

Installation Guide

ZK-VSCN200

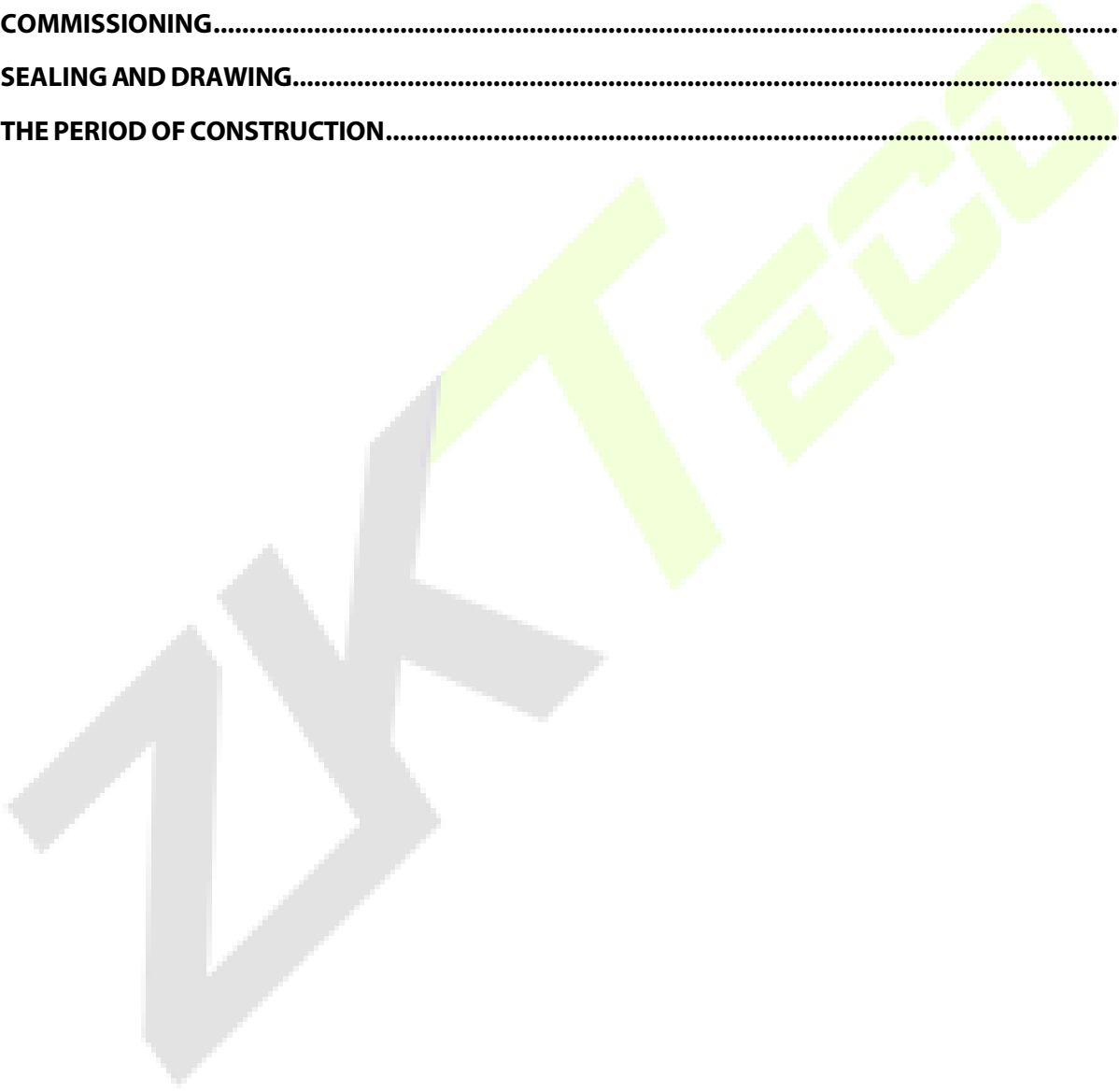
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English

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1 UVSS Design Drawing

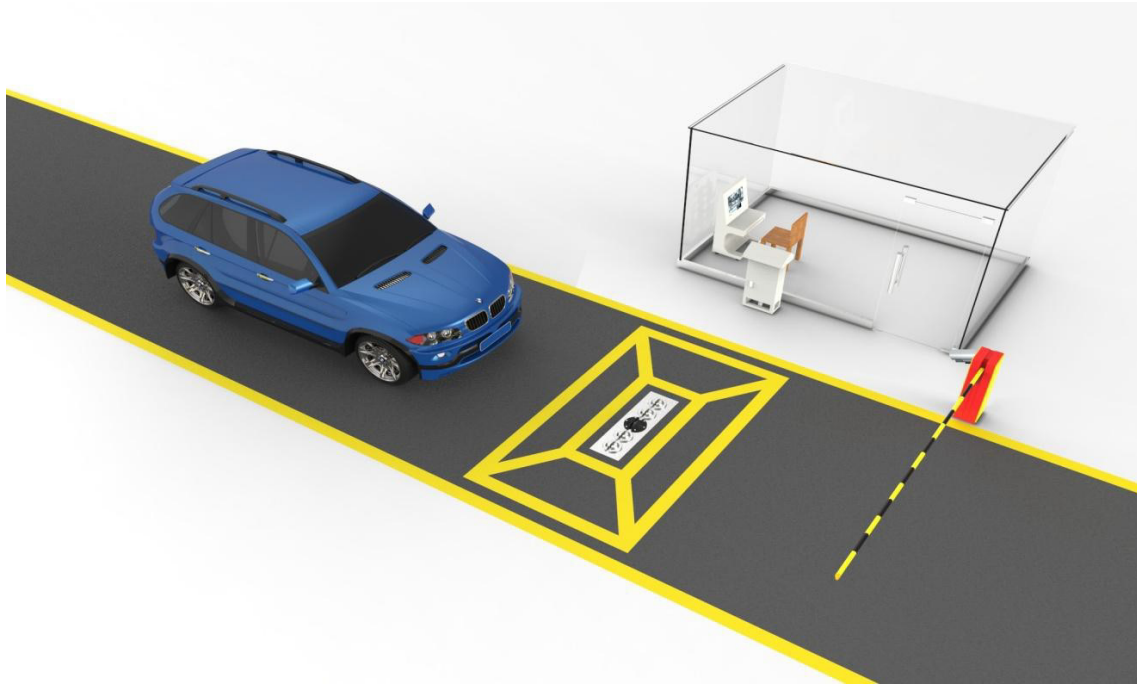
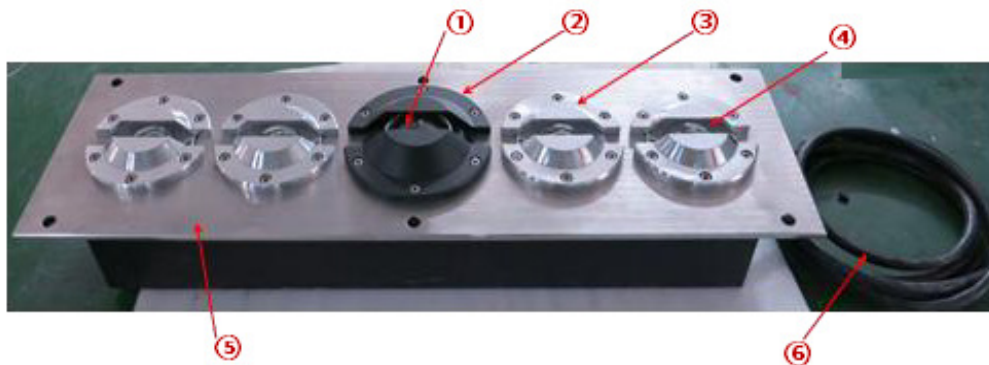


