Road Maintenance (C) Infrastructure Tour (Technical exchange)

Kochi Interchange Line・Southern East Road ・Oroku Road

Explanation of the inspection site

Nov. 13-14, 2025

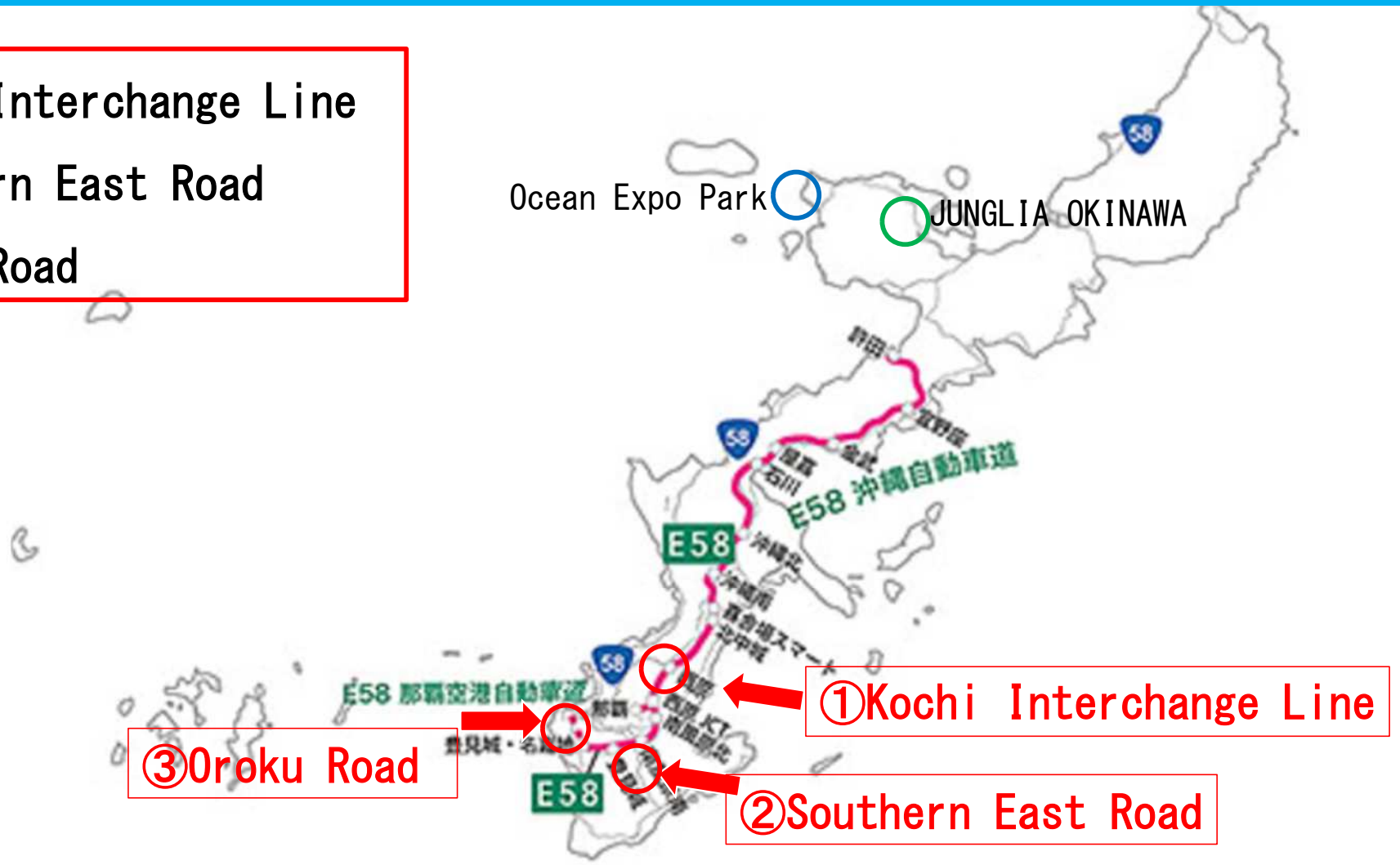
Okinawa Professional Engineers' Association

