Design Review Panel

18th April 2018

ENTUITIVE

GRIMSHAW

sbp

DRAFT

—Port Lands.


/Landscape.


/Industry.

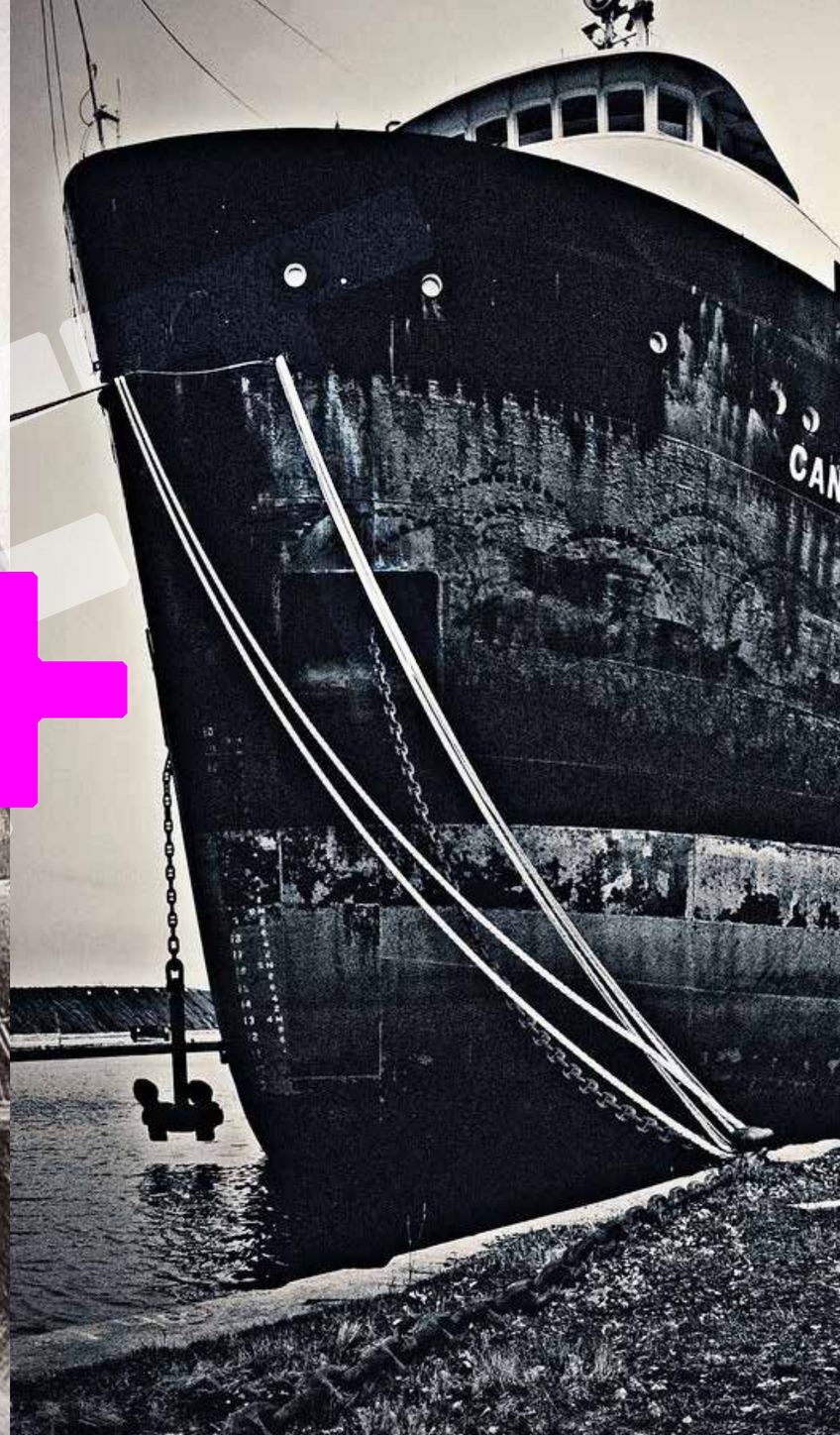
Considerations

Comments from design review:

- Bridges should be simple, elegant and inspire!
- Questions regarding teams approach to sustainability
- Bridges should be represented over time and show phases of construction
- Bridges should be thought of in a spatial sequence (show views from pedestrian & car experience)

