Webinar: A63 Castle Street Improvement Scheme, Hull

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Cameras and microphones off please until q&a!

A63 Castle Street – Why is there a need for a scheme?

Current Problems:

- A63 Castle Street is approximately 1.5 kilometres long and is a dual carriageway which runs through the centre of Hull
- Vital link between the M62 motorway to the west and the Port of Hull to the east of the city
- Approximately 50,000 vehicles a day travel on Castle Street
- 6 sets of traffic lights between Porter Street and Market Place (so within the scheme limits)
- Not very efficient and frequent cause of congestion
- A63 creates visual and physical severance between the city centre and the Waterfront

Our Scheme Objectives:

1. To relieve congestion on A63 Castle Street
2. To provide improved accessibility to the Port of Hull
3. To reduce severance between the city centre and waterfront
4. To improve safety

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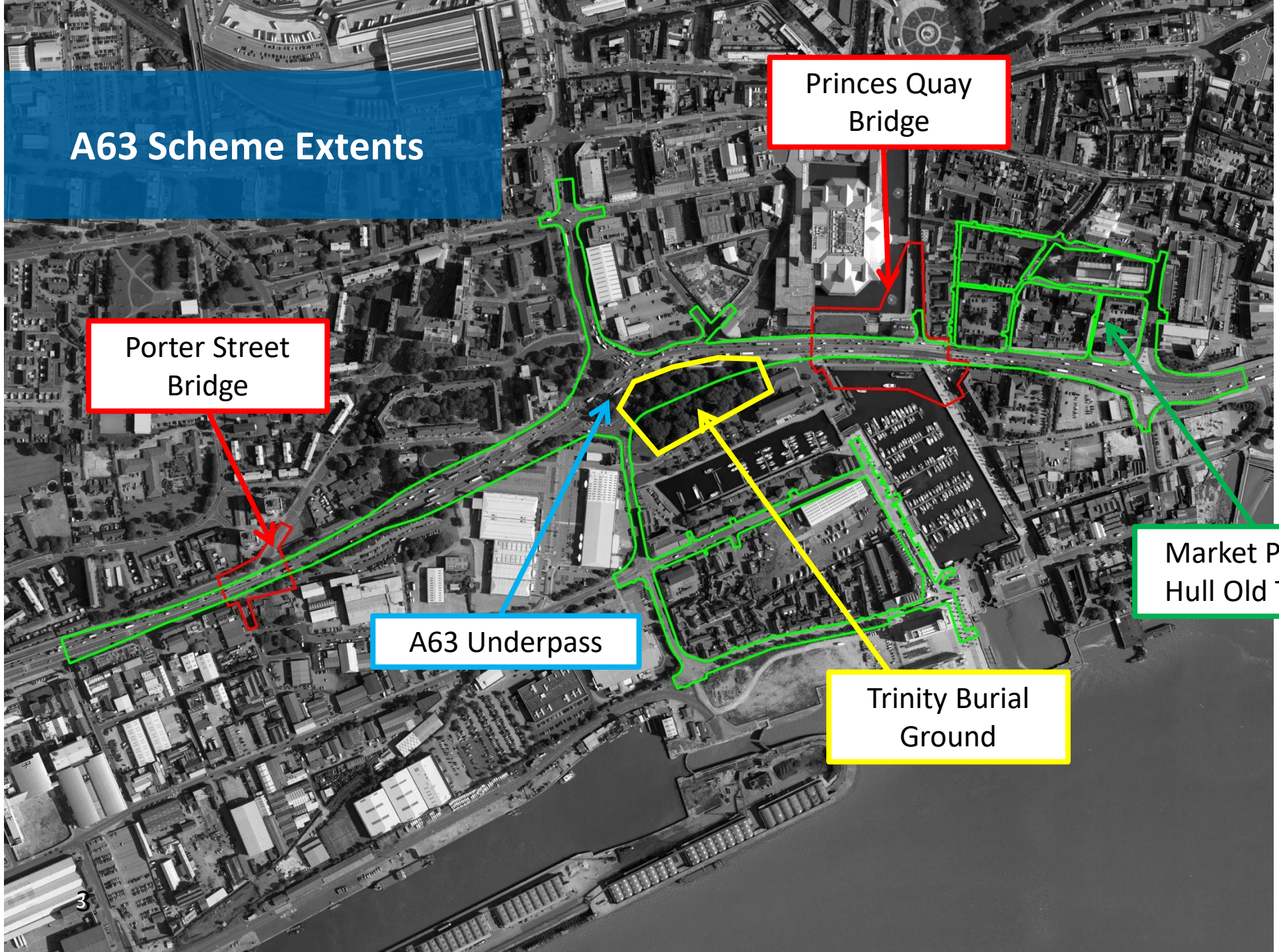
A63 Scheme Extents



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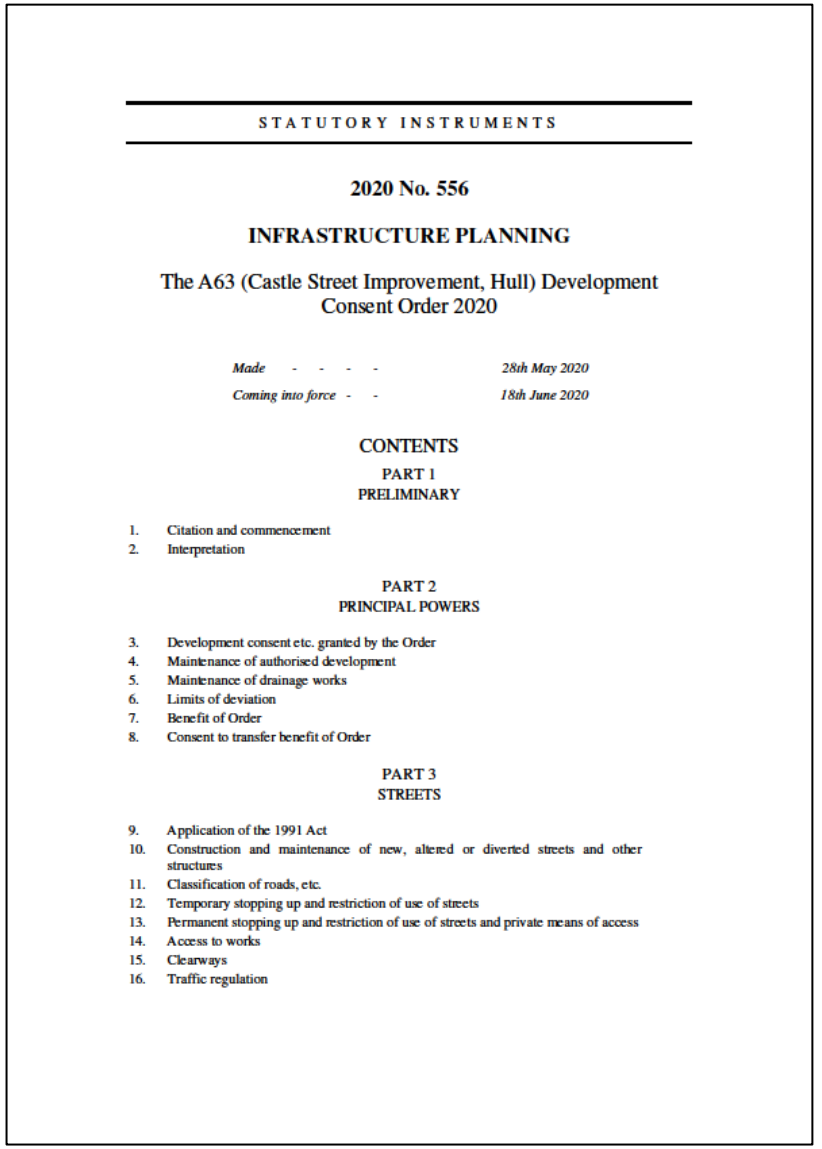
Princes Quay Bridge – FUTURE WEBINAR!

- Key element of A63 scheme – landmark footbridge
- Hull CC / LEP contributing £4m to scheme
- When DCO dates moved MP lobbied for PQB to be delivered ahead of DCO
- Decision made by DfT, started in October 2018
- Joined up with OD scheme
- Complex build
- Early build assists main scheme
- Excellence in stakeholder management / inclusion
- Bridge moved into place Nov 2019
- Due to complete Autumn 2020

Development Consent Order

- NSIP scheme
- DCO determined on 28th May 2020
- Came into force 18th June 2020
- Inspector recommended refusal, decided there were four 'key harms' from the project:
  - ***harm to Trinity Burial Ground,***
  - ***the impact on Non-Motorised Users crossing the A63,***
  - ***the visual impact of the proposed central reservation, and critically***
  - ***the impact on the Earl de Grey pub.***
- Secretary of State overruled this stating he disagreed and said that because the harm was necessary, and was outweighed by the benefits of the project.
- High Court Challenge Period ended 10th July 2020 with no objections to the Order or decision
- Before work started we needed to get Department for Transport to sign off requirements in the DCO and these were approved on Friday 25th June 2020.



