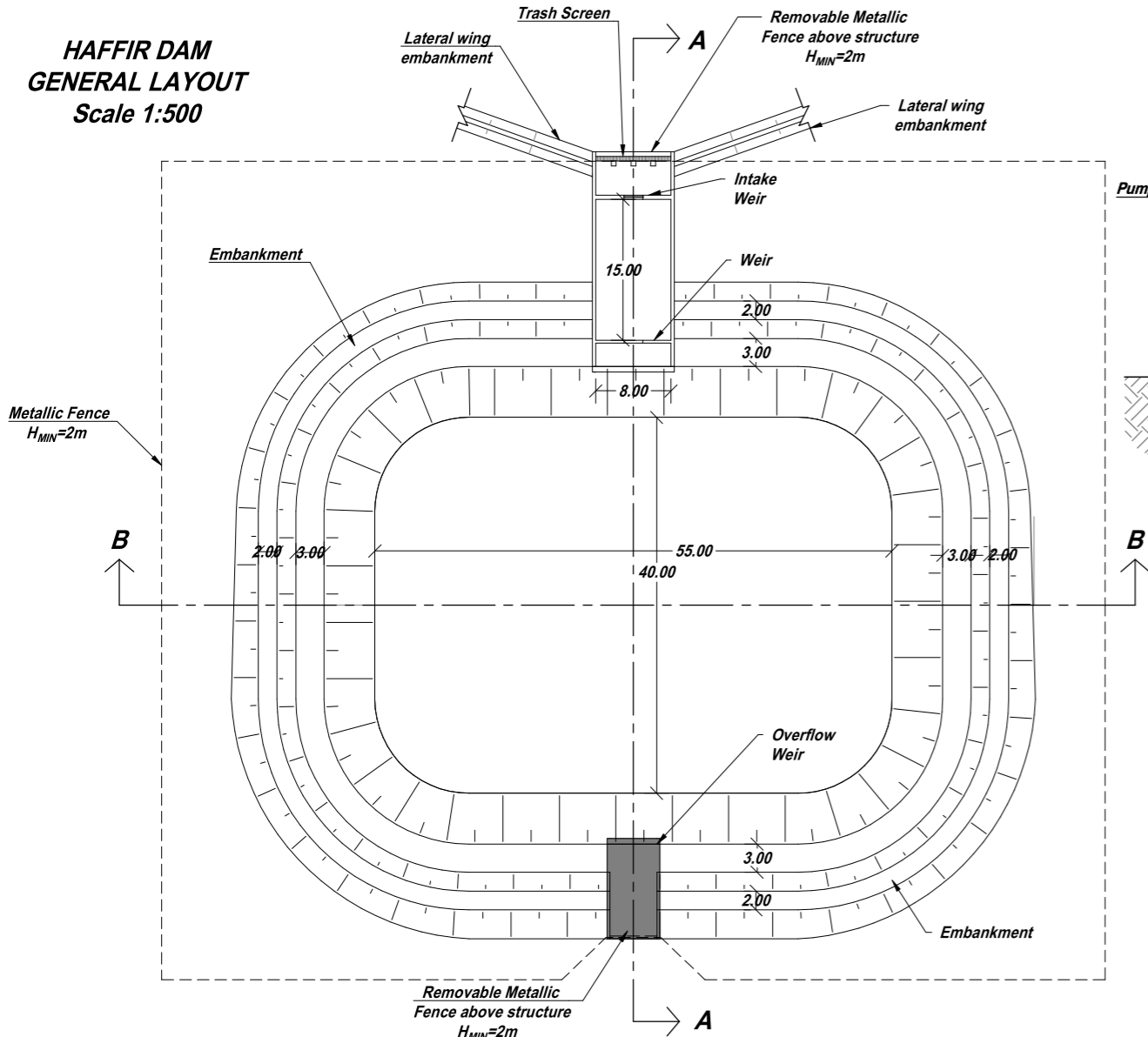




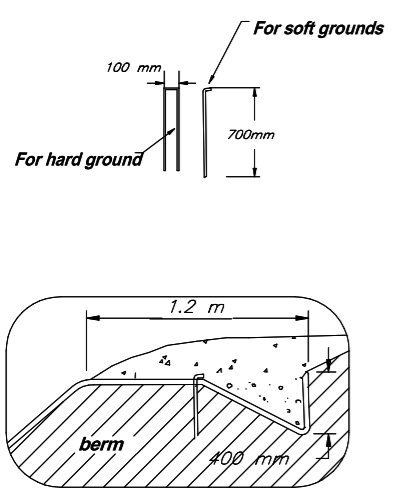
Haffir Dam

LIST OF DRAWINGS	
Drawing's Number	Drawing's Title
01	General plan
02	Haffir plan, Typical pump installation & Typical Channel, Embankment and Wings sections
03	Cross sections along dam axis
04	Desilting Basin & Typical Removable Metallic Fence
05	Desilting Structure - Longitudinal Section
06	Desilting Structure - Partic. A
07	Overflow Spillway Structures
08	Water Tank Plan and Section
09	Water Tank Reinforcement
10	Shoats & Camel Water Trough Plan and Sections
11	WatchMan House Plan & Sections
12	Metallic Fence Typical Installation
13	Pumps House

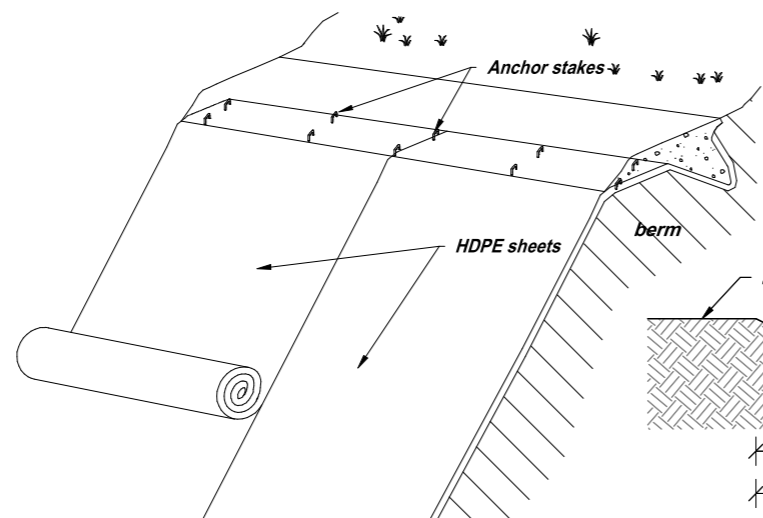
**HAFFIR DAM
GENERAL LAYOUT
Scale 1:500**



