Construction manual of the RCC water tank

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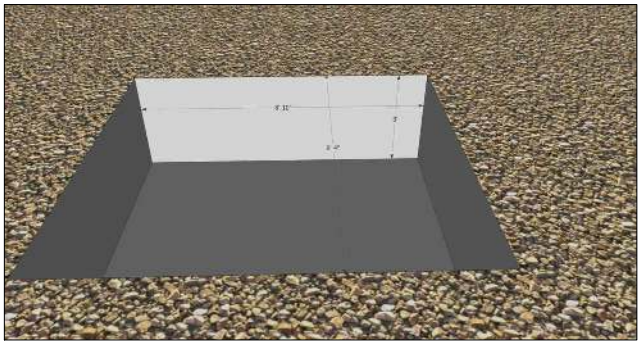
Step 1:
Clear the site where tank is to be constructed.

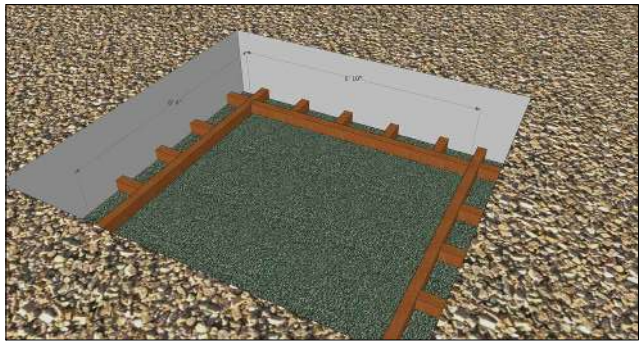


Step 2:
Proceed with excavation of ground sized 8'10"x8'-4"x3'(lxbxh)

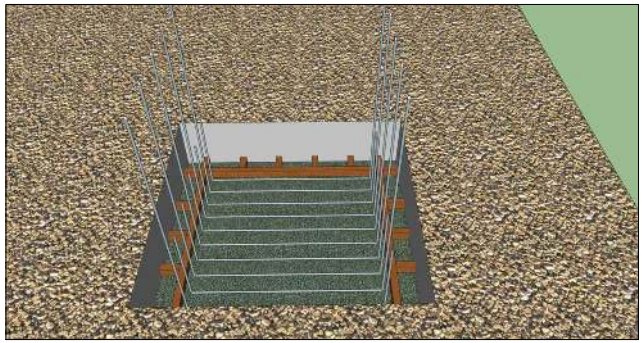
Step 3:
6"Thick stone soling is to be done on the excavated ground surface.

ARCHITECTS PVT.LTD.	Project Title Water tank design at Okhaldhunga Volunteers Initiative Nepal	Revisions:	Architectural Design Drawing Details: slab devider and cleat details Job No: 08001 Scale: Date: 2020-12-13	Architect: Ar. Rajeeb Awale Engineer: Drawn: Hina Magar Checked: Dwg No: C1

Step 4:
Work on the PCC of thickness 4" high on the stone soling surface, assure the mixing is evenly done at the ratio of 1:3:5 (cement: sand :aggregate)



Step 5:
Prepare for the framework for the RCC base of the tank. Make sure that the thickness of slab is 5" is obtained. Tie it with supporting framework members to get the perpendicular size of the tank base.



Step 6:
Lay first layer of 10 dia bar with reference to the bar detail diagram form the drawing. Maintain the c/c distance of the bar be 8" and obtain slab cover of thickness 1.5" form the side as well as from the base with the use of cement mortar cleats.