Inspection Site Location Map

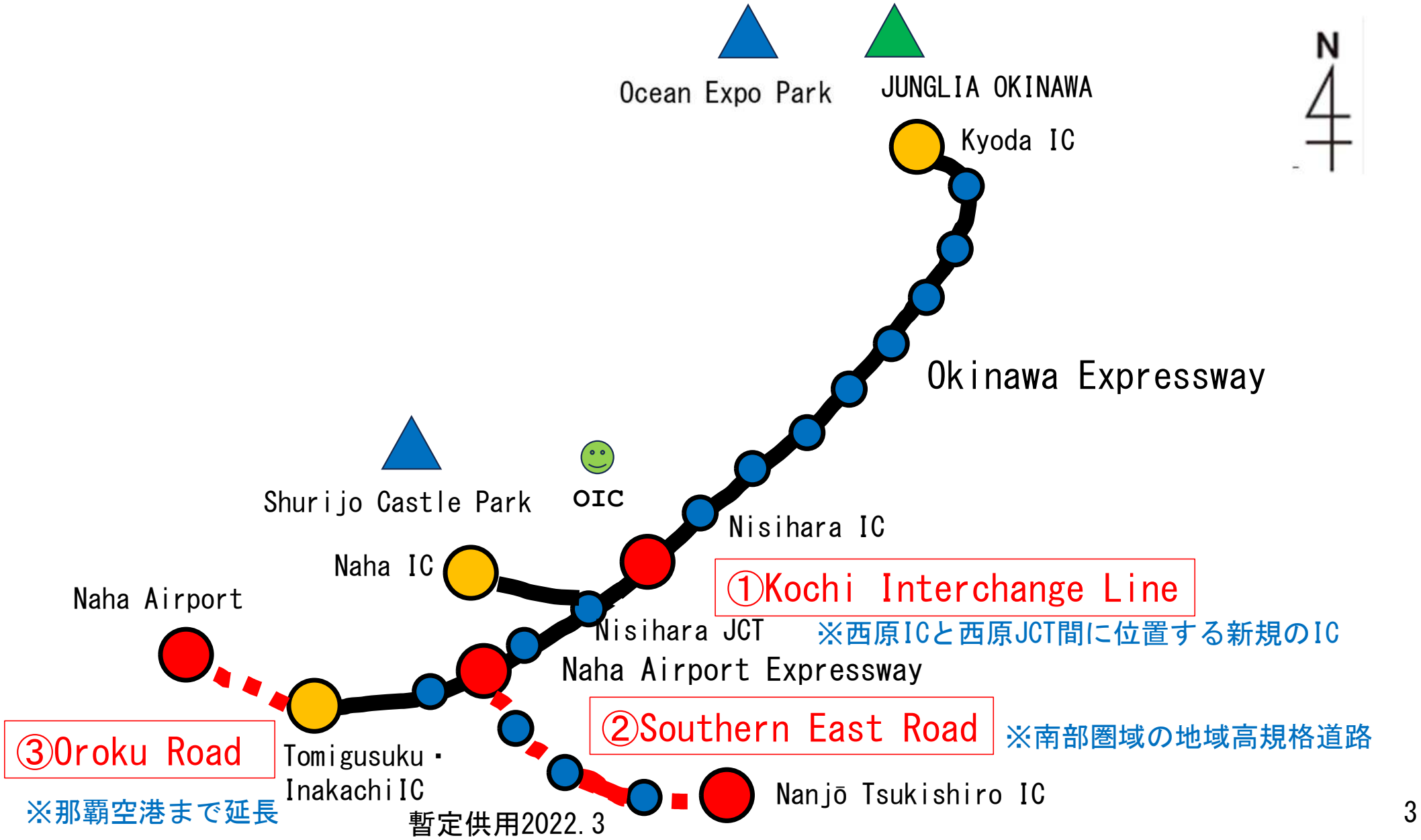
①Kochi Interchange Line

②Southern East Road

③Oroku Road



国土交通省HP

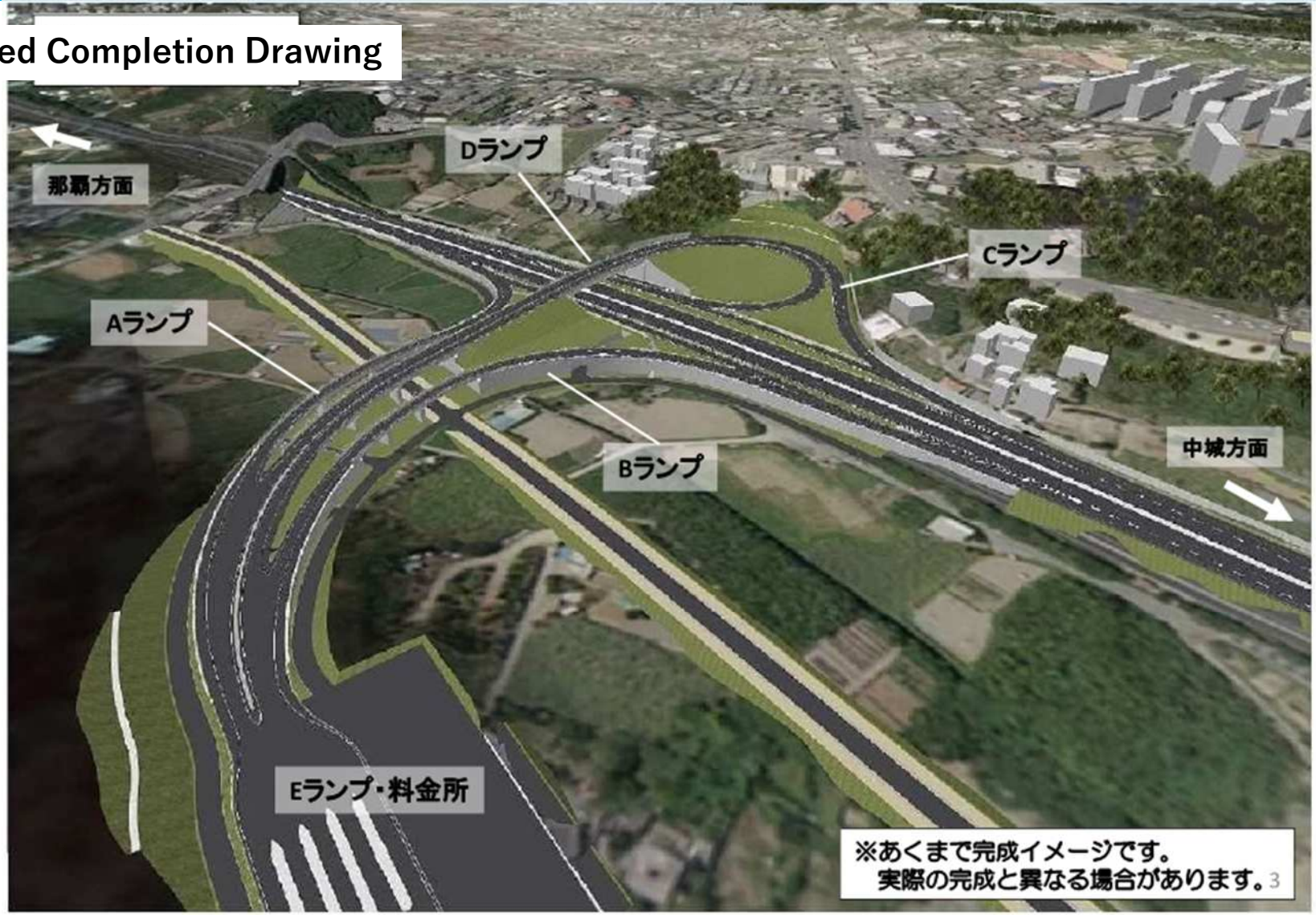

Ocean Expo Park
JUNGLIA OKINAWA
N
Kyoda IC
Okinawa Expressway
Shurijo Castle Park
OIC
Nisihara IC
Naha IC
①Kochi Interchange Line
※西原ICと西原JCT間に位置する新規のIC
Naha Airport
Nisihara JCT
Naha Airport Expressway
②Southern East Road
※南部圏域の地域高規格道路
③Oroku Road
Tomigusuku・
InakachiIC
Nanjō Tsukishiro IC
※那覇空港まで延長
暫定供用2022.3

Explanation of the inspection site

Project Name	Kōchi Interchange Line	Southern East Road	Oroku Road
Site Visit Day	Thursday, November 13, afternoon	Friday, November 14, morning	Friday, November 14th, afternoon
Business entity	Okinawa Prefecture、 West Nippon Expressway Company Limited	Okinawa Prefecture	Okinawa General Bureau, Cabinet Office Southern National Highway Office
Major roads, etc.	Okinawa Expressway	Regional High-Standard Road South-East Route (Haebaru Chinen Line)	Naha Airport Expressway
Place	Kōchi, Urasoe City (Kōchi Interchange Construction Site Office)	Oozato, Nanjo City (South East Road Construction Site Office)	Oroku, Naha City (Naha Airport Expressway Branch Office)
Travel time	About a 10-minute drive	About 40 minutes by car	About 45 minutes by car
Purpose	・Traffic congestion relief: Expected to improve traffic conditions in the surrounding area. ・Regional revitalization: Contributes to the revitalization of the surrounding community.	・It is a road that ensures regular hours and speeds, aims to establish a 30-minute area to Naha City, provides urban services to local residents, and supports the development of the southern region. ・It is expected to promote tourism, support medical services, encourage industrial development, and improve the roadside environment.	・ Ensure regular and high-speed service between the northern and central-southern parts of Okinawa Island and Naha Airport. ・ Alleviate traffic congestion in the Oroku area along National Route 331. ・ Support efficiency in logistics and tourism on Okinawa Island.
Business Extension	約0.8km	7.4km 約2.0km（暫定開通）2022年3月	5.7km
Construction period	Fiscal Year 2018～	Fiscal Year 2015～	Fiscal Year 2014～
Progress rate	Construction Office・Confirmation on Site	Construction Office・Confirmation on Site	Construction Office・Confirmation on Site
Site visit	Bridge (superstructure), Cut slope construction, Ground improvement work, etc.	Environmental countermeasures sites, etc.	OFF lamp bridge upper part, Bridge upper part (P15-P19), Bridge upper part (P19-P24)

