

Chang'an in the Western Han and Tang Dynasties:

Spatial Analysis of a Multi-layered Urban Site

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Research Direction

- ▶ Cultural history of early China
- ▶ The man-made landscape
- ▶ Textual descriptions
- ▶ Archaeological data

Chang'an as imperial capital

- ▶ Qin Dynasty 221-206 BCE
- ▶ Western Han Dynasty 206 BCE – 23 CE
- ▶ Period of Disunion (local capital)
- ▶ Tang Dynasty 618 – 907 CE

Development of early Chinese capitals

- ▶ Walled capitals of small states
- ▶ Unwalled capital of Qin empire
- ▶ Walled capital of Han empire



Literary Reconstructions

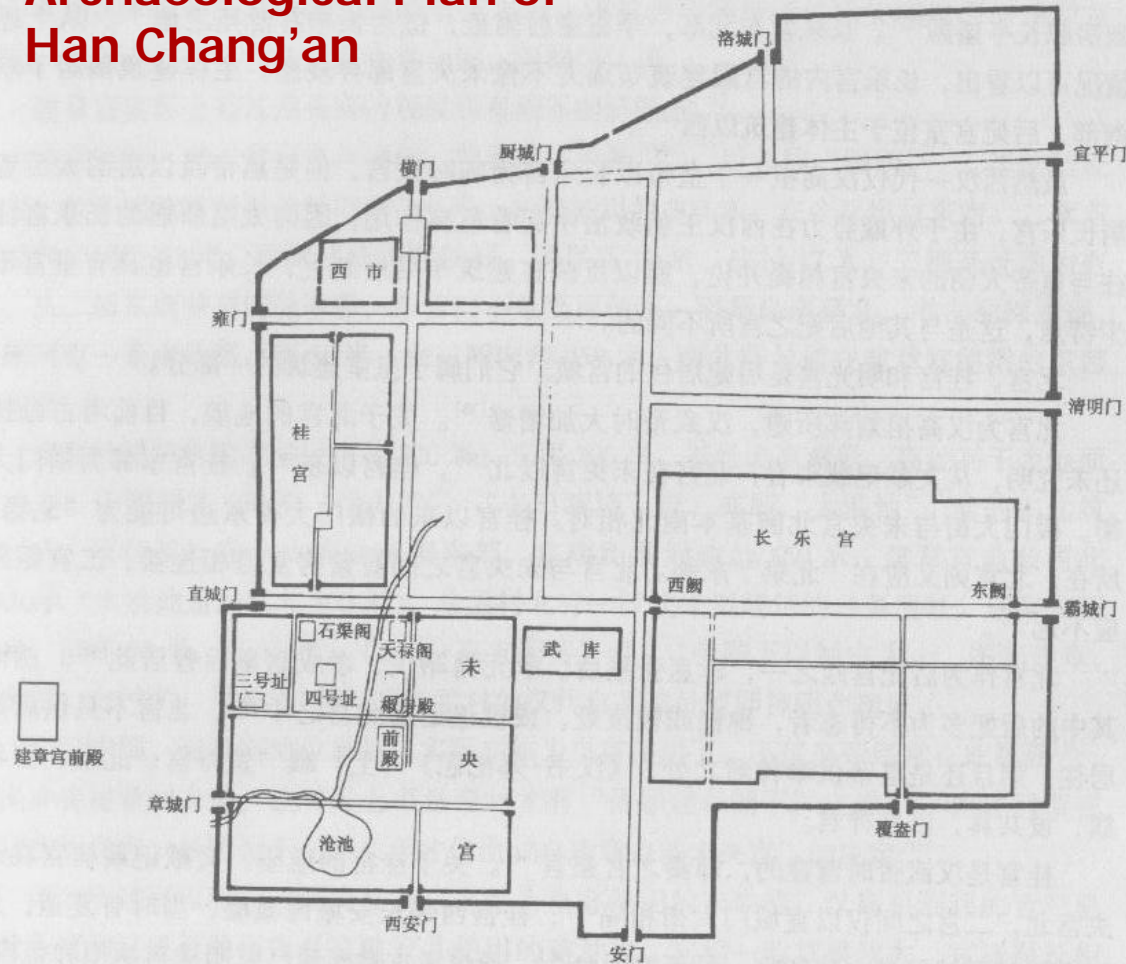
- ▶ Ban Gu 班固 “Liang Du Fu” 兩都賦
- ▶ *Shiji* “Hequ Shu” 史記河渠書
- ▶ *Hanshu* 漢書地理志
- ▶ *Sanfu Huangtu* 三輔黃圖
- ▶ *Chang'an Tongshi* 長安通史
- ▶ *Chang'an Zhi* 長安志
- ▶ *Shuijingzhu* 水經注

