Final Progress Report
May - December 2009

Village Infrastructure Development and Employment Creation through Pro-Poor Employment-Intensive Investments

in

Dak Sorsor Settlement Area
Battambang, Cambodia

by
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International Labour Organization

1 Executive Summary

This report presents and summarises the full details of the consultant site visits, surveys, work inspections relating to the design and improvement of village infrastructure in the settlement of Dak Sorsor in Battambang Municipality. A village access road connects Dak Sorsor to National Road No 57. This access road is also the main access that connects people in Andong Bring and Beng Reng to the national road. People in these villages mainly rely on agriculture. Most of the farm land is rice fields. Some farms have access to irrigation but most farmers only grow one single crop. Dak Sorsor village is regarded as one of the poorest settlements in the municipality. All the villages suffered from bad road conditions during the rainy season.

The project has provided support to the municipal government of Battambang in its efforts to reduce poverty through pro-poor infrastructure investments and the use of employment-intensive work methods to improve living conditions and at the same time provide cash employment. The improvement works included upgrading of village access roads, drainage, water supply systems and sanitation.

2 General Information

Dak Sorsor is a settlement located at the outskirts of Battambang town, comprising of 206 households with a total populations of 1,093 inhabitants (566 female – 527 male). Most of the inhabitants were repatriated from the refugee camps in 1992 at which time the government provided land to individual households through registered land title deeds. The settlement is situated in a lowland area prone to flooding which made roads inaccessible and without proper drainage and sanitation cause bad living conditions particularly during wet season. Most of the households in this area are living without any proper sanitation facilities. In general, the living standard of the population is considered among the lowest in the municipality.

3 Investment Priorities

To establish a list of priority improvements in the project area, a meeting was held on 21st of May, 2009. The meeting included participants from the community, local authorities, representatives of the Provincial Department of Rural Development (PDRD), deputy governor of Battambang town and the commune council chief. The

meeting agenda focused on the priority selection process to identify the priorities for project investment based on the criteria as specified below:

- Access situation
- Population (number of people living along road alignments)
- Economic viability
- Tourism potential
- Sanitary and health conditions

The meeting gathered a total of 100 persons. About 55 % were women. Three community members were elected for liaison with the Project Management Team.

Problems Found:

- Bad road conditions in the wet season, many roads damaged by floods,
- Lack of funds for road maintenance (no drainage and culverts),
- Lack of support from government and development organisations,
- Lowland area,
- Poor sanitation facilities (lack of toilets),
- Poor access to clean water,
- No road maintenance committee and
- No water user management committee.

The table below indicates the priority list of project investments by categories:

Priority	Priority class	Type of Investment	Quantity	Location	remark
1st	1	Roads & drainage	0.9 km	Dak Sorsor	Road Improvement
	2	Roads & drainage	2.6 km	Dak Sorsor to Angpo	Road improvement
2nd		Culverts	11 no	Daksorsor & Angpo	cross road drainage
3rd		Sanitation (latrines)	30 no	Dak Sorsor (repatriated)	Poor households & school
4th		Filtration system & clearing ponds	2 sets	Dak Sorsor	Clean water
5th		Rain water collection	2 sets	Dak Sorsor (church & school)	Water storage

Design Standards

Careful consideration was given to the following factors while deciding on the design standards for the works:

- Avoidance of unnecessary demolition of the existing structures and any other negative environmental effects;
- Possibility of future incremental upgrading of works by the community;
- Compliance with existing municipal standards so as to facilitate linking to other municipal services;
- Ownership and maintenance of the community infrastructure.

A topographical survey and layout plan of the area were developed by the local consultant. The consultant was accompanied by the Community Task Force during the surveys and for identifying plot boundaries, roads and drainage works. The Task Force assisted the project in dealing with the individual home owners who had encroached upon public land and to remove obstacles from the road and the right of way. Based on the survey reports, layout plans for roads and a drainage plan for the area was developed and shared with the community and the relevant technical departments.



Contract and Bidding Process

The ILO local consultant prepared bidding documents for the proposed works and invited bids from local small-scale contractors who had prior experience in similar type of works from Battambang. The contracts were awarded through local competitive bidding. Bids for the various types of works were evaluated and the recommendations for the award of works were submitted to the ILO in Bangkok. The choice of successful bidders was shared with the Task Force. The following contracts were awarded to the successful bidders:

Item / Description	Amount US$	Remarks
Road improvement and culvert installation	**12,494.00**	Contract No: ILO Urban-BB-09-01
Gravel surfacing works	**15,495.00**	Contract No: ILO Urban-BB-09-02
Road & drainage works	**11,855.00**	Contract No: ILO Urban-BB-09-03
Water supply and sanitation improvement	**14,907.98**	Contract No: ILO Urban-BB-09-04
Total	**$54,661.98**	

Monitoring and Supervision

All the monitoring and supervision for the infrastructure activities was done by the ILO ASIST-AP in active collaboration with the Task Force and the municipal and commune authorities.

4 Description of Works Components

Road and Street Improvement Works

The labour-based road works executed in the settlement area are shown in the index plan. The total road length is 3,503 metres consisting of access roads to Dak Sorsor and Angpo as well as streets inside Dak Sorsor. The road works comprised of:

- Embankment works in low areas to raise the level of road above the flood level,
- Reshaping of existing roads to camber,
- Provide a 15cm thick compacted laterite gravel surface.




Drainage Works

Drainage works comprised of excavating trapezoidal road side drains on both side of the village streets in compliance with the drainage plan for the settlement area. Drains in front of each house were provided with a 1.0 metre wide, 0.7m concrete slab to provide access to the adjacent plots. 27 such slabs were installed across the 240 metres of solid brick masonry side drains.

In addition, 3 pipes culverts (500mm) with brick masonry side walls and 5 concrete pipe culverts (600mm), 2 pipe culverts (800mm) and 1 pipe culvert (1000mm) were constructed at designated points along the road for effective cross-drainage and discharge of floodwater.




Sanitation

30 pour flush latrines were constructed, benefiting the poorest households to improve sanitary conditions. The households were identified in consultation with the Task Force.

5 Potable Water

Initially, it was proposed to construct water wells with hand pumps at designated locations to cater for the potable water needs of the residents. Unfortunately, water was not found up to 100- 200 meter depth in this area. The Water Unit in PDRD informed the project that several earlier attempts to drill for water had been unsuccessful. This problem was discussed in a community meeting and as an alternative it was agreed to clean up the ponds, install a water filtration system and build tanks for rainwater harvesting.



