METHOD STATEMENT

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WASTE WATER TREATMENT PROJECT

CONTRACT NO: 00i-4E-0008807654A

TITLE:

CIVIL POND WORK

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CONTRACTOR:

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REVISION CONTROL SHEET

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Attachment:

- **Attachment-1……Permit of Work Form**
- **Attachment-2……ERP Notification**
- **Attachment-3…… ITP**

1) INTRODUCTION

This civil Method Statement defines the procedure to carry out the pond work as per requirement in WWT project to ensure the safety and quality of the work.

2) DEFINITION

Definition Within the contents of this specification shall be as follow:

- The “OWNER” shall mean Amperro De Achoz Corporation.
- The “CONTRACTOR” shall mean DdNyca, PTE Ltd.

3) SCOPE OF WORKS

This procedure describe that for excavation activity, rebar installation, formworks, concrete pouring, curing of concrete, formwork dismantling, finishing, and other civil work base on civil work item list.

4) MATERIALS

The material should be use in the activity;

***Figure 4.1**: Materials*

No	Item	Class	Specification
1	Rebar D 13 for dowel		SNI07-2052-2002/BJTS40
2	wiremesh M10 for reinforcement		JIS G 3551 with grade WFR
3	Anchor bolt with template setting	(By Contractor)	
4	Polyethylene sheet & geomembrane HDPE 2mm for waterproofing		GRI GM 13,
5	Embedded steel	(By Contractor)	
6	Waterstop & Bitumen for construction joint		SIKA WATERBAR FLEXIBLE PVC WATER STOP SIKA BITUSEAL T-130 SG
7	Plywood 12 mm & support for formwork		KELAS-1
8	Lean concrete fc’150 Kg/cm2 and structure concrete fc’ 250 Kg/cm2		

9	BRC for fence		SNI07-2052-2002/BJTS40
10	Embedded parts & pipe	By Other	

5) SCHEDULE AND ORGANIZATION CHART

Bikinlah bagan organisasi disini bro!!!