Figure 1-1 Effect Picture of Set Design



- ① CCD Line Scan Camera
- ② Stainless Steel Protection Cover
- ③ LED Illumination
- ④ LED Light
- ⑤ AT3300 Main Frame
- ⑥ Main Control Cable
- ⑦ Rack Mount Equipment

Figure 1-2

Scanning Units Dimension(1200x350x230mm)

Rack Mount Equipment Dimension (1320x460x48mm)



- ① Operation Table
- ② DVR (Optional)
- ③ 22-inch Monitor
- ④ Industrial Personal Computer
- ⑤ Start Button

Figure 1-3 Operation Table (800x750x1430mm)



Figure 1-4 Distribution Box (600x300x1000mm)



Figure 1-5 Vehicle Plate Number Capture Camera

2 Construction Preparation

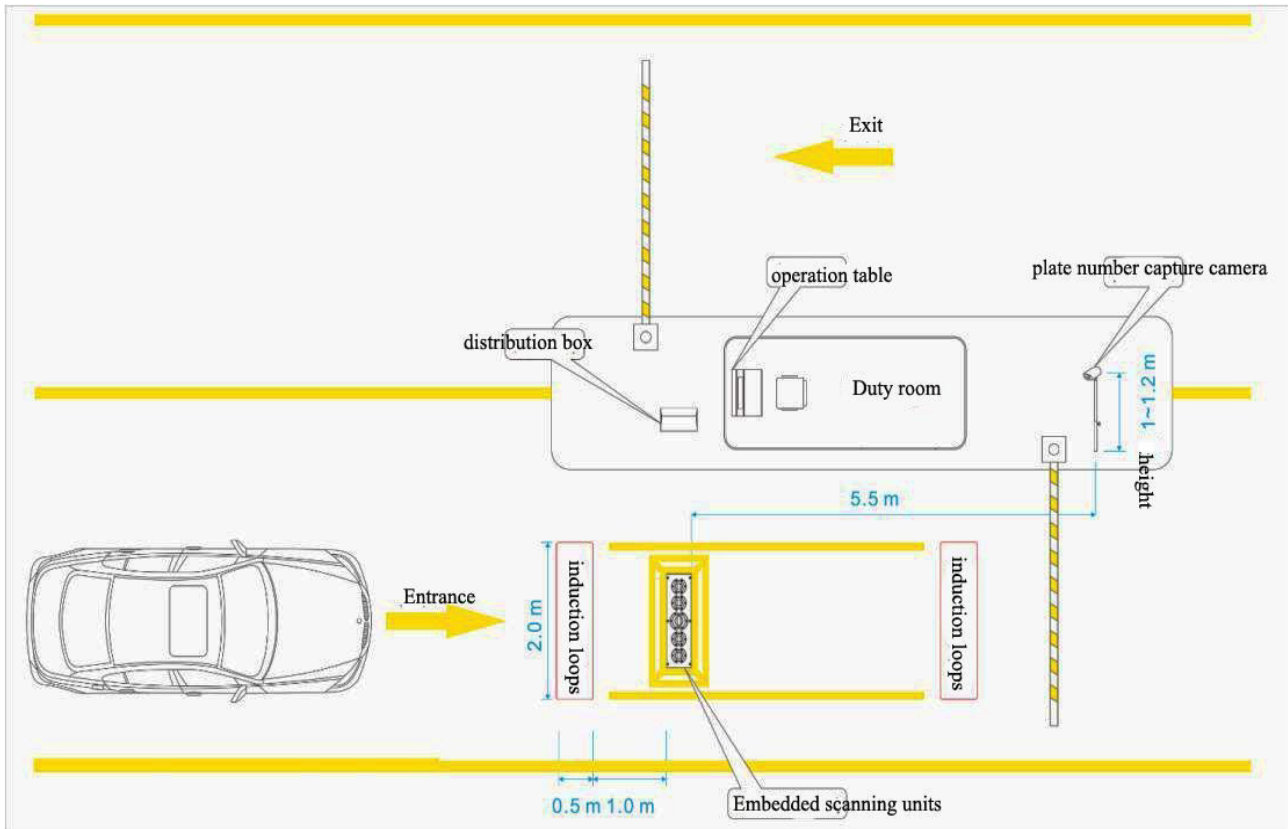


Figure 2-1 Normal Installation Plane Graph for Reference

In general, we can refer to Figure 2-1 to know how to install the UVSS. However, different installation locations may be affected by different geographic environmental, different parts' location and distance will have a little difference. We need to confirm the below details before installation:

1. Whether have special technician check the installation location in advance? If have, please let the technician provide some related data, if no, need client assistance us to get some related data.
2. Whether clients need install scene monitor camera? If need, how many pcs scene monitor camera? How about the cameras location? How long the separately distance among scene monitor camera with the distribution box, operation table and scanning units? See Figure 2-2.