STATUTORY INSTRUMENTS

2020 No. 556

INFRASTRUCTURE PLANNING

The A63 (Castle Street Improvement, Hull) Development Consent Order 2020

Made - - - - 28th May 2020

Coming into force - - 18th June 2020

CONTENTS

PART 1
PRELIMINARY

1. Citation and commencement
2. Interpretation

PART 2
PRINCIPAL POWERS

3. Development consent etc. granted by the Order
4. Maintenance of authorised development
5. Maintenance of drainage works
6. Limits of deviation
7. Benefit of Order
8. Consent to transfer benefit of Order

PART 3
STREETS

9. Application of the 1991 Act
10. Construction and maintenance of new, altered or diverted streets and other structures
11. Classification of roads, etc.
12. Temporary stopping up and restriction of use of streets
13. Permanent stopping up and restriction of use of streets and private means of access
14. Access to works
15. Clearways
16. Traffic regulation

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A63 Castle Street – What are the proposals?

- Exhumation / reinternment of circa 17,000 bodies to allow us to build the scheme.
- Update the Mytongate junction to grade separated layout
- Two-lane dual carriageway carrying east-west traffic below north-south traffic in a new 400 metre underpass.
- Diversion of major Yorkshire Water Sewer which dissects the proposed underpass
- Removal of all traffic light crossings across A63 within scheme limits
- 2 new bridges which will link the south and north of the city for pedestrians, cyclists and disabled users.
- Upgrade of existing local authority underpass to enhance pedestrian experience near Market Place
- A bespoke pumping station.

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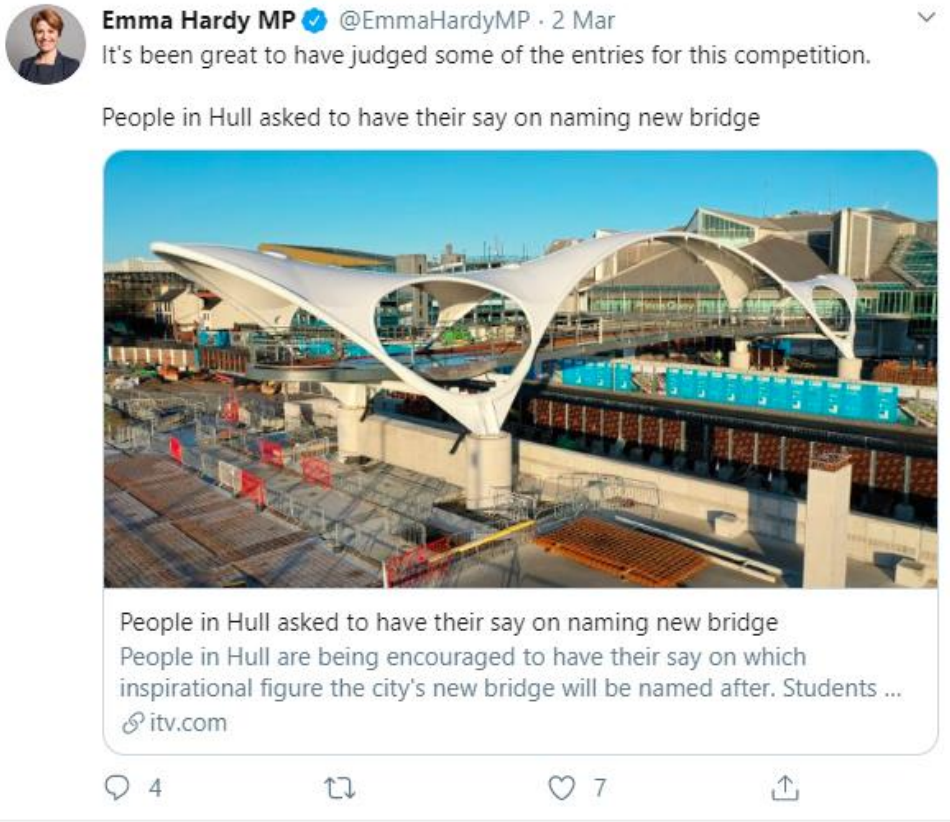
A63 Castle Street, Hull

History

- Been discussed / in development for many years, possibly decades
- Very good public and MP support for the project
- DCO determined 28th May 2020, this was delayed by 2 months

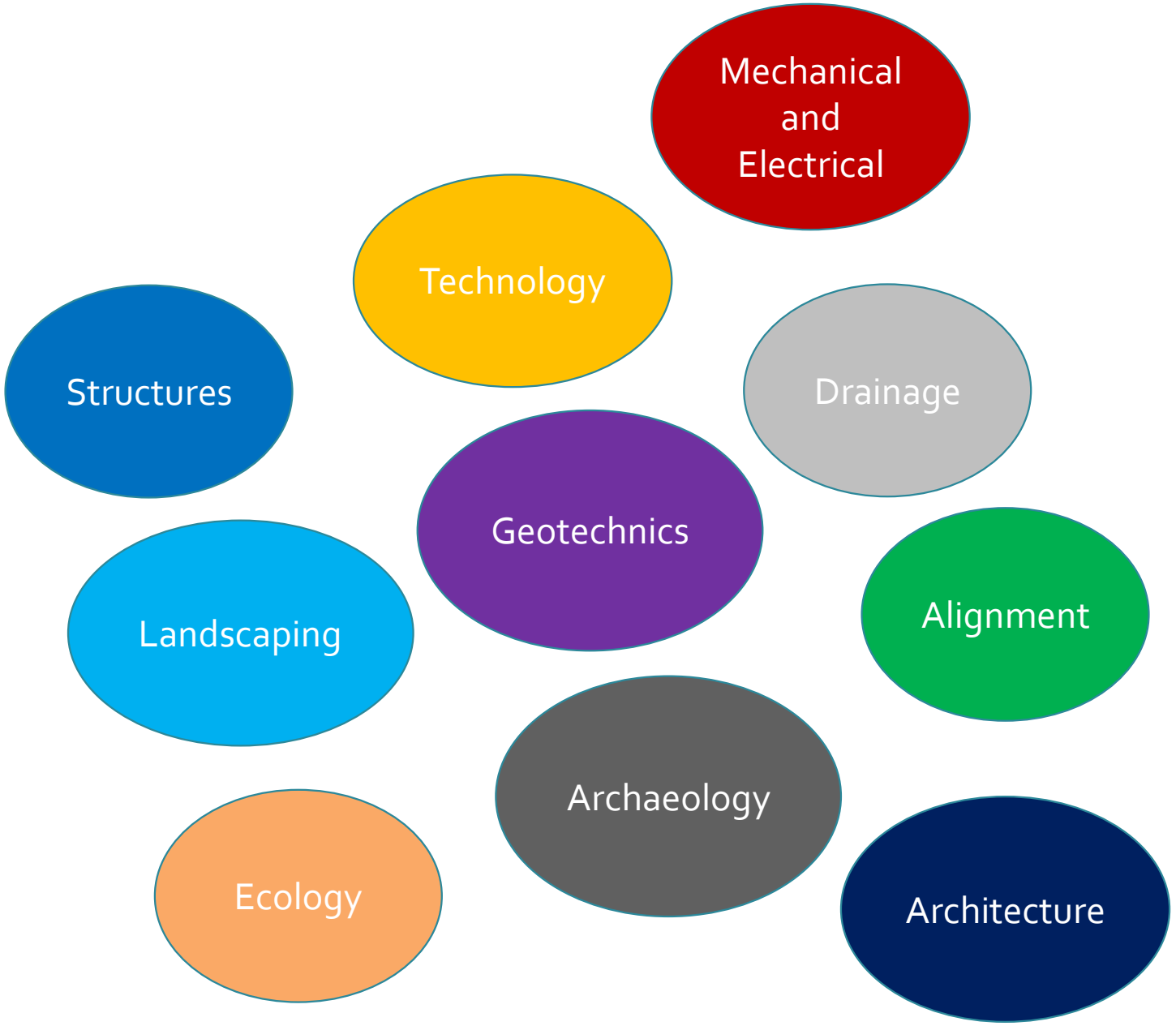
Challenges

- Land acquisition – lots of private land in urban area to acquire
- Urban Network Challenges – keeping our and HCC networks moving and whilst managing pedestrians, cyclists and vulnerable road users in this urban area a priority during works
- Archaeology – burial ground / bodies to exhume
- Physical Constraints – need to move Earl de Grey to maintain 2 lanes of traffic
- Number and type of utilities to divert – Urban area is very ‘full’
- The unique engineering solution and poor ground conditions
- Programme length / Phasing of works – 5 years to complete