6 Rain Water Harvesting

Rain water harvesting is quite popular throughout Cambodia. The project installed tanks in two locations for rainwater harvesting for people to use together. These places were chosen in consultation with the village Task Force.



7 Work Plan

The above mentioned works were executed as per the following work plan.

WORK PLAN - VILLAGE INFRASTRUCTURE BATTAMBANG

Item / Description	2009							
	May	June	July	Aug	Sep	Oct	Nov	Dec
Approval of the project								
Approval of detailed works programme								
Discuss selection of site with local authorities and the community								
Community meeting for identi-fication of infrastructure works								
Conduct technical survey								
Agreement with local inhabitants, the Governor and local authorities								
Preparation of bidding documents for the various works components								
Short-list local contractors and invite for tenders								
Identification of contractors and local suppliers								
Award of works								
Execution of infrastructure work								
Supervision								
Progress reporting								
HIV/AIDS training for the community, contractors and the workers employed in the project								

8 Project Linkage to Decent Work Priorities

The pilot project in all aspects of its engagement supported the creation of productive employment opportunities for people living in poverty in compliance of the Decent Work Agenda and the Government Rectangular Strategy. The decent work indicators and International Labour Standards were suitably integrated and reflected in the contracts offered to the contractors – with the following particular references:

- the freely exercised right of workers, without distinction, to organise, to further and concerned and to defend their interests as well as the protection of those workers who exercise their right to organise;
- prohibition of forced or compulsory labour in all its forms;
- equal remuneration for men and women for work of equal value;
- prohibition of employment of children;

- equality of opportunity and treatment in respect of employment and occupation without discrimination on grounds of race, colour, sex, religion, political, opinion, national or social origin.

9 Physical Progress of Work and Employment Creation

The following summarises the physical progress and employment in terms of various activities.

PHYSICAL WORKS PROGRESS Location : Dak Sorsor Settlement						
Description / Activity	Employment Creation (workdays)					
	Planned			Actual		
	M	F	Total	M	F	Total
Contract No 01 Construction of Dak Sorsor - Angpo Road (Earthworks and culverts)						
- 5 Pipe culverts (Ø 600mm. 5.0m length)	100	50	150	160	20	180
- 2 Pipe culverts (Ø 800mm. 5.0m length)	65	15	80	85	10	95
- 1 Pipe culverts (Ø 1000mm. 5.0m length)	35	5	40	45	5	50
- Road (earthworks)	450	360	810	460	319	779
Sub total	**650**	**430**	**1080**	**750**	**354**	**1104**
Contract No 02 Construction of Dak Sorsor - Angpo Road (Gravel surfacing)						
- Spreading gravel	470	200	670	490	207	697
Sub total	**470**	**200**	**670**	**490**	**207**	**697**
Contract No 03 Improvement of roads and drainage in Dak Sorsor						
- Lining of side drains (masonry works)	180	60	240	200	30	230
- Side drain excavation	20	20	40	20	16	36
- Cover side drain	5	5	10	11	0	11
- Earthworks and gravel works	250	250	500	421	100	521
- 3 Pipe culverts (Ø 500mm. 4.0m length)	50	40	90	90	0	90
Sub total	**505**	**375**	**880**	**742**	**146**	**888**
Contract No 04 Small Civil works						
- Pour flush latrines (30 No)	350	190	540	383	50	433
- Water Filtration System (2 No)	60	0	60	78	0	78
- Rain water harvesting (2 No)	50	0	50	43	0	43
- Clearing ponds (2 No)	30	30	60	58	5	63
Sub total	**490**	**220**	**710**	**562**	**55**	**617**
Total	**2115**	**1225**	**3,340**	**2,544**	**762**	**3,306**

Gender distribution:
Male - 77 % female - 23 %

10 Recommendations

The ILO's unique approach lays special emphasis on employment and decent work in all aspects of its engagement. This decent work approach could lead from pilot projects to upgrading living conditions across the country and at the same time creating productive employment through:

- Improving basic urban infrastructure in their settlements such as water supply, shelter, sanitation, roads, rain water collection and drainage,
- Incentives for community driven initiatives for planning, management and maintenance of such initiatives,
- Promoting rights of the urban and rural poor to decent livelihoods and thus demand their share for developmental activities from the national budget,
- Improving their access to basic health, education and communication facilities in their habitat.
- Improving income generation opportunities through skills development.

Urban Poverty Infrastructure Pilot Project, Battambang
Term of Reference of the Community Task force

The Community Task Force comprising of three elected members from the community shall be responsible for the following:

- Liaise with the community for the smooth implementation of the infrastructure works,
- Collaborate with the project in the identification of contractors for civil works,
- Collaborate with the project in the recruitment of skilled and unskilled labour for the works implementation,
- Assist the project management and the contractor in the removal of any encroachments by individual community households which interfere with the implementation of the infrastructure works,
- Assist the contractors in all logistics and other arrangements for safe keeping of their tools and equipment with the communities during works implementation,
- Participate in the identification of poorest households for the implementation of sanitation works,
- Identify appropriate locations for rain water harvesting and water filtration system,
- Assist in reaching an agreement with the inhabitants for future maintenance of the streets and access roads, rain water harvesting, filtration system and drainage,
- Assist the project in monitoring works carried out by the contractors and provide feedback to the communities and the project management in case of any problems.

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Pilot Project Rehabilitation of Urban Infrastructure

WORKPLAN AND PHYSICAL PROGRESS

Rehabilitation of Dak Sorsor to Angpo Road *(Earthworks and Culverts)* ILO-Urban-BB-09- 01

ACTIVITY	Unit		Quantity	2009					Complet. %
				Aug	Sep	Oct	Nov	Dec	
1- Earthworks									
1.1- Clearing	m^2	Plan	1,400		400	1000			100
		Actual	1400		1,000				
1.2- Raise level of existing road	m^3	Plan	813		300	513			100
		Actual	813		30		600	183	
1.3- Reforming camber	m^2	Plan	5,100		3000	2100			100
		Actual	5100				3500	1600	
1.4- Turfing	m^2	Plan	480			480			100
		Actual	480					480	
2- Pipe Culverts									
2.1- Culvert dia. 60cm	no	Plan	5		3	2			100
		Actual	5				4	1	
2.2- Culvert dia. 80cm	no	Plan	2		2				100
		Actual	2				1	1	
2.3- Culvert dia. 100cm	no	Plan	1			1			100
		Actual	1				1		

Note : Contractor Started on 01-09-09

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Pilot Project Rehabilitation of Urban Infrastructure