Kochi Interchange Line Interchange

Expected Completion Drawing



3D・VRシミュレーションコンテスト FORUM8

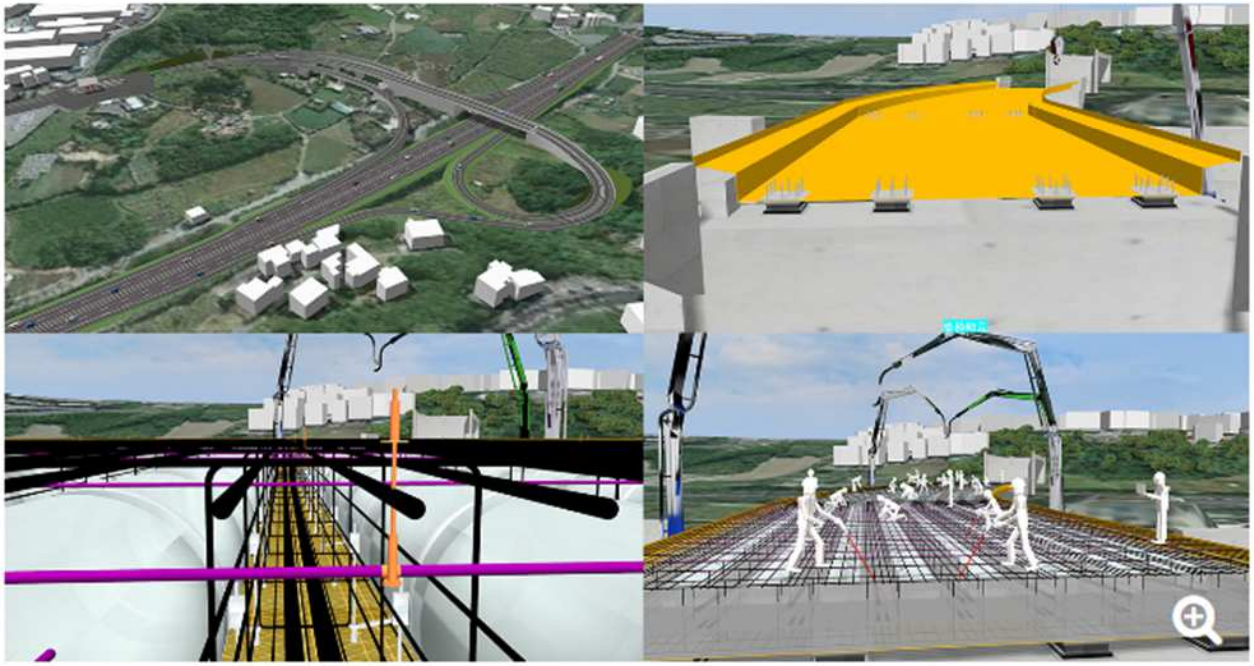
https://vrcon.forum8.co.jp/2023/

2分20秒/4分33秒

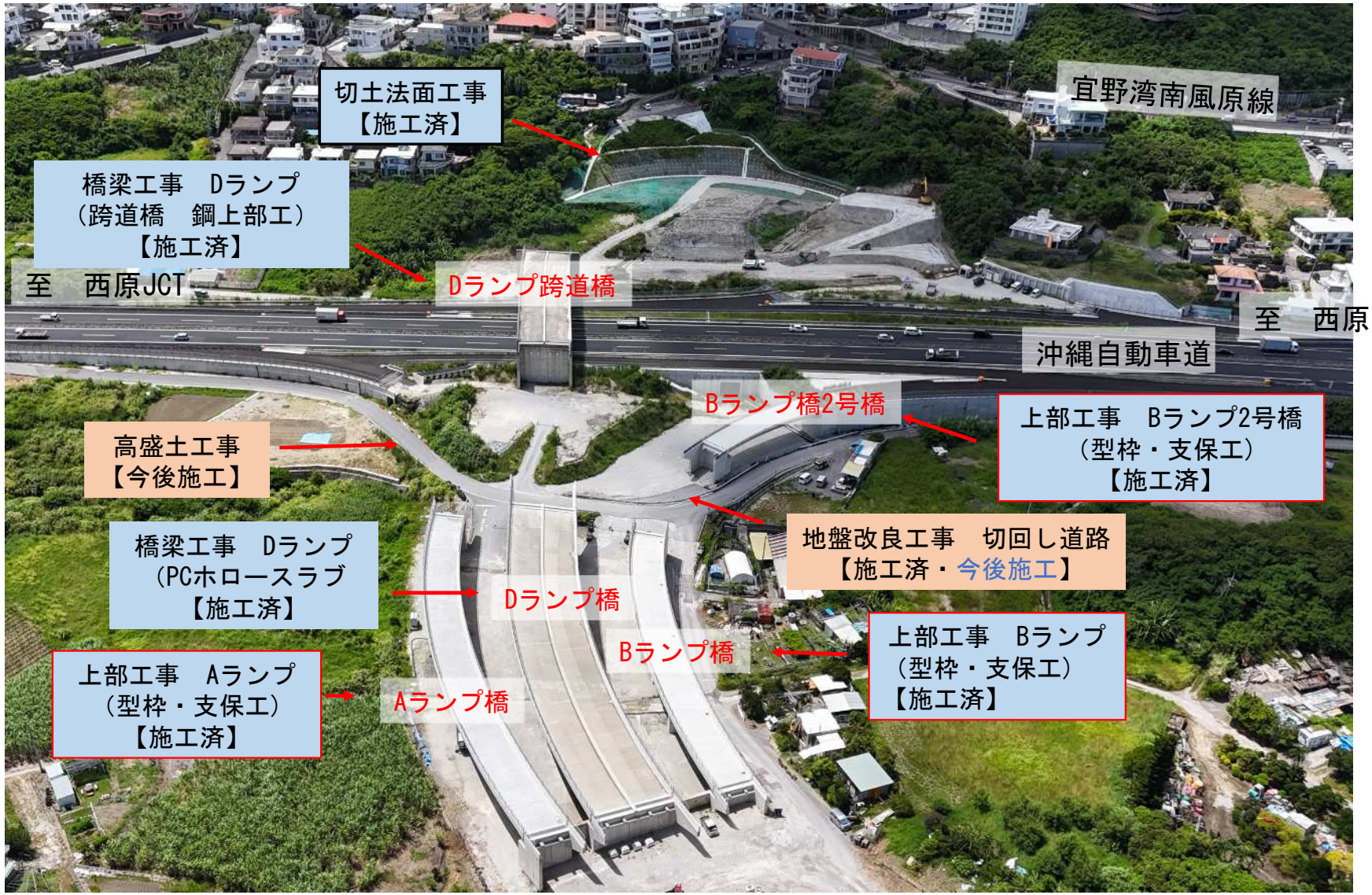
ノミネート賞

金秀建設株式会社

幸地インター線橋梁整備工事（Dランプ上部工）



Kōchi Interchange Line Construction Status (From Central to Terminal Side) Photographed August 2025



【施工済】

【施工中・
今後施工】

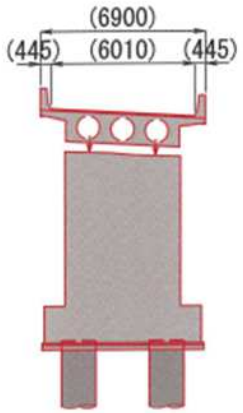
Each construction project and related technologies

Construction Name	Project Name	Construction Method	Construction Progress	Related Technologies
Bridge construction	Foundation work	Pile Foundation (Cast-in-Place Pile Method)	Construction completed	① Red soil runoff countermeasures, environmental conservation
	Substructure work	Abutment and Pier Construction (Concrete Work)	Construction completed	② Salt Damage Countermeasures, Infrastructure Longevity Enhancement
	Superstructure Work (D Ramp Overpass)	Bent method: Factory fabrication and on-site erection (550-ton crane)	Construction completed	② Salt Damage Countermeasures, Infrastructure Longevity Enhancement
	Superstructure Work (A, B, D Ramp Bridges)	Fixed Formwork Installation Concrete Work	Construction completed	② Salt Damage Countermeasures, Infrastructure Longevity Enhancement ⑥ ICT Utilization
Cutting work	Cut slope construction	Steel Bar Insertion Work Retaining pile work	Construction completed	④ Disaster Prevention Measures
Earthwork construction	Ground improvement work	Mid-layer mixing treatment method	Under construction	① Red soil runoff countermeasures, environmental conservation
	Earthwork construction	高盛土工事	Future construction	① Red soil runoff countermeasures, environmental conservation

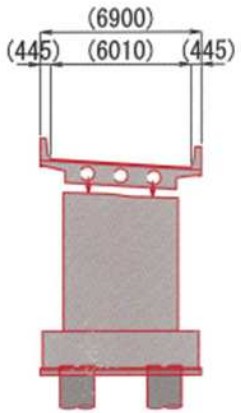
Bridge Construction Bridge Types and Substructures

Bridge Name	Bridge length (m)	Effective width (m)	Bridge Types	Lower form	Foundation work type	Year of Completion
A Lamp Bridge	89.5	6.01	Post-tensioned PC3 span Continuous cast-in-place hollow slab bridge	Inverted T-shaped abutment Wall-type pier	cast-in-place pile φ1500	2025.5
B Lamp Bridge	68.6	6.01	Post-tensioned PC3 span Continuous cast-in-place hollow slab bridge	Inverted T-shaped abutment Wall-type pier	cast-in-place pile φ1500	2025.5
B Ramp Bridge No. 2	32.0	6.01	Post-tensioned PC Simple Cast-in-place Hollow Deck Bridge	Inverted T-shaped abutment Wall-type pier	cast-in-place pile φ1500	2025.2
D Lamp Bridge	79.4	12.01	Post-tensioned PC3 span Continuous cast-in-place hollow slab bridge	Inverted T-shaped abutment 張出壁式橋脚	cast-in-place pile φ1500	2023.12
D Lamp Overpass	62.0	12.01	Steel Simple Composite Narrow-Flange Box Girder Bridge	Inverted T-shaped abutment	cast-in-place pile φ1500	2023.3

