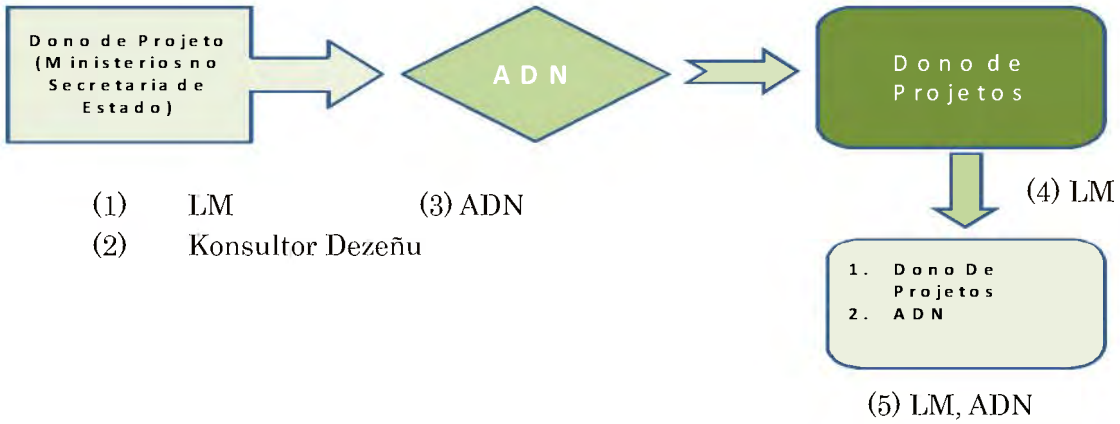


Figura 1. Projetus Liña Ministériais

(1) LM (Liñas Ministériais)

LM prepara kontratu ba Konsultor ruma mak seleksiona hodi halo Dezeñu projetu ne'ebé detalhu. LM mak fundamental sai Na'in ba projetu.

(2) Consultant Design (Konsultor Dezeñu)

Konsultor hala'o servisu bazeia ba TOR ne'ebé estabelese ona. Depois de remata dezeñu projetu, Konsultor refere sei entrega ba LM hodi submete fila fali mai iha ADN.

(3) ADN (Agência Desenvolvimento Nacional)

Iha biban ne'e, ADN sei verifika dokumentus tender ne'ebé entrega husi LM karik dokumentus ne'ebé entrega kompleta ona. Hafoin verifikasaun kompleta, ADN sei entrega hikas ba LM hodi loke prosesu tender iha Ministério ka Secretário de Estado.

(4) LM (Liñas Ministériais)

LM mak responsabiliza ba projetu.

(5) LM, ADN

LM sei resubmete, karik dokumentus ne'ebé entrega ona seidauk kompleta. Hotu tiha, ADN sei verifika ba dokumentu.

4.1.2 Orárius Obra

(1). Tempu Reklamadu ba verifikasaun iha ADN

ADN sei kompleta verifikasaun ba dokumentus konkursu/tender durante loron sanulu (10) nia laran (loron servisu) após simu ofisialmente dokumentus reklamadus husi LM. Karik dokumentus ne'ebé entrega sedauk kompleta, ADN ho esforsu tomak hodi kontakta LM atu kompleta liu tan dokumentu hirak ne'e.

(2). Tempu ba submisaun adisional, resubmisaun ka responde ba perguntas ADN, LM tenke submete, resubmete ka responde ba ADN saida mak reklama husi ADN durante semana (2) após simu notifikasaun husi rekerementu para informasoens seluk-seluk tan depende ba tipu husi projetu.

(3). Iha kazu husi sub-klauza (2) iha leten, tempu ba ADN atu kompleta verifikasaun tenke ser atraza iha tempu ne'ebé hanesan haktuir implementasaun husi LM ba submisaun adisional, resubmisaun ka responde.

4.1.3 Konfirmasaun ba dokumentu ne'ebé submete ona:

ADN sei revista karik rekerementu dokumentus hotu-hotu entrega tiha ona. Karik iha kazu buat ruma ne'ebé falta, ADN sei informa ba LM kona-ba ne'e no instrui LM hodi submete iha tempu espesifiku nia laran.

(1) Karta pedidu verifikasaun ba dokumentus tender : ***formatu-A***

(2) Project Outline/delinear projetu preparadu husi LM; ***formatu B***

(3) Dokumentus Konkursu : ADN sei konfirma rekerementu dokumentus ne'ebé submete tiha ona, utiliza ***Lista Verifikasaun-A***

1) Konvite ba Lisitasaun/tender
2) Instrusaun ba Lisitatante sira
3) Formatu husi lisitasaun no Dadus Kualifikasaun
4) Kondisoens Kontratu
5) Dadus Kontratu
6) Lista Kuantidade/BOQ
7) Formatu husi Seguransa
8) Espesifikasoens
9) Dezeñu/drawings
10) Seluk-seluk tan, karik nesessáriu

4.1.4 Verifikasaun ba kondisoens pagamentu: ADN sei verifika kondisoens pagamentu ne'ebé adekuadu, utiliza **Lista Verifikasaun-B.**

(1) Tempu para kompleta/Periódu konstrusaun

ADN sei verifika kona ba tempu ne'ebé hodi kompleta ká periodu ba konstrusaun hanesan maneira,

1) Verifika orárius konstrusaun detaillu fornese husi LM,
2) Iha esplikasaun husi LM kona-ba oinsá sira desidi tempu ká periodu
3) Kompara ho tempu kompleta obra seluk ké hanesan.

(2) Periódu Manutensaun/ Periódu Notifikasaun ba Estragu/Periódu Responsabilidade Estragu

1) Iha esplikasaun husi LM konaba oinsá sira desidi tempu ká periodu,
2) Kompara ho tempu kompleta obra seluk ké hanesan

(3) Lei Governu nian (Ukun-fuan Fovernu nian)

Lei Governu mak Lei República Demokrátika de Timor Leste.

(4) Regulamentu língua

Regulamentu língua mak Inglês

(5) Exekusaun Di'ak/ Guaranti ba Exekusaun Di'ak

Montante Mínimu Guaranti ba Exekusaun Di'ak mak hanesan prosentajen ba montante kontratu hanesan dadus passadu hatudu 10% to'o 20% bazea ba total pagamentu adiantadu.

(6) Demora estragus ba obra/ Multas

Multas ba obra tomak mak 0,1% ba Presu kontratu final kada loron.

(7) Montante Mínimu ba demora estragus.

Montante Mínimu husi demora estragus/Multas ba projetus passadu mak 10% husi montante kontratu

(8) Montante Provizóriu(Provisional sum)

Montante Provizóriu ba projetu passadu mak 5% to'o 15%

(9) Total Pagamentu Adiantadu

Total Pagamentu Adiantadu ba projetu passadu mak 10% to'o 20%

(10) Prosentajen Retensaun

Prosentajen Retensaun ba projetu projetu passadu mak 10%

(11) Limitasaun ba Orsamentu Retensaun

Limitasaun ba Orsamentu Retensaun ba projetu passadu mak 10% husi montante kontratu ne'ebé aseita.

(12) Montante Mínimu ba Sertifikadu Pagamentu Provizóriu

Montante Mínimu ba Sertifikadu Pagamentu Provizóriu mak entre 25%, 50%, 75%, ká 100% husi montante kontratu bazea ba kontratu orijinal.

4.1.5 **Verifikasaun Téknika utiliza lista verifikasaun(Checklist)**: ADN sei verifika

téknikamente dokumentus ruma hanesan BOQ, dezeñu no espesifikasaun sira, utiliza **lista verifikasaun- C.**

Uza lista verifikasaun-C kona ba projetu Uma nian

Projetu Uma nian (Lista verifikasaun C)

(1) Antesedentes(background)

Verika antesedentes husi projetu no planu viabilidade. Konfirma adekuadamente entre projetu no antesedentes.

(2) Objetivus

Konfirma adekuasaun ba projetu,konsidera ba efikâsia no potênsia ekonómia no efisiênsia.

(3) Âmbitu husi Obra

Konfirma âmbitu hotu-hotu husi obra iha dokumentu tenderizasaun.

(4) Relatóriu no Orário Tempu

Konfirma razoabilidade kona-ba orário tempu, konsidera tempu mobilizasaun, tempu inundasaun, etc

(5) Espesifikasaun

Espesifikasaun téknika tenke tuir padraun(standard)/kódigu, "ne'ebé ekuivalente ká kualidade aas-liu" duké espesifikasaun baibain?

(6) Padraun(standard) ká Kódigu

Laiha lei edifísiu/uma,kódigu & padraun(standard) iha Timor Leste. Konfirma kódigu edifísiu/uma" Australia (AS) no Australia/Nova Zelandia (AS/NXS)" ká " Padraun Edifísiu Indonésia (SNI 2002)".

(7) Kualidade

Haktuir espesifikasaun/kódigu tékniku etc.

Amostra(sample) espesifikasaun material

1) Espesifikasaun Konkretu (haktuir ba NP EN 206-1,2007; Klassifikasaun Inspesaun 2; Durasaun-vida(lifetime) tinan 50)
2) Besi-betaun(rebar steel) NP ENV 13670-1)

(8) Lista Kuantidades/BoQ

Verifika Lista kuantidades, unidade presu no montantes husi item bo'ot ruma, evita sala/erru ne'ebe fásil. Konfirma lolos entre dezeñu iha dezeñu arsiktektura, dezeñu estruktural, no estabelesimentu dezeñu iha mekániku,elétriku, no dezeñus Hidráuliku.

(9) Dezeñu

Veifika espesifikasaun detailla no kódigu iha dezeñus.

(10)Âmbitu husi konstrusaun
Verifikaa âmbitu husi konstrusaun indika iha dezeñu no espesifikasaun sira.

4.1.6 **Rona husi LM**: ADN sei rona husi LM oinsá sira bele atinji solusaun ikus nian, iha lia fuan seluk, karik kompara ona ho alternativus seluk.
Ne'e defisil tebes atu verifika Dokumentus tender barak tebes ké simu horseik iha loron hirak nia laran. Ne'e bele rekomenda tebes ba enjiñeiru ADN foin sae sira hodi estuda Dokumentus tender no prepara antesipadamente perguntas ba nia-an rasik iha akordu ho manual ne'e utiliza lista-verifikasaun (checklist) anexada iha-ne'e, hodi bolu enjiñeiru LM no konsultan dezñu mai ADN, no husu perguntas no tesi-lia.
Ida-ne'e sei ajuda enjiñeiru ADN sira guarda tempu ba verifikasaun, no hasa'e sira nia kapasidade.

4.1.7 **Orário Verifikasaun**: ADN sei prepara orário, iha-ne'ebé ne'e permiti funsionário ADN atu kompleta verifikasaun obra durante iha tempu ne'ebé defini ona.
Orário Verifikasaun Dokumentus tenderizasaun ne'ebé aperta tebes , iha kalendário loron 10 deit, hafoin simu dokumentus ne'ebé entrega.
Ne'e Rekomenda hodi prepara orário ba verifikasaun, no tuir orário, prossesu hosi ida ba ida,hosi loron ba loron.
Exemplu orário verifikasaun ne'ebé hatudu iha okos ba loron 3 operasaun [loron 1 to'o loron 3].
(1) Verika karik dokumentus submetidu ne'ebé utiliza **lista-verifikasaun/checklist A.**
Karik lae, informa ba LM katak dokumentus la sufisiente, no verifikasaun sei komesa iha loron tuir-mai husi simu dokumentus adekuadu.
(2) Wainhira dokumentus reklamadu sira ne'e hotu entrega ona, komesa verifika kondisaun pagamentu /anexa ba tenderizsaun/kondisaun partikular, iha konkordânsia ho manual ne'e utiliza **lista-verifikasau B.**
(3) Prepara perguntas iha akordu ho manual ne'e utiliza **lista-verifikasaun C**, ba projetu Uma nian.

(4) Arranja Intervista ho LM no nia konsultan ba perguntas tékniku iha loron segundu.
[loron 4 to'o loron 6].
(5) Husu pergunta kona ba kestaun tékniku ne'ebe ita boot prepara.
(6) Karik sira nia resposta la satisfeitu ká resposta la'dun klaru tamba menus dadus, hato'o ba sira atu prepara data sufisiente para explika, hafoin arranja intervista tuir-mai. Loron ikus kona ba intervista tuir-mai mak loron segundu husi verifikasaun.
(7)Hatete LM hodi kompleta dokumentus korreksaun hotu-hotu,hatama hikas fali
[loron 7 to'o loron 10]
(8) Verifika deit porsaun koriji ona, no manda sira ba LM, wainhira dokumentus korrijidu ne'ebé entrega ona.
(9) Entantu katak koreksaun mak la satisfeitu, halo hanesan pontu (3) iha leten.

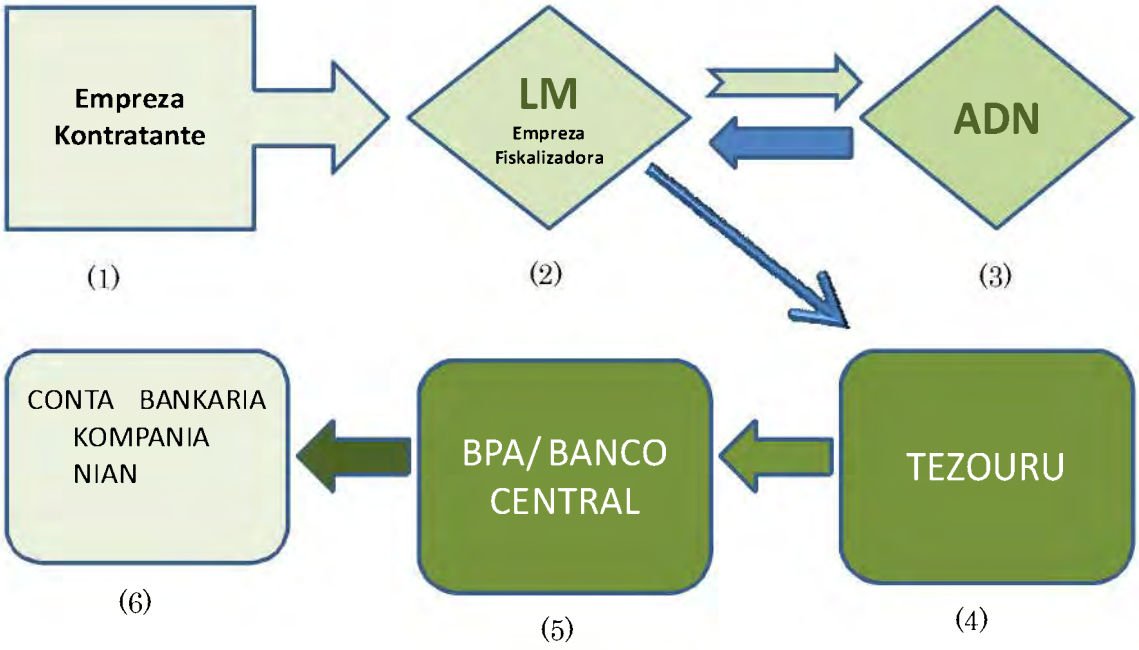
4.1.8 **Remédiu/reparasaun**: iha kazu problemas ruma ne'ebé rezulta dokumentus verifikasaun, ADN sei informa ba LM kona ba problemas no oinsá atu resolve.
Obra Verifikasaun sei demora husi lakon tempu ba resubmissaun.

4.1.9 **FAQ (Frekuentamente/Nafatin husu perguntas)**

Iha kursu verifikasaun dokumentus tender, enjiñeiru ADN sei iha perguntas no problemas oin-oin, no rezolve problemas ho ajudu husi enjiñeiru senior sira to'o sira toman atu kompleta sira nia servisu. Ne'e rekomenda ba enjiñeiru sira sé-mak atu rezolve problemas sira ne'e rai inskrisaun iha "Livru FAQ".
Livru FAQ bele ajuda enjiñeiru seluk ne'ebé hasoru problema hanesan.

4. 2: Inspesaun Regular ba Pagamentu & Rekomendasaun ba Pagamentu

4.2.1 Fluxograma



(1) Empreza Kontratante
Hatama Invoice ba iha LM haktuir ba progressu fiziku obra nian iha terrenu maibé relatóriu progressu tenke hetan aprovasaun husi Konsultor supervisaun.

(2) LM (linã Ministeriais) no (Empreza Kontratante fiskalizador)
LM simu Invoice husi Empreza Kontratante/kontraktor bazea ba relatóriu progressu ne'ebé hetan tiha ona revista ba-mai/cross-check husi kompañia supervizaun no hetan aprovasaun husi Secretário do Estado ká Ministro/a hodi prepara Sertifikadu Pagamentu no Sertifikadu refere hetan autorizasaun husi Secretário do Estado ká Ministro/a. Hafoin LM submete Karta Pedidu ba ADN, anexa mós dokumentus relevante kompletu.

(3) ADN
Simu dokumentus pedidu ba Inspesaun ida-ne'ebé anexada dokumentus Pagamentu hodi realiza inspesaun. Depois inspesaun hotu, ADN sei prepara Relatóriu Inspesaun no Rekomendasaun Pagamentu entrega ba LM , atu nune'e LM bele submete ba Tezouru hodi hetan TPO (Orden pagamentu husi Tezouru/Treasury Payment Order).

(4) Tezouru
Tezouru sei prepara TPO (Orden pagamentu husi Tezouru/Treasury Payment Order)

hafoin TPO ne'e manda ba Banku Sentral (BPA).

(5) BPA/Banku Sentral
Halo pagamentu ba Konta Bankária Kompañia nian.

(6) Konta Bankária Kompañia
Kompania sei simu osan ne'ebé transfere iha sira nia Konta Bankária rasik.

4.2.2 Orário Obra

(1) Rekere tempu ba verifikasaun iha ADN

ADN tenke kompleta dokumentus inspesaun ba pedidu pagamentu durante semana rua (2) nia laran depois de simu ofisialmente dokumentus rekerementu husi ADN.

(2) Tempu ba submisaun adisional, resubmisaun ka responde ba perguntas ADN nian, LM tenke submete, resubmete ka respode ba ADN saida mak rekere husi ADN durante semana rua(2) ni laran depois de simu notifikasaun husi rekerementu mais informasaun detalhu.

(3) Iha kazu husi sub-kauza rua (2) iha leten, tempu ba ADN atu kompleta verifikasaun tenke ser atraza iha tempu hanesan ho tempu ne'ebé LM foti ba adisional submisaun, resubmisaun ka responde ba Dokumentus inspesaun.

4.2.3 Dokumentu Inspesaun

(1) Konfirmasaun ba dokumentus submetidu: ADN sei revista karik dokumentus rekerementu hotu-hotu hatudu iha okos entrega tiha ona utiliza **lista verifikasaun-D**. Iha kazu buat ruma mak falta, ADN sei informa ba LM kona ba ne'e no instrui/haruka LM hodi submete/entrega iha tempu espesífiku nia laran.

1) Karta pedidu inspesaun husi LM hato'o ba ADN : **formatu –C**
2) Partes husi dokumentu kontratu, hatudu montante kontratu no kondisoens pagamentu.
3) Lista Kuantidade/BOQ hatudu presu unidades no kuantidades
4) Deskrisaun husi mudansa, alterasaun ka variasaun, karik iha
5) Relatóriu inspesaun Terrenu husi LM

6) Dadus Dijitál husi BOQ

(2) Konfirmasaun husi kondisoens pagamentu hanesan pagamentu adiantadu no retensaun:

ADN tenke halo serteza kondisoens pagamentu hirak ne'e mak tuir los-los deskrisaun husi dokumentu kontratu.

(1) Kalkulasaun iha folha faturamentu

(2) Konfirmasaun husi remata obra iha BOQ, dezeñu no fotográfia

(3) Konfirmasaun ba oráriu obra

(4) Konfirmasaun ba rezulta inspesaun husi LM

(5) Emite relatóriu inspesaun no rekomendasaun ba pagamentu : **formatu-D**

4.2.4 **Inspesaun Terrenu**

(1) Preparasaun

ADN manda Pedidu Preparasaun husi Inspesaun Terrenu ba ADN uja **formatu-E** iha loron hitu (7) molok inspesaun.

1) Atendentes

LM tenke konvida sira hotu iha kra'ik ne'e ba inspesaun terrenu.

- Inspetór husi ADN
- Enjeñeiru husi Liña Ministériu
- Konsultan Supervizaun
- Emprezáriu/Kontraktor

2) Preparasaun

LM tenke organiza buat hotu iha kra'ik ne'e iha inspesaun terrenu

- Arkivu/inskrisaun husi kontrolu kualidade
- Dezeñu
- Lista Kuantidade/BOQ Detaillu
- Ekipamentu Medisaun/sukat
- Asisténte para sukat/medisaun

(2) Kontrolu kualidade

Arkivu ba kontrolu kualidade sei avalia husi ADN utiliza *Lista-verifikasaun/checklist E.*

Item verifika sira iha checklist ne'e hanesan amostra de'it, nune'e item própriu tenke ser aumenta depende ba situasaun.

(3) Medisaun/Sukat ba Obra ké kompletu ona

Obra ké Kompletu ona tenke ser sukat. Objetivu husi sukat/medisaun mak atu konfirma katak kuantidade atual husi kada item ké kompletu ona hanesan ho kuantidade husi pedidu iha Invoice laran.

(4) Rona husi enjeñeiru LM nian

ADN tenke rona husi enjeñeiru LM karik iha perguntas.

(5) Remédiu/Reparasaun(Remedy)

Wainhira ADN hetan buat ruma sala/non-conformant ká la satisfatóriu ba obra, ADN tenke haruka remédiu/hadi'a.

4.2.5 Notifikasaun husi Julgamentu kona-ba pagamentu

Finalmente ADN tenke julga montante pagamentu sufisiente, notifika no rekomenda pagamentu ba LM, **utiliza Formatu C**. ADN manda orijinal ida no kopia rua husi dokumentus pagamentu ba LM, no rai kopia ida iha eskritóriu ADN.

4.2.6 FAQ (Frekuetemente/Nafatin husu Perguntas)

Ne'e rekomenda maka'as tebes atu halibur no hakerek perguntas no resposta ne'ebé mosu hela de'it iha ADN relasiona ba pedidu husi inspesaun ba pagamentu.

Anexu -4. (Liña Ministériais)

Formatu-A (Karta Pedidu Verifikasaun ba dokumentus tender

Karta ulun/Kop husi Liña Ministériais

Data : _____Fulan_____Tinan

Número : Ministério/ Infra Unit/_____(númeru surat)

Hato'o ba : Ex^{mo}. Senhor Samuel Marçal
Director ADN
Iha Dili

Assuntu : Pedidu Verifikasaun
Projetu Fundo Liña Ministérial (Tipu husi projetu)
Lokalizasaun (Fatin Projetu)

Atu responde ba pedidu verifikasaun ne'ebé regula iha regra legal ba prosesu tender, Ami (LM) informa katak sei hala'o prosesu tender ba projetu.....(projetu naran) ho No.Kontratu: RDTL_____.
Ho biban ne'e mos, ami submete mos kampania lisitante sira no sira nia profile ne'ebé anexa iha okos atu nune'e ADN bele halo verifikasaun no selekta kompania ne'ebé mak sei manan.

Ikus Liu, Ami hato'o agradese wa'in ba Ita nia kooperasaun.

Chefe de projeto

(.....)

Aprova husi Ministro/SOS

(.....)

Anexu
1. Periódu implementasaun (Konkluzaun ba projetu)
2. Súmariu Projetu
2. Lista Kuantidade (BOQ)
3. Dezeñu (Drawings)
4. Espesifikasaun téknika detalhadu
5. Medisaun (Measurement)
6. Lista no profile kompania Lisitante sira
7. Seluk-seluk tan, karik persija

Formatu-B (Project Outline/Rezumu Projetu preparadu husi LM)

Kop Surat husi LM									
Delinear/outline projetu husi LM									
No	Distrito	Sub Distrito	Tipo husi Projetu	Kustu Estimadu	Kustu Teknika Estimadu	Implementasaun 2012	Implementation 2013	Total Implementasaun	Observasaun
						Percentagem...%	Percentagem...%		
....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total Orsamentu								

Dili, data.....