WORKPLAN AND PHYSICAL PROGRESS

Rehabilitation of Dak Sorsor - Angpo Road (Gravel Surfacing) ILO-Urban-BB-09- 02

ACTIVITY	Unit	Quantity		2009					Complet. %
				Aug	Sep	Oct	Nov	Dec	
1- Gravel works									
1.1- Laterite spreading	m^3	Plan	1,185					1,185	100
		Actual	1,185					1,185	

Note : Contractor Started Work on 02 -12 - 09

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Pilot Project Rehabilitation of Urban Infrastructure

WORKPLAN AND PHYSICAL PROGRESS

Rehabilitation of Roads and Drainage in Dak Sorsor Village — ILO-Urban-BB-09- 03

ACTIVITY	Unit		Quantity	2009					Complet. %
				Aug	Sep	Oct	Nov	Dec	
1- Earthworks									
1.1- Clearing	m^2	Plan	1,806		600	1,206			100
		Actual	1,806		1,806	0			
1.2- Raise the level of existing road	m^3	Plan	201		201				100
		Actual	201		169	0	32		
1.3- Reforming camber	m^2	Plan	1,600		1200	400			100
		Actual	1600		1200	60	340		
1.4- Side drain excavation	m^2	Plan	43		43				100
		Actual	43			43			
2- Gravel Surfacing									
2.1- Laterite surfacing	m^3	Plan	378		120	258			100
		Actual	378		126	182	70		
3- Structures									
3.1- Culverts	no	Plan	3		2	1			100
		Actual	3			3			
3.2- Side drain masonry works	m	Plan	240		180	60			100
		Actual	240		0	240			
3.3- Cover side drains	no	Plan	27		10	17			100
		Actual	27		0	27			

Note : Contractor Started Work on 0 1-09-09

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Pilot Project Rehabilitation of Urban Infrastructure

WORKPLAN AND PHYSICAL PROGRESS

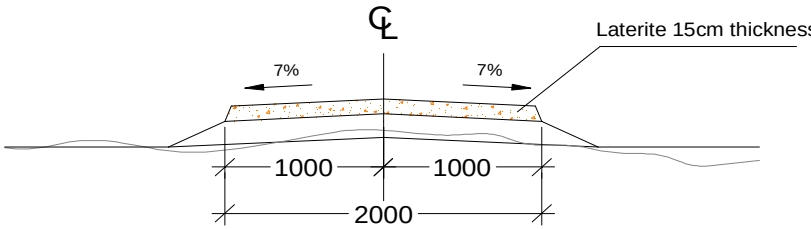
Civil works in Dak Sorsor Village

ILO-Urban-BB-09- 04

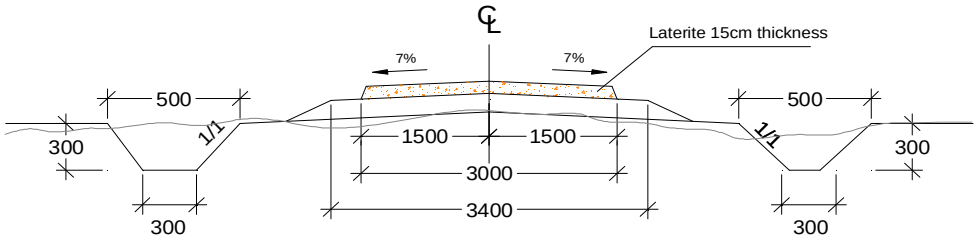
ACTIVITY	Unit	Quantity		2009					Complet. %
				Aug	Sep	Oct	Nov	Dec	
1- Cilvil work									
1.1- Rain Water harvesting	No	Plan	2				2		100
		Actual	2.0			0.5	1.5		
1.2- Water filtration System	No	Plan	2				2		100
		Actual	2.0				2		
1.3- Clearing Ponds	m^2	Plan	2,234			1,000	1,234		100
		Actual	2,234				2,234		
1.4- Pour Flush Latrines	no	Plan	30			3	17	10	100
		Actual	30			2	28		

