

# Excavation Report on the Dingding Gate

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**Key words:** eastern capital of the Sui and Tang dynasties    outer city wall    Dingding Gate

The Dingding Gate 定鼎门 was the south central gate of the outer city wall of Luoyang 洛阳, the eastern capital city during the Sui and Tang dynasties. According to historical sources, the gate was built in the 1st year of the Daye 大业 (605) reign period, and was destroyed near the end of the Northern Song Dynasty. It was called the Jianguo Gate 建国门 during the Sui, the Dingding Gate during the Tang, Five Dynasties, and the Song periods. The name was changed to Shizi Gate 狮子门 some time during the Song Dynasty.

The Dingding Gate site lies in the present Luoyang municipality, Henan 河南 Province, to the west of Zhaoacun 赵村 Village and northeast of Caotun 曹屯 Village. In order to provide accurate information on the Eastern Capital of the Sui and Tang, and to preserve the site, the two archaeological teams carried out a complete excavation from 1999 to 2000 (Fig. 1). This excavation was based on field surveys from 1954 to 1961.

A stratigraphic assessment was taken at the south wall of Grid LT59. It found that there were three layers. The surface layer is 55–180 cm thick. It is brown and soft. It contains cultural deposits starting from the Jin and Yuan dynasties and continuing up to modern times. The second layer is 40 cm thick. It is yellowish-brown and includes large chunks of red clay. It contains cultural remains from the Song Dynasty. Porcelain shards as well as broken architectural fragments from the Tang and Song were

found in this layer. At the bottom of this layer, archeologists discovered remains from the late Tang and Northern Song gates and road surfaces. The third layer is 50–65 cm thick. It is yellowish-brown and contains a fair amount of sand. It holds Tang remains. Some porcelain shards and architectural remnants were found in this layer. At the bottom of the third layer, the archaeologists found remains of the gate from the early and late middle Tang period along with traces of rammed earth from the late Sui and early Tang gate.

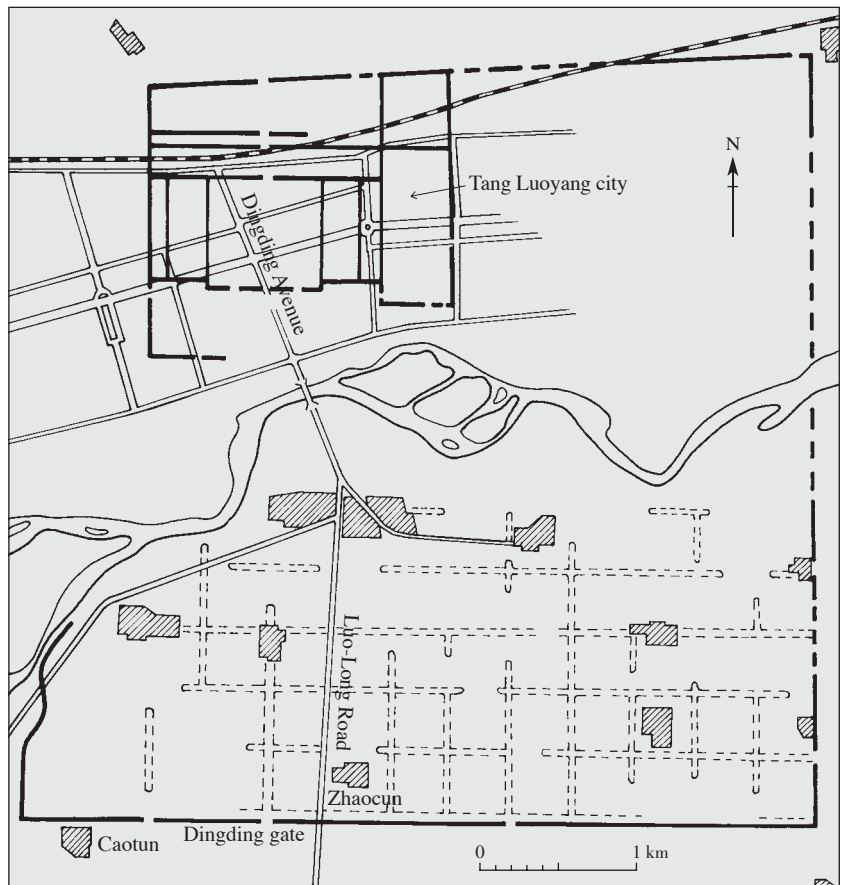


Fig. 1 Location of the Dingding Gate site

## I. The Site

The archaeological remains of the Dingding Gate site span four periods: the early middle Tang, the late middle Tang, the period between the Tang and Northern Song dynasties (918–960), and the Northern Song period.

