

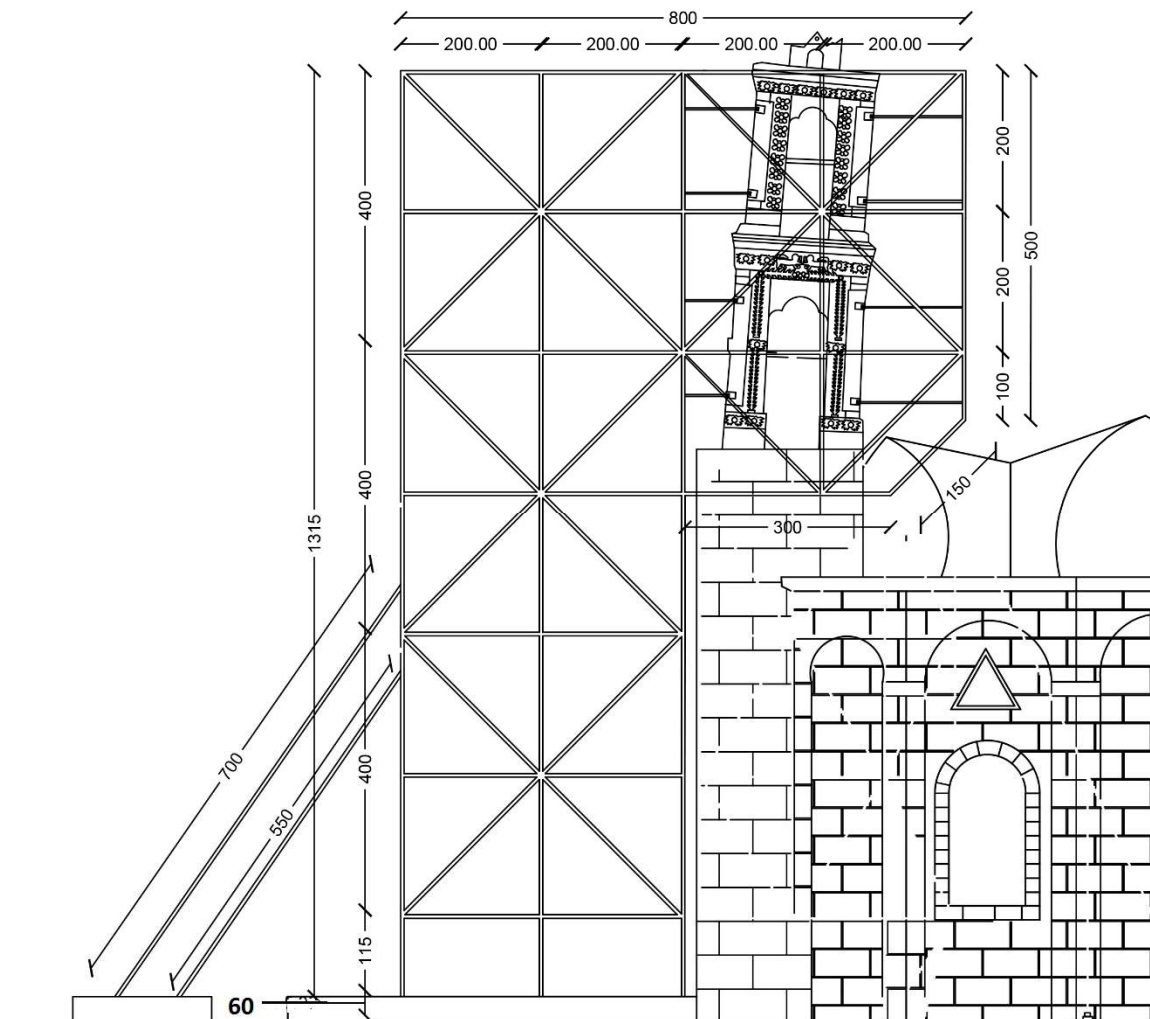
## **Annex 1.2 - Description of Works; Lot 2**

The Church of Agios Georgios is located in Vothylakas/Derince village, in Karpasia peninsula of Cyprus.