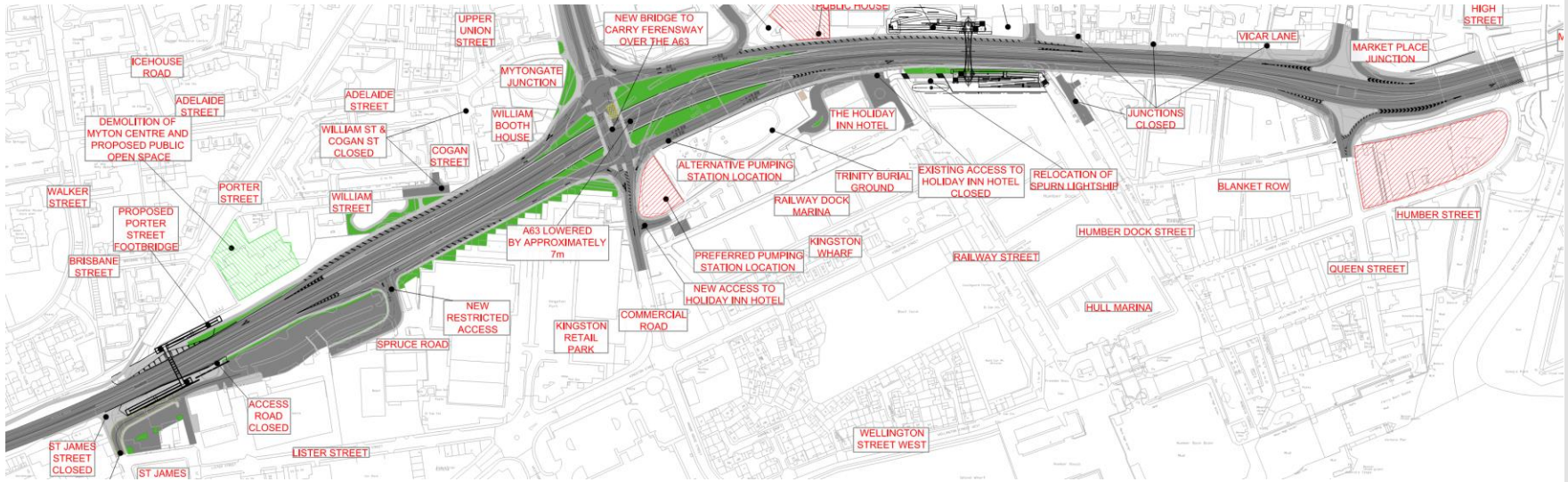


A63 Castle Street, Hull

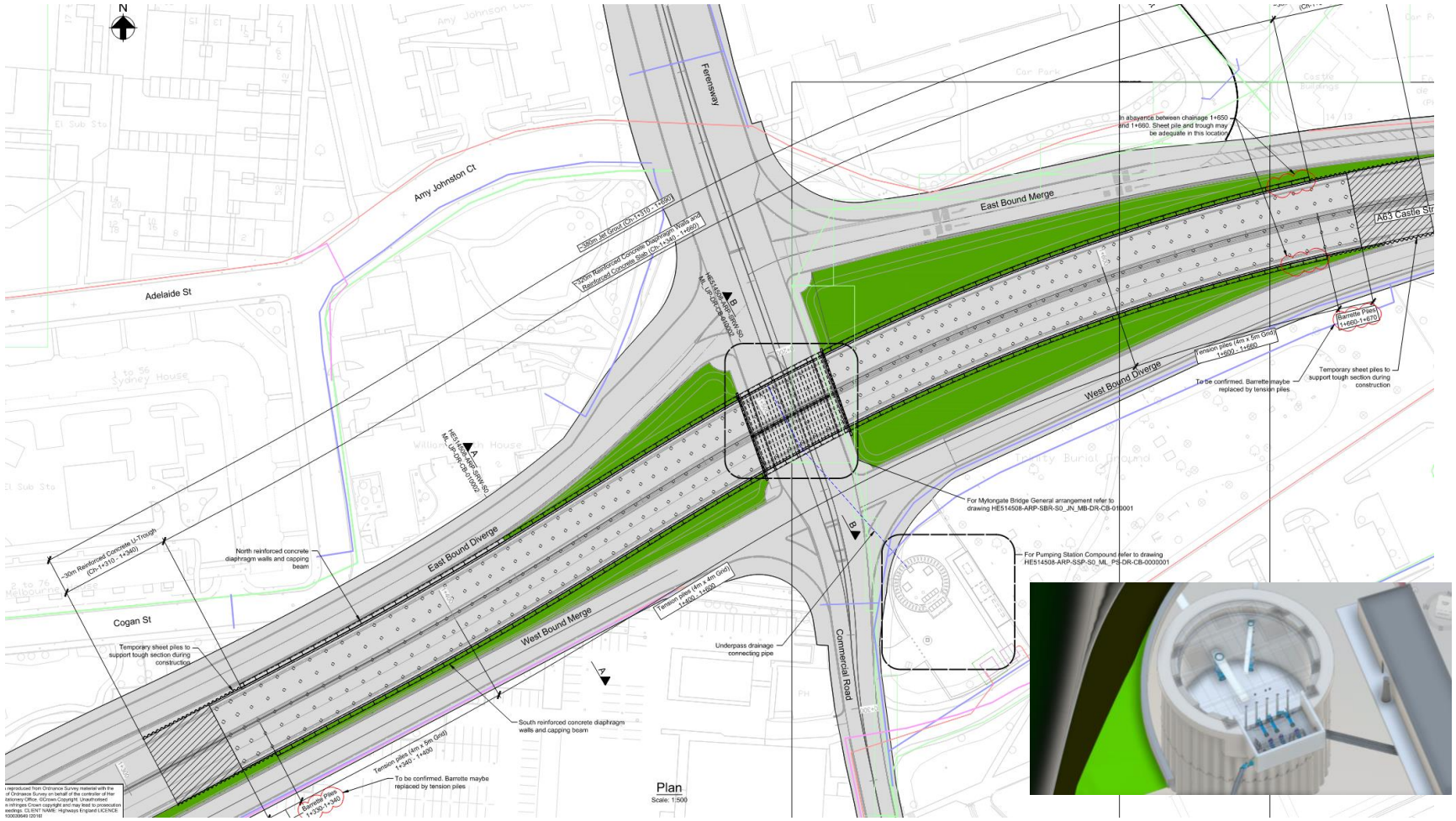
Aspects of Design



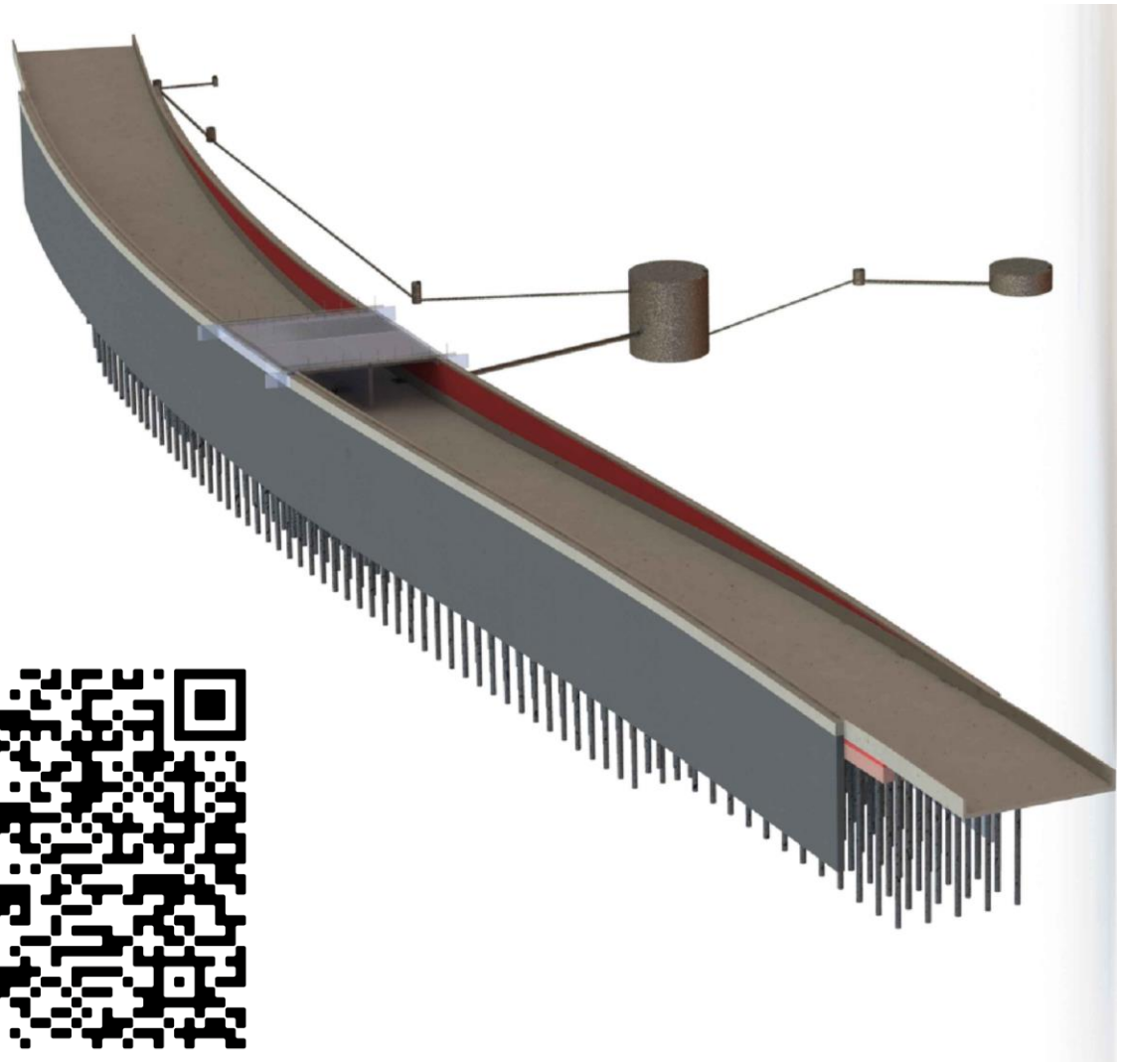
Function


UPPER UNION STREET
NEW BRIDGE TO CARRY FERENSWAY OVER THE A63
HIGH STREET
VICAR LANE
MARKET PLACE JUNCTION
ICEHOUSE ROAD
MYTONGATE JUNCTION
ADELAIDE STREET
ADELAIDE STREET
WILLIAM BOOTH HOUSE
THE HOLIDAY INN HOTEL
JUNCTIONS CLOSED
DEMOLITION OF MYTON CENTRE AND PROPOSED PUBLIC OPEN SPACE
WILLIAM ST & COGAN ST CLOSED
COGAN STREET
ALTERNATIVE PUMPING STATION LOCATION
TRINITY BURIAL GROUND
EXISTING ACCESS TO HOLIDAY INN HOTEL CLOSED
RELOCATION OF SPURN LIGHTSHIP
BLANKET ROW
WALKER STREET
PORTER STREET
WILLIAM STREET
RAILWAY DOCK MARINA
HUMBER STREET
PROPOSED PORTER STREET FOOTBRIDGE
A63 LOWERED BY APPROXIMATELY 7m
KINGSTON WHARF
HUMBER DOCK STREET
BRISBANE STREET
PREFERRED PUMPING STATION LOCATION
RAILWAY STREET
QUEEN STREET
NEW ACCESS TO HOLIDAY INN HOTEL
NEW RESTRICTED ACCESS
COMMERCIAL ROAD
KINGSTON RETAIL PARK
HULL MARINA
SPRUCE ROAD
ACCESS ROAD CLOSED