### 1. Foundations of the Gate site from the early middle Tang

The gate site was constructed with three entranceways. The archaeological remains include traces of pier platforms, entranceways, partition walls, side corridors, ramps, watchtowers, and culverts. The archaeologists could not excavate the north and east sides of the site because of constraints due to recent construction (Figs. 2 and 3).

(1) Pier platforms: the pier platforms are constructed using rammed earth. They have two parts: foundation and platform proper. The whole structure is 44.5 m wide from east to west, and 21.04 m deep from north to south.

The foundations are 2.5 m deep and the remains of the platforms on top are 1.05 m high. On the eastern side of the entranceway, the platform is 7.98 m wide from east to west and 15.8 m long from north to south. On the western side of the entranceway, the platform is 7.98 m wide from east to west, and 21.04 m long from north to south. The platforms were faced with bricks, but these remains only on the southern and eastern edges of both platforms (Fig. 4).

(2) Entranceways: altogether there are three entranceways. They are approximately 5.8 m wide. Going north to south, they are 21.04 m deep. The foundations of the doorways, partition walls, and the eastern and western pier platforms were all constructed at the same time.

At the eastern entranceway, remaining traces include support stones (地袱石 *difushi*, literally earth-supporting stones), lining stones (土衬石 *tuchenshi*, literally ground-lining stones), and foundation stones (门砧石