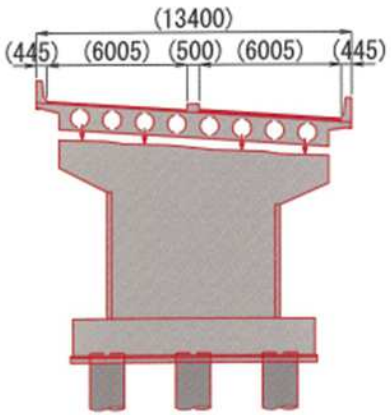
Aランプ橋



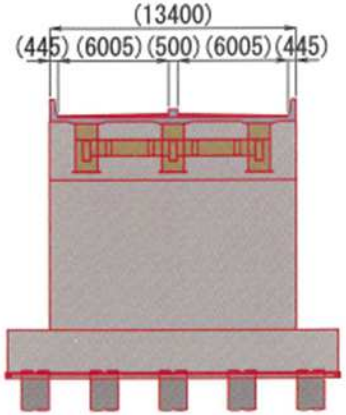
Bランプ橋



Dランプ橋



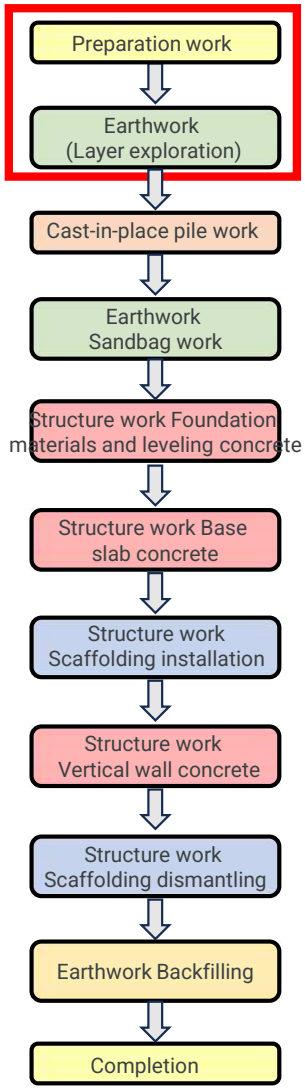
Dランプ跨道橋



Bridge construction (Foundation Works・Lower Structure Works)

Photographed in June 2023

Bridge construction, substructure construction and A・D ramp substructure A2



(Overall construction flow chart)

Surveying work

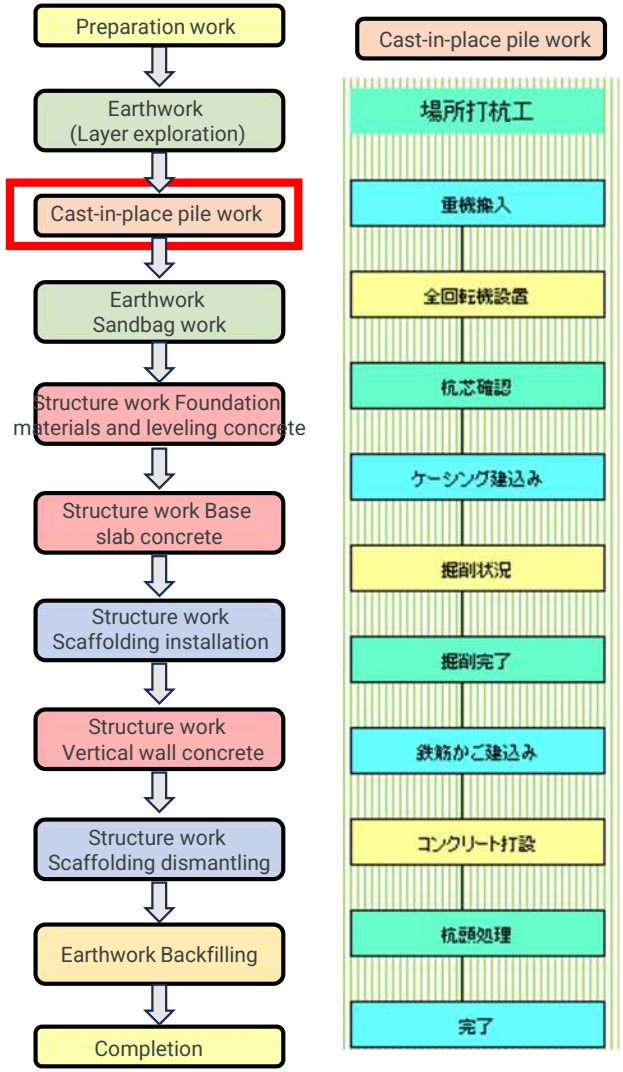
Installation of construction signs, etc.

Excavation

Magnetic exploration (stratigraphic exploration)

Source: Nakamoto Kogyo Co., Ltd.

Bridge construction, substructure construction and A・D ramp substructure A2



(Overall construction flow chart)

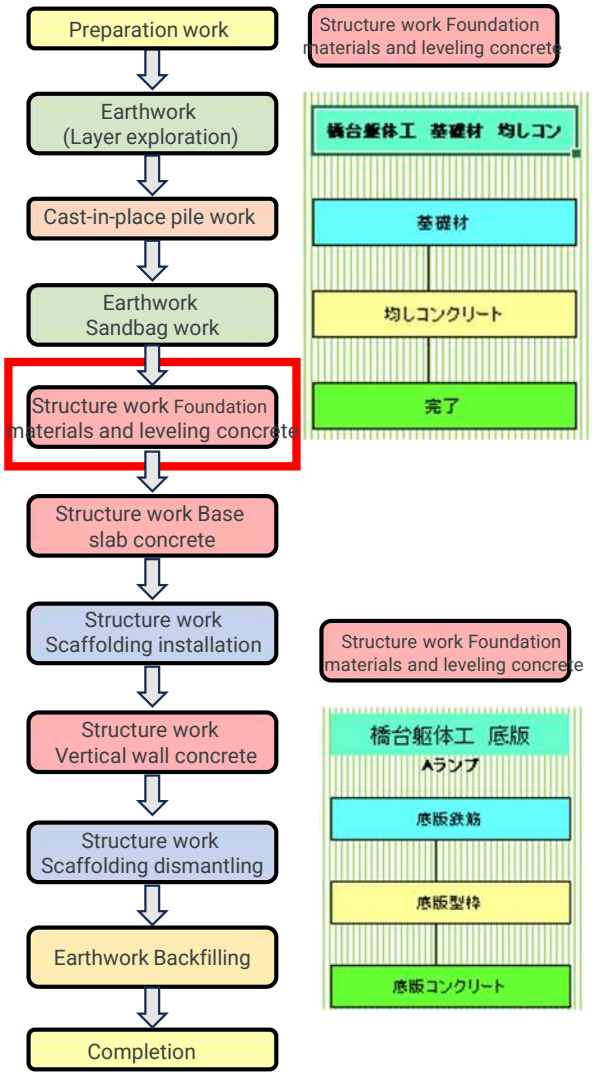
Excavation machine installation
(full rotary machine installation)

Drilling status

Installing the steel cage and spacers

Pile head treatment construction

Bridge construction, substructure construction and A・D ramp substructure A2



(Overall construction flow chart)

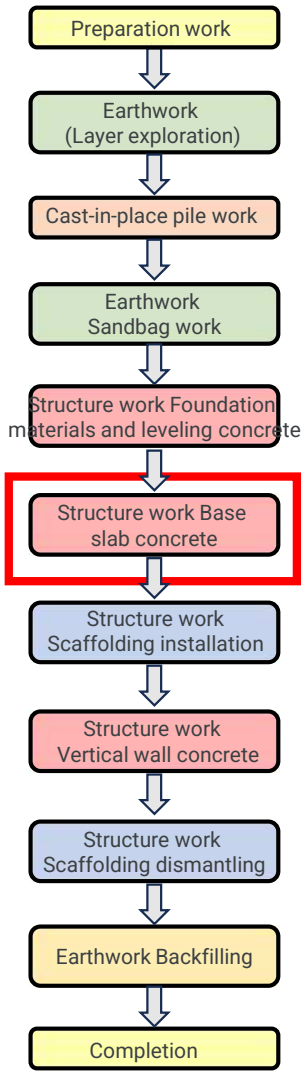
Foundation installation

Pouring smooth concrete

Bottom plate rebar assembly

Bottom slab formwork assembly

Bridge construction, substructure construction and A・D ramp substructure A2



(Overall construction flow chart)

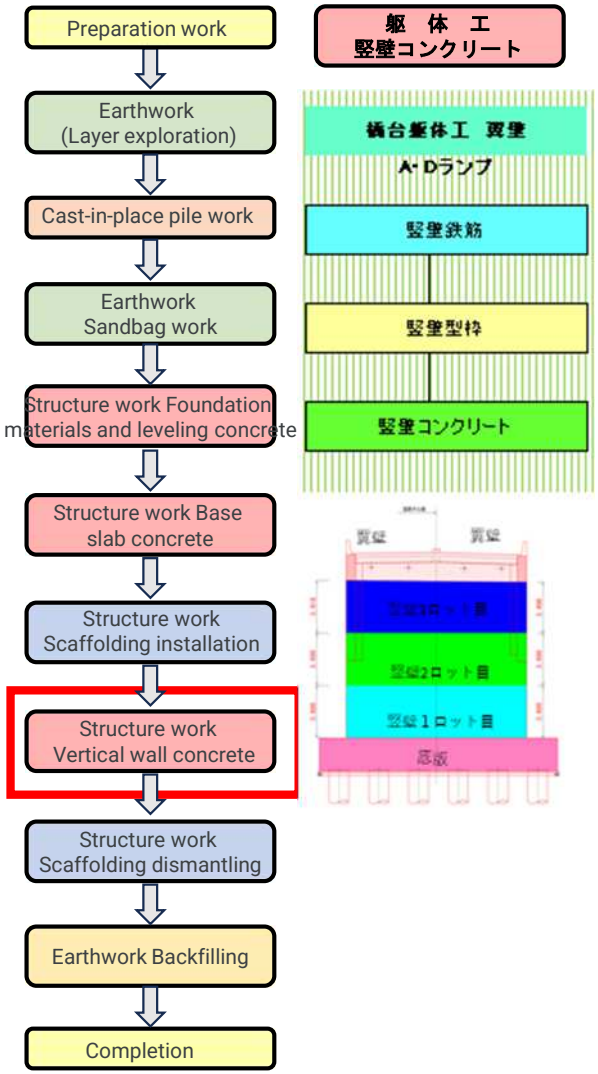
Pouring concrete for base plate

Spreading concrete curing material

Pouring of base concrete completed

Formwork removal

Bridge construction, substructure construction and A・D ramp substructure A2



(Overall construction flow chart)