Song Dynasty Stone Map Reconstruction of Tang Capital

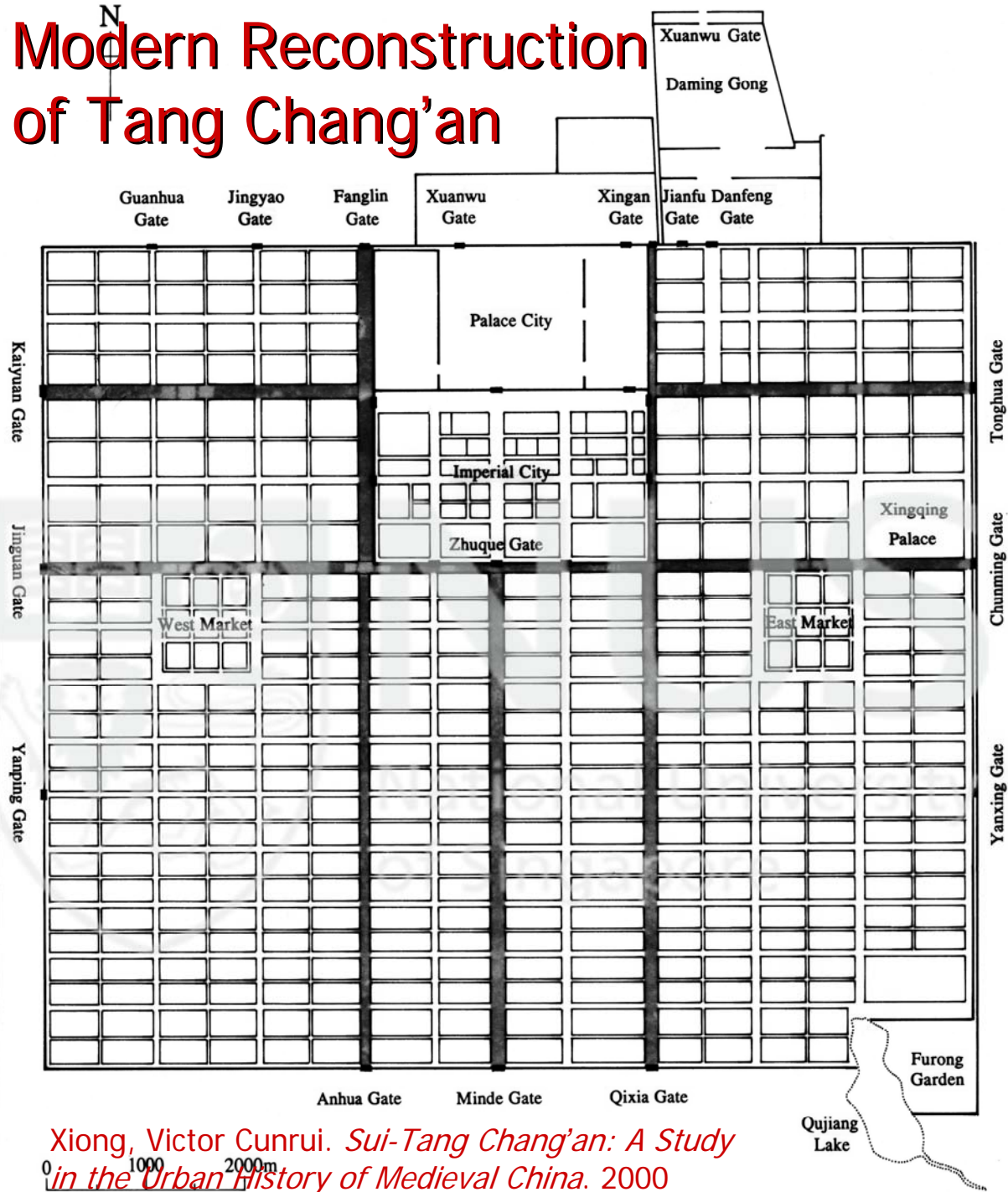


Archaeological Research

Archaeological Plan of Han Chang'an



Modern Reconstruction of Tang Chang'an



Xiong, Victor Cunrui. *Sui-Tang Chang'an: A Study in the Urban History of Medieval China*. 2000



王才強. *A digital reconstruction of tang Chang'an*. 2007



“Japanese” Survey Maps

- ▶ Begun in early 1930's
- ▶ Most surveying and drafting before Japanese invasion
- ▶ Classified and taken to Japan after the invasion, then most to the US after Japanese defeat