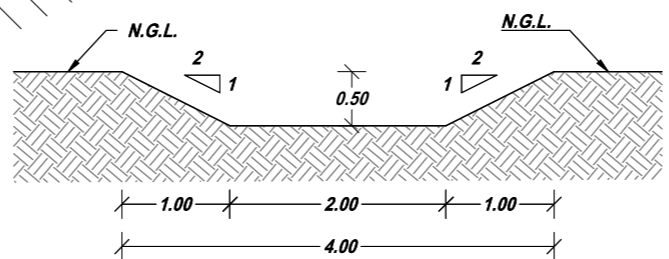
Anchor stakes



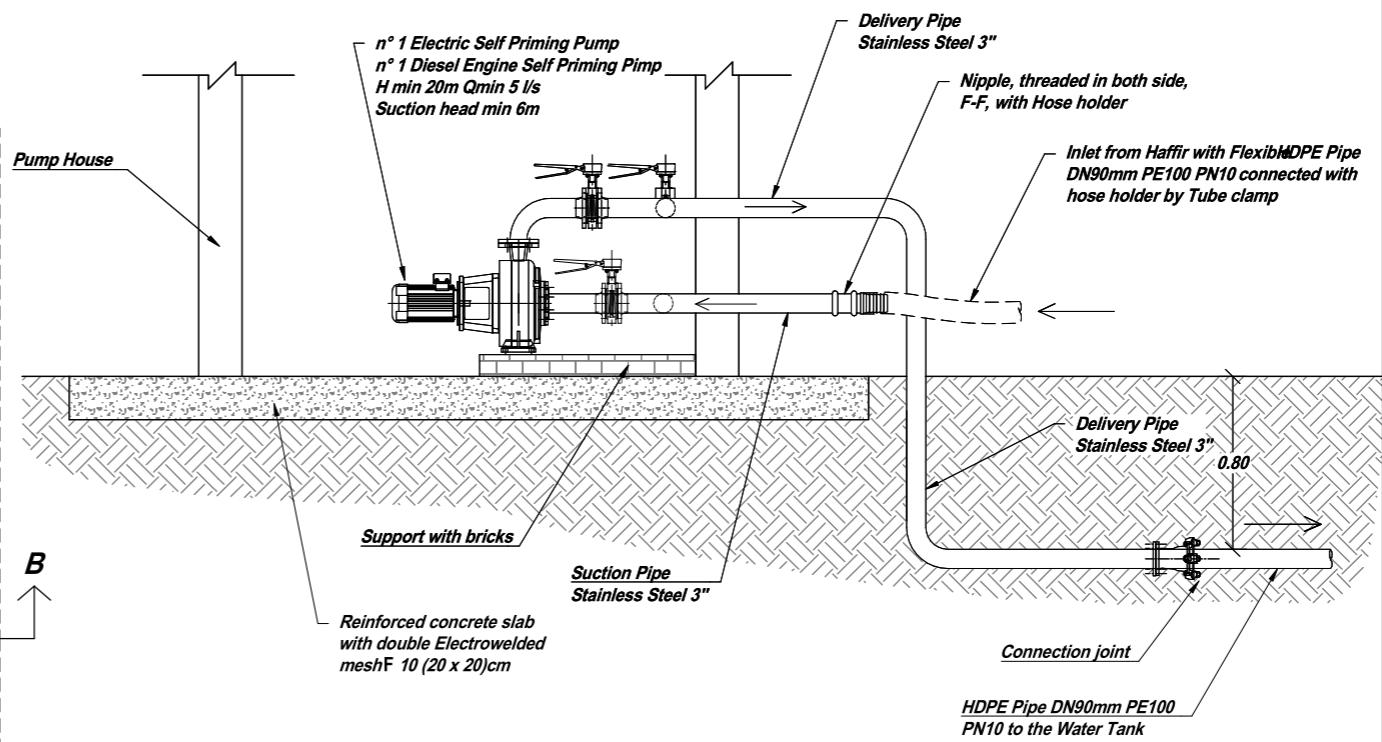
Typical HDPE sheets installation



**TYPICAL OVERFLOW CHANNEL
CROSS SECTION
Scale 1:50**

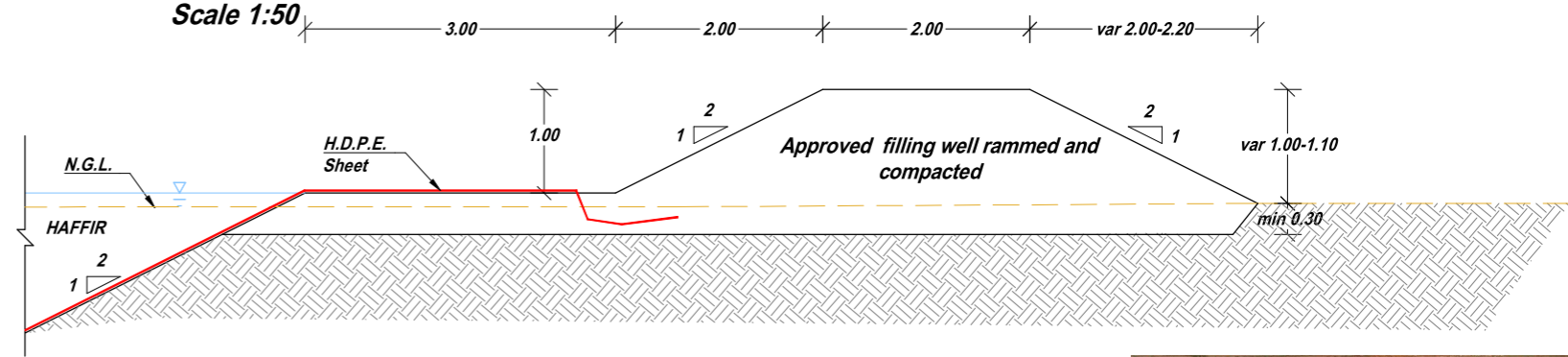


**SELF PRIMING PUMPS
TYPICAL INSTALLATION
Scale 1:25**

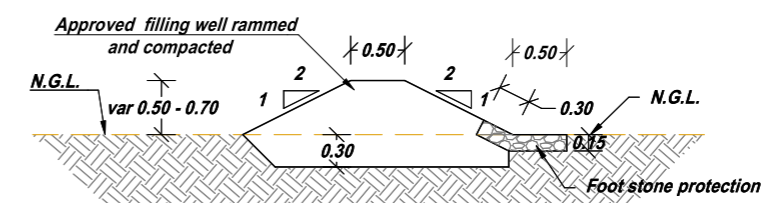


IMPORTANT NOTE: Exact location of pumps house & pumps, pipe layout and profile must be carefully verified by supplier before pumps purchase and installation.

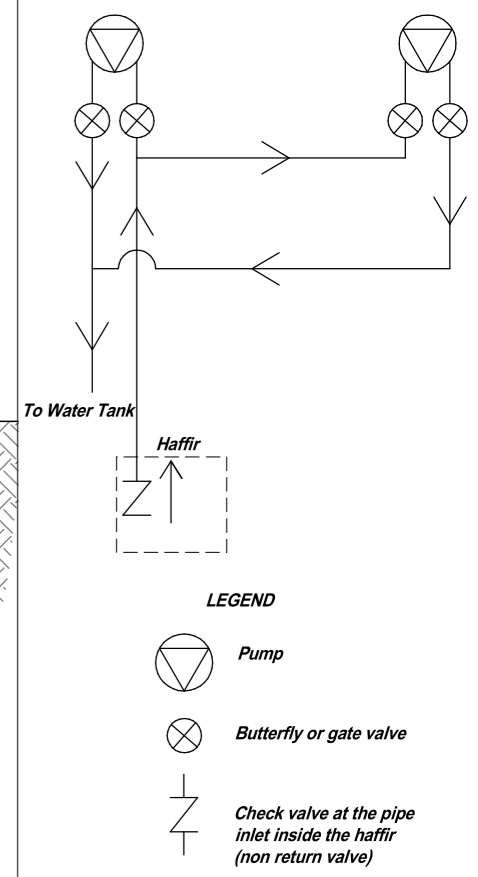
**TYPICAL EMBANKMENT CROSS SECTION
FOR HAFFIR DAM
Scale 1:50**



**LATERAL WING EMBANKMENT TYPICAL
CROSS SECTION
Scale 1:50**



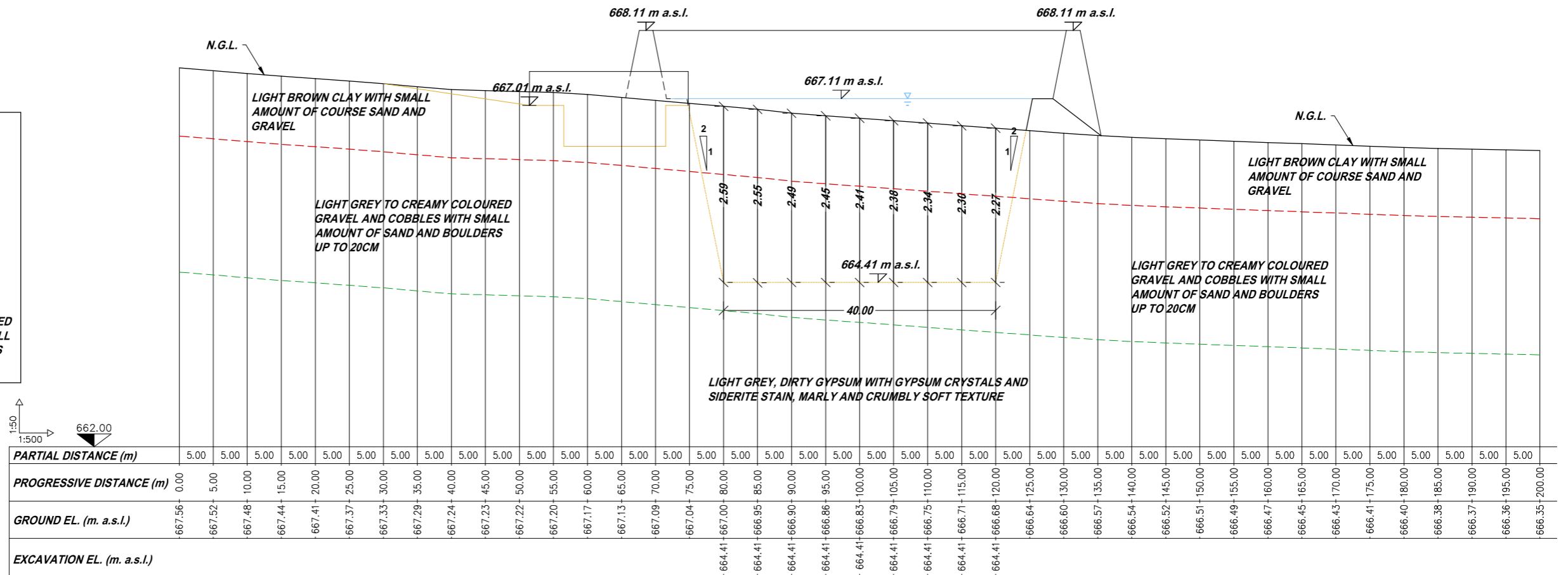
**PUMPS INSTALLATION
SCHEME**



No.	REVISION DESCRIPTION	BY	DATE	NOTES	CLIENT	Structure Type:	Haffir Dam
1						Drawing's Title:	Haffir plan, Typical pump installation & Typical Channel, Embankment and Wings sections
						Drawing's Number:	02

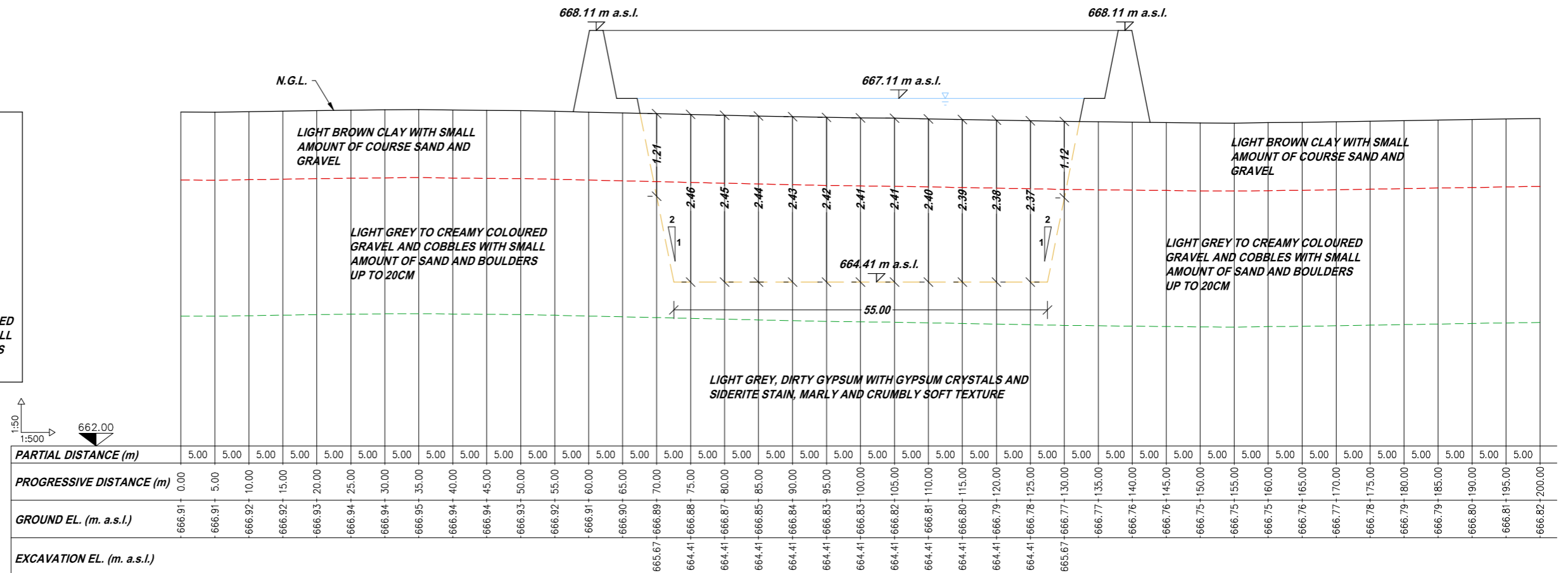
LEGEND

	<i>GROUND</i>
	<i>EXCAVATION LINE / HAFIR PROFILE</i>
	<i>WATER LEVEL</i>
	<i>LIGHT BROWN CLAY WITH SMALL AMOUNT OF COURSE SAND AND GRAVEL</i>
	<i>LIGHT GREY TO CREAMY COLOURED GRAVEL AND COBBLES WITH SMALL AMOUNT OF SAND AND BOULDERS UP TO 20CM</i>