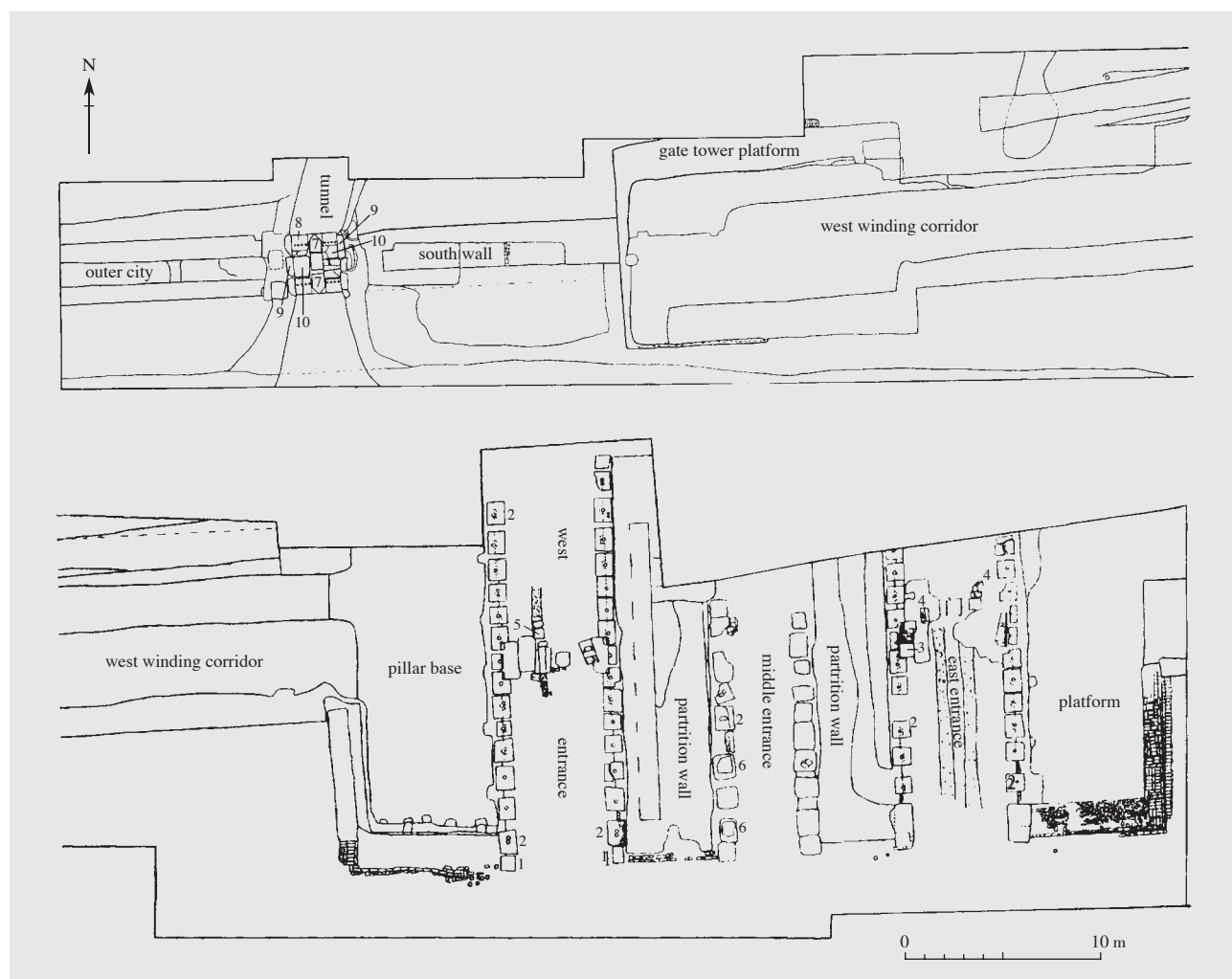


Fig. 2 Plan of the Dingding Gate site in the early middle Tang period (upper: west section; lower: east section)



Fig. 3 Panorama of the Dingding Gate site in the middle Tang period

*menzhenshi*, literally gate foundation stones). The support stones are located beneath the walls on the two sides of the entranceway, lined up facing each other to the east and west. On the surfaces of the support stones are round holes intended to hold beams. Beneath the support stones, inside the rammed earth, are the lining stones, flat on the surface and roughly square in shape. The support stones are not joined together; spaces are left between them. The spaces between the stones at the northern and southern ends of each row are wider than those at the center. Between the support stones, the wall is made of bricks. On the brick walls are the remains of a surface coating of white plaster with red paint. The gate-foundation stones had been moved from their original positions and broken. On the surface of the foundation stones are holes to hold the gate sockets in which the gate-pivots turned. Each foundation stone was also incised with grooves intended to hold slabs to further support the two sides of the gate (立颊石 *lijashi*, literally stone for standing up cheeks). The archaeologists discovered two slabs with rectangular grooves for supporting the door frame. The road inside the entranceway had traces of wheel ruts. The top layer of the road was all covered with silt. Probably at some point before the middle Tang period, the Dingding Gate was destroyed by flooding (Fig. 5).

The central entranceway was preserved poorly. Only three supporting stones from below the western wall are left. Archaeologists found indentations from five lining stones on the northern side of the eastern wall of the entranceway. At the southern end of the bottom of the



Fig. 4 Face bricks of the southeastern part of the pier platform (photo from southeast to northwest)



Fig. 5 East ramp

eastern and western walls, several concave indentations for stone doorstops (撞石坑 *zhuangshikeng*, literally knocking stone holes) were found. The surface of the road inside the entranceway consists of a lower layer of cobblestones and an upper layer of bricks.

The western entranceway was rather well preserved. The support stone foundations were complete, with fourteen square support stones under the western wall and fifteen beneath the eastern wall. The alignment was identical to that of the eastern entranceway. On top of the support stones are lines of indentations intended to hold stanchions (support beams). They still retain square marks presumably left by square-shaped stanchions. It appears that the stanchions were half inside the walls and half exposed. Because the last support stones on each end of the corridor have two indentations, it is assumed that they each held two stanchions. On the south and north ends of the entranceway (the northern end of the western wall was destroyed) the archaeologists found stones that acted as doorstops and indentations for the stones. The surface of the corridor consists of a lower