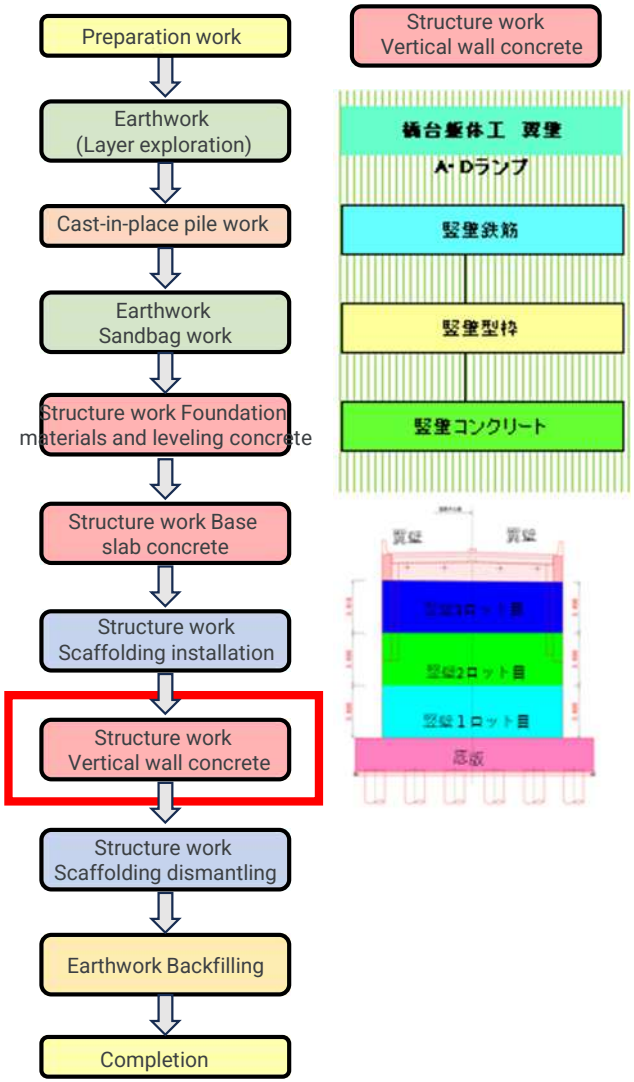
Assembling vertical wall rebar (1st lot)

Assembling vertical formwork (1st lot)

Pouring concrete (1st lot)

Spraying treatment material for vertical wall concrete joints

Bridge construction, substructure construction and A・D ramp substructure A2



(Overall construction flow chart)

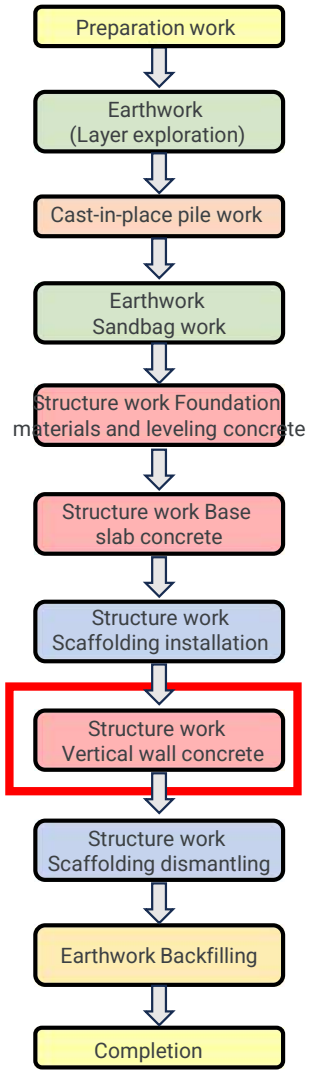
Backfill

Scaffolding assembly

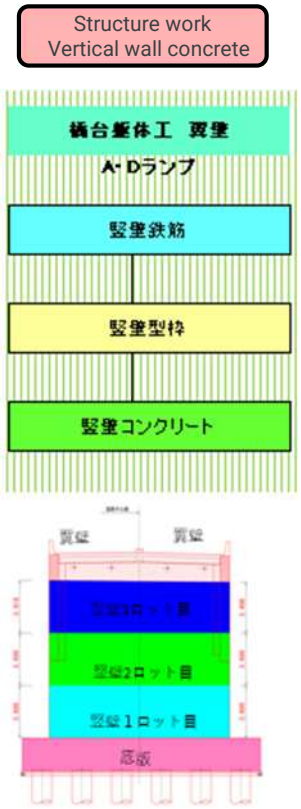
Pouring concrete for vertical walls (2nd lot)

Vertical wall concrete pouring (3rd lot))

Bridge construction, substructure construction and A・D ramp substructure A2



(Overall construction flow chart)



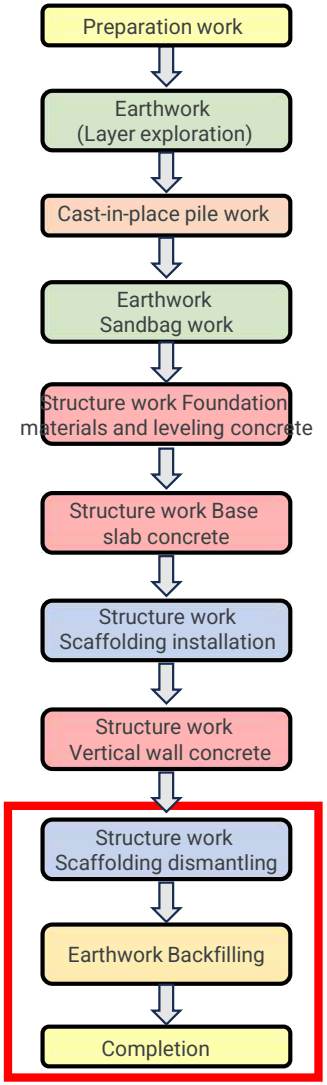
Vertical wall rebar assembly (3rd lot)

Vertical formwork assembly (3rd lot)

Pouring concrete for vertical walls (3rd lot)

Vertical wall concrete pouring completed

Bridge construction, substructure construction and A・D ramp substructure A2



(Overall construction flow chart)

Dismantling scaffolding

Backfilling

Bridge abutment completed

Bridge abutment completed

Bridge Construction (Superstructure) D Ramp (Overpass) Photographed June 2023

Bridge Construction Superstructure Work D Ramp (Overpass) Steel Superstructure

①Factory Production

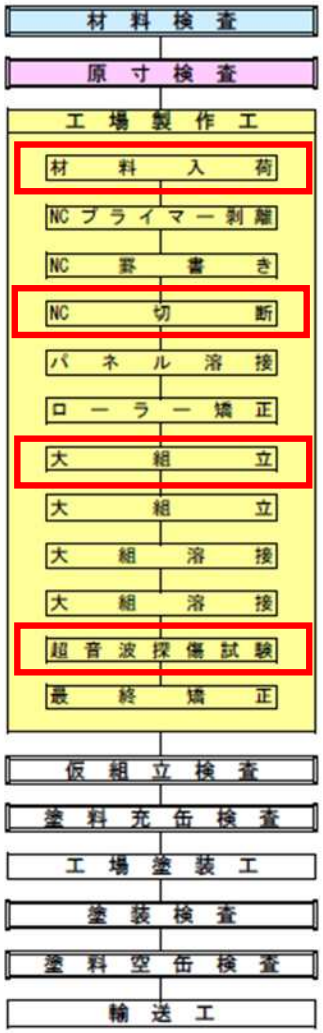
- Material Receiving
- NC Cutting
- Major Assembly
- Ultrasonic Testing
- Pre-Assembly Inspection
- Factory Painting
- Film Thickness Measurement
- Transportation (Sea/Land)