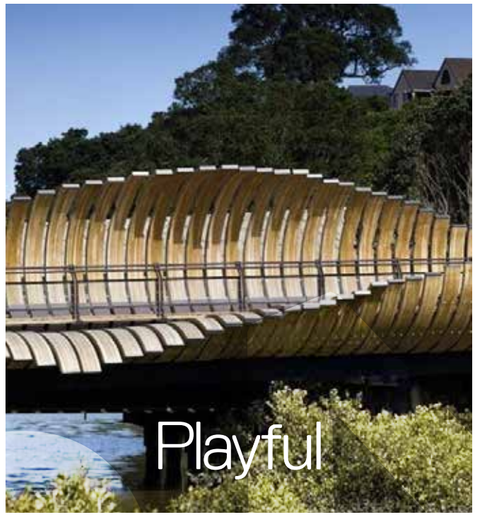
Combined Inspiration

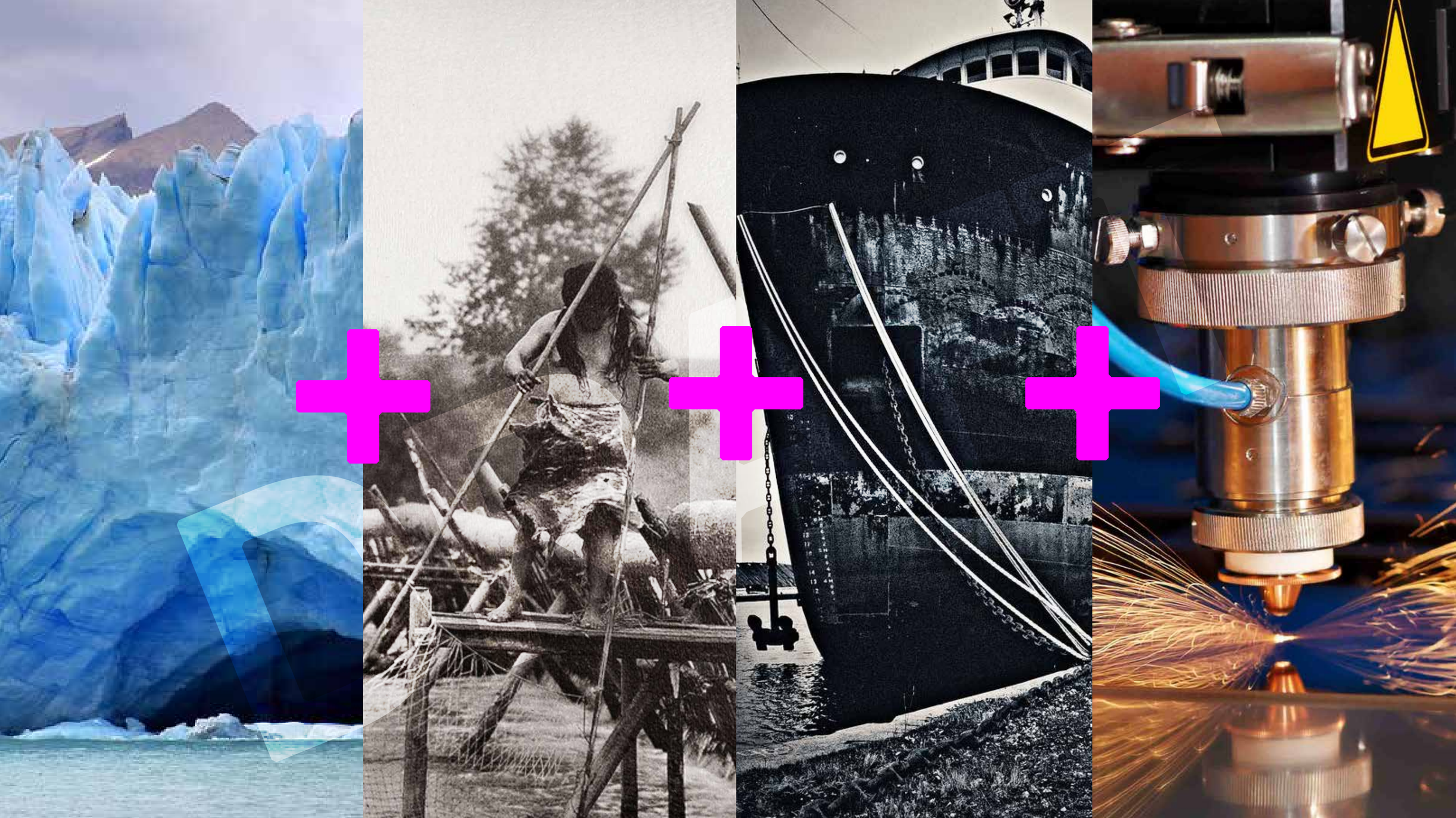
Geological, Cultural and Technological