Survey Map Quadrant, 1:10,000, 1933

KO-LAO-MEN
關老門

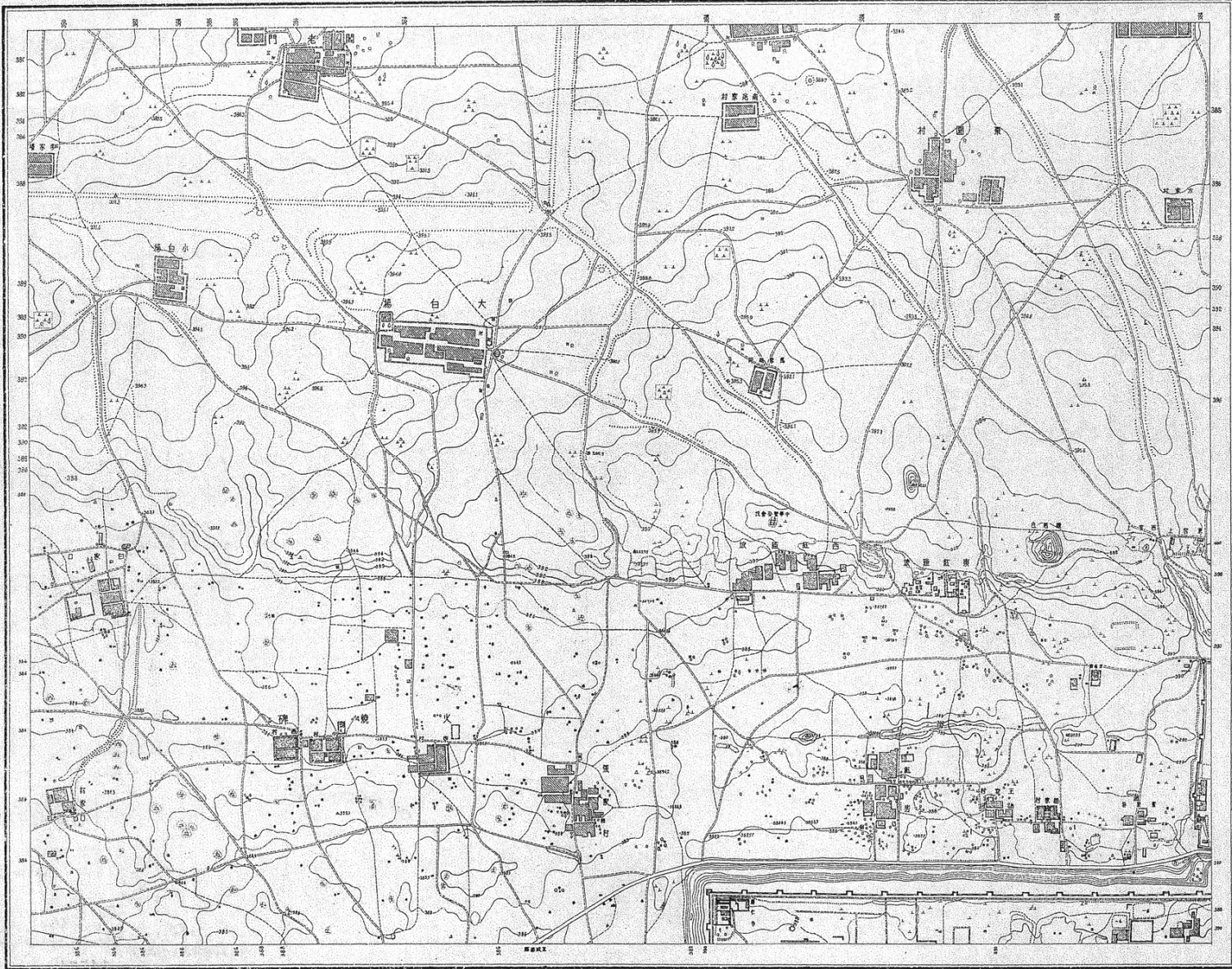
33

陸軍部 門文王 陸軍部
陸軍部 陸軍部 陸軍部
陸軍部 陸軍部 陸軍部

縣民區市京西

D=OCT. 1933
DRAFTED
NOV 1933

中華民國二十二年十月測繪十一月清繪

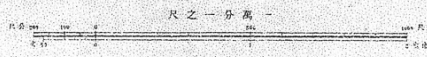


CGSL5

金陵本部陸軍測繪總局

標高
由海
面起
算
以
建
國
前
四
等
水準
點
為
基
準

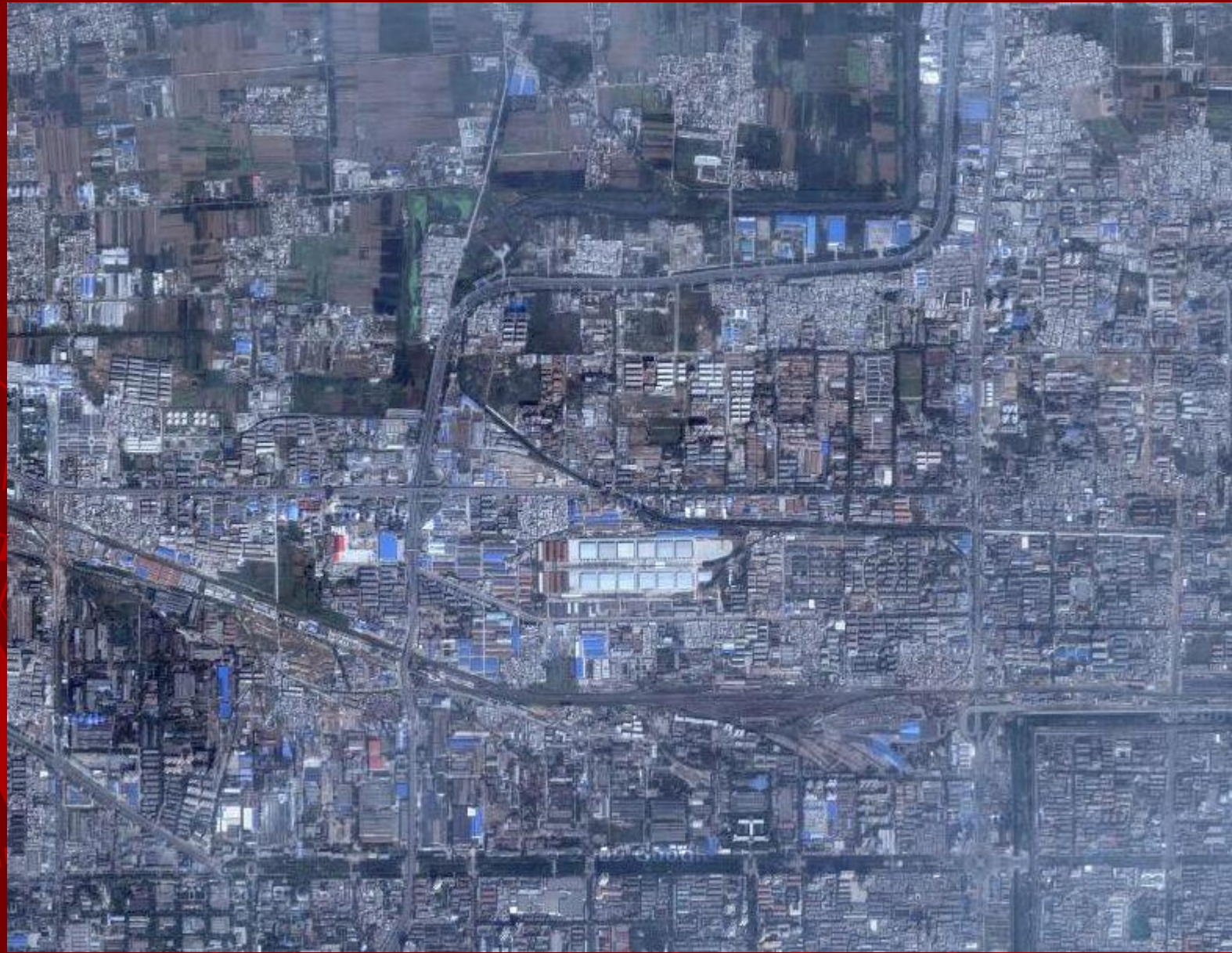
CHINESE



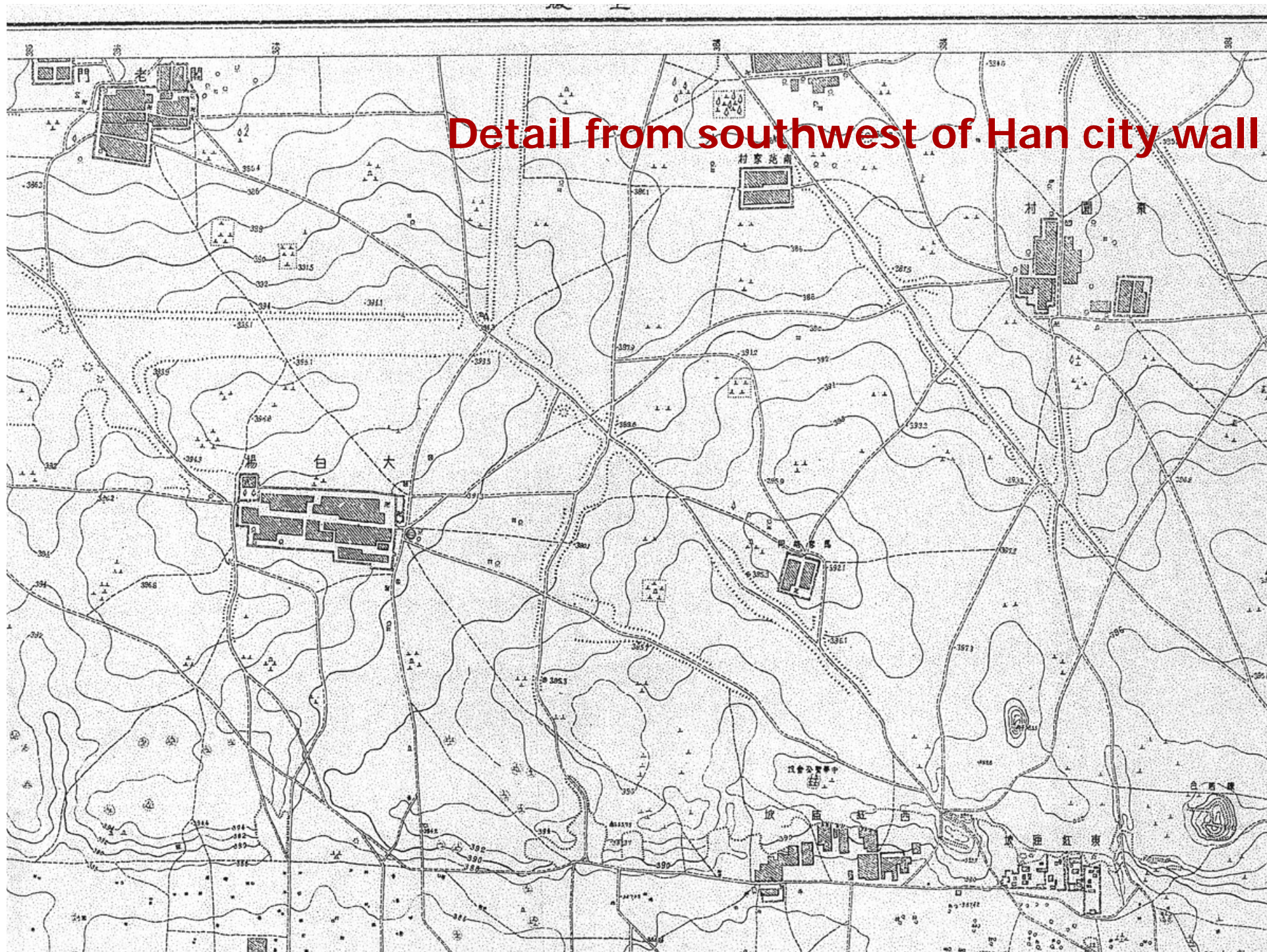
1:10,000

79.29
2.11

► Current satellite image (Google Map)



