Analyst Take-home Exercise

Please create a local database with a common engine and add the data contained in the attached file. Each file should be its own table (other than the metadata file). Point a common dashboarding tool at the end transformations of the data and answer the following client requests.

Complete the exercise below by providing the SQL code used to create the final tables the dashboard figures/tables were pointed to AND provide screenshots of the dashboards created (link to public dashboard is also sufficient).

Scenario:

We have deployed our technology on a commercial construction site. There is a network blanketing the entire site with gateways and extenders. The wearables should be online the entire time the worker is on site and go offline once they leave. Each worker is given a wearable that must be worn at all times. This wearable quantifies when the worker is "on site" by picking it up on the network signal AND can be used in place of common RFID cards to enter/exit the site via the security turnstiles (access control).

Our client, a commercial construction contractor:

1) Wants to know billable hours from each subcontracting group. It is negotiated to be done by access control gate transactions (individual worker daily hours = last out – first in gate timestamps). Create a weekly "billable hours" dashboard the client can use to validate subcontractor bills.
2) Wants to know which subcontracting groups have not provided a single worker to date AND how many workers as a percentage have shown up from the other subcontracting groups. Create a dashboard highlighting percent of promised labor provided project to date.
3) Wants a daily dashboard to assess how many workers (headcount) are on site Total and by Subcontracting group
4) Is concerned the site security plan (at least one in and out of the gate) is not being followed (which is a security risk and makes billing validation inaccurate):
    a) Create a compliance dashboard so a corrective conversation can be had with the respective subcontracting group leadership
    b) Create a more accurate billable hours estimate dashboard, augmenting the access control transaction hours with the IOT "on network" hours when they differ dramatically or are missing gate transactions