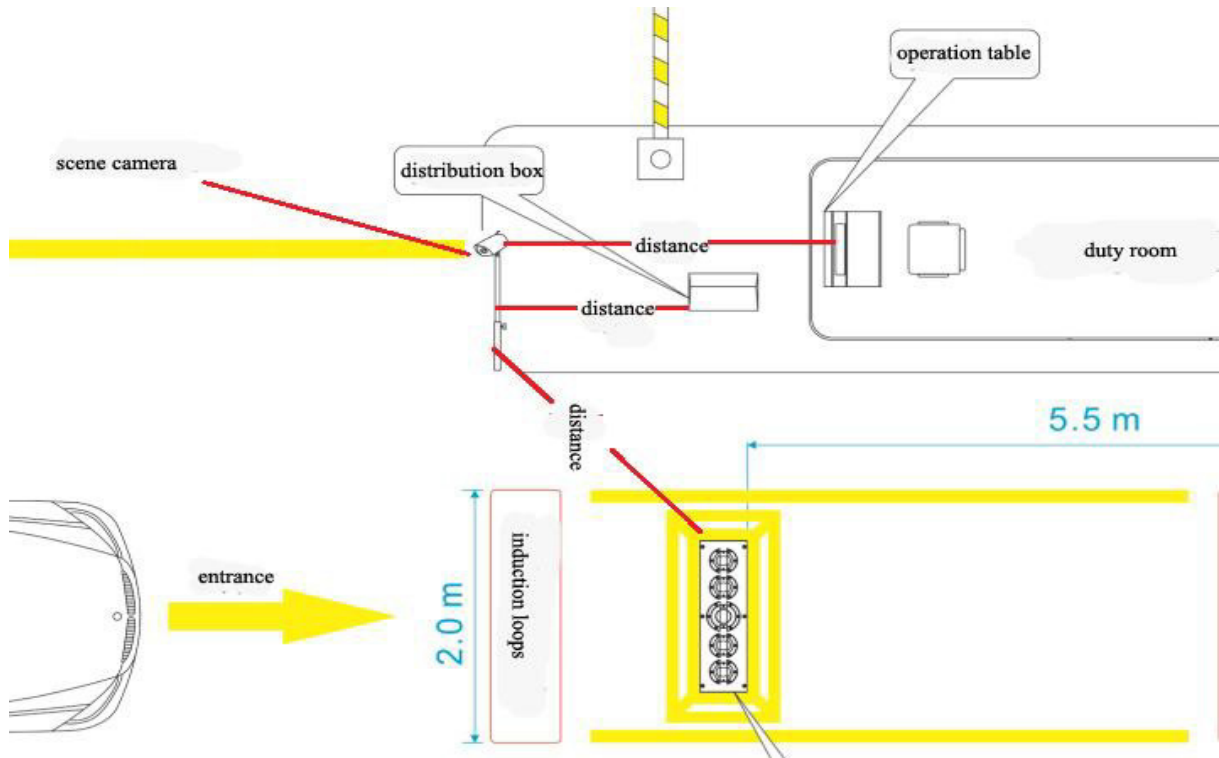


Figure 2-2

3. In general, install the distribution box near the passageways, distance between scanning units is less than 10m and at the same level. If the distribution box can't install near the passageways because of geographical conditions or other factors influence, the client should provide us the exactly installation location, and the distance between the distribution box and the scanning units, distance between distribution box and operation table. Refer to Figure 2-3.

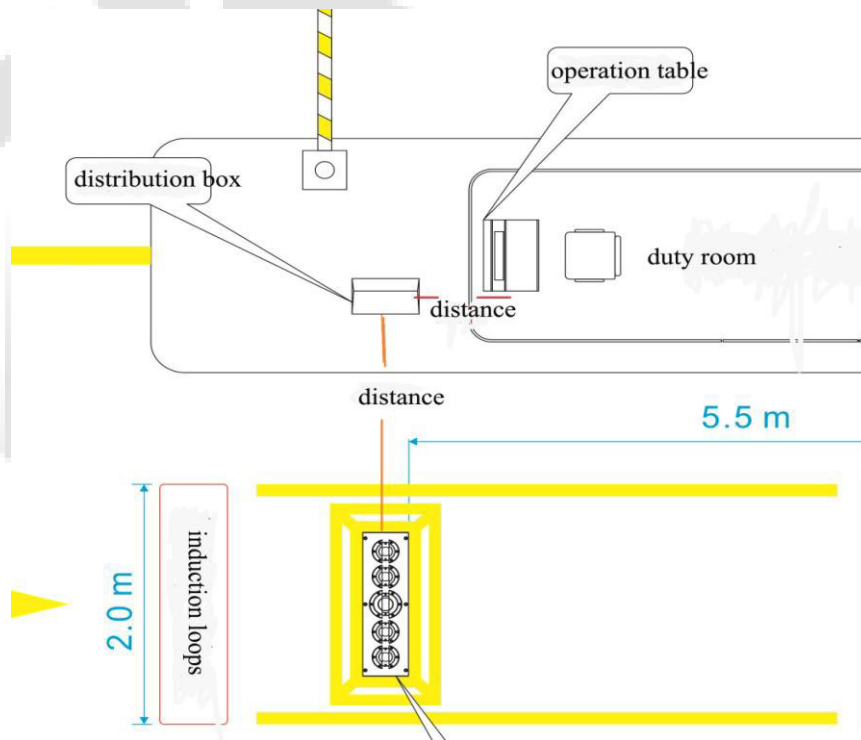


Figure 2-3

4. Operation table's installation location, what's the distance between operation table and scanning units & and what's the distance between operation table and distribution box? See Figure 2-4.

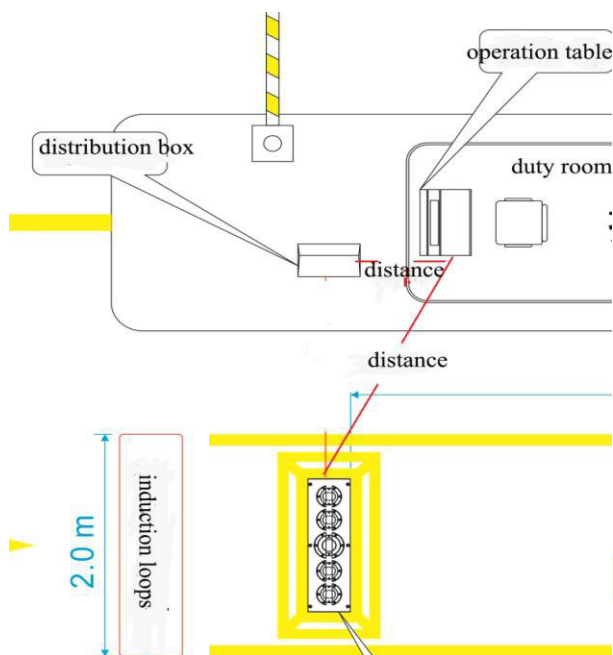


Figure 2-4

5. The scanning units should be installed in the middle of one-way street. If this one-way street is only for small vehicles use, and there have car barrier, bollards system, anti-collision wall, etc as well. The distance between scanning units and obstacles should be over 5.5m. If the one-way street is for van and big truck use, the distance should be more far away. In principle, should make sure the distance between the scanning units and obstacles can hold one vehicle. See Figure 2-5.