Note : Contractor Started Work on 28 -10 - 09

Existing Road Levels and Typical Road Cross Sections

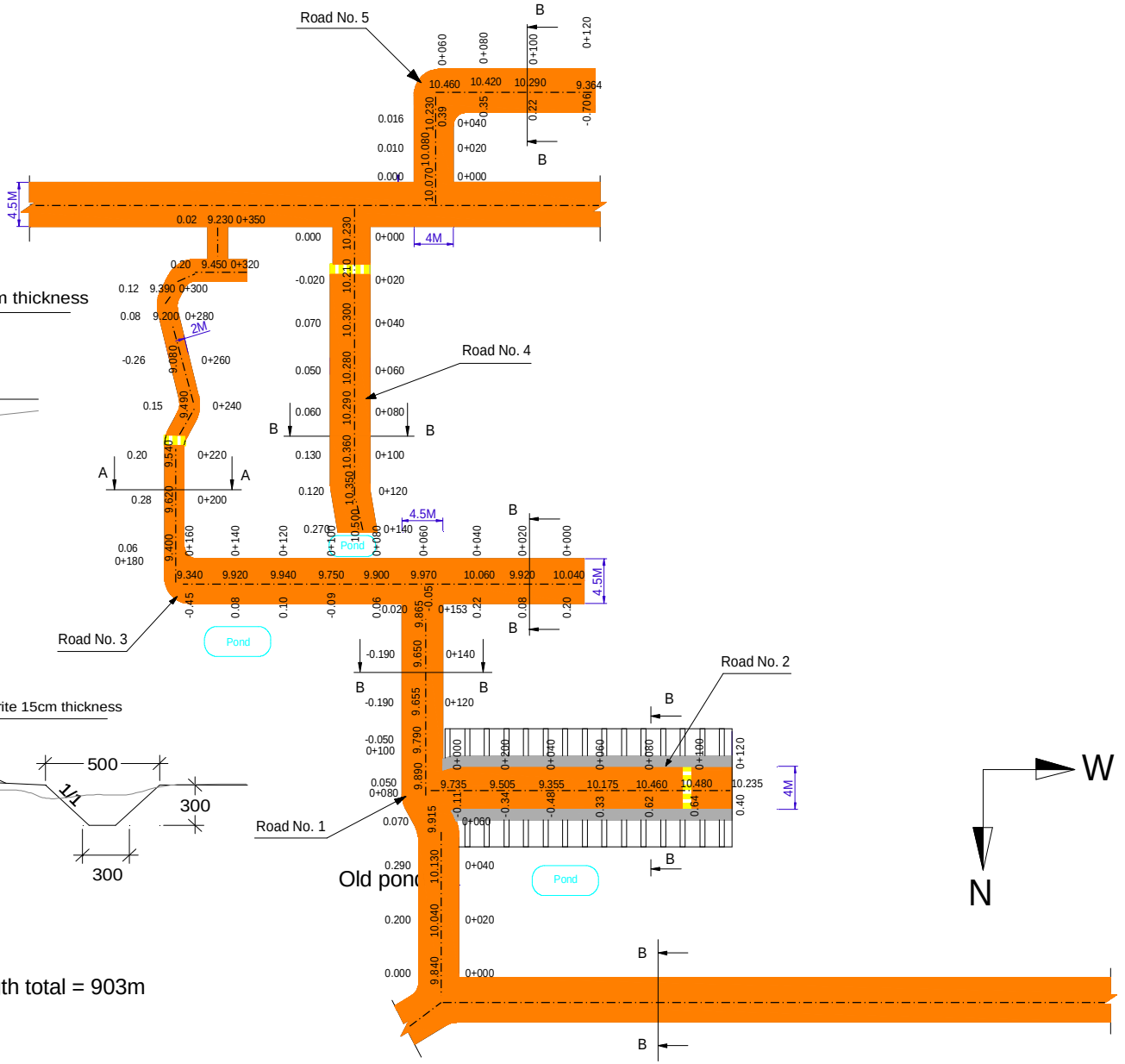


Section A-A

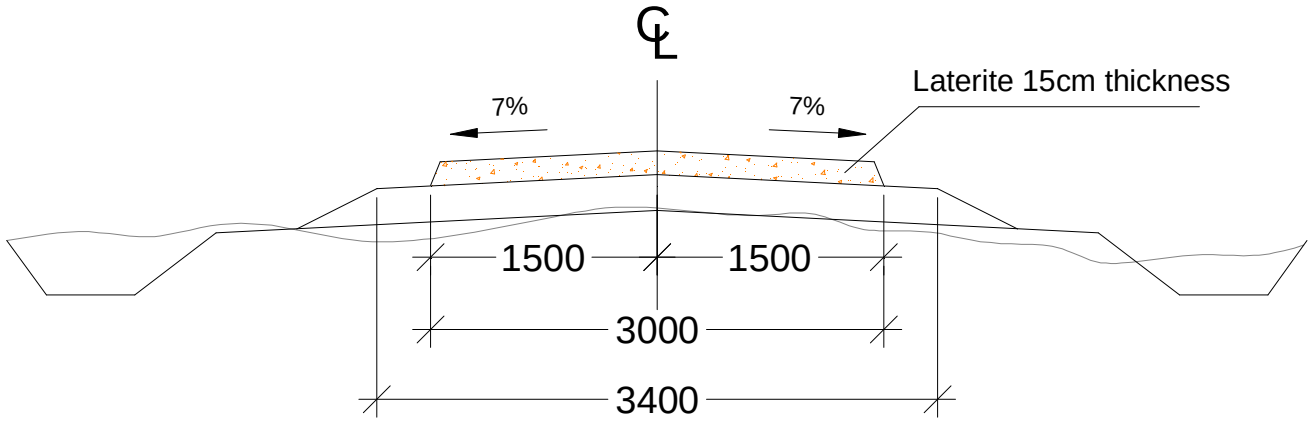


Section B-B

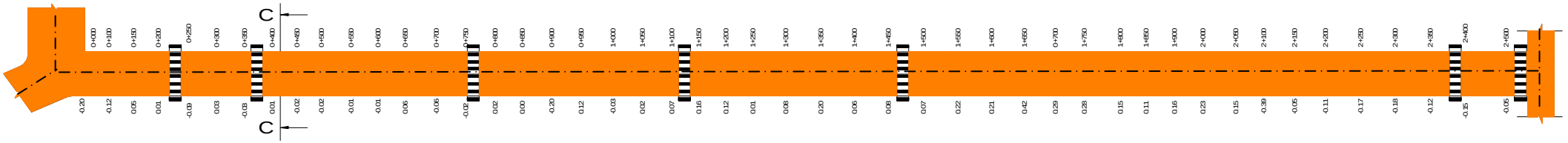