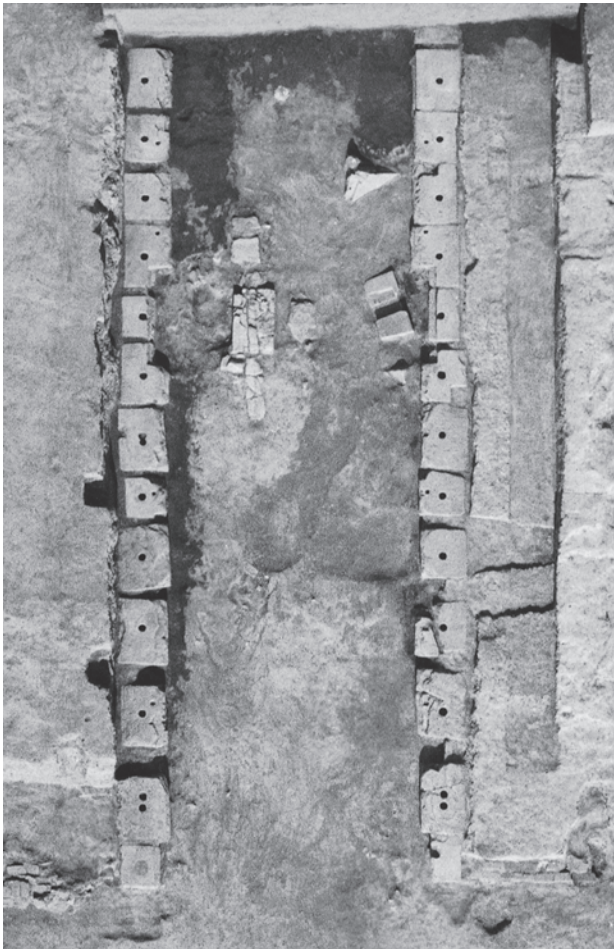


Fig. 6 West entranceway

layer of cobblestone covered by an upper layer of dirt (Fig. 6).

(3) Partition walls: there were two partition walls located between the three entrances. Both walls are 5.6 m wide. The west wall running north to south is 21.04 m long and the height of the remains is 0.8 m. The remains of the east wall are only 15.3 m long and 0.2 m high.

(4) Side corridors to the east and west: the rammed earth corridors are located between the pier platforms and the watchtowers. The archaeologists completely excavated the west corridor, but only partially excavated the east corridor. The west corridor is approximately 33.3 m long from east to west and about 5 m wide from north to south. The rammed earth is divided in two parts: the foundation and the structure above it. The foundation is approximately 1.1 m thick. The structure above it is 1.3 m tall. Five remaining layers of bricks were found on the south side of the east corridor. The brick layer measures 0.95 m wide from north to south and 6.75 m long from east to west.

(5) Watchtowers to the east and west: the watchtowers were located on the outer edges of the pier platforms beyond the corridors. The archaeologists excavated the entire west watchtower, but only did drilled surveys of the east watchtower. The west watchtower platform is rectangular. The length of the remains of the base is 16 m, the width is 11.9 m, and the height is 1.1 m. The length of the remains of the east watchtower is 16 m long from east to west, 10.5 m wide from north to south, and 1.5 m high. The outside surface of the rammed earth is plastered white and painted red. The front of the tower protrudes 2.8 m beyond the corridor.

(6) Ramps: the ramps, dog-eared in shape, are located outside the beacon platform next to the northern wall of the corridor. The eastern ramp has not been excavated. The archaeologists excavated only the west ramp. The length of the part that remains is 20.72 m from east to west, 4.7 m wide from north to south, and 1.25 m high. The grade of ramp is 20–22 degrees. The surfaces of the west and north exterior walls of the ramp show remnants of white plaster with red paint.

(7) Culverts: both the east and west culverts are located outside the watchtowers. The west culvert is constructed of gray granite 14.9 m west of the west tower. The culvert runs perpendicularly under the city wall. It is 3.1 m long from north to south and 2.3 m wide from east to west. The archaeologists discovered a stone switch for directing waterflow (分水石 *fenshuishi*, literally a stone that divides water) in the middle of the

culvert that allowed the water to alternate between two different channels. The stone switch originally consisted of three pieces of stone of which only the bottom layer remains. The two channels are each 0.83 m wide. Both ends of the channels contain stones that acted as foundations for grills. In one of the holes drilled in the foundation stones the archaeologists found remnants of an iron grill (Fig. 7).

## 2. Foundations of the Gate site from the late middle Tang

The structure of the foundations of the gate site from the late middle Tang is basically the same as that of the earlier gate. Only the scale and size of the entranceways, watchtowers, and ramp changed slightly (Fig. 8).