***Figure 5.1**: Organization Chart*

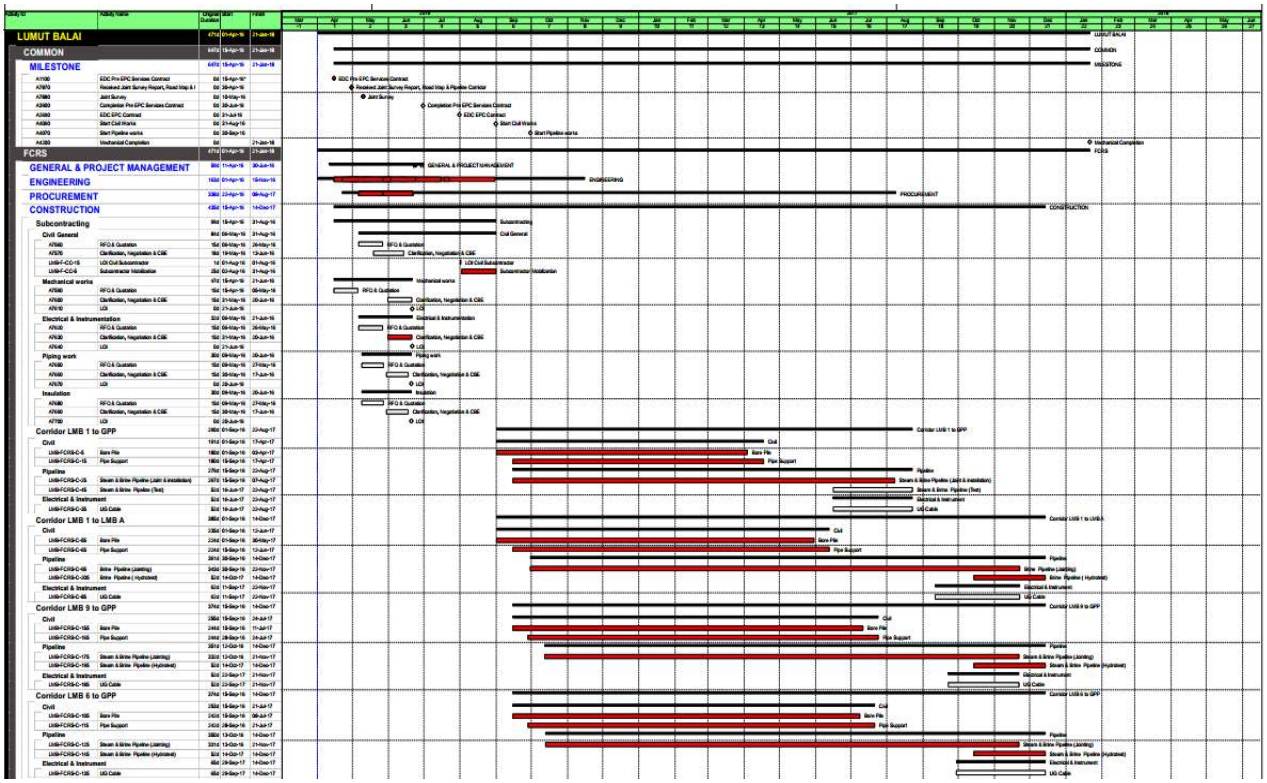

***Figure 5.2**: MasterSchedule*

6) CONSTRUCTION EQUIPMENT

Pond work consist of general excavation backfilling and Concrete work, general excavation and backfilling equipment will provided as mention in doc. No …… and concrete work will be used as mention below:

- Concrete work equipment (Refer to Doc. ……..)

- Truck mixer and concrete pump
- Crane and truck
- Scaffoldings and accessories,
- Formwork and accessories,
- Lighting in situational (If needed),
- Hand tools
- Hand Cutter, HDPE Weld machine

7) MANPOWER

Direct manpower shall be allocated as following:

1. Foreman
2. Concrete worker
3. Carpenter
4. Batching plant Operator & Crew
5. Truck mixer operator
6. Concrete pump operator
7. General Labour
8. Masson
9. Rebar men
10. Surveyor
11. Mechanic & electrician
12. HDPE Welder

8) METHOD OF WORKS

The general activity to construct the pond describe on chart below, at cluster #9 the pond area positioned on existing pond, there are water, HDPE geo membrane, and also wider than the design,

Over all the existing pond will reconditioning and reshape to design parameter and the water will free with construct open drainage, connecting the both pond and to existing drainage, because of elevation deviation the water will flow by self and the geo membrane will cut piece by piece and remove it to other place.

And before earth work activity, the remaining water will pump by excavator and mud, sediment material will transfer nearby area to make it dry by self, and it will reuse and/or mixing with good soil as filling material.