Preparadu husi

Coordenador Projetu husi LM

Aprovadu husi

Ministro/SOS

Formatu-C (Karta Pedidu Inspesaun husi LM hato'o ba ADN)

Karta ulun/Kop husi Liña Ministériais

Data : _____Fulan_____Tinan

Número : Ministério/ Infra Unit/_____(númeru surat)

Hato'o ba : Ex^{mo}. Senhor Samuel Marçal
Director ADN
Iha Dili

Assuntu : Pedidu Inpesaun
Projetu Fundo Liña Ministérial (Tipu husi projetu)
Lokalizasaun (Fatin Projetu)

Atu responde ba pedidu pagamentu ne'ebé submete ona husi kompania_____(naran kompania), Ami (LM) informa katak sei hala'o inspesaun ba projetu_____(projetu naran) ho No.Kontratu: RDTL_____, iha Loron_____(data husi inspesaun). Ho biban ne'e mos, ami submete mos Invoice kampania nian no Relatóriu Progressu ne'ebé anexa iha okos atu nune'e ADN bele halo inspesaun no prepara relatóriu inspesaun no rekomendasaun ba pagamentu.

Ikus Liu, Ami hato'o agradese wa'in ba Ita nia kooperasaun.

Chefe de projeto

(.....)

Aprova husi Ministro/SOS

(.....)

Anexu
1. Periódu implementasaun (Konkluzaun ba projetu)
2. Súmariu Projetu
2. Lista Kuantidade (BOQ)
3. Dezeñu (Drawings)
4. Espesifikasaun Téknika detalhadu
5. Medisaun (Measurement)
6. Invoice no relatóriu progressu husi kompania
7. Seluk-seluk tan, karik persija

Formatu-D (Relatóriu Inspesaun no Rekomendasaun ba Pagamentu)

REPUBLICA DEMOCRATICA DE TIMOR LESTE

GABINETE DO PRIMEIRO MINISTRO

AGENCIA DESENVOLVIMENTO NACIONAL

Data :_____,Fulan, Tinan

Hato'o ba : Director of Major Project Secretary(MPS)

Husi : Samuel Marçal (Karimbu no asina husi ADN)
Director Geral ADN

Ref : _____ RDTL/ GPM /ADN / III / 20_____

Assuntu : Pedidu Pagamentu

Relasiona ho Pedidu Pagamento No._____(No. Pedidu) husi companhia_____(Naran companhia) ba projetu_____(naran projetu) iha_____(distrito)_____ (sub distritu)_____(Suco). Ekipa Tékniku ADN ne'ebé hala'o ona inspesaun ba projetu refere rekomenda bele halo pagamentu ba progressu ne'ebé iha. Nune'e Ami Husu ba Secretário de Grandes Projetos (MPS) wainhira atu exakuta prosesu pagamentu persija verifika fali pagamentu anterior.

Mak ne'e deit, ba Ita bo'ot nia kolaborasaun diak ami hato'o obrigado wa'in

Formatu ne'ebé exite hela

REPUBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

No	RELATORIO INSPECSAUN NO RECOMENDASAUN BA PAGAMENTO				
A	Projecto nia Naran				
B	Ministerio/Dono de Projecto	*LM*			
C	Fontes de Fundos : (PDD I, PDD II,PDL,FI,Emergencia,MDG Suco,etc)				
D	Contractor				
E	Numero PO (Purchase Order)				
F	Localizasaun Projecto :	B.Distrito :			
		b.Sub distrito :			
		c.Suco/Aldeia :			
G	Valor Contracto				
H	Progreso fisico iha fulan kotuk				
I	Progreso fisico ate agora				
J	Valor Pagamento foer ate agora (gross)	(9-8)*7			
K	Osan adiantamento nebe simu ona ...%	(...%*7)			
L	Deducsaun adiantado ba pagamento ida ne'e 10%	(9-8)*11			
M	Deducsaun retensaun ba pagamento ida ne'e	(10%*10			
N	Valor pagamento depois de deducsaun ba retensaun	(10-13)			
O	Valor pagamento nebe atu selu ba pagamento ida ne'e	(14-12)			
P	Balansu depois de pagamento ida ne'e	7-(9*7)			
Q	Observasaun ou komentario:				
R	Recomendasaun ba MPS-MdF/Tezouro-MdF/Ministerio/Agencia Tutela Selu ho Montante (USD)				
S	Observasaun :		SIM	Komentarios	LAE
a	Tuir Dezenho ?		LAE		
b	Tuir BOQ ?		SIM		
c	Tuir Espesifikasaun ?		LAE		
d	Tuir Schedule curva S ?		SIM		
e	Tuir Termos de Contracto ?		SIM		
T	Data Inspecsaun		Data: 03-0	Fulan: 07	Tinan:2012
U	Enginheiro Nebe Halo Inspecsaun :	Assinatura:			Data :
	1. Maximos dos Santos				
	2. Camilio de Jesus	Assinatura:			Data :
		Assinatura:			Data :
V	Verifikado Hosi :	Assinatura:			Data :
	Miguel Marques Monteiro de Jesus				
W	Q.C.	Assinatura:			Data :
	Esron ST. Henuk				
X	Approvado Hosi :	Assinatura:			Data :
	Sr. Samuel Marçal				
	Directur Geral - ADN.				
Y	Annexo :	Fotografias Ruma Hosi Terreno			

Propoin Folla Foun

No	RELATORIU INSPEKSAUN NO REKOMENDASAUN BA PAGAMENTU		
1	Projeito nia Naran		
2	Ministerio/Dono de projeito		
3	Fonte de fundos (PDD I, PDD II ,MP, Emergencia, etc)		
4	Contractor		
5	Numero PO (Purchase Order)		
6	Localizasaun Projeito :	a) Distrito : b) Sub distrito : c) Suco/Aldeia :	
7	Valor Contracto		
8	Valor pagamento foer ate agora (gross)		
9	Billing(faturamentu) ih invoice husi emprezariu		
10	Billing(faturamentu) verifikadu husi Inspector		
11	Osan adiantamento nebe simu ona ....%	(7)*10%	
12	Deducsaun adiantado ba pagamento ida ne'e 10%	(11)*((10)/(7))	
13	Deducsaun retensaun ba pagamento ida ne'e	(10)*10%	
14	Valor pagamento depois de deducsaun ba retensaun	(10)-(12)-(13)	
15	Liberasaun ba iha retensaun anterior (50%)		
16	Valor pagamento nebe atu selu ba pagamento ida ne'e	(14)+(15)	
17	Balansu depois de pagamento ida ne'e	(7)-(8)-(16)	
18	Progreso fisico iha fulan kotuk %	(8)/(7)	
19	Progreso fisico ate agora %	(10)/(7)	
20	Documentos husi Inspecsaun	Dokumentos	Problema & Comentario ruma
a	Tuir Termos de Contracto ?	Yes/No	
b	Tuir BOQ ?	Yes/No	
c	Tuir Espesifikasaun ?	Yes/No	
d	Tuir Dezenho ?	Yes/No	
e	Tuir Schedule curva S ?	Yes/No	
f	Relatoriu inspeksaun husi Dono de Projeitu(EDTL ka distritu)	Yes/No	
g	Rezultadu teste ba Termu-Entrega	Yes/No	
h	Dezenha ba faturamentu ne'e	Yes/No	
21	Rezultadu Husi Inspeksaun		
	{ Rezultadu husi Dokumentu Inspeksaun nian } Revista item hirak nu'udar referensia: * Dokumentus ba invoice preparadu lo-los ? * Invoice ida ne'e atinji ba kondisaun pagamentu hanesan pagamentu adiantadu no retensaun ? * Kalkulasaun lo-los husi faturamentu(billing)? * Sei mantein loron completa nian? * Rezultadu husi teste (Teste de exekusaun) ba Termo-Entrega tuir kriteria? * Karik laiha inspeksaun terenu, Tenki ser mensiona razaun saida, exemplu; Montante ki'ik ba pagamentu interkalar, implementasaun husi vizita terenu liu-ba, Foto sufisiente ba verifikasaun qualidade, etc.		
	{ Rezultadu husi Inspeksaun Terenu } Revista item hirak nu'udar referensia: * Dono de projeito (EDTL ka seluk) mak atende mos iha terrenu ka fo explikasaun iha edefisiu? * Komponentes importante ba funsaun no komponentes volume bo'ot iha BoQ revista tiha ona ? * Problema ruma iha qualidade (Qualidade ladiak husi material no instalasaun, rezultadu teste alem de criteria, etc.)? * Problema ruma iha quantidade (Diferenti entre figuras aktual no BoQ) ?		
	{Ajustamentu ba iha pagamentu } Revista item hirak nu'udar referensia: * Rekomendasaun pagamentu haktuir invoice ka lae ? * Karik Lae, Razaun husi avaliasaun ba redusaun ? * Rekomendasaun hadia(konsertu) saida mak kontra(hasoru) defeitu(estragu) ?		
22	Proposta pagamentu ih invoice husi emprezariu		
23	Recomendasaun ba MPS-MdF/Tezouro-MdF/Ministerio/Agencia Tutela Selu ho Montante (USD)		-
24	Loron Inspeksaun terrenu	Data:	Fulan: / Tinan:
25	Inspector	Assinatura:	Data :
	1. Maximos dos Santos		
	2. Ana Maria Guterres	Assinatura:	Data :
	Verifikadu husi :	Assinatura:	Data :
	Miguel Marques Monteiro de Jesus		
26	Q.C.	Assinatura:	Data :
	Esron ST. Henuk		
27	Aprovadu husi :	Assinatura:	Data :
	Sr. Samuel Marçal		
28	Direitor Geral - ADN.		
29	Annexu : Sertifikadu husi dono de projeitu & dokumentu addisional		

Formatu E (Pedidu ba Preparasaun Inspesaun Terrenu)

KARTA ULUN/KOP

DATA

(HATO'O BA SÉ)
LM

(ASSUNTU) PEDIDU BA PREPARASAUN INSPESAUN TERRENU

Atu responde ba pedidu pagamentu ne'ebé submetidu ba ADN, ADN informa katak ..... ADN hato'o pedidu ba LM atu prepara tuir-mai hodi realiza inspesaun terrenu ne'ebé korretamente no ordenada.

1. Naran Projetu
2. Data Inspesaun terrenu
3. Atendentes/Lista Prezensa ne'ebé nesessáriu
   1) Supervisor ka Engenheiro(s) responsável husi LM
   2) Konsultor(s) supervizaun
   3) Jerrente projetu no Chefe Engenheiro husi Emprezariu
4. Preparasaun iha Terrenu aranjadu husi LM
   1) Records/Notafikasaun sobre Kontrolu Kualidade
   2) Drawings/dezeñu homos inkluidu konstrusaun kompleta
   3) Detailhus husi BOQ
   4) Dispositivu Medisaun/Measuring Devices, karik Teste Destructivu nesessáriu
   5) Assistentes ba Measurement/medida

Husi ADN

CC.
ba Organizasaun Relevante karik iha

Checklist A

REPÚBLICA DEMOCRÁTICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL

Checklist husi Verifikasaun Dokumentu ba Dezeñu no BOQ

Naran husi Projetu :

Projetu Na'in :

Númeru Kontratu :

Data Simu dokumentu :

1. Karta Akumpañamentu.....
2. Dezeñu tenke ser kompleta no hetan assinatura husi Enjiñeiru husi LM.....
3. BOQ no Estimasaun Kustu hetan assinatura husi Obras Públika .....
4. Análiza Presu Unidade/Unit Price Analysis.....
5. Soft copy husi dokumentus ida-ne'ebé mensiona iha-leten.....
6. Espesifikasaun Téknika .....
7. Ida-ne'e tenke iha mós Análiza Kalkulasaun Estrutura no Hidrolójia, nomós dadus Topográfia.....

Notifikasaun: Checklist ida-ne'e utiliza hodi konfirma katak dokumentus rekeridu hotu-hotu submetidu ona para verifikasaun dokumentu husi Projetu Fundu da Infra-estrutura ba Estrada, Ponte, Portu & Irrigasaun

Checklist A

REPÚBLICA DEMOCRÁTICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL

CHECKLIST DOKUMENTU TENDER BA PROJETUS KONSTRUSAUN EDIFÍSIU & MORU HALE'U ESKRITÓRIU

8. Dezeñu tenke ser aprovadu husi Obras Públika _____ ☐

9. Bill of Quantity (BoQ) tenke ser aprovadu husi Obras Públika _____ ☐

10. Estimasaun Kustu tenke ser aprovadu husi Obras Públika _____ ☐

11. Espesifikasaun Téknika tenke ser hetan husi Obras Públika _____ ☐

12. Submete file elektrónika ne'ebe salva iha CD laran _____ ☐

13. Karik Edifisiu mak nia ass mak liu andar 2, tenke ser anexada Estudu Viabilidade husi Rai ká rezultadus invertigasaun rai _____ ☐

14. Karik Edifisiu nia ass mak liu andar 2, tenke ser anexada Análiza Kalkulasaun Estrutura _____ ☐

Notifikasaun: Checklist ida-ne'e utiliza hodi konfirma katak dokumentus rekeridu hotu-hotu submetidu ona para verifikasaun dokumentu husi Projetu Fundu da Infra-estrutura ba <u>Edifisiu.</u>

Linha Ministeriais	CHECKLIST-B (Lista Verifikasaun)			Verifika husi	Aprova husi
Tipu husi Projetu	Edifisiu	Objetivu	Kondisaun Pagamentu		

Atrazu Estragu ba obra/Liquidadu estragu		Loron submete	
Naran Projetu		Etapa	Verifikasaun husi dokumentus konkursu/tender
Ajensia Implementador			

	Item verifika	Pontu Inspesaun	Loron verifika	Marka verifika	Observasaun
	Ne'e Se konfirmadu karik buat-hirak iha-okos mak razoavel ka lae?				
1	Tempu kompleta(konkluzaun)/Periodu Konstrusaun	Se karik iha orariu detalhadu? Ne'e karik Diak/OK kompara nia ho dadus passadu?			Karik Lae,realiza rona husi LM
2	Periodu manutensaun/Periodu Notifikasaun Defeitu	Ne'e karik diak/ok kompara nia ho dadus passadu?			
3	Lei Administrativa	Karik iha Lei husi Republica Democratica de Timor Leste?			
4	Regulamentu Lingua	Karik iha Ingles?			ICB Utiliza Ingles iha Timor-Leste
5	Dezempenhu Seguransa/Garantia exakusaun diak	Ne'e karik diak/ok kompara nia ho dadus passadu?			
6	Estragu Atraza ba obra/Liquidadu estragu	Ne'e karik diak/ok kompara nia ho dadus passadu?			
7	Montante maximu ba estragu atraza	Ne'e karik diak/ok kompara nia ho dadus passadu?			
8	Montante Provizional	Ne'e karik diak/ok kompara nia ho dadus passadu?			
9	Total pagamentu adiantamentu	Ne'e karik diak/ok kompara nia ho dadus passadu?			
10	Porsentajen husi Retensaun	Ne'e karik diak/ok kompara nia ho dadus passadu?			
11	Limitasaun husi orsan Retensaun	Ne'e karik diak/ok kompara nia ho dadus passadu?			
12	Montante minimu husi sertifikadus pagamentu interinu	Ne'e karik diak/ok kompara nia ho dadus passadu?			

Linha Ministeriais	CHECKLIST-C (Lista Verifikasaun)			Verifika husi	Aprova husi
Tipu husi projetu	Edifisiu	Objetivu	Verifikasaun teknika		

No. Kontratu			Loron submete		
Naran Projetu			Etapa	Verifikasaun husi dokumentus konkursu/tender	
Ajensia implementador					

	Item verifika	Pontu inspesaun	Loron verifika	Marka verifika	Observasaun
					Dadus Referidu
1	Background/Fundo	Karik ne'e klaru entre projetu no Fundo?			
2	Objetivu	Karik ne'e projetu ne'ebe adequadu, konsidera efektivus, potensia ekonomia no efisiensia?			
3	Eskopu husi Servisu	Karik ne'e klaru ba dokumentus konkursu/tender?			
4	Relatorius no Orariu	Karik ne'e klaru ba Relatoriu? Karik ne'e razoavel ho Orariu?			Konsidera tempu mobilizasaun, tempu idundasaun, etc
5	Espesifikasaun	Karik ne'e klaru ba kodigu edifisiu & standard/padraun?			
6	Padraun ka Kodigus	Karik kodigu edifisiu Australianu (AS) no Australianu/New Zealand(AS/NXS) ka Padraun Edifisiu Indonesio(SNI 2002)?			Laiha Lei, kodigu & standard/padarun ba Edifisiu iha Timor Leste
7	Kualidade	Karik Ne'e haktuir padraun/kodigu? Karik ne'e utiliza equivalente ka kualidade a'as-liu duke espesifikasaun?			
8	BOQ	Karik ne'e korekta/los?			
9	Drawings/Dezenu	Oinsa ne'e hatudu detalhu ba espesifikasaun no kodigu?			
10	Eskopu husi konstrusaun	Oinsa eskopu husi konstrusaun indika iha dezena no espesifikasaun?			

Lista Verifikasaun-C (Verifikasaun Téknika)

Checklist D

REPÚBLICA DEMOCRÁTICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL

Checklist Pagamentu ba Dokumentu husi Konsultan Supervizaun

Projetu nia Naran :

Na'in husi Projetu :

Númeru husi Kontratu :

Data Simu dokumentu :

10. Invoice iha Orijinal hatama husi Konsultan..... ☐
11. Sertifikadu Pagamentu iha Orijinal ne'ebé hetan aprovasaun husi Ministru ká Sekretáriu Estadu..... ☐
12. Submete kopia kompleta husi Kontratu Válidu ho nia anexu..... ☐
13. Hatama Relatóriu Menssal ne'ebé hetan aprovasaun husi Projetu Na'in..... ☐
14. Submete No. TIN (Identificação do Contribuite Registo Imposto)..... ☐
15. Númeru husi Konta Bankária..... ☐
16. Submete Sertidaun Dividas ne'ebé válidu no tenke ser legalizadu..... ☐
17. Submete Licença Actividades de Commercio e Económico ne'ebé válidu no legalizada..... ☐
18. Submite Para Quem Interessado ne'ebé válidu ..... ☐

Notifikasaun: Checklist ida-ne'e utiliza hodi konfirma katak dokumentus rekeridu hotu-hotu submetidu ona para dokumentu pagamentu husi Projetu Fundu da Infra-estrutura ba Estrada, Ponte, Portus & Irigasaun

Checklist D

REPÚBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL
CHECKLIST FUNDU DA INFRA-ESTRUCTURA BA PAGAMENTU

Naran husi Projetu :

Naran husi Kompañia :

Númeru Kontratu :

Valor husi Kontratu : **US$**

Valor husi Invoice/Pedidu : **US$**

No	Dokumentus ne'ebé submetidu iha Invoice laran	Resultadu		OBS
		Sim	Lae	
1	Kontratu sei moris hela (mais menus fulan ida antes data prazu hotu/ expired date). Valor kontratu mak liu husi >500,000 tenke ser sujeitada hodi hetan Karta Justifikasaun husi Tribunal das Contas, Tribunal Superior das Administrativas de Timor Leste.			
2	Submete Sertidaun Dívidas ne'ebé válidu no tenke ser legalizadu			
3	Submete No. TIN (Identificação do Contribuite Registo Imposto)			
4	Submite Para Quem Interessado ne'ebé válidu			
5	Submete Licença Actividades de Commercio e Económico ne'ebé válidu no legalizada			
6	Submete Invoice Orijinal 1 (kopia 5) no hetan aprovasaun husi Tékniku LM			
7	Pedidu husi Karta Pagamentu			
8	Sertifikadu Pagamentu aprovada husi Liñe Ministriais			
9	Númeru Konta Banária husi Kompañia			
10	Garantia ba Exekusaun di'ak tenke ser rai iha banku nu'udar garantia, ida-ne'e hanesan ho Valor Adiantadu ká bazea Termos husi Kontratu			
11	Invoice tenke ser anexada ho Relatóriu Progressu Mensal			
12	Kompañia Internasional tenke anexa sertifikadu hosi Organizasaun Padraun Internasional (ISO)			

Notifikasaun: Checklist ida-ne'e utiliza hodi konfirma katak dokumentus rekeridu hotu-hotu submetidu ona para dokumentu pagamentu husi Projetu Fundu da Infra-estrutura ba <u>Edifisiu, Estrada, Ponte, Portu, Irigasaun, etc.</u>

Linha Ministeriais	CHECKLIST- E (Lista Verifikasaun)			Verifika husi	Aprova husi
Tipu husi projetu	Edifisiu	Objetivu	Kontrolu Kualidade		

No.Kontratu			Loron submete		
Naran Projetu			Etapa	Inspesaun no Rekomendasaun ba Pagamentu	
Ajensia implementador					

	Item verifika	Pontu Inspesaun	Loron verifika	Marka verifika	Observasaun
1	Finalidade no Utilizasaun	Karik Espesifikasaun konstrusaun obedese ba rekerementus husi kontratu?			Wainhira Lae, aponta Rona husi LM.
2	Kodigus no Padraun	Karik Padraun no kodigus hotu-hotu husi Praktika utilizada ih espesifikasaun konstrusaun aktuais haktuir loron manan konkursu/tender nian?			Hanesan iha leten
3	Inspesaun, amostrajen /Sampling no Teste	Karik Inspesaun, sampling no teste exekuta hodi kumpri tuir assegura kualidade no kontrolu rekerementus espesifikadu iha Rekerementu jeral?			Hanesan iha leten
4	Seguransa	Oinsa ho Obra hotu-hotu exekuta hodi kumpri tuir rekerementus seguransa ne'ebe estabelese iha Kontratu no rekerementus seguransa espesifiku ruma?			Hanesan iha leten
5	Asessu	Oinsa ho Emprezariu responsabiliza hodi fornese asessu dalan temporaria ba no husi terrenu?			Hanesan iha leten
6	Signboard/Plakas	Karik Signboard fornesidu no montadu husi Emprezariu? Nusa signboard hirak ne'e iha adisaun ba seguransa no sinais avisu ruma?			Hanesan iha leten
7	Rekerementus Ambiental	Tamba sa mak Obra hotu-hotu exekuta hodi kumpri ba rekerementus ambiental ne'ebe estabelese iha rekerementus ambiental espesifiku ruma?			Hanesan iha leten
8	Demolisaun	Karik ne'e mak Planu adequadu?			Hanesan iha leten

添付資料３　人材育成計画

DEMOCRATIC REPUBLIC OF TIMOR-LESTE

ADN

EXPERT FOR STRENGTHENING INSTITUTIONAL CAPACITY OF NATIONAL DEVELOPMENT AGENCY

HUMAN RESOURCE DEVELOPMENT PLAN

OCTOBER 2013

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

DAINICHI CONSULTANT INC.
TOKYO WATERWORKS INTERNATIONAL CO.LTD
GEOPLAN CO.,LTD
NEWJEC INC.

EXPERT FOR STRENGTHENING INSTITUTIONAL CAPACITY OF
NATIONAL DEVELOPMENT AGENCY (ADN)
IN DEMOCRATIC REPUBLIC OF TIMOR-LESTE

HUMAN RESOURCE DEVELOPMENT PLAN

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1. Background

The low quality of infrastructure in Timor-Leste is one of the most serious social issues that Timor-Leste faces. As part of this, effective quality control of infrastructure is a nationwide issue that remains to be addressed.