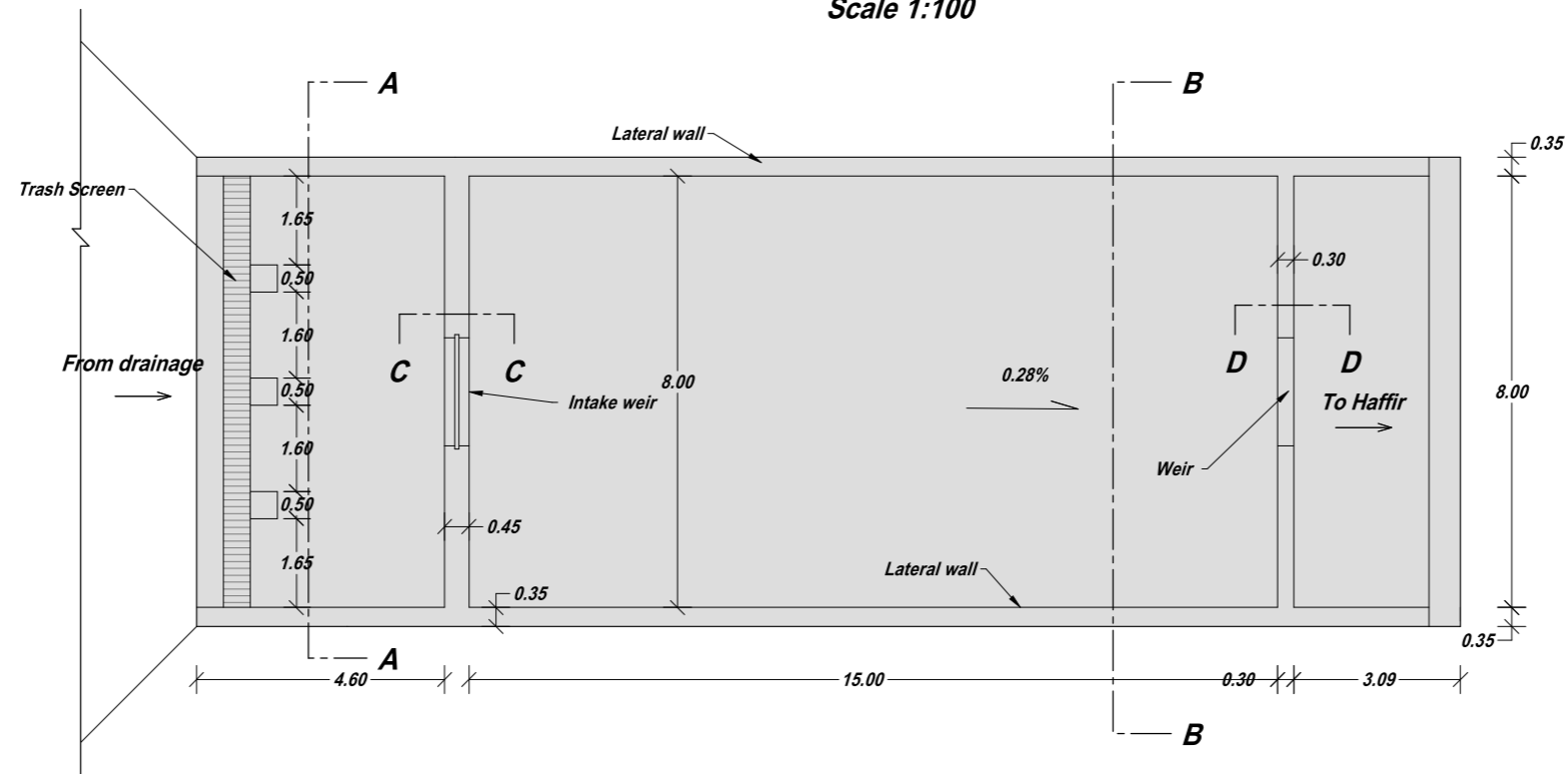


LEGEND

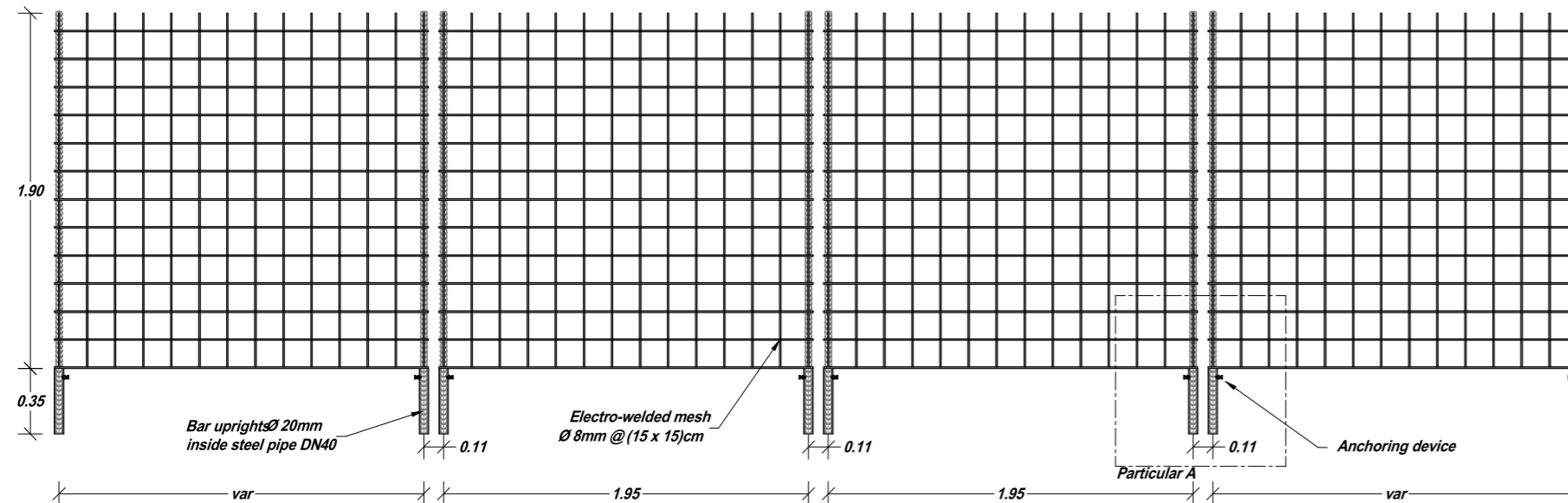
	<i>GROUND</i>
	<i>EXCAVATION LINE / HAFIR PROFILE</i>
	<i>WATER LEVEL</i>
	<i>LIGHT BROWN CLAY WITH SMALL AMOUNT OF COURSE SAND AND GRAVEL</i>
	<i>LIGHT GREY TO CREAMY COLOURED GRAVEL AND COBBLES WITH SMALL AMOUNT OF SAND AND BOULDERS UP TO 20CM</i>

[illegible]

DESILTING BASIN LAYOUT
Scale 1:100

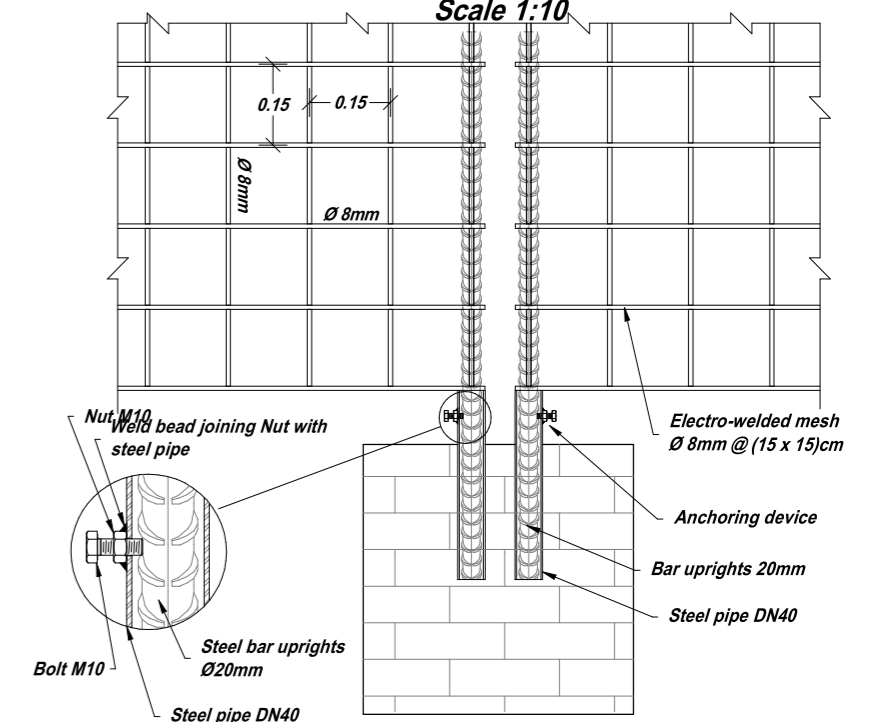


DESILTING BASIN REMOVABLE METALLIC FENCE
Scale 1:25



N.B. Wheelbase between bar uprights must be checked from contractor and approved from engineer before construction

PARTICULAR A: ANCHORING DEVICE OF
REMOVABLE METALLIC FENCE TO THE
STRUCTURE
Scale 1:10



No.	REVISION DESCRIPTION	BY	DATE	NOTES	CLIENT		
1				1. CONCRETE CLASS M25 - MIX RATIO (CEMENT:SAND:COARS AGGREGATE) 1:1:2 - MAX WATER/CEMENT RATIO = 0.45 2. MINIMUM CONCRETE COVER OF THE OF REINFORCEMENT 50mm 3. CONSTRUCTION JOINTS ARE NOT PERMITTED ,THE SLABS MUST BE CAST IN ONE TIME. 4.FOR ALL PARTS OF THE REINFORCED CONCRETE STRUCTURE 28 DAY CUBE CHARACTERISTIC STRENGTH OF THE CONCRETE HAS TO BE MINIMUM 25N/mm ² ACCORDING TO CLASS M25 AND ALL REINFORCEMENT SHOULD BE OF CLASS B450C		Structure Type:	Haffir Dam
						Drawing's Title:	Desilting Basin & Typical Removable Metallic Fence
						Drawing's Number:	04

DESILTING BASIN UPSTREAM LONGITUDINAL SECTION
Scale 1:25

The diagram illustrates the upstream longitudinal section of a desilting basin. Key components and dimensions are as follows:

- Trash Screen:** Located at the inlet, with a width of 4.80m.
- Vertical wall for foot protection:** A wall with a height of 0.75m and a thickness of 0.30m, reinforced with Y12@200 bars.
- Reinforcement:** Y12@200 U shape bars are used in the walls and slab. The slab is reinforced with Y12@200 bars.
- Concrete:** The structure is made of R.C. Concrete and Lean Concrete.
- Weir:** A weir with removable wood bulkheads, with a height of 1.10m and a width of 0.45m. It is reinforced with Y8@200 U shape bars (0.40+0.10+0.40)m.
- Basin Floor:** The floor has a slope of 0.28% and is reinforced with Y12@200 bars.
- Dimensions:** The total length of the basin is 15m. The weir is 0.25m wide. The basin floor is 0.07m thick.
- Section Line:** A section line A-A is shown, indicating the location of the weir.