Detail from southwest of Han city wall

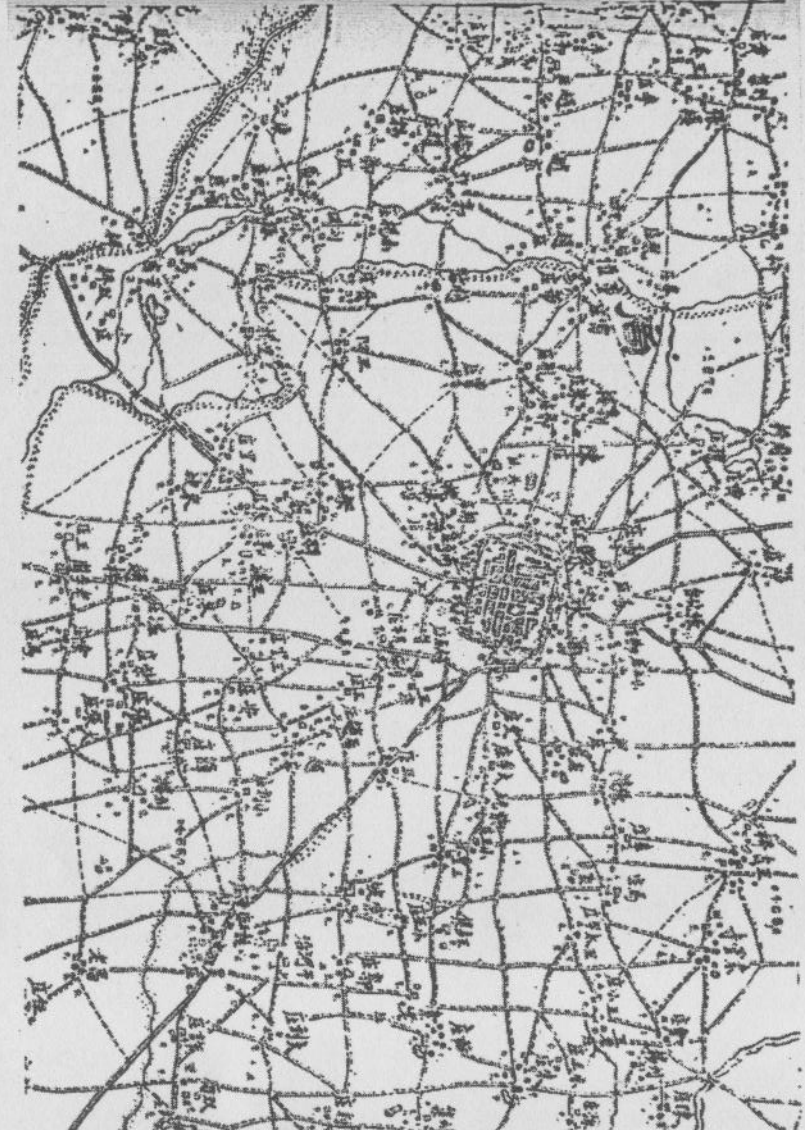
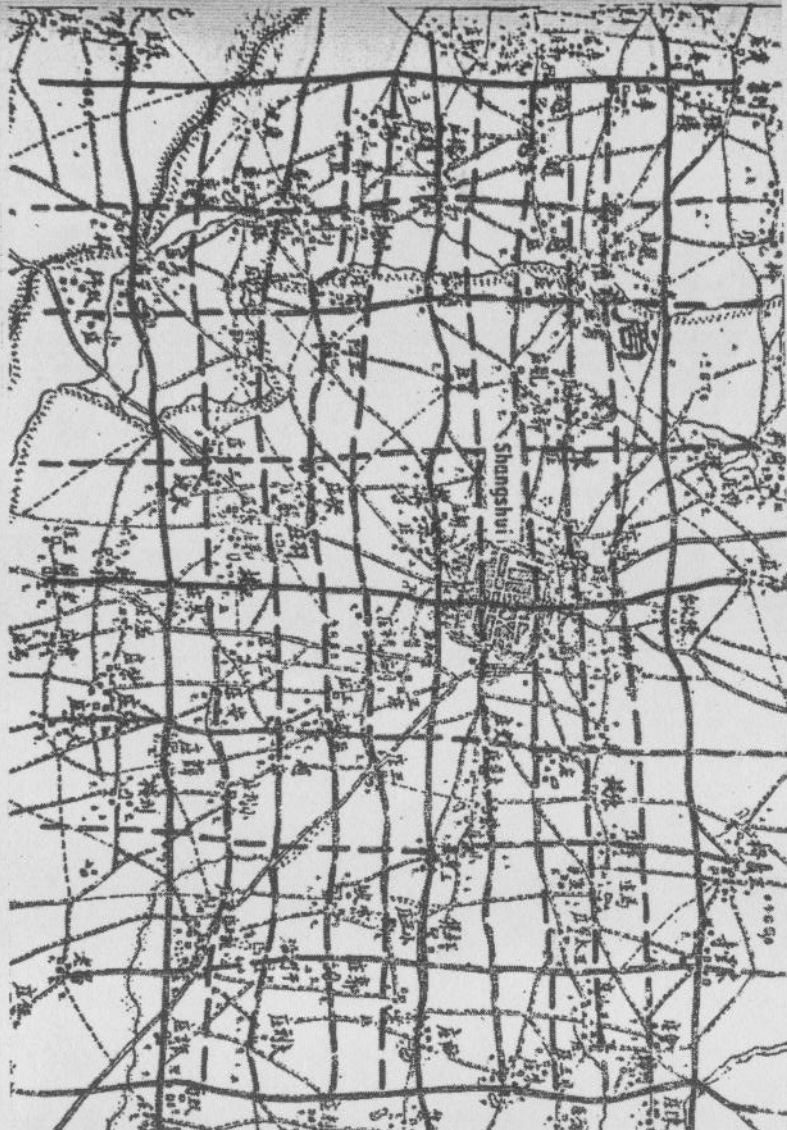


Previous research on the historical landscape using maps

- ▶ Frank Leeming, “Official Landscapes in Traditional China”, *Journal of the Economic and Social History of the Orient*, 23 (1980).