The National Development Agency (ADN) is responsible for quality control of infrastructure especially through design verification and construction inspection. However, ADN is a young organization whose institutional framework is still in the process of stabilization. In addition, ADN's staff is almost fully composed of junior engineers and most of them do not have sufficient experiences or knowledge that is required to fulfill their mission.

The Japanese Technical Assistance Project, "Strengthening Institutional Capacity of the National Development Agency of the Democratic Republic of Timor-Leste" was carried out in 2012 (Phase I) and 2013 (Phase II) under these conditions. The Japanese International Cooperation Agency (JICA) proposed to develop a capacity building strategy through the creation of a manual and the "ADN Manual" was made by a JICA-ADN team in 2012. During Phase II it was planned that the capacity of ADN's staff would be strengthened through the use of the ADN Manual and the provision of classroom based lessons and one the job trainings (OTJ) to ADN engineers.

As it is still necessary to continue to develop human resources capability beyond the end of Phase 2 of the JICA-ADN Project, this Human Resource Development Plan has been developed taking into account the results of the activities of the JICA-ADN team. The plan consists of two parts; part one explains the scheme of the general plan and part two describes the specific sections of the plan, namely, Bridge, Power and Water Supply.

2. General Plan

2.1 Outline of the Plan

a. Goal

A more effective human resource development management system is in place and quality is assured through ADN's supervision of projects.

b. Objective

A human resource development system as required for management will be established and human resources will be developed through better coordination with International Advisors.

c. Targeted Staff

All ADN engineers

d. Time Frame

Two years from 2013 to 2015.

2.2 Methodology

Generally, personnel's skills are expected to improve through continued practical work activities, and their development will be assisted by the personnel management and training system.

(1) Personnel management system

a. Recruitment

b. Job rotation

c. Management System for voluntary capacity development.

(2) Training system

a. Off-the-job training (Off JT)

b. On-the-job training (OJT)

c. Self-development support

Practical work activities, self-help efforts, and classroom lesson are factors that will contribute to human resource development in governmental organizations and private companies. However the ADN or Government of Timor-Leste have specific characteristics that makes them difficult:

- ADN engineer's knowledge at recruitment is insufficient.
- ADN is mostly composed of junior engineers.

It is expected that human resource development will be accelerated against above difficulties.

Existing level of ADN engineers is divided into 1) Team Leader level, 2) assistant engineer level

and 3) new recruit level.

Considering these particular situations, this human resource development plan of new recruit level mainly focuses on Classroom Lessons. New recruit level should start from the start line as illustrated in Fig.2-1.

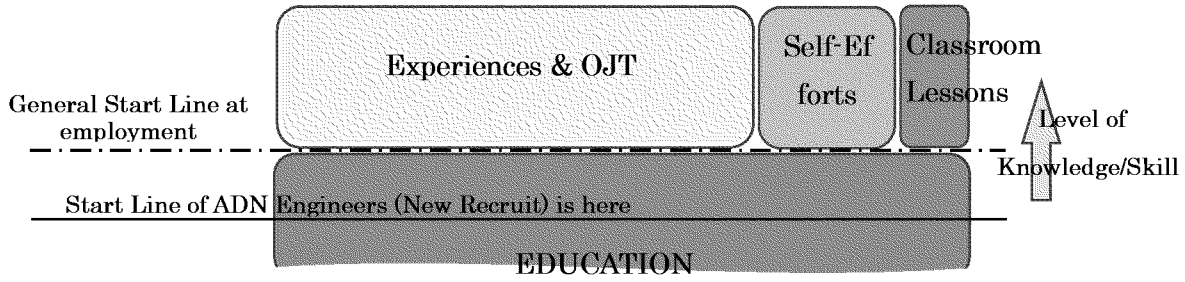

Fig.2-1: Means and level of contribution to of human resource development

2.3 Program

2.3.1 Targeted Engineering Levels

The level of ADN engineers on general plan is defined in Table 2-1.

Table 2-1 Definition of Level of ADN engineers

Level I	New recruit level.
Level II	Assistant engineer level (can handle ADN work with Team Leader's support)
Level III	Team Leader level,(can handle ADN work)

ADN's engineers are required to attain the following abilities:

a. To check the design documents and identify any errors in the design, and
b. To check the construction works, any mistakes and to instruct the contractor rework to remedy such works correctly.

To supervise project adequately, ADN's engineers need to acquire the specific knowledge to be obtained through practical work activities. But, as it takes time to accumulate experience, it is difficult for ADN's engineers to obtain such knowledge within a short period of time. Therefore, it is proposed that;

- First step (Level-I): Fundamental knowledge on civil engineering shall be acquired through classroom lessons,
- Second step (Level-II): The practical knowledge to be applied depending on the

various situations in the different project sites shall be acquired through practical work and OJT, and

- Third step (Level-III): A special program shall be necessary. Refer to **2.3.5.**

2.3.2 Off-the-job training for Level-I

The attainment to Level-I, which is the general start line or a little bit above it, shall be made through classroom lessons. The Level-I Training Course, which may be set on Saturdays, should be prepared in order that as many engineers as possible can attend the classes. E-learning systems should also be constructed and made available for engineers based in the Districts. Whenever possible, simultaneous TV-classes will be the option to favor.

(1) Classroom lessons

The preparation of the classroom lessons shall follow the procedures below:

1. Determination of Curriculum and Syllabus
2. Preparation of texts
3. Preparation of training materials (Power Point Slides)
4. Recruitment of Instructor (International Adviser)

It is expected that the preparation of the training mentioned above is carried out by a team headed by an international adviser(s).

(2) E-learning (Electronic learning)

The contents of the e-learning system should be the same with classroom lesson and the function of evaluation such as "test and record of the test result" will be necessary. The e-learning system should be constructed by IT engineers.

2.3.3 Practical Work Activities & On-the-job training for Level-II

The attainment of Level-II, which is the ability to identify most of the engineering issues to be addressed in a project cycle and to solve them, shall be done through practical work activities and OJT.

(1) Practical work activities

Acquisition of knowledge/skills through practical work activities are deeply related to time, job rotation and the number of jobs undertaken.

(2) OJT

Practical technical transfer of design verification and supervision, monitoring and inspection of construction works shall be done through OJT. OJT activities should be carried out with a leader, senior engineer or international adviser, who is able to give instruction and advice to junior

engineers.

2.3.4 Small group activities/Self-development for Level-II

Additional measures such as "QC group activities" may be necessary to expedite the human resource development.

(1) QC circle activities

A QC Circle is a small group of frontline employees who meet regularly to try to improve the quality of their work. QC Circle activities are at the core of Total Quality Management (TQM). QC Circles normally take a problem-based approach to improve the quality of their work. They identify problems in their workplace, usually related to product quality and referred to as 'themes', and together they set about to find solutions for these problems. They use quality control concepts and techniques, and try to be creative in seeking solutions.

The QC Circle leaders will be the driving force behind the activities. The selected individuals will be able to show leadership to get members to cooperate during meetings, gather ideas, and create an atmosphere where everyone will feel free to express their opinions.

(2) Voluntary study circle

Voluntary study circles consist of members of a small group meeting regularly to pursue a common theme of study. It may take the form of reading a book and discussing it chapter by chapter. Even when the cost is not subsi-dized, it is necessary to provide at least meeting facilities.

2.3.5 Special program for Level-III

If the ADN needs section/sector expert(s), they would be in charge of developing the following activities. The ADN must prepare a special program beginning with the recruitment of Level-III or these expert(s).

- National Development Planning
- Planning of city or district master plans
- Attending international conferences such as the MDGs conferences
- Introduction of advanced technologies to their sectors

The ADN will have to recruit several postgraduate students and prepare courses of study or training abroad for them.

2.3.6 Others

(1). Guidance for newly recruited engineers

Guidance should be provided for newly recruited engineers to ensure their full understanding of the outline of ADN jobs. The ADN Manual which describes the whole work area of ADN will be very useful for this purpose.

(2) Handbook by Sector

The JICA-ADN team produced "Technical Checklists" as a part of the ADN Manual. In the near future the contents of these checklists will be enriched by international advisers and ADN staff. Ultimately, it would be better to complete a second, "Technical Handbook" by ADN staff, which would be very useful for their work and for self-study.

2.4 Time Schedule

The time schedule of the plan is shown in Table 2-2 below.

Table 2-2 Time Schedule

Year	2013	2014				2015		
Activities	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Annual training plan								
Classroom lessons								
E-learning								
OJT								
Small group activities								
Guidance for new personnel								
Sectoral handbook								

: Preparation

: Implementation, : Intermittent implementation

3. Plan of each sector

Regarding Human Resource Development Plan of ADN, Chapter 2 explains common belief. There are a lot of different conditions among ADN Sector Team, so Chapter 3 focus on Plan of Each Sector, considering existing assignment, personal distribution and time frame of two years.

3.1 Plan for the Road/Bridge Sector

3.1.1 Engineering Field knowledge necessary for ADN Bridge Engineers

Most of the work for the ADN bridge engineers working in the Infrastructure Fund Project (FI Project) consists of the verification of tender documents and inspection for payment. Bridge projects in other budget categories such as PDID are technically similar to FI Project or less difficult.

ADN is the organization in charge of evaluating before a contract is signed as to whether a project is feasible and reasonable, and also ADN must judge whether the payment amount requested by a contractor is reasonable. In other words, ADN is generally not an implementing agency. As a result, the range of engineering fields necessary for the engineers is thus limited. The bridge engineers are not required to plan a project, nor make a detailed design or to supervise and manage bridge works directly on site.

Required knowledge and technology for the engineers to accomplish their responsibilities of verification of tender documents and inspection of payment requests are;

[Verification of Tender Documents]

1) Knowledge regarding which documents are required for the verification,
2) Knowledge regarding the conditions of contract, especially payment conditions such as delay damages, provisional sum, advance payment, percentage of retention, minimum amount of interim payment and so on,
3) General but broad knowledge regarding bridge technology including planning, detailed design, construction, design standards and quality control on technical specifications to evaluate the project shown in the drawings, and
4) Knowledge on BOQ, constitution of BOQ, unit price.

[Inspection for Payment Request]

1) Knowledge regarding which documents are required for the inspection,
2) Knowledge of payment conditions such as contract amounts, advance payments, performance bond, retention, delay damage and so on,

3) Knowledge and technology on BOQ. The engineer has to know how the BOQ document is composed, and how to calculate and verify the percentage of completed work claimed by a contractor at certain times,
4) Knowledge on time schedule. The engineer has to check how the construction work has progressed according to the schedule,
5) Knowledge and technology on quality control. The engineer has to verify if the works done so far conform to the quality specifications. Thus he has to be familiar with the quality control on technical specifications.
6) Knowledge on how to measure and calculate quantities. Some items are calculated by length, linear meter and others by area or volume. The engineers must know how to use these measuring units and how to measure and calculate quantities in order to verify the quantities on which the payment amount requested is based.

Regarding special improvement points identified by JICA-ADN Team, required knowledge and technology for the engineers to accomplish their responsibilities on Bridge, Road & Flood Control sector are;

1) Knowledge of durability assessment of Bridge, Road & Flood Control
2) Knowledge of countermeasure of Bridge, Road & Flood Control against natural disaster
3) Knowledge of safety control of construction and traffic
4) Knowledge of maintenance & operation of Bridge, Road & Flood Control

3.1.2 Targeted Engineers to be Developed and Objectives

There are two kinds of engineers targeted for human resource development. (1) One are the junior engineers, who have just graduated from school, and were recruited and dispatched to district offices; hereinafter they are referred to as **"Junior Engineers"**. (2) The other are engineers equivalent to sub-team leaders, who have worked for several years in the industry or at ADN and who aspire to be senior bridge engineers; hereinafter they are referred to as **"Would-be senior Engineers"**. Table 3-1 shows Relationship between Level of Road/Bridge Sector and Level of General Plan.

Table 3-1. Relationship between Level of Road/Bridge Sector and Level of General Plan

Level of Road/Bridge Sector	Level of General Plan
Junior Engineers	Level I
Would-be Senior Engineers	Level II or Level III
Senior Engineers	Level III

"The Junior Engineers" seldom have knowledge and experience on bridge, even though they are graduated from a faculty of civil engineering. Japanese civil engineers are classified into specialized areas depending on the specialization that they choose during their university studies. By contrast, as mentioned by an Indonesian adviser, Timorese as well as Indonesian civil engineers get their specialization after graduation through experience gained in the industry with time.

"Would-be Senior Engineers" may have some experience in the bridge sector but usually they have not exclusively worked in this field, but also in other fields such as irrigation or water supply. Thus even the Would-be senior Engineers do not have sufficient knowledge and technological skills to be considered as bridge specialists. They still need to ask advice from Indonesian advisers when they have to make an important judgment.

(1) The purpose of the human resource development plan for the Junior Engineers is to give them very basic and general knowledge on bridges as a part of the general scope of work in order to raise the level and/or accuracy of the on-site inspection of bridges and of the relevant documents. Finally after one or two years of capacity development the junior engineer will be able to work as a "Generalist" in a district, with the ability to inspect a bridge not only on site but through the examination of documents also as a part of his scope of work.

(2) The purpose of the human resource development plan for Would-be Senior Engineers is to give them deeper knowledge on bridges through which they can inspect a bridge and also verify tender documents themselves. Even after getting a deeper knowledge on bridges, they will need at least 5 years experiences by working exclusively on bridges. Finally they will be expected to become bridge specialists, able to give advice and instructions to junior engineers.

3.1.3 Methods of Human Resource Development

Two human resource development methods are introduced to Junior Engineers and Would-be Senior Engineers; lectures and OJT.

(1) Verification of Tender Documents

Tender documents are verified mainly at the Head Office by Senior Engineers and Would-be Senior Engineer. Would-be Senior Engineers have to know about the tender document itself, especially contract conditions and also technical matters such as verification of drawings and BOQ. Junior Engineers do not need to gain this knowledge for the time being as it is too difficult for them to verify documents. Instead they must focus on the inspection of bridges at

district level. So only Would-be Senior Engineers will benefit from the trainings mentioned below;

[Lectures to Would-be Senior Engineers]

Knowledge on verification of contract, unit price analysis and drawings

[OJT to Would-be Senior Engineers]

Technology on verification of contract, unit price analysis and drawings

(2) Inspection for Payment

Junior Engineers, stationed at the district level, work on bridge inspection with the help of Senior Engineers and international advisers. They will gain the necessary knowledge through lectures, and practical technical skills through actual inspections.

Would-be Senior Engineers will have to replace Senior Engineers in the near future, so they have to gain full knowledge and technical skills required for effective inspections.

[Lectures to Junior Engineers]

As Junior Engineers work on bridges consists of inspection for payments, they need lectures by international advisers on subjects such as;

1) Knowledge on the required documents for inspection for payment
   Refer to the "ADN Manual" and materials for Classroom Lessons prepared by JICA-ADN Team
2) Knowledge on payment conditions
   Refer to "ADN Manual" and materials for Classroom Lessons prepared by JICA-ADN Team
3) Knowledge and technology on BOQ
   Refer to the materials for Classroom Lessons prepared by JICA-ADN Team
4) Knowledge on time schedule
5) Knowledge on quality control
   Refer to the materials for classroom lessons prepared by JICA-ADN Team
   Even after taking lectures on quality control, it is still hard for the junior engineer to actually understand the quality control system or each clause of the specifications. They need experience in actual situations related to specified quality specifications and instruction from senior engineers.
6) Knowledge on how to measure and calculate the quantities
   Refer to materials for classroom lessons prepared by JICA-ADN Team

[OJT to Junior Engineers]

1) Quality control techniques

Capability on quality control consists of understanding technical specifications and judging

the actually achieved results. To fully understand the specifications and judge the results is a long term process. Junior Engineers need to learn this material step by step under the instruction of Senior Engineers and advisers.

2) Quantity measurement techniques

Junior Engineers will practice what they study through the lectures, that is, measure and calculate the work completed so far under instruction from the Senior Engineers or advisers.

[Lectures to Would-be senior Engineers]

1) With regards to 4), and 6), Would-be Senior Engineers usually have considerable knowledge about these subjects in principle, thus no lecture is necessary.

2) Knowledge on quality control

Most specifications are written in English with many technical terms. Some would-be Senior Engineers have a good understanding of English, but the majority are weak in reading English. This is one reason why engineers are reluctant to looking into specifications.

Lectures will teach would be senior engineers how to use and how to find out proper clauses of the specifications for specific quality control activities.

[OJT to Would-be Senior Engineers]

1) Quality control techniques

International advisers will teach Would be Senior Engineers how to make a comparison between the specified quality level and the actually achieved quality as well as on how to make an on the job quality evaluation.

3.2 Plan of Power Sector

3.2.1 Engineering Field necessary for Power Engineers in ADN

Power Sector Development Projects in Timor-Leste are divided roughly into two categories, the 'Construction Supervision Services of the Nationwide Electrical Power Grid and Power Plants and its Facilities' project and the 'Installation Middle Voltage and Low Voltage line, House Connection and Home Installation (Hereinafter, it is referred to as The Power Distribution Line Extension)" project.

The former consists of the construction of two diesel power stations, the construction of high voltage (150kV) transmission lines (700km in full length), and the construction of nine distribution substations. The construction has been mostly completed as of September, 2013. Meanwhile, the latter project is still in the middle of development.

Required knowledge and techniques for the engineers to accomplish their responsibilities in the Power sector are;

1) Knowledge of the verification of inventory/ master plan of implementation project list
2) Knowledge of the verification of project development pronouncing the infrastructure plan
3) Knowledge of the verification on the selection of contractors and award of contract
4) Knowledge of the verification of contracts (payment condition, control of costs and quality)
5) Knowledge on the Inspection of Power Stations (Mainly Diesel Power Station)
6) Knowledge of the Inspection of Power Substation
7) Knowledge of the Inspection on Transmission and Distribution System
8) Knowledge of the Inspection on Renewable Energy (Photovoltaic Power)
9) Knowledge required of others on electrical engineers

Regarding special improvement points found by JICA-ADN Team, required knowledge and technology for the engineers to accomplish their responsibilities on Power sector are;

1) All the domains, which are generation, transmission, transformation, and distribution.
2) The establishment of a continuous education system which can acquire the knowledge of each domain and can understand the relevance between each domain is recommended.
3) Effective use of Classroom Materials
4) Training in PLN (electric power company of Indonesia) University

3.2.2 Targeted Engineers to be Developed and Objectives

One definition of the level of engineers is shown in the IEA Technical Report, Structure of

Operation and Maintenance Training Programmes (May 2000). The level of competence has been classified into five categories applicable to a shift charge-engineer, the control room technician and the plant operator of the hydro power plant.

Table 3-2 shows Level of Competence.

Table 3-2 Level of Competence on Power (Defined in IEA Technical Report)

LEVEL	CONPETENCE
5	Can perform the task/competence with better than acceptable speed and quality and with initiative and adaptability. Can lead others in performing the task.
4	Can perform the task/competence with better than acceptable speed and quality and with initiative and adaptability to special problems and situations.
3	Can perform the task/competence without assistance and supervision with better than acceptable speed and quality of work.
2	Can perform this task/competence without assistance and supervision.
1	Can perform the task/competence satisfactorily, but requires periodic supervision and some assistance.

Table 3-3 shows Relationship between Level of Power Sector and Level of General Plan.

Table 3-3. Relationship between Level of Power Sector and Level of General Plan

Level of Power Sector	Level of General Plan
Level 5	Level III
Level 4	Level II or Level III
Level 3	Level II
Level 2	Level II
Level 1	Level I

3.2.3 Methods of Human Resource Development

Training is divided into two sections, one of which is theory and the other, practice.

Regarding theory, it is necessary to use the classroom lessons materials effectively.

Table3-4 shows the classroom syllabus

Table3-4 Syllabus of Classroom on Power

No	Contents
1	Introduction
2	Power Station (Diesel)
3	Substation
4	Transmission and Distribution System
5	Power System Study
6	Power Flow Analysis
7	Power System Stability
8	An Example of Power System Analysis (Using PSS/E)

9	How to Use the Result of Power System Analysis
10	Renewable Energy (Photovoltaic Power)

It is also useful to use the course of PLN University. Table 3-5 shows course of PLN University.

Table 3-5 Course of PLN University

Level	subject of educational training
Basic	Operation of LV line and LV connection service
Bas/spe	Operation of MV Line
Bas/spe	Operation of distribution substation
Bas/spe	Operation of culbicle 20KV
Basic	Instalation and sealing APP (measuring and limiting tools)
Bas/spe	Wiring and APP (measuring and limiting tools) LV testing
Bas/spe	Testing of CT- PT distribution
Bas/spe	Wiring and testing APP – MV
Bas/spe	Electronic meter reading and AMR
Basic	Inspection of distribution network
Basic	LV line maintenance
Basic	MV line maintenance
Bas/spe	Maintenance of distribution transformer
Bas/spe	Maintenance of culbicle 20KV
Bas/spe	Connecting and terminating ground cable 20KV
Spe/sys	Construction plan of medium voltage distribution network
Sys/opt	Distribution plan management
Sys/opt	Operation management and distribution maintenance
Bas/spe	Controling of power consumption
Bas/spe	Introducing automatic meter reading

Junior engineers in Electrical Team will categorized into level, from Level 1 to Level 3, as shown in Table 3-2 & Table 3-3. Table 3-6 shows a case model for the development of competence.

Table 3-6 Model Case for Development of Competence

LEVEL	Position	NO. of Syllabus	OJT	PLN University
1	-	1~4	accompany with inspection	arbitrarily
2~3	-	5~9	Inspection with level 4	
4	Sub Leader	-	Experiences are acquired	
5	Leader	-		

3.3 Plan of Water Supply Sector

3.3.1 Engineering Field necessary for Water Supply Engineers in ADN

Required knowledge/skills in water supply section are as follows:

1. Knowledge for verification of design documents
   - Basic knowledge on rural water supply systems
   - Basic knowledge on the design of rural water supply system
   - Practical knowledge on the outlining and design of rural water supply system
   - Basic knowledge on basic hydraulics of pipelines
   - Practical knowledge on hydraulics calculation of simple pipelines using EPANET or PIPECAL
   - Knowledge on profile of pipeline and air release valve
   - Practical knowledge on drawing profile using Google Earth
2. Knowledge for inspection of construction works
   - Basic knowledge on inspection procedures
   - Basic knowledge on the inspection of water source facilities
   - Basic knowledge on the inspection of concrete storage tanks
   - Basic knowledge on the inspection of transmission and distribution pipelines
   - Basic knowledge on the inspection of public taps

Regarding special improvement points identified by JICA-ADN Team, required knowledge and technology for the engineers to accomplish their responsibilities on Water Supply sector are;

1) Knowledge of adoption of good sample drawings for design
2) Knowledge of information from Google earth and preparation of pipeline profile.
3) Knowledge of air valves and sand valves on pipeline
4) Knowledge of countermeasure of leakage from tank and pipeline

3.3.2 Targeted Engineers

The proportion of time that ADN spends on water supply projects is not large. Therefore, it will require a significant timeframe for water engineers to gain OJT experience. Also, ADN does not have a specialized section to deal with water supply. As a result the creation of a mechanism to increase the capacity of ADN engineers in the area of water supply is difficult. Due to the short period of time spent by the ADN engineers investigating water supply issues it may be inefficient itself to retain in the ADN personnel a water supply specialist. Thus it might be better

to carry out periodical training to all ADN engineers by international adviser(s).

Table 3-7 shows Relationship between Level of Water Supply Sector and Level of General Plan.

Table 3-7. Relationship between Level of Water Supply Sector and Level of General Plan

Level of Water Suplly Sector	Level of General Plan
Level III	Level III
Level II	Level II
Level I	Level I

3.3.3 Method of Human Resource Development

Table 3-8 shows Level I Plan on Water Supply.

