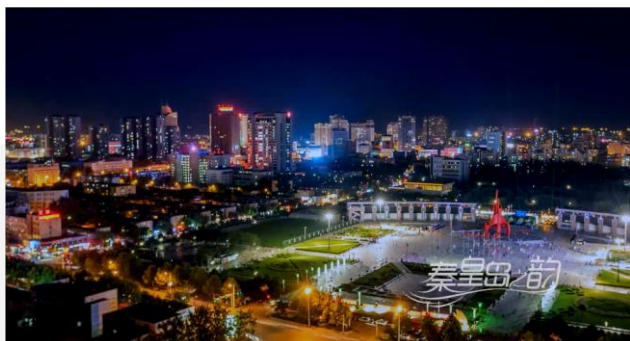




CEPC Site Choice and Related Technical Challenges (1 Qinhuangdao)



Yu XIAO

Yellow River Engineering Consulting Co., Ltd.

Nov. 2, 2021



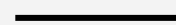
Contents

01. Introduction
02. Site Choice
03. Related Technical Challenges
04. Summary



01

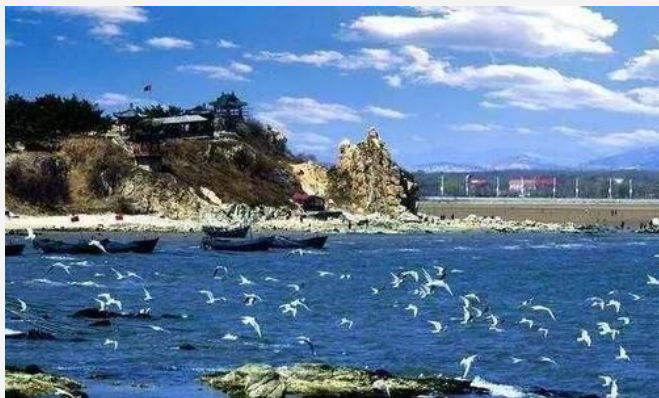
Introduction



Qinhuangdao



1.1 Location