Technical drawing of a dam cross-section, showing a weir and spillway structure. The drawing includes dimensions, material labels, and flow direction.

Dimensions:

- Total length: $L_{tot} = 15m$
- Spillway width: 3.09
- Upstream concrete thickness: 0.30
- Upstream concrete height: 0.40
- Upstream concrete depth: 0.70
- Upstream concrete width: 0.30
- Spillway height: 0.10
- Spillway depth: 0.50
- Spillway width: 0.07

Materials and Reinforcement:

- R.C. Concrete:** Reinforced concrete structure.
- Lean Concrete:** Reinforced concrete structure.
- Y12@200:** Reinforcement bars (Yield strength 12, spacing 200).

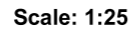
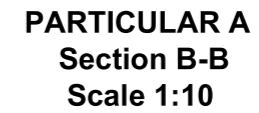
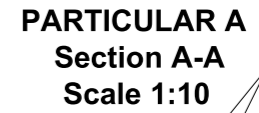
Flow Direction: To Haffir (indicated by an arrow).

Other Labels:

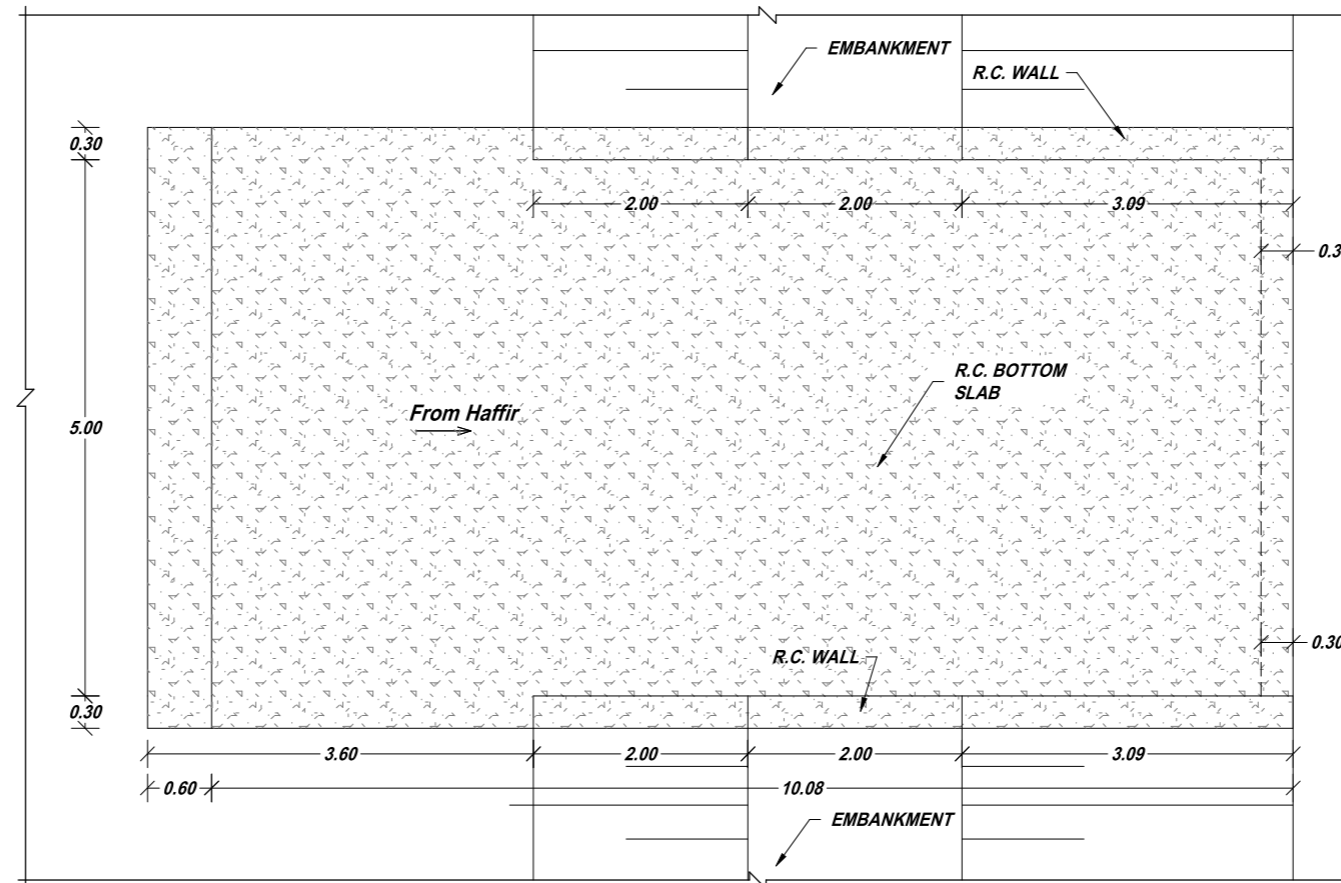
- Weir:** The structure over which water flows.
- N.G.L.:** Natural Ground Level.
- Haffir Dam:** The downstream structure.



Scale: 1:25



Scale 1:50



OVERFLOW WEIR
Longitudinal Section
Scale 1:50

From Haffir →

R.C. SLAB
Y12@200
LEAN CONCRETE

E—E

LOCAL BOULDERS
N.G.L.

Dimensions:
Total Length: 10.68
Crest Width: 2.00
Height: 1.54
Slopes: 2H : 1V
Reinforcement: Y12@200
Section Cut: E—E

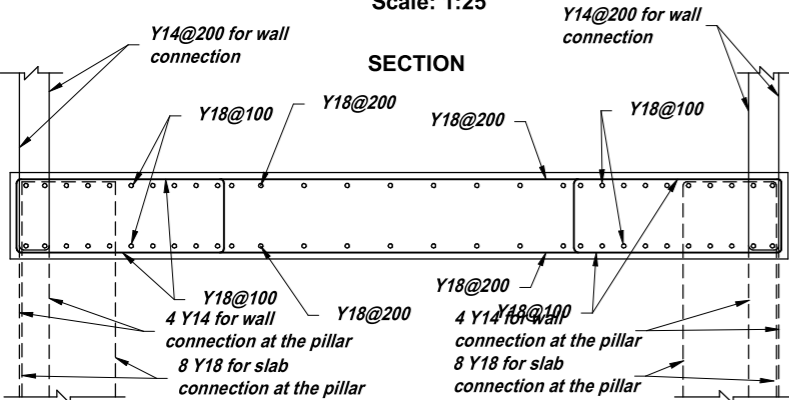
Figure 10 shows the reinforcement layout of the beam-column joint. The joint is rectangular with a width of 5.00m and a height of 1.31m. The reinforcement is labeled Y12@200. The dimensions 0.30m are indicated for the top and bottom edges. The vertical dimension is labeled 'max 1.31' and '0.30'.

No.	REVISION DESCRIPTION	BY	DATE	NOTES	CLIENT	
1				1.CONCRETE CLASS M25 - MIX RATIO (CEMENT:SAND:COARS AGGREGATE) 1:1:2 - MAX WATER/CEMENT RATIO = 0.45 2. MINIMUM CONCRETE COVER OF THE OF REINFORCEMENT 50mm 3. CONSTRUCTION JOINTS ARE NOT PERMITTED ,THE SLABS MUST BE CAST IN ONE TIME. 4.FOR ALL PARTS OF THE REINFORCED CONCRETE STRUCTURE 28 DAY CUBE CHARACTERISTIC STRENGTH OF THE CONCRETE HAS TO BE MINIMUM 25N/m ² ACCORDING TO CLASS M25 AND ALL REINFORCEMENT SHOULD BE OF CLASS B450C		
						Structure Type: Haffir Dam
						Drawing's Title: Overflow Spillway Structure
						Drawing's Number: 07