Table 3-8 Level I Plan on Water Supply

Name	General Program of Water Supply
Objects	To acquire basic knowledge on rural water supply
Methodology	Classroom Lecture and e-Learning
Preparation	1. Curriculum and Syllabus 2. Preparation of Text (refer to WB's Manual of Rural Water Supply) 3. Preparation of Training materials (Power Point Slides) 4. Instructor (International Adviser) Preparation of training mentioned above shall be carried out by an International Adviser lead team.

Table 3-9 shows the Level II Plan on Water Supply.

Table 3-9 Plan for Level-II on Water Supply

Name	Senior Engineer Program of Water Supply
Objects	To acquire practical and specific knowledge on rural water supply so that he/she can identify technical problems on water supply projects and solve them.
Methodology	Experiences, OJT, and QC circle activity
QC Circle Activity	A QC Circle is a small group of frontline employees who meet regularly to try to improve the quality of their work. QC Circle activities are at the core of Total Quality Management (TQM). QC Circles normally take a problem-based approach in order to improve the quality of their work. They identify problems in their workplace, usually related to product quality and referred to as 'themes', and together they set about finding a solution. They use quality control concepts and techniques, and try to be creative in seeking solutions. The QC Circle leaders will be the driving force behind the activities. Select people, who can show leadership, get members to cooperate in meetings, can gather ideas, and can create an atmosphere where everyone will feel free to express their opinion.

Table 3-10 shows Level III Plan on Water Supply.

Table 3-10 Level III Plan on Water Supply

Name	Expert program of Water Supply
Objects	To acquire total water supply knowledge as followings: • Water Supply Policy (National Plan, Tariff, Sustainable water supply) • Water supply and Hygiene • MDG • Urban Water supply System • Advanced Technology and Appropriate Technology • Planning of Master Plan
Methodology	Special training (Master course, e-Learning of special program, Study or Training Abroad)

A reference handbook should be prepared to use as needed. Concerning the Handbook, it is recommended that the Rural Water Supply Manuals published by WB Manila Office, which should be edited in accordance with the actual situation of this country and in the spoken language of Timor-Leste.

添付資料４ セミナー配布資料(英語版)

AGÉNCIA DE DESENVOLVIMENTO NAÇIONAL
REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE

Workshop on Quality Control through ADN Work

Handout of Presenter

20th September 2013

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ACTIVITIES OF JICA-ADN TEAM

Presented
by
Mr. Hideo MATSUSHIMA
JICA-ADN TEAM

1

Project Title / Overall Goal / Purpose of JICA-ADN Team

PROJECT TITLE	JAPANESE TECHNICAL ASSISTANCE ON STRENGTHENING INSTITUTIONAL CAPACITY OF NATIONAL DEVELOPMENT AGENCY (ADN)
OVERALL GOAL	More effective management of Infrastructure Development is carried out and quality is assured through ADN
PROJECT PURPOSE	Human resource of ADN is developed on fundamental knowledge & experience of evaluation, monitoring and inspection of infrastructure project as following fields. 1) Road/Bridge/Flood Control (Use of Infrastructure Fund on ADN Manual) 2) Power (Use of National Electrification Program: PEN on ADN Manual) 3) Water (Use of PDD I & II on ADN Manual)

2

Project Activities of JICA-ADN Team (Phase-1)

- JICA provided JICA-ADN Team (Phase-1) for **OJT** of project monitoring/ inspections for infrastructure and **development of ADN manual**. JICA-ADN Team (Phase-1) dispatched from Jun 2012 to Nov 2012.

Mr. Hideo MATSUSHIMA (Road & Bridges #1)
Mr. Jiro KOYAMA (Road & Bridges #2)
Mr. Shimpei TOMITA (Power)
Mr. Hiroyasu YODA (Water)
Mr. Hiroki Oe (ITC) (Assistant)
Mr. Osamu KUNITA (Port & Aviation)

3

Project Activities of JICA-ADN Team (Phase-2)

- JICA provides JICA-ADN Team (Phase-2) for **wide use of ADN Manual** and **basic skill training** for project inspection, review and monitoring. JICA-ADN Team (Phase-2) dispatched from Apr 2013 to Sep 2013.


Road & Bridges expert #1 Mr. Hideo MATSUSHIMA


Road & Bridges expert #2 Mr. Jiro KOYAMA


Water expert #1 Mr. Hideo HIGUCHI


Water expert #1 (Assistant) Mr. Takeo SAKAMOTO


Water expert #2 Mr. Hiroyasu YODA


Power expert Mr. Koichi UCHIDA

4

Outputs resulted from JICA-ADN Team

[1] **The Revised ADN Manual** ---pp6-10

JICA-ADN Team/ADN engineers revised ADN Manual.

[2] **Core technologies** on evaluation, monitoring and inspection of infrastructure projects. ---pp11-14

ADN engineers acquire the core technologies by use of ADN Manual.

[3] **Fundamental knowledge** on evaluation, monitoring and inspection of infrastructure projects. ---pp15-19

ADN engineers acquire the fundamental knowledge by class room lessons.

[4] **Coordination** with relevant Ministries/Agencies---pp20-22

[5] Suggestion on Human resource development plan ---p23

[6] Finding & Achievements ---pp24-38

[7] Workshop --- p39

5

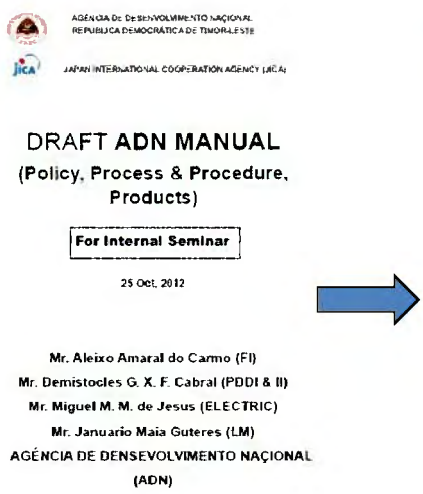
[1] **The Revised ADN Manual**

- ADN engineers revised the Checklists/Forms resulting from actual use.
- JICA-ADN Team and ADN engineers revised the Checklists/Forms according to the discussion results.

(Achievement)

- **Revised ADN Manual**

6

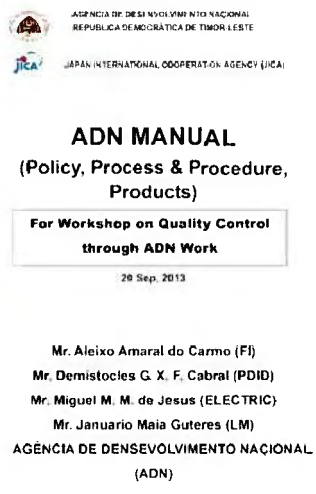

AGÊNCIA DE DESENVOLVIMENTO NAÇIONAL
REPUBLICA DEMOCRÁTICA DE TIMOR-LESTE
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

DRAFT **ADN MANUAL**
(Policy, Process & Procedure, Products)

For Internal Seminar

25 Oct. 2012

Mr. Aleixo Amaral do Carmo (FI)
Mr. Demistocles G. X. F. Cabral (PDDI & II)
Mr. Miguel M. M. de Jesus (ELECTRIC)
Mr. Januario Maia Guteres (LM)
AGÊNCIA DE DENSEVOLVIMENTO NAÇIONAL
(ADN)


AGÊNCIA DE DESENVOLVIMENTO NAÇIONAL
REPUBLICA DEMOCRÁTICA DE TIMOR-LESTE
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ADN MANUAL
(Policy, Process & Procedure, Products)

For Workshop on Quality Control through ADN Work

26 Sep. 2013

Mr. Aleixo Amaral do Carmo (FI)
Mr. Demistocles G. X. F. Cabral (PDID)
Mr. Miguel M. M. de Jesus (ELECTRIC)
Mr. Januario Maia Guteres (LM)
AGÊNCIA DE DENSEVOLVIMENTO NAÇIONAL
(ADN)

Draft ADN Manual (Phase-1)

Revised ADN Manual (Phase-2)

7

Brief Summary of Revised ADN Manual

(Scope)

- ADN Manual aims at ADN to carry out properly and efficiently its duties which are specified in the Decree-Law. The manual also aims at LMs and other organizations concerned to play properly their roles and responsibilities during provision of the capital development project.
- The manual focuses specifically on the following processes since they are most busily handled at present.
- -Verification of Tender Documents
- -Inspection for Payment Request

8

(Category of Projects/Funds)

- The manual is separately formulated based on the category of projects in consideration of different procedure and in favor of the users.
- The manual deals with **Infrastructure Fund** Project, **Line Ministries** Fund Project, **PDID** Fund Project, and National Electrification Program (**PEN**).
- The manual does not deal with **Emergency**, **Additional**, **SEFOPE**, **MDG**, and **Special Project** under ADN.

9

(Range of Application of Each Sector)

- Regarding Sectors, the manual includes technical checklist for **Road & Bridge on Infrastructure Fund**, **Water Supply on PDID**, and **Electric Power on PEN**. The technical checklist will be able to use for other category partially.
- Please note the explanation of page 5 on ADN Manual, when application on other category.

10

[2] **Core technologies** on evaluation, monitoring and inspection of infrastructure projects.

- Regarding Inspection, JICA-ADN Team supported how to use ADN Manual at District Office and at site.
- Regarding Verification, JICA-ADN Team supported how to use ADN Manual at Head Office and at site.

(Achievement)

- **ADN engineers acquire the Core technologies by use of ADN Manual. As a result, the work flow is visual and uniform, and procedure is more efficient than before. The system is improved.**

11

Inspection at Los palos

Inspection at Betano

Verification at Suai

Inspection at Los palos

Inspection at Betano

Mobile Team at Ainaro

12

Inspection at Viqueque

Inspection at Lahane,Dili

Inspection at Lahane,Dili

Verification at Loes River

Inspection at Lahane,Dili

Inspection at Lahane,Dili

13

Explanation after Inspection at Oecussi

Explanation after Inspection at Oecussi

Verification at Tasi ToluDry Port, Dili

Inspection at Comoro Bridge

Verification at Maubisse

Verification Bidau River, Dili

14

[3] **Fundamental knowledge** on evaluation, monitoring and inspection of infrastructure projects.

JICA-ADN Team had a lot of Lectures in classroom on Saturday at ADN head office.

(Achievement)

ADN engineers acquire the Fundamental knowledge by class room lessons. As a result, the quality of verification and inspection is improved.

15

Class Room Lesson on Road/Flood Control

Class Room Lesson on Power

Class Room Lesson on Power

Class Room Lesson on Bridge

Class Room Lesson on Water Supply

Class Room Lesson on Water Supply

16

Class Room Lesson by JICA-ADN Team

(1) Bridge

No.	Contents	Date	Entry
1	Flow of Bridge Work & Site Investigation	5/11	19
2	Bridge Plan (Superstructure)	5/18	10
3	Bridge Plan (Substructure, Foundation and Accessories)	6/1	3
4	Detail Design & How to Read Bridge Drawings	6/8	4
5	Construction method & Tender Documents (Bidding Documents)	6/29	25
6	Review of above No.1 & No.2	7/6	17
7	Review of above No.3 & No.4	7/13	14
8	Use of ADN Manual	7/27	14
9	Specification	8/3	2

(2) Road

No.	Contents	Date	Entry
1	Pavement	5/11	19
2	Road Width & Landslide, Slope Stability Analysis	5/18	10
3	Design Speed, Plan & Profile	6/1	3
4	Soil Condition, Design of Retaining Wall, Box Culvert, Landslide	6/8	4
5	Construction of Road, Payment	6/29	25
6	Review of above No.1 & No.2	7/6	17
7	Review of above No.3 & No.4	7/13	14
8	Comment on Comoro Bridge, and so on	7/27	14
9	Comment on Pavement materials in Oecussi, Cold Mix and so on	8/3	2

17

(3) Flood Control

No.	Contents	Date	Entry
1	Countermeasure of Flood Control	5/11	19
2	Topographic Data, Hydrologic Data, Design Discharge	5/18	10
3	Channel Characteristic, Revetment, Foot Protection	6/1	3
4	Construction of Dike, Revetment	6/8	4
5	Construction of Spur Dike, Weir	6/29	25
6	Review of above No.1 & No.2	7/6	17
7	Review of above No.3 & No.4	7/13	14
8	Comment on Loes River, and so on	7/27	14
9	Comment on Tono River, and so on	8/3	2

(4) Electric Power

No.	Contents	Date	Entry
1	Introduction, Power Engineering, Transmission & Distribution	5/25	7
2	Power Station (Mainly Diesel Power Station)	6/29	7

18

(5) Water Supply

No.	Contents	Date	Entry
1	How to Use EPANET with Practice (1/6)	4/29	3
2	How to Use EPANET with Practice (2/6)	4/30	10
3	How to Use EPANET with Practice (3/6)	5/3	6
4	How to Use EPANET with Practice (4/6)	5/6	5
5	How to Use EPANET with Practice (5/6)	5/8	12
6	How to Use EPANET with Practice (6/6)	5/9	6
7	Design of Rural Water Supply System (Case Study) (1/5)	5/13	7
8	Design of Rural Water Supply System (Case Study) (2/5)	5/14	8
9	Design of Rural Water Supply System (Case Study) (3/5)	5/16	5
10	Design of Rural Water Supply System (Case Study) (4/5)	5/23	5
11	Design of Rural Water Supply System (Case Study) (5/5)	5/28	4
12	How to Use EPANET & How to Use PIPECAL (1/1)	5/25	16
13	Design of Rural Water Supply System (Introduction. Water Demand)	6/1	3
14	Design of Rural Water Supply System (Water Source)	6/8	4
15	Outline of Rural Water Supply System	7/6	17
16	Diagnosis of Rural Water Supply System	7/13	14
17	Design of Rural Water Supply System (Trasmission and Distribution)	7/27	14
18	One point lesson on air release valve	8/3	2

19

[4] **Coordination** with relevant Ministries/Agencies

- JICA-ADN Team explained the ADN Manual to relevant Ministries/Agencies stressing use of the forms, and checklists.
- JICA-ADN Team confirmed “Schedules of the Work” specified in the ADN Manual with relevant Ministries/Agencies.
- JICA-ADN Team discussed with relevant Ministries/Agencies how to facilitate verification and inspection of the procedures.

20

MPW DRBFC JICA expert

DNSA

ADN

MPW DRBFC Director

DNSA

ADN

21

Recommendation & Achievement

(Issues)

Request of Verification and inspection come to ADN from LM suddenly. LM also receive them from Contractor suddenly. It is hard to make efficient and effective schedule.

(Recommendation)

LM instructs Contractor to submit Monthly & Weekly Schedule of Verification and Inspection, so that LM and ADN will share schedule at same time.

(Achievement)

Relationship between ADN and relevant LM is smoother than phase 1.

22

[5] Suggestion on Human resource development plan

- New organization was discussed at Dare Retreat on July 2013.

The sub-team leaders and junior engineers developed through the lessons & OJT, but still they need help of the advisers to make serious decision. Based on activities of this project, JICA-ADN Team submitted Human Resource Development Plan of ADN.

(Achievement)

Human Resource Development Plan

23

[6] Finding & Achievement

through evaluation, monitoring and inspection of infrastructure projects

24

1. Road/Bridge/Flood Control (Infrastructure Fund Projects)

1) Findings of FI projects on Road/ Bridge/ Flood Control

- Team Leader, Sub Team Leader, Staffs and Indonesia Advisor carry out the verification of tender documents and inspection for payment request.
- Increase of verification of feasibility study and/or preliminary phase.
- Donor and/or MPW have complaints of 1) uncertainty of process of ADN, 2) unclear template of submit form, and 3) closed procedure system of ADN.

25

2) Achievements on Road/Bridge/Flood Control

(a) Upgrading human resource of FI projects on Road/Bridge/Flood Control

- Sub-team leader is leveled up to Team Leader class and young engineers is Sub-team leader class, with use of ADN Manual and material of class room lessons of English version and Tetum version , and with OJT by Indonesia/ JICA-ADN Team.

26

(b) Wide Use of Revised ADN Manual

- ADN engineers know it is necessary to use 1) the form & checklist, 2) the technical checklist using class room lesson's material.

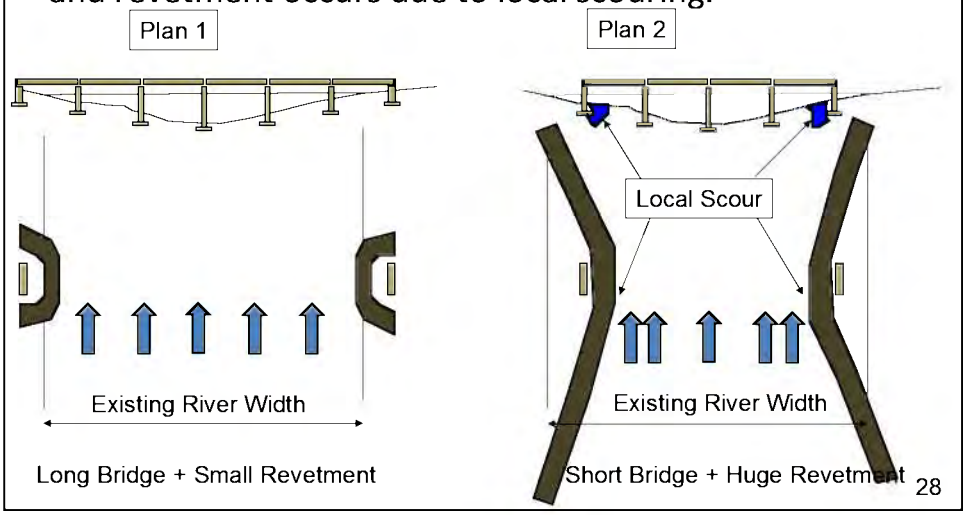
(c) Showings by JICA-ADN Team

- They were saved in ADN share folder, which are 1) materials of class room lesson, 2) short reports on site training, 3) material of MPW guidelines, 4) Revised ADN Manual.

27

Finding No.1 of FI project

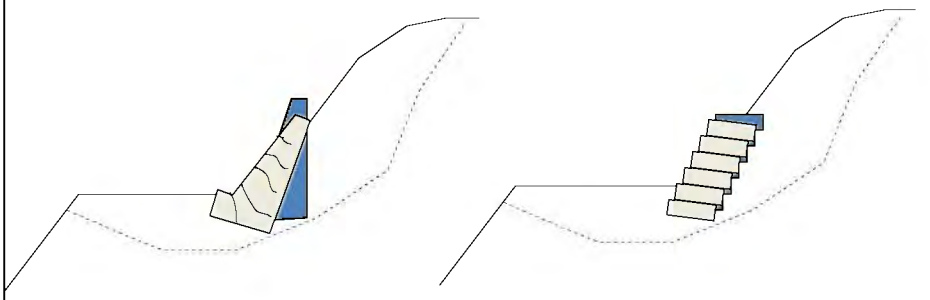
- Comparative study is necessary. The damage of abutment and revetment occurs due to local scouring.



28

Finding No.2 of FI project

- It is necessary to specify the area of Landslide. It is required to make safety & flexible stability structure like gabion.



Concrete Retaining Wall

Gabion Retaining Wall

29

2. Power (National Electrification Program: PEN)

1) Findings of PEN projects on Electric

- Team Leader and electric team carry out the verification of tender documents and inspection for payment request based on PEN Decree-Law No.40/2012.
- There are no district engineers on power, so that electric team covers all of Timor-Leste
- PEN Decree-Law requires evaluation of the plan/ design/ construction/ tender of distribution system by ADN engineers. Regarding power, there is no Indonesia Advisor in ADN.

30

2) Achievements on Power

(a) Upgrading human resource of PEN projects on Electric

- Sub-team leader is leveled up to Team Leader class and young engineers is Sub-team leader class, with use of ADN Manual, material of class room lessons of English version and Tetum version, and with OJT by JICA-ADN Team of Electric.

31

(b) Wide Use of Revised ADN Manual

- ADN engineers know it is necessary to use 1) the form & checklist, 2) the technical checklist together with class room lesson's material.

(c) Showings by JICA-ADN Team

- They were saved in ADN share folder, which are 1) materials of class room lesson, 2) short reports on site training, 3) material of EDTL guidelines, 4) Revised ADN Manual.

32

3. Water (PDID)

- **1) Findings of PDID projects on Water**
- There are lots of projects of PDID in ADN, which sectors are building, road, ditch, river development, irrigation, water supply. There are a few numbers of projects on water supply.
- ADN checklist is not efficient under the present situation such as the design drawings are far different from the site.
- ADN's inspectors must judge the facilities from the viewpoints of the function, not complying the design drawings at the inspection of some rural water supply projects.

33

- Mobile Team started to train contractors and consultants of each district for PDID projects.
- Contractors (design & construction) of PDID projects would have little technical knowledge/ experience, so that it is necessary for ADN engineers not only to verify the projects but also to coach the contractors on the plan, design, tender document and construction.
- Regarding water supply, there is no Indonesia Advisor in ADN.
- One of the main problems in rural water supply projects is lack of technical knowledge/ experience on pipeline hydraulics/calculation and pipeline profile.

34

2) Achievements on Water

(a) Upgrading of human resource of PDID projects on Water

Some of young engineers acquired fundamental knowledge through class room lessons, and OJT at inspection site by JICA-ADN Team of Water Supply

35

(b) Wide Use of Revised ADN Manual

- Fundamental technical knowledge is required to use ADN Manual (technical checklist). Therefore technical notes were attached with existing checklist.
- As a result, ADN engineers can use technical checklist more effictively.

(c) Showings by JICA-ADN Team

- They were saved in ADN share folder, which are 1) materials of class room lesson, 2) short reports on site training, 3) Revised ADN Manual, and 4) technical references such as EPANET software with the user manual and World Bank's Rural Water Supply Manual.

36

4. ICT work in ADN (Outside the scope of JICA-ADN Team)

- Donor and/or MPW have complaints of 1) uncertainty of process of ADN, 2) unclear template of submit form, and 3) closed procedure system of ADN.
- ICT Advisor starts the bellow countermeasures of information system in ADN.
- **(a) Project Monitoring System**
- ICT Team prepares the project monitoring system, which can monitor the progress of each project, sorting in sequence from oldest.

37

- **(b) Down load of Template, ADN Manual** on website of http://adn.gov.tl
- ICT Team will prepare the template and ADN Manual data on website.
- **(c) Project Mapping System**
- ICT Team will prepare project mapping system.
- The above information system is to cooperate between ADN and Line Ministries.

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[7] Workshop

- Each presenter explain **Issues** During ADN performance verification for tender documents and conduct inspection at project. They also make a suggestion about them.
- Each presenter explain process & procedure of ADN work.
- Each presenter explain sample of bad quality control work/ good quality control work.
- Please listen them and **use ADN Manual for systematic way** of process & procedure of infrastructure projects.

39

END

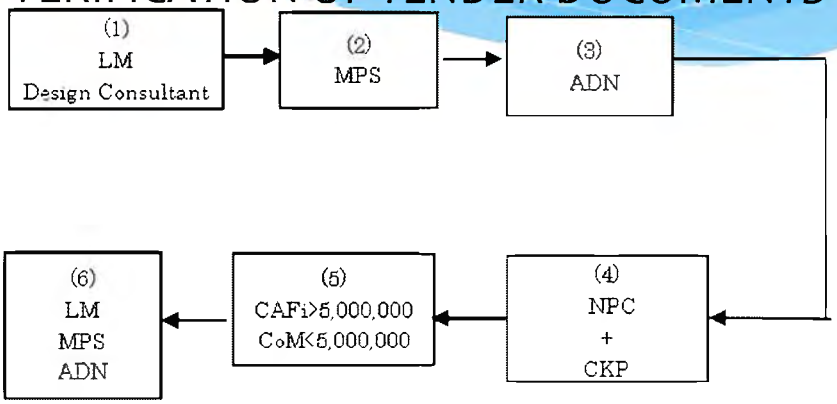
- Thank you very much for your cooperation with JICA-ADN Team.