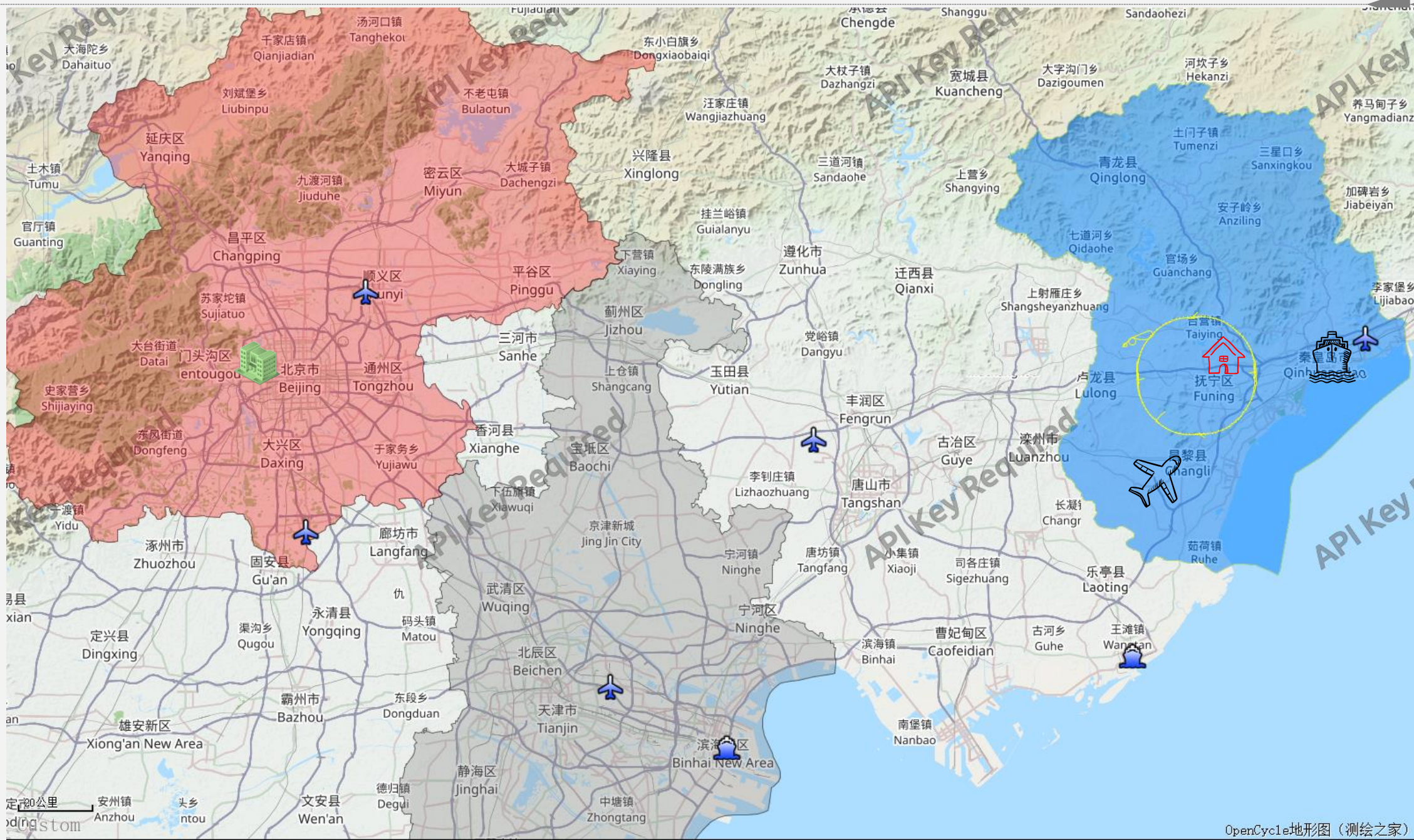
1.1 Location



Hebei Province



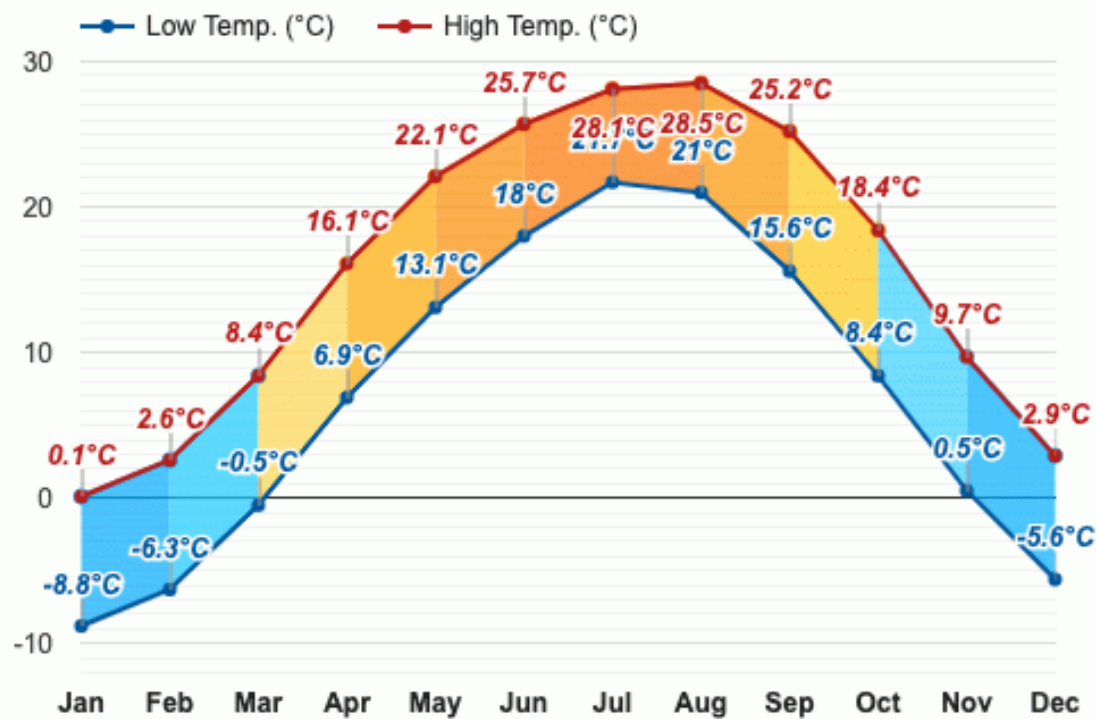
1.2 Traffic Conditions



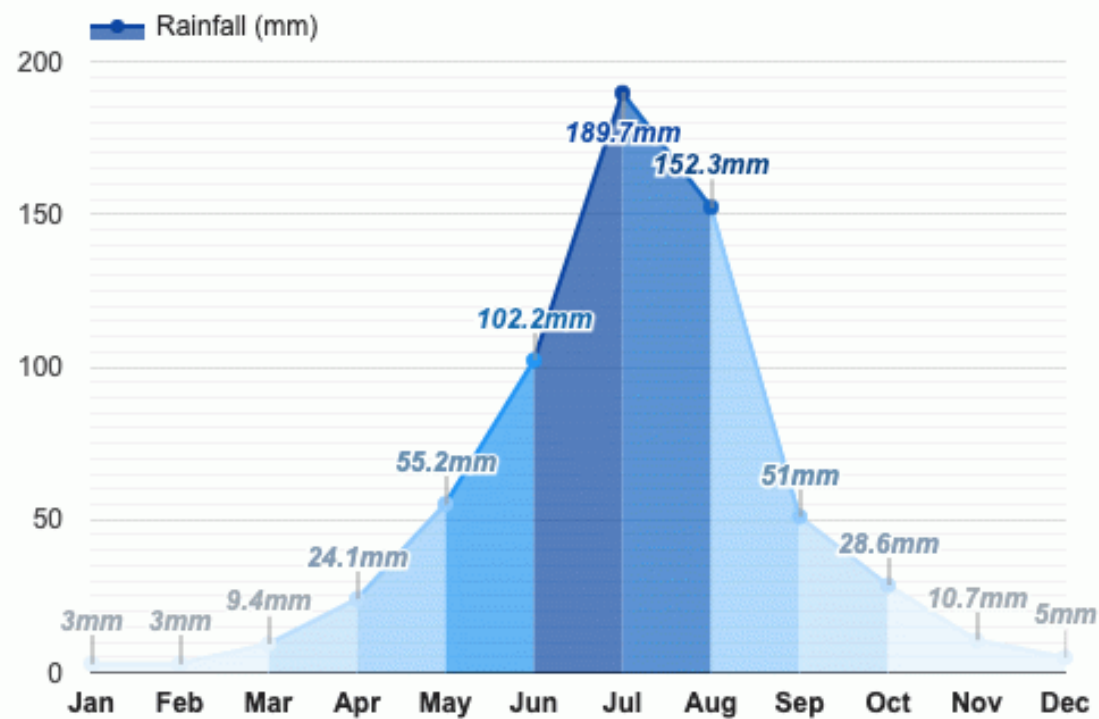


1.3 Climatic Conditions

Temperature - Qinhuangdao, China



Rainfall - Qinhuangdao, China



1.4 Economic Development





02

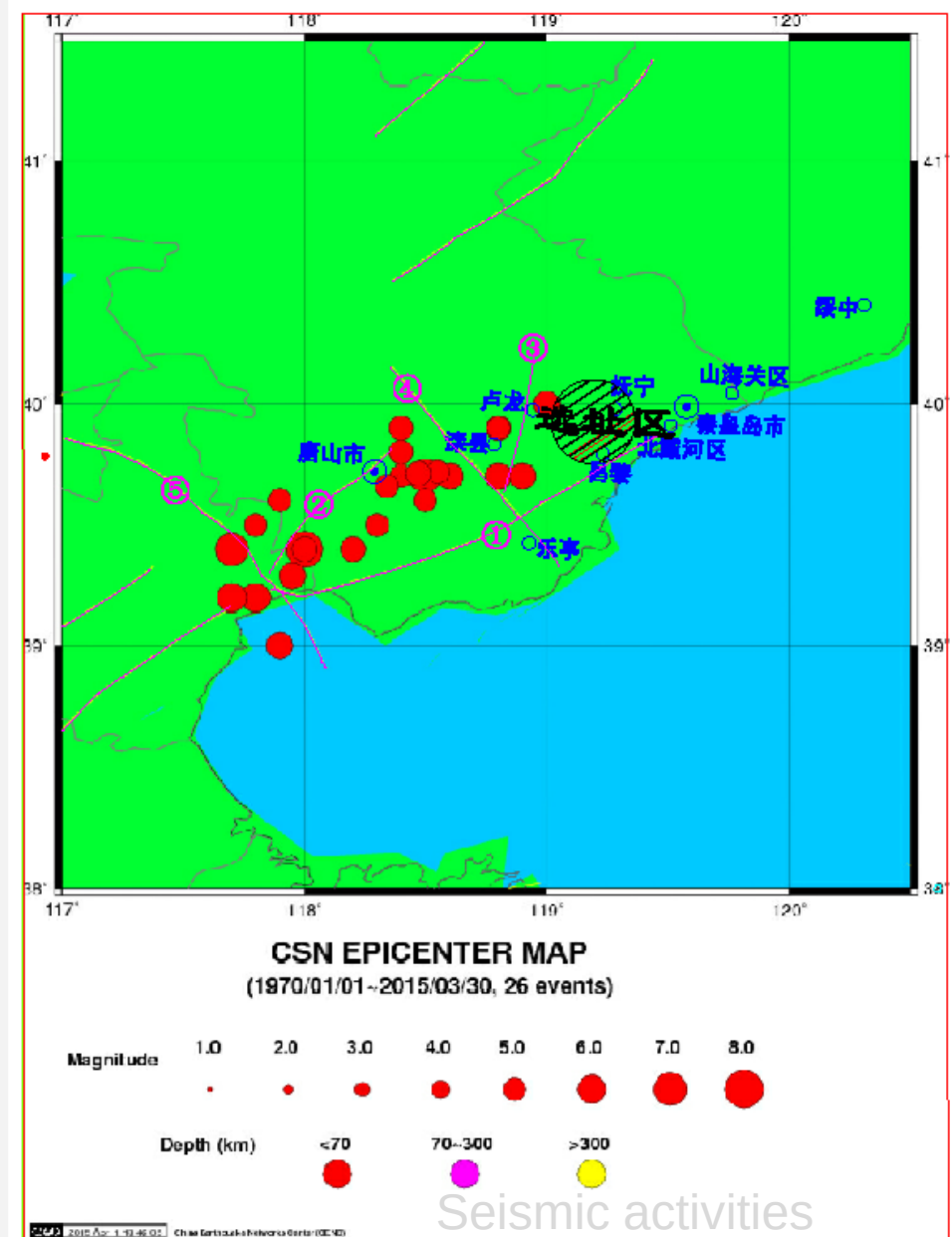
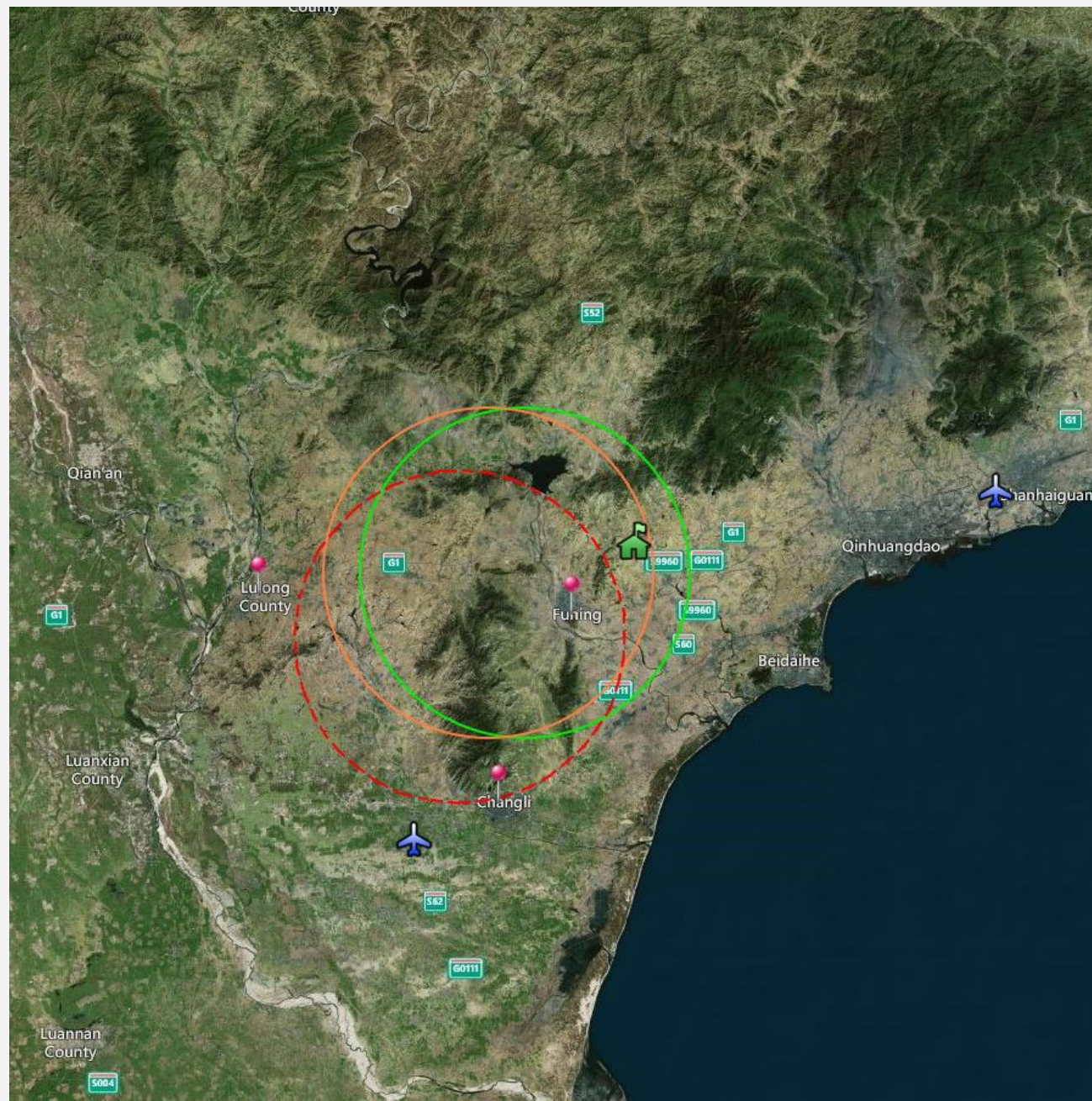
Site Choice