Road Length total = 903m



Existing Road Levels and Typical Road Cross Section



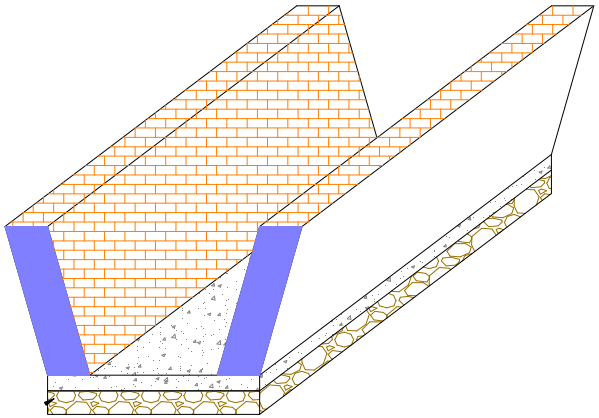
Section C-C

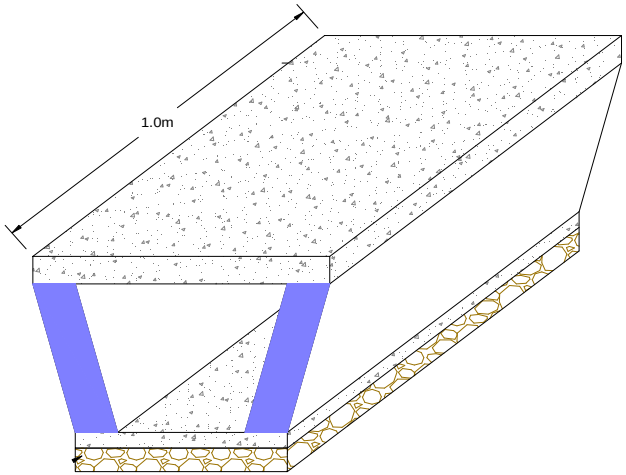


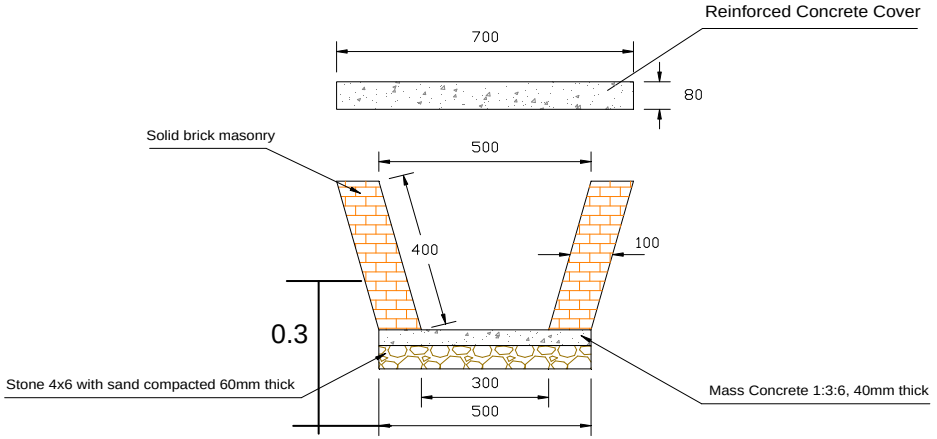
W
N

Road Length total = 2600m

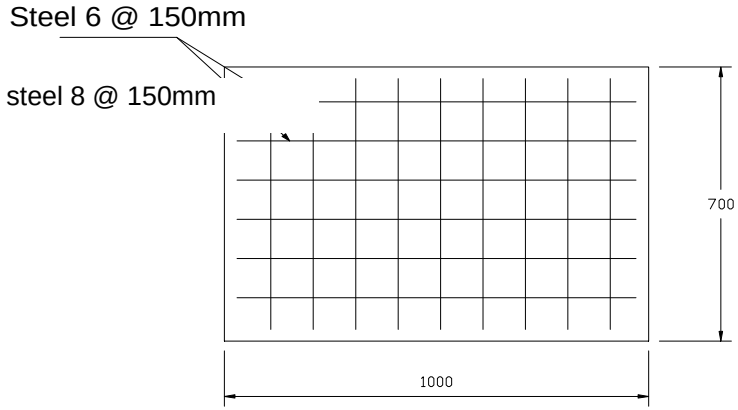