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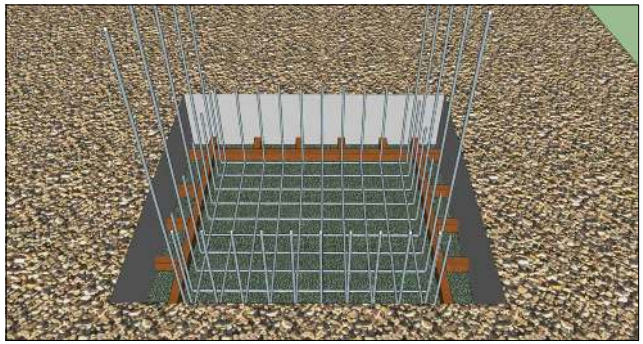
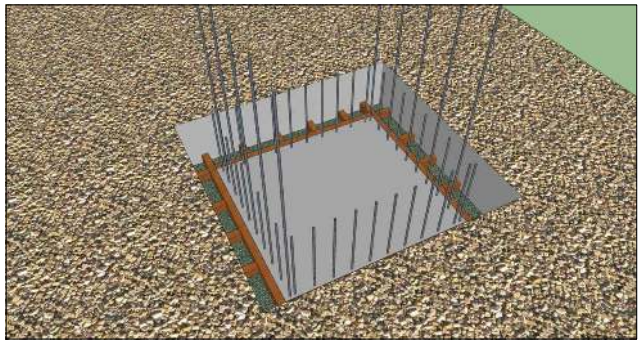
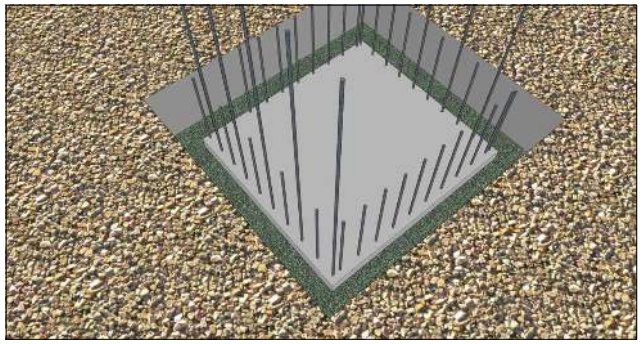


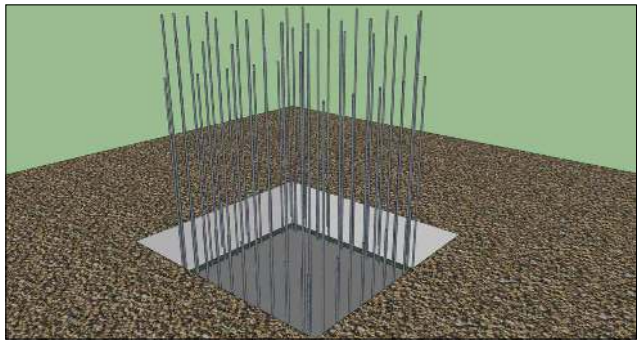
Step 7:
Follow the step 6 and lay bars of the other direction.



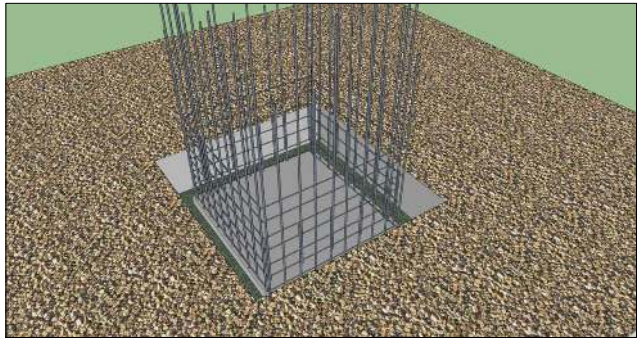
Step 8:
Casting of the tank base is done with M20 concrete grade (1:1.5:3) cement:sand: aggregate. Use water proofing of Dr. Fixit , 200ml for a bag of cement. Uniform trawling of the surface to be done to assure compaction and leveling. Maintain gradiant towards tank cover base so that it will be easy to collect residues during cleaning of tank.



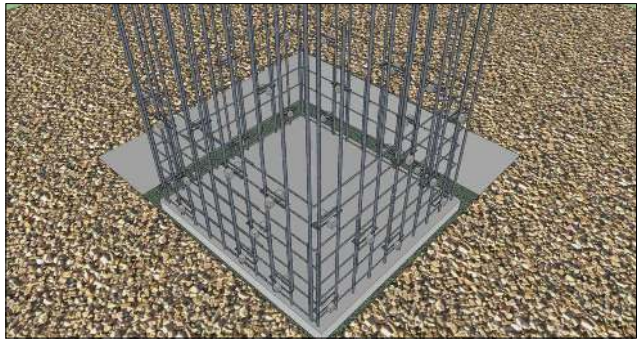
Step 9:
Formwork can be removed after 24 hours and curing water is splashed after 24 hours only. Leave it for 2 days before proceeding the next steps. Covering the concrete surface with jute sacs would give effective result in long run regarding strength of the RCC.