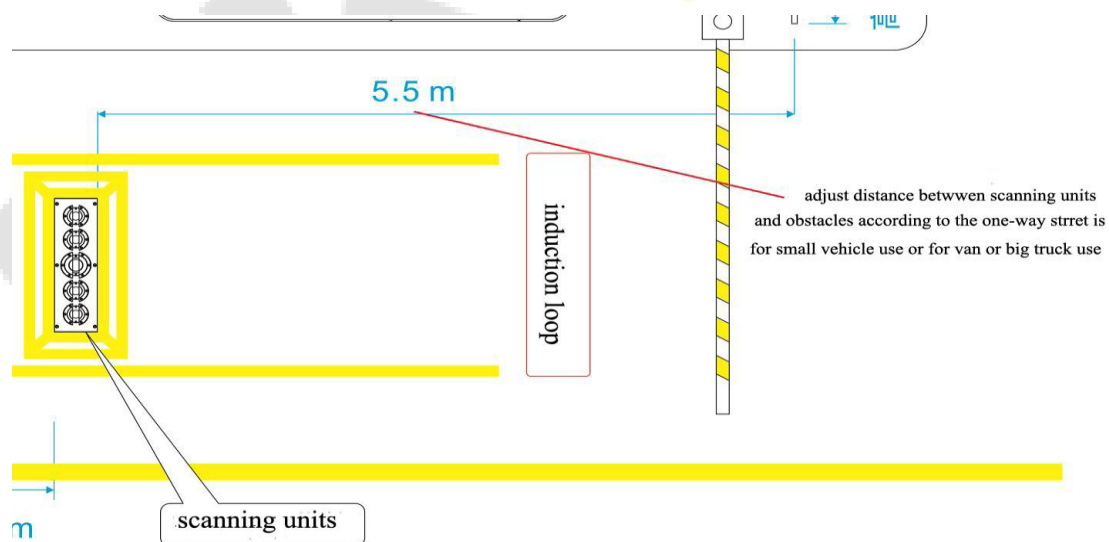


Figure 2-5

- Whether there has suitable support stand for the vehicle plate number capture camera? And what's the distance between operation table, distribution box, scanning units and plate number capture camera? The distance between plate number capture camera and scanning units can't over 10m. The most suitable distance is 5.5-6.5m.

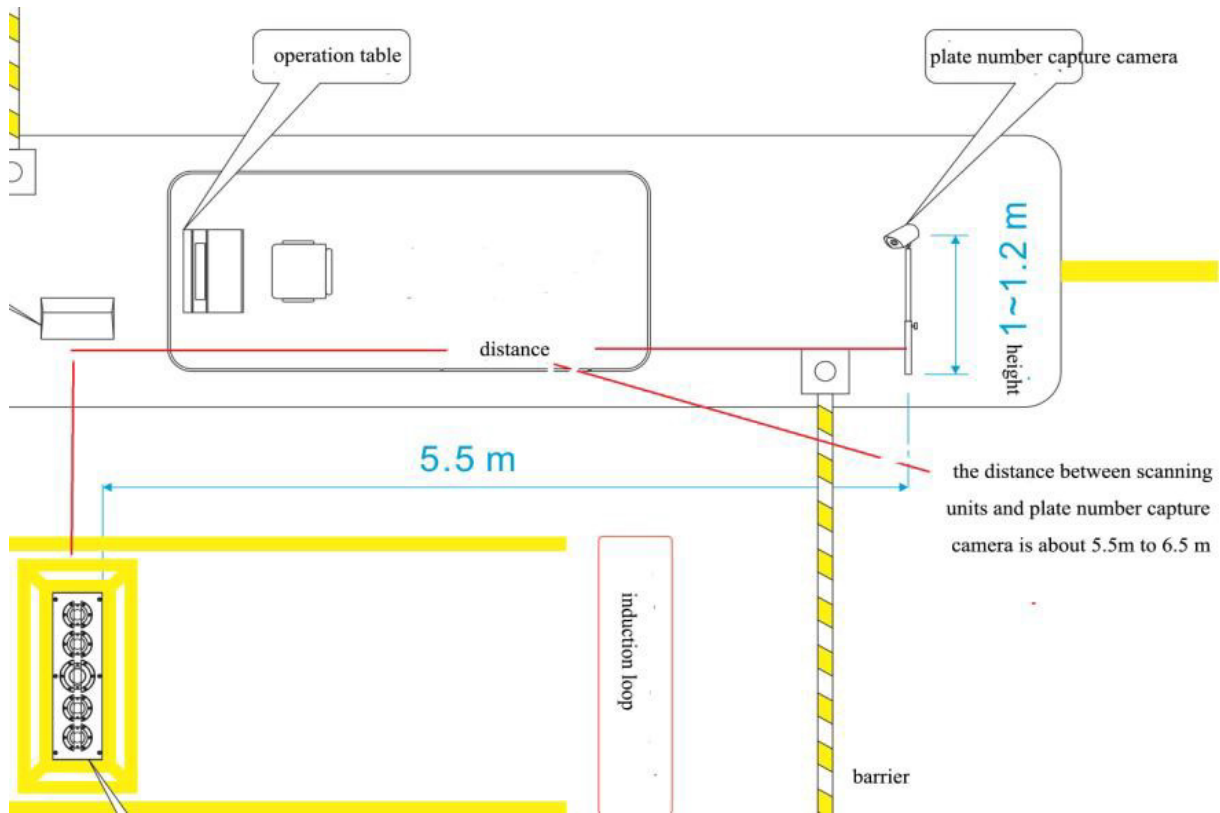


Figure 2-6

- Whether need to connect big monitor? For example, 50-inch monitor.
- Whether send the construction drawings and construction requirements to the client in advance? Whether the client allow to construction in the installation location.
- Whether the clients ready the below related material and tools?

2.1 Tools

To install scanning units: cutting machine, concrete, drilling machine, 40mm diameter galvanized steel pipe.

To fixed the camera: electric hammer, electric drill, Expansion screws, PVC pipe, etc.

Remark: the concrete needs several days to solidification, please use the steel plate to cover the concrete when there is vehicle pass through during construction process.

2.2 Material

PVC pipe, 1pc 40mm diameter galvanized steel pipe, 90° elbow, pipe's length is up to the installation onsite situation. Several slots.

3 Construction Installation Instructions

According to the installation situation, confirm exactly installation location and related connection wire's direction of scanning units, distribution box, induction loops, plate number capture camera, pipes, etc. First, confirm the scanning units installation location, general considering the following factors:

1. **Passage Width**

Count out the center line of passage width, install the scanning units in the overlap between the scanning units' center line and passage's center line.

2. **Vehicle's Width**

In order to scan all kinds of size's vehicles, it needs to statistics the most longest's vehicle which possible enter into the passage. So that the distance between scanning units and barrier is enough to park the longest vehicle.

3. **Passage's Underground Pipes and Cablecasting**

The scanning units should yield to the underground pipe and cablecasting to avoid disturbing.

Once confirm the scanning units installation location, then to confirm induction loops, plate number capture camera and environment control equipment's installation location.

Please refer to the Figure 3-1.