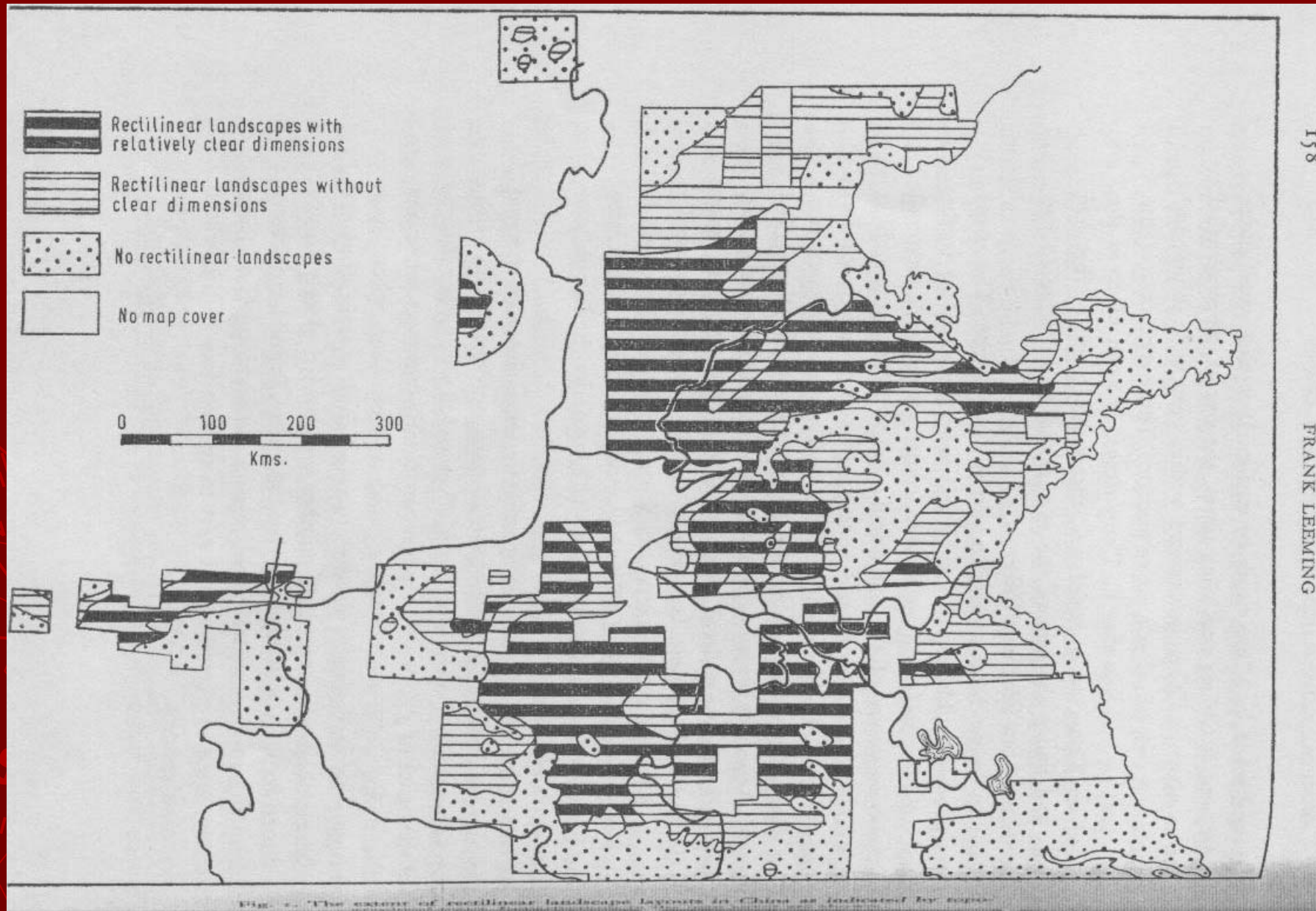


► Traces of earlier roadway grid system visible within later, less organized development

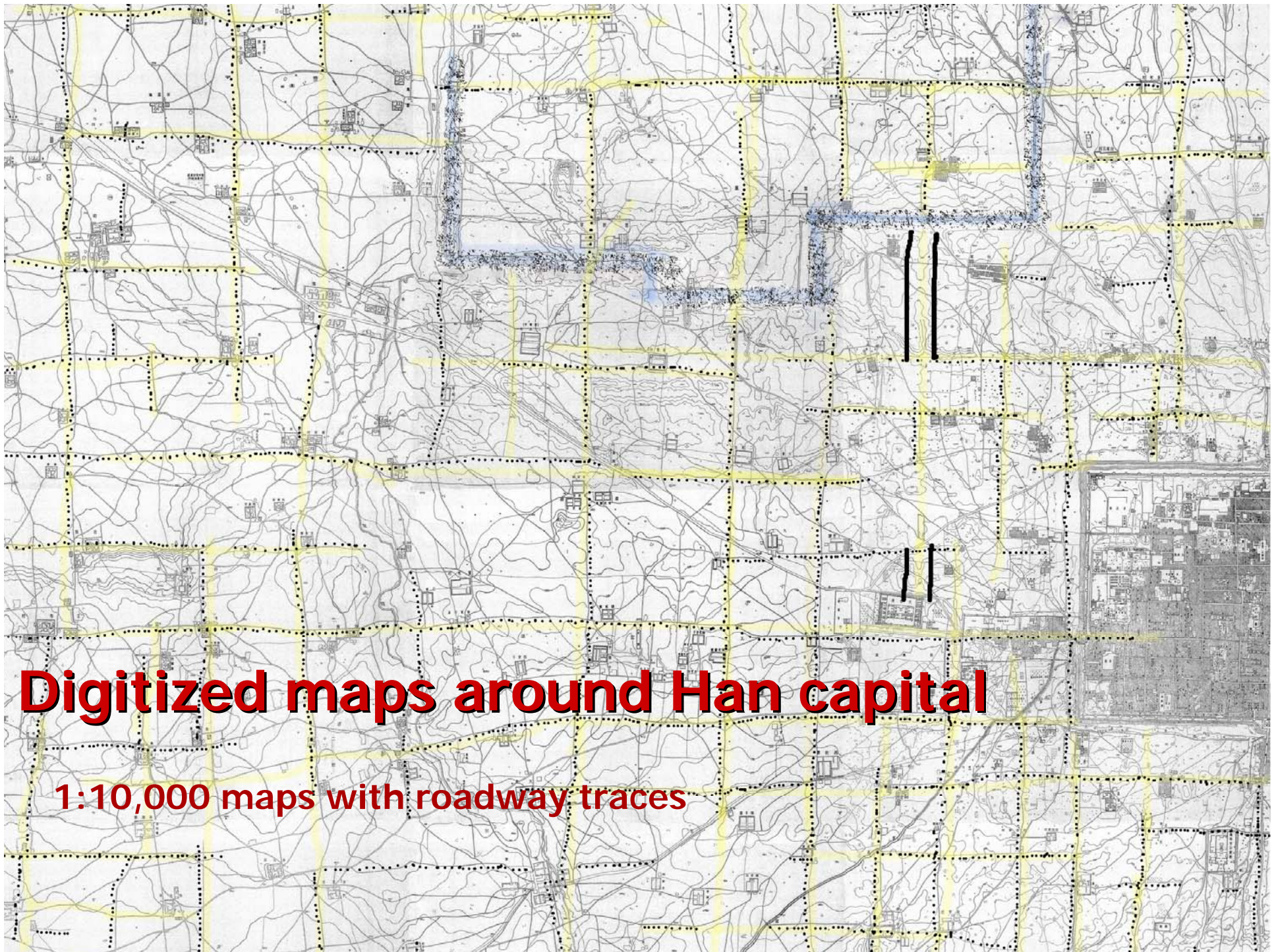


Honan Province, Shangshuihsien. This layout appears to be of Sui or present form. The interior boundaries of the 4 major units are fairly c suggest the 4 Sui *hsiangs* shown, with the origin of the graticule at a point the S gate of Shangshui city. The underlying strip system appears to use a strip width close to 414 m.