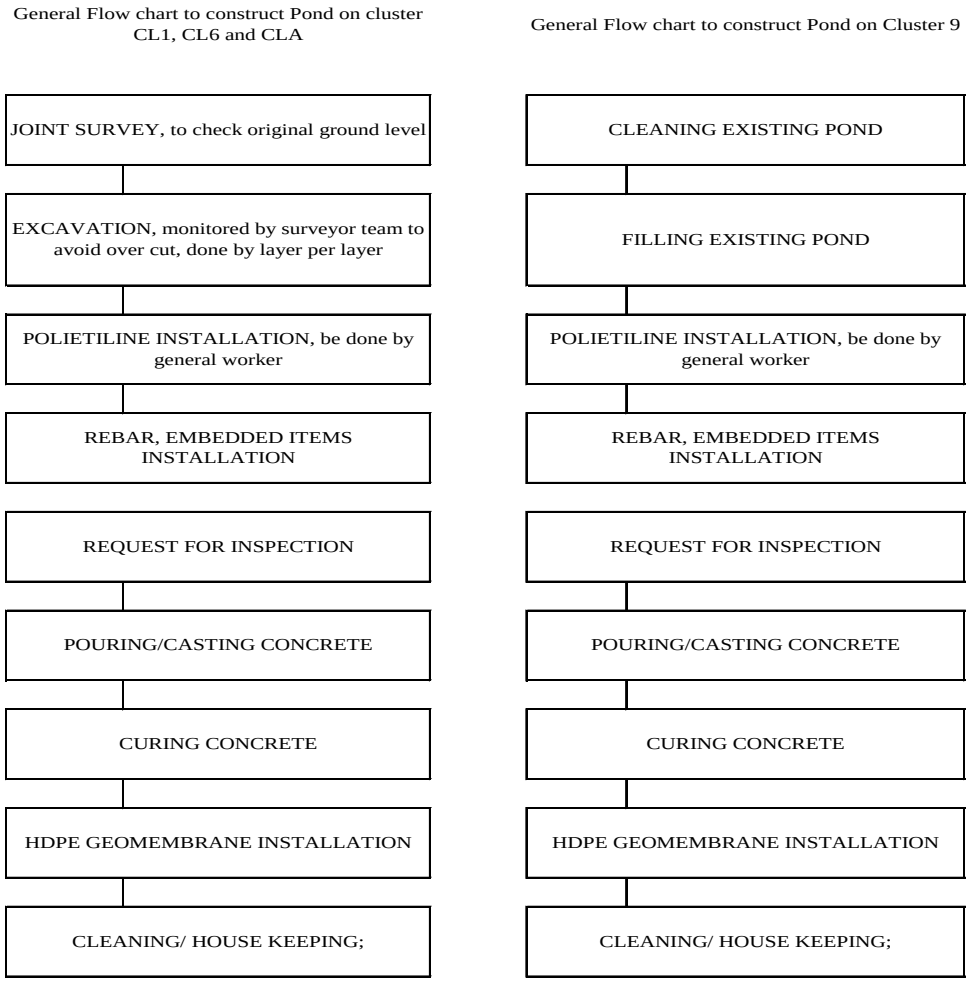

***Figure 8.1**: Method of Work*

8.1 Excavation

The surveyor will perform joint survey to get the original ground level; afterwards will mark the area to allow the excavation.

The excavation will perform as per layer (not designed depth layer). Excavation work is finished when the bottom of the excavation has reached the elevation as shown in the drawings.

The excavation will start after the subcontractor receive the drawing with for construction

status and the treatment general earth work at cluster #9, and other cluster will continue with general excavation.

Temporary sum pit will construct to collect the water (if rainy season), and the sum pit will complete with temporary drainage entire the edge to sum pit area, and the water (if any) will pump outside and the sum pit will keep until all polyethylene installed finish. And the sum pit will close with concrete as describe in the drawing below.