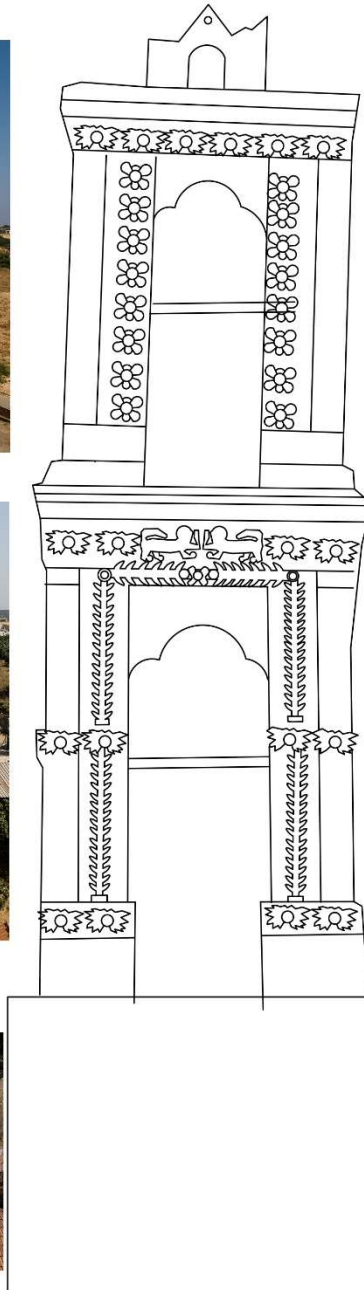
The height of its Bell tower is 14 meters from the base 7.6 meters from the roof of the church, where the bell tower becomes a cantilever member.

The bell tower has approximately 1.90 x 1.190 meters square plan. Above the roof the bell tower is composed of three parts, solid base, first level and second level with the dislocated cross and the bell. Extensive carvings are present in all facades of the bell tower.

The construction materials are local cut limestone (Kumyalı Stone), ornamented limestone, wooden beams, iron reinforcement between the levels.



**Figure 1 Eastern Elevation**





Picture 1



Picture 2

Out of plane movement (leaning towards north) is observed in the bell tower. The leaning starts at the end of the solid base level and the the first and second parts show leaning towards north. There are ornamented stones at all facades of the bell tower.





Picture 3

The top part of the bell tower does have a uniform mortar cover without any substantial cracking that would lead to water infiltration.



Picture 4

The rate of deterioration on the local limestone is superficial.

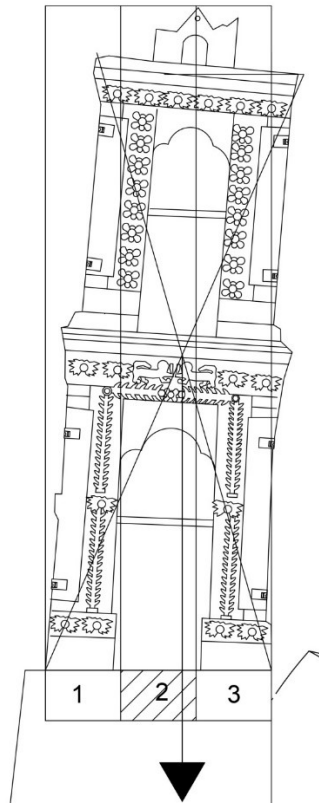
The local limestone is less porous than limestone originating from Nicosia and Morphu regions.

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Picture 5

Past pointing repairs with gypsum is observed on the northern façade.



**Figure 2 Drawing showing the extent of out of plane movement**

The center of gravity of the leaning portion of the bell tower shifted close to Zone 3 from the center of safe zone (Zone 2). Zone 3 is where the structure becomes structurally unstable. Therefore a permanent support system is proposed to stop shifting towards this zone

### **Support materials and treatment:**

Wood specifications and treatment:

Pine timber according to EN350 all pine wood used in the project must be kiln dried at  $10\% \pm 2\%$  Moisture content and free of any knots. All wooden members have to be treated with colored protective coating, Silvanol 726 or equivalent.

Anticorrosion coating:

All the iron members including bars bolts screws must be protected with water resistant, anti – corrosive primer such as (sika Armatec 100 master seal 300) or equivalent.