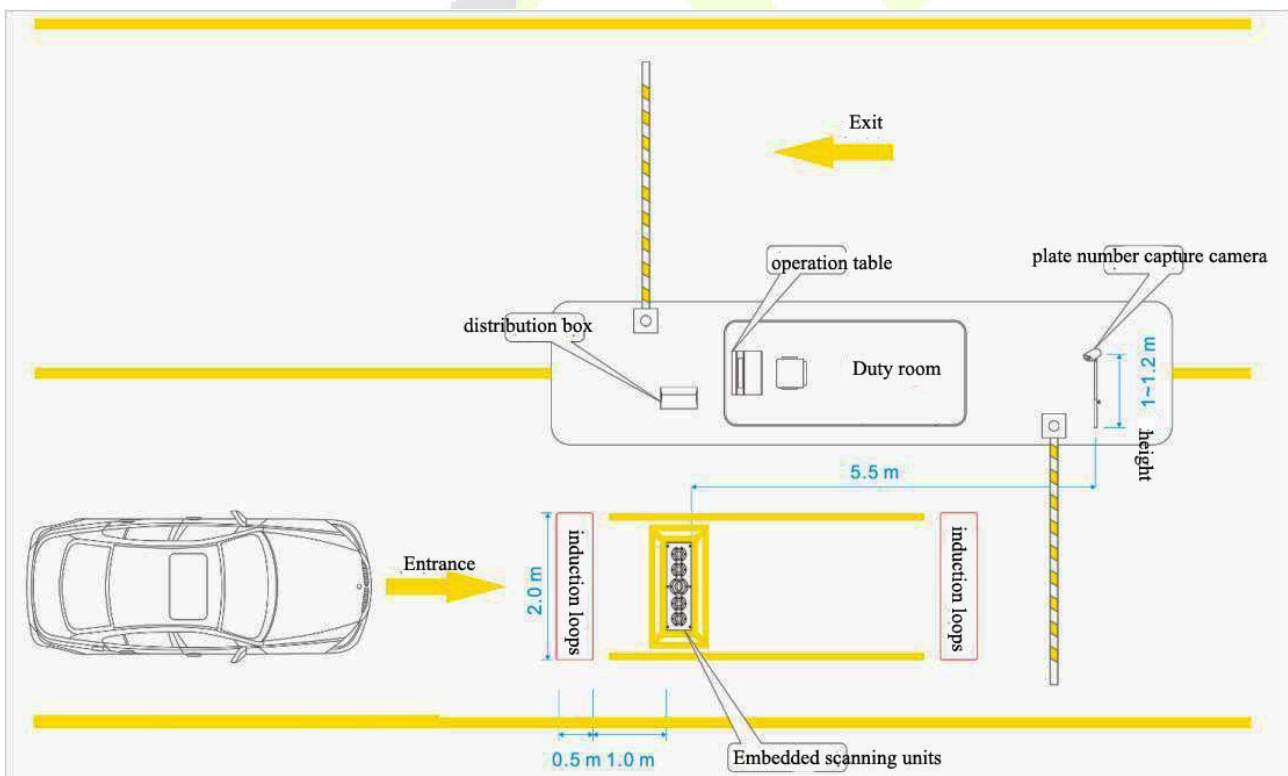
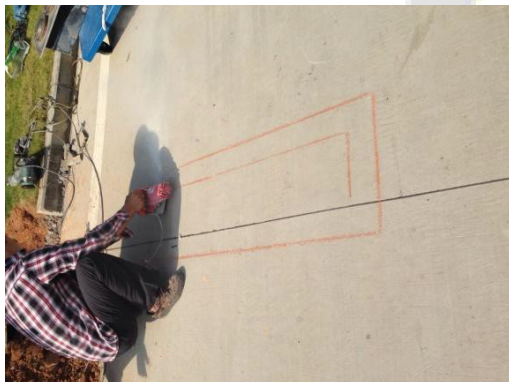
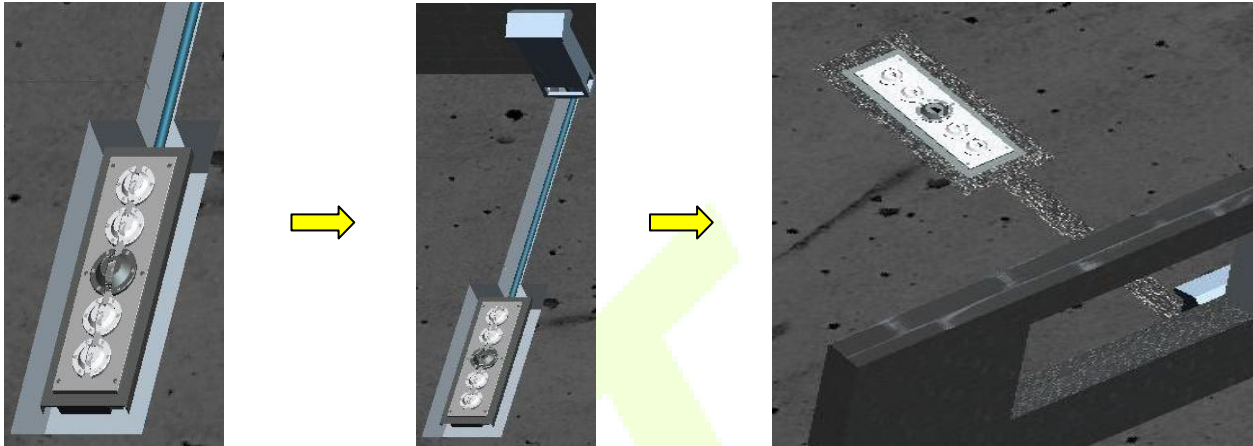


Figure 3-1

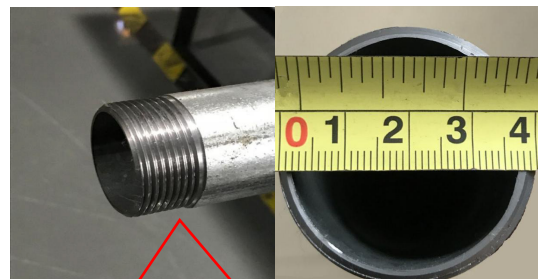
4 Civil Construction

Details installation steps: Dig a hole → Install the scanning units and induction loops wiring → Fixed the pipes (40mm galvanized steel pipe, 25mm PVC pipe) → Back-fill concrete and punning → Debugging → Drawing mark lines.

Please refer to the following photos:



This location's step is the bearing step for the rack mount equipment, It should have this bearing step.