—— Qinhuangdao





2.1 Engineering Geology



①: 昌黎断裂 ②: 唐山断裂 ③: 卢龙断裂 ④: 滦县-乐亭断裂 ⑤: 蓟运河断裂



2.1 Engineering Geology

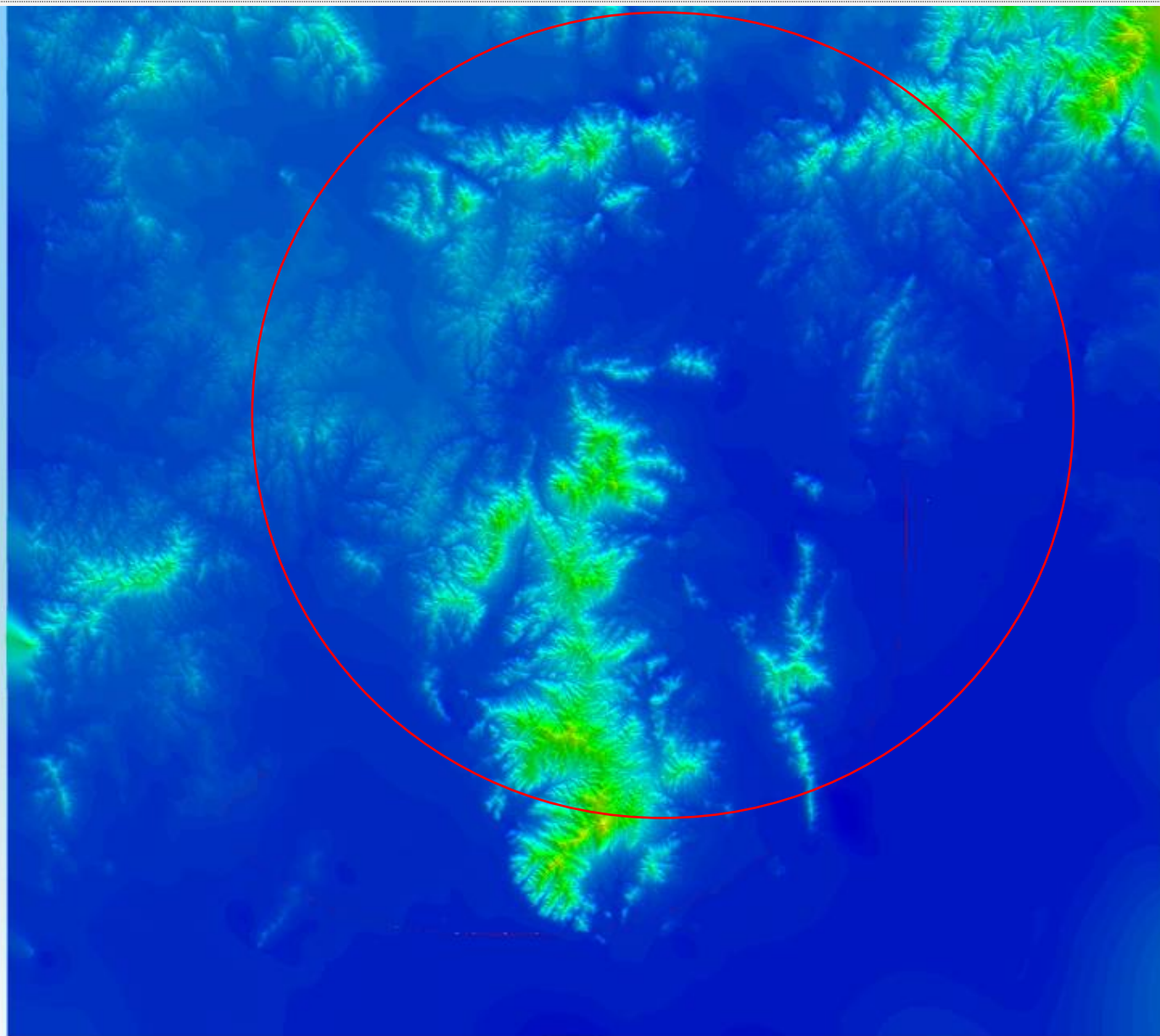
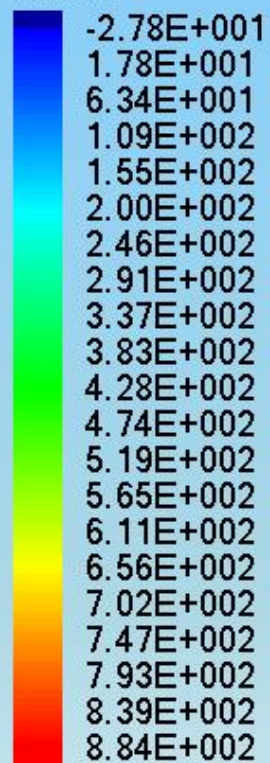


According to the Seismic Ground Motion Parameters Zonation Map of China (GB 18306-2015), the seismic peak ground acceleration to the east of Funing - Changli is 0.10g, while that to the west is 0.15g. The characteristic period of the seismic response spectrum is 0.40s.