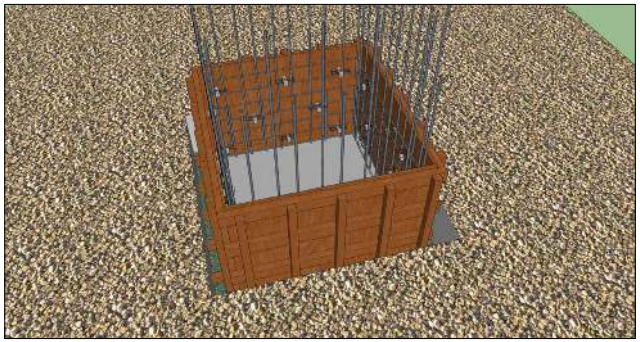
Step 10:
Join the appropriate size of vertical bars on the existing bars with effective lap details as quoted in the drawing.



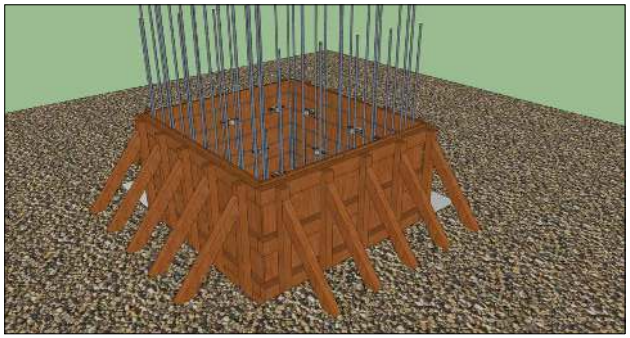
Step 11:
Join 8 dia horizontal bars to vertical 10 dia bars with binding wires. Assure that every crossing between the bars is tied correctly.



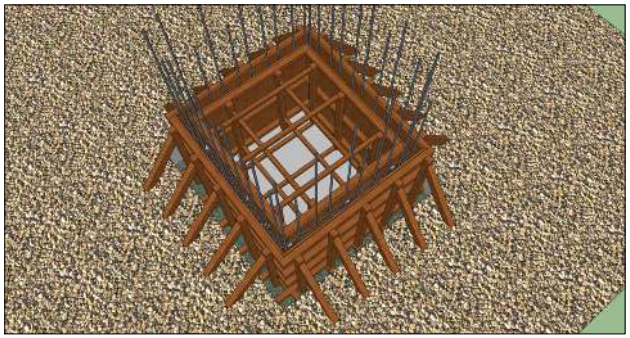
Step 12:
Tie the divider link with the vertical bars consisting of the cleats in order to maintain the thickness of the slab wall. Check the drawing details for the cleat and link dimension. Make sure to maintain thickness of slab using thread to assure it in same level and line.



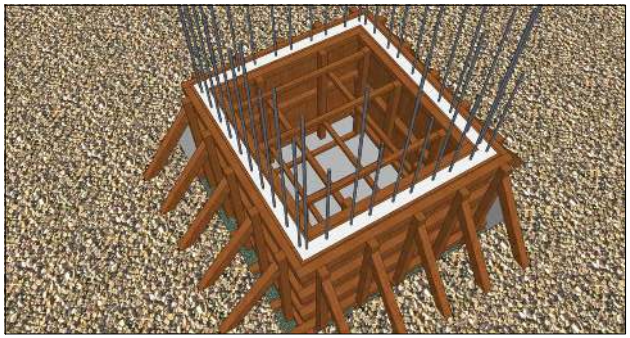
Step 13:
Prepare for the formwork of the outer surface with with vertical posts at distance of 1'6" c/c distance.