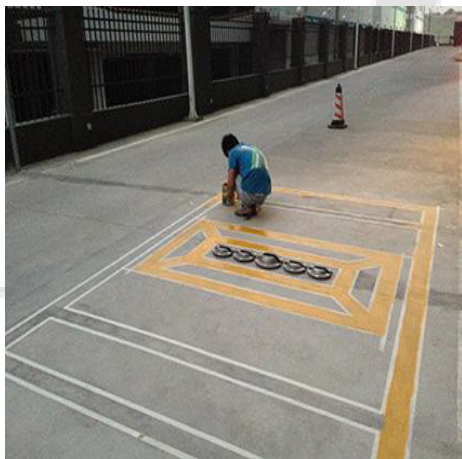
Using a 40mm diameter galvanized steel pipe to protect the electronic wire and connect with the embedded scanning units by half nipple, and avoid leaking water.



The joint of galvanized steel pipe must be sealed well.



The intersection of ground inductance coils to the distribution box needs to be sleeved with PVC pipes.

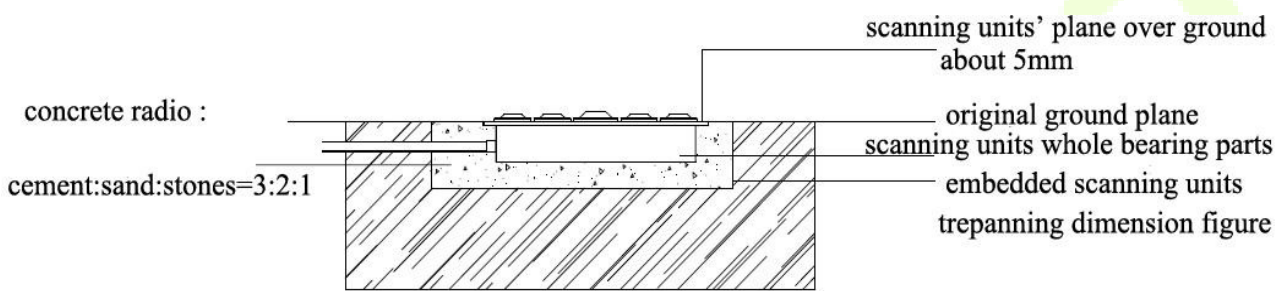


How to dig a hole for the scanning units, please refer to the following planar graph: Figure 4-1 and Figure 4-2.

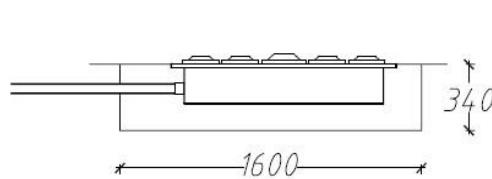


ground trepanning dimension figure

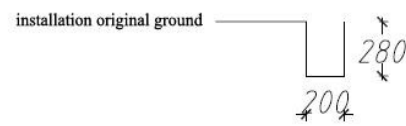
Figure 4-1



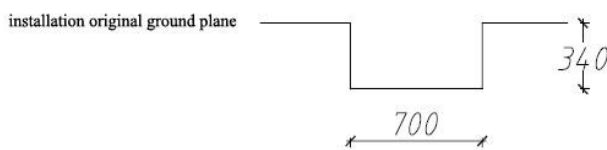
scanning unit flank trepanning dimension figure



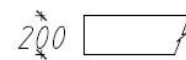
scanning units profile dimension figure



electrical and signal wire depth trepanning dimension figure



ground depth flank trepanning dimension figure



electrical and signal wire trepanning dimension figure

Figure 4-2

● Requirements

The rack mount which is to protect the scanning units should be put in the concrete step, so that act as weight-bearing function. Please fill the concrete on both side at the same time to avoid the rack mount move. Don't backfill the concrete full in one time, should backfill at the same time punning, so that there is no any air bubble in the concrete. The scanning units part which is over the ground about 5mm, make it to

a slight incline and press polish the surface. Use object which can absorb water cover on the surface, sprinkle water to keep it moist. In summer, about 48 hours. If in winter, it should add saline into the concrete and do Proper insulation on the surface. 3 days later, it can pass through the vehicles.

Induction loops trepanning dimension figure: Figure 4-3 and Figure 4-4.