## Description of Works

| No: | Work Item                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Site mobilization and demobilisation                            | <p>Mobilization consists of preparatory work and operations necessary for site setup, equipment, supplies, health &amp; safety and incidentals at the site. Liability insurance up to Euro 50,000 for the duration of the project and to cover all persons on site.</p> <p>Site cleaning and demobilization after completion of the works.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 2   | Permanent Support and Scaffold setup and its material treatment | <p>Ring lock scaffold system will be used as indicated in the drawings. For the diagonal supports coupler system complying with standard <b>EN74-1 A</b> have to be used. All scaffold set up and materials used have to comply with <b>EN 12811</b>. Connection details of the supports and scaffolds are also provided.</p> <p>Use Pine timber according to EN350. All pine wood used in the project must be kiln dried at 10% ± 2% Moisture content. All wooden members have to be treated with colored protective coating, Silvanol LS 726 or equivalent.</p> <p>Protect all the iron members including support bars bolts screws must be with water resistant, anti – corrosive primer such as (sika Armatec 100 master seal 300) or equivalent. All iron support and scaffold members must comply with EN 12811.</p> <ul style="list-style-type: none"> <li>- Materials submission will be required for the scaffold elements</li> <li>- Materials submission will be required for anti-corrosive primers</li> <li>- Method statement is required for the scaffolding</li> </ul> |
| 3   | Reinforced concrete footings                                    | <p>Two separate rectangular reinforced concrete foundations with dimensions <b>2.65x5.5m and 4.85x5.5m</b> respectively will be required to counteract the props.</p> <p>The footings will be cast on the site with ready mix concrete. Curing of the concrete footings will be carried out; watering every day for 14 days. Reinforcement will be with a Yield Strength of Steel (fpy): 420N/mm<sup>2</sup> Design mix for concrete C30 shall be provided to UNDP.</p> <p>The footings will be laid on the existing ground; if ground adjustments are needed coarse sand beds will be used and polyethylene sheets will be used as interface between the ground and the footing.</p> <p>Props are to be connected to the concrete footings as per detail 5.</p> <ul style="list-style-type: none"> <li>- Contractor will submit a method statement before proceeding</li> </ul>                                                                                                                                                                                                       |