Lined Side Drain of Solid Brick Masonry





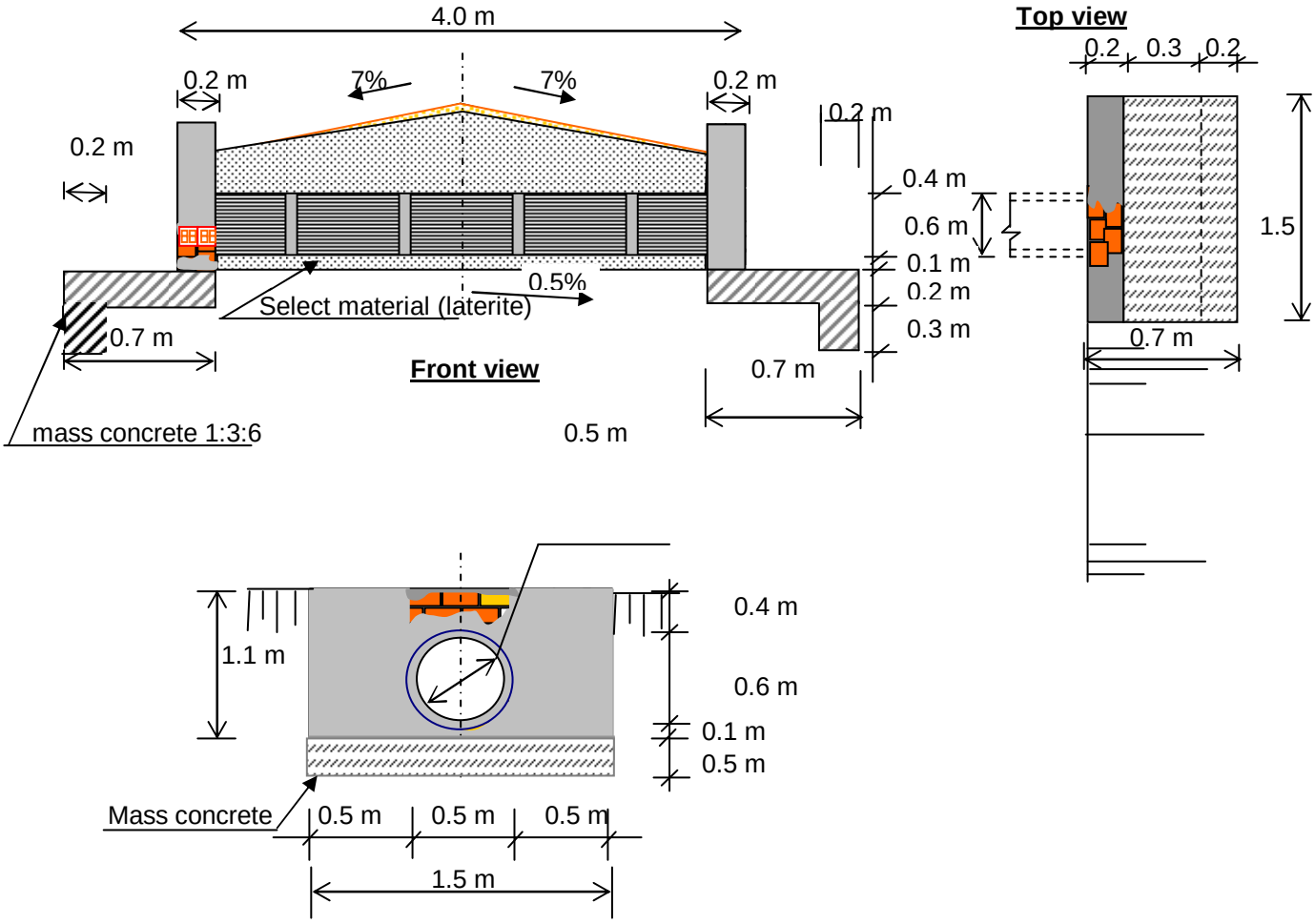


Section of Brick Masonry

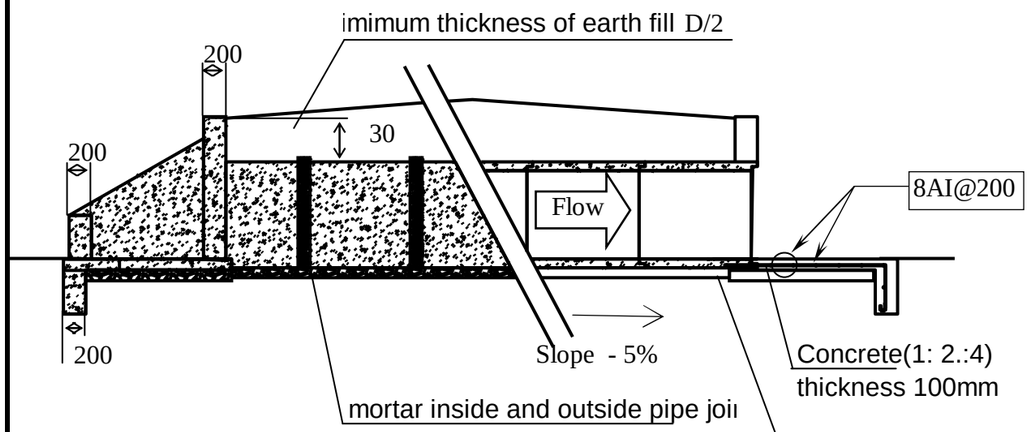


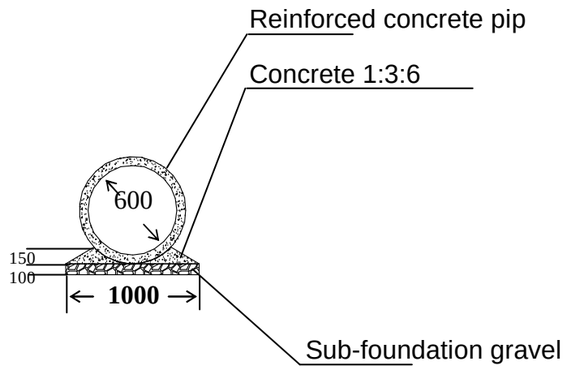
Bar Schedule

Concrete Pipe Culvert (ø 500 mm)