WELLINGTON STREET WEST
ST JAMES STREET CLOSED
LISTER STREET
ST JAMES

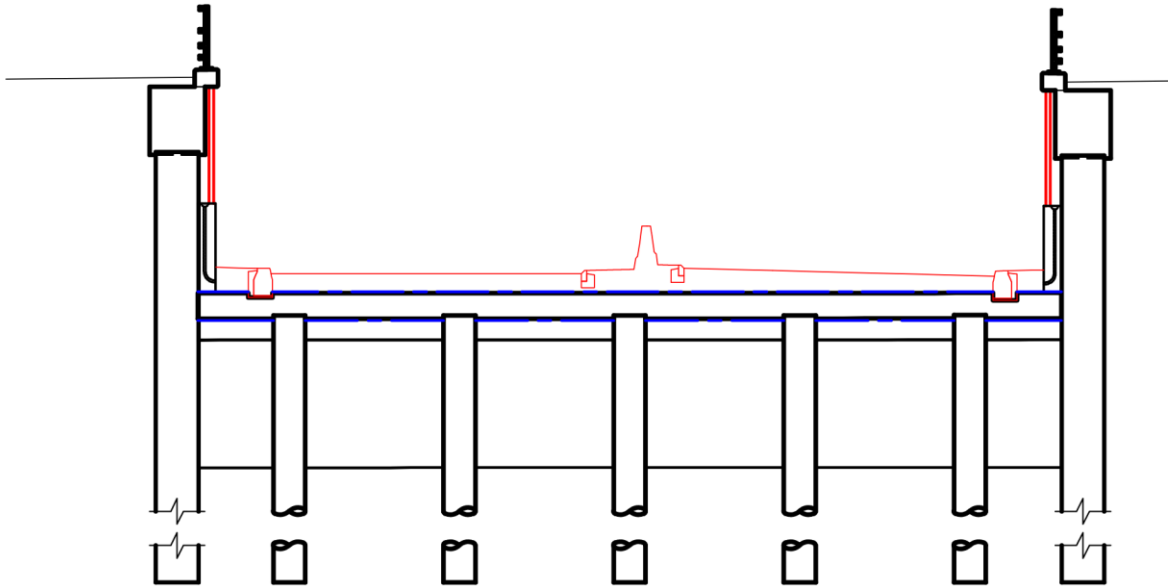
Function

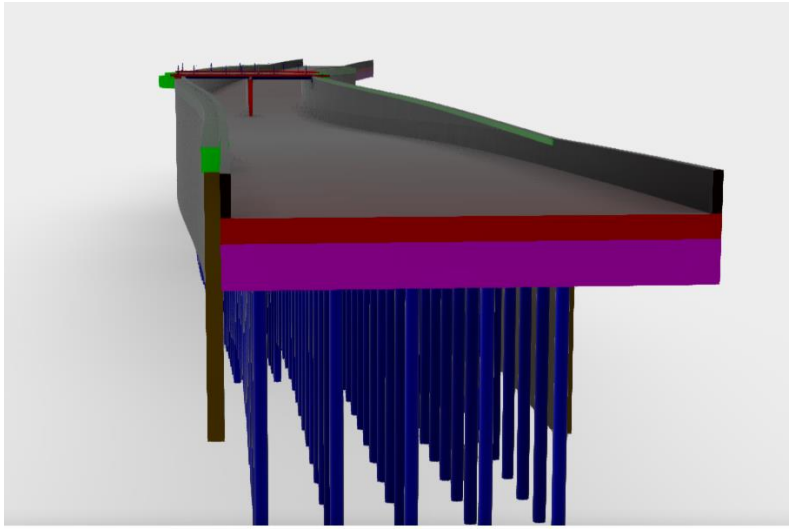

N
Ferensway
Amy Johnston Ct
Adelaide St
Cogan St
East Bound Diverge
West Bound Merge
East Bound Merge
West Bound Diverge
Commercial Road
A63 Castle Str
-30m Reinforced Concrete U-Trough (Ch:-1+310 - 1+340)
North reinforced concrete diaphragm walls and capping beam
Temporary sheet piles to support tough section during construction
Tension piles (4m x 6m Grid) 1+340 - 1+400
To be confirmed. Barrette maybe replaced by tension piles
Barrette Piles 1+340 - 1+340
South reinforced concrete diaphragm walls and capping beam
Underpass drainage connecting pipe
Tension piles (4m x 6m Grid) 1+600 - 1+660
Barrette Piles 1+660 - 1+670
Temporary sheet piles to support tough section during construction
For Mytongate Bridge General arrangement refer to drawing HE514508-ARP-SBR-S0_IN_MB-DR-CB-010001
For Pumping Station Compound refer to drawing HE514508-ARP-SSP-S0_ML_PS-DR-CB-0000001
Plan
Scale: 1:500