(1) Entranceways: there are still three entranceways, but the middle one is badly preserved. Only parts of the east and west entranceways remain. The same support stones from the earlier period were used, but the entranceway became narrower because the support stan-



Fig. 7 Culvert to the west side of the west entranceway

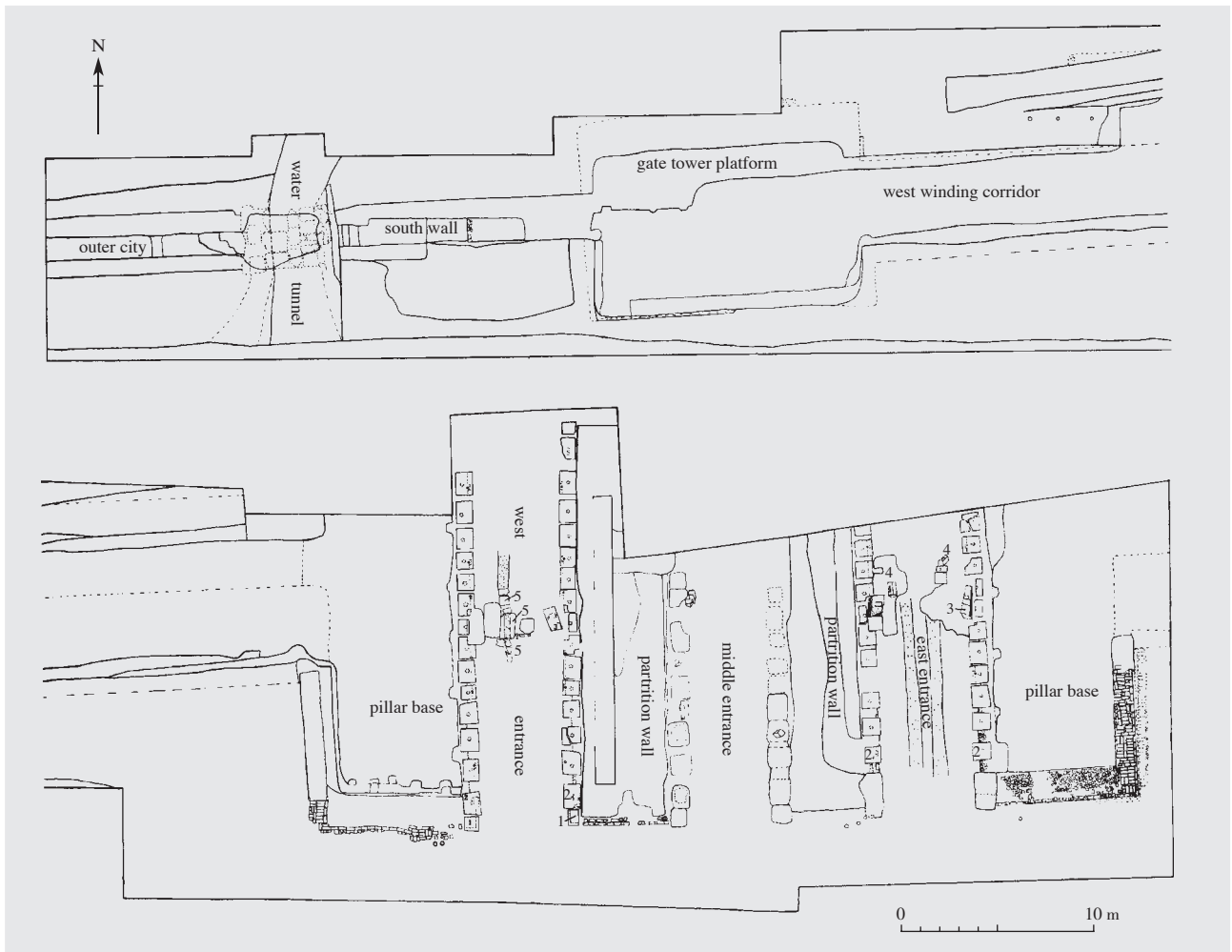


Fig. 8 Plan of the Dingding Gate site in the late middle Tang period (upper: west section; lower: east section)

chions were moved inward. The indentations on the stones are smaller and the spaces between the stones are wider. The entranceway is 5.2 m wide, 0.6 m narrower than the earlier entranceway. The stanchions are still square in shape. The archaeologists found remains of broken slabs in the middle of the west entranceway.

(2) Watchtowers: the watchtowers from the earlier period were in continuous use throughout the period after the middle Tang. But the scale of the structures became smaller. The excavated tower is 14.1 m long, with a reduction of 1.09 m on the east end and 0.4 m on the west end. It is 8.6 m wide, a reduction of 1.8 m on the north end. The south end is unchanged. The height of the remains is 0.9 m.