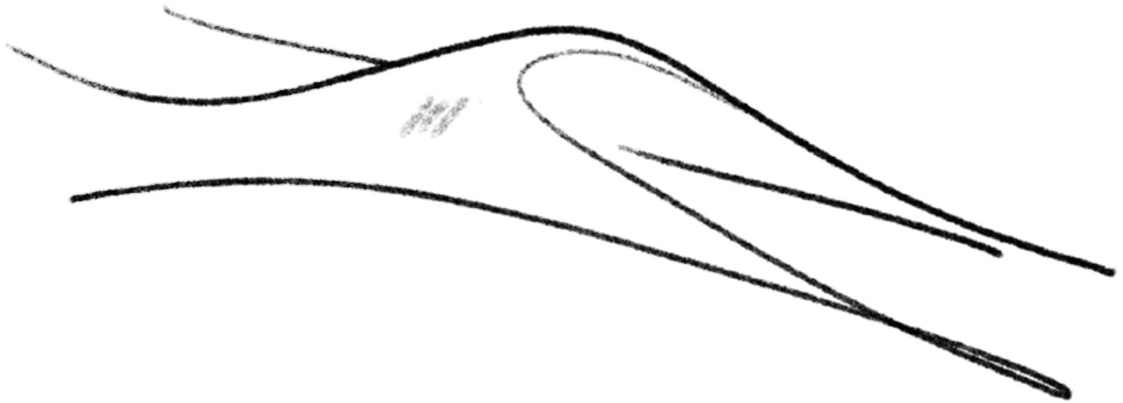
Inspiration Studies

Precedent



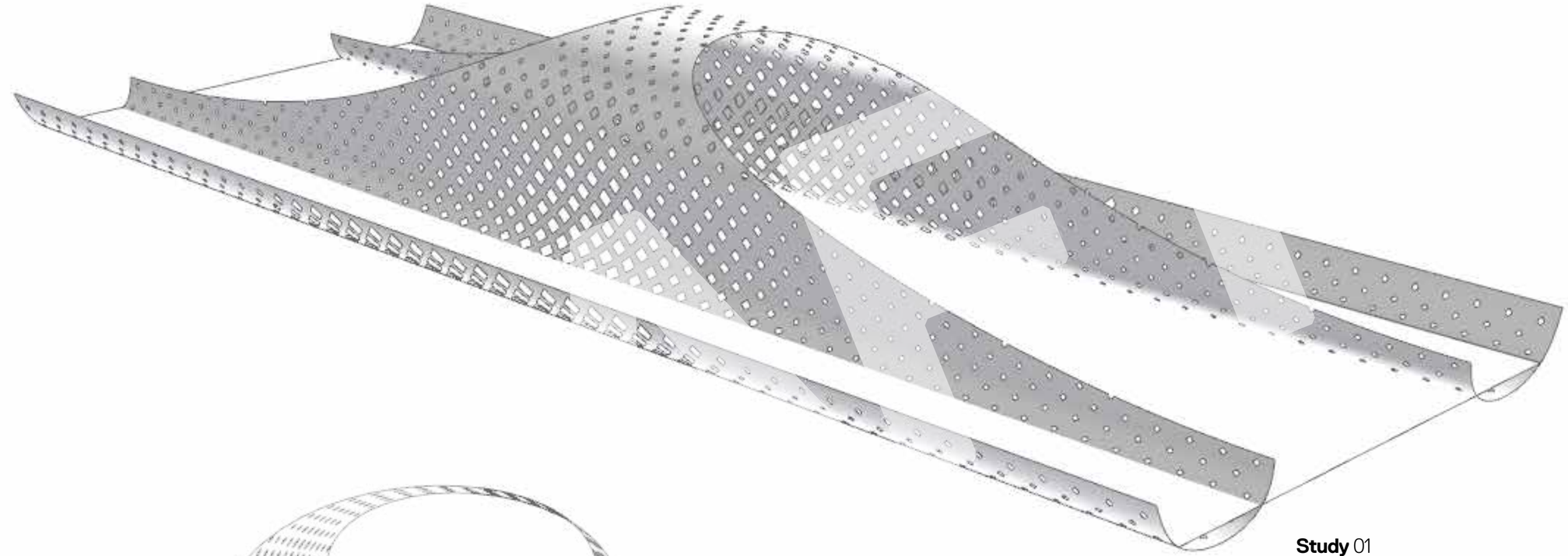


/Bridge for the City of the Future.