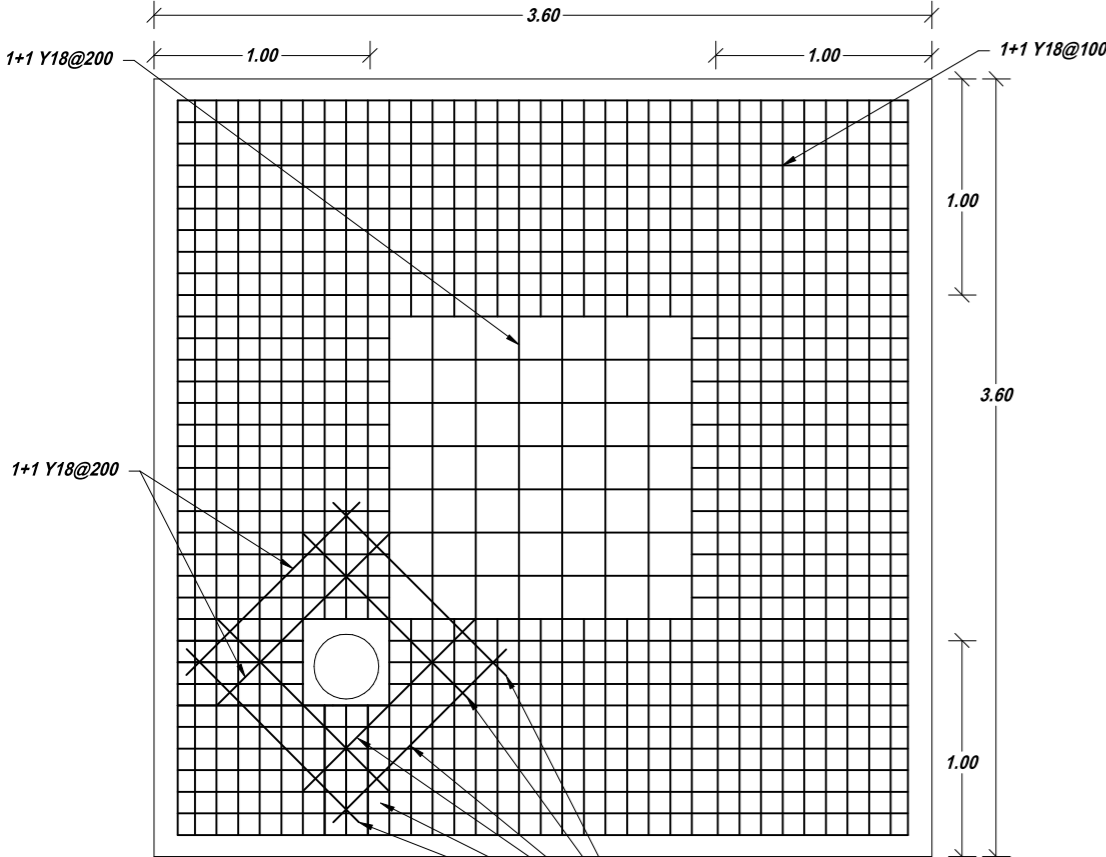
Water tank Reinforcement: Floor Slab

Scale: 1:25

SECTION

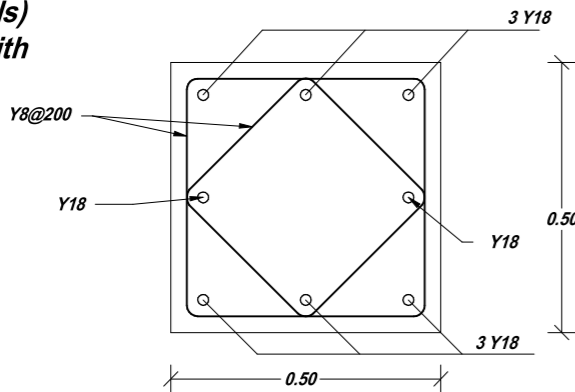


PLAN



Water tank Reinforcement: Columns

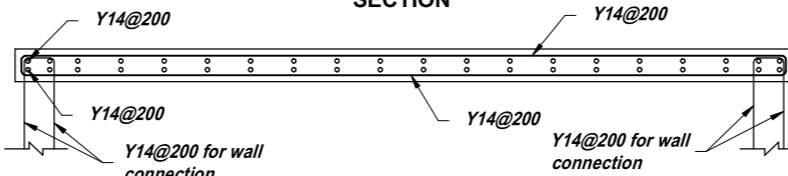
Scale 1:10



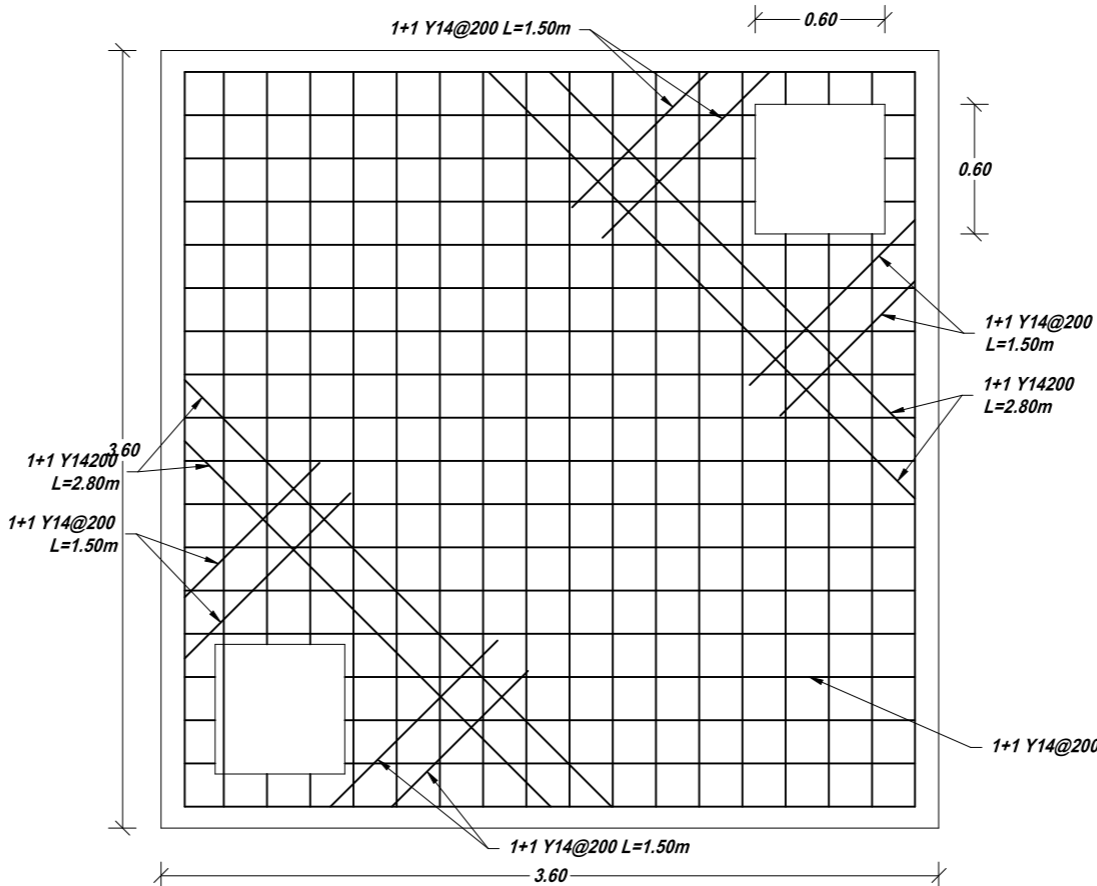
Water tank Reinforcement: Roof Slab

Scale: 1:25

SECTION

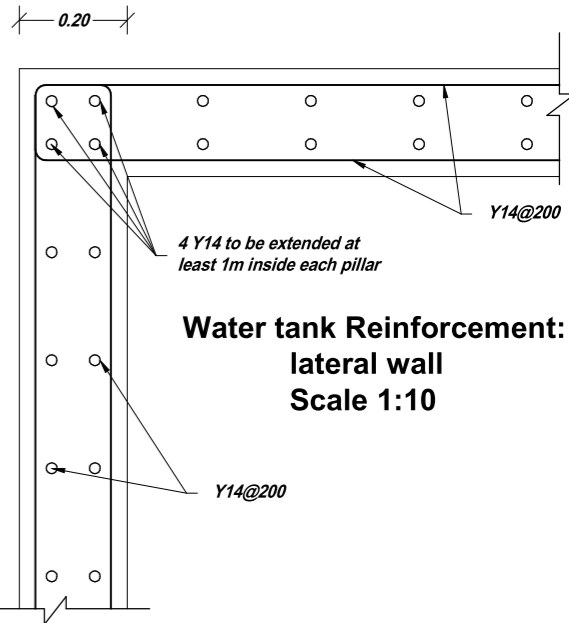
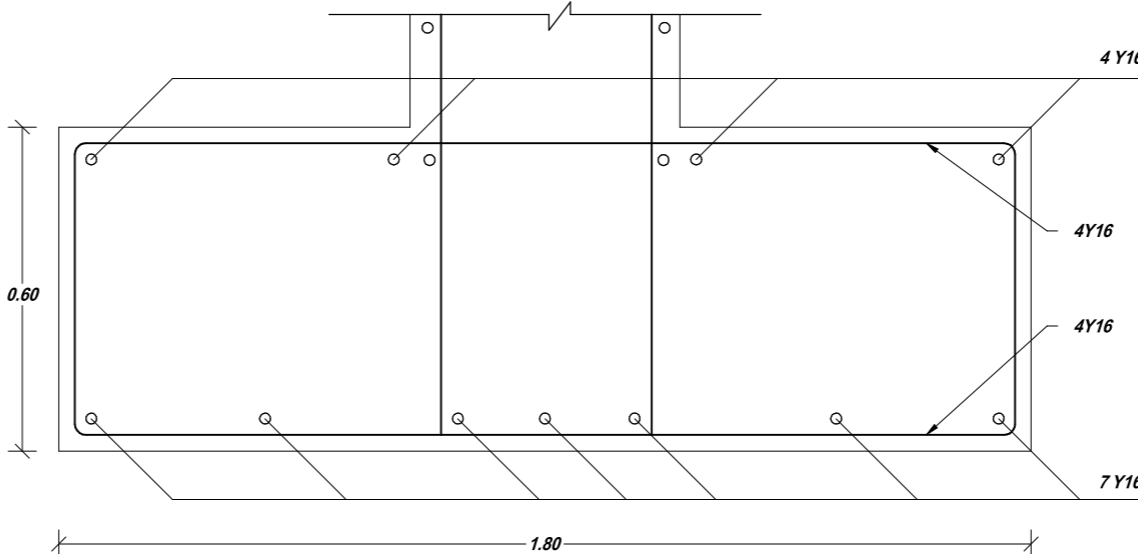


