



<p>PHU BIA MINING CONSULTANTS CO., LTD. 10/100, PHOU KHOUA, VIENTIANE, LAOS PHONE: 856 21 222 181, 856 21 222 182 PROJECT NO. 113030</p>	<p>THIS DRAWING IS CONFIDENTIAL AND IS THE SOLE PROPERTY OF BAN HOUAYXAI AND IS LOANED SUBJECT TO THE CONDITION THAT IT IS NOT TO BE REPRODUCED OR USED IN ANY MANNER WHATSOEVER FOR THE BENEFIT OF ANYONE OTHER THAN BAN HOUAYXAI. ANY VIOLATION WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.</p>	NO.	DATE	DESCRIPTION	BY	CHECKED	DATE	REVISION	BY	
<p>PHU BIA MINING LIMITED</p>		<p>BAN HOUAYXAI GOLD/SILVER PROJECT</p>			<p>DESIGN BY: [] CHECKED BY: [] DATE: 20/03/11 DRAWN BY: [] DATE: 20/03/11</p>		<p>PROJECT NO. 113030 SHEET NO. 1 SCALE 1:500 DATE: 20/03/11 DRAWN BY: []</p>			

Name of Project : **Consultancy Services for Detailed Design of Pontoon Raw Water Pumps and Barge**

Location : Ban Houayxai Lao PDR.

Client : Phu Bia Mining Limited, LAO PDR

Duration : February 2011 - December 2011

Narrative Description : Detailed Design of Pontoon Raw Water Pumps and Barge consist as following :

1. Detail design for fire water pumps and fire hydrant.
2. Design of general arrangement around Raw Water Pump such as Pumps, Tanks and Suction/Disc Piping.
3. Design of Structural support for steel pipeline 16" diameter culvert as per AISC and ACI standard
4. Structure design rating of existing culvert/bridge to determine its structure's safe load, uniform load and truck load.
5. Re-calculation of structure design for "MB Workshop (1/2)" building that sufficient for 10 tons overhead crane load movement.
6. Calculation work of PBM raw water pipeline that suitable for flow rate and velocity range.
7. Detailed Design of Barge.
8. Detailed design of Pontoon raw water pumps.

- Services Description** : Project Detailed Design scopes of services are as following :
- Detailed engineering design and Calculation works for Pontoon Raw Water Pumps, Barge and general arrangement around Raw Water Pump.
 - Prepare for Specification, Bill of Quantities and Estimate Budget Cost.