(3) Corridors: corridors from the earlier period remained in continuous use throughout the period after middle Tang. However, obvious repairs were made on the south and west sides. The length from east to west of the remaining corridors is 32.3 m, the width is 5.3 m,

and the height is 1.3 m.

(4) Ramps: the ramps of the late middle Tang were straight. The archaeologists only did drill surveys on the east ramp. The east end of the west ramp connects to the platform containing the gates. It is 10 m from the tower. The remaining length is 20.72 m from east to west and 2.3 m from north to south. The ramp is higher on the eastern end, with a grade of 20 degrees. Post holes were found along the north edge of the ramp. They probably supported railings.

### 3. Gate site from the period between the Tang and Northern Song dynasties

This gate site is extremely poorly preserved. The remains include pier platforms, entranceways, corridors, watchtowers, and ramps (Fig. 9).

(1) Pier platforms: the previous platforms were in continuous use throughout this period. Old bricks were used to repair the platform, but parts of the upper structures were newly constructed.

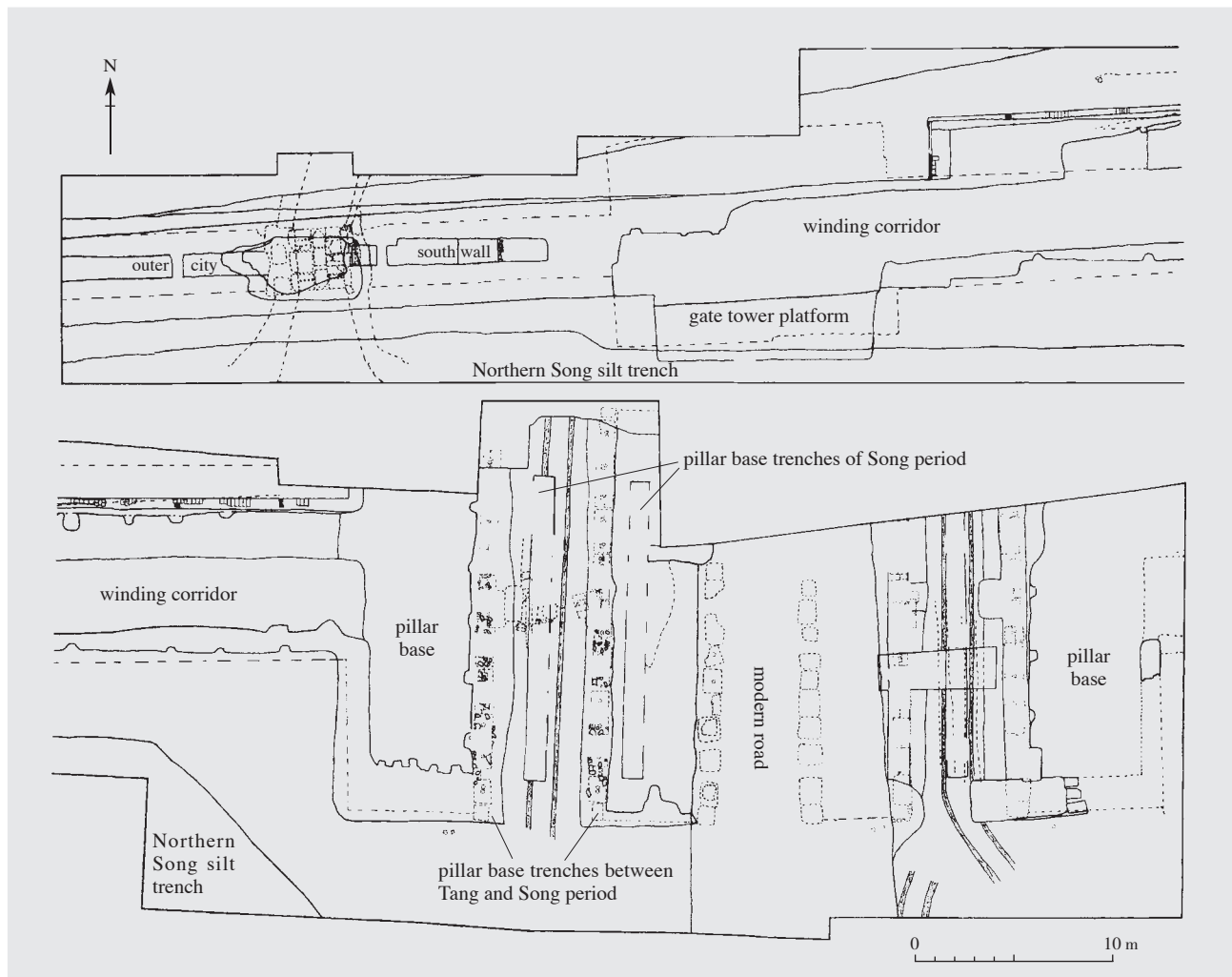


Fig. 9 Plan of the Dingding Gate site in the period between Tang and Song dynasties (upper: west section; lower: east section)

(2) Entranceways: the three entranceways remained in continuous use. The middle entranceway was severely damaged. The east doorway is just a rammed earth foundation built on top of the earlier support stones. It also still has indentations from the gate's foundation