PLAN



Water tank Reinforcement: Plinths

Scale 1:10

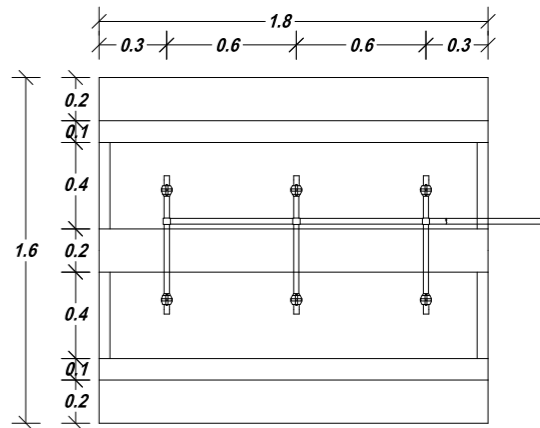


Water tank Reinforcement: lateral wall

Scale 1:10

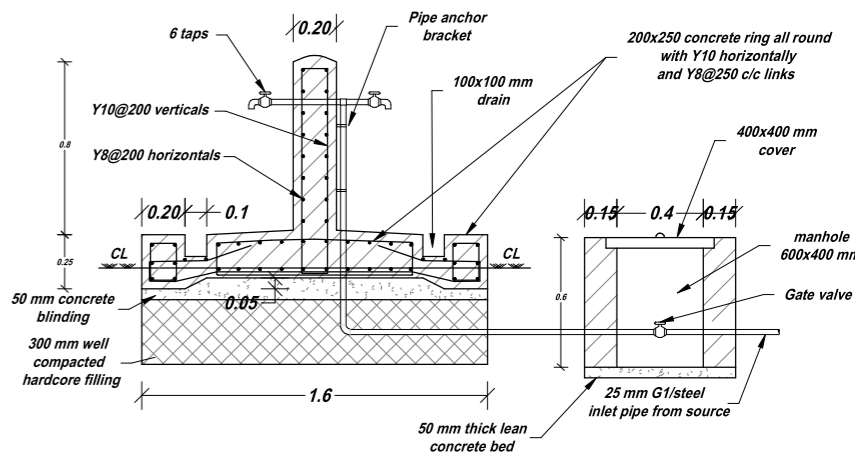
KIOSK PLAN

Scale: 1:25



KIOSK SECTION

Scale: 1:25



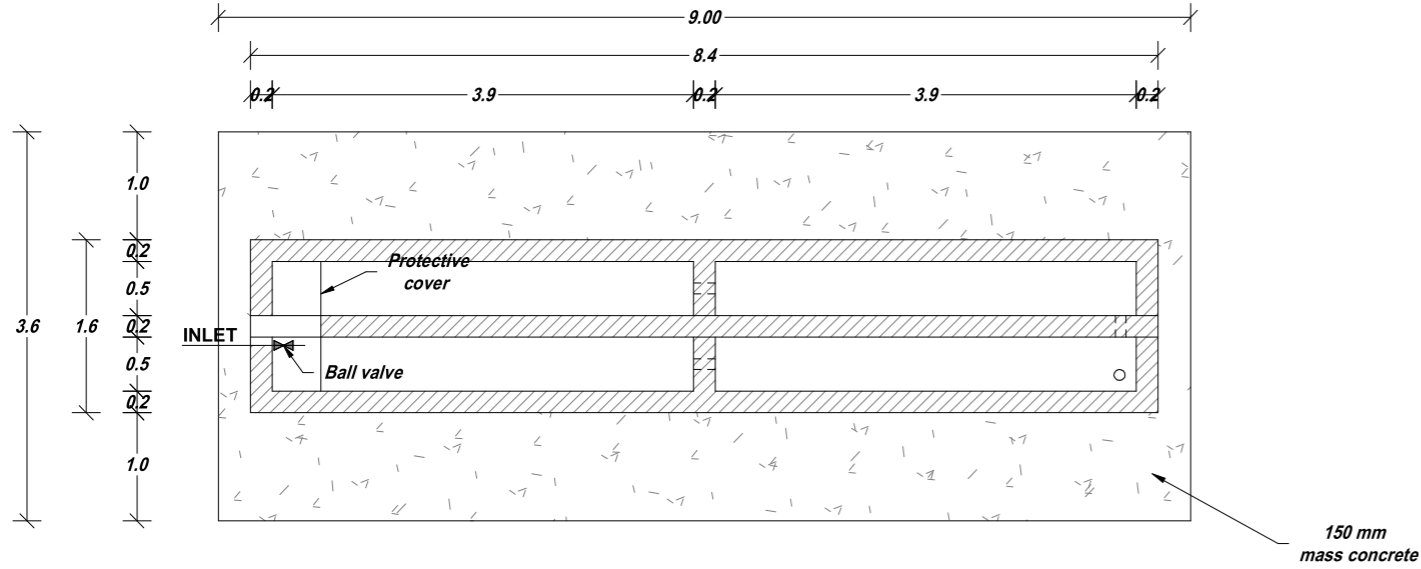
NOTE: Each steel reinforcements of vertical element (pillars and lateral walls) must be properly connected with horizontal slabs.

Steel reinforcements placements must be approved by the engineer before each single concrete cast.

No.	REVISION DESCRIPTION	BY	DATE	NOTES	CLIENT	Structure Type:	Drawing's Title:	Drawing's Number:
1				1. CONCRETE CLASS M30 - MIX RATIO (CEMENT:SAND:COARS AGGREGATE) 1:1:2. MAX WATER/CEMENT RATIO = 0.4 2. MINIMUM CONCRETE COVER OF THE OF REINFORCEMENT 50mm 3. CONSTRUCTION JOINTS ARE NOT PERMITTED, THE SLABS MUST BE CAST IN ONE TIME. 4. FOR ALL PARTS OF THE REINFORCED CONCRETE STRUCTURE 28 DAY CUBE CHARACTERISTIC STRENGTH OF THE CONCRETE HAS TO BE MINIMUM 30N/mm ² ACCORDING TO CLASS M25 AND ALL REINFORCEMENT SHOULD BE OF CLASS B450C		Haffir Dam	Water Tank Reinforcement & Kiosk Layout and Sections	09