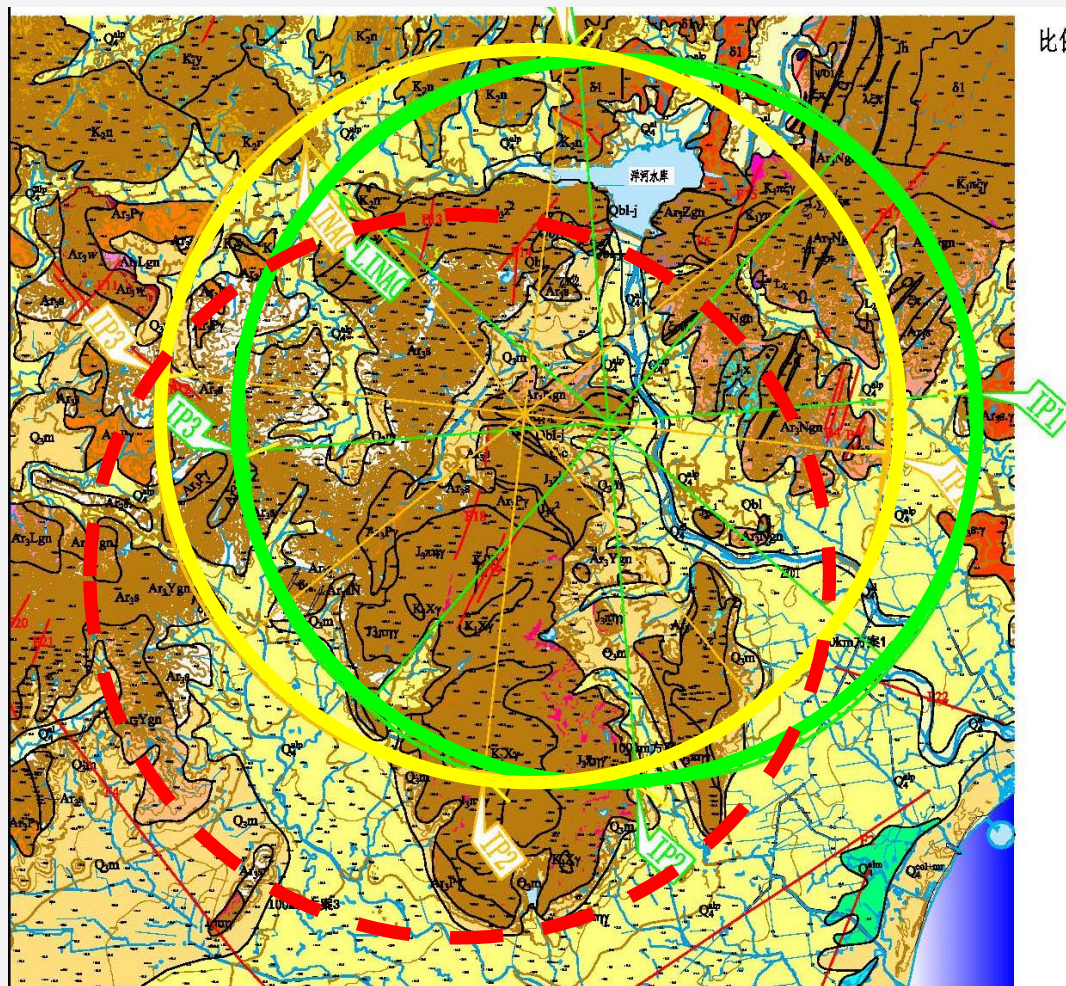
2.1 Engineering Geology

地表面:Z





2.1 Engineering Geology



比例



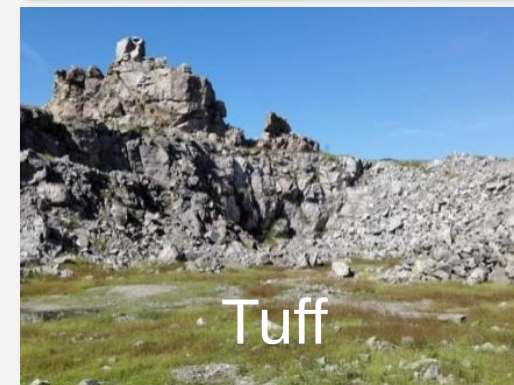
Gneiss



Granite



Sandstone



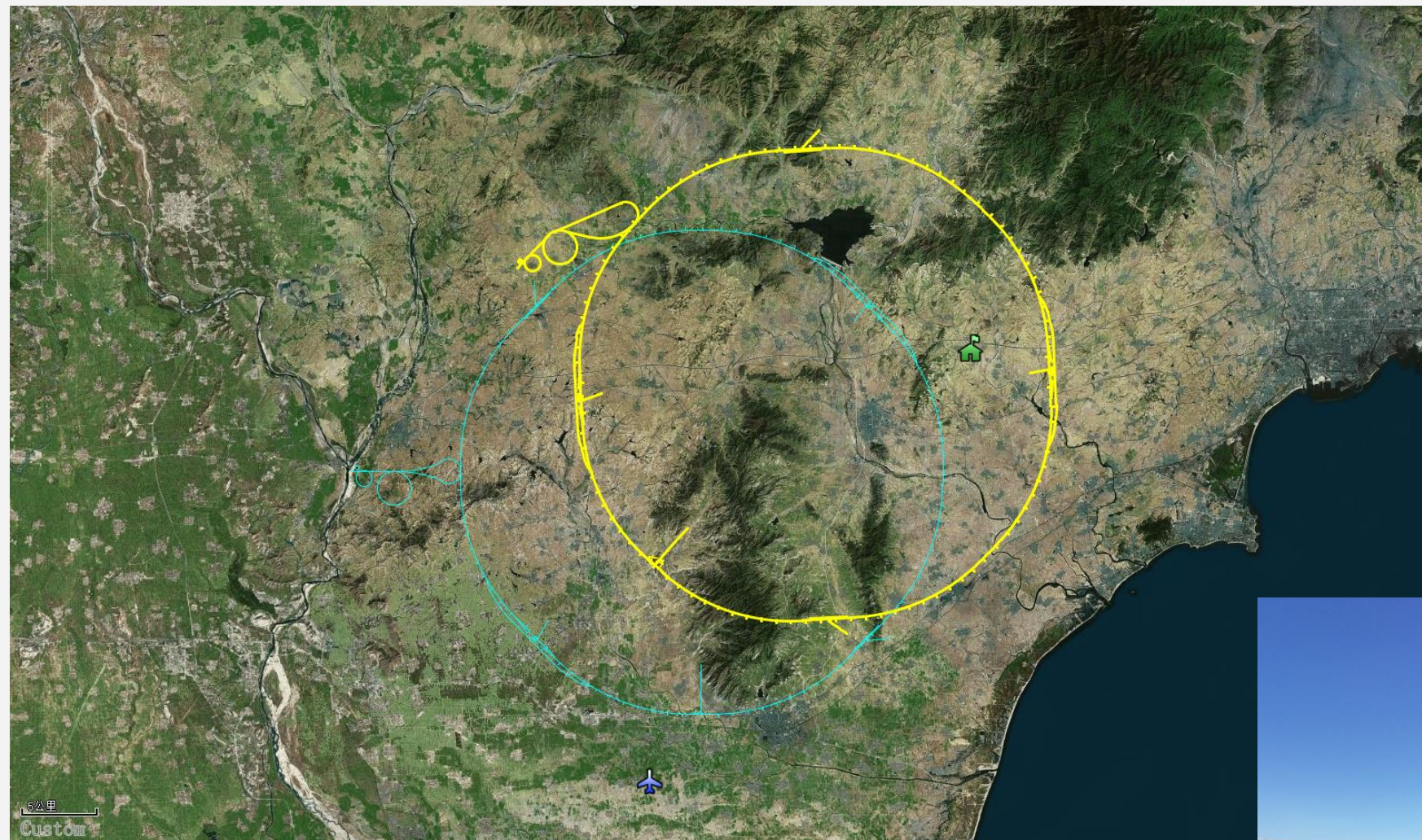
Tuff

Stratum Lithology

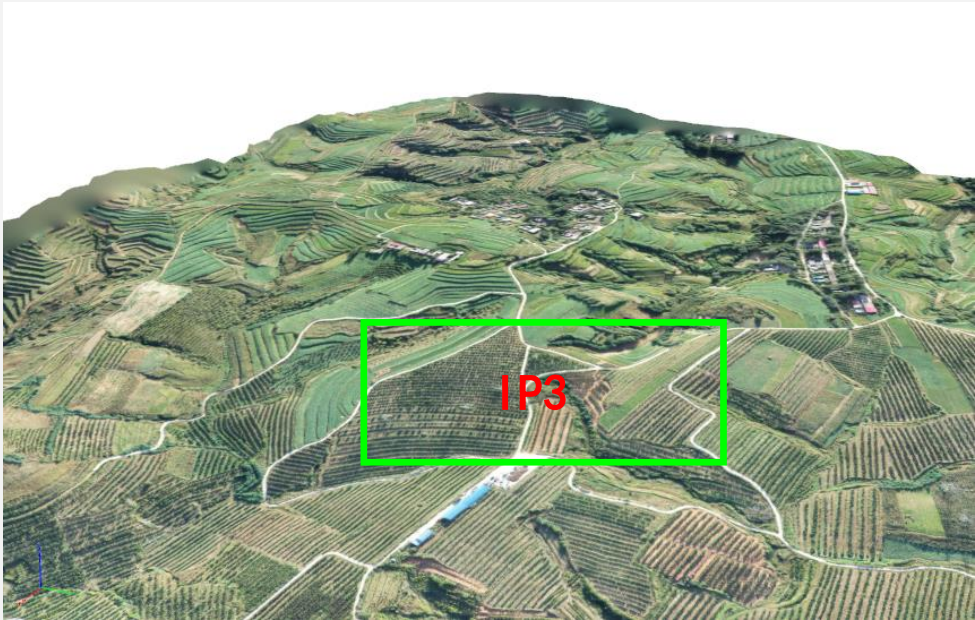
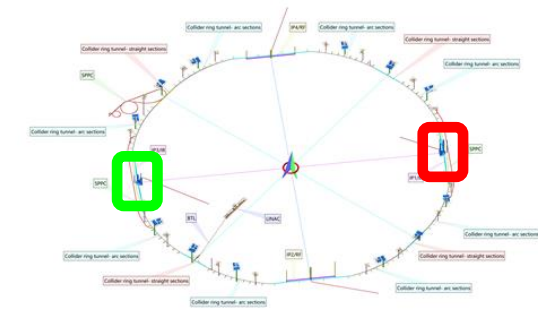
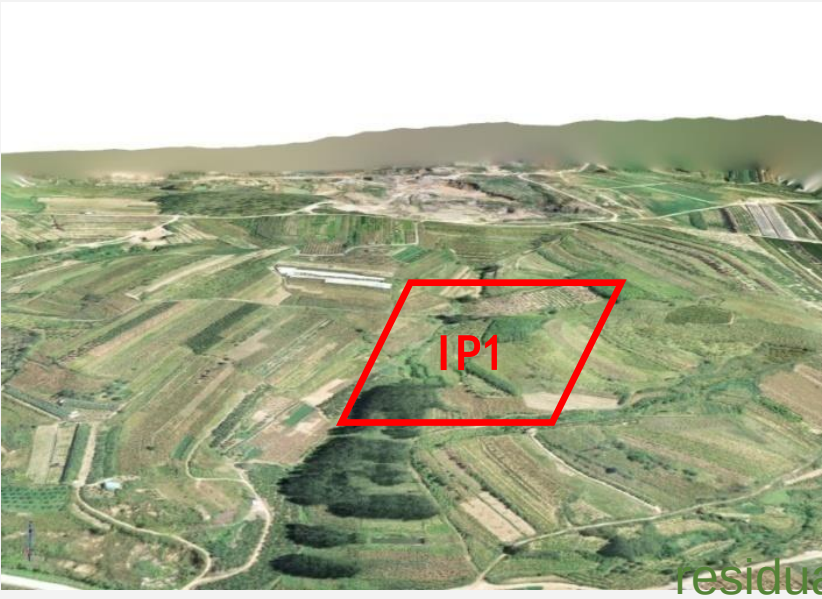