40

Quality Control
and
Use of ADN Manual
on Infrastructure Fund Projects

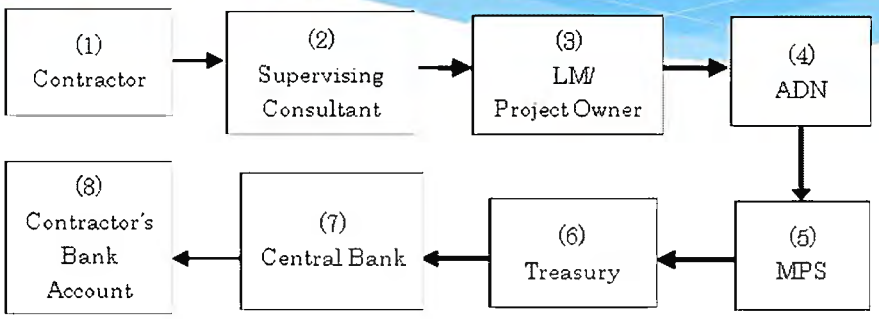
By Aleixo Amaral do Carmo

FLOW CHART
IN
VERIFICATION OF TENDER DOCUMENTS



Contact to Administration Unit of ADN for inquiry on progress of Tender Document

FLOW CHART
IN
INSPECTION FOR PAYMENT



Contact to Administration Unit of ADN for inquiry on progress of Inspection for Payment

3

CHECKLIST OF VERIFICATION DOCUMENT
FOR DESIGN AND BOQ
(ROAD, BRIDGE, PORT & IRRIGATION)

Checklist A

DEMOCRATIC REPUBLIC OF TIMOR LESTE
CABINET OF PRIME MINISTER
NATIONAL DEVOLOPMENT AGENCY

Checklist of Verification Document for Designs and BOQ

Name of Project :
Owner of the Project :
Number of Contract :
Date of Receipt :

1. The Letter of Inclusion ☐
2. Design should be completed and obtained the signature by LM's Engineers ☐
3. BOQ and Estimation Cost should be gotten the signature by Public Works ☐
4. Unit Price Analysis ☐
5. Soft copy of documents which mentioned above ☐
6. Technical Specification ☐
7. It should also have the Structure and Hydrologic Calculation Analysis, and Topography data ☐

Note: This checklist is used to confirm that all the required documents are submitted for Verification Document of Infrastructure Fund project of Road, Bridge, Port, Irrigation

4

TENDER DOCUMENT CHECKLIST OF CONSTRUCTION FOR BUILDING & OFFICE FENCING WALLPROJECTS

CHECKLIST A

DEMOCRATIC REPUBLIC OF TIMOR LESTE
CABINET OF PRIME MINISTER
NATIONAL DEVOLOPMENT AGENCY

TENDER DOCUMENT CHECKLIST OF CONSTRUCTION FOR BUILDINGS & OFFICE FENCING WALL PROJECTS

1. The Drawings should be approved by Public Works _____ ☐
2. Bill of Quantity (BoQ) should be approved by Public Works_____ ☐
3. Cost Estimation should be approved by Public Works _____ ☐
4. Technical Specification should be ascertainable by Public Works_____ ☐
5. Submit the Electronic files which saved inside CD _____ ☐
6. If the buildings is more than 2 stairs, it should be attached the feasibility study of Soil or soil investigation results_____ ☐
7. If the buildings is more than 2 stairs, it should be attached the Structure Calculation analysis _____ ☐

Note: This checklist is used to confirm that all the required documents are submitted for Verification Document of Infrastructure Fund project of Building

5

CHECKLIST OF PAYMENT DOCUMENT FOR THE SUPERVISING CONSULTANT

Checklist D

DEMOCRATIC REPUBLIC OF TIMOR LESTE
CABINET OF PRIME MINISTER
NATIONAL DEVOLOPMENT AGENCY

Checklist of Payment Document for the Supervising Consultant

Name of Project :
Owner of Project :
Number of Contract :
Date of Receipt :

1. The Invoice in Original submitted by Consultant..... ☐
2. The Payment Certificate in Original which obtained approval by Minister or Secretary of State..... ☐
3. Submit the completed copy of the Valid Contract with attachment..... ☐
4. Submit the Monthly Report which obtained approval by Project Owner..... ☐
5. Submit No. TIN (Identification of the Taxpayer contributions Number)..... ☐
6. Number of Bank Account..... ☐
7. Submit the valid of the Company Birth Certificate and should be legalized..... ☐
8. Submit the Valid Economic Activity License and should be legalized ..... ☐
9. Submit the Valid of Company Ownership License..... ☐

Note: This checklist is used to confirm that all the required documents are submitted for Payment Document of Infrastructure Fund project of Road, Bridge, Port & Irrigation

6

INFRASTRUCTURE FUND CHECKLIST OF PAYMENT
(Submitted by Contractor)

Checklist D

DEMOCRATIC REPUBLIC OF TIMOR LESTE
CABINET OF PRIME MINISTER
NATIONAL DEVOLOPMENT AGENCY

INFRASTRUCTURE FUND CHECKLIST OF PAYMENT

Name of Project :
Name of Company :
Contract Number :
The Value of Contract : US$
The Value of Invoice/Request : US$

No	Documents to be submitted at the Invoice	Results		Remarks
		Yes	No	
1	The contract is still valid (at least one month before expired date). The contract Value is more than 5 hundreds thousands must be subjected to get Justification Letter from the chamber of Account in the Superior Administrative Curt of Timor Leste.			
2	Submit the valid of the Company Birth Certificate and should be legalized			
3	No TIN (Identification of the Taxpayer contributions Number)			
4	Submit the Valid of Company Ownership License			
5	Submit the Valid Economic Activity License and should be legalized			
6	Submit 1 Original Invoice (5 copies) and obtained approval by the LM 's Techniques			
7	Request of Payment Letter			
8	The Payment Certificate approved by Line Ministries			
9	Bank Account Number of company			
10	Performance Bond should be saved in the bank as guarantee, it is a similar with the Advance Value or based on the Terms of contract			
11	The Invoice should be attached with the Monthly Progress Report			
12	International Company should attach the certificates from International Standard Organization (ISO)			

Note: This checklist is used to confirm that all the required documents are submitted for Payment Document of Infrastructure Fund project of Building, Road, Bridge, Port & Irrigation and others.

7

PROBLEMS AND RECOMMENDATIONS

PROBLEM 1. Sometimes MPW and related LM, Consultant and Contractor do not attend the site inspection.

RECOMMENDATION 1. ADN will inform when the inspection is carried out.

RECOMMENDATION 2. In accordance with ADN Manual, MPW and Related Ministries will prepare for the inspection

8

PROBLEM 3. Consultant who designs a work has sometimes no appropriate background and qualification.

RECOMMENDATION 3. Project owners, relevant ministries or agencies, have to employ good enough consultants to work on the project.

PROBLEM 4. We find out contractor's activities on site that do not follow the specification.

RECOMMENDATION 4. Both parties, project owner and contractor should follow not only specifications but all the contract documents.

9

PROBLEM 5. It is specified in the ADN Manual that ADN has to complete inspection for payment within 10 days after receiving complete set of documents, but sometimes it takes more than 10 days.

RECOMMENDATION 5. ADN staff in charge of the inspection has to complete the document and site inspection, and then send recommendation for the payment to MPS within the specified time. But on the other hand, the project owner has to send all the required documents, specified in the ADN Manual, within the specified time and cooperate with AND on the inspection .

10

PROBLEM 6. Contractors complain to ADN regarding deduction of money.

RECOMMENDATION 6. ADN makes inspection for payment in accordance with the ADN Manual. When quality of the works is less than specified, then remedy against the defectives are issued. When quantities invoiced is more than the quantities actually completed at the time of inspection, the amount the contractor receives may be deducted from the invoiced amount.

11

The Quality of the Construction

Doing Construction

Must be based on designs and technical specification:

- **Type of materials**
- **Quantities**
- **Qualities**
- **Dimensions**
- **Mixtures**
- **Construction Methods**
- **Miscellaneous(Colors, Indoors, outdoors)**

12

Doing Construction

Dimensions must be based on Designs :

- Its Length
- Its Width
- Its Height
- Its Depth
- Its Thickness
- Radius

THE WORKS HAVE BEEN SUCCESSFUL AND CORRECTED, WHEN :

-In accordance with the terminated time of contract

-Corrected quality based on technical specification and other technical methods.

-Corrected quantities is based on technical specification and other technical methods.

-Corrected Dimensions is based on designs, technical specification and other technical methods.

-Based on administrative matters.

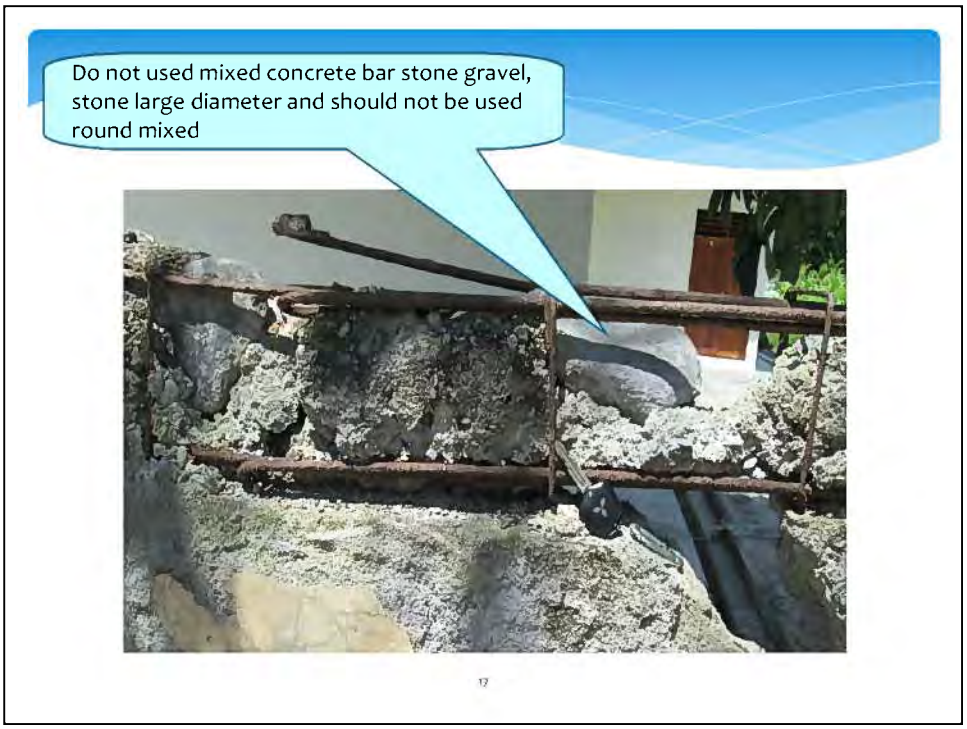
13

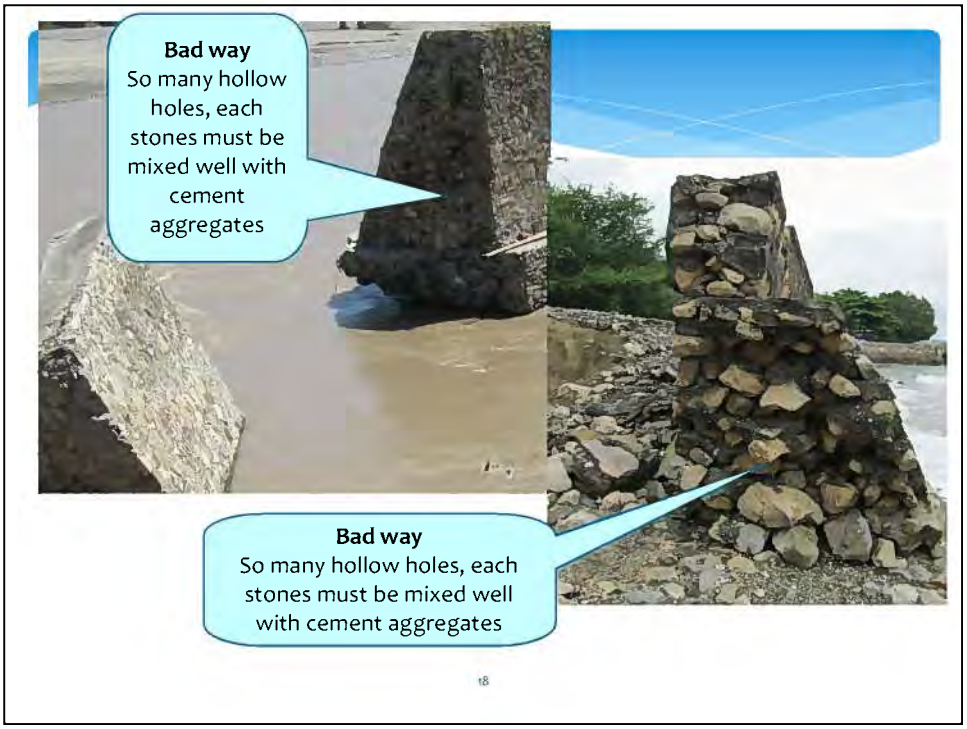
Some Documentations of Construction has been uncorrected/not corrected yet

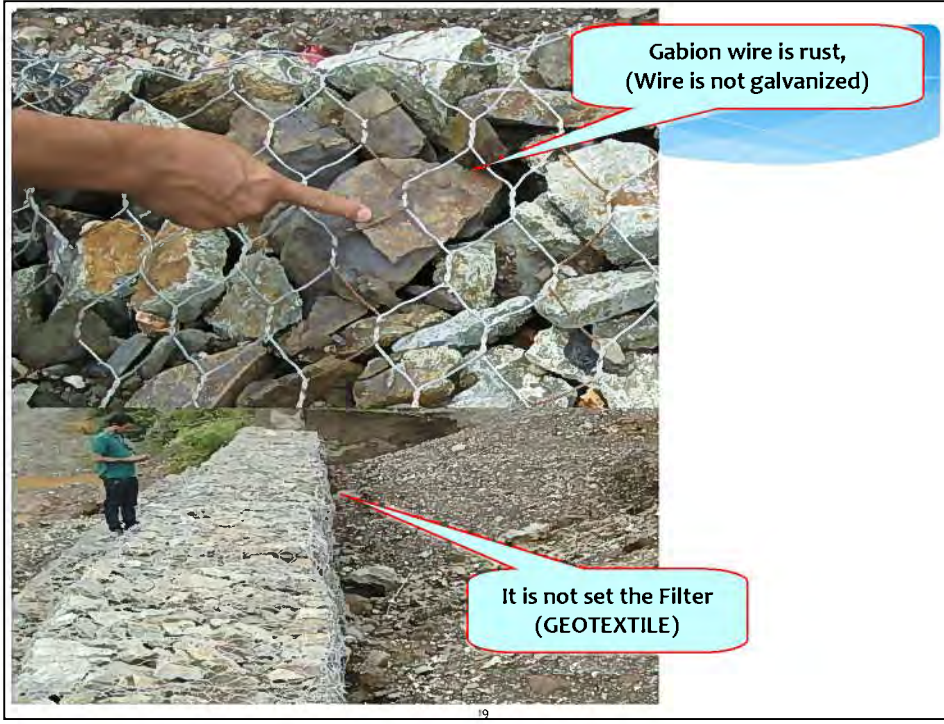
14

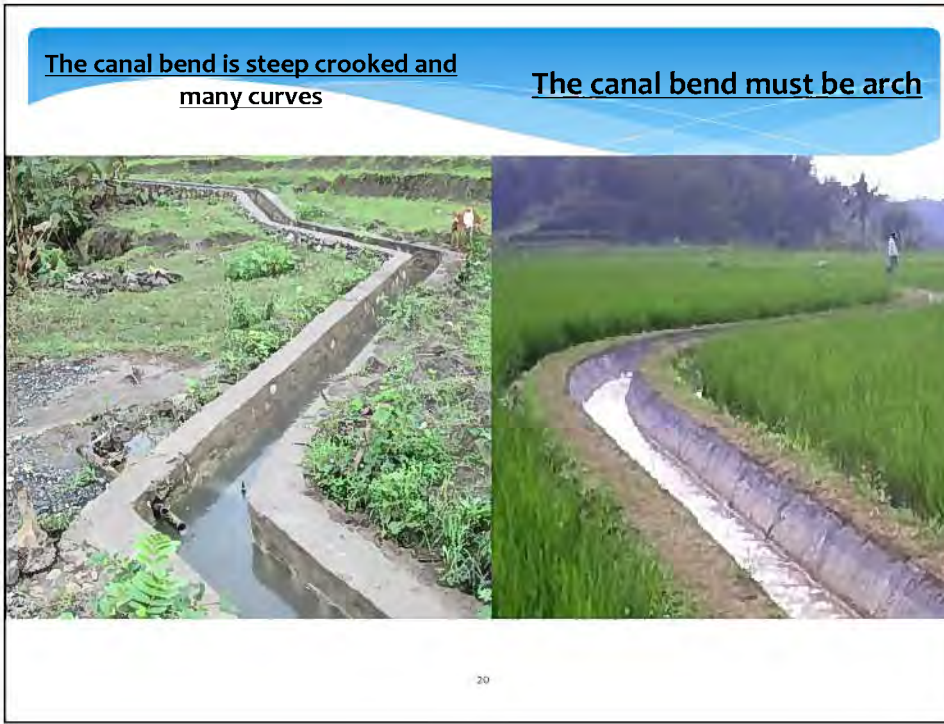

Distances from the others stirrup reinforcement is too big.
End of the reinforcement does not bend
15

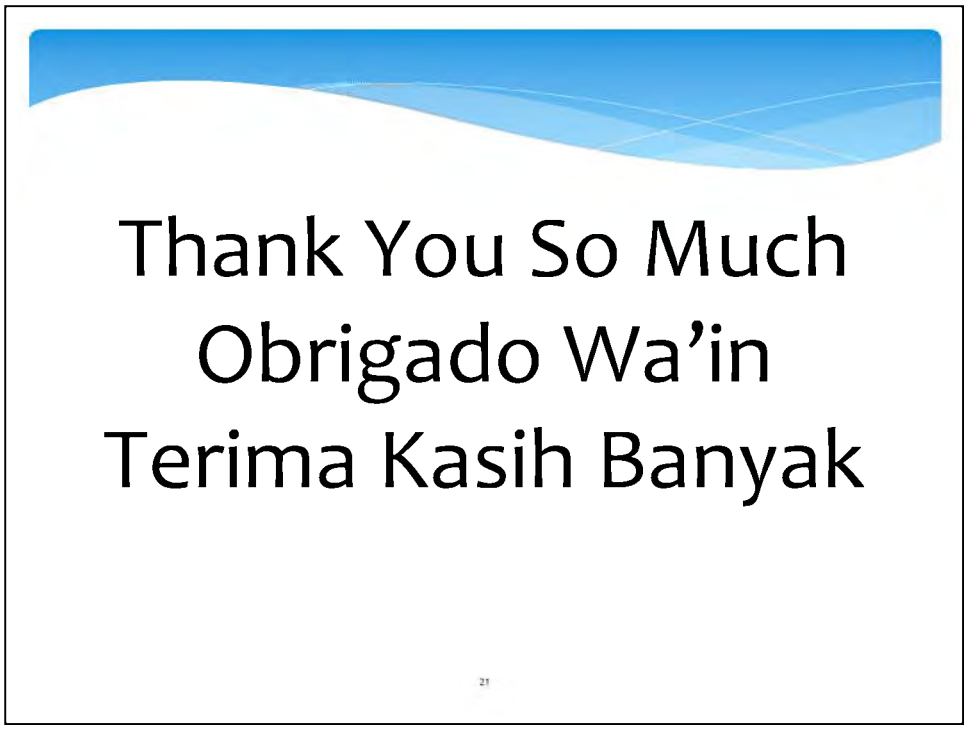

Making the wrong mortar
(excavator instead of a tool for stirring)
CAT
16


Do not used mixed concrete bar stone gravel, stone large diameter and should not be used round mixed
17


Bad way
So many hollow holes, each stones must be mixed well with cement aggregates
Bad way
So many hollow holes, each stones must be mixed well with cement aggregates
18


Gabion wire is rust,
(Wire is not galvanized)
It is not set the Filter
(GEOTEXTILE)
19


The canal bend is steep crooked and many curves
The canal bend must be arch
20


Thank You So Much
Obrigado Wa'in
Terima Kasih Banyak
21

Rapid Assessment of ADN
ADN's Role in the Infrastructure Development Process

Carolyn Peterken
Consultant to AusAID/ADN

Rapid Assessment – Purpose

- Propose a way forward for ADN that will enable it to better meet its current mandate
- Consider the potential transition of ADN to EPIA

ADN's Strengths

- Has already led to significant cost savings for GovTL
- Strong sense of shared values across ADN
- Some strong HR policies, and a commitment to L&D
- Checklists to guide administrative processes
- Strong district presence
- Strong relationship with Office of the PM, and good personal relationship with other government stakeholders
- Positive internal management style

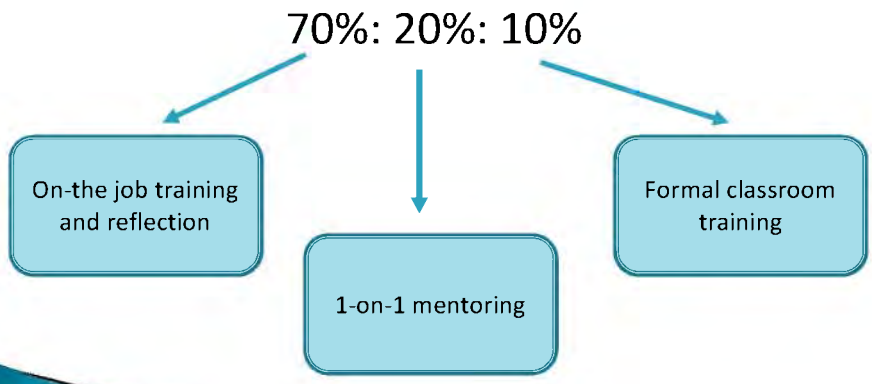
3

Recommendations re. Internal Operations

- Articulate and maintain a ***positive culture*** that supports good relationships with its stakeholders
- Strengthen ***capabilities***, not only technical, but also in communication, negotiation, community engagement, leadership and management...
- Add certain areas of ***professional expertise***, such as legal and contract management
- Establish and communicate ***standard operating procedures*** on the basis of which recommendations are made
- Establish an ***internal structure*** with clearly identified coordinators who take a leadership role with respect to their team
- Maintain good ***internal channels of communication*** and information sharing as the Agency establishes a more formal organisational structure

Framework for Learning and Development at ADN

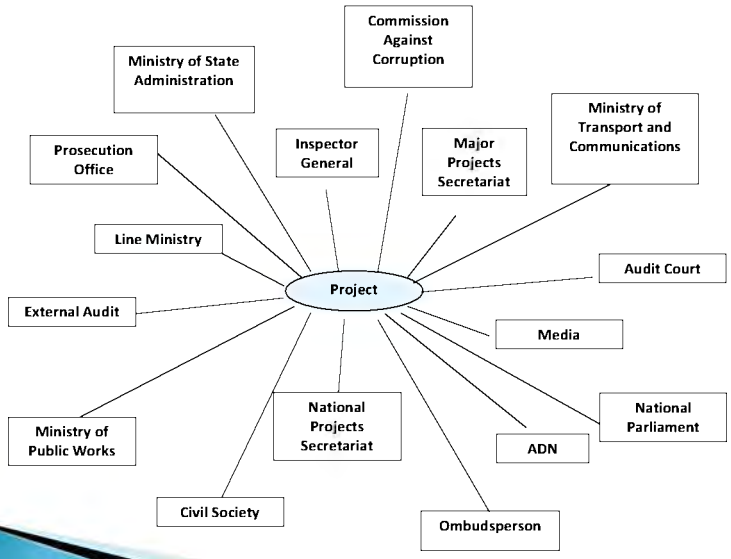
- Annual Agency Learning and Development Plan
- Annual individual Learning and Development plans



Draft Skills Framework for ADN

General skills/knowledge	Core engineering skills/knowledge	Working with stakeholders
All staff need an understanding of the following: •Role, structure and processes of government •Role, structure and processes of ADN •General administration •Portuguese language •English language	***All technical staff*** need a qualification and breadth of knowledge in one of the following: •Civil Engineering •Architecture •Electrical Engineering •IT and communications •Project management	***All technical staff*** need skills in the following: •Communication with stakeholders •Negotiation
Specialised corporate/professional skills	**Specialised engineering skills/knowledge**	**Management and leadership skills**
Some corporate staff need specialised knowledge in one of the following: •Finance/FMIS •Procurement •HR management	***Some technical staff*** need to specialised knowledge in one of the following areas of engineering •Roads •Bridges •Construction/buildings •Geotechnical •Water and sanitation •Irrigation •Electricity transmission and distribution •Renewable energy •Ports	***Some staff*** need to develop skills in the following: •Team management •Leadership •Communicaty engagement
Other professional capabilities		
Some staff need professional qualifications/experience in the following •Economics* •Social planning* •Environment* •Contract management •Legal		

Organisations potentially involved in monitoring/ inspection process



7

Challenges in infrastructure process as identified by ADN

- Different contracts used by Line Ministries
- Incomplete documents and late submissions
- Poor communications between state institutions
- Many projects have no project manger

8

Challenges identified through Rapid Assessment process

- Lack of certainty regarding future intentions for ADN/ EPIA
- Overlap of roles ADN/MPS
  - Evaluation of projects prior to procurement
  - Processing of payments
- Overlapping mandates between ministries (or overlap in their implementation)
- Lack of clarity around project owner and project accountability, and inconsistencies between authority/ accountability
- Inefficient process leading to significant delays in both project approvals and in payments
- Lack of clarity around basis on which ADN makes its decisions/recommendations

9

Recommendations

- Clearly define words commonly used around quality control process ("project owner", "accountability", "monitor", "evaluate", "supervise", "inspect", "quality control", "certify"...)
- Produce a single document that summarises the roles of different players at each step of the infrastructure development process, their roles, authorities and accountabilities, and work through this with the respective stakeholders.
- Establish a program of regular meetings between ADN and key stakeholders at various organisational levels.
- Once finalised, share ADN's standard operating procedures with stakeholders.
- Where possible conduct joint inspections with ADN and other stakeholders.