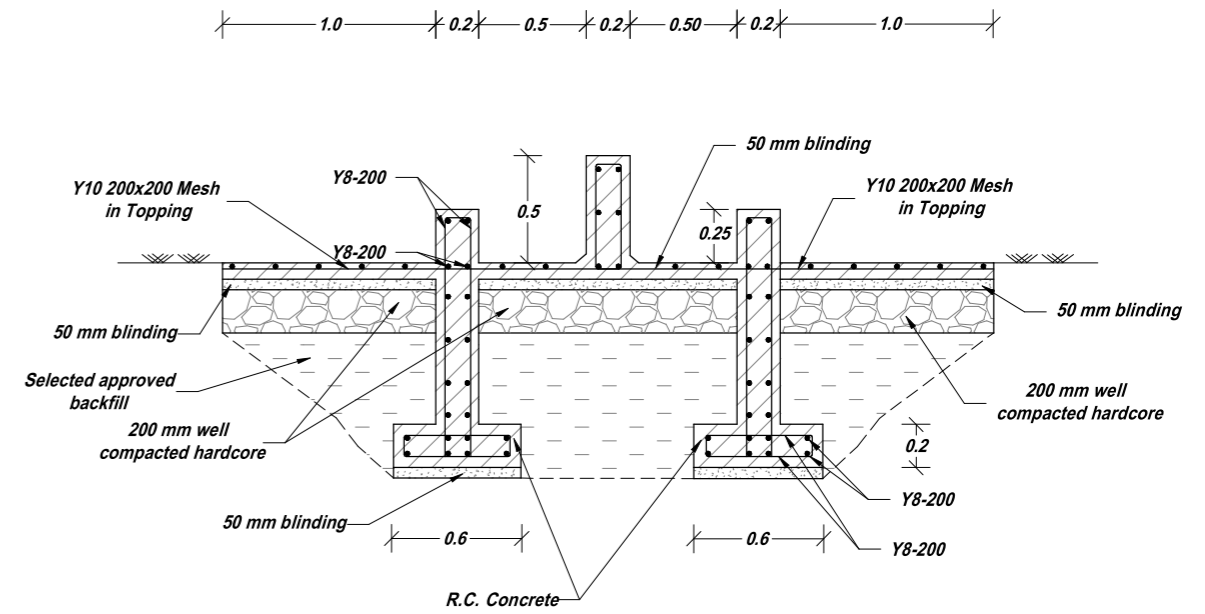
SHOATS WATER TROUGH PLAN

Scale: 1:50



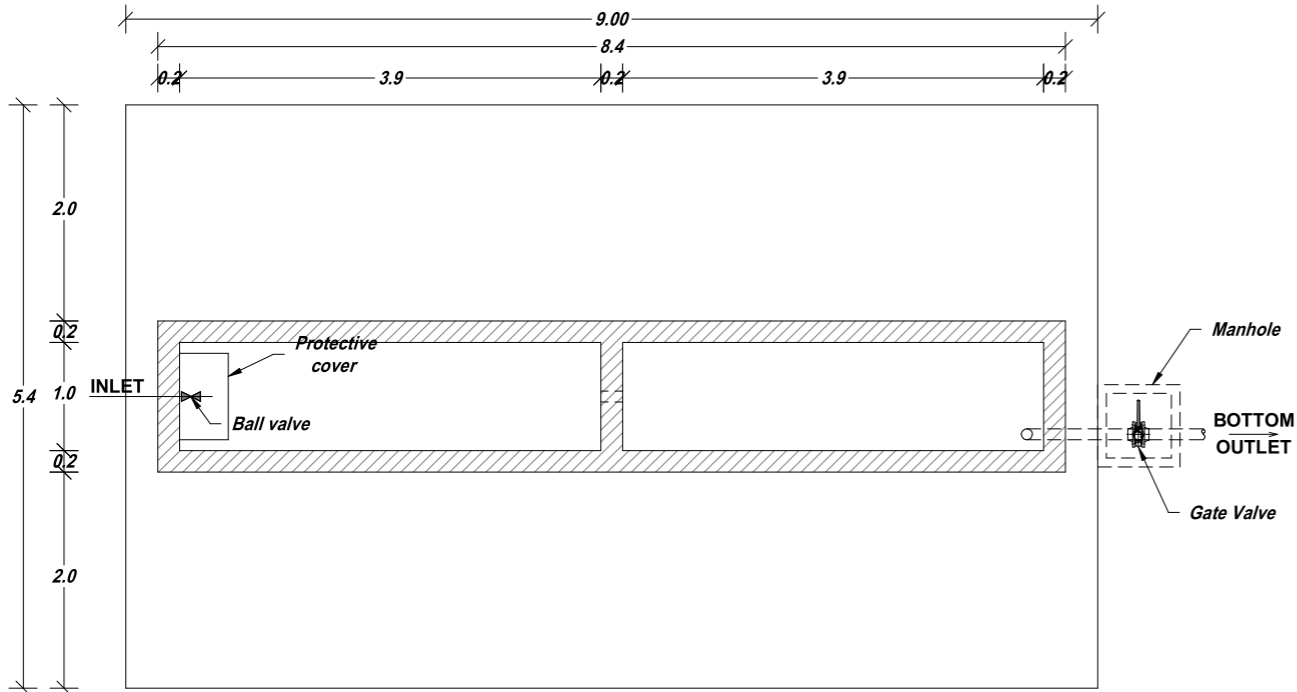
SHOATS TROUGH SECTION

Scale: 1:2



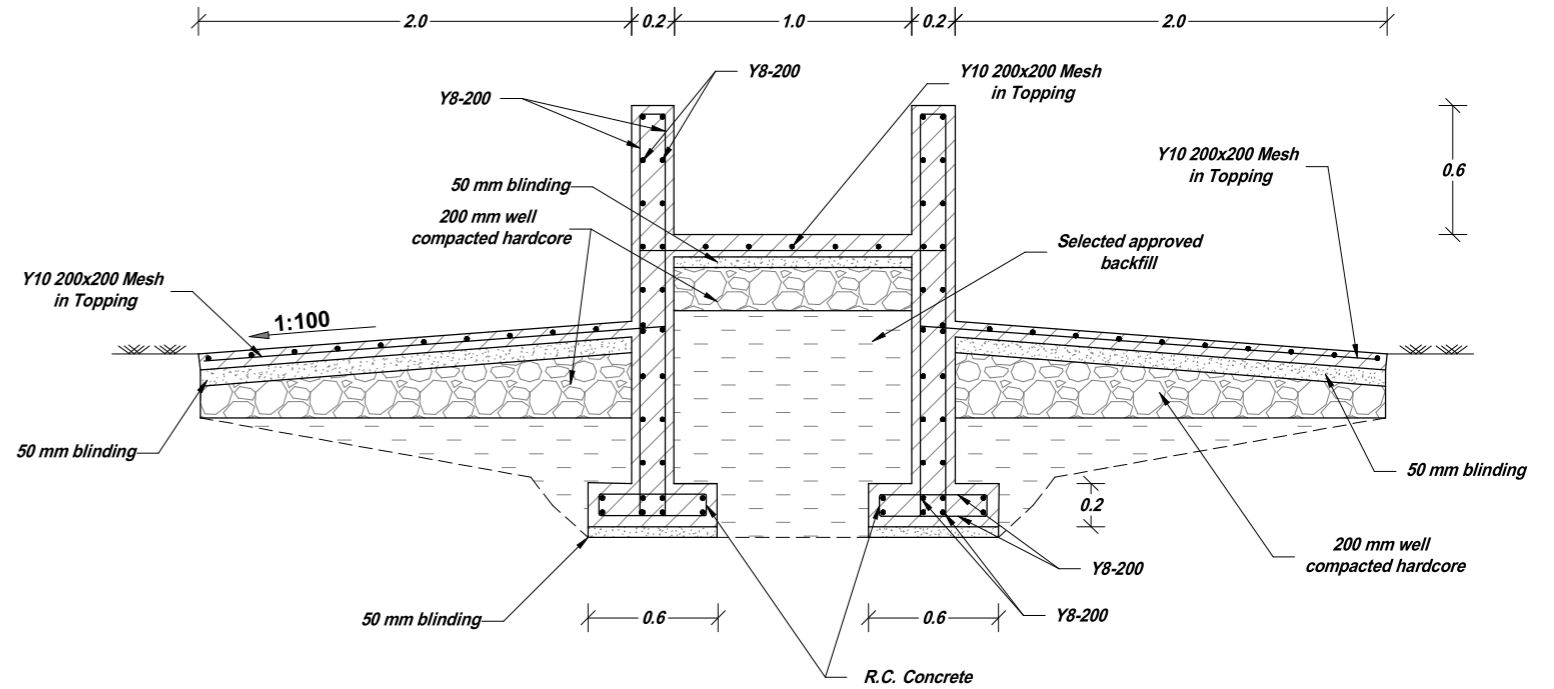
CAMEL WATER TROUGH PLAN

Scale: 1:50



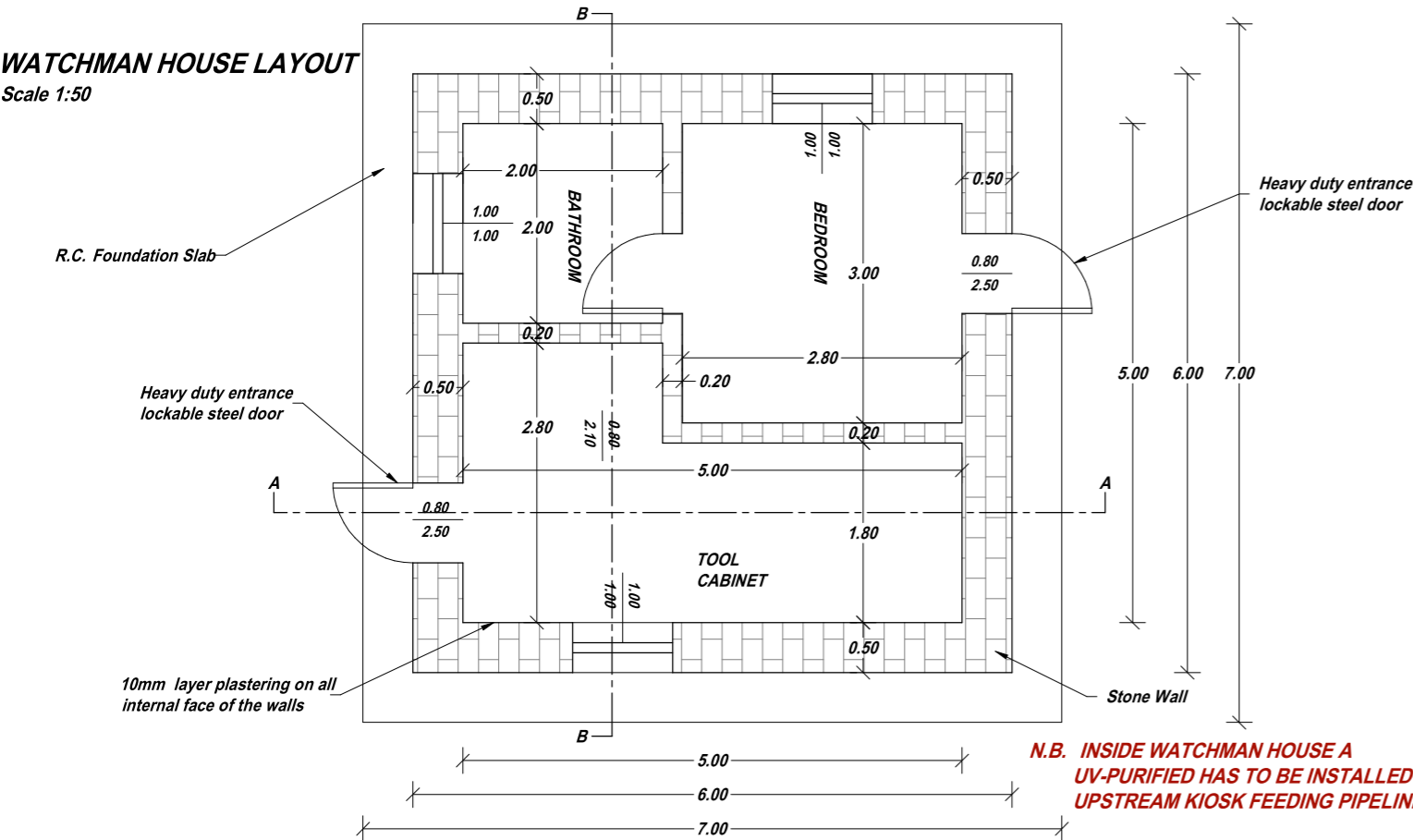
CAMEL TROUGH SECTION

Scale: 1:25

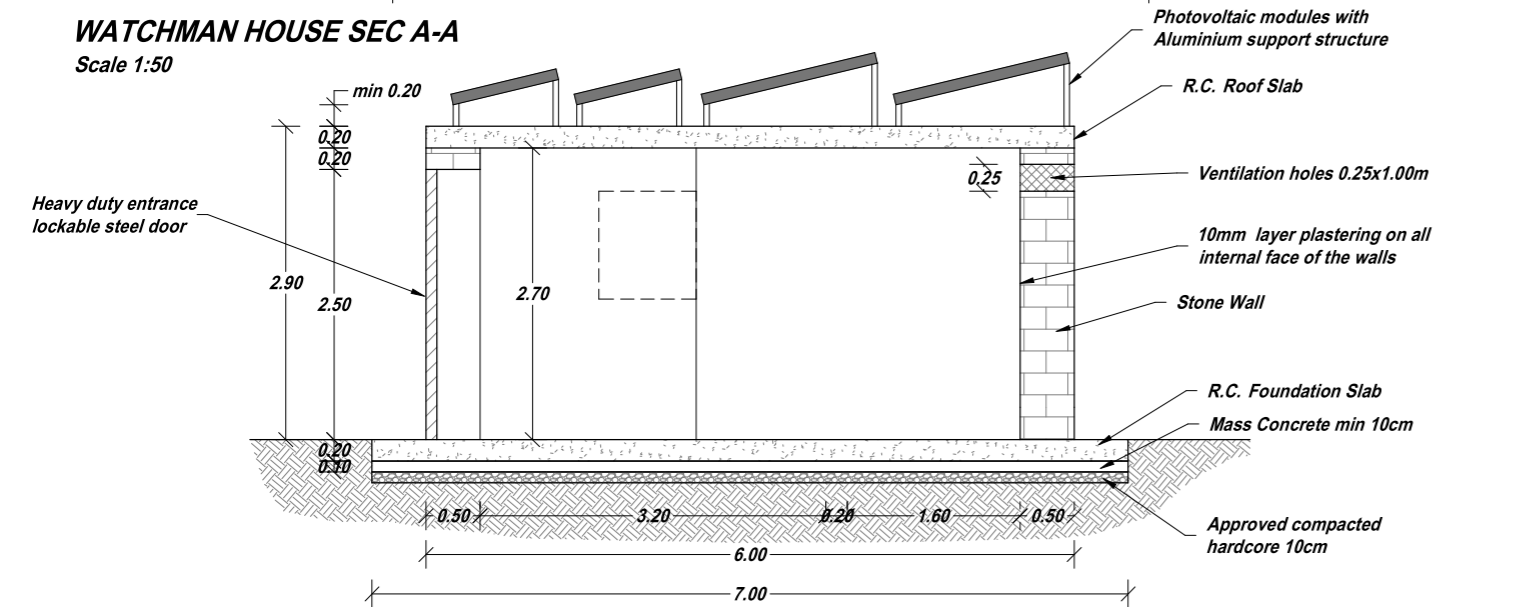


No.	REVISION DESCRIPTION	BY	DATE	NOTES	CLIENT
1	FIRST EMISSION	A.C.	SEP 2024	1.CONCRETE CLASS M25 - MIX RATIO (CEMENT:SAND:COARS AGGREGATE) 1:1:2 - MAX WATER/CEMENT RATIO = 0.45 2. MINIMUM CONCRETE COVER OF THE OF REINFORCEMENT 50mm 3. CONSTRUCTION JOINTS ARE NOT PERMITTED ,THE SLABS MUST BE CAST IN ONE TIME. 4.FOR ALL PARTS OF THE REINFORCED CONCRETE STRUCTURE 28 DAY CUBE CHARACTERISTIC STRENGTH OF THE CONCRETE HAS TO BE MINIMUM 25N/mm ² ACCORDING TO CLASS M25 AND ALL REINFORCEMENT SHOULD BE OF CLASS B450C	
					Structure Type: Haffir Dam
					Drawing's Title: Shoats & Camel Water Trough Plan and Section
					Drawing's Number: 10