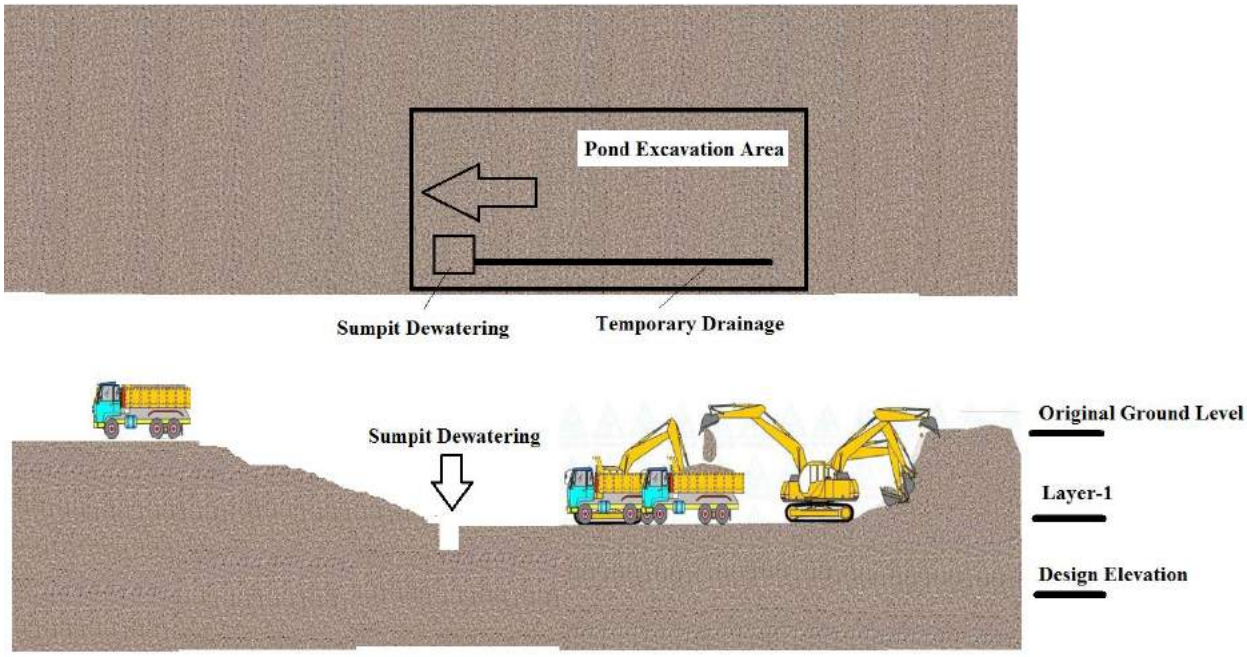

***Figure 8.2**. Excavation phase*

8.2 Polyethylene &Rebar Installation

Polyethylene will be installed after excavation has reached design elevation, to lift, load and mobilize during installation will perform by crane (If needed).

Rebar and or wire-mesh will mobilize to design area from stockpile area/ bar bending area and it will install by worker (tightened by hand tool).

The formwork will replace by chicken mesh to perform rough surface to next joint pouring and or to next joint construction.

8.3 Formwork Installation

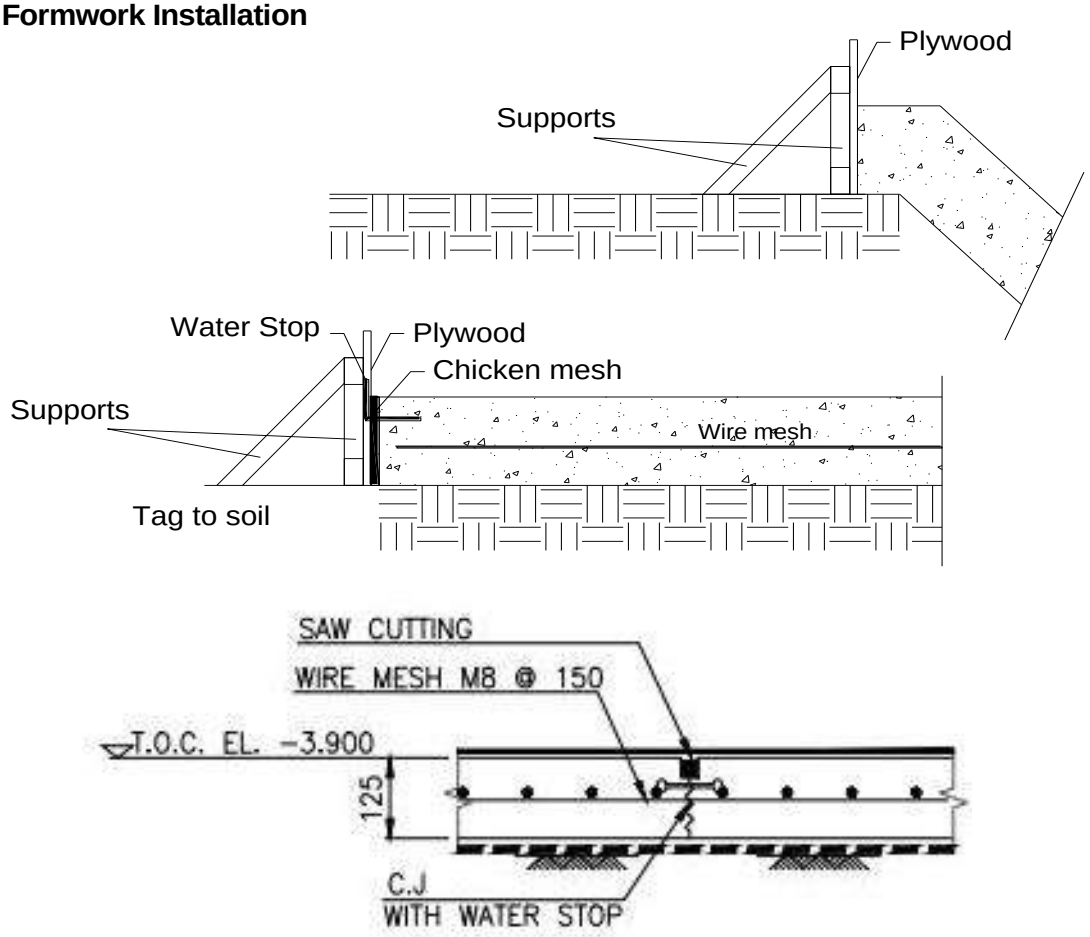

***Figure 8.3**: Formwork Installation*

The edge of pedestrian pond will install formwork as well describe drawing above, construction joint will perform with fold the waterstop and combine with chicken mesh.