10


Questions/Comments?
Thank You!

PRESENTATION ADN MANUAL FOR LINE MINISTRY PROJECT

Presented

by

Januario Maia Guterres

ADN was established by Decree-Law No.11/ 2011 as one of the government take initiatives to establish reform and strengthen an organizational structure of the public administration.

ADN is responsible for strict reviewing of capital development projects as follows:

-assessing merit and feasibility of capital development projects;

-supervising, inspecting and certifying capital development projects;

-managing construction projects under PDDII; and

-providing support to MDG program for Sucos.

During ADN performance of verification for tender documents and conduct of inspection at project, many issues were met as follows:

Issues

- Many drawings were submitted without detailed drawings.
- Regarding many designs/drawings, they were uncompleted.
- The design/drawing compared with the condition at site were very differents.
- Due to a lot of BoQ, analyzing the unit price were uncompleted.
- Regarding many Payment of Document, they were uncompleted.
- Payments for the other Company were delayed because the long process to complete the document for the inspection.
- Many payments of the other Company were delayed because an administrative system does not flow.

It is effective and efficient work, that ADN has support from JICA to make ADN Manual. This Manual was helpful for the ADN to perform the job appropriately and to follow Decree-Law efficiently. So that, also this Manual have supported to LM and other relevant Institutes for supporting the responsible papers during procurement and implementation of projects at capital development.

This Manual specially explained about the process and flow chart :

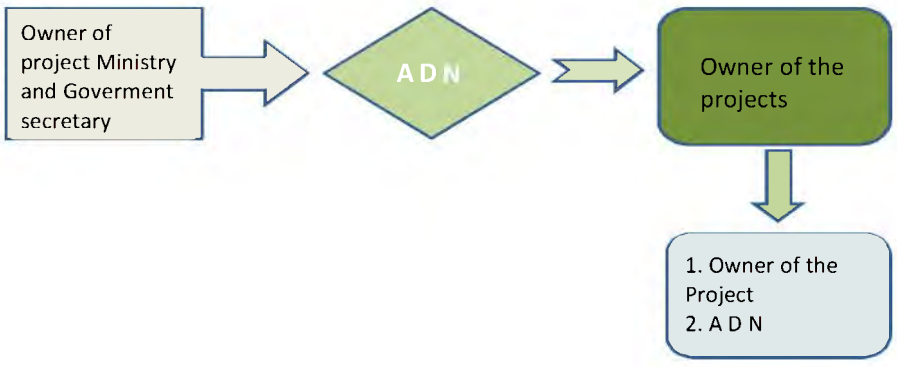
- Verification of Documents for tender.
- Inspection for payment recommendation

The Manual was separate base on Category. One is forms where the fund indicated in the following table and second is to have a considerate and different procedure.

Table 3. Anticipated Category on ADN as of 2014

Class of Project	Infrastructure	Line Ministries	PDID	MDG	SEFOPE	Emergency Fund	National Electrification Programa (PEN)	Additional	Special Projects under ADN
Note				Building house	Decree Law LM	Only in emergency cases	Decree Law No: 40/2012	Only used for projects not foreseen in the budget	Upon instruction and approval by PM
Funding Source	Infrastructure Fund	Line ministries Budget	ADN	ADN	SEFOPE	Emergency Fund Managed by MoF	Infrastructure Fund	Contingency Fund managed by MoF	Funds allocated to ADN
Budget Range	Over US$1,000,000	US$5000,00 to US$1,000,000	(PDDI) Up to 150,000 (PDDII) 150,001 Up to 300,000	No limit	No Limit	US$100,000 to US$150,000	US$ 1,000,000 to US$ 4,500,000	Maximum 2,000,000 (Normal pratice)	Upon to 10,000,000

Project Evaluation before Contract Award



Check List of Tender Document

DEMOCRATIC REPUBLIC OF TIMOR LESTE

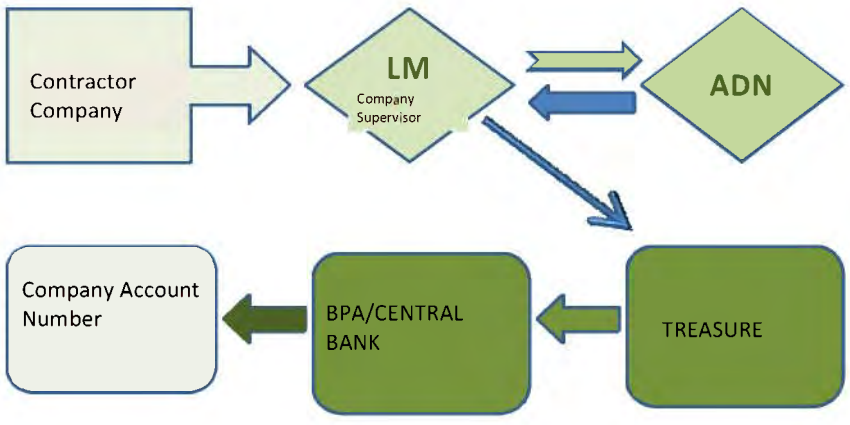
CABINET OF PRIME MINISTER

NATIONAL DEVOLOPMENT AGENCY

TENDER DOCUMENT CHECKLIST OF CONSTRUCTION FOR BUILDINGS & OFFICE FENCING WALL PROJECTS

1. The Drawings should be approved by Public Works _____ ☐
2. Bill of Quantity (BoQ) should be approved by Public Works_____ ☐
3. Cost Estimation should be approved by Public Works _____ ☐
4. Technical Specification should be ascertainable by Public Works_____ ☐
5. Submit the Electronic files which saved inside CD _____ ☐
6. If the buildings is more than 2 stairs, it should be attached the feasibility study of Soil or soil investigation results_____ ☐
7. If the buildings is more than 2 stairs, it should be attached the Structure Calculation analysis _____ ☐

Project Inspection & Recommendation for Payment



Check List of Payment

DEMOCRATIC REPUBLIC OF TIMOR LESTE
CABINET OF PRIME MINISTER
NATIONAL DEVOLOPMENT AGENCY

CHECKLIST OF DOCUMENT FOR THE PAYMENT OF BUILDINGS & FENCING WALL PROJECTS

1. The Original Invoice submitted by Company _____ ☐
2. Submit the Original Payment Certificates which approved by Minister or State Secretary of Line Ministries _____ ☐
3. Submit the Copied document of the valid Contract and completed with its annex_____ ☐
4. Submit the three copies of Phisical Progress Report which approved by the Owner of Project ☐
5. No.TIN (Identification of the Taxpayer contributions Number)_____ ☐
6. Bank Account Number of company_____ ☐
7. Submit the valid of the Company Birth Certificate and should be legalized _____ ☐
8. Submit the Valid Economic Activity License and should be legalized _____ ☐
9. Submit the Valid of Company Ownership License_____ ☐
10. If, the payment for 100% of phisical progress, it should attach the Term of Pre Handover Letter (PHO)_____ ☐
11. If, the Payment of retention, it should attach the Term of Final HandOver Letter for deduction of retention money (FHO) _____ ☐

Letter Head of Line Ministries

Date : _____Month_____Year

Número : Ministry/ Infra Unit/_____(number of Letter)

To : Excellency Mr. Samuel Marçal
Director of ADN
In Dili

Subject : Request of Inspection
Project of Line Ministries Fund (Type of project)
Localization (place of project)

In response to the request of payment which submitted by company_____(name of company). We (LM) inform that will be done the inspection for the project o_____(name of project) with the contract number: RDTL_____, at_____(date of inspection). In this case, we also submitted the Invoice of companies and progress report which attached below in order to ADN could inspect and prepare the inspection report and the recommendation for payment.

Finally, we would express appreciation for your cooperation.

Chief of project

(.....)

Approved by Minister/SOS

(.....)

Attachment:
1. Implementation period (Completion for the project)
2. Summary of Project
2. List of Quantity (BOQ)
3. Drawings
4. Detailed technical specification
5. Measurement
6. Invoice and progress report of company
7. Others, if required

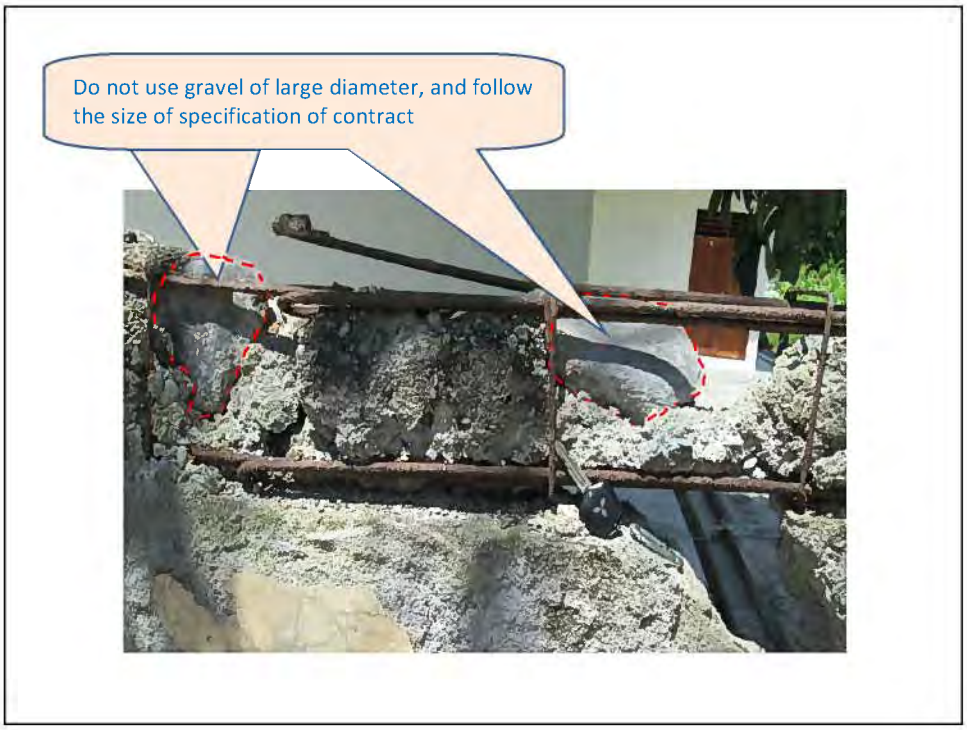
REPUBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

No	Inspection Result and Recommendation for Payment				
A	Name of Project				
B	Ministry/Project Owner			*Line Ministry*	
C	Sources of Funds : (PDD I, PDD II,PDI,H,Emergency,MDG Suco,etc)				
D	Contractor				
E	PO number (Purchase Order)				
F	Project site :	a.District b.Sub district c.Village/Hamlet	: : :		
G	Contract Value				
H	Previous physical progress				
I	Physical progress up to date				
J	Gross payment value up to date (gross)	(9-8)*7			
K	Advance payment which paid ...%	(...%*7)			
L	Deduction for advance payment 10%	(9-8)*11)			
M	Deduction for retention payment	(10%*10)			
N	Value payment after deduction for retention	(10-13)			
O	Value for this payment	(14-12)			
P	Balance after this payment	7-(9*7)			
Q	Observation or others Commands:				
R	Recommendation for payment to MPS MoF/Treasurer MoF/Ministry/other reelevant agency with amount (USD)				
S	Observation		Yes	Comments	No
a	Based on Design ?				
b	Based on BOQ ?				
c	Based on specification ?				
d	Based on Schedule curve S ?				
e	Based on Terms of Contract ?				
T	Inspection date		Date:	Month:	Year:
U	Inspector	Signature:			Date :
	1				
	2	Signature:			Date :
		Signature:			Date :
V	Verified by:	Signature:			Date :
	Miguel Marques Monteiro de Jesus				
W	Q.C.	Signature:			Date :
	Esron ST. Renuk				
X	Approved by:	Signature:			Date :
	Sr. Samuel Marçal				
	Director Geral - ADN.				
Y	Annex :	Site Picture			

REPUBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

Date _____Month, Year
To : Director of Major Project Secretary (MPS)
From : Samuel Marçal *(Stamp and signed by Director of ADN)*
General Director of ADN
Ref : _____ RDTL/ GPM /ADN / III / 20____
Subject : Payment Request
On regarding to the Payment Request No._____(Number of Request) by the company _____(Name of company) on the project for _____(name of project) in _____(district) _____(sub district) _____(Village). ADN's Technical Team which done the inspection for works referred recommends to be able making payment for existed progress. So we would ask to Major Project Secretary (MPS) when executing the payment process has to verify again the previous payment.

Finally, Thank You Very Much for Your collaboration .



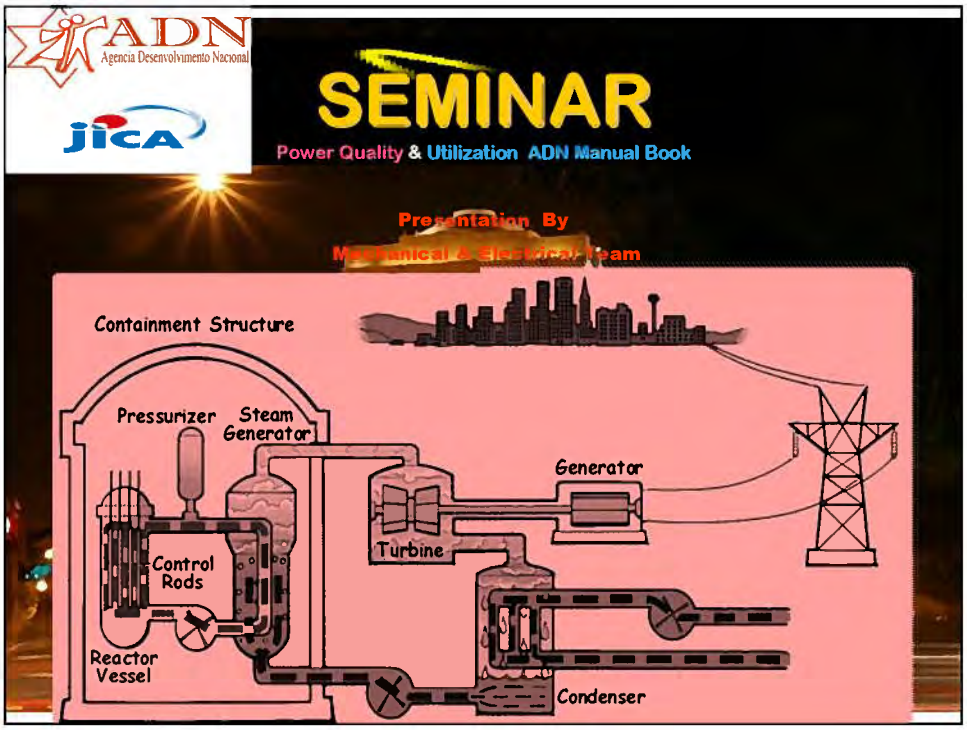
Making the wrong mortar
(excavator instead of a tool for stirring)

Distance from the others stirrup to stirrup of reinforcement is too wide

Re-bar work is not true

End of the reinforcement does not bend

- Thank you very much

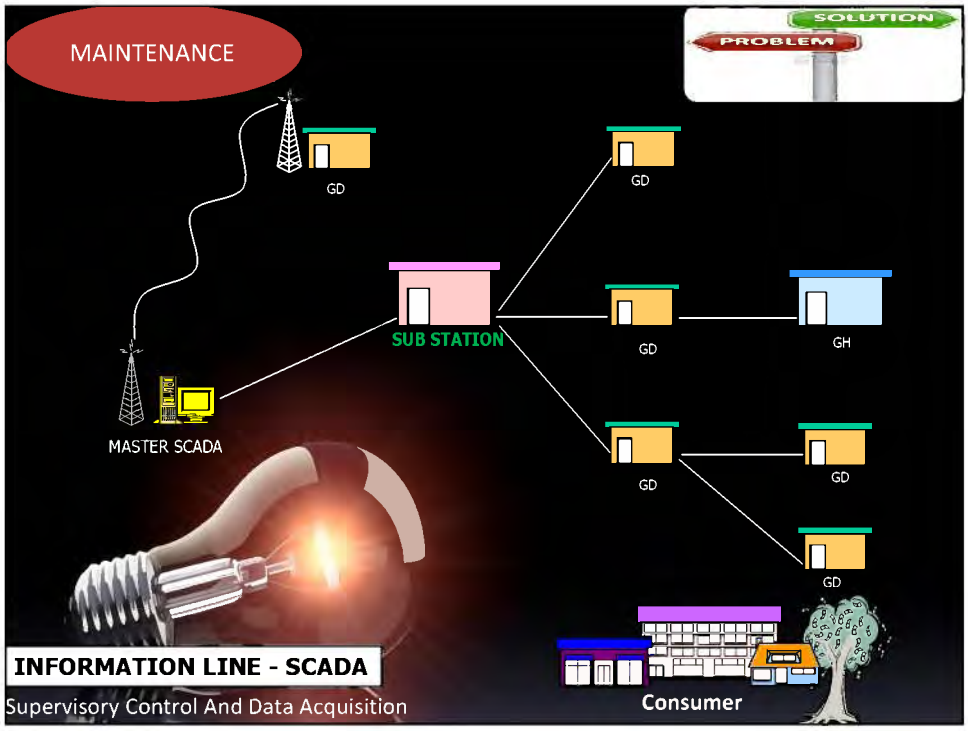

ADN
Agencia Desenvolvimento Nacional
JICA
SEMINAR
Power Quality & Utilization ADN Manual Book
Presentation By
Containment Structure
Pressurizer
Steam Generator
Generator
Turbine
Control Rods
Reactor Vessel
Condenser


Power Quality
Construction
Planning
Material
Orderly
Safety
Reliable
Quality
Efficiency
Control
Maintenance
Operational
SOP

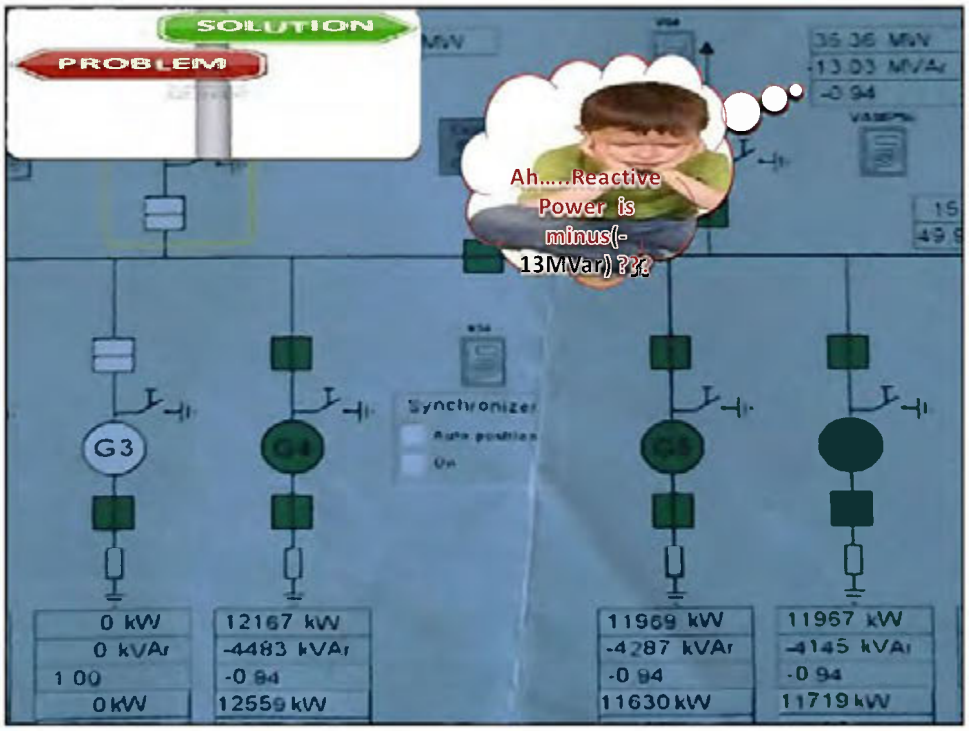

PLANNING
SOLUTION
PROBLEM
Double Line = High Cost
Revoke
Emergency Project
2010-2011
PEN - 2013
Should be
Revoked ...