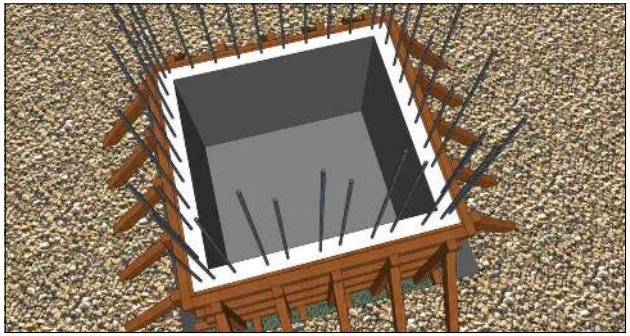
Step 14:
Proceed with slant shoring to gain the perpendicular height of the tank.



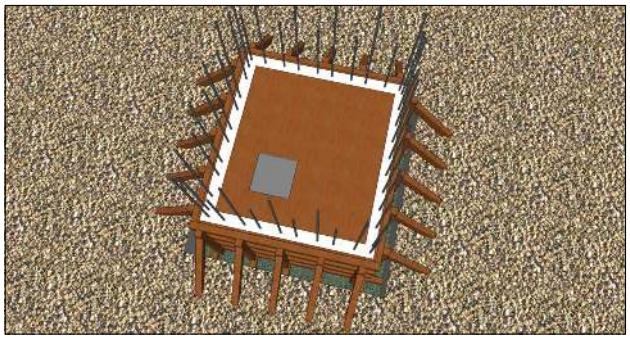
Step 15:
Follow the step 14 and prepare for the formwork in inside as well with effective nos of vertical and horizontal ties.



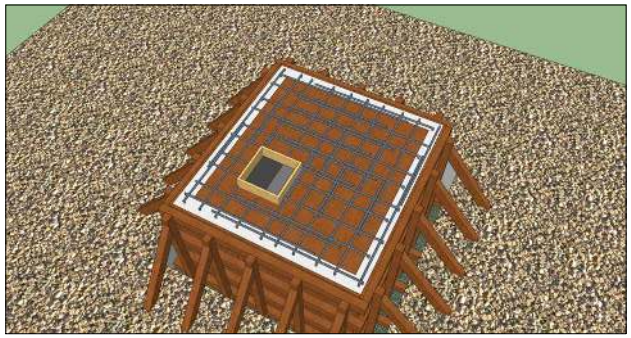
Step 16:
Proceed with the casting on the enclosed formwork space by M20 concrete mix. Assure that pouring of concrete is not done more than 1' on same level. Use vibrator and water proofing for the even mixing of the concrete.



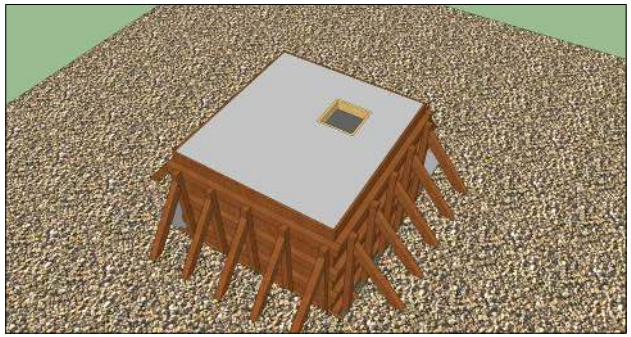
Step 17:
Remove the inside form work after 24 hours and proceed with curing work. Use of jute sacs to cool the RCC surface would be appropriate. Leave one more day with curing.
Proceed with plastering and cement punning work on inside after 48 hours. Use water proofing during plastering work as well.



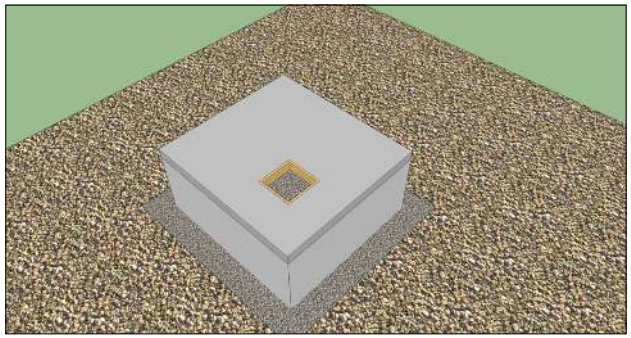
Step 18:
Prepare for the formwork of the top slab. Assure that the tank cover space is left as per dimension given in drawing. Use the planks inside of the size that can be removed easily form the tank cover opening. Also note for the appropriate nos of posts to level the top slab hold the live working load.