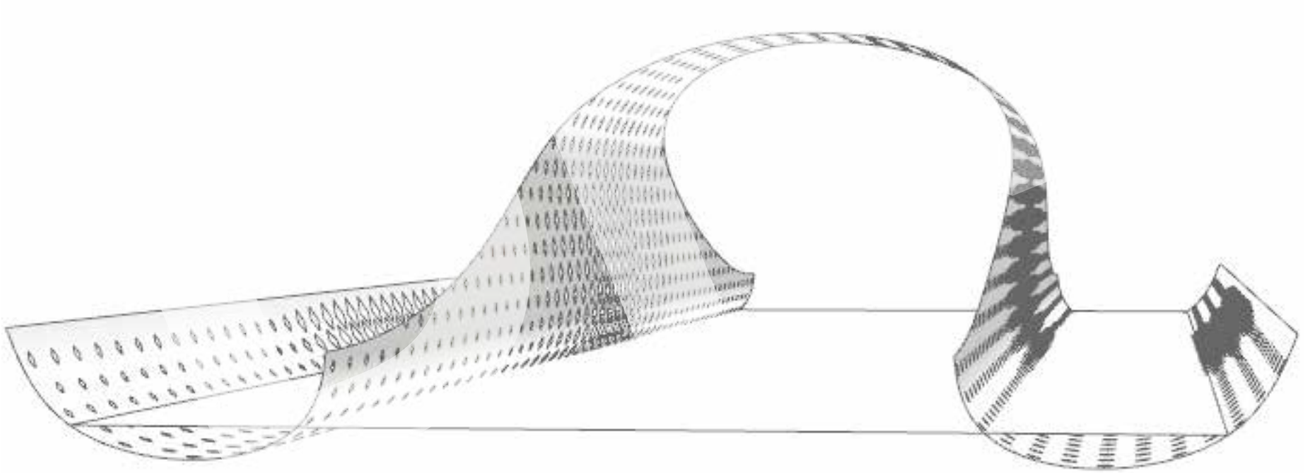


Bridge for the city of the Future

Shell bridge



Study 01



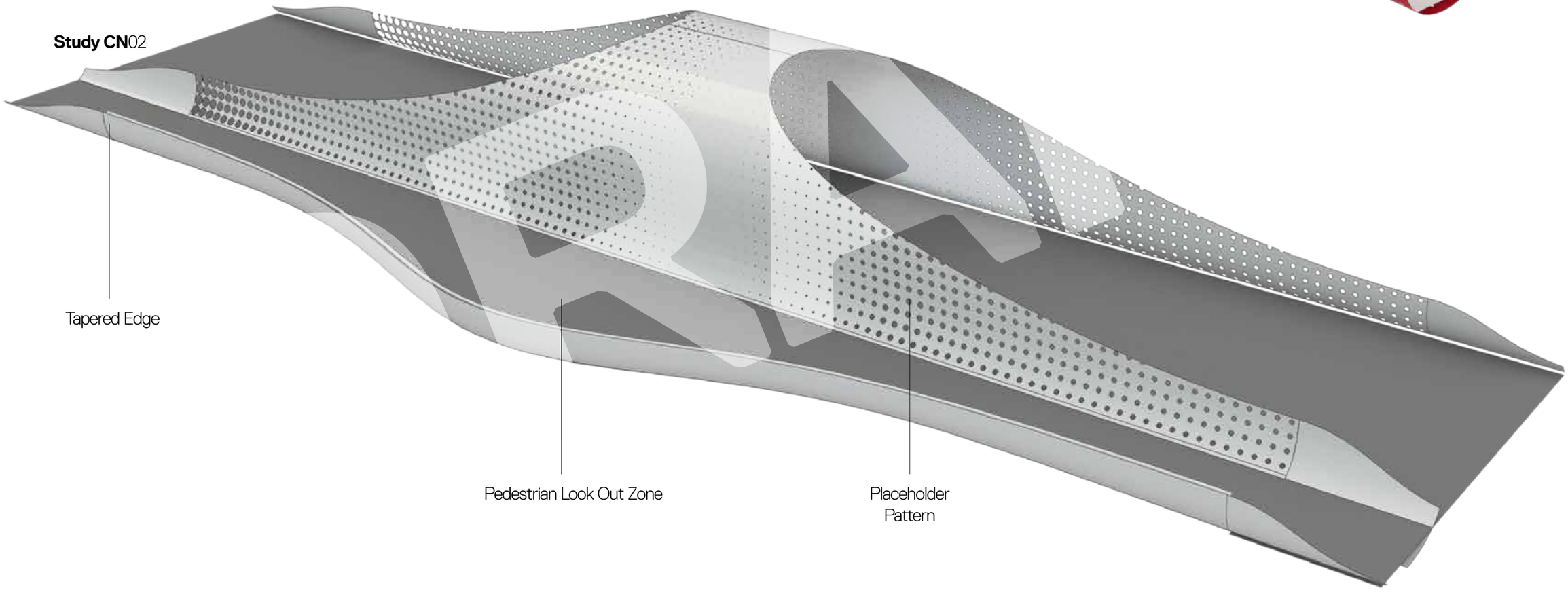
Study 01

Cherry North

Macro Geometry Test

Study CN01

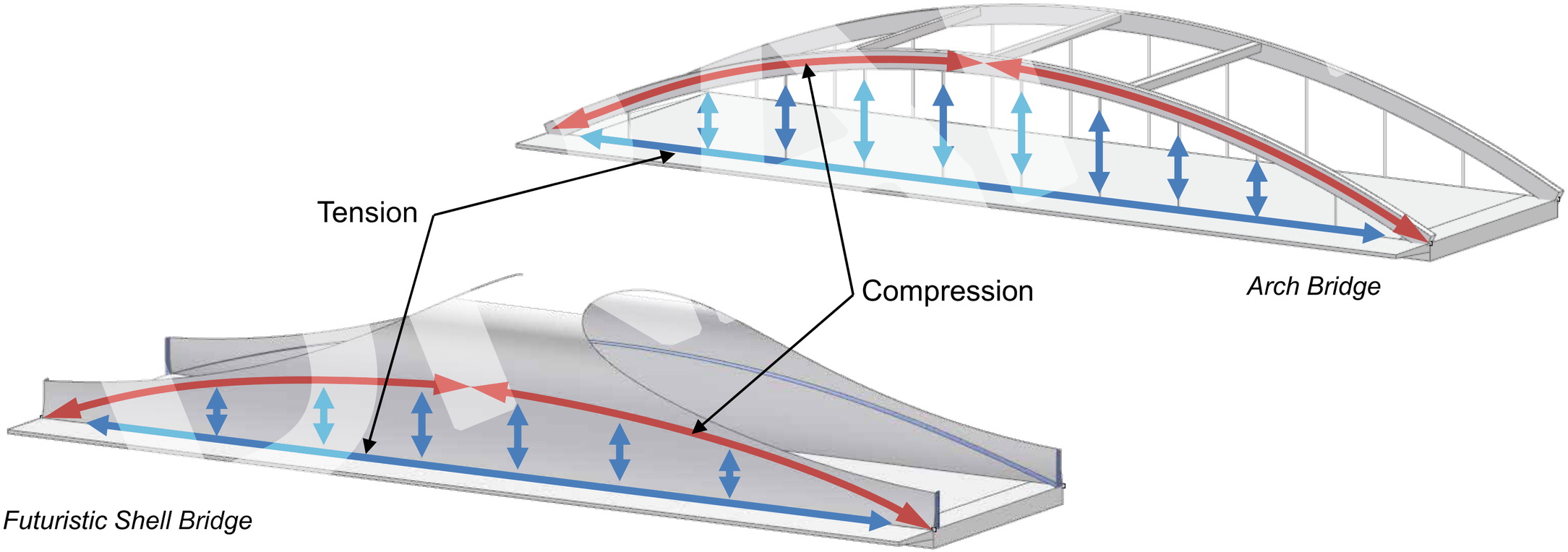
Study CN02



Cherry North

Force Flow

- The futuristic shell bridge at cherry street north can be compared to an arch bridge with stabilizing cross beams
- The concentrated forces in an arch bridge are distributed over the overall shell area -> shell can be a thin plate