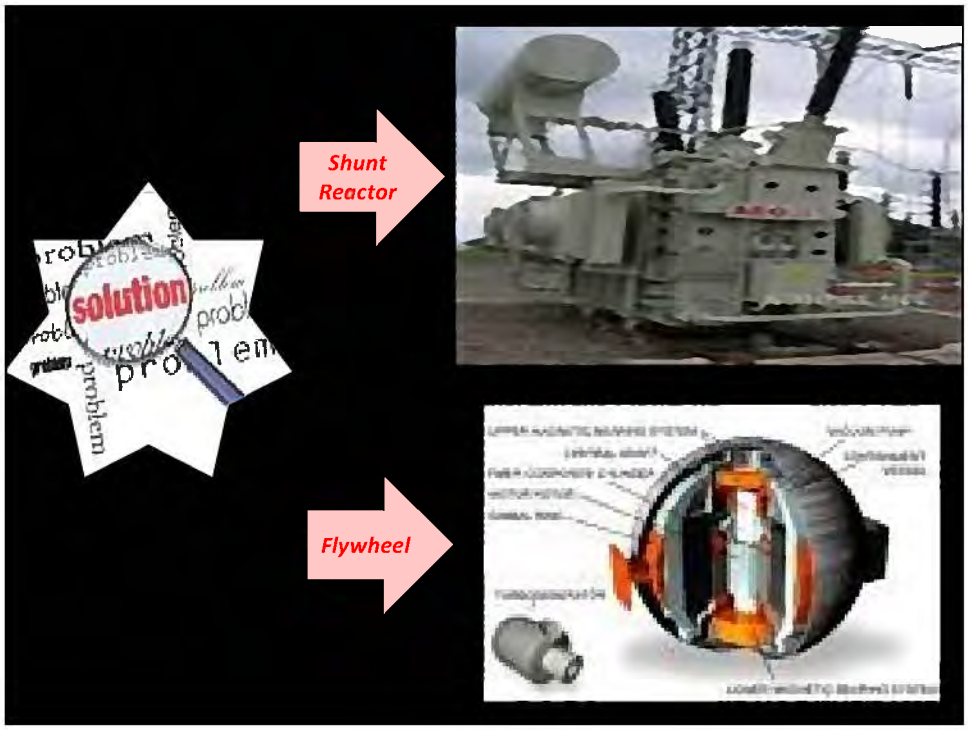

PLANNING
SOLUTION
PROBLEM
Inefficiency = High Cost


MAINTENANCE
SOLUTION
PROBLEM
Maintenance = POWER OFF
Maintenance = POWER ON
Blackout Again....

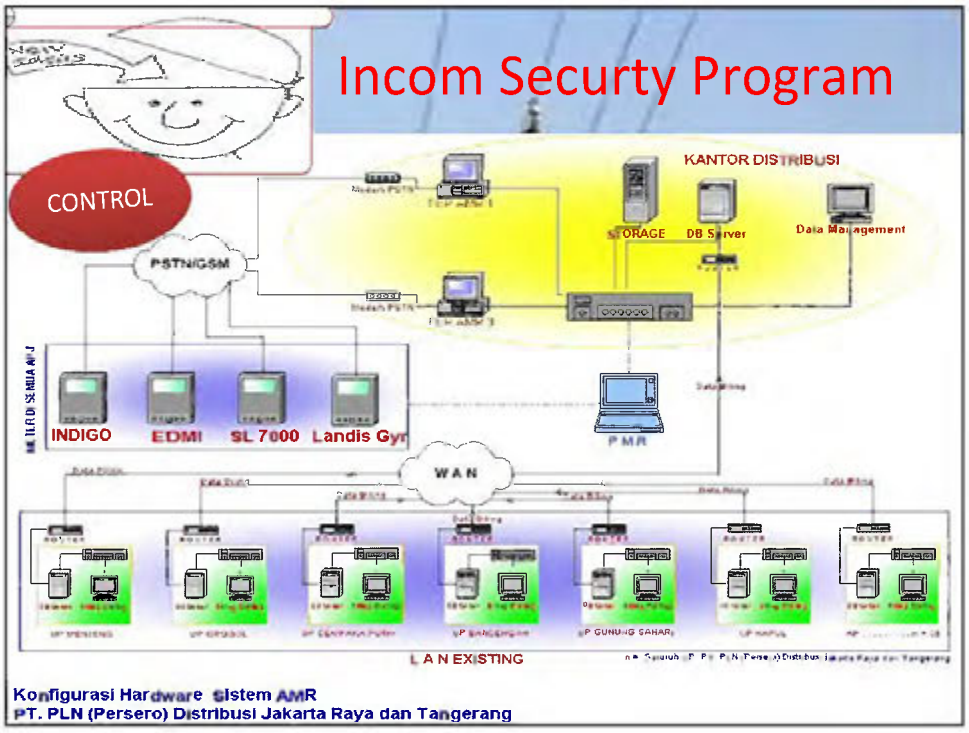

MAINTENANCE
SOLUTION
PROBLEM
GD
GD
SUB STATION
GD
GH
MASTER SCADA
GD
GD
GD
INFORMATION LINE - SCADA
Supervisory Control And Data Acquisition
Consumer

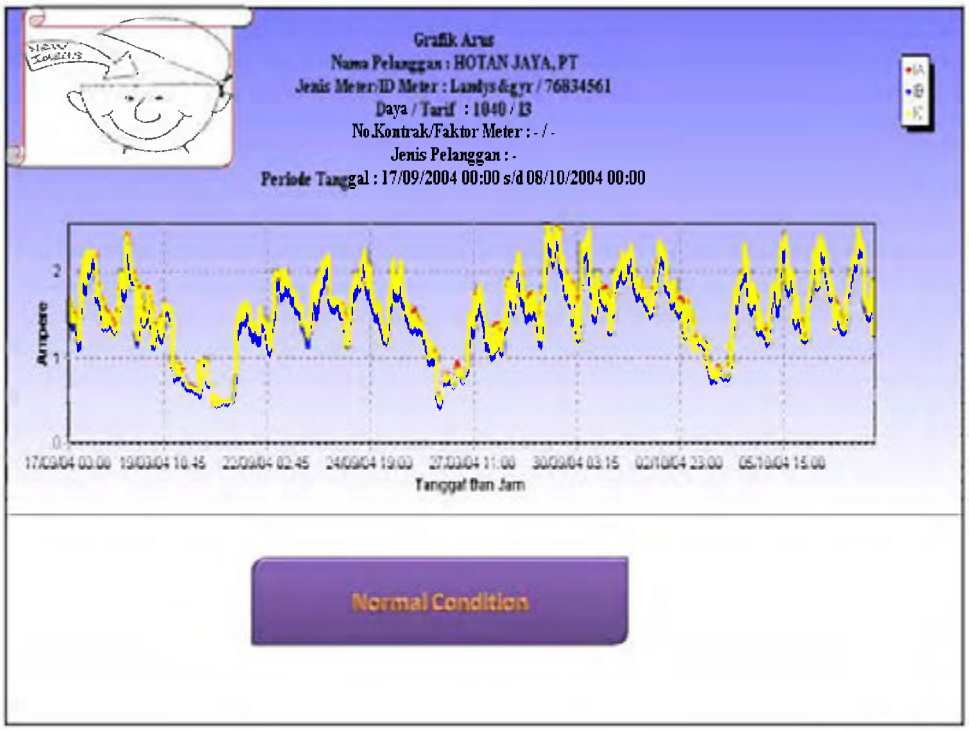

SOP
SOLUTION
PROBLEM
UNSAFE
SAFE

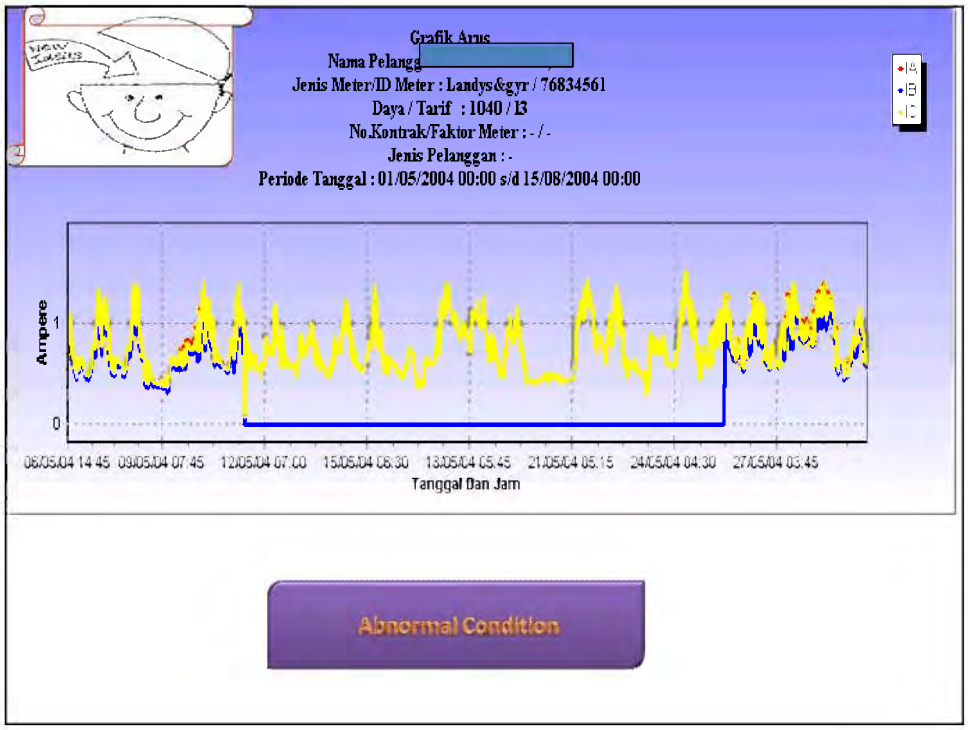

SOLUTION
PROBLEM
Ah.....Reactive Power is minus(-13MVar) ??
G3
Synchronizer
0 kW
0 kVAr
1 00
0 kW
12167 kW
-4483 kVAr
-0 94
12559 kW
11969 kW
-4287 kVAr
-0 94
11630 kW
11967 kW
-4145 kVAr
-0 94
11719 kW

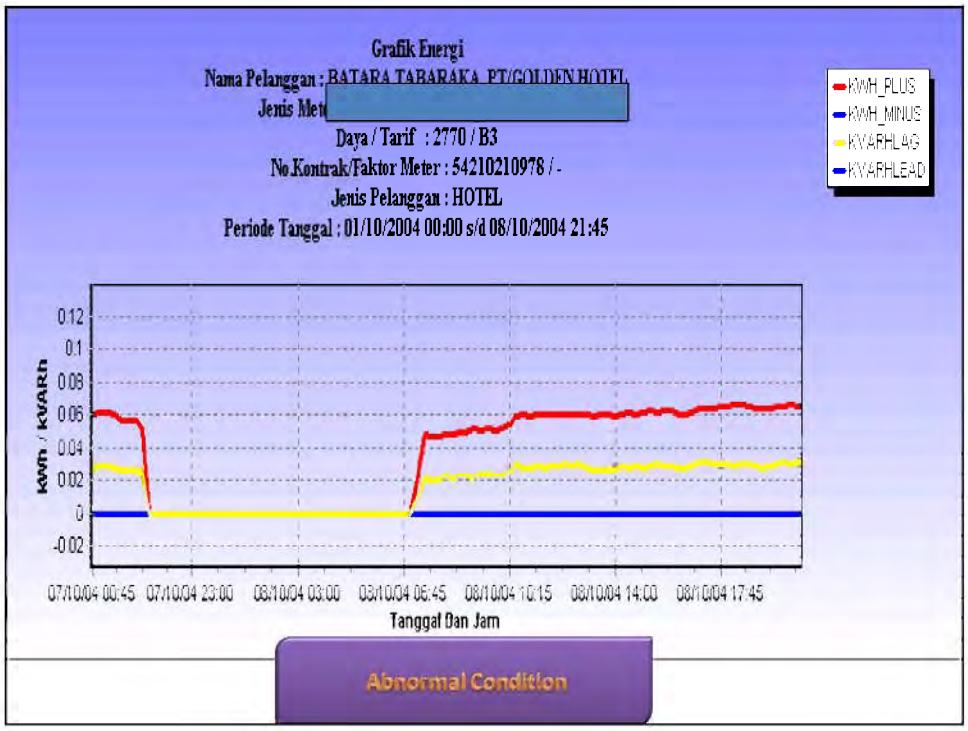

Shunt Reactor
solution
problem
Flywheel


KWH calculation of loss due to the illegal installation
ombeiros-audian-belarminio lobo, bidau metiaut pas ane laulara
1. The number of consumers with illegal Connection 258 Houses
2. The number of consumers (KWH COMBO/Conventional) 550 Houses
3. The number of Ex. Illegal 39 Houses
4. The number of not installed /house closed 269 Houses
Total 1.116 Houses
total 5.251-1.116 = 4.135
PROBLEM
ORDERLY
Load per/house = 6 Ampere (1300 VA)
Number of Load 1116 Houses = 1300 x 1116 x 0.8 = 1160.64 Kwh
Kwh /day = 24 X 1160.64 = 27,855.36 Kwh
$ /Kwh = $ 0.12 cen
❖ Loss $/Day
= 27,855.36 X 0.12 = $ 3,342.64
❖ Loss $/Month
= $ 3,342.64 X 30 Days=
$ 100,279.20
❖ Loss $/Year
= $ 100,279.20 X 12 Month
$1,203,350.40

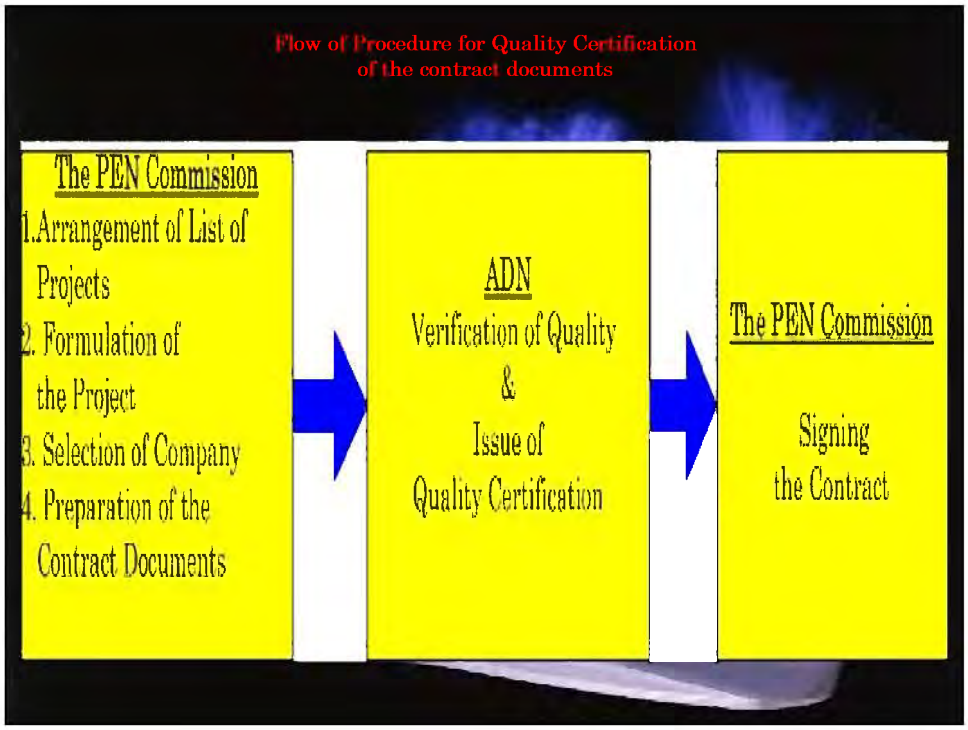

Incom Securty Program
CONTROL
KANTOR DISTRIBUSI
STORAGE
DB Server
Data Management
PSTN/GSM
INDIGO
EDMI
SL 7000
Landis Gyr
PMR
WAN
LAN EXISTING
Konfigurasi Hardware Sistem AMR
PT. PLN (Persero) Distribusi Jakarta Raya dan Tangerang


Grafik Arus
Nama Pelanggan : HOTAN JAYA, PT
Jenis Meter/ID Meter : Landys&gyr / 76834561
Daya / Tarif : 1040 / I3
No.Kontrak/Faktor Meter : - / -
Jenis Pelanggan : -
Periode Tanggal : 17/09/2004 00:00 s/d 08/10/2004 00:00
Ampere
Tanggal Dan Jam
Normal Condition

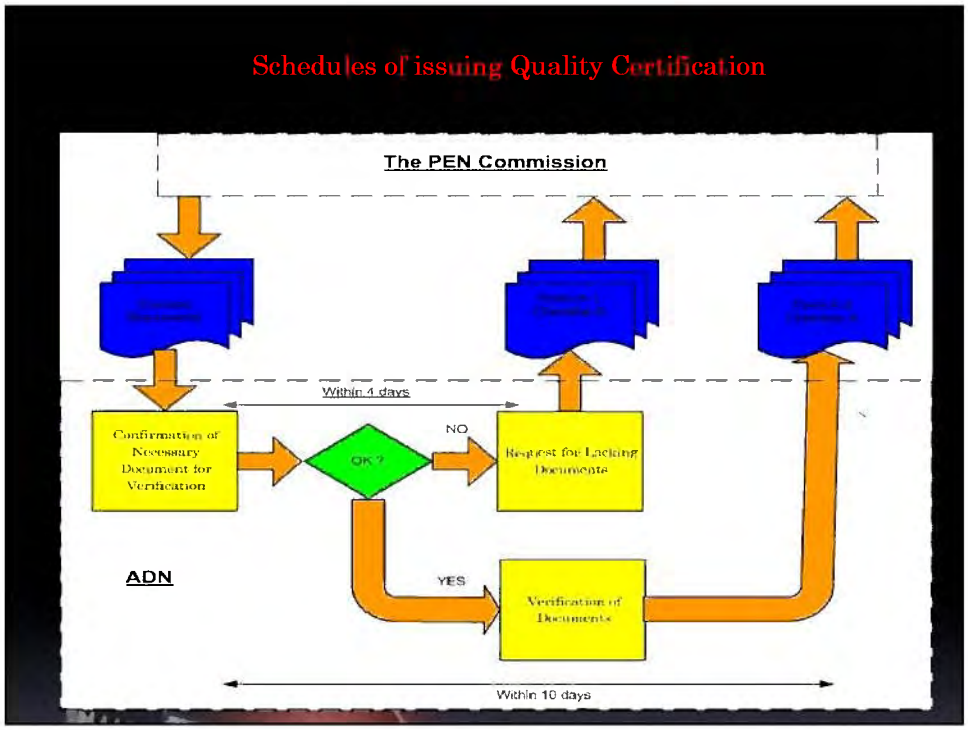

Grafik Arus
Nama Pelangg
Jenis Meter/ID Meter : Landys&gyr / 76834561
Daya / Tarif : 1040 / I3
No.Kontrak/Faktor Meter : - / -
Jenis Pelanggan : -
Periode Tanggal : 01/05/2004 00:00 s/d 15/08/2004 00:00
IA
IB
IC
Ampere
1
0
06/05/04 14:45
09/05/04 07:45
12/05/04 07:00
15/05/04 06:30
18/05/04 05:45
21/05/04 05:15
24/05/04 04:30
27/05/04 03:45
Tanggal Dan Jam
Abnormal Condition


Grafik Energi
Nama Pelanggan : BATARA TABARAKA PT/GOLDEN HOTEL
Jenis Met
Daya / Tarif : 2770 / B3
No.Kontrak/Faktor Meter : 54210210978 / -
Jenis Pelanggan : HOTEL
Periode Tanggal : 01/10/2004 00:00 s/d 08/10/2004 21:45
KWH_PLUS
KWH_MINUS
KVARHLAG
KVARHLEAD
kWh / kVARh
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
07/10/04 00:45
07/10/04 23:00
08/10/04 03:00
08/10/04 06:45
08/10/04 10:15
08/10/04 14:00
08/10/04 17:45
Tanggal Dan Jam
Abnormal Condition

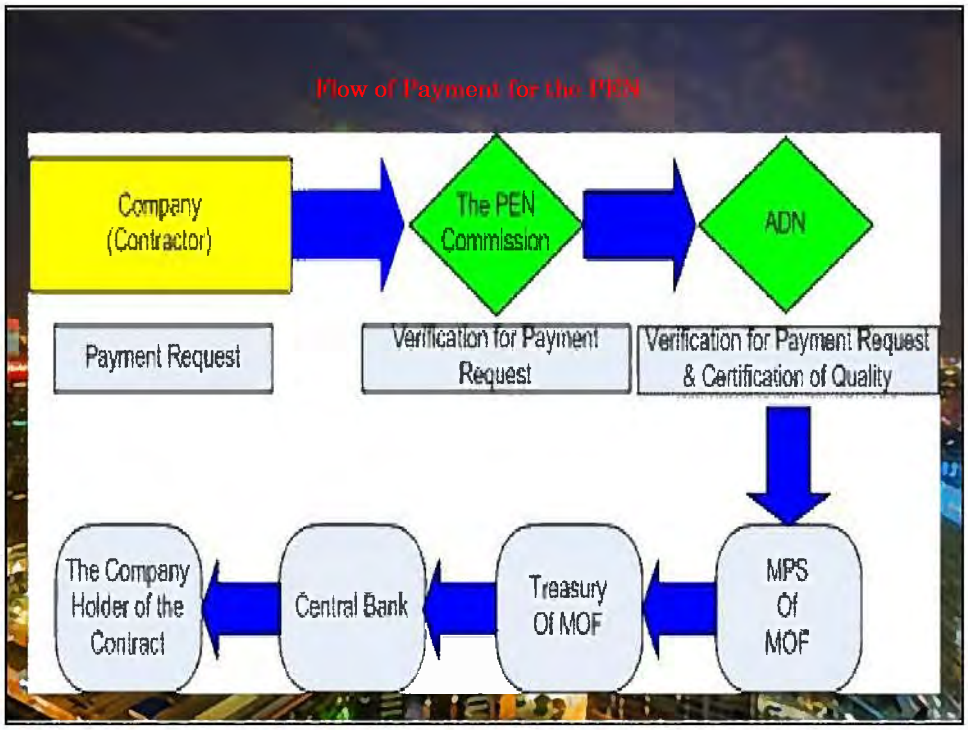
Flow of Procedure for Quality Certification of the contract documents



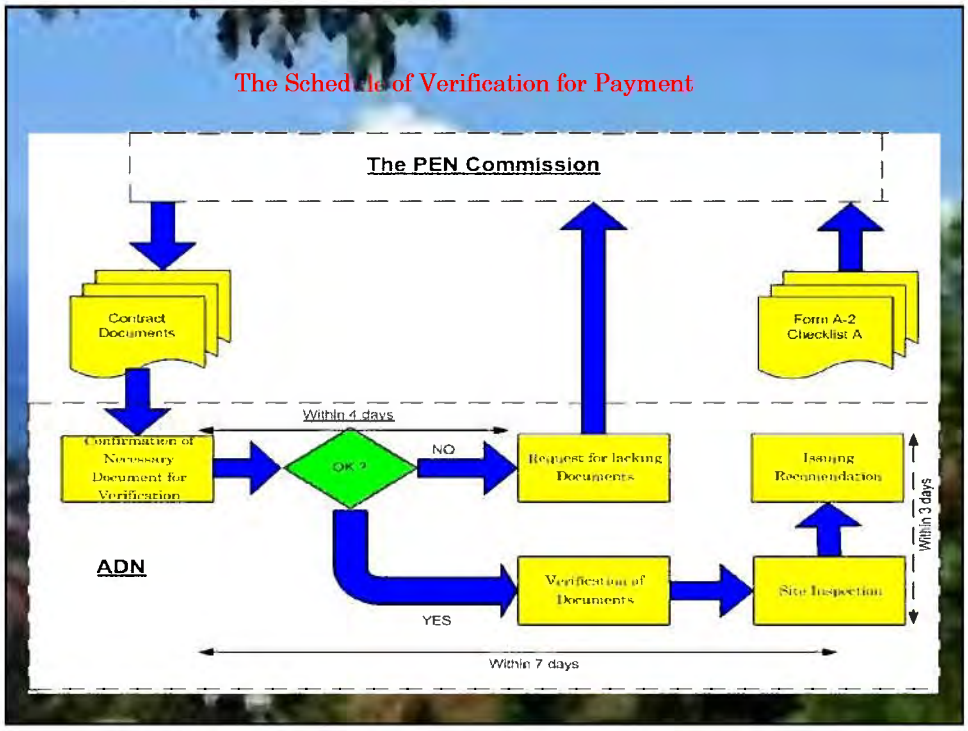
Schedules of issuing Quality Certification



Flow of Payment for the PEN



The Schedule of Verification for Payment



Checklist A(Document to be submitted)