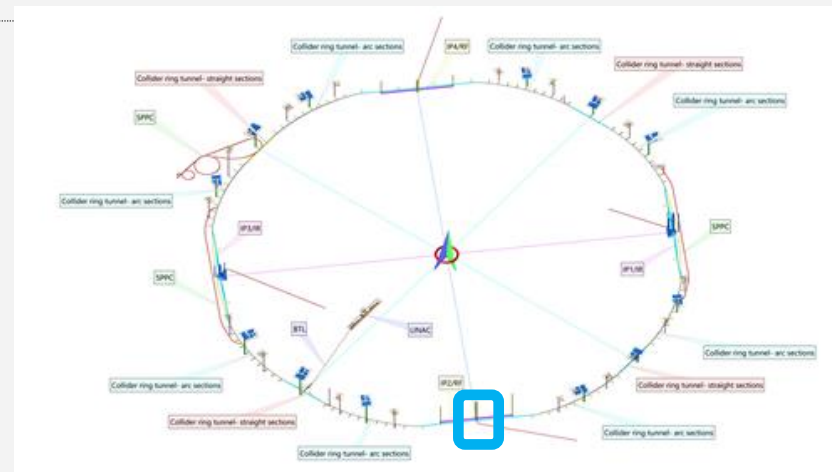
Drill Holes

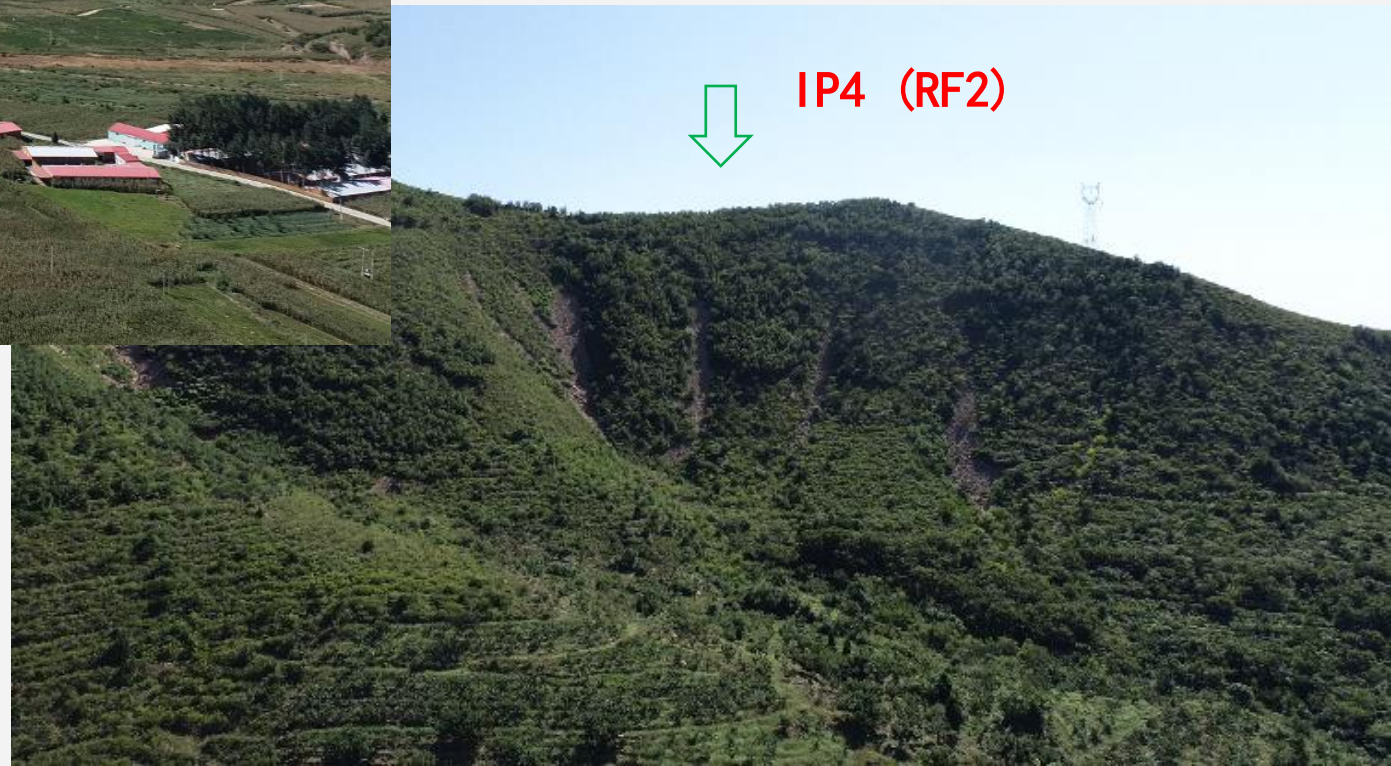
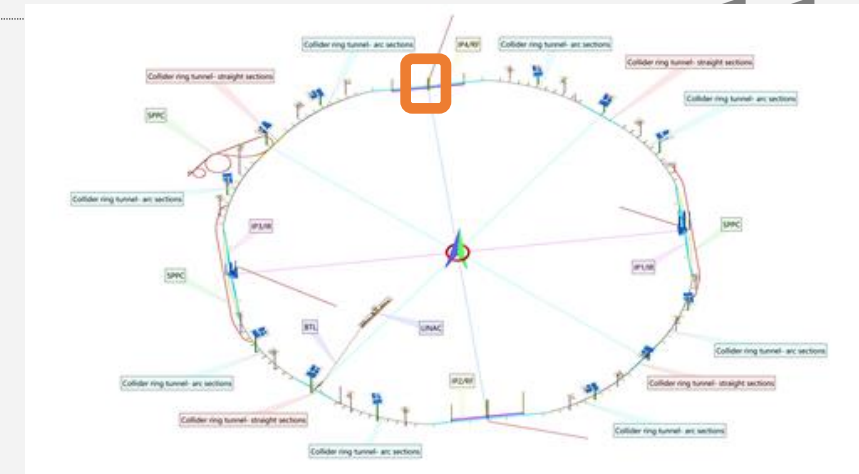
2.2 Site Choice



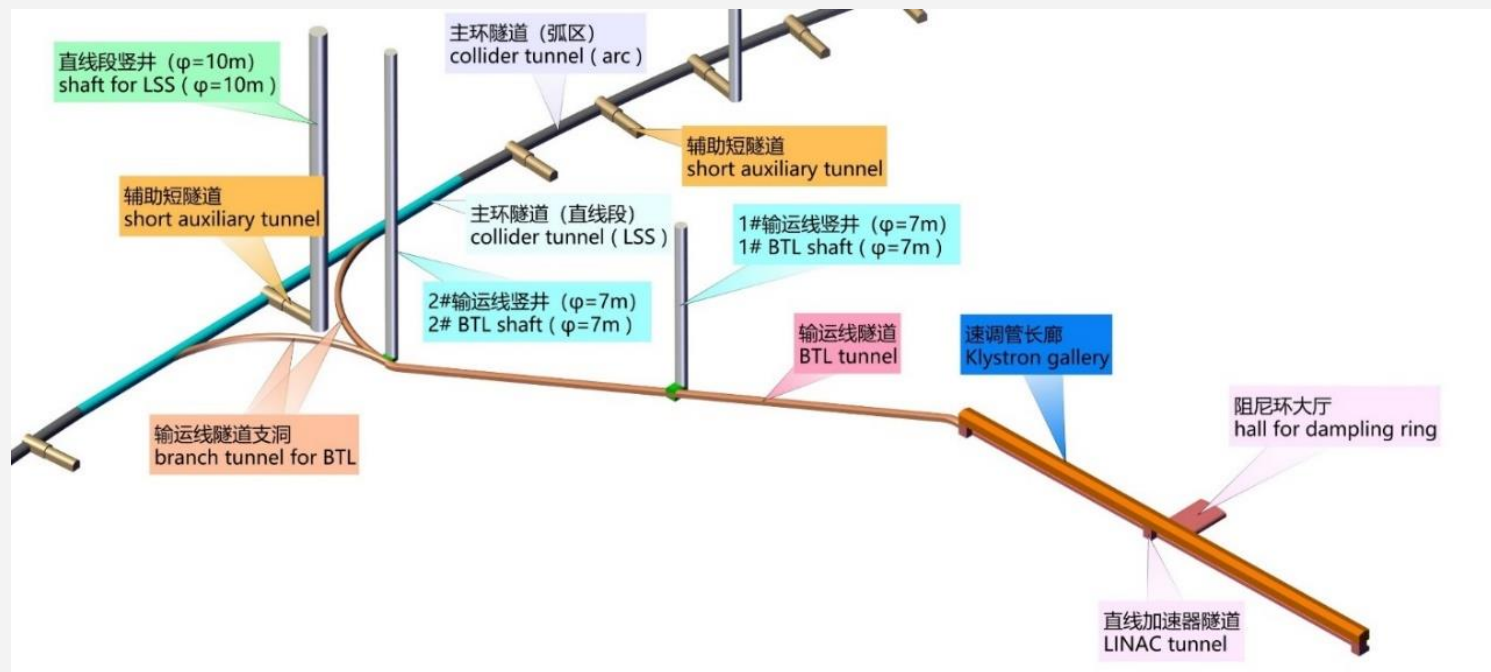
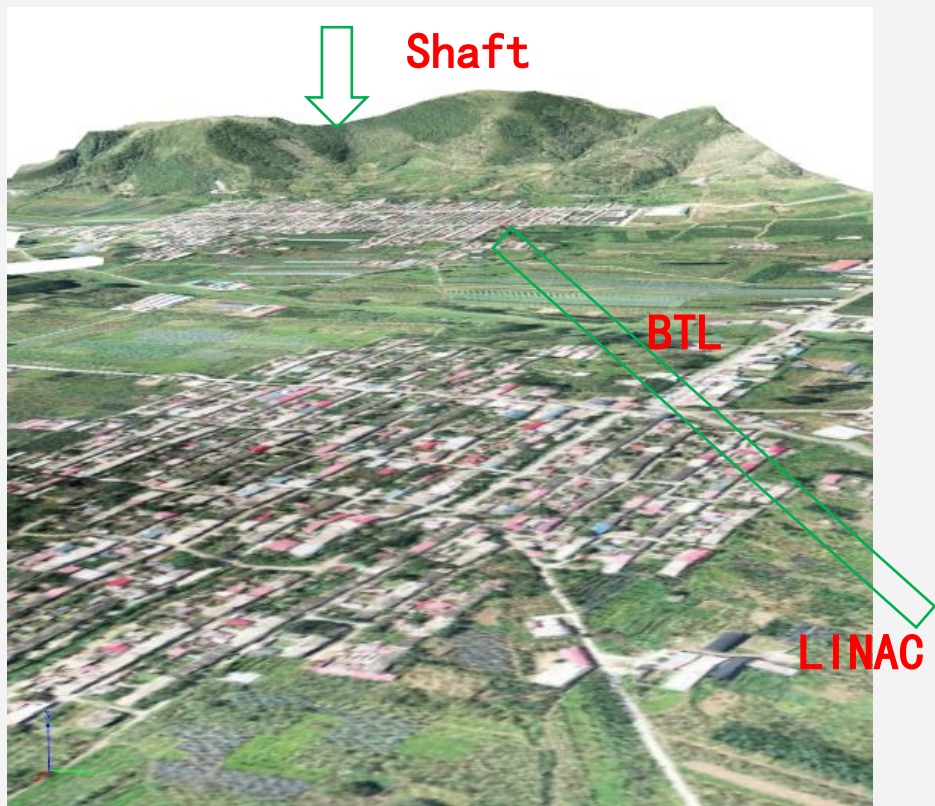
Preferred Option