## Drawings

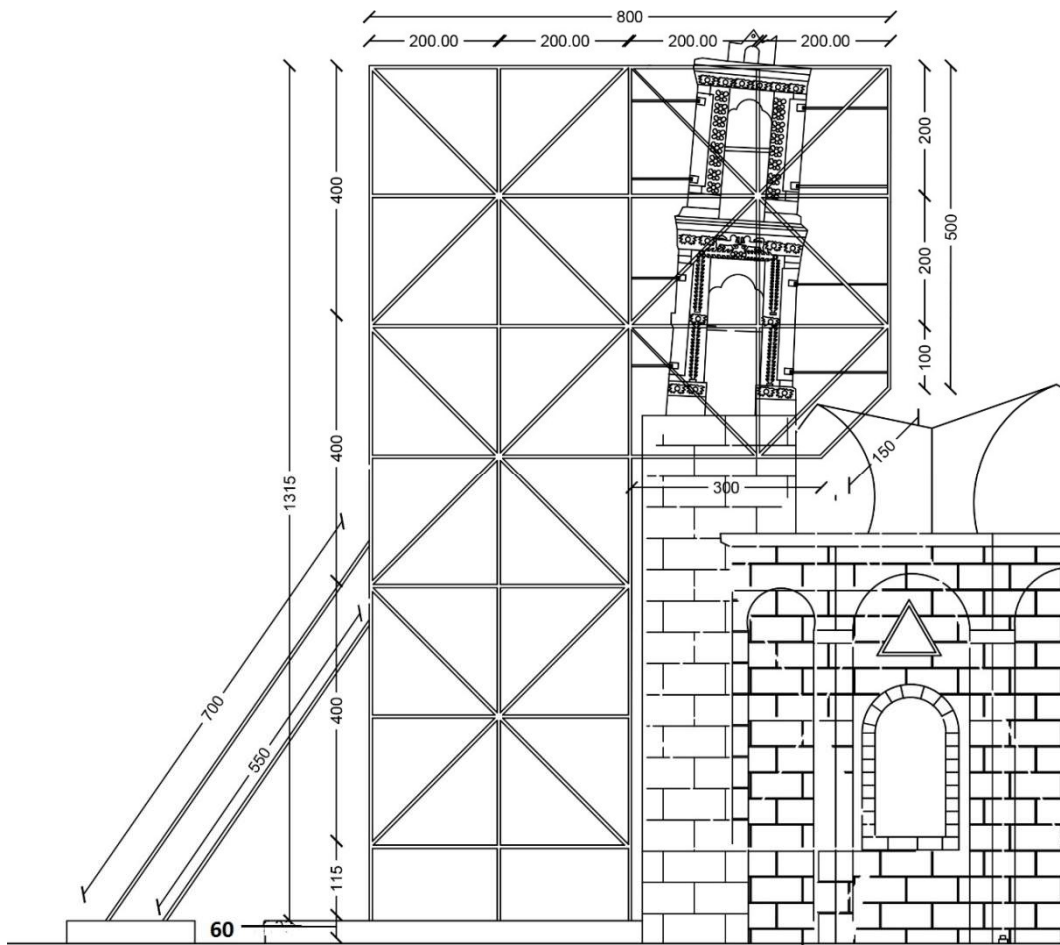


Figure 3 Eastern Elevation with permanent support