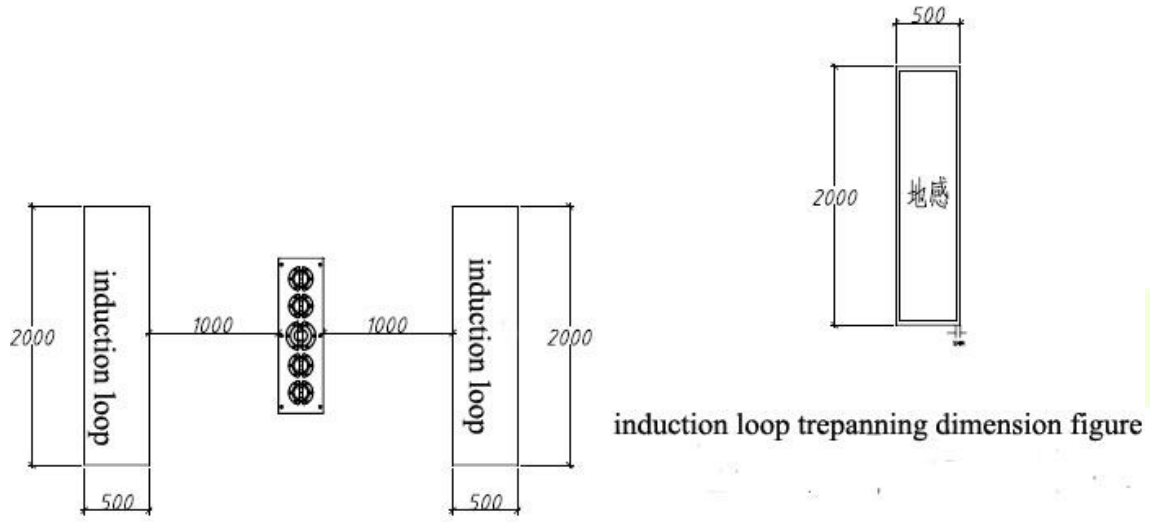


Figure 4-3

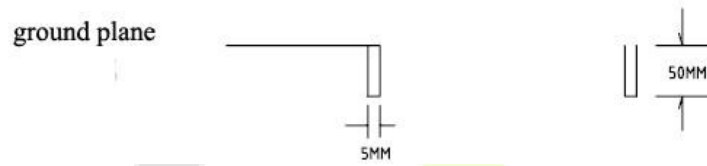


Figure 4-4

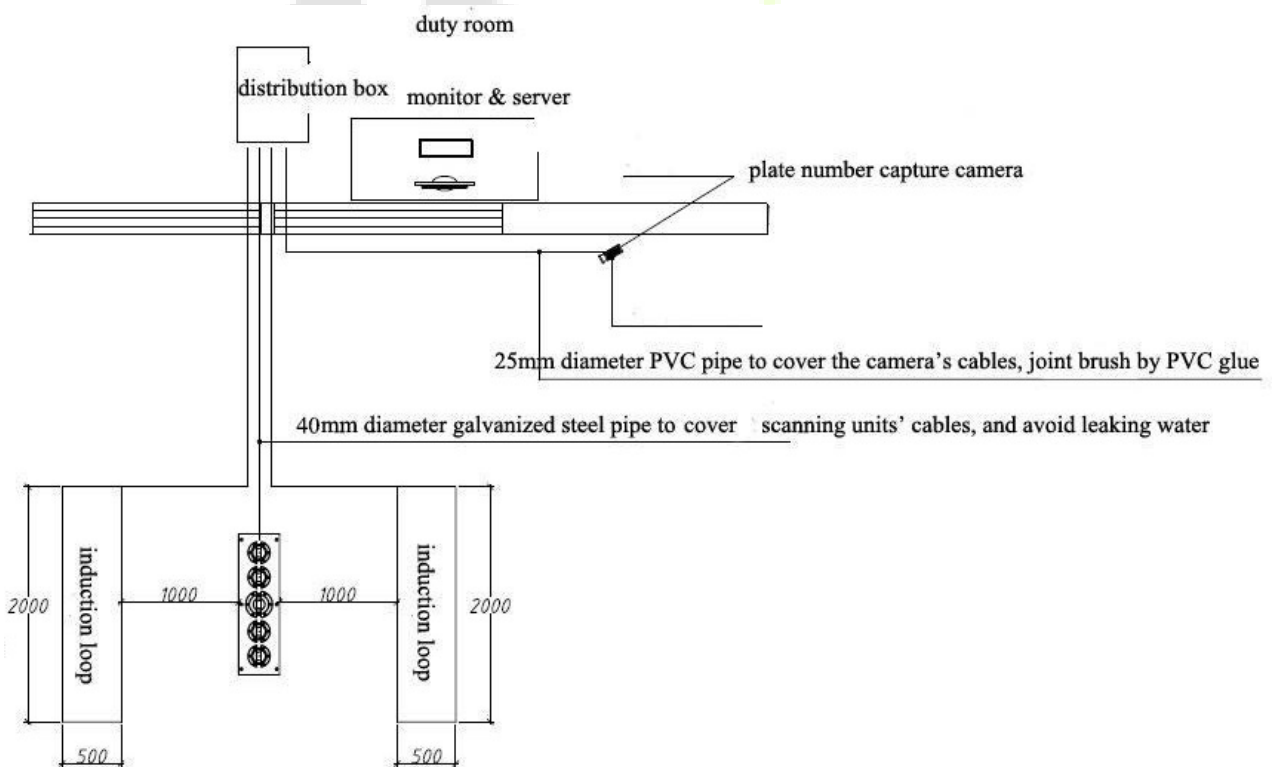


Figure 4-5 Pipe and Wiring Planar Graph

- **Induction Loops Dimension**

Length: 2000mm, width:500mm, hole depth is 50mm, hole width is 5mm, there should be no any metals within 1m around the induction loops. If the induction loops close to the metal gate, the distance should be over 600mm.

- **Technical Description**

1. Using a 40mm diameter galvanized steel pipe to protect the electronic wire and connect with the embedded scanning units by half nipple, and avoid leaking water.

It will be more better to fill the sew by neutral glass glue or polystyrene foam. Reduce use elbow as much as possible to avoid unnecessary troubles when threading

2. Exclude 2000x500mm area, other areas of induction loops' wiring and camera's wiring can use 25mm PVC pipe. And PVC pipe's joint should blush PVC glue.

3. Before bury camera' connect wires, it needs to confirm the below details in advance

- 1) How many pcs cameras in total?
- 2) What's the distance with the distribution box and operation table (server)?
- 3) How many cables need to connect among them?