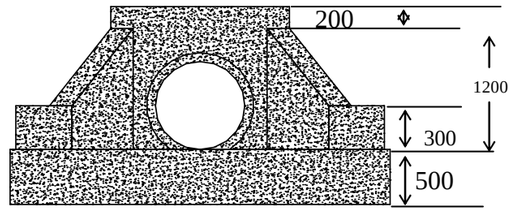


Standard Drawing of Single Row Pipe Culvert

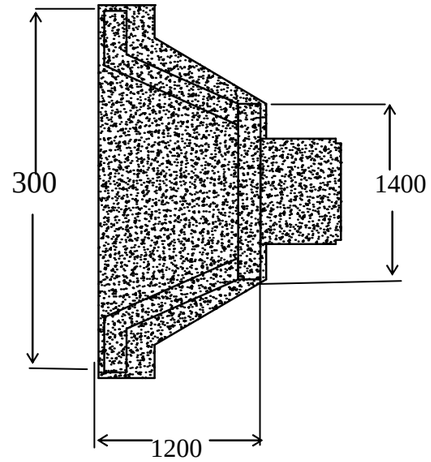




CROSS SECTION



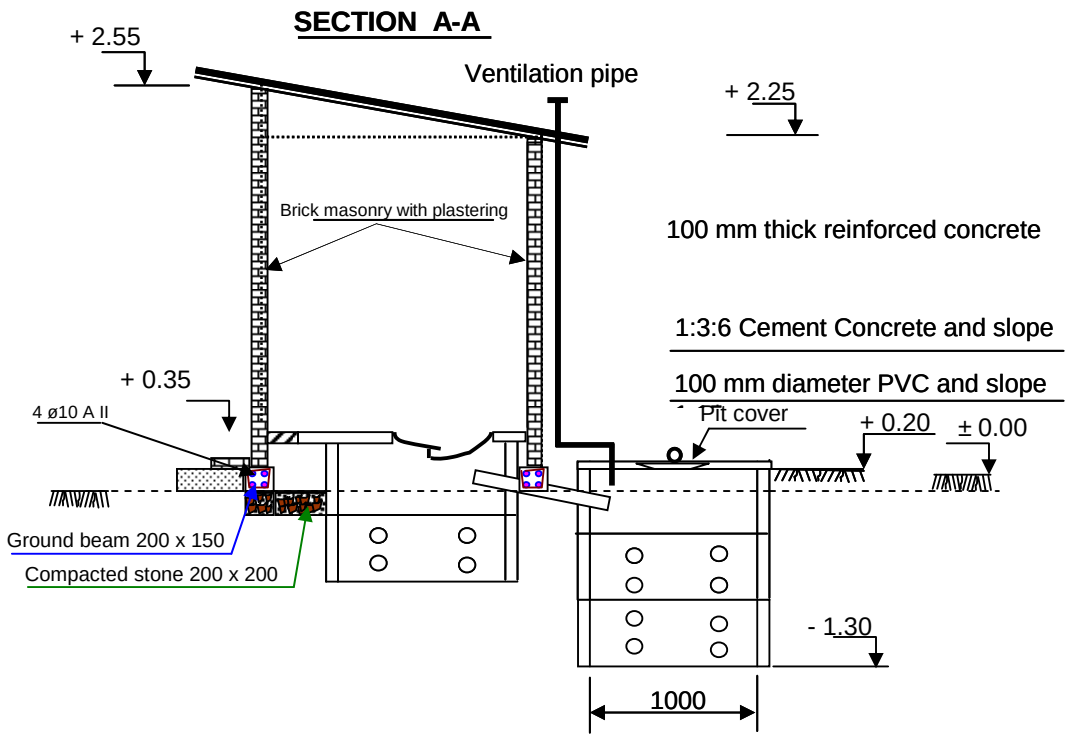
FRONT VIEW

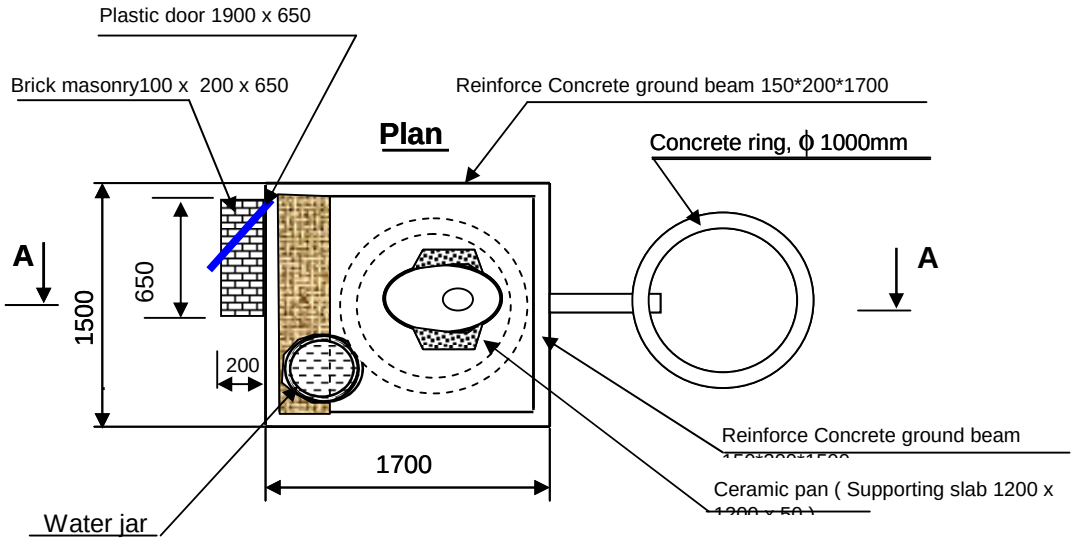


PIPE DIAMETER (MM)	**D**	**600**
PIPES IN 1 LINE	**N**	**5**

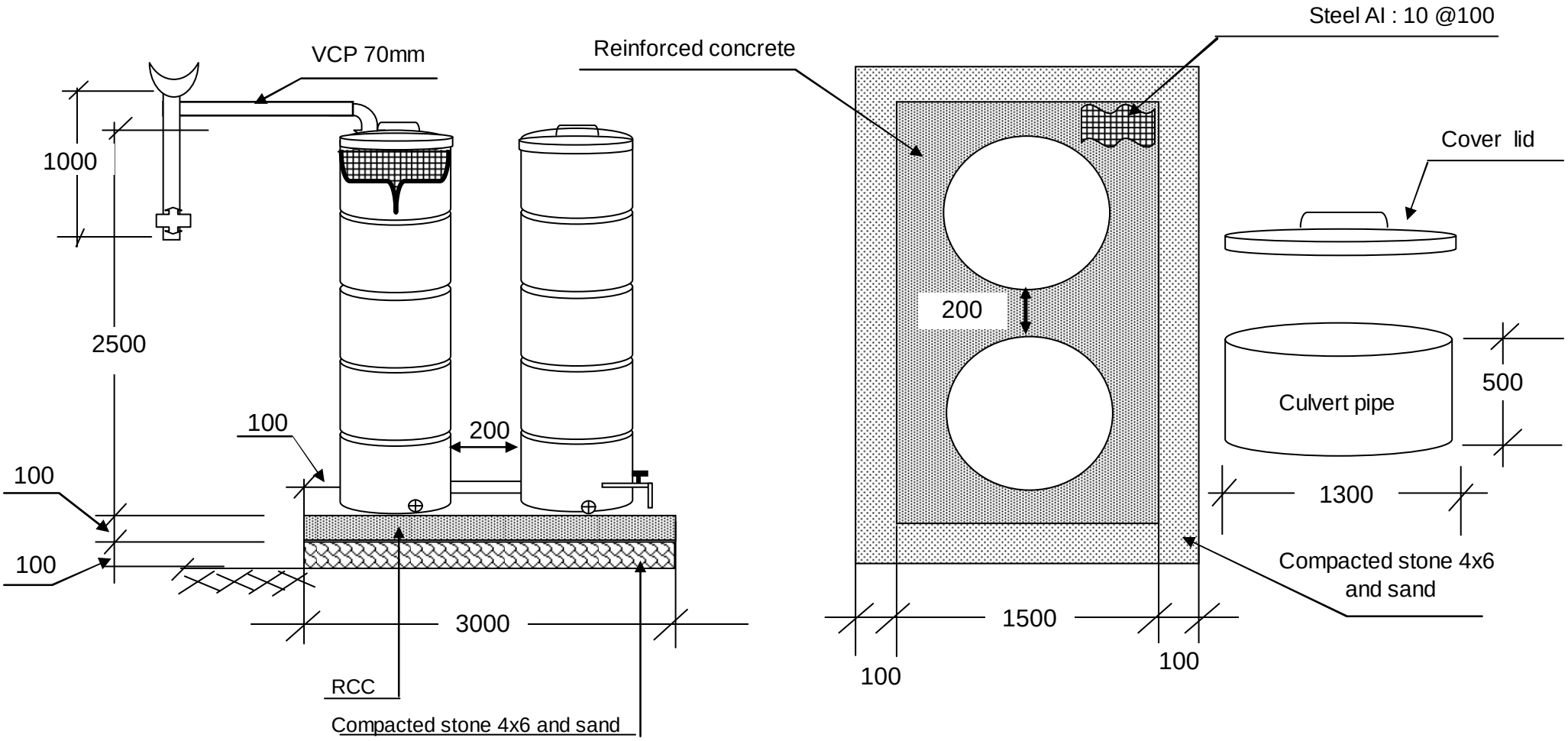
INTERNATIONAL LABOUR ORGANIZATION			
Pilot Project-Rehabilitation of Urban Infrastructure			
Province : Battambang			
Road Name : DakSor Sor - Angpo			
Type of work Reinforcement concrete Pile culvert			
Prepaired by:		Checked by:	
SHEET 1 OF 1		NOT TO SCALE	

Family Latrine in rural area (High groundwater table)