► Areas with evidence of early roadway grids



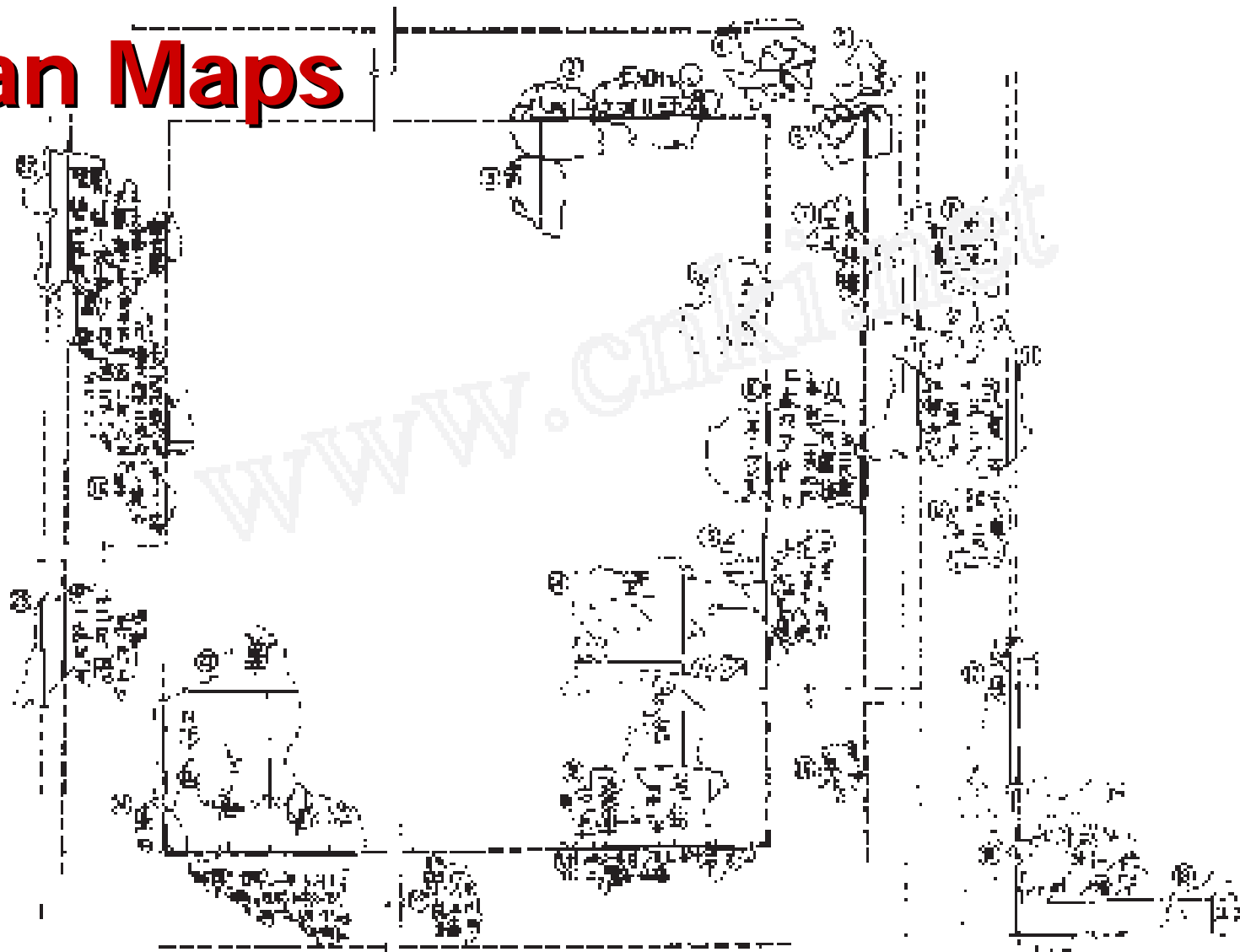
- 
- The background of the slide is a dark red color with a faint, light red grid pattern. In the bottom-left corner, there is a stylized compass rose with a red needle pointing towards the top-left. The compass rose has a circular scale with tick marks and some letters like 'N', 'S', 'E', and 'W' are visible. The main text is in a white serif font with a slight shadow effect.
- ▶ Leeming: rectilinear grids are a result of *jingtian* 井田 and *juntian* 郡田 systems of dividing agricultural land, originating at least as early as Five Dynasties and progressively modified.



Digitized maps around Han capital

1:10,000 maps with roadway traces

Han Maps



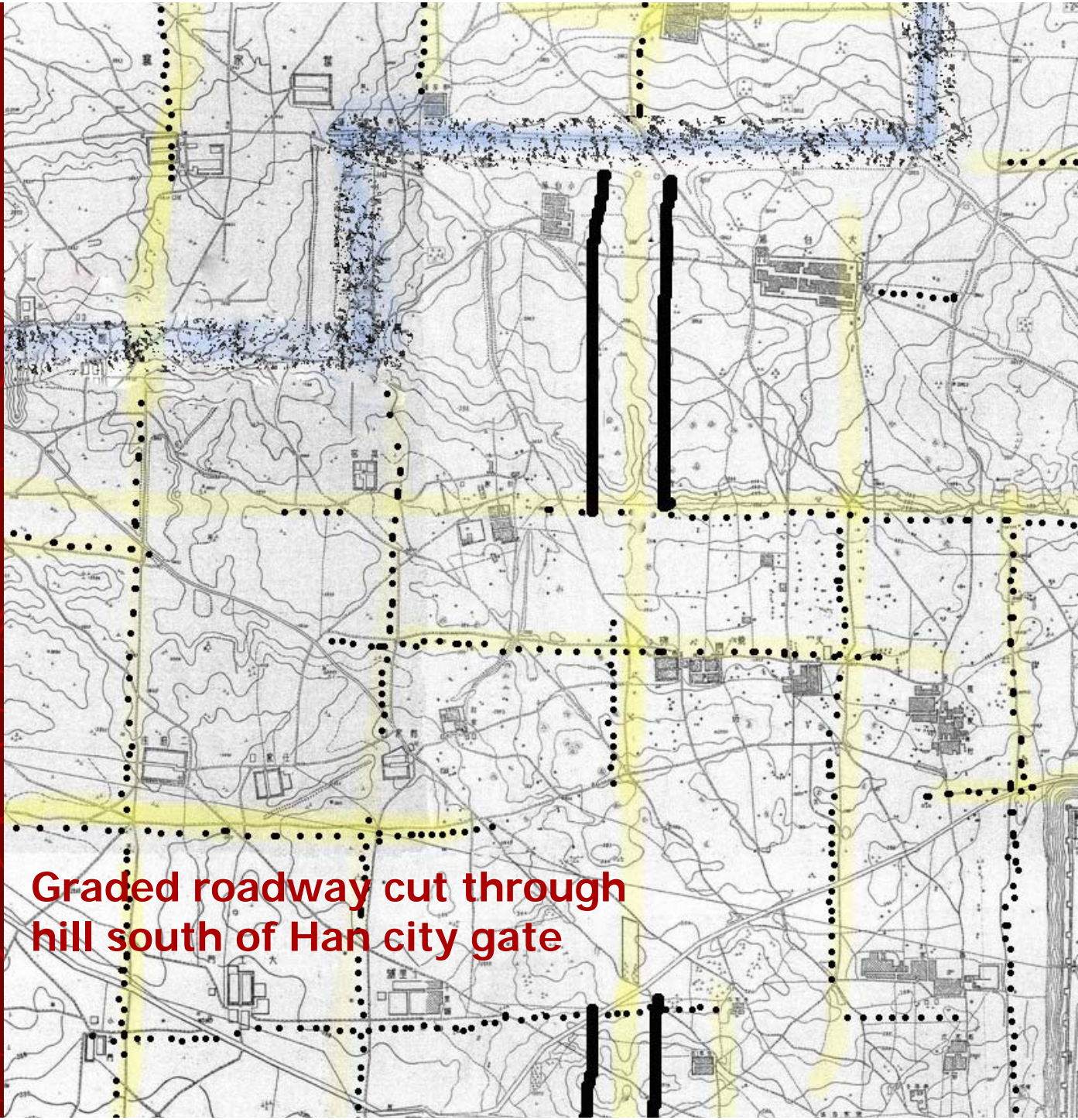
Mawangdui small city map 馬王堆小城圖 ca. 180 BCE