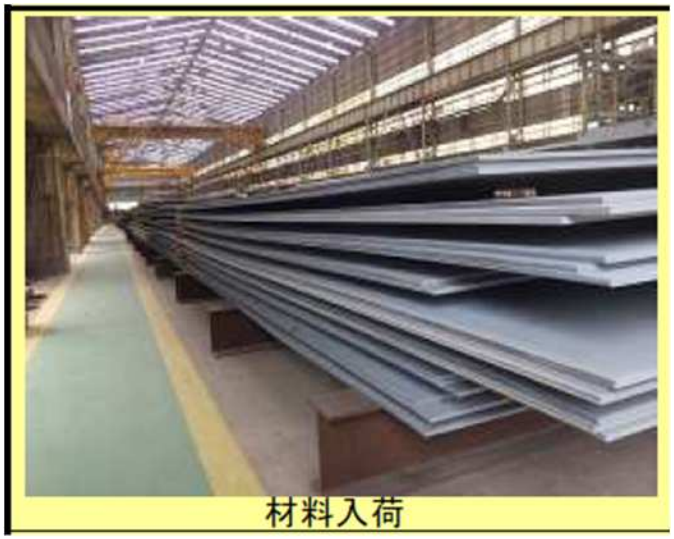
② Site Erection

- Vent installation
- Ground-level girder erection (2B) span between Bent and A2160-ton crane
- 550-ton crane assembly
- Large Block Installation (2B) A1 to Vent
- 550-ton crane dismantling
- 合成床版架設
- Reinforcement assembly
- Concrete placement

① Factory production

工場製作フローチャート





材料入荷

NC切断

大組立

超音波探傷試験

① Factory production

工場製作フローチャート

- 材料検査
- 原寸検査
- 工場製作工
  - 材料入荷
  - NCプライマー剥離
  - NC罫書き
  - NC切断
  - パネル溶接
  - ローラー矯正
  - 大組立
  - 大組立
  - 大組溶接
  - 大組溶接
  - 超音波探傷試験
  - 最終矯正
- 仮組立検査
- 塗料充缶検査
- 工場塗装工
- 塗装検査
- 塗料空缶検査
- 輸送工

Bridge Construction Superstructure Work D Ramp (Overpass) Steel Superstructure

①Factory Production

- Material Receiving
- NC Cutting
- Major Assembly
- Ultrasonic Testing
- Pre-Assembly Inspection
- Factory Painting
- Film Thickness Measurement
- Transportation (Sea/Land)

② Site Erection

- Vent installation
- Ground-level girder erection (2B)spanbetween Bent and A2160-ton crane
- 550-ton crane assembly
- Large Block Installation (2B) A1 to Vent
- 550-ton crane dismantling
- 合成床版架設
- Reinforcement assembly
- Concrete placement

② On-site installation

Before construction

Completed

ベント設置状況

Erection of ground beams (2B) between bent and A2

② On-site installation

550t lifting crane assembly

550t lifting crane assembly Large block erection (2B) between A1 and vent

架設完了

550t吊クレーン解体

② On-site installation

合成床版架設完了

鉄筋組立完了

打設状況

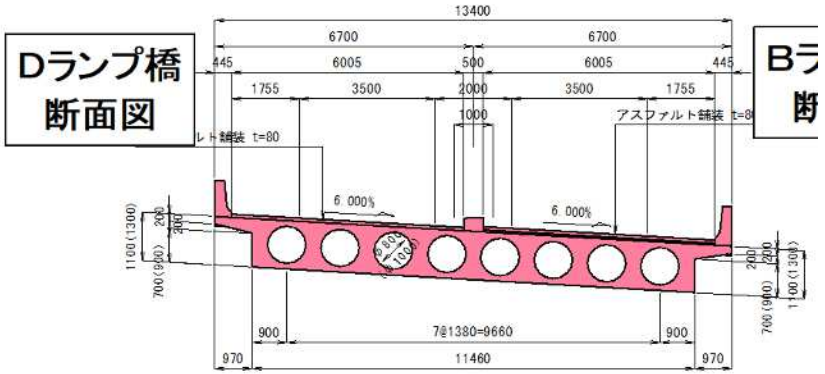
打設完了

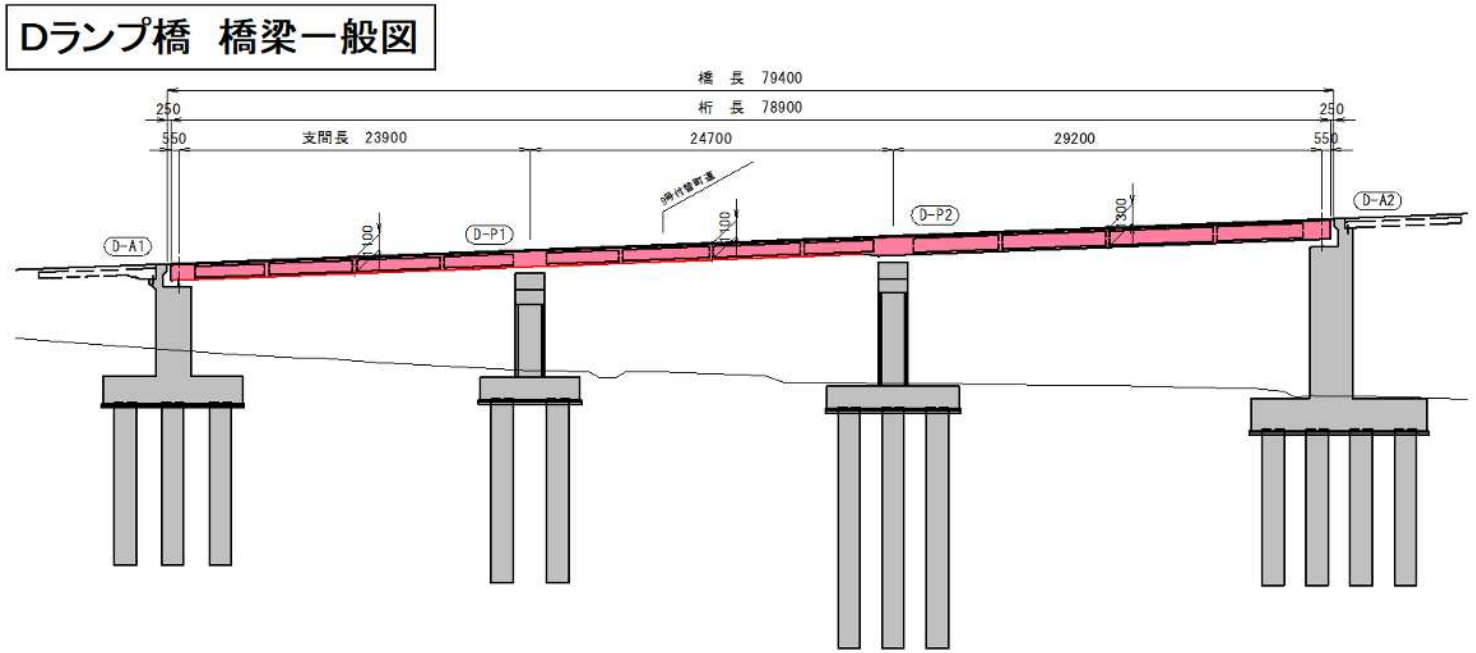
Bridge construction: Superstructure construction (D ramp)