stones and the road surface. The remaining east foundation is 14 m long, 0.9 m wide, and 0.2–0.3 m high. The remaining west rammed earth foundation is 13.95 m long, 1.5 m wide, and 0.2–0.3 m high. The corridor is 5.8 m wide and the road surface is 4.5 m wide. In the west doorway the archaeologists found eight timber speed bumps laid out at 2.2–2.3 m intervals.

(3) West corridor: the earlier corridor was in continuous use throughout this period. The southern side wall was widened. The corridor is 32.3 m long from east to west and 5.7 m wide from north to south. The remaining height is 1.3 m.

(4) Ramps: the ramp was widened and rebuilt two times on the earlier straight ramp. The first rebuilding made the ramp 38.3 m long and 0.7–1.4 m wide. After the second rebuilding, the ramp was 39 m long and 1.3–3.1 m wide. The remaining brick wall from the second rebuilding is still visible.

(5) Watchtowers: the archaeologists did not excavate the eastern watchtower. The western watchtower from the earlier period continued to be used. That watchtower is 13 m long and 8.65 m wide. The west end was reduced 1.35 m from the previous period, and the south end protruded an additional 1.25 m. On both the north and south sides the archaeologists found an apron (散水 *sanshui*, literally a scatter-water) foundation approximately 1 m wide.

#### 4. Gate site from the Northern Song Dynasty

Although people continued to use the form of the three-entranceway gate during this period, the east and west entranceways moved inward and became narrower. The remains include pier platforms, doorways, and ramps (Fig. 10).