Form:
The underpass trough



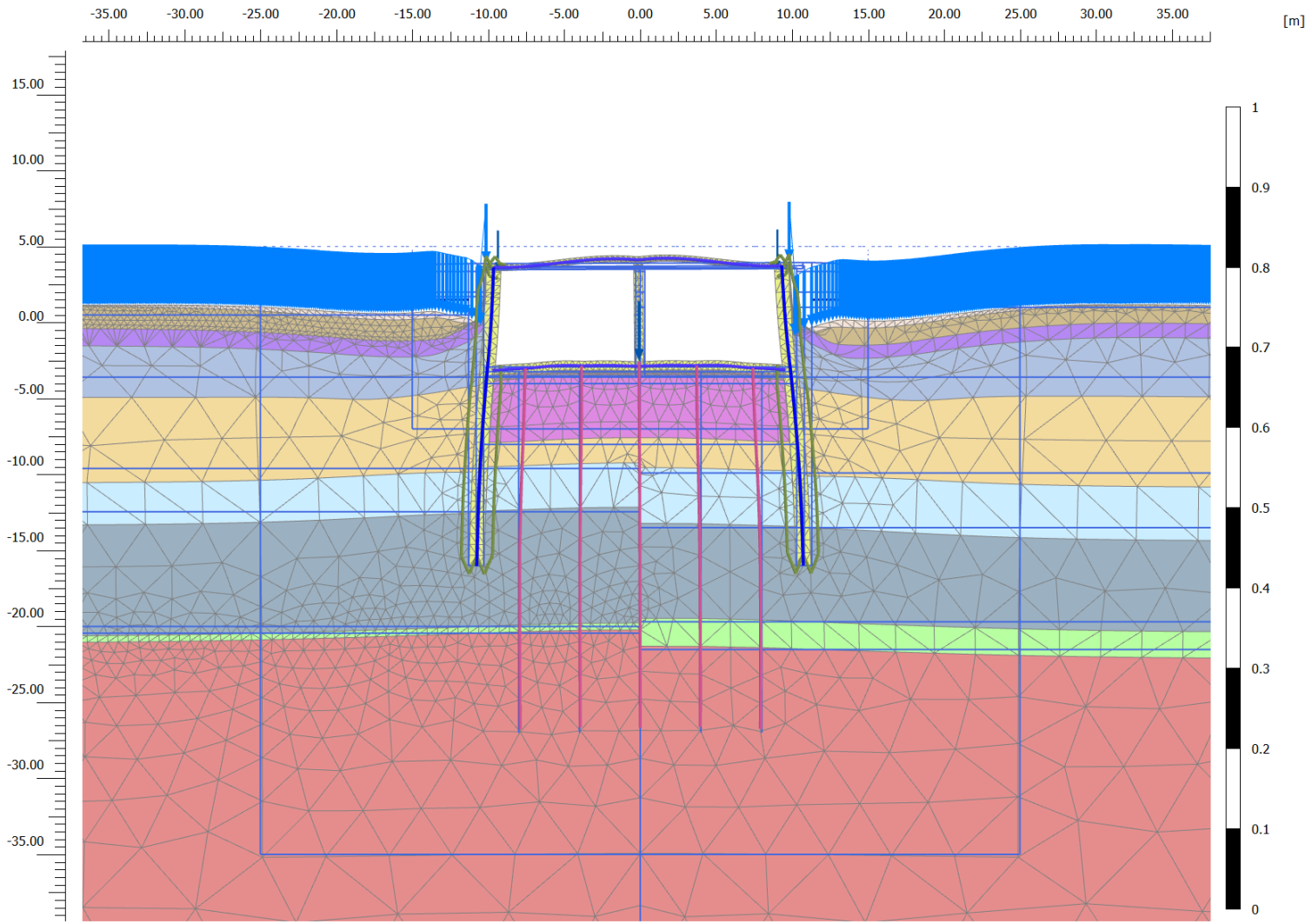
Form:
The underpass trough



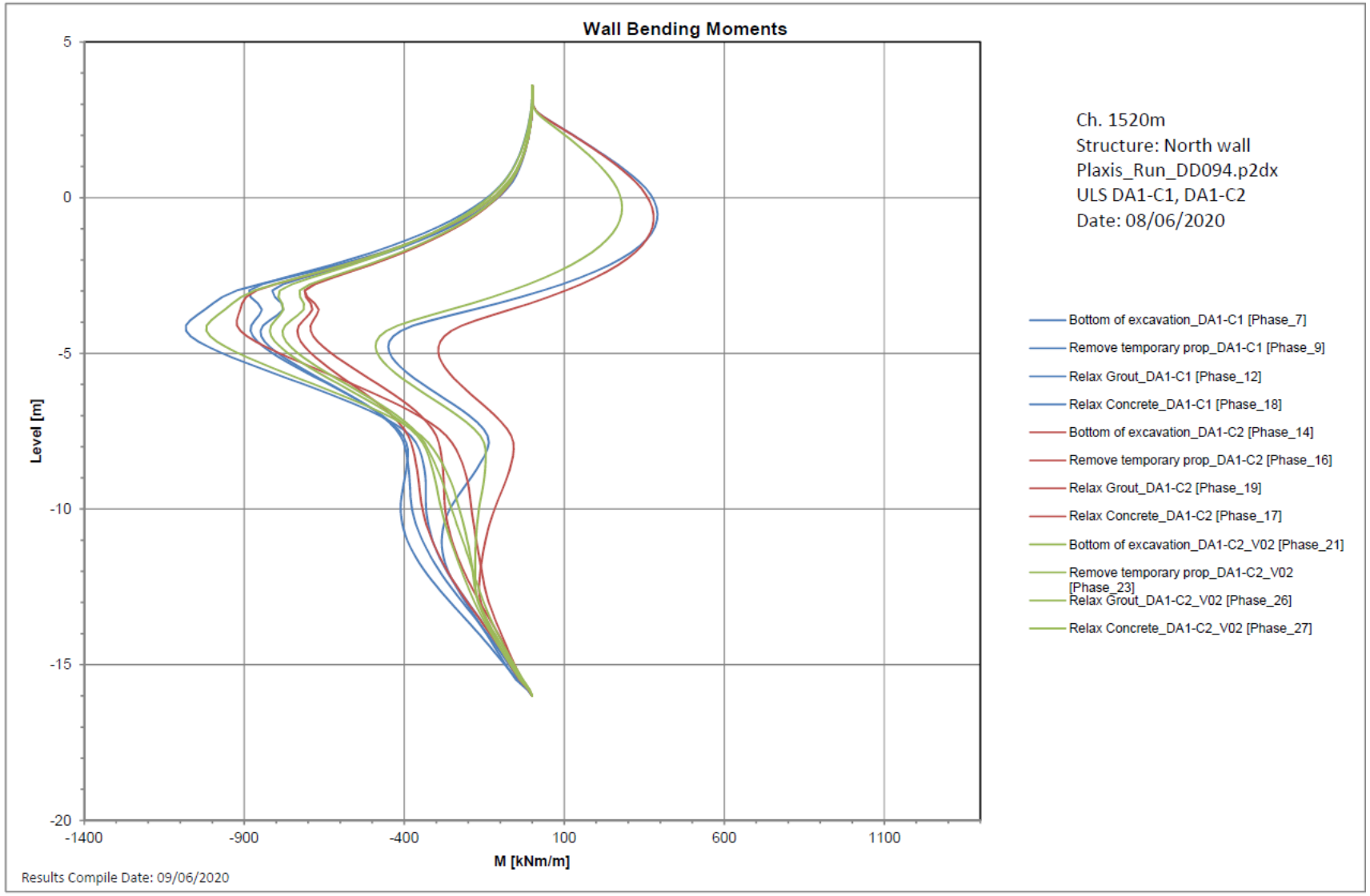


The Iterative Process

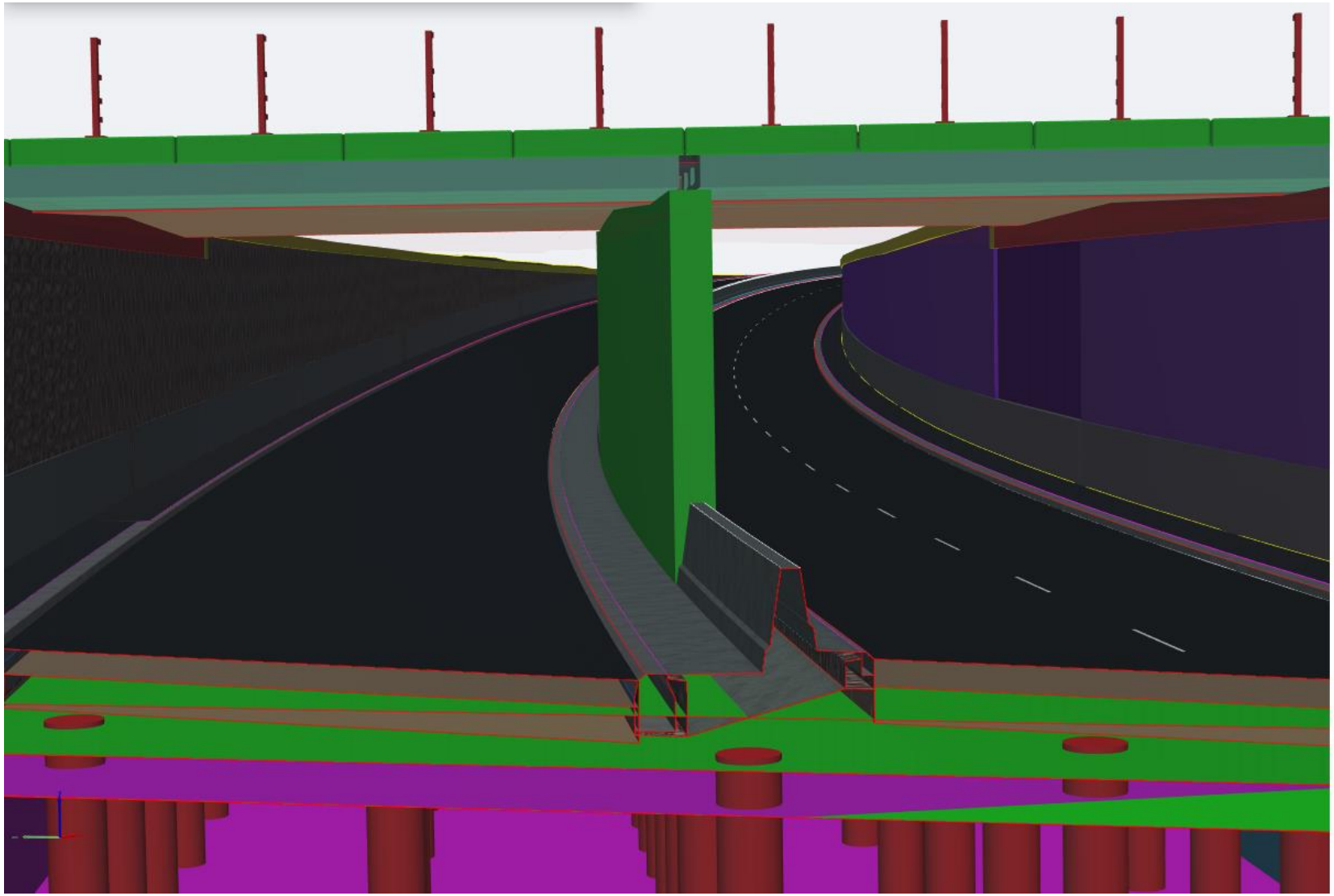
- Soil Structure Interactions



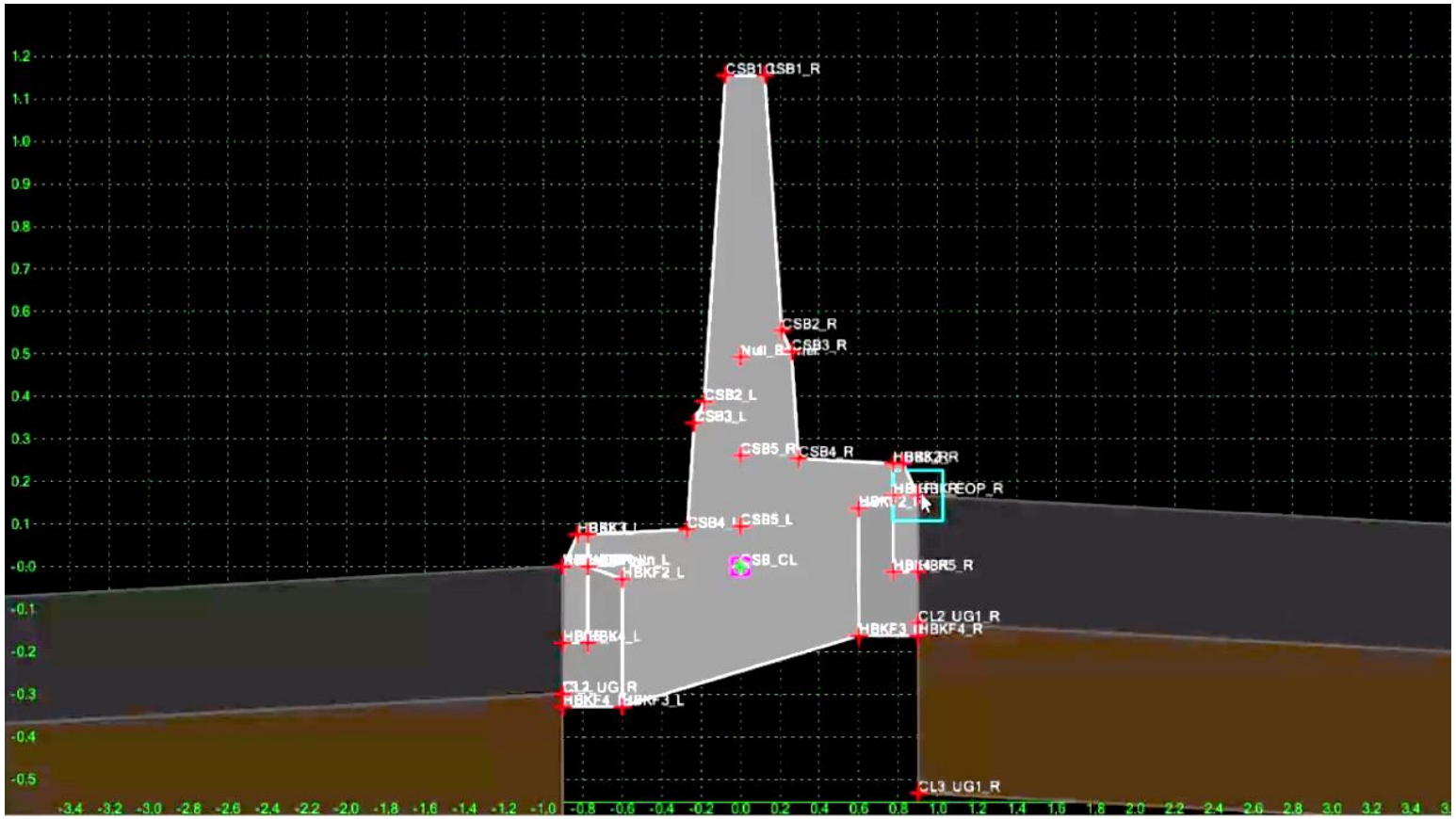
The Iterative Process



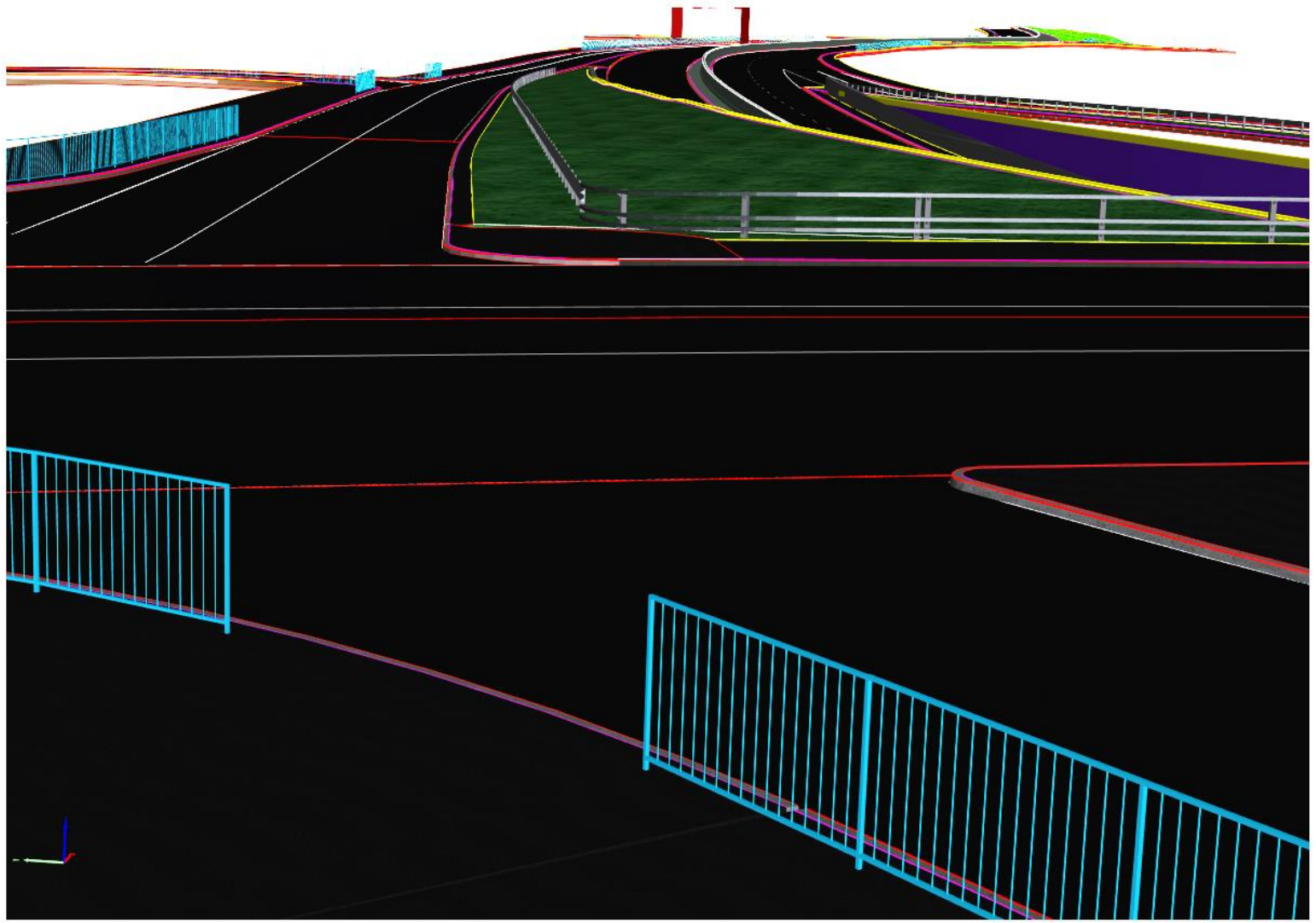
Underpass geometry modelling