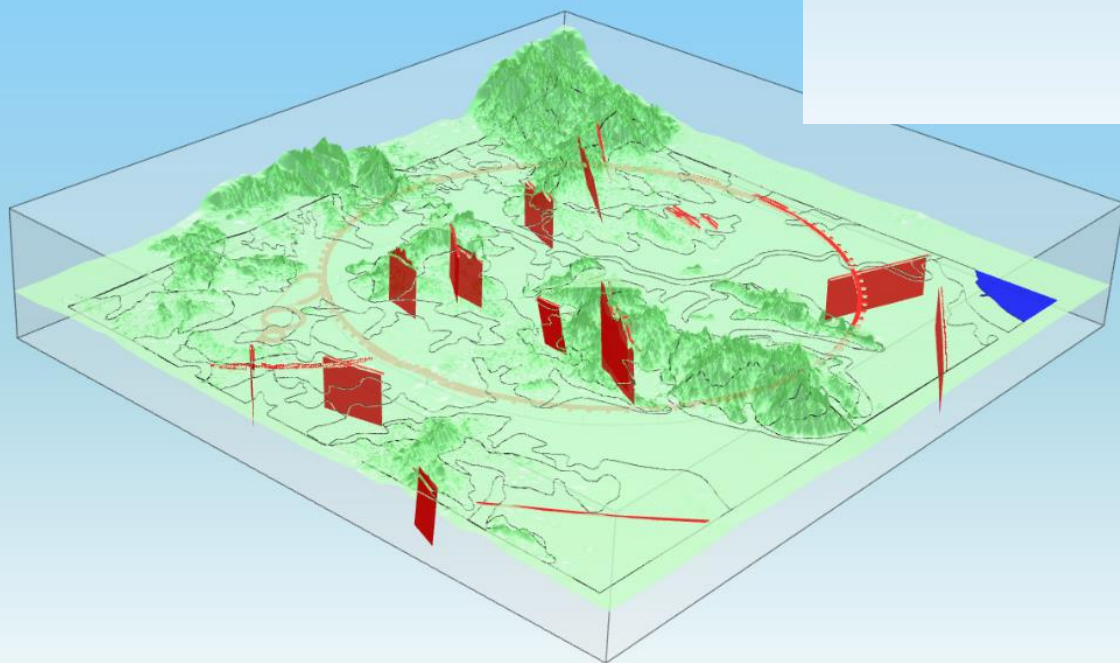
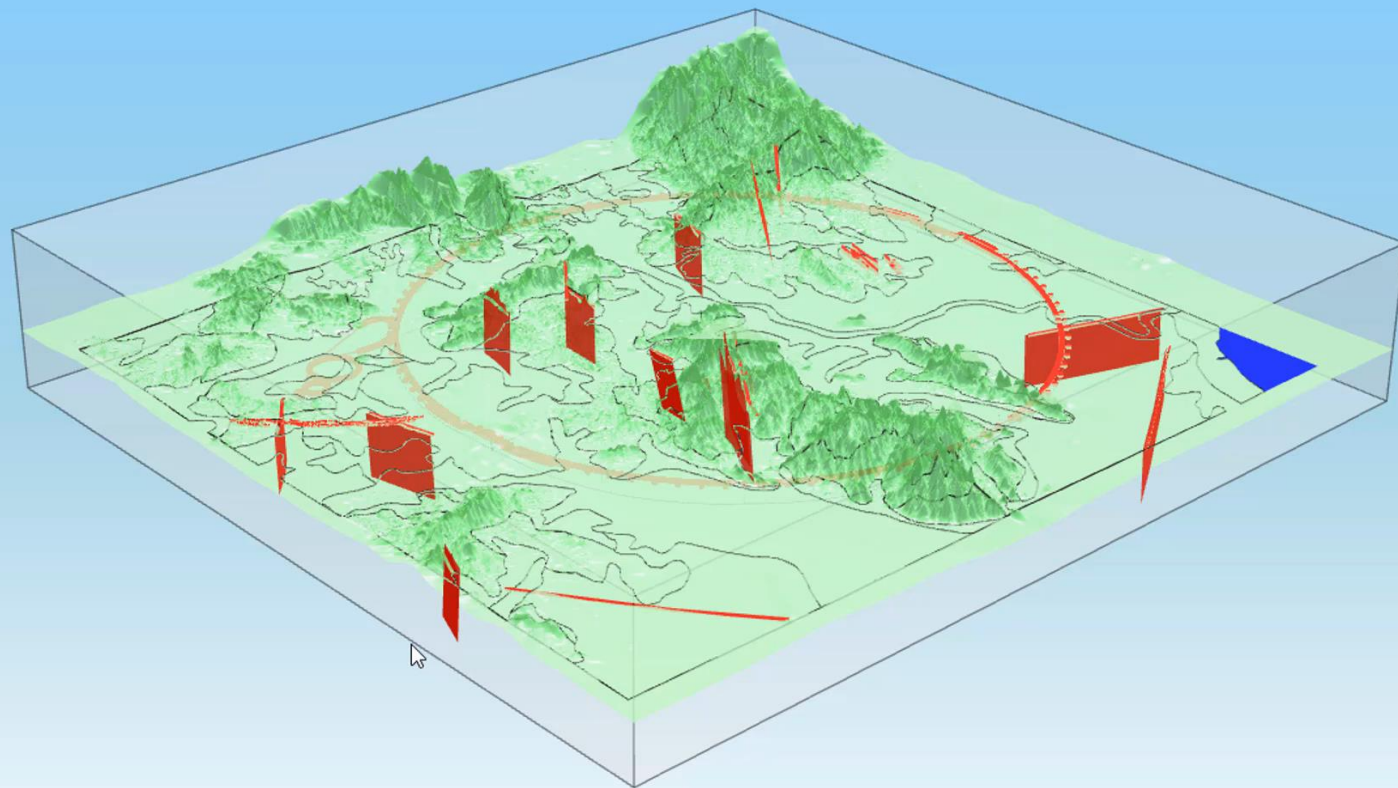