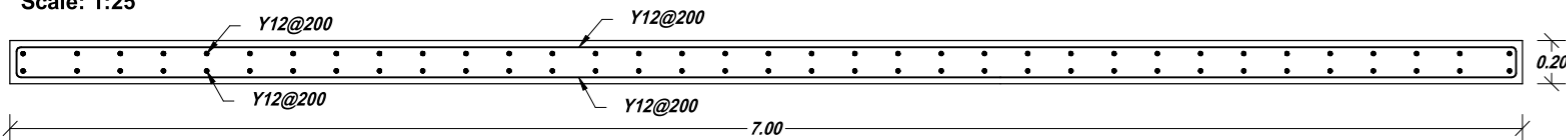
WATCHMAN HOUSE LAYOUT
Scale 1:50



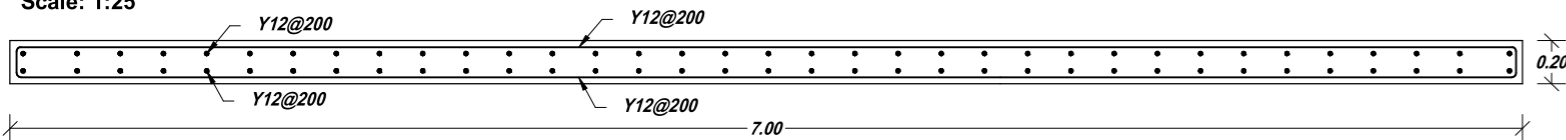
WATCHMAN HOUSE SEC A-A
Scale 1:50



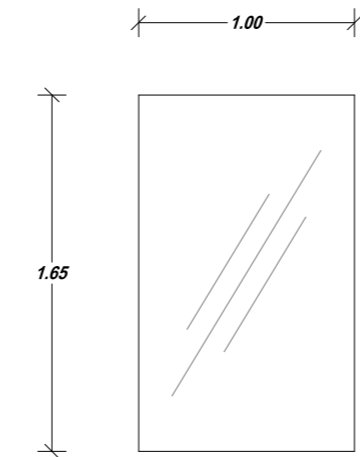
Roof Slab Reinforcement along section A-A
Scale: 1:25



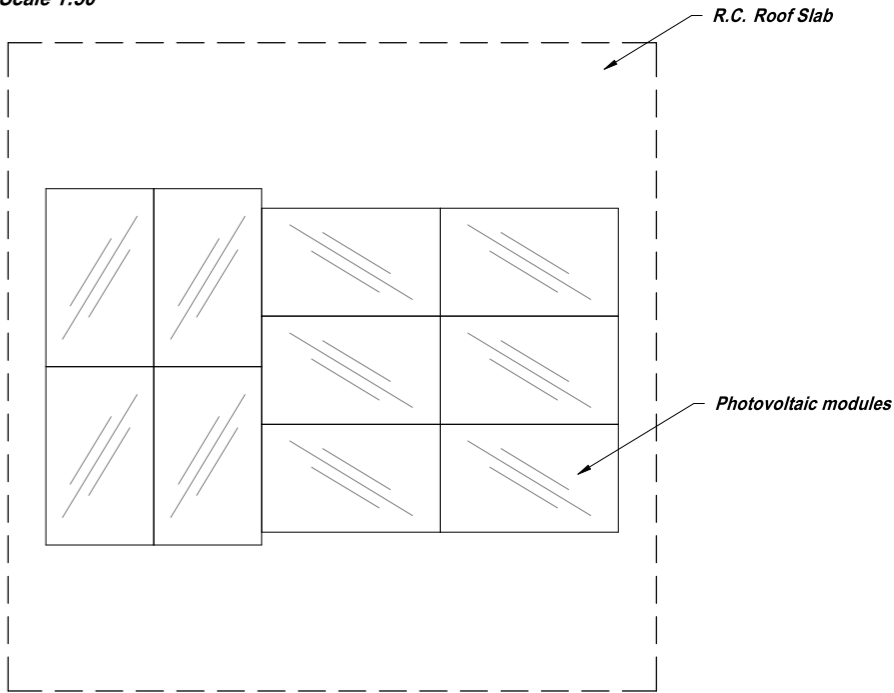
Floor Slab Reinforcement along section A-A
Scale: 1:25



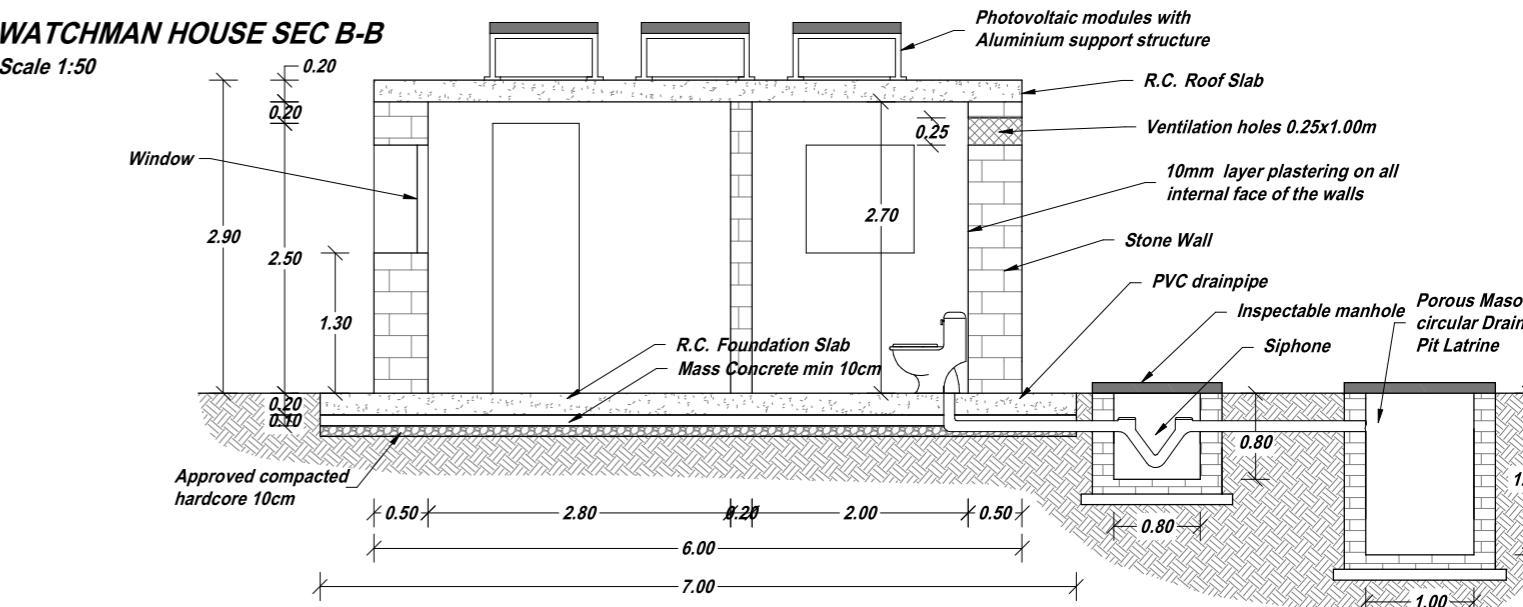
TYPICAL PHOTOVOLTAIC MODULE
DIMENSION
Scale 1:25



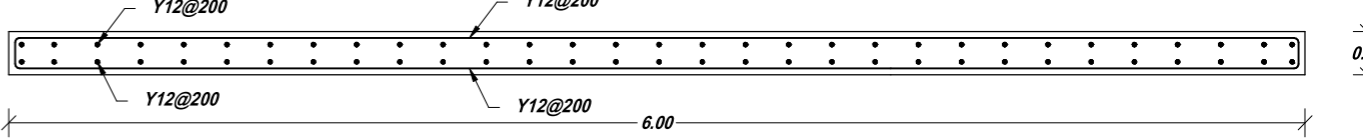
PHOTOVOLTAIC MODULES INSTALLATION
LAYOUT ON THE ROOF
Scale 1:50



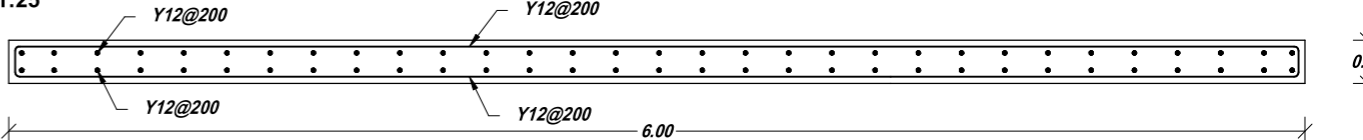
WATCHMAN HOUSE SEC B-B
Scale 1:50



Roof Slab Reinforcement along section B-B
Scale: 1:25



Floor Slab Reinforcement along section B-B
Scale: 1:25



No.	REVISION DESCRIPTION	BY	DATE	NOTES	CLIENT	Structure Type:	Haffir Dam
1				1. MASONRY WALL SHALL NOT BE CONNECTED TO EITHER THE ROOF SLAB, THE WALL SUPPORTING AREA OF THE FLOOR SLAB AS WELL AS THE TOP OF THE WALL SHALL BE TROWEL FINISHED AND BE PAINTED WITH THREE COATS OF BITUMINOUS PAINT. BETWEEN ROOF SLAB AND WALL A TARRED SHEATH 5mm THICK HAS TO BE PLACED 2. THE MASONRY WALL SHALL BE BUILT OF GOOD QUALITY LOCAL BUILDING STONES OR CONCRETE BLOCKS. THE SIZE OF THE STONES SHALL BE: WIDTH NOT LESS THAN 225mm RESP. 300mm; LENGTH BETWEEN 200 AND 300 mm; HEIGHT NOT MORE THAN 150 mm. THE STONES SHALL BE SOAKED IN WATER FOR 24HRS BEFORE BEING BUILT INTO THE PARTICULAR CARE MUST BE TAKEN TO FILL ALL THE JOINTS COMPLETELY WITH MORTAR. (MORTAR MIXTURE 3:1, SAND: CEMENT) 3. CONCRETE CLASS M25 (MIX RATIO 1:1:2) FOR FLOOR SLAB AND ROOF SLAB - MAX WATER/CEMENT RATIO = 0.45 4. MINIMUM CONCRETE COVER OF THE OF REINFORCEMENT 50mm 5. CONSTRUCTION JOINTS. ARE NOT PERMITTED, THE SLABS MUST BE CAST IN ONE TIME. 6. EXTERIOR SURFACE SHALL RECEIVE ONE COAT OF CEMENT WASH. 7. INTERIOR SURFACE OF THE WALLS SHALL BE PLASTERED THICKNESS 10mm WITH MORTAR MIXTURE 3:1 (SAND: CEMENT) 8. FOR ALL PARTS OF THE REINFORCED CONCRETE STRUCTURE 28 DAY CUBE CHARACTERISTIC STRENGTH OF THE CONCRETE HAS TO BE 25N/mm2 ACCORDING TO CLASS M25 AND ALL REINFORCEMENT SHOULD BE OF CLASS B450C	ALIGHT	Drawing's Title:	WatchMan House Plan and Sections
						Drawing's Number:	11



Front view

No.	REVISION DESCRIPTION	BY	DATE	NOTES	CLIENT
1				1.CONCRETE CLASS M25 - MIX RATIO (CEMENT:SAND:COARS AGGREGATE) 1:1:2 - MAX WATER/CEMENT RATIO = 0.45	

Structure Type:	Haffir Dam
Drawing's Title:	Metallic Fence Typical Installation
Drawing's Number:	12