AGÊNCIA DE DESENVOLVIMENTO NACIONAL
GABINETE DO PRIMEIRO MINISTRO
REPÚBLICA DEMOCRÁTICA DE TIMOR-LESTE

Checklist A

Checklist for Necessary Documents from the Committee and Verification				Inspected by	Approved by
Project Name					
Stage	Issue of Quality Certification before signing Contract		Date of Inspection of ADN		
Fund	Infrastructure Fund	Type of Project	National Electrification Program (PEN)	Implementing Agency	EDTL
Project Site	a) District	(b) Sub district		(c) Village /Hamlet	

		Check of Confirmation of Documents	Check Point for Verification	Checking	Remarks & Remarks
1	A List of Projects				
	①	Location map and diagrams of lines	Maps for projects	Yes / No	
			Diagrams of planned and existing 20kv distribution lines	Yes / No	
	②	Sheet of the list of projects	Name and approx. population of each non electrified village for each project	Yes / No	
			The approx. length of new lines of 20kv for each project	Yes / No	
			Rate of the population and length of the line for the effect and cost	Yes / No	
			Order of priority for the implementation of projects	Yes / No	
	③	Criteria of priority for the selection	Reason for putting the order of priority	Yes / No	
2	Formulation of the Project				
	①	The justification of the project	Reason of priority of the project in the district and sub-district	Yes / No	
			Summery of cost and benefit (effect)	Yes / No	
	②	The location map	The maps with the area of the works and villages and existing lines	Yes / No	
	③	Outline of villages to be electrified	The name, numbers of household, population and income houses	Yes / No	
	④	Salient features of the Project	Location, name of sub district & district, length of 20kv & 380v lines, numbers of houses, budget, name of company, etc	Yes / No	
3	Selection of the Company				
	①	Publicity of the project	The documents related to publicity through the public newspaper	Yes / No	
	②	Justification of the Company	Including evaluation of the selection with criteria by the Committee	Yes / No	
	③	The minute of meeting for selection	Record of minute of the district and MPS as well as their attendance	Yes / No	
	④	Eligibility of Company	The proof of tax payment in the last quarter and certification of registration	Yes / No	
	⑤	The list of similar previous experiences	Name, contract price, type of the works, year of implementation, etc	Yes / No	
	⑥	The list of engineers for the project	One electrical & civil engineer are minimum requirements with name, years and list of experiences	Yes / No	
	⑦	Information on involvement of Veteran	involvement, or not and if any, what kinds involvement?	Yes / No	
4	The Contract Documents				
	①	Salient features of the Project	Location, name of sub district & district, length of 20kv & 380v lines, numbers of houses, budget, name of company, etc	Yes / No	
	②	Contract Agreement (without signing)	Contract price, start day and intended completion day	Yes / No	
	③	General Condition with Contract Data	Payment conditions such as advance payment, retention, bank security	Yes / No	
	④	Technical Specifications	Prescription of quality of materials & components listed in the BOQ	Yes / No	
	⑤	Standard Construction	Construction method for main components	Yes / No	
	⑥	Design Drawings	Description of main items of BOQ in the drawings	Yes / No	
	⑦	BOQ	Estimated quantities and unit price	Yes / No	

Note: The circled numbers shows minimum requirement of documents submitted by the Commission for verification by the ADN

Confirmation of Payment Request by the PEN Commission

REPUBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL — Form A-1

Date : 25 October, 2012

To : Sr. Kassius Klei
Head of the Management and Implementation Commission of PEN

From : Sr. Samuel Marcal
General Director of the Agencia de Desenvolvimento Nacional

CC : S.E. Januario da Costa Pereira
Secretary of State of the Electricity

Ref : _____RDTL/GPM/ADN/X/2012

Subject : Necessary Documents Submitted by the Commission of PEN

With respect,
Based on Decree Law No. 11/2011: Agência Desenvolvimentu Nacional (ADN) and Decree Law No. 40/2012: Programa Eletrificação Nacional (PEN) which gives role to the ADN as Quality Control & Auditing to the all Project funded by government budget, the Team has carried out confirmation of the documents which is submitted by the Management and Implementation Commission to the ADN.
Result of confirmation of the necessary documents to be submitted is shown as follows with the result of Checklist A (Attachment):

Project Name : _____
Project Site : _____
Company Name : _____
Type of Verification : 1. List of Project ☐
2. Formulation of the Project ☐
3. Selection of the company ☐
4. Contract Document ☐

Result of Confirmation of the Document: **APPROVES/ APPROVES with NOTE /PENDING/REJECT**

RECOMMENDATION BY ADN

Thank you for your attention and collaboration.

REPUBLICA DEMOCRATICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGÊNCIA DE DESENVOLVIMENTO NACIONAL — Form A-2

Date : 25 October, 2012

To : Sr. Kassius Klei
Head of the Management and Implementation Commission of PEN

From : Sr. Samuel Marcal
General Director of the Agencia de Desenvolvimento Nacional

CC : S.E. Januario da Costa Pereira
Secretary of State of the Electricity

Ref : _____RDTL/GPM/ADN/X/2012

Subject : Result of Verification of Documents of the Project of PEN

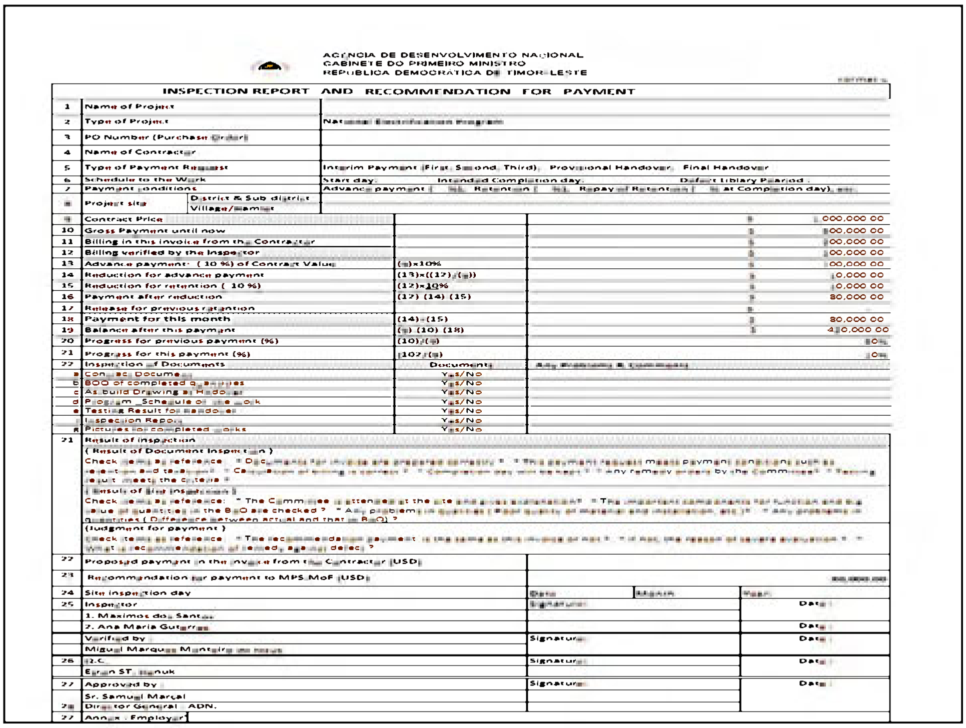
With respect,
Based on Decree Law No. 11/2011: Agência Desenvolvimentu Nacional (ADN) and Decree Law No. 40/2012: Programa Eletrificação Nacional (PEN) which gives role to the ADN as Quality Control & Auditing to the all Project funded by government budget, the Team has carried out verification of the documents which is submitted by the Management and Implementation Commission to the ADN.
Result of Verification of the documents is shown as follows with the result of Checklist A (Attachment):

Project Name : _____
Project Site : _____
Company Name : _____
Type of Verification : 1. List of Project ☐
2. Formulation of the Project ☐
3. Selection of the company ☐
4. Contract Document ☐

Result of Verification of the Document : **APPROVES/ APPROVES with NOTE /PENDING/REJECT**

RECOMMENDATION BY ADN

Thank you for your attention and collaboration.



AGENCIA DE DESENVOLVIMENTO NACIONAL
GABINETE DO PRIMEIRO MINISTRO
REPUBLICA DEMOCRATICA DE TIMOR-LESTE

INSPECTION REPORT AND RECOMMENDATION FOR PAYMENT

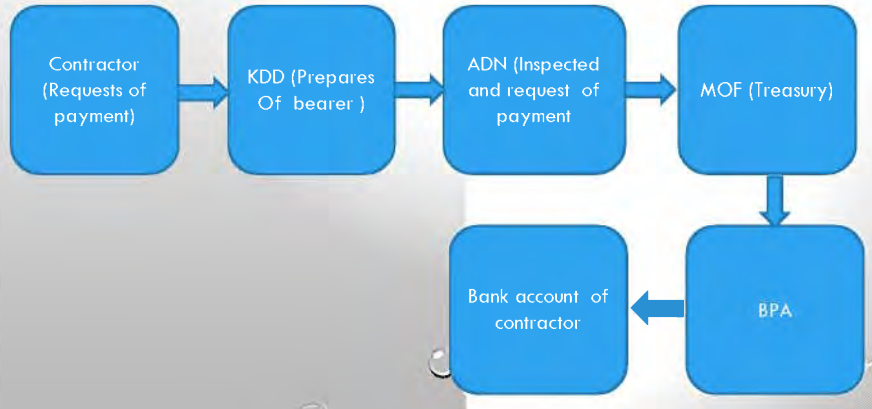
1	Name of Project		
2	Type of Project	National Electrification Program	
3	PO Number (Purchase Order)		
4	Name of Contractor		
5	Type of Payment Request	Interim Payment (First, Second, Third), Provisional Handover, Final Handover	
6	Schedule to the Work	Start day: Intended Completion day: Defect Liblary Period :	
7	Payment conditions	Advance payment (%), Retention (%), Repay of Retention (% at Completion day), etc.	
8	Project site — District & Sub district / Village/Hamlet		
9	Contract Price		$ 1,000,000.00
10	Gross Payment until now		$ 500,000.00
11	Billing in this invoice from the Contractor		$ 100,000.00
12	Billing verified by the Inspector		$ 100,000.00
13	Advance payment: (10 %) of Contract Value	(9)x10%	$ 100,000.00
14	Reduction for advance payment	(13)x((12)/(9))	$ 10,000.00
15	Reduction for retention (10 %)	(12)x10%	$ 10,000.00
16	Payment after reduction	(12) (14) (15)	$ 80,000.00
17	Release for previous retention		$
18	Payment for this month	(14)+(15)	$ 80,000.00
19	Balance after this payment	(9) (10) (18)	$ 4[illegible]0,000.00
20	Progress for previous payment (%)	(10)/(9)	50%
21	Progress for this payment (%)	(10)/(9)	10%
22	Inspection of Documents	Documents	Any Problems & Comments
a	Contract Documents	Yes/No	
b	BOQ of completed quantities	Yes/No	
c	As build Drawing at Handover	Yes/No	
d	Program Schedule of the work	Yes/No	
e	Testing Result for Handover	Yes/No	
f	Inspection Report	Yes/No	
g	Pictures for completed works	Yes/No	
21	Result of inspection (Result of Document Inspection) Check items as reference: * Documents for invoice are prepared correctly ? * This payment request meets payment conditions such as retention and tax[illegible]? * Calculation of billing is correct ? * Completion day will be kept ? * Any remedy orders by the Commissee? * Testing result meets the criteria ? (Result of Site Inspection) Check items as reference: * The Commissee is attended at the site and gives explanation? * The important components for function and big value of quantities in the BoQ are checked ? * Any problems in quantities (Poor quality of material and installation, etc.)? * Any problems in quantities (Difference between actual and that in BoQ) ? (Judgment for payment) Check items as reference: * The recommendation payment is the same as this invoice or not ? * If not, the reason of severe evaluation ? * What is recommendation of remedy against defect ?		
22	Proposed payment in the invoice from the Contractor (USD)		
23	Recommendation for payment to MPS MoF (USD)		[illegible]
24	Site inspection day	Date / Month / Year	
25	Inspector 1. Maximos dos Santos 2. Ana Maria Guterres	Signature	Date :
	Verified by : Miguel Marques Monteiro [illegible]	Signature	Date :
26	Q.C. Ervan ST, [illegible]nuk	Signature	Date :
27	Approved by : Sr. Samuel Marçal Director General ADN.	Signature	Date :
27	Annex : Employer		

THE PRESENTATION OF ADN MANUAL REGARDING PDID PROJECT

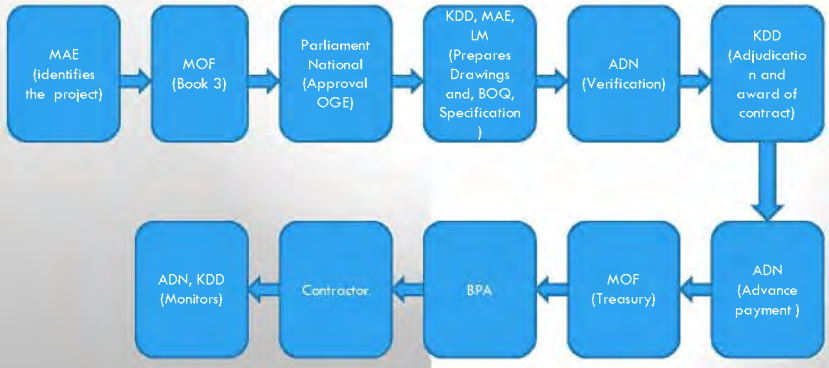
BY

Demistocles Cabral

FLOW CHART PDID PROCESS INSPECTION AND PAYMENT



FLOW CHART PDID PROCESS OF PROJECT WORK



PROBLEM AND RECOMMENDATION

Problem

- ❑ Without Line coordinated with Ministry and other District
- ❑ Design Document and BOQ submitted delay will be impacted to implementation process
- ❑ Many failure were found in implementation because the design not to reflect the actual site condition.

Recommendation

- ❑ To make coordinated with other Ministry (LM)
- ❑ Requested to all Ministry to submitted Design and BOQ base on schedule were determinate.
- ❑ Requested to all Ministry to controlling their Consultant and avoided to have reserve fund.

PAYMENT FORMAT OF CHECK LIST

Format: Payment

REPÚBLICA DEMOCRÁTICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

NO	INSPECTION REPORT AND RECOMMENDATION FOR PAYMENT			
1	Name of Project			
2	Ministry/Project Owner			
3	Sources of funds			
4	Contractor			
5	PO Number (Purchase Order)			
6	Project site :	a. District : Manufahi b. Sub District : Same c. Villag/Hamlet : Letefoho		
a	Contract Value	a	$	125,398.59
b	Progress for previous payment	b		80.00%
c	Progress for this payment	c		100.00%
d	Gross Payment until now	(c-b)*a	$	25,079.71
e	Advance payment: (10%) of Contract Value	...%*a	$	-
f	Reduction for advance payment	e	$	-
g	Reduction for retention	0.1*d		
h	Payment after reduction for retention	d-g	$	25,079.71
i	Release for (50%) previous retention	h-f	$	25,075.71
j	Total Net Payment until now		$	112,858.70
k	Balance after this payment	(100%-c)*a	$	
7	Observation or comment : ADN team, based on inspection of the potable water supply project in Fatumea that relies its power source on the solar panel system, verifies that the project has been reached to 95%, and therefore we ensure to take necessary procedures for the payment of the 90% physical progress.			

8	Recommendation for payment toTreasurer-MoF/Ministry/Agency Tutela (USD)		12,600.00		
9	Observation :		YES	Any comments	NO
a	Drawings		√		
b	BOQ		√		
c	Technical specification		√		
d	Schedule of S shape curve		√		
e	Payment conditions in the contract		√		
10	Inspection date		Date:	Month:	Year:
11	Inspector :	Signature:			Date :
	1. Lourdes Pereira				
	2. Manuel Martins	Signature:			Date :
	Verified by :	Signature:			Date :
	Sònia Freitas Moreira				
12	Q.A	Signature:			Date :
	Esron St. Henuk				
13	Approved by :	Assinatura:			Date :
	Sr. Samuel Marçal				
	General Director - ADN.				
14	Annex :	Some photographys of Site inspection			

Format : Check List

REPUBLICA DEMOCRÁTICA DE TIMOR LESTE
GABINETE DO PRIMEIRO MINISTRO
AGENCIA DESENVOLVIMENTO NACIONAL

No.	Name of Document	Condition						Remark
		Yes	No	Completed	Uncompleted	Yes	No	
1	Requested payment from Company to KDD (Original)							
2	Inclusion letter from KDD Coordinator (Original)							
3	Copy Contract document /if the project is handed over while the contract is expired, it should attach with a Original document or copy of valid contract at minimum until the first date of provisional hand over of the project .							
4	The payment certificate which prepared by manager of Public Works/ KDD technique, verified by District ADN engineer and approved by KDD Coordinator (Original) - **for payment of II PDD Project at 2012 and PDID only.**							
5	Term of Hand over of final project (Original)							
6	Final Inspection Sheet for retention							
7	Copy the Term of first/provisional Hand over of the Project							
8	Copy the document of the Valid Economic Activity License, minimum until one month from submission date of payment request (legalized). it **is not applied for KIK (Communitarian Project)**							
9	Copy document of the Valid Company Birth Certificate, minimum until one month from submission date of payment request **(legalized)**- it **is not applied to KIK(Communitarian Project)**							
10	Copy document of TIN(Identification of the Taxpayer contributions) it **is not applied to KIK(Communitarian Project)**							
11	Copy document of Company Ownership License – it **is not applied to KIK(Community Project)**							
12	Copy Bank Account Number of Company							
13	Copy Electoral Card of Director Company							
14	Documentation (Picture based physical progress.							
15	As Built Drawing Based on result of implementation - **only for payment of PDID Project.**							
16	Copy Design and BoQ which already approved – **for PDD project at 2012 only.**							

PDID	CHECKLIST A			Verified by	Approved by
Type of Project	Water Supply	Objective	Required Documents to be submitted		

Contract/Project No.		Date of Submission	_____ 201__
Project Name		Stage	Verification of Draft Contract Documents
Implementing Agency			

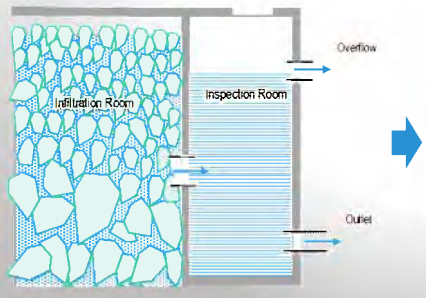
Check Item	Check Point	Date Checked	Tick	Remarks
	It is confirmed that all of those ducuments are submitted by KDD			Reasons of undelivered
1	Project Advertisement			
2	Conditions of Contract			
3	Contract Data			
4	Bill of Quantity			
5	Specifications			
6	Drawings			
7	Others if necessary			

Example Case

Issues 1: Construction

Design drawings are not necessarily accurate and not based on sound engineering. Therefore, majority of construction companies here related to water supply do not tend to rely on the drawings.

An Example: Good Design to Bad Result



Design of Intake Facilities

Construction without partition wall

Another Example: Bad Design to Bad Result

There is no monitoring tank in the design.

Issues 2: Inspection

Inspection is to ensure that the contractor's work is carried out in accordance with contract documents including design drawings and specifications of the project. The inspection is impossible theoretically when the drawings do not reflect the actual site condition.

The construction works has finished, but water cannot flow in the pipeline. Should the contract payment be paid?

Payment

In a case that water cannot flow

	Design	Construction	Payment
Case 1	Bad	Not carried out in accordance with contract documents	x
Case 2	Bad	Carried out in accordance with contract documents	?
Case 3	Good	Not carried out in accordance with contract documents	x

Thank You!!!
Obrigado Barak!!!

Overview of JICA Assistance to ADN and Way Forward

AND seminar on September 20, 2013

Southeast Asia and Pacific Department
Japan International Cooperation Agency (JICA)

Tasks of JICA Assistance to ADN

- Task #1) Facilitate efficient work flow of ADN and provide basic skill trainings for project inspection, review and monitoring (along with its Organic Law)
- Task #2) Clarify the role of ADN among Ministries; especially between ADN and MOF/MPS (development planning coordination), ADN and Line Ministries, such as MPW (technical operational coordination)

Overview of JICA Assistance (Initial Stage)

INPUTS	2011	2012				2013				2014
		I	II	III	IV	I	II	III	IV	
Dispatch of Short Term Experts		→								
- Expert on Road & Bridges		●	●							
- Expert on Ports		●								
- Water Sanitation			●							

Key Achievements: Developed training programs on basic skill development for major infra. project inspection, review, and monitoring, etc.

Overview of JICA Assistance (Basic Capacity Development)

INPUTS	2011	2012				2013				2014
		I	II	III	IV	I	II	III	IV	
Dispatch of JICA-ADN Expert Team				Phase I →			Phase II →			
- Expert on Road & Bridges #1				→			→			
- Expert on Road & Bridges #2				→			→			
- Expert on Power				→			→			
- Expert on Water				→			→			
- Expert on Port & Aviation				→						
Infrastructure Advisors (to supervise the team)				● ● ●			●	●		

Key Achievements: [Phase I:Jun -Nov, 2012] Development of ADN work manuals & check lists and OJT, etc / [Phase II: April – September, 2013] Harmonize ADN work manual & check lists with ADN daily work including updating them and OJT , etc

Overview of JICA Assistance (Planning for the Future)

INPUTS	2013				2014				2015			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Development Administration Advisor / Advisor to DG of ADN (Mr. Todoroki)												

Key Tasks: Assist in contract management / Assist in quality control of administrative works of ADN / Assist DG in designing organizational structure of ADN / Provide polic recommendations on establishment of EPIA based on PM's instruction/ Coordinate ADI with other JICA related assistance

Other Relevant Cooperation (Training Programs and Japan or Third Countries)

2011

- Training Program for Young Leaders for Timor-Leste/Urban Environmental Management Course

2012

- Economic Development Policies in Japan
- Maintenance of Mountain Road in Japan
- Road Administration in Japan
- Project Management Training in Philippines
- Study Visit to BAPPENAS, BAPPEDA, and NEDA

2013 (In Process)

- National Government Administration for Senior Officials in Japan
- Environmental Planning for Sustainable Tourism in Singapore

Other Relevant Cooperation

- Road Policy Advisor to MPW (~2014)
- Advisor on Improvement of Water Supply System to DNSA (~2014)
- Dili Urban Master Plan (~2014)
- Port Management Advisor (~2015)
- Aid Coordination Advisor to MOF (~2014)

Way Forward :JICA's future cooperation

- Identifying Concrete Roles of ADN in TL Government

  【Task 1】Defining the scope of works of ADN
- Designing Organizational Structure

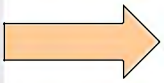
  【Task 2】Well designing organizational structure in accordance with the defined scope of works

→ **Development Administration Advisor could support**

Way Forward :JICA's future cooperation

- Strengthening Coordination Mechanism with Line Ministries

  【Task 3】Establishing coordination task forces and meeting bodies with line ministries

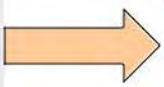


JICA-ADN Team is supporting the effort / relevant Advisors to line ministries, such as MPW, could support in facilitating coordination with the line ministries

Way Forward :JICA's future cooperation

- Continuing Improvement of Basic Skills in Engineering and Evaluation

  【Task 4】Promoting Self-study



JICA-ADN Team prepared educational materials, which will be useful for daily works, through the class room lectures / Opportunity of JICA's Long Term Training in Economics and Public Administration

Way Forward :JICA's future cooperation

- Strengthening Development Planning Capacity

  【Task 5】Capacity Development in socio-economic analysis, development planning and budgeting, etc.

Development Administration Advisor could support / Opportunity of JICA's Long term training / New Technical Cooperation Project for capacity development once PM's decision is made

Thank you!