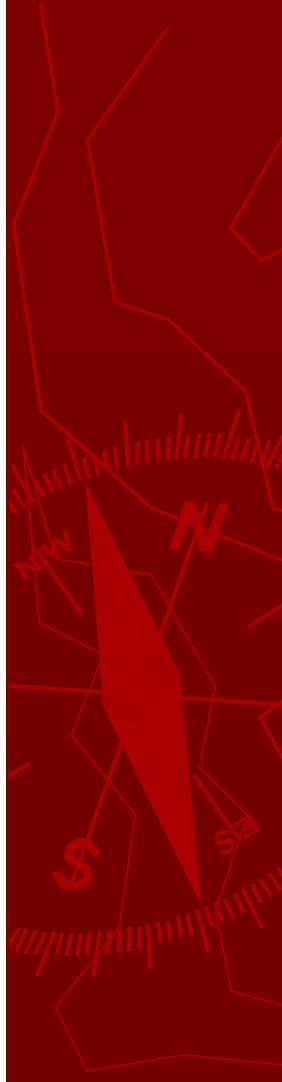
圖一 馬王堆三號西漢墓出土帛書中的小城圖

Issue of Dating

- ▶ Assumption of the durability of roadways over long time spans
- ▶ Question of when the roadway grid originated.
- ▶ Alignment with Han Dynasty gates

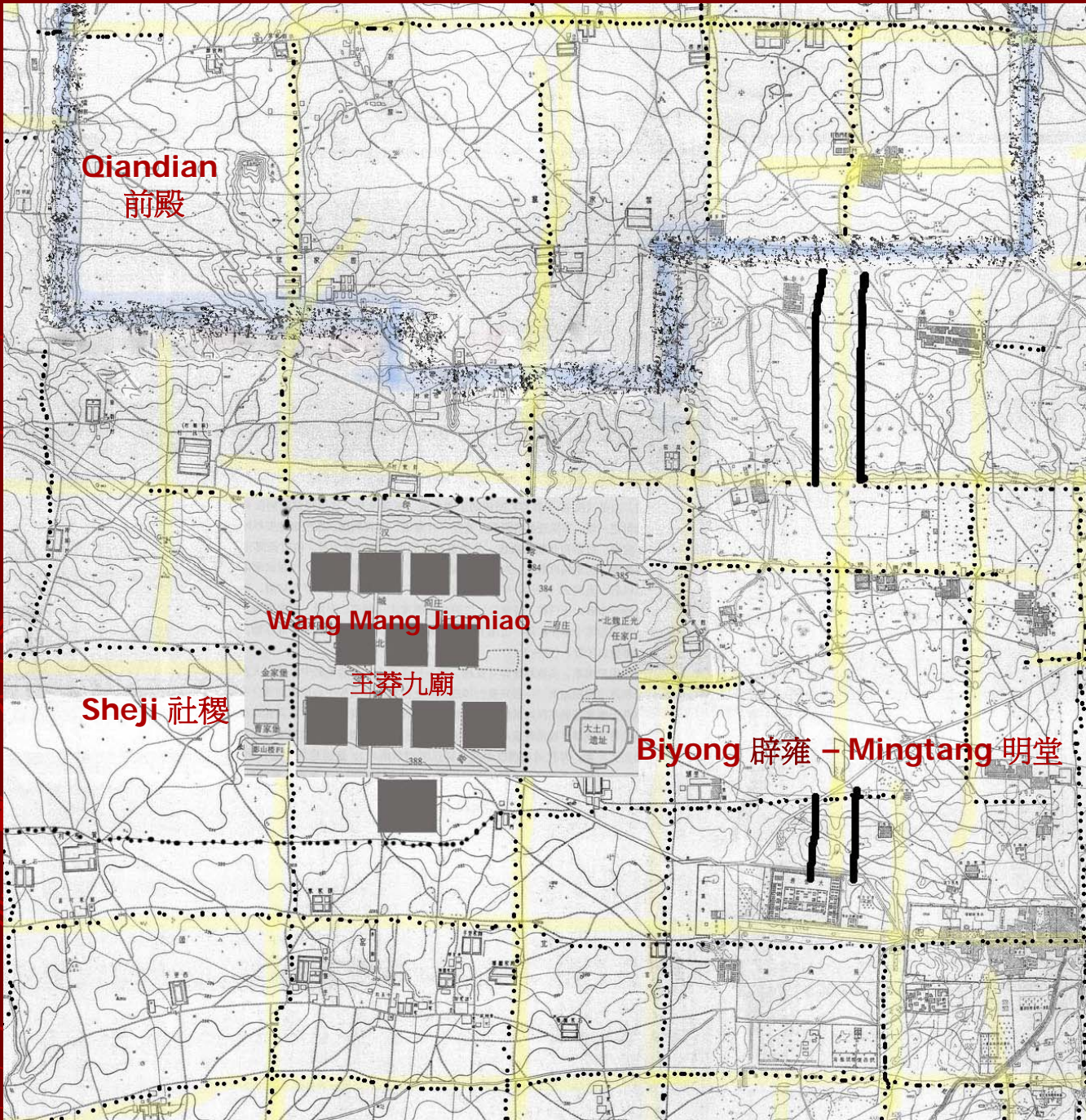


Graded roadway cut through hill south of Han city gate



State Ritual Facilities South of Chang'an

- ▶ Sheji 社稷 (Altars to Earth and Grain), built during reign of Aidi 哀帝 (r. 7 BC-1BC)
- ▶ Mingtang 明堂 built during reign of Pingdi 平帝 (1BC-5AD) under orders of the regent, Wang Mang 王莽
- ▶ Jiumiao 九廟, imperial ancestral temples for Wang Mang (9 AD -23)