Photographed in June 2023

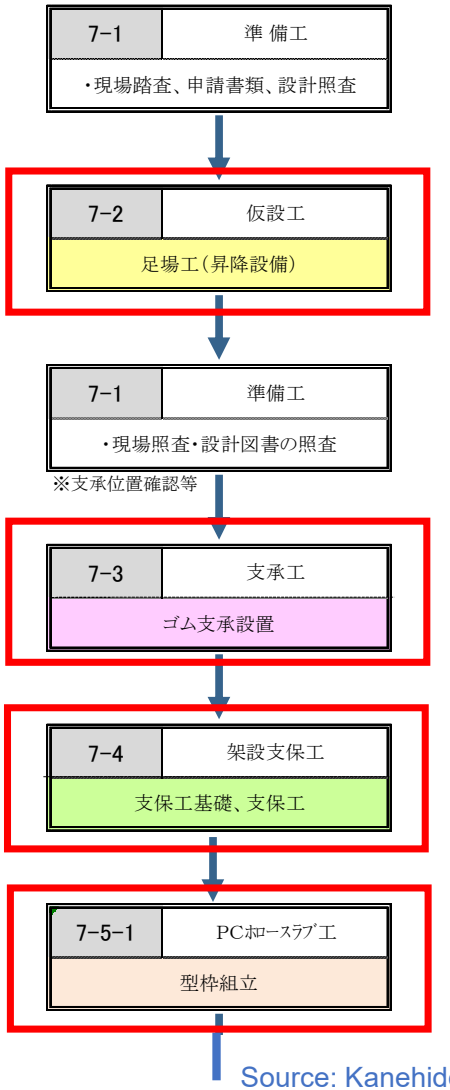
D ramp bridge

ポストテンション方式PC3径間
連続場所打ち中空床版橋



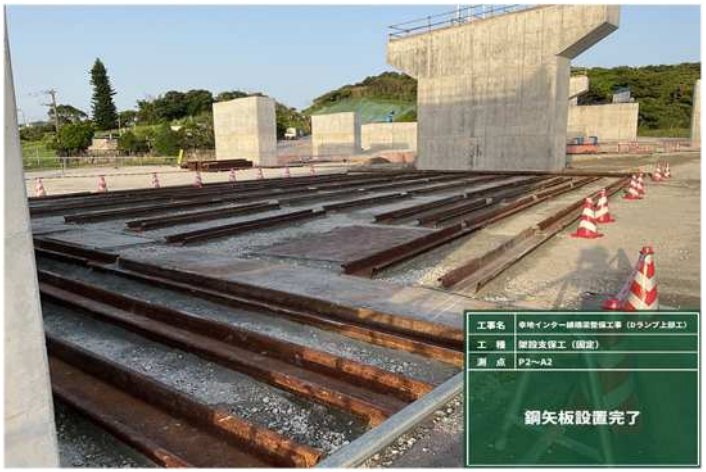


Bridge construction: Superstructure construction (D ramp)



7-2 Temporary works (lifting equipment A1)

7-3 Rubber bearing construction

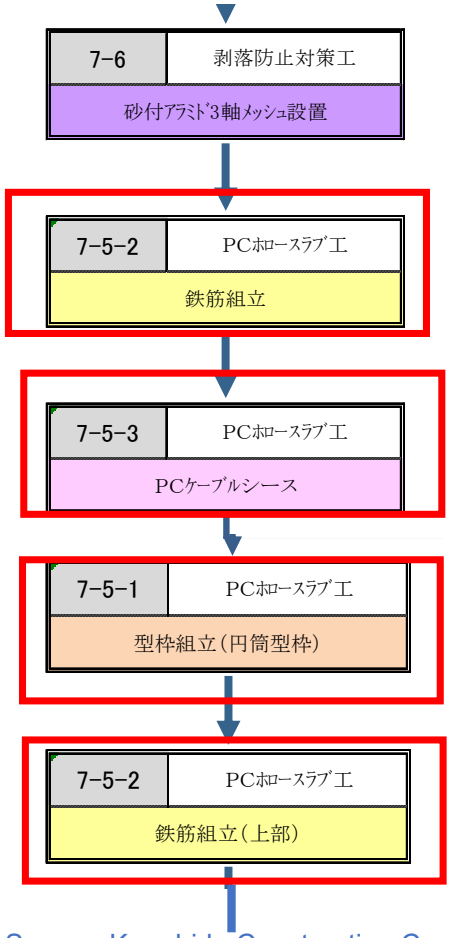


7-4 Shoring foundation

7-5-1 Formwork assembly

Source: Kanehide Construction Co., Ltd. and Okinawa PC Co., Ltd. JV

Bridge construction: Superstructure construction (D ramp)



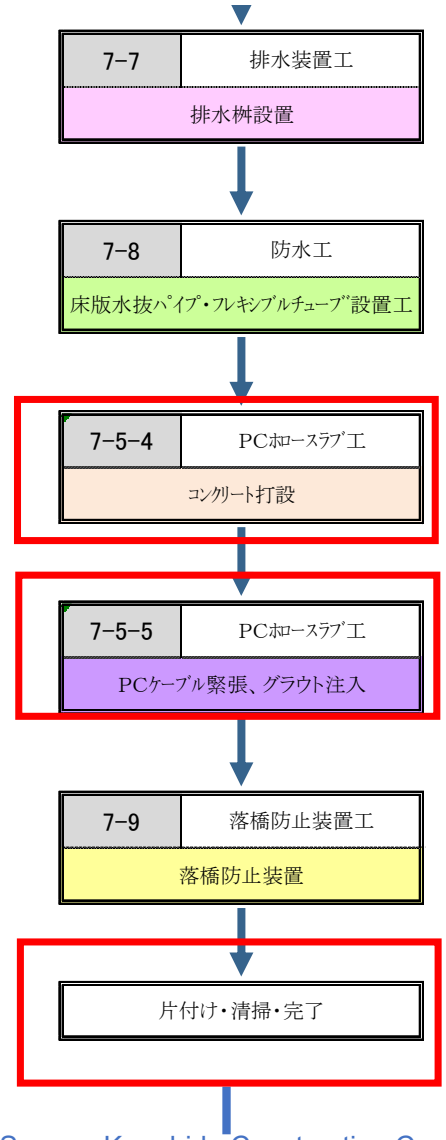
Source: Kanehide Construction Co., Ltd. and Okinawa PC Co., Ltd. JV

7-5-2 Reinforcing bar assembly (lower bar)

7-5-3 PC cable sheath (overall view)

7-5-1 Formwork assembly (cylindrical formwork)

7-5-2 Reinforcing bar assembly (upper bar)



Source: Kanehide Construction Co., Ltd. and Okinawa PC Co., Ltd. JV

7-5-4 Concrete pouring

7-5-5 Cable tensioning

7-5-5 Ground injection

Completed (view of A1-A2))

Bridge construction: Superstructure construction (D ramp)

Video explanation

2 minutes 27 seconds

https://www.youtube.com/watch?v=sNs2BLETdRs

2 minutes 27 seconds - **Kochi Interchange Line Bridge Construction Work (D Ramp Superstructure) - Some voice explanations**

Cut-slope construction

Cut-slope construction

Reinforcing Bar Insertion Work

- Tree Removal
- Red Soil Erosion Prevention Measures
- Magnetic Survey
- Slope Shaping
- Borehole Angle Verification and Drilling
- Reinforcement Bar Insertion Status
- Torque Wrench Tightening Verification

Restraint Pile Method

- Scaffolding erection
- やぐら組立
- Excavation (large-diameter boring work)
- Pile installation
- Mortar placement
- Scaffolding and towerremoval
- Head connection

Landslide Investigation and Design Review Flow

START

1) Estimation of landslide blocks
(based on field surveys, topographic maps, etc.)

(2)Determination of the Main Fault Line and Estimation of the Slip Surface

(3) Implementation of Survey Plans and Ground Investigations

(4) Mechanism Analysis (Identification of Landslide Blocks and Slip Surfaces)