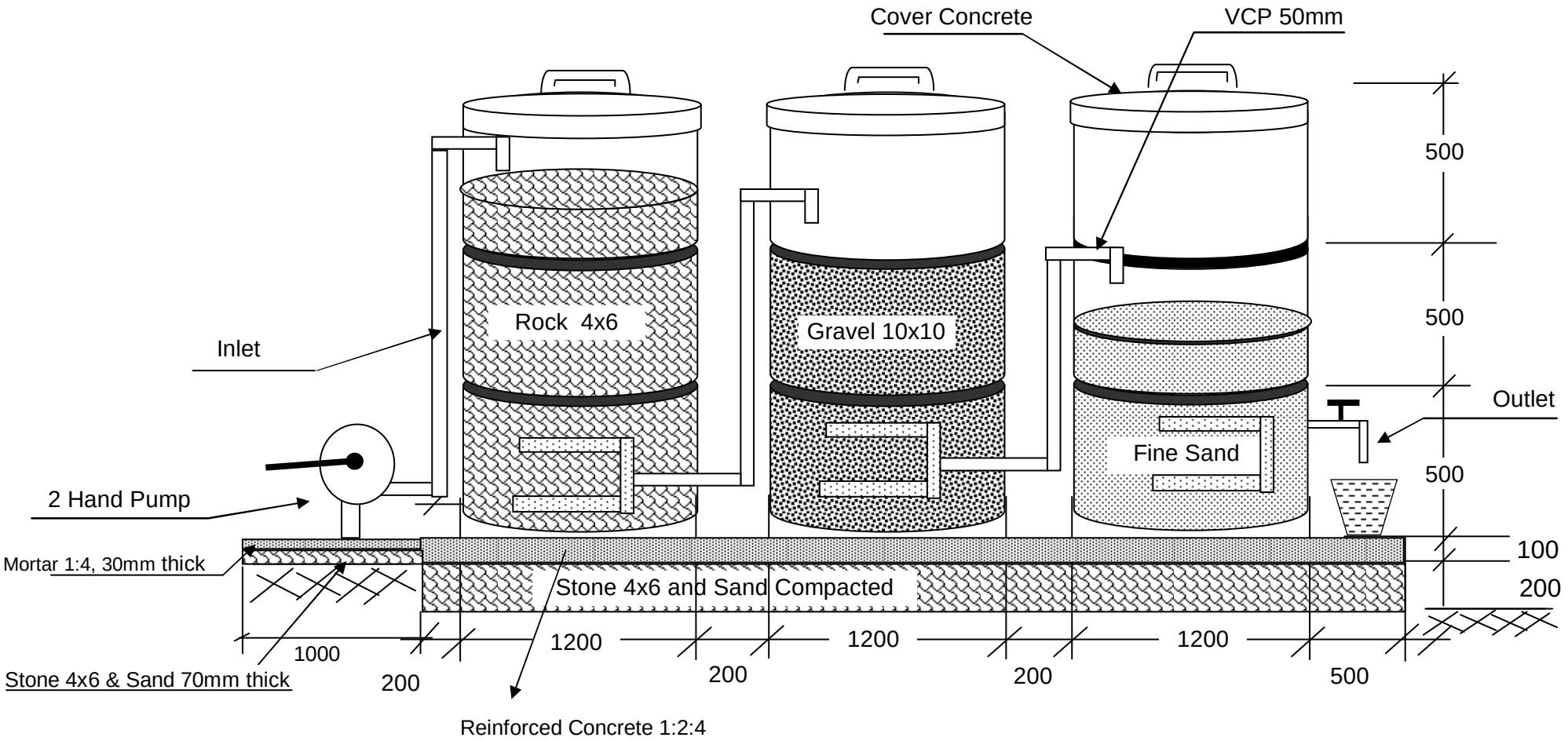




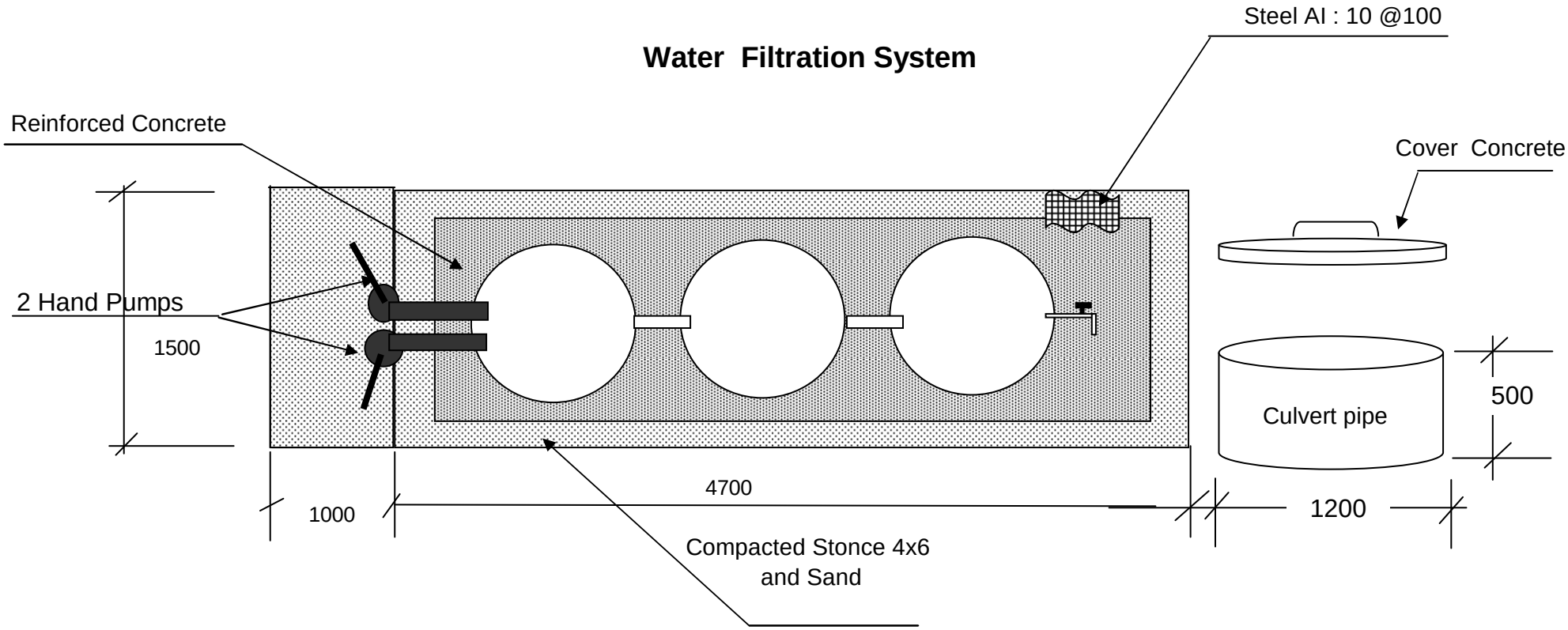
Rain Water Collection



Water Filtration System



Water Filtration System



Top view

Before – Typical condition of road

After – condition of road

Before – Typical condition of pond

After – condition after clearing

Before – Typical drainage conditions

After – installed drainage

Before – Original condition of road

After – Improved village road

Before – Typical condition of sanitation

After – Provided pour flush latrine

Before – Original road to Angpo

After – Improved road to Angpo

Road improvement works in Dak Sorsor

Bush clearing

Grubbing

Surveying and setting out

Earthworks

Earthworks

Earthworks

Road construction works

Earthworks

Spreading gravel

Compacting gravel surface

Spreading gravel

Installing pipe culvert

Setting out culvert

Drainage and water supply works

Building apron at culvert outlet

Culvert abutment wall

Side drains with brick masonry lining

Completed culvert with abutments

Cleaning pond

Water filtration

Completed works

Improved drainage

Proper sanitation

Improved water supply

Water filtration

Water harvesting tanks

Project signboard