Qiandian
前殿

Wang Mang Jiumiao
王莽九廟

Sheji 社稷

Biyong 辟雍 - Mingtang 明堂

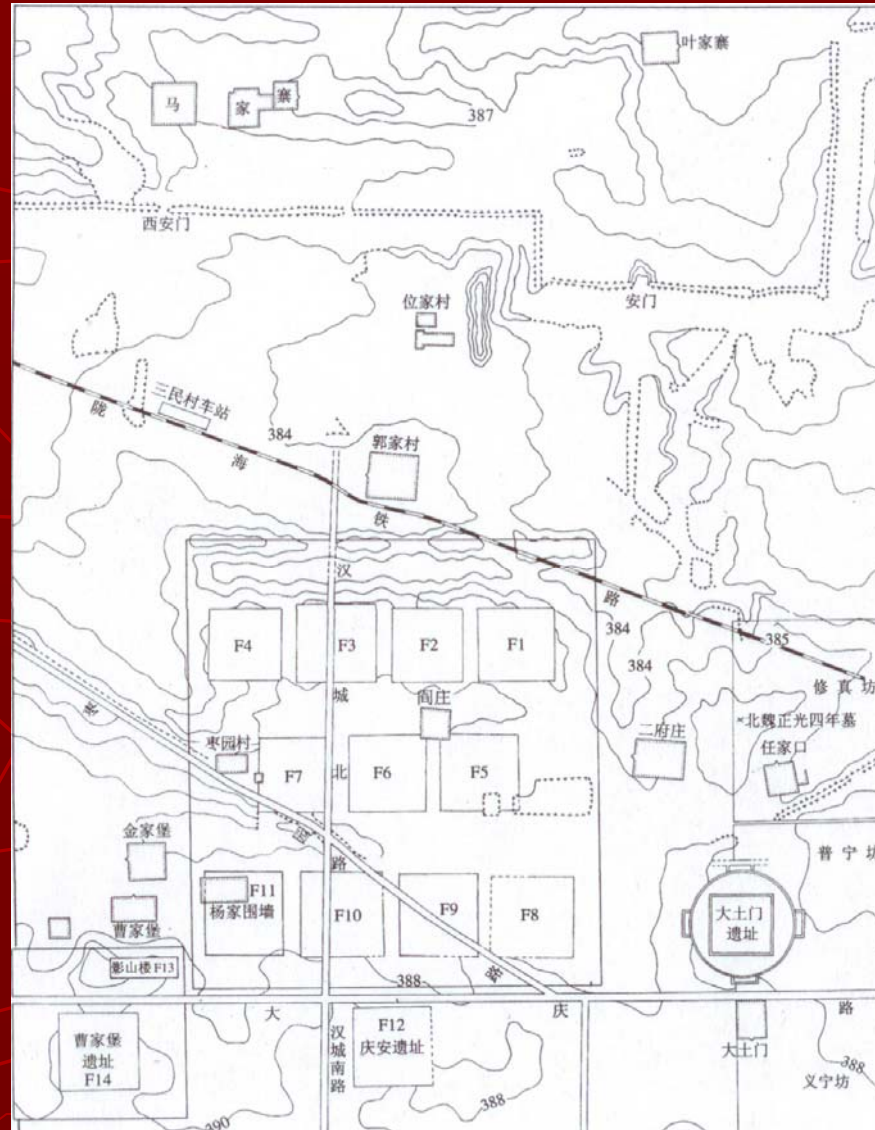


Distinguishing between Han and Tang dynasty roadway systems

- ▶ Addition of Tang archaeological sites
- ▶ Incorporation of Ming Dynasty city roads
- ▶ Use of GIS platform

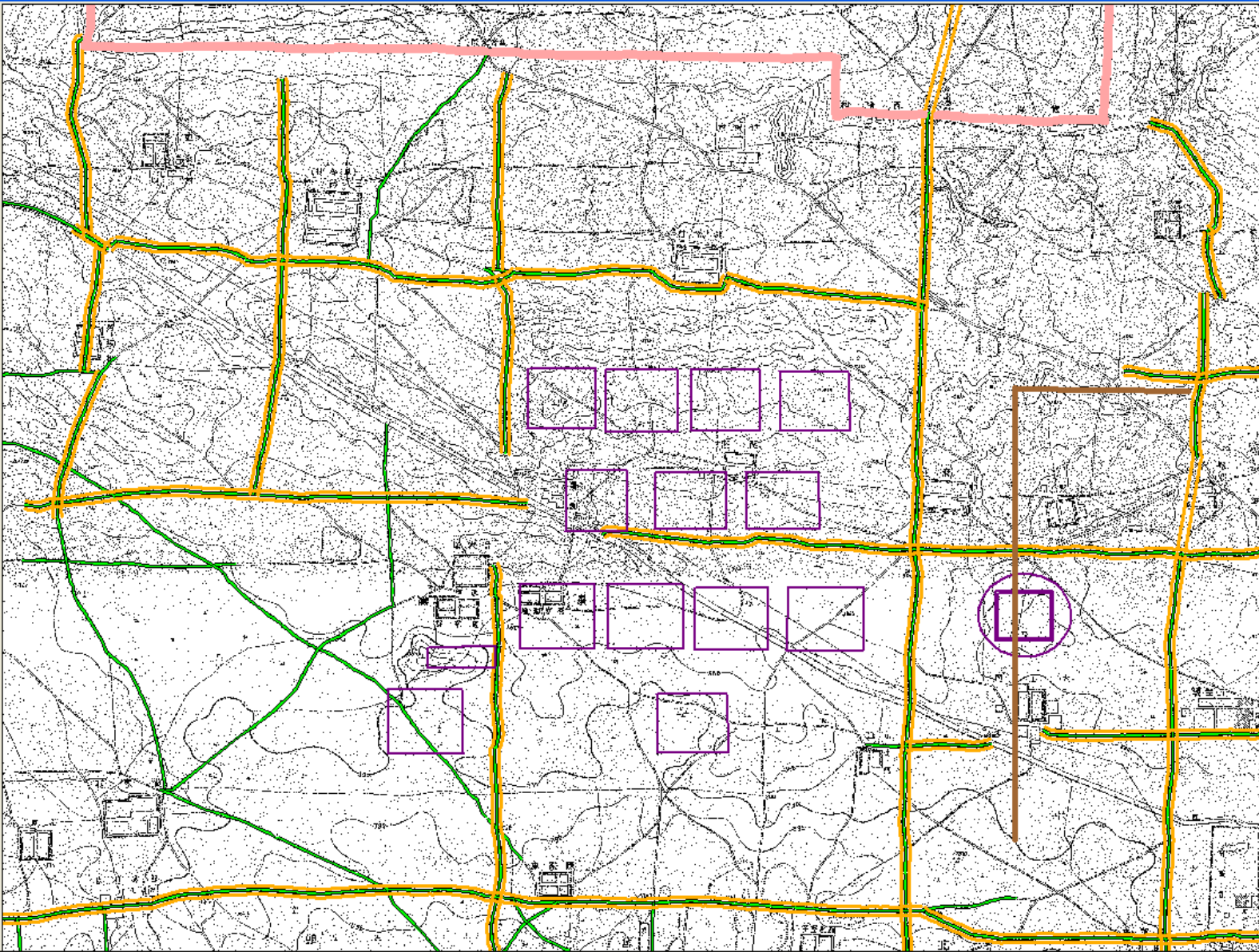


► Archaeological information added to GIS





- 界址和城牆遺址.shp
- 漢界和漢南郊遺址
- 明城牆遺址.shp
- 漢城牆遺址.shp
- 東郊堡障路限.shp
- 西郊堡障路限.shp
- 13in1.bmp
- Cvt_0741_1.shp
- Theme5.shp
- greatwall.shp
- Aaa.bmp
- 13in1.tif
- 農林區的地理行政
 - 界址山頂地形
 - 界址其他小地
 - 界址界址各月
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Nature of the Spatial Matrix

- ▶ Rigid Cartesian grid plan not clearly supported by evidence from large-scale maps
- ▶ Spatial Grain: rectilinear and oriented to cardinal points – but with discontinuities due to terrain or major buildings

Relationship between City and Suburbs

- ▶ Continuous spatial matrix
- ▶ Continuous avenues and major axes
- ▶ Combination of Warring States walled capitals and Qin open capital metropolis

Historical Implications

- ▶ Manifestation of state control
- ▶ Understanding the relationship between the idealized map of the Tang city and the actual plan
- ▶ Urban growth and change within a semi-permanent matrix
- ▶ Cultural continuity as expressed in spatial organization

End

▶ Continuing work on this project is supported by the National Science Council of Taiwan and the Center for GIS of the Academia Sinica