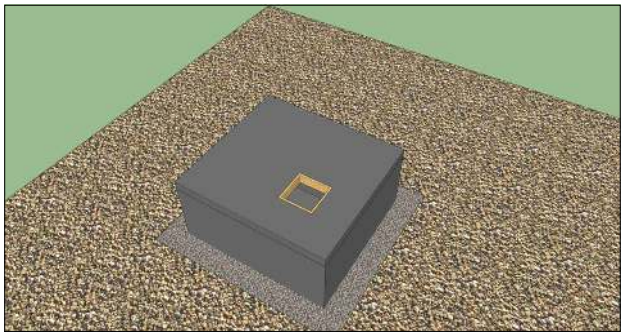
Step 19:
Bend the vertical bars and tie up with binding wires. Also use 1.5" cleats to maintain clear cover form the base of the formwork. Insert CPVC pipes at the needed corner before casting is done for inlet and outlet.



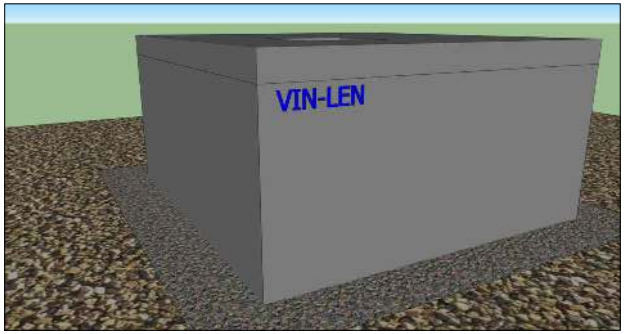
Step 20:
Cast the top surface of the tank with M20 concrete mix. Assure about the uniform level.



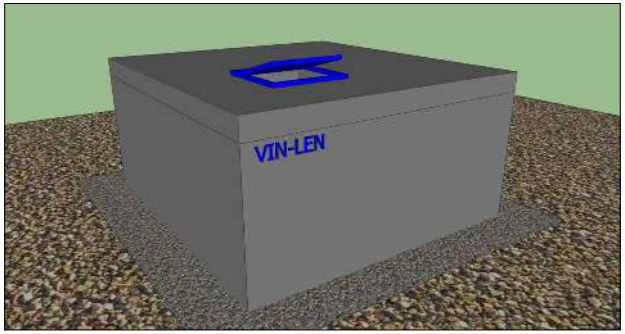
Step 21:
Remove the formwork after 24 hours and continue with curing work with watering on the RCC surface. Backfilling and ramming can be done at this stage.



Step 22:
Work on the plastering of the outer surface. Use water proofing at the ratio of 200ml for 1 sacs of cement.



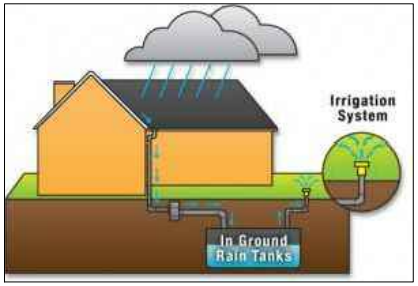
Step 23:
Work with the leveling of VIN-LEN on the finished surface of the elevation of water tank.



Step 24:
Remove the fromwork of the top slab after 22 days of the casting and install the tank cover.
Meanwhile it is ready to use.

Step 25:
Identify the source of water for storage to the constructed tank which could be:

* **Well**
* **Rain water**
* **streams**
* **River**
* **VDC tap water**
* **Natural lakes**



Step 26:
Rain water harvesting can be considered as one of the main water resource to storage tank.

Step 27:
Use water from storage tank for irrigation of cultivating land either my drip irrigation technology/sprinkler irrigation technology.