Templates for concrete central reserve barrier



Vehicle restraint systems



Traffic Sign Design

General Design Process:

- Sign Face Design
- Post design for passive safety
- Generated 3D models

Main Constraints

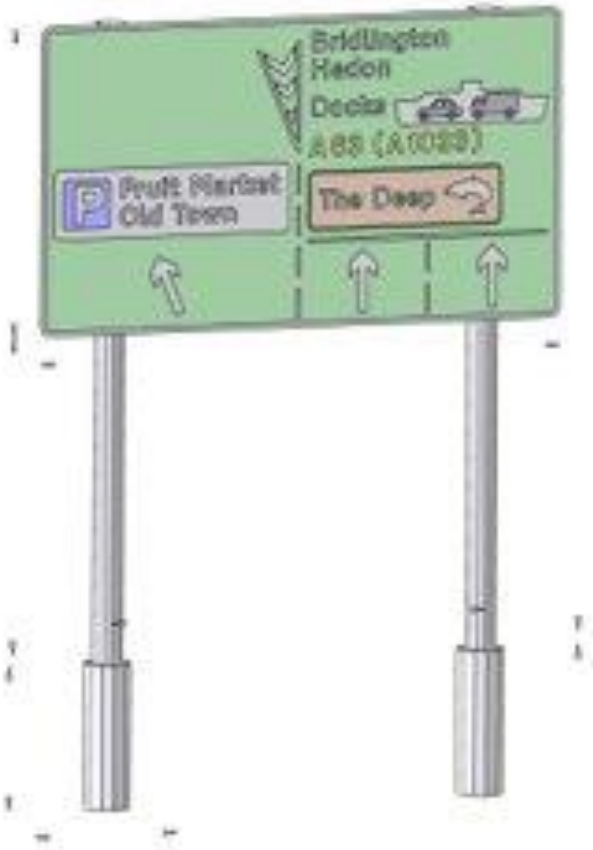
- Limited space within and urban environment
- Utility assets within the footways
- Efficient conveyance of information