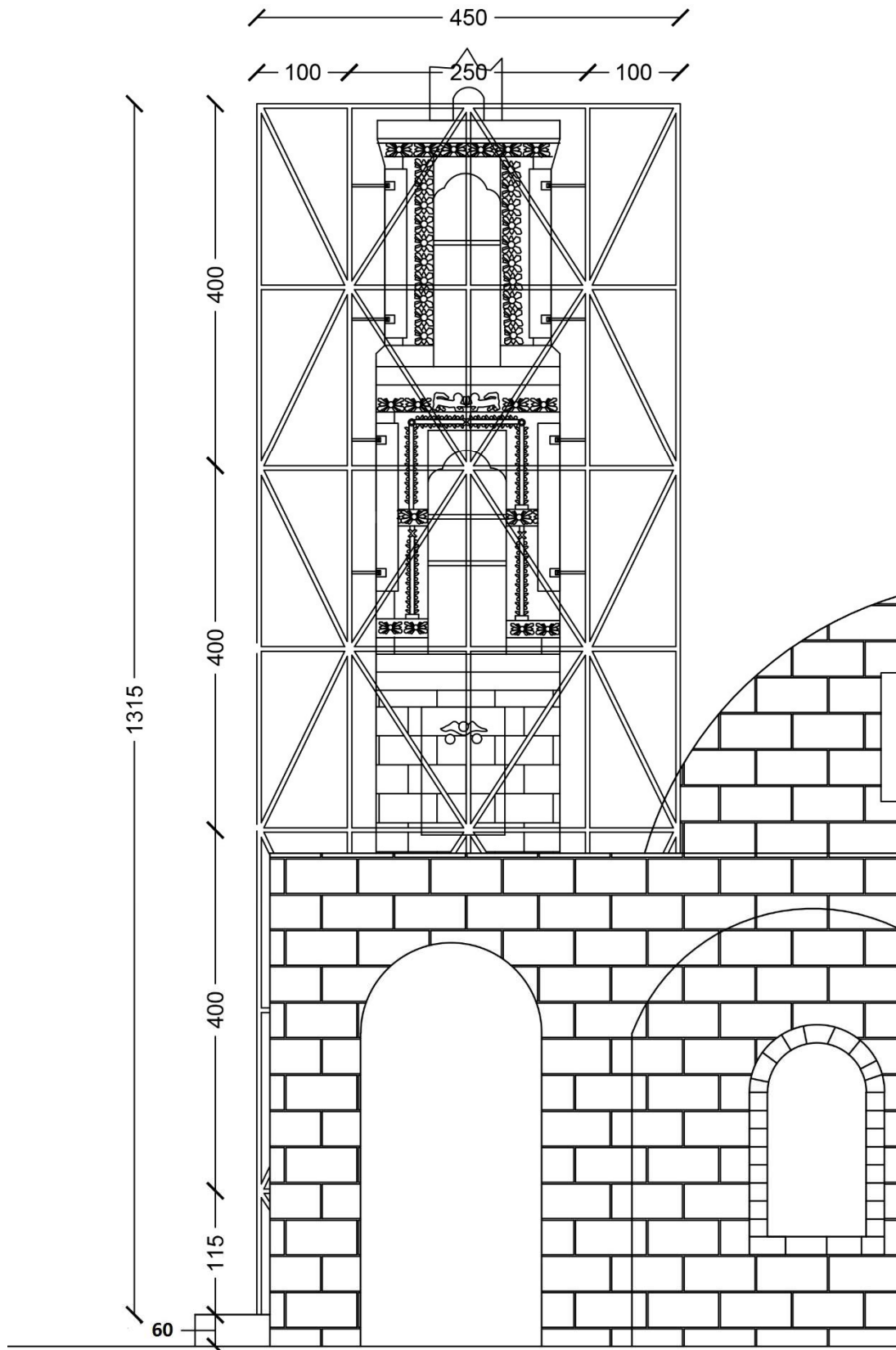


Figure 4 Northern Elevation



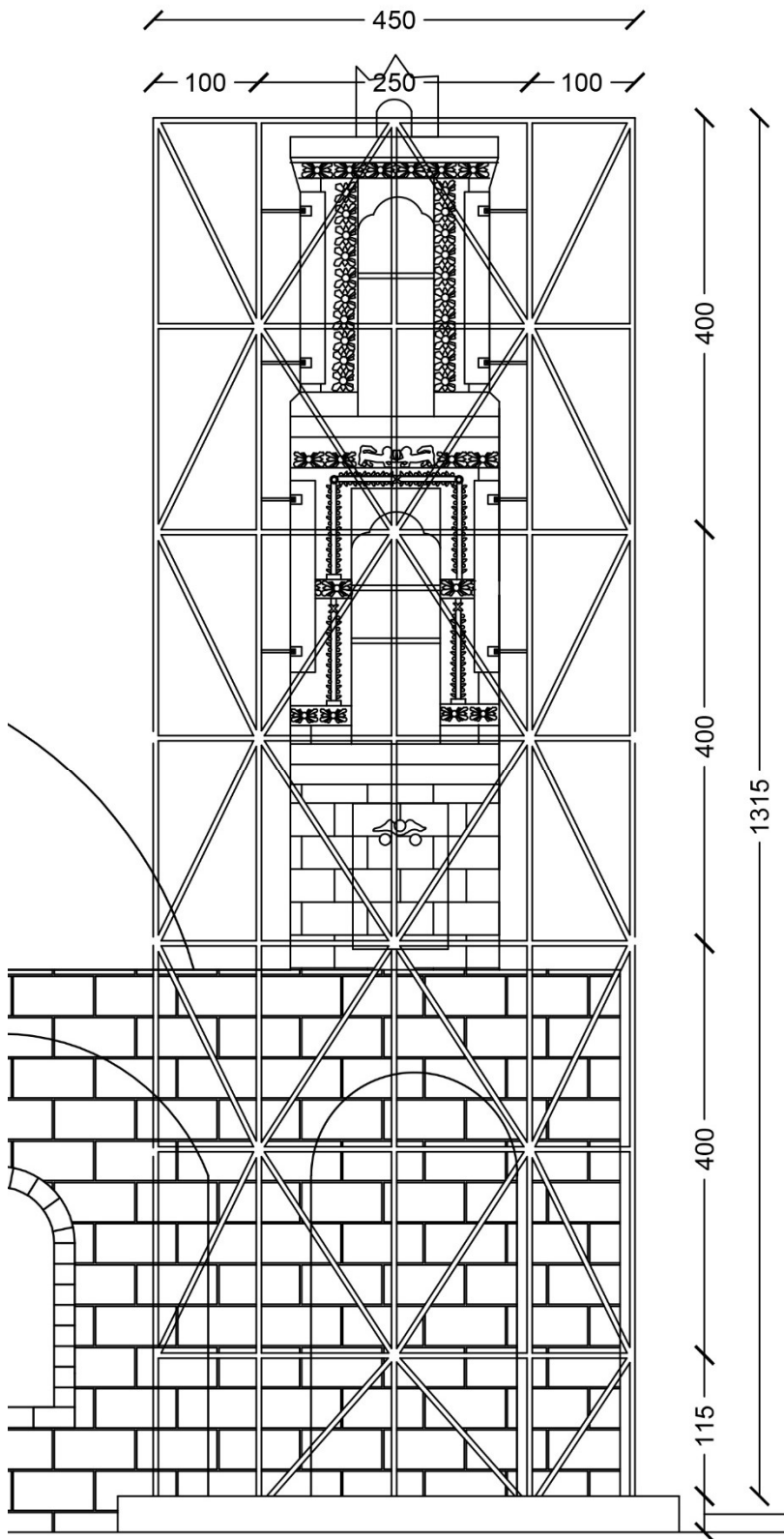


Figure 5 Southern Elevation