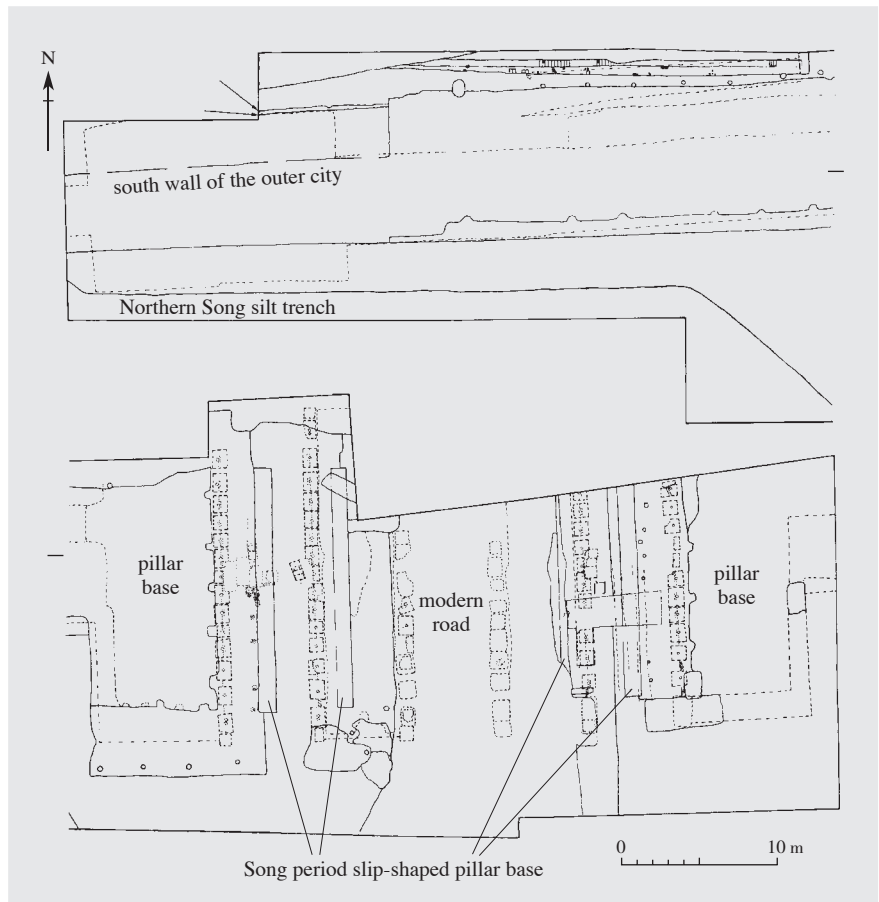


Fig. 10 Plan of the Dingding Gate site in the Northern Song dynasty (upper: west section; lower: east section)

(1) Pier platforms: the rectangular-shaped pier platforms are 44.5 m long from east to west and 23.3 m wide from north to south. The earlier platform foundations were continuously used, but the retaining walls were reinforced. The northern side was extended 3.7 m. The southern side was extended 4.3 m. Stanchions were found inside the new rammed-earth walls.

(2) Entranceways: the middle entranceway is severely damaged. The archaeologists found the northern Song support-stone foundations were all moved inward such that the eastern doorway's eastern side was rebuilt in the middle of the entranceway corridor of the gate from the period before the middle Tang, and its western side was rebuilt on top of the middle Tang partition wall. The remaining foundations are 13.55 m long, 1 m wide, and 0.8 m high. The distance between the two sides is 4.9 m. The foundation contains some broken bricks and tiles. The western entranceway presents a similar situation. The remaining foundations are 15.6 m long. The eastern side is 1 m wide, and the western side is 1.2 m wide. Both are 1.05 m tall. In both east and west entranceways the archaeologists discovered the remains

of sealed doors. Presumably only the middle entranceway remained open for traffic during certain parts of the Northern Song.

(3) Ramps: the ramps were straight. The west ramp had been in continuous use from the earlier periods. The width of the ramp slightly increased. The excavated part of the remaining west ramp is 34 m long and 3 m wide. Repairs from this era are visible.

## II. Artifacts

The archaeologists found rich artifacts from the Tang and Song dynasties at this site. The Tang artifacts include construction components, objects for daily use, weapons, Buddhist images, and coins. Construction components, which are the largest proportion of the remains, include 382 different types. There are rectangular and square bricks, tiles, eave tiles, and iron nails. Objects for daily use include ceramics, porcelain, metal pieces, ironwork, and bone objects. In comparison to the plentiful Tang remains, only a few Song artifacts were found. They include construction components, objects for daily use, and coins. Construction components include bricks and eave tiles decorated with animal heads. Objects for daily use include porcelain bowls and other items.

Note: The original report, published in *Kaogu Xuebao* 考古学报 2004:1: 87–130, with 29 illustrations and 8 pages of plates, is written by Chen Liangwei 陈良伟, Li Yongqiang 李永强, Shi Zishe 石自社, and Xie Xinjian 谢新建. The present summary is prepared by Shi Zishe and English-translated by Miriam Gross, Suzanne Cahill, and Ye Wa 叶娃.

## III. Conclusion

The Dingding Gate site was a three entranceway complex. It had been rebuilt and renovated on a grand scale repeatedly from the Sui through the Northern Song dynasties. The central loft above the city gate was the main building. On both sides of the central loft were subordinate watchtowers connected by side corridors. This complex is very similar to that depicted in the Tang mural in Cave 138 in the cave temples of Dunhuang 敦煌 in Gansu 甘肃 Province.

From their excavations, the archaeologists learned that the gate was continually used from the Sui through the Northern Song. Despite repeated reconstruction, the basic structure of the gate never changed. Silt and charcoal from fires found in the site indicate that the gate was flooded and burned, which is consistent with the historical record.

The Dingding Gate was located in the center of the outer southern city wall of Luoyang. It was on the central axis facing north towards the central gates of the imperial and palace cities. The discovery of this gate helps us to determine the city's coordinates, which in turn is crucial for reconstructing the eastern capital of the Sui and Tang.