(5) Stability Analysis

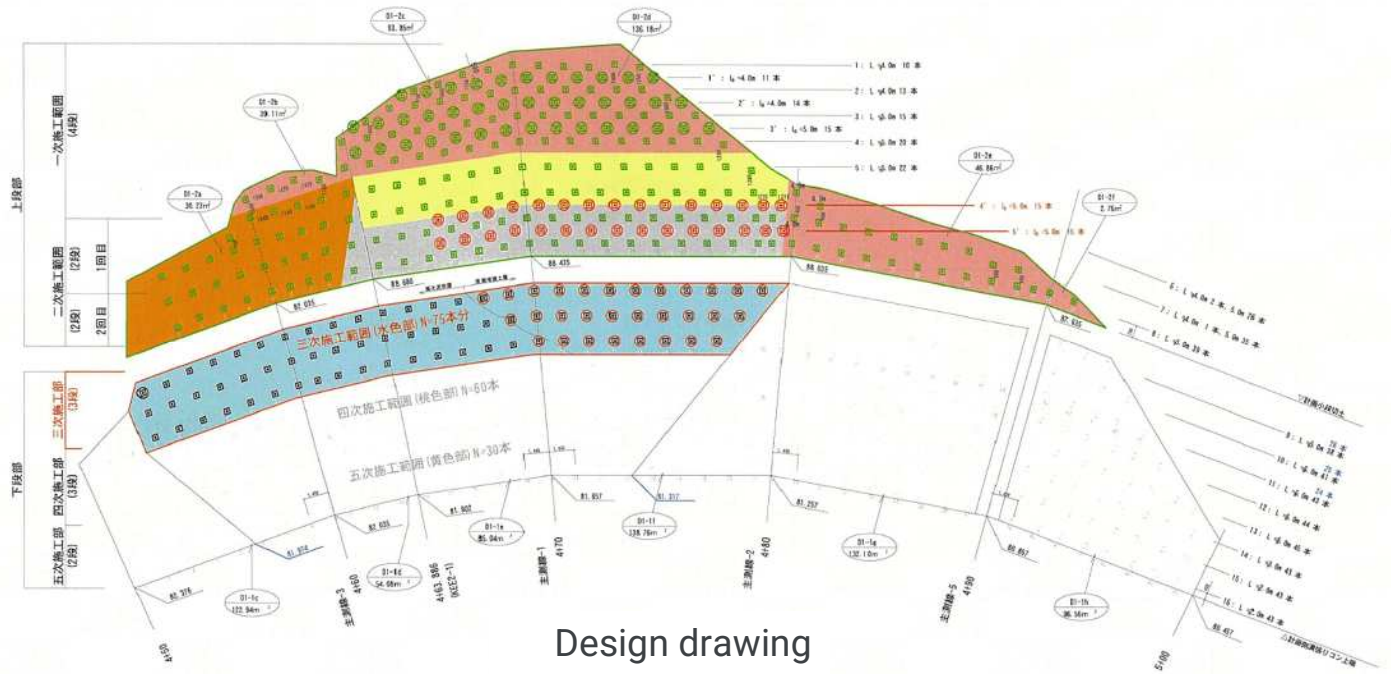
(6) Selection of Landslide Countermeasures

END

Landslide Countermeasures: Reinforced Concrete Piles, Retaining Piles

Cut-slope construction

Rebar Insertion Work



Design drawing

Upon completion

1-5　伐採

1-6　赤土流出防止対策

1-2　法面整形

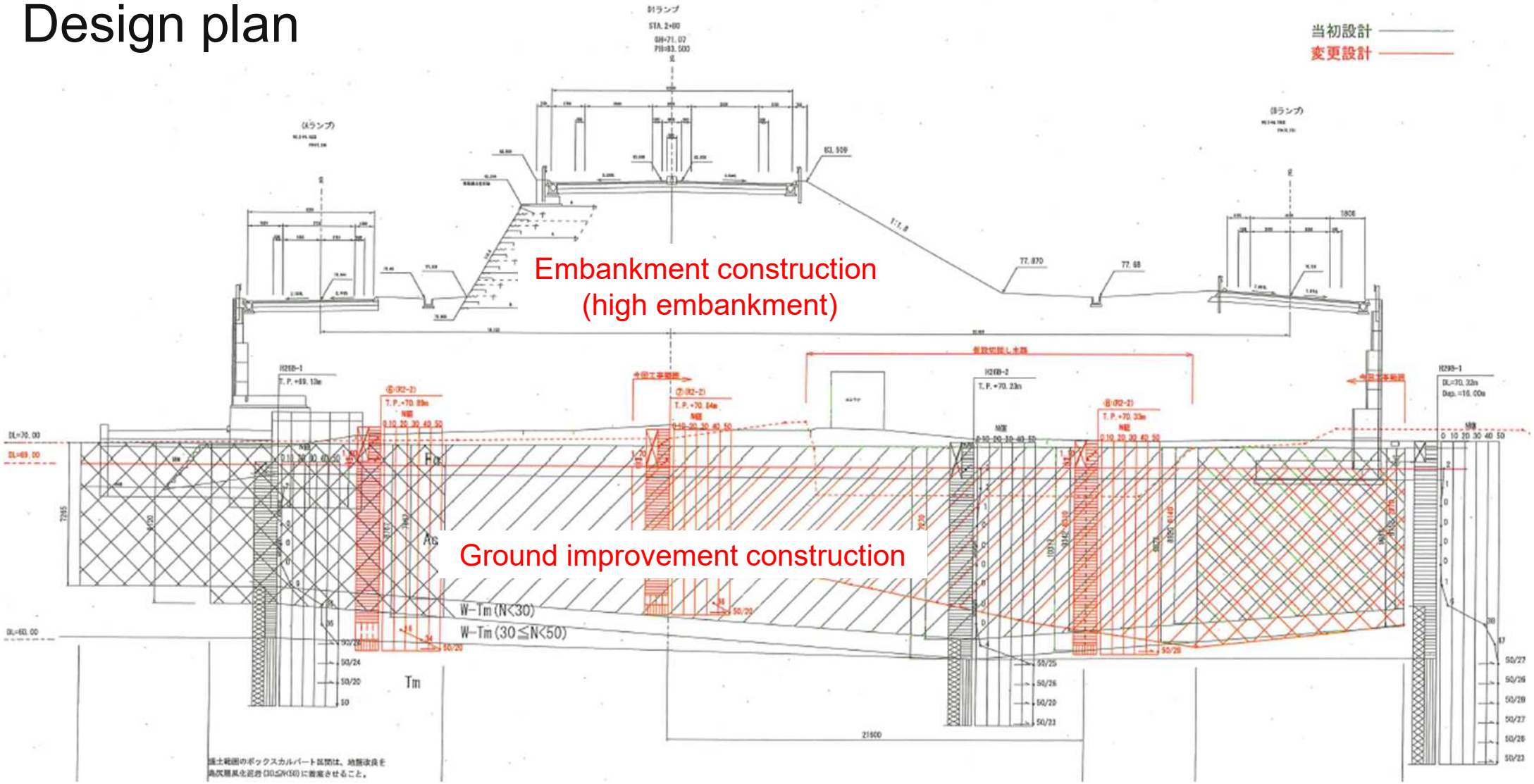
1-3　削孔角度確認・削孔

1-4　補強筋挿入状況

1-8　トルクレンチ締付け確認

Ground Improvement Work / Embankment Construction

Design plan


当初設計
変更設計
Embankment construction
(high embankment)
Ground improvement construction
W-Tm (N<30)
W-Tm (30≦N<50)
Ac
Tm
1:1.8
77.870
77.68
83.909
21500

Ground improvement construction
ICT earthwork
（GNSS）

着　手　前

A1橋台（真上より）

A2橋台（真上より）

完　　成

A1橋台（真上より）

A2橋台（真上より）

Ground improvement construction

A1架設ヤード準備工

準　　備　　工

基本測量・事前調査

調査ボーリング

A1架設ヤード事業損

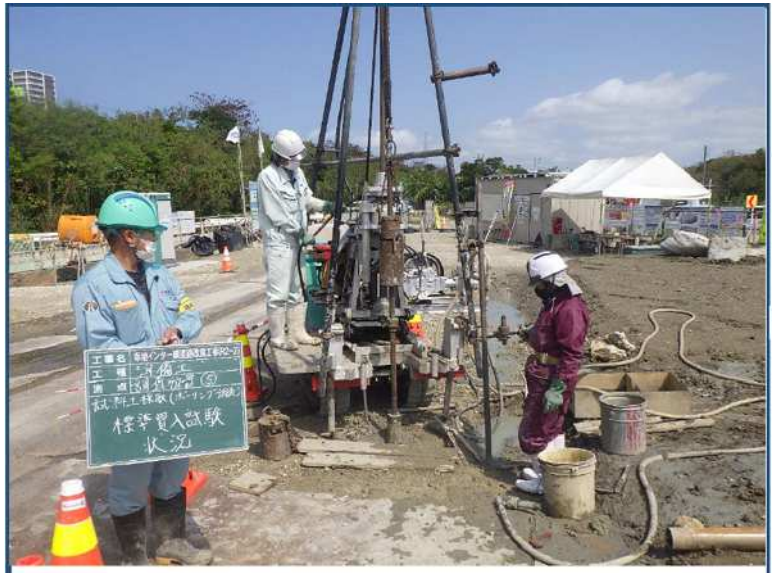
確　認　探　査　掘　削

地　盤　改　良　工

プ　ラ　ン　ト　組　立

プラント機材搬入

基本測量



調査ボーリング

探査状況

地盤改良プラント設置完了

Ground improvement construction

ICTキャリブレーション

撹拌装置計測
位置確認

GPS機械位置確認

光波による座標確認

座標値照合確認

ＩＣＴ施工

着底試験施工
（１箇所目）
調査ボーリング②

GNSS測位アンテナ取付


ICT施工（光波による位置確認）②点目

本撹拌改良（深度及び圧力モニター確認）

チームビュアによるリモート確認状況