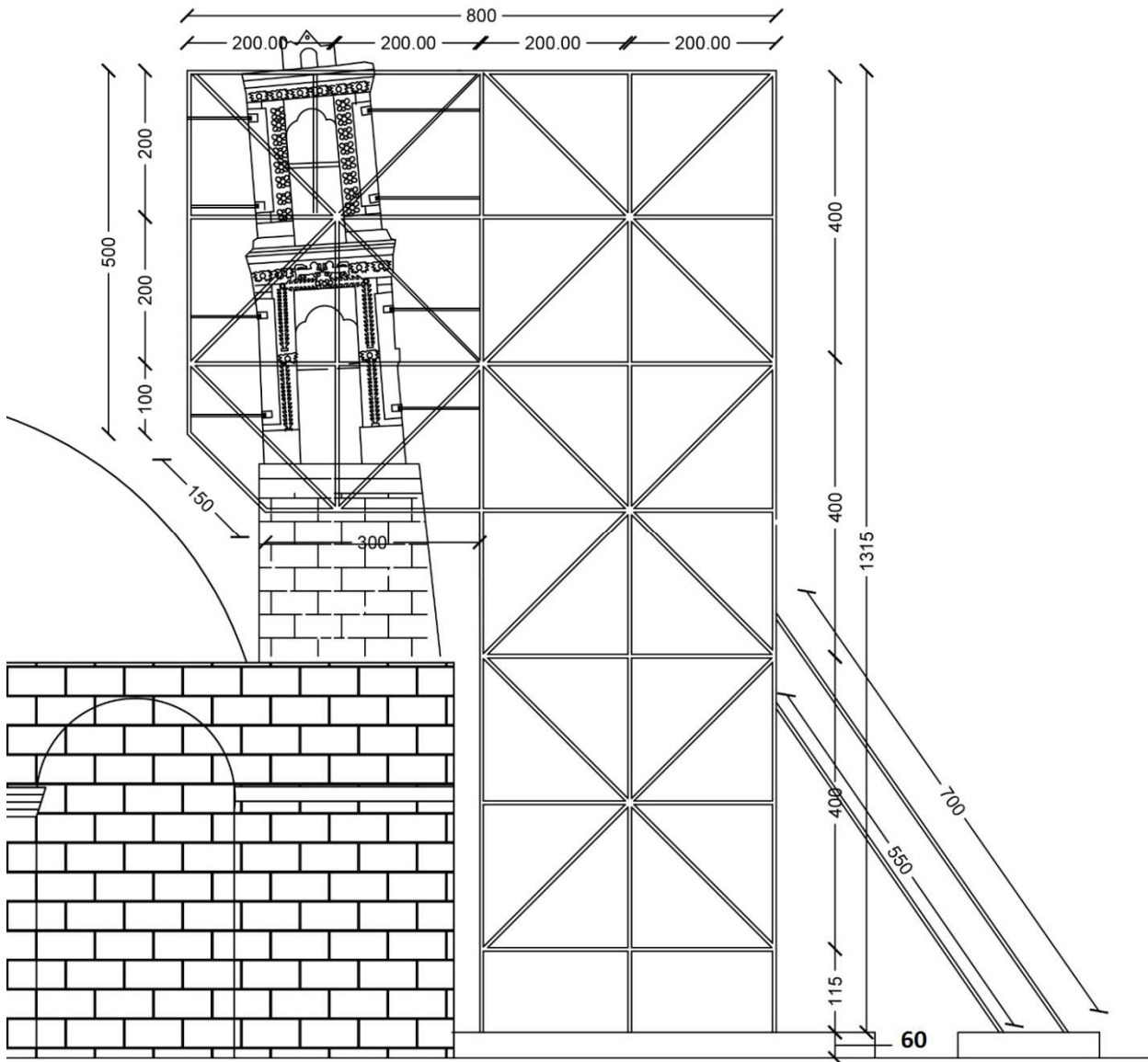
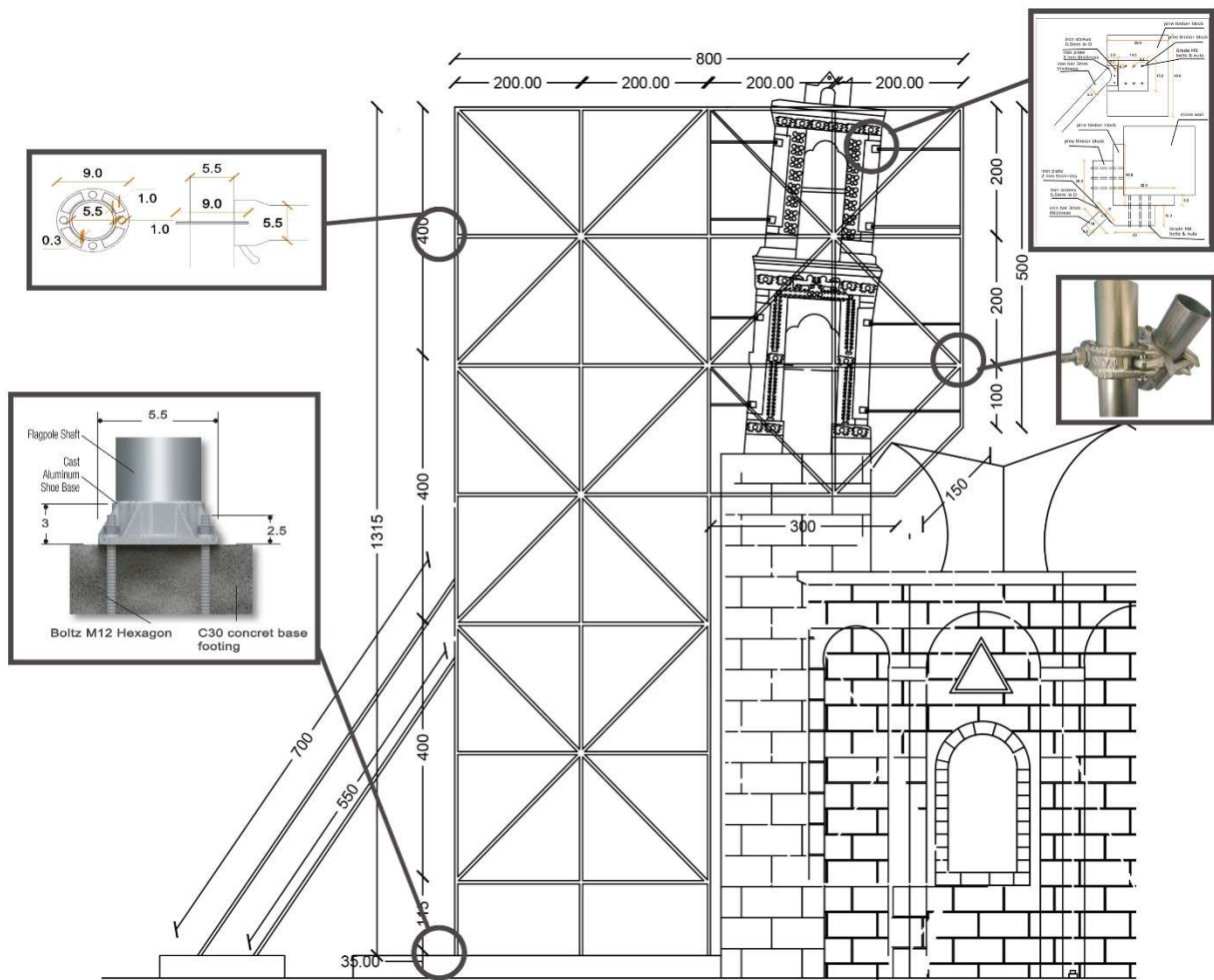
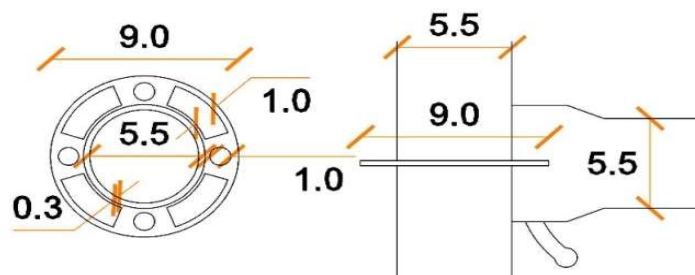


