

### 3.3 Baseline surveys and inferences

#### A. Topography and hydrogeology assessment (Refer to folder 1 for detailed reports)

##### Total station survey

To understand localized level differences, a total station survey was conducted, that provided levels of existing infrastructure and locations of as built informal structures, trees, parking zones and drainage infrastructure locations. The survey was also useful to procure levels that can inform the water management strategy for the larger plot area.

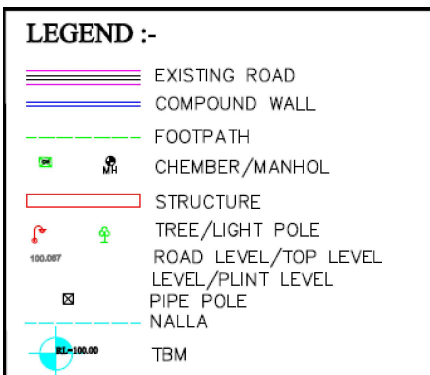
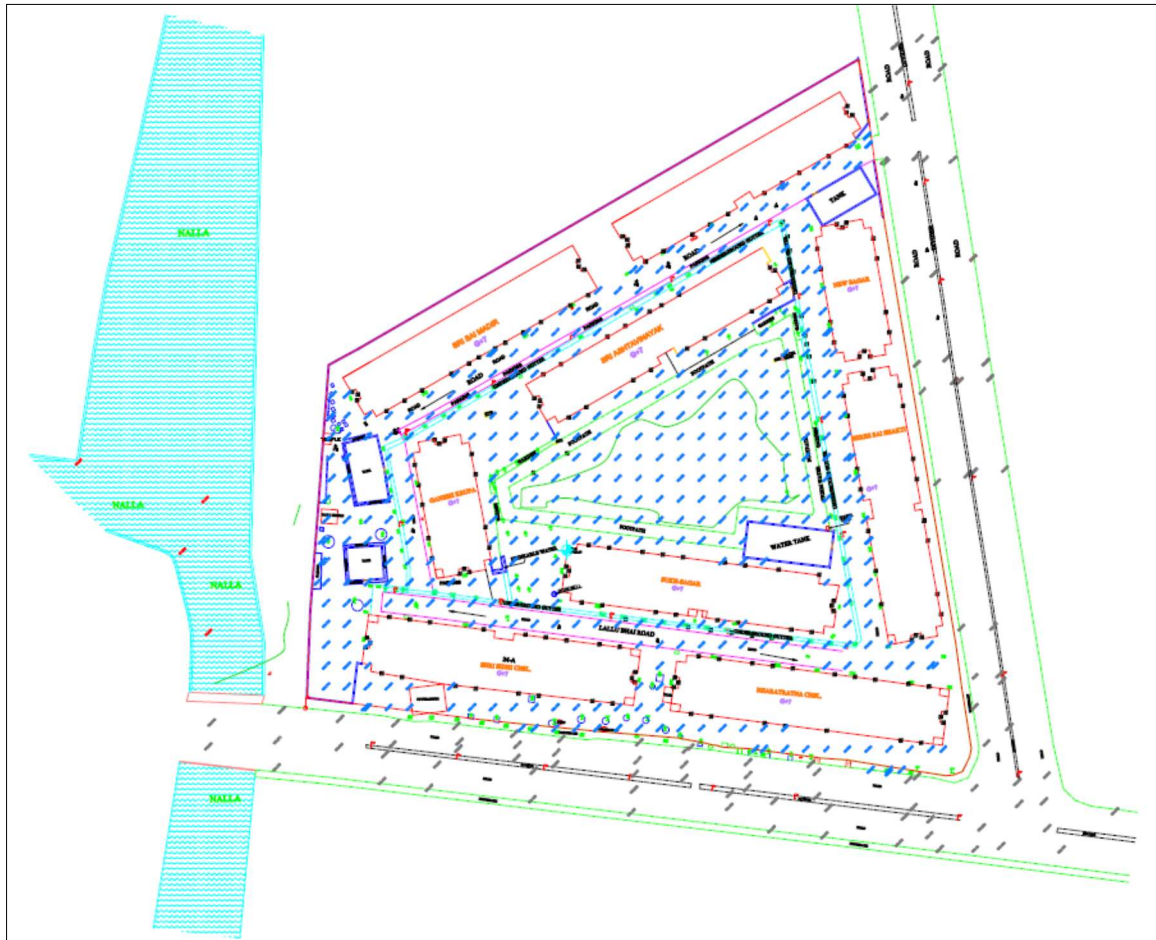


Figure 3.20 Survey produced by Rane Management Consultant Pvt. Ltd. recording levels and as build structures

## Hydrogeological survey

Hydrogeology survey report (Refer to report 'Vertical Soil-Rock Strata Detection, Soil Testing, Groundwater Depth Estimation of Laal Maidan Site, Mumbai' done by Universal Geotechnica, in folder 1)

### **Observations as per Hydrogeology survey:**

- In Figure 3.21 (Left) below red dotted line represents the profile line of scan done as per this survey. Area shown with white dotted line was not scanned as per the consultants due to challenges in scanning like insufficient area, close proximity of building foundation and water logging in central portion of maidan which were restrictions for electrodes to spread and scan.
- As per the scanning result on north south direction scan which is up to depth of 100 m. there is presence of an underlying aquifer at scan 7 number and Probable groundwater yield for same site is 1100 to 1400 (lph) at scan 7 number. As shown in figure 3.21 (Right) Scan no. 7 will fall under the zone shown with yellow dotted line.
- As mentioned in the report This site is recommended for plantation work as well as groundwater recharge work based on scientific resistivity field investigation survey of soil-rock strata and soil quality testing at laboratory.
- Test pits to check the strata of maidan during month of august the 150 mm of concrete slab was observed in concretized area and mix of murrum and Malaba below this 150mm slab.
- Water saturation was observed in all the pits after digging up to 0.75 m – 0.9 m.
- Also locals mentioned that there is presence of water at certain depth (up to 1.2m) throughout year as per their observation and previous digging experience in and around maidan.

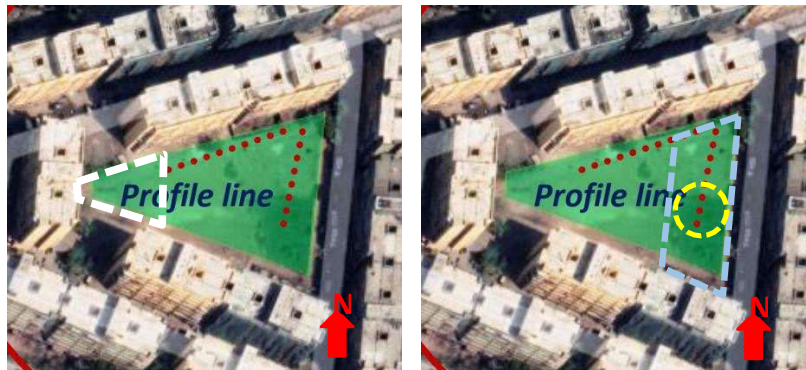


Figure 3.21 Hydrogeology survey extent. (Left) Red dotted profile line shows 300 meter depth scan from west to east; 100 meter depth scan from north to south. Zone with white dotted line is not scanned. (Right) Blue dotted line shows the area suitable for recharge system; yellow dotted line zone shows the proximity of underground aquifer.



Figure 3.22 Pits done in 5 places on site during month of August showing layers of strata and water saturation levels.