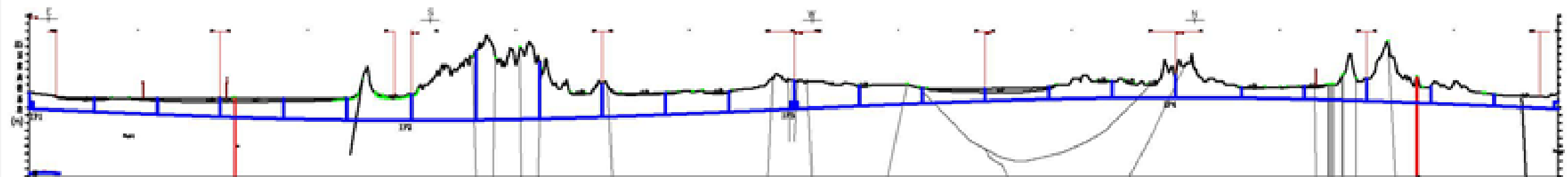
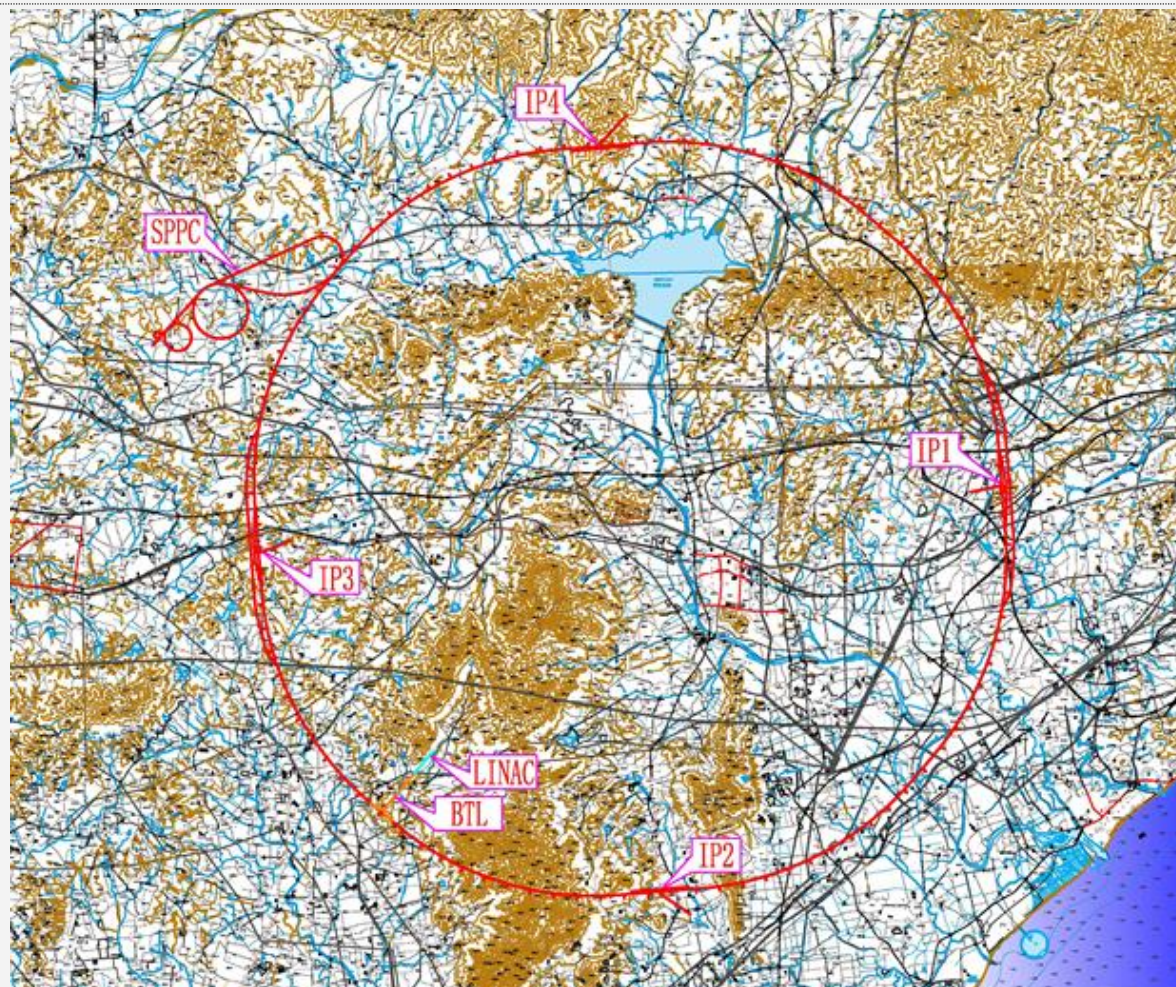




↓ IP4 (RF2)



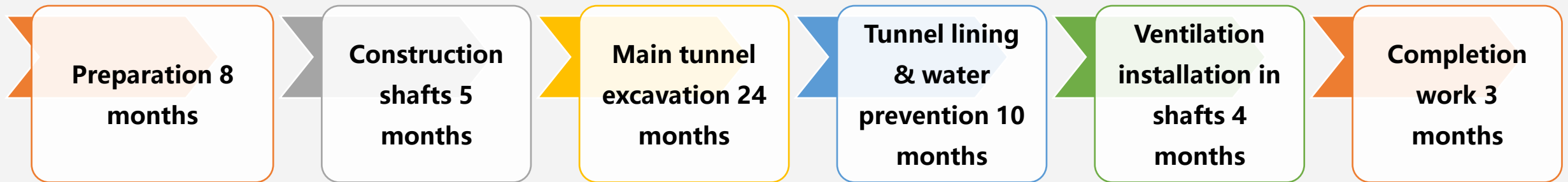




General Construction Schedule

The total construction period is 54 months, including preparatory work of 8 months, main works of 43 months and completion work of 3 months.

The critical activities are:



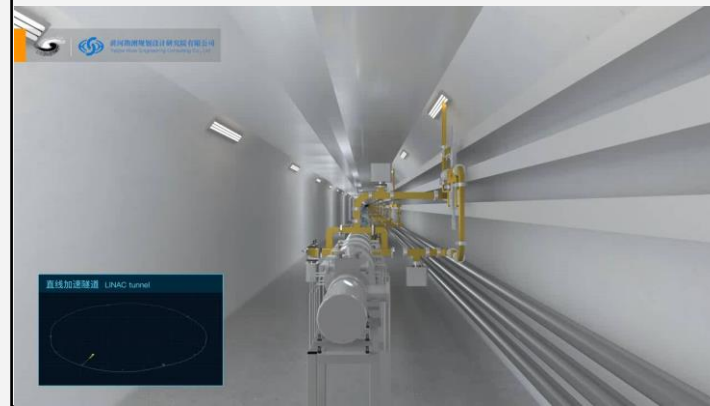
The surface buildings and electrical installation are carried out in parallel and not on the main path.

2.5 Equipment Layout

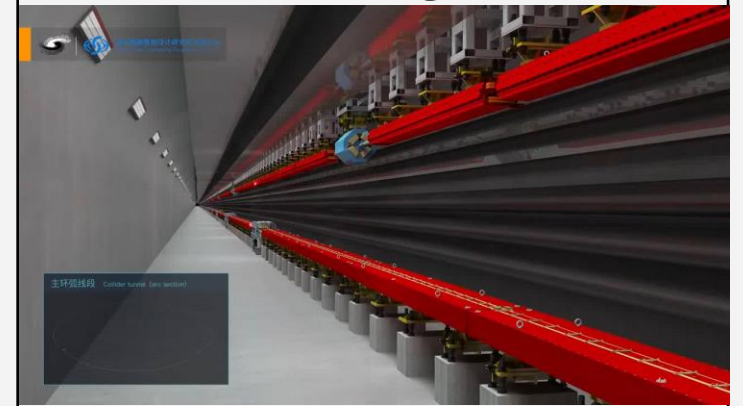
Klystron Gallery



Linac & BTL Tunnel



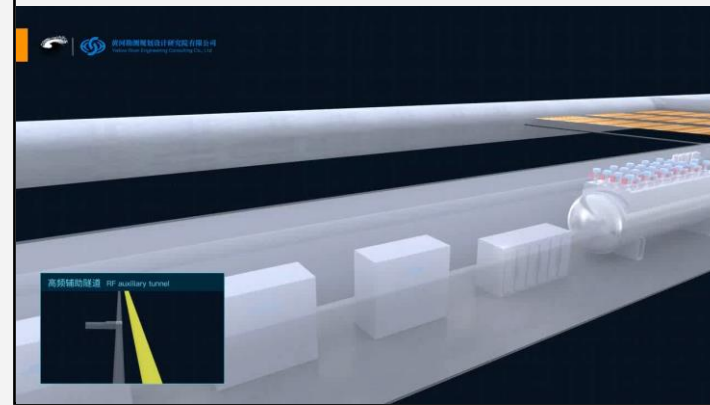
Collider ring tunnel



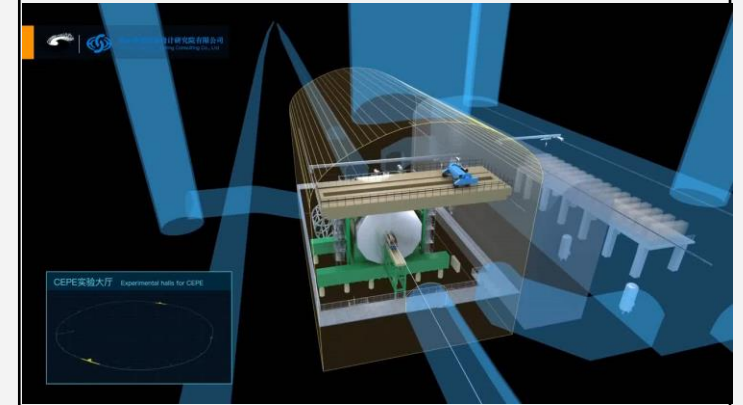
Collider ring tunnel (RF)