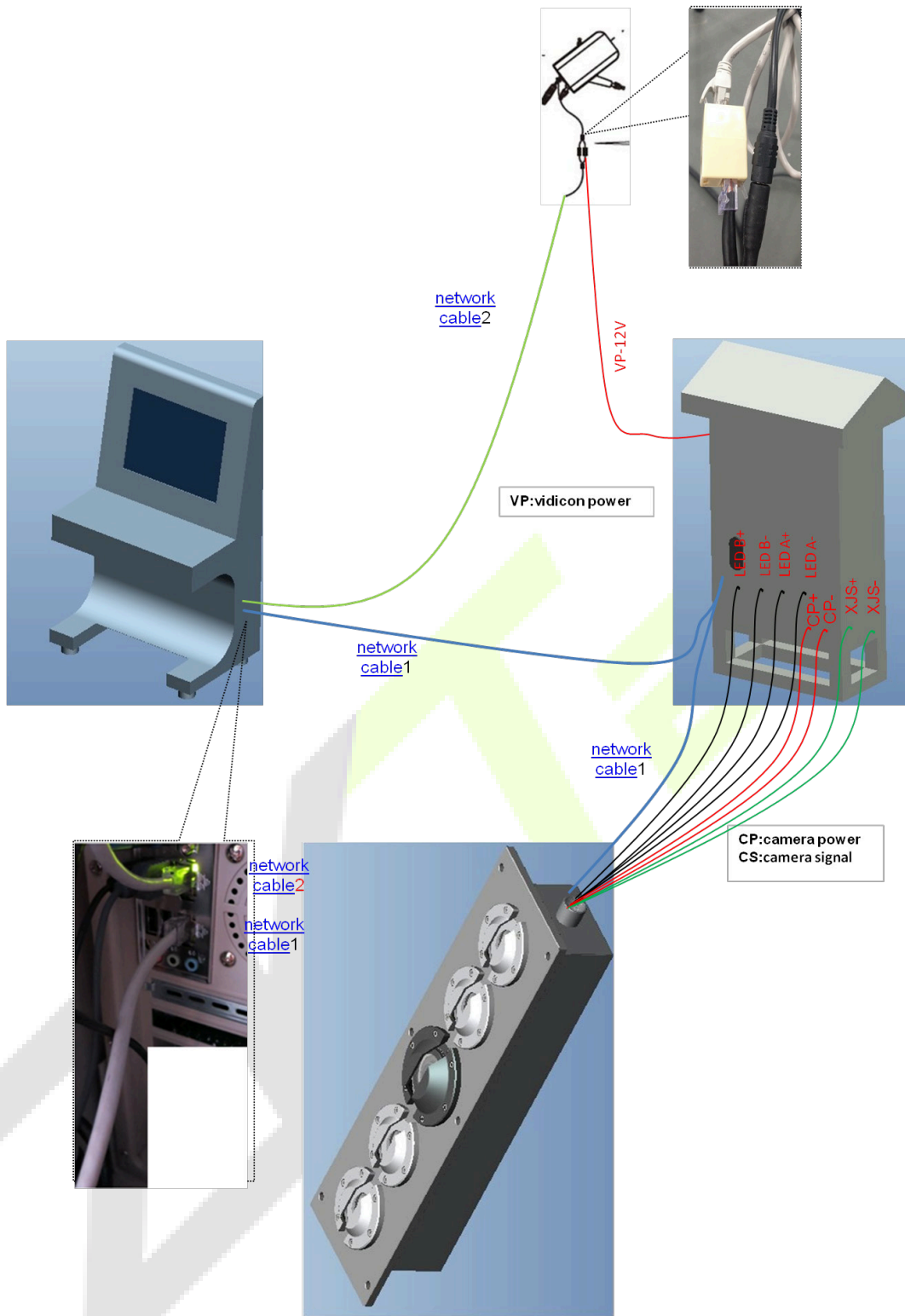


Figure 4-6 System Wires Connect Figure

5 Commissioning

After install the machine successfully, should commissioning the system.

1. Commissioning Scanning Image

Click monitor desktop's icon "car check", input user name and password to enter into the software working interface. Let the vehicle go through the scanning units with 1-60km/h speed, observe whether the LED lights is on, whether have scanning image display on the monitor. If can see the scanning image on the monitor, it means the system is on the good condition.

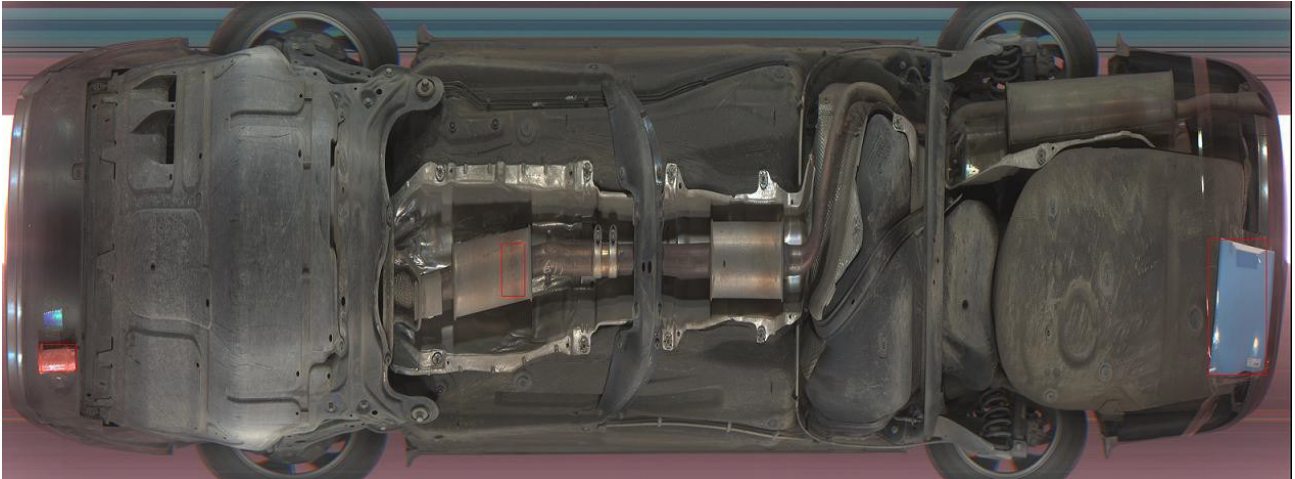


Figure 5-1

2. Commissioning Automatic License Plate Recognition Software

- 1) Park the vehicle near the induction loops, adjust plate number camera's focal distance to make it can see the vehicle.
- 2) plate number clearly, plate number camera and scanning units vertical angle is less than 30 degree, perfect state is zero degree. See the Figure 5-2.
- 3) During commissioning, the plate number's width should cover over 1/5 to 1/3 on the monitor's vehicle plate number display window, ideal condition is 1/4.

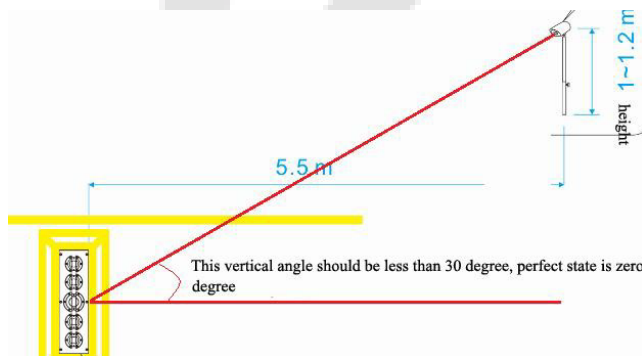


Figure 5-2

6 Sealing and Drawing

After debugging, use neutral glass cement to seal the scanning units and screws.

In order to make more better inspection effect, we suggest to draw marking and attention line: Figure 6-1.

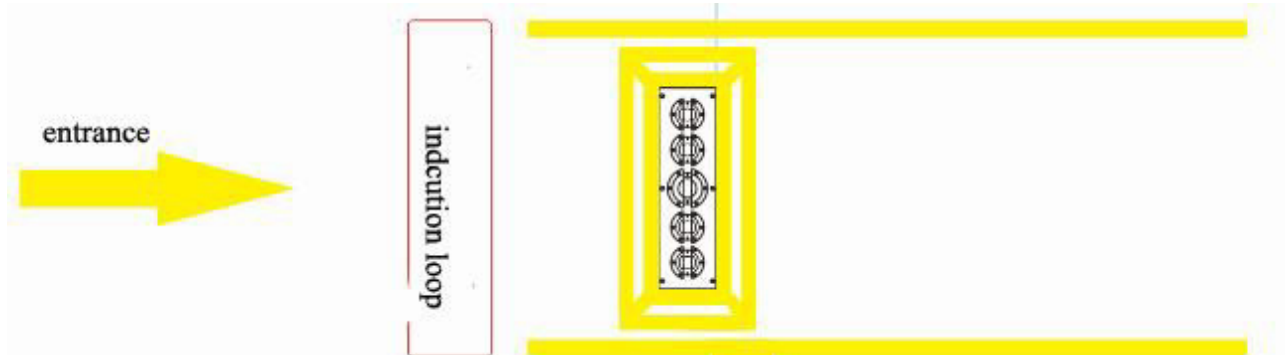


Figure 6-1

7 The Period of Construction

Project	Period	1 Day	2 Days	3 Days	Total
Dig Hole			▲		
Wiring And Installation		▲			
Fixed Pipe and Backfill		▲			
Installation And Commissioning		▲			
					5 days

Remark:

Constructors: 3 persons.

Installation and Commissioning Engineer: 2 persons.

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