Forms shall be constructed from sound materials of plywood with supporting accessories (Wood, Steel hollow, tie rod etc), shall be fixed in perfect alignment and securely braced to with stand displacements and deflections due to construction loads, such as vertical, horizontal and impact construction loads. Such as to produce a smooth surface free from irregularities. The formwork shall be of sufficient strength, properly rigid throughout the placing and compacting of the concrete without visible deflection. Forms shall be so constructed that they can be removed without shock or vibration to the concrete.

Before concreting is commenced the forms shall be thoroughly cleaned and free from dust, dirt and other debris. Temporary openings shall be provided where necessary to drain away water and rubbish.

Wooden formwork (plywood), thickness shall not be less than 12 mm.

Forms shall be removed in such manner as to ensure the complete safety of the structure, and similar sort vertical forms may be removed after a lapse of 3 days during all form surfaces shall be cleaned before re use.

8.4 Concrete Pouring

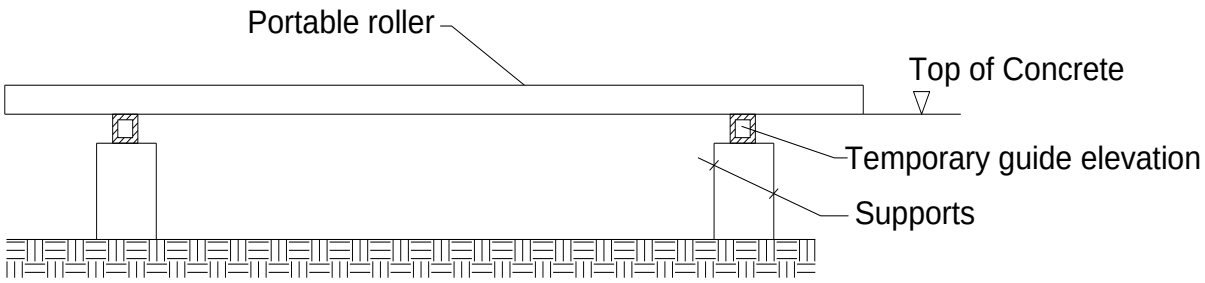

***Figure 8.4**: Concrete Pouring*

Concrete shall be sprayed to the poring area by equipment (concrete pump or other) ensuring it's required. Concrete shall be deposited directly in it, final position/elevation and shall not be caused to flow in a manner to permit or cause segregation. And the fresh concrete will be smoothed by construct temporary rail as guidance, the support of guidance/rail below of top concrete, and during the pouring time the guidance/rail will remove and all the top concrete will be smoothed by hand trowel.

When pouring of concrete has started, it shall be carried on as a continuous operation until the placing of the block complete.

The pond will pour with phase to phase (area by area), refer to joint construction item, as shown below.

Where joints are to be made the surface of the hard concrete shall be cleaned thoroughly, roughened, and all laitance shall be removed by chipping and treated with a thin layer of neat cement before additional fresh concrete is placed.

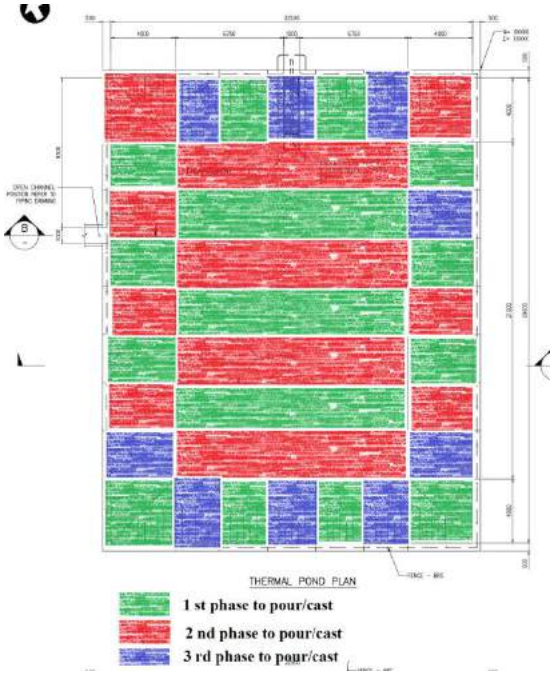

***Figure 8.5**: Phase of Pouring Concrete*

8.5 Curing & Concrete Protection

All concrete surfaces shall be kept wet at least 7 days after placing except that high early strength concrete shall be so maintained for at least 3 days and method approved by the EMPLOYER.