RF Auxiliary Tunnel



IP1 / IP3





03

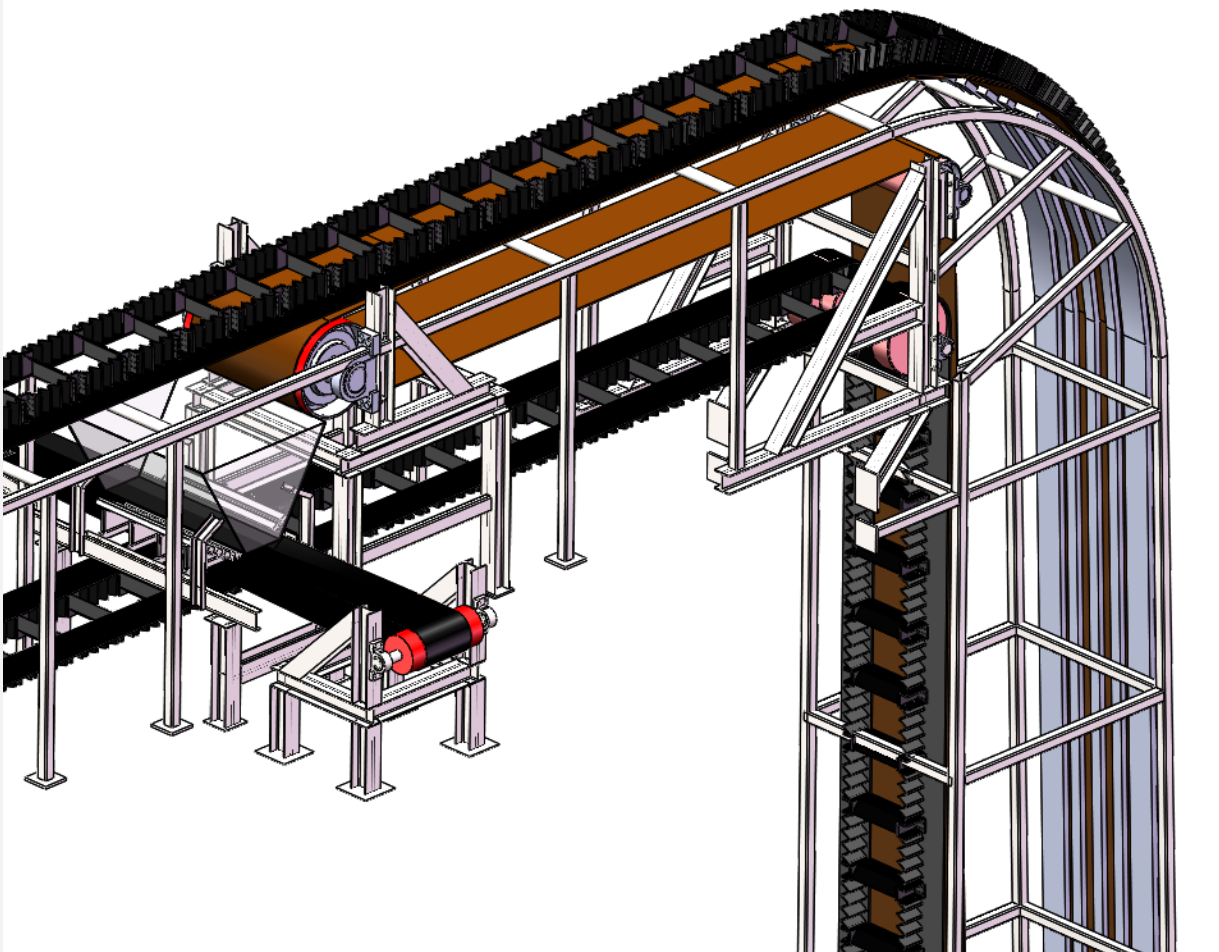
Related Technical Challenges



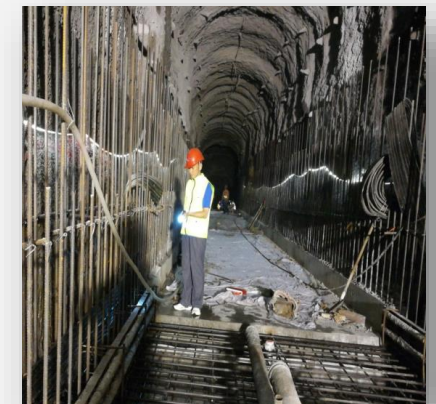
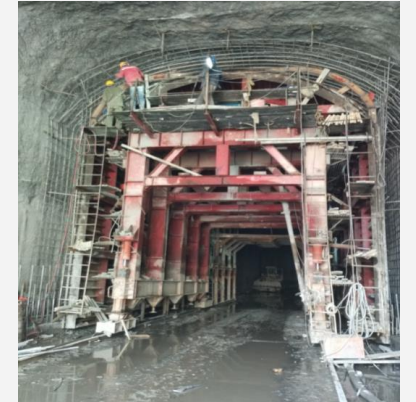
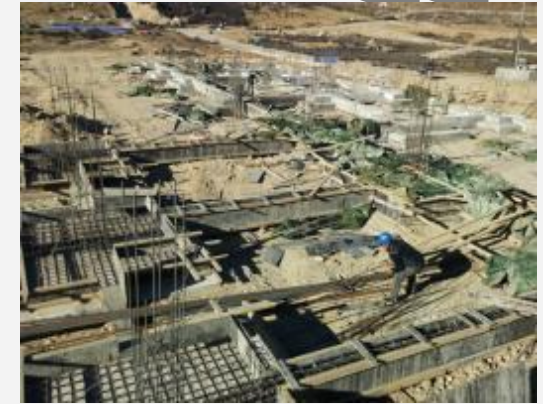
(1) Rectangular TBM



(2) Vertical Lifting Belt Conveyor

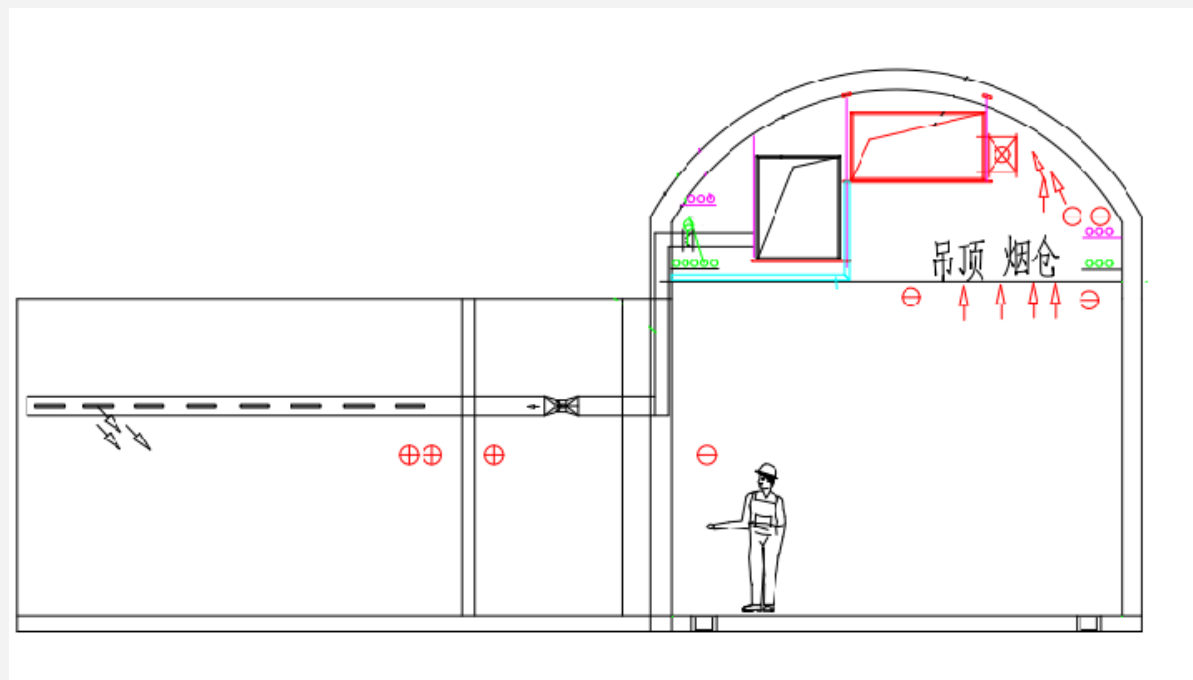


(3) Waterproof Study



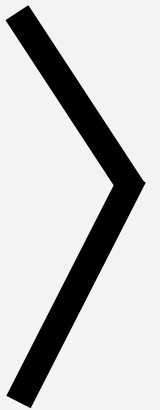


(4) fire control design



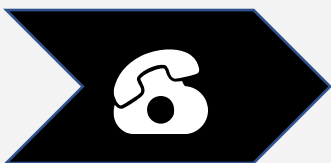
04

Summary





Qinhuangdao sites can satisfy requirements for CEPC construction.



Advance the preliminary civil engineering design as soon as possible.



Market Distribution
市场分布



国际市场分布图
Overseas Market Distribution

THANK YOU FOR LISTENING