Traffic Sign Design

Sign Faces

- PDS Sign software suite
- Developed through consultation with Highways England and Local Authority

Traffic Sign Design



Drainage

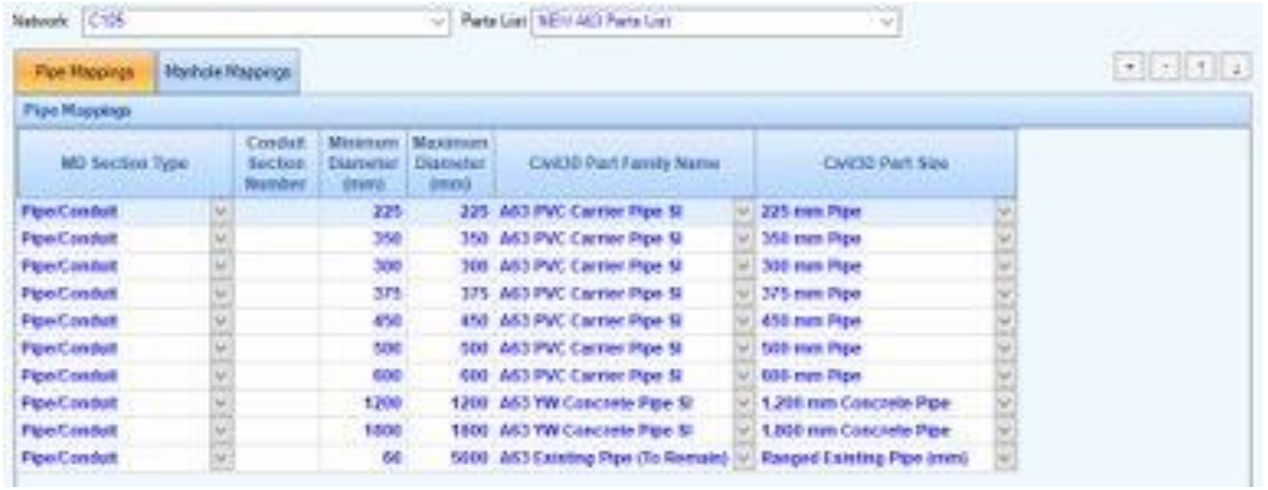
General Design Process:

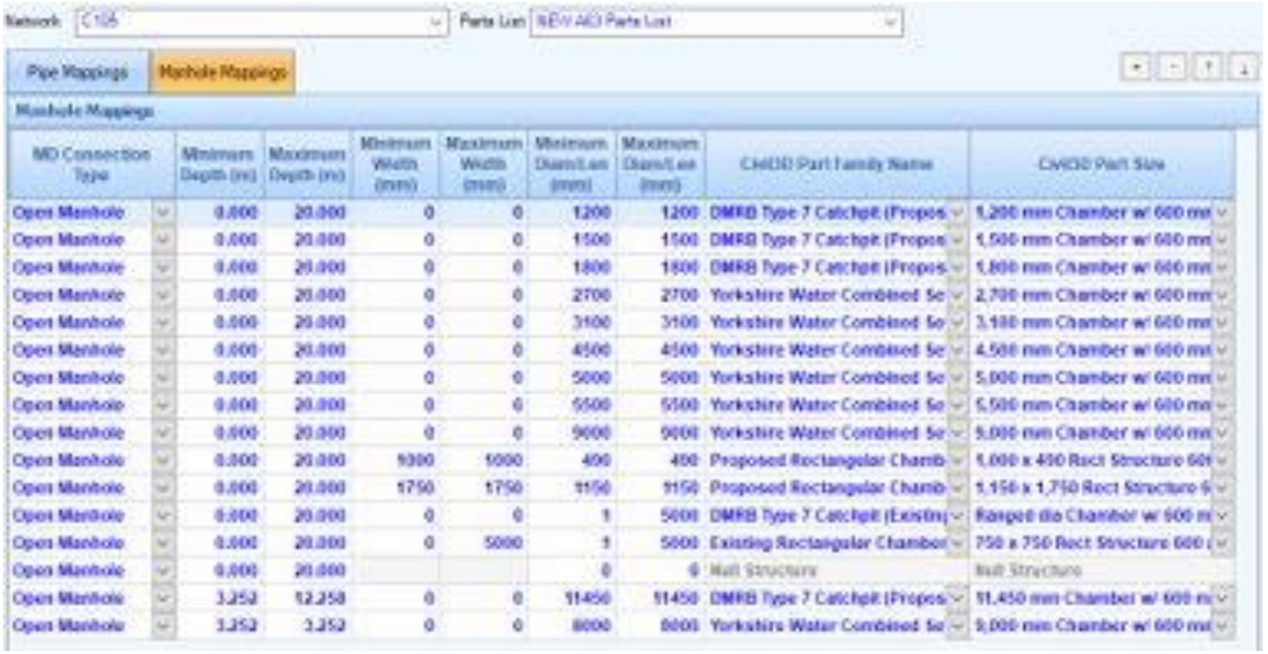
- Civils 3D & DrawNet
- Microdrainage design
- Civils 3D model export

Main Constraints

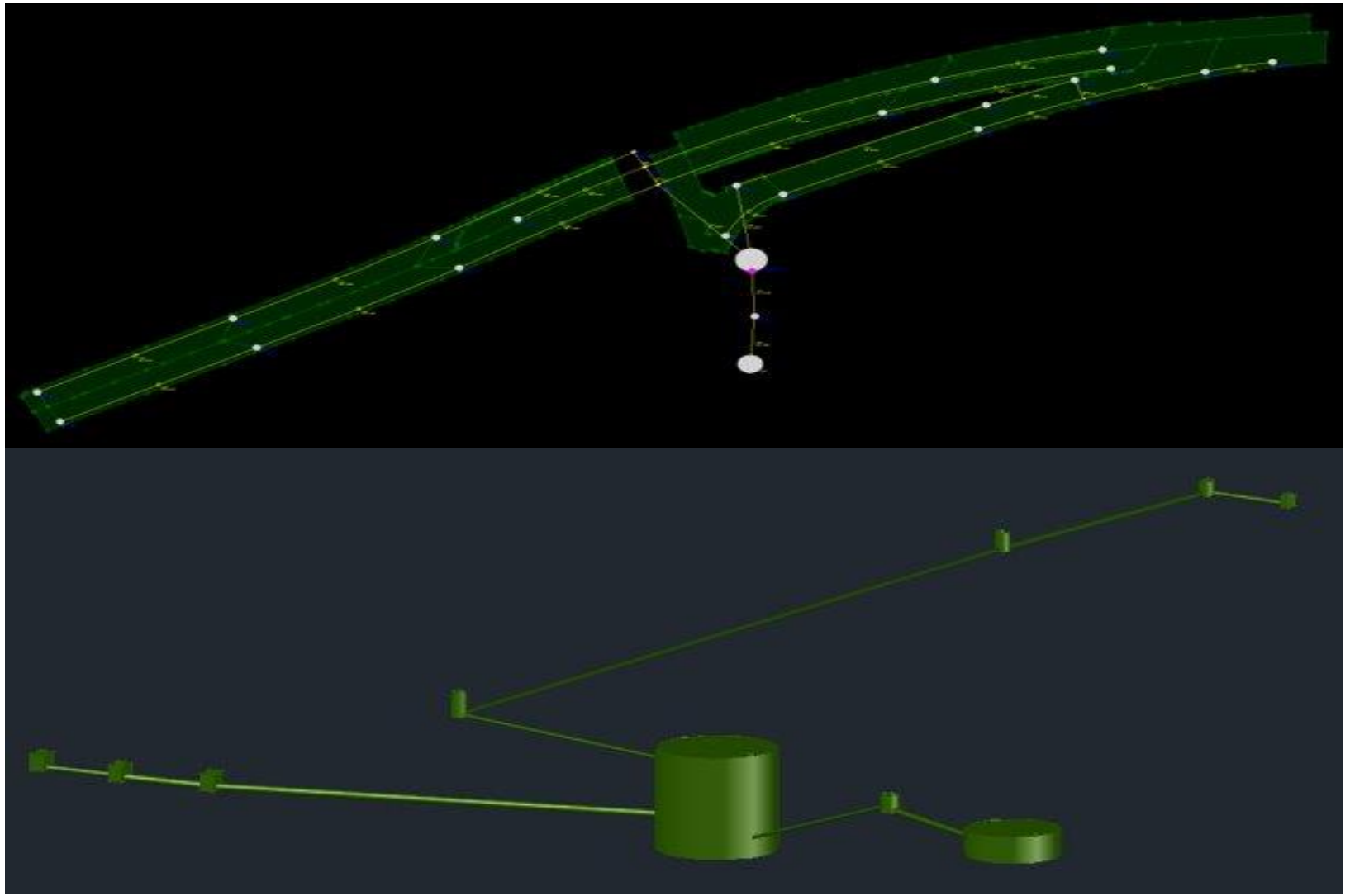
- Limited space within the footways and verge areas
- Existing drainage assets
- Underpass geometry