The covering material shall remain in place during the full curing period. The covering material may be removed when the concrete has hardened sufficiently.

8.6 Surface Treatment of Structural Concrete

Top surfaces of structural concrete slabs shall be levelled unless otherwise indicated.

Hand tool trowel finish; The same requirements apply as for monolithic finish, except that the consistency of concrete shall be as used for the portion of work for which steel troweled finish is specified.

8.7 Geo membrane Installation

After material/geo membrane stock nearby pond area, it will spray/install per sheet to mark area, installation will conduct by excavator and tidy by general worker, and some of them

will cut as connection (as drawing below), the geo membrane will be connected with fusion welding, before installation perform, the pond will be pumped from water (if any).

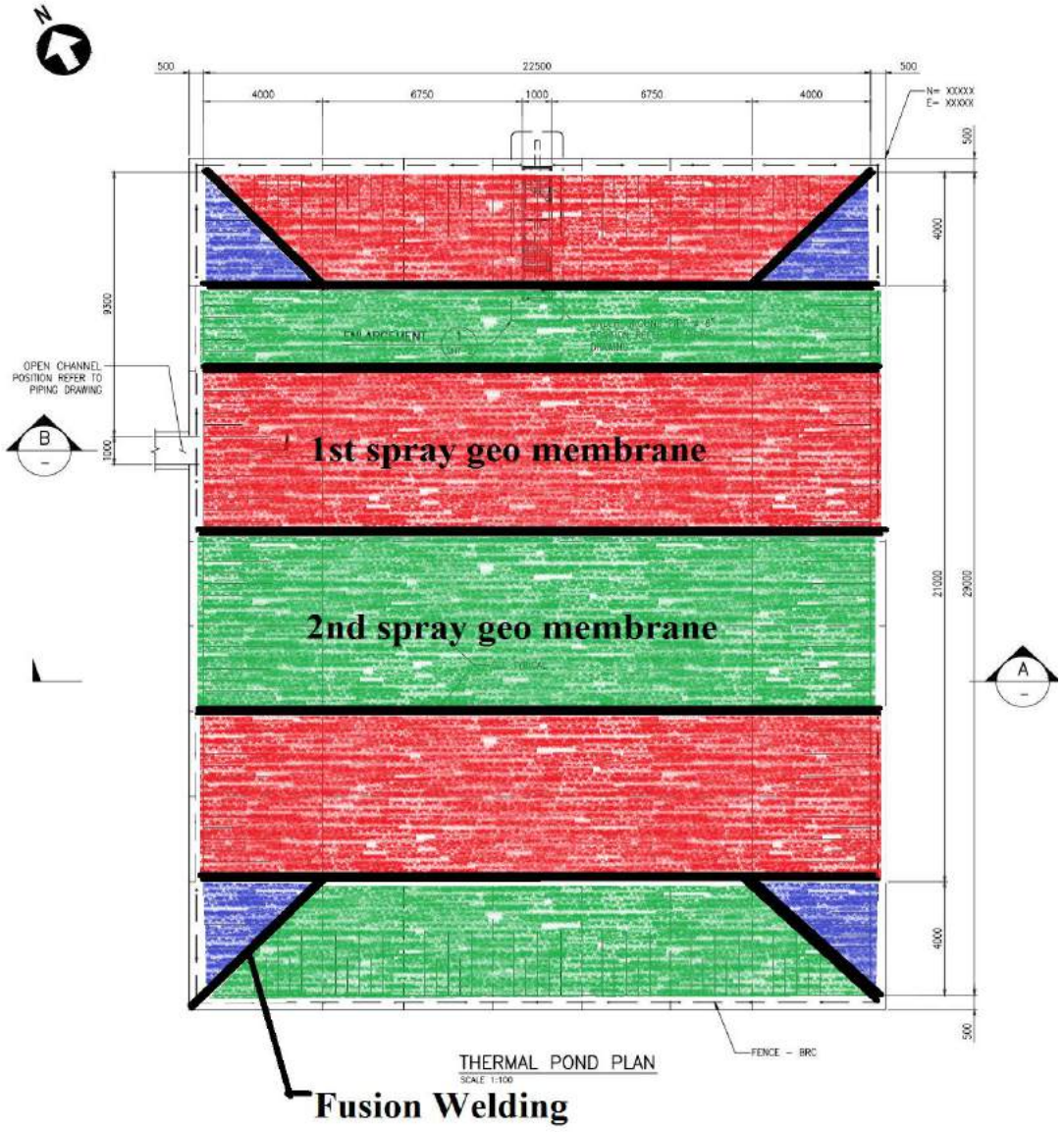

***Figure 8.6**: Geomembrane Installation*

8.8 Fence installation and concrete paving work