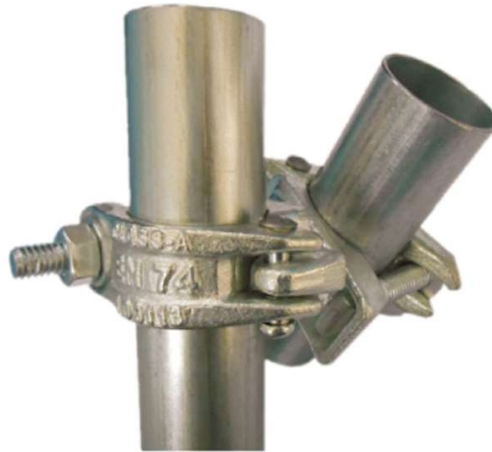
Figure 6 Western Elevation



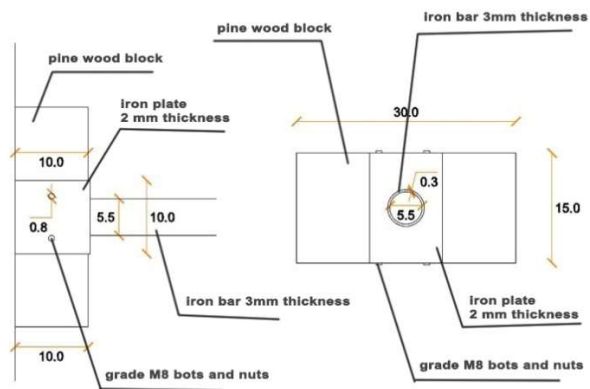
**Figure 7 General figure showing Scaffold connection and base details**