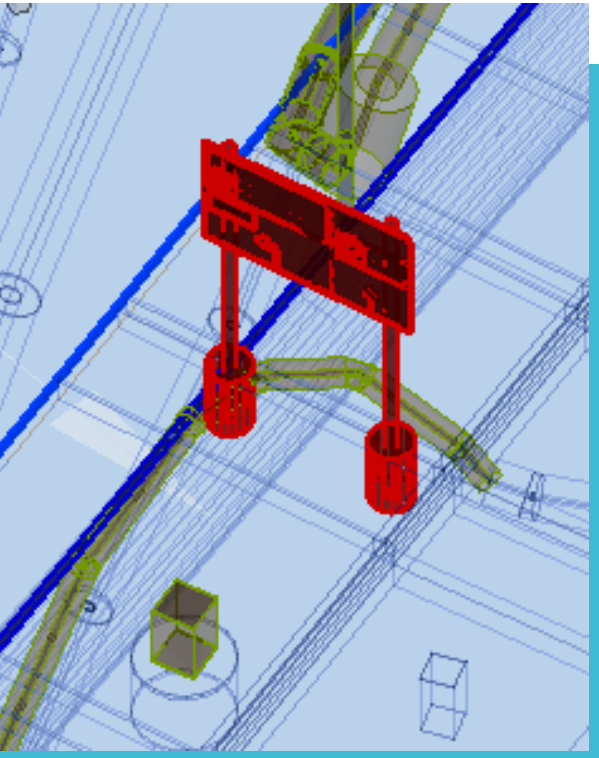
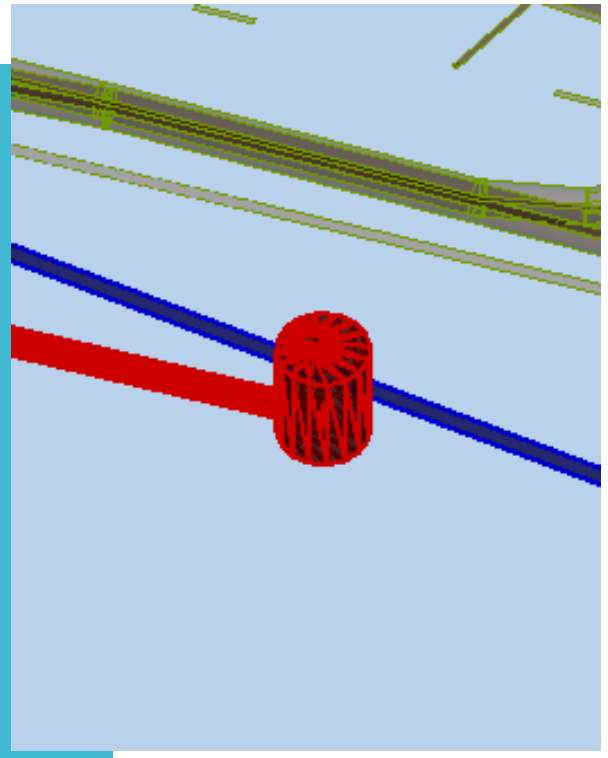
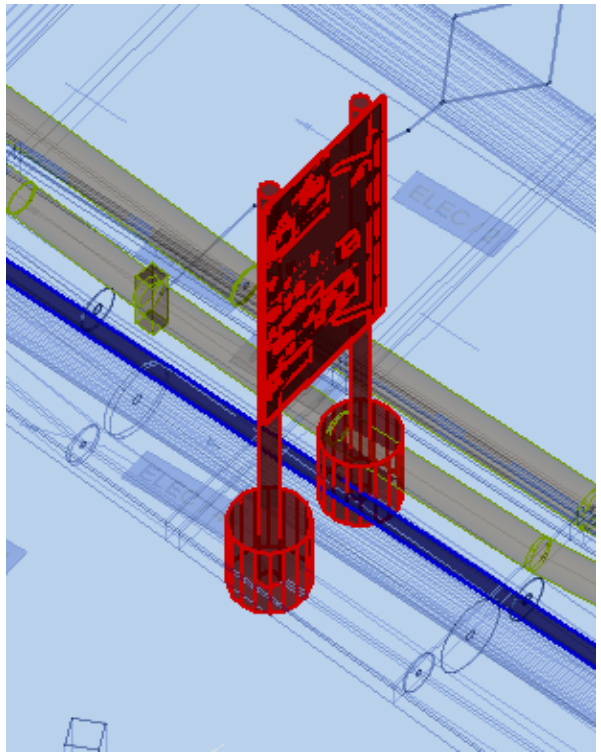
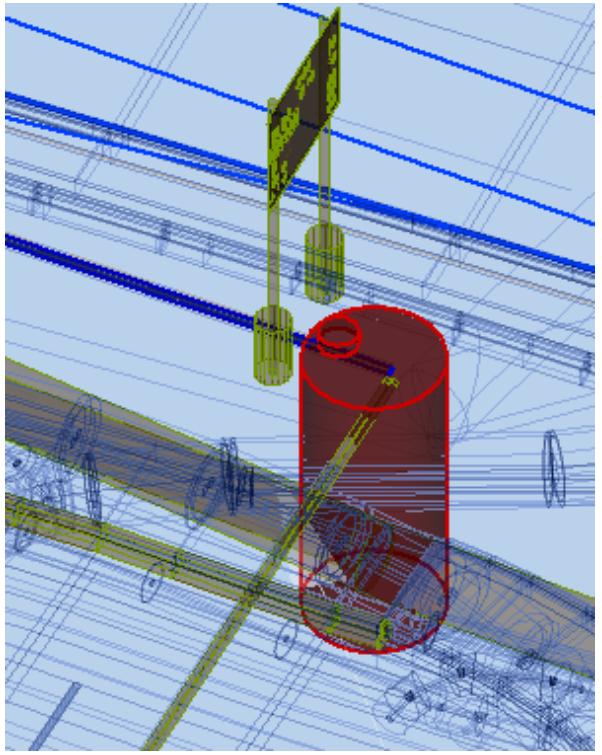
Drainage


Network: C105
Parts List: NEW A63 Parts List
Pipe Mappings
Manhole Mappings
Pipe Mappings
MD Section Type
Conduit Section Number
Minimum Diameter (mm)
Maximum Diameter (mm)
CivilSD Part Family Name
CivilSD Part Size
Pipe/Conduit 225 225 A63 PVC Carrier Pipe SI 225 mm Pipe
Pipe/Conduit 350 350 A63 PVC Carrier Pipe SI 350 mm Pipe
Pipe/Conduit 300 300 A63 PVC Carrier Pipe SI 300 mm Pipe
Pipe/Conduit 375 375 A63 PVC Carrier Pipe SI 375 mm Pipe
Pipe/Conduit 450 450 A63 PVC Carrier Pipe SI 450 mm Pipe
Pipe/Conduit 500 500 A63 PVC Carrier Pipe SI 500 mm Pipe
Pipe/Conduit 600 600 A63 PVC Carrier Pipe SI 600 mm Pipe
Pipe/Conduit 1200 1200 A63 YW Concrete Pipe SI 1,200 mm Concrete Pipe
Pipe/Conduit 1800 1800 A63 YW Concrete Pipe SI 1,800 mm Concrete Pipe
Pipe/Conduit 66 5000 A63 Existing Pipe (To Remain) Ranged Existing Pipe (mm)


Network: C105
Parts List: NEW A63 Parts List
Pipe Mappings
Manhole Mappings
Manhole Mappings
MD Connection Type
Minimum Depth (m)
Maximum Depth (m)
Minimum Width (mm)
Maximum Width (mm)
Minimum Diam/Len (mm)
Maximum Diam/Len (mm)
CivilSD Part Family Name
CivilSD Part Size
Open Manhole 0.000 20.000 0 0 1200 1200 DMRB Type 7 Catchpit (Propos 1,200 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 0 0 1500 1500 DMRB Type 7 Catchpit (Propos 1,500 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 0 0 1800 1800 DMRB Type 7 Catchpit (Propos 1,800 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 0 0 2700 2700 Yorkshire Water Combined Se 2,700 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 0 0 3100 3100 Yorkshire Water Combined Se 3,100 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 0 0 4500 4500 Yorkshire Water Combined Se 4,500 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 0 0 5000 5000 Yorkshire Water Combined Se 5,000 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 0 0 5500 5500 Yorkshire Water Combined Se 5,500 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 0 0 9000 9000 Yorkshire Water Combined Se 9,000 mm Chamber w/ 600 mm
Open Manhole 0.000 20.000 9300 5000 400 400 Proposed Rectangular Chamb 1,000 x 400 Rect Structure 600
Open Manhole 0.000 20.000 1750 1750 1150 1150 Proposed Rectangular Chamb 1,150 x 1,750 Rect Structure 6
Open Manhole 0.000 20.000 0 0 1 5000 DMRB Type 7 Catchpit (Existin Ranged dia Chamber w/ 600 m
Open Manhole 0.000 20.000 0 5000 1 5000 Existing Rectangular Chamber 750 x 750 Rect Structure 600
Open Manhole 0.000 20.000 0 0 Null Structure
Open Manhole 3.252 12.250 0 0 11450 11450 DMRB Type 7 Catchpit (Propos 11,450 mm Chamber w/ 600 m
Open Manhole 3.252 3.252 0 0 8000 8000 Yorkshire Water Combined Se 8,000 mm Chamber w/ 600 mm

Drainage



Clash Detection

Thank you & any Questions?

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