The foundation of fence and concrete paving will perform with precast, and then it will be installed by excavator and guided by surveyor for alignment and excavation will perform manually with general worker.

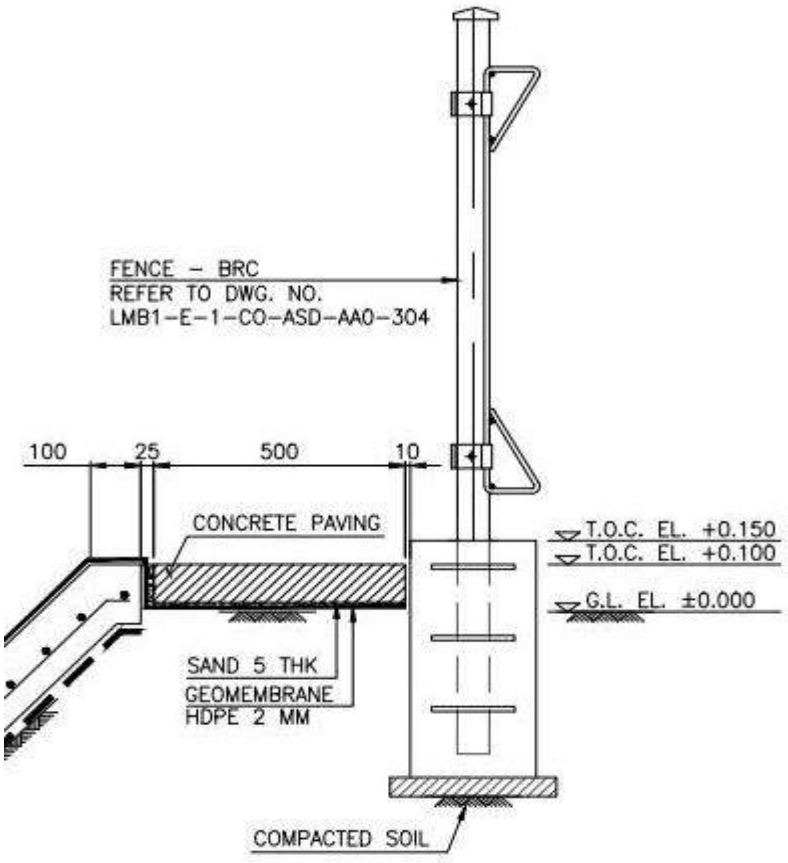

***Figure 8.7**: Fence Installation & Concrete Paving*

9) HEALTH, SAFETY & ENVIRONMENTAL

9.1 Sub-Contractor will follow Project Health & Safety Plan ……

9.2 Safety concern during the excavation work as a mention below:

- ✓ Ensure Permit To Work and JSA ready
- ✓ Assign a safety supervisor frequently on site to ensure work is being conducted in accordance with the Permit to Work and JSA
- ✓ Conduct truck mixer when loading & unloading
- ✓ Provide all mandatory PPE
- ✓ Conduct toolbox talk before commencement of works
- ✓ Ensure all personnel beware with all safety signs, barricades and other type of safety controls of hazard identification
- ✓ All personnel should maintain awareness of potential hazards before beginning each shift
- ✓ Establish effective communication system between operators, supervisors and other parties.