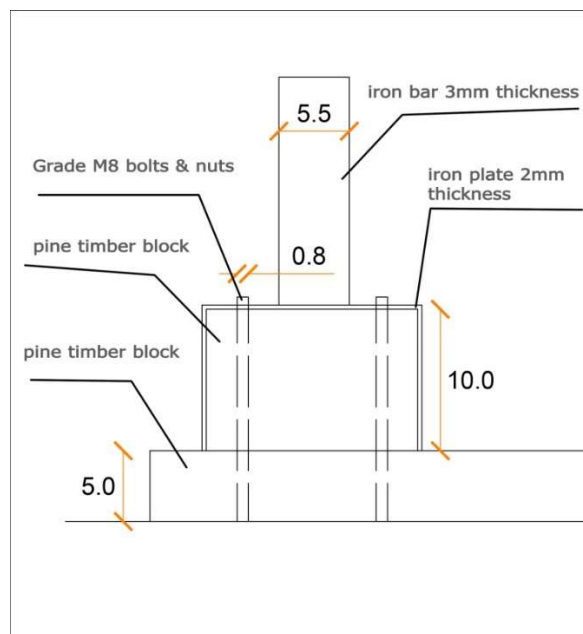
### Detail 1 Ring Lock scaffolding



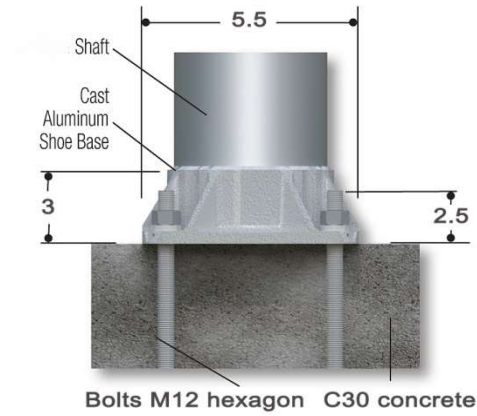
**Detail 2 coupler for diagonal connections (EN-74 Class A)**



**Detail 3 horizontal support points**



**Detail 4 footing connection of the vertical support**



Detail 5 footing connection of supportz

## Footing

Reinforcement plan can be seen below.

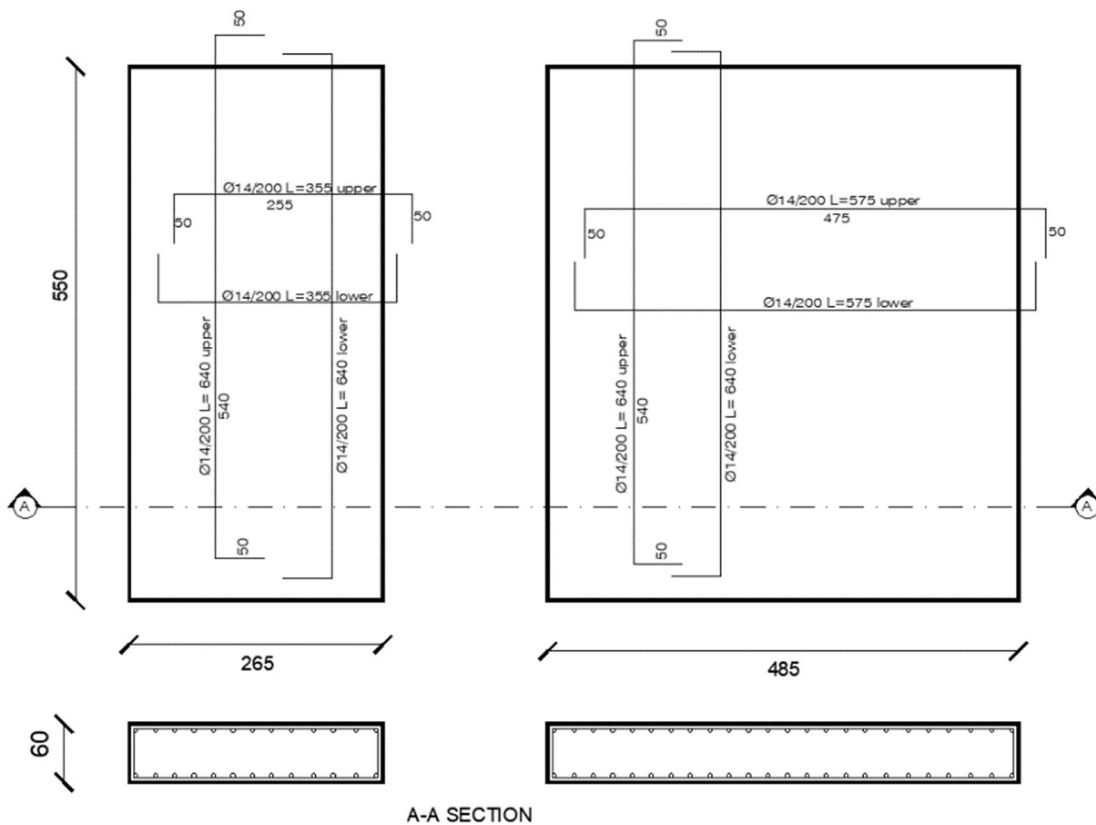


Figure 8- Footing reinforcement plan

## Foundation Materials

| Material           | Quantity | Unit |
|--------------------|----------|------|
| Concrete (C30)     | 24.75    | m3   |
| Rebar (Ø14 – S420) | 1200     | kg   |



**Photo Album**