Cherry North

Reference

North Halsted street Arch bridge (Chicago)

Puente de Matadero (Madrid)

Footbridge L01 (London)

Bridge of Peace (Tiflis)

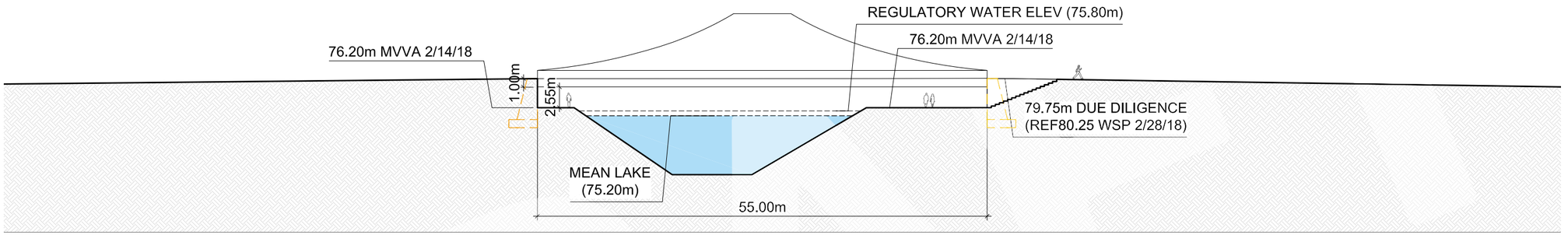
Cherry North

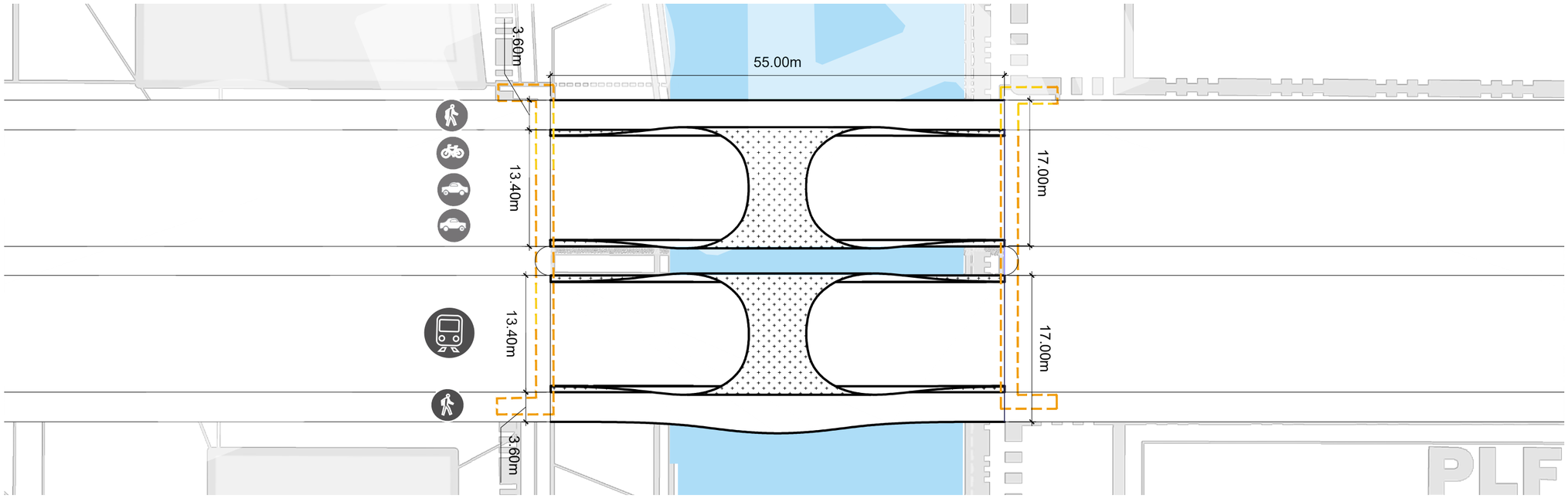
Plan & Elevation

DUE DILIGENCE ABUTMENTS / PIERS

0 1 5 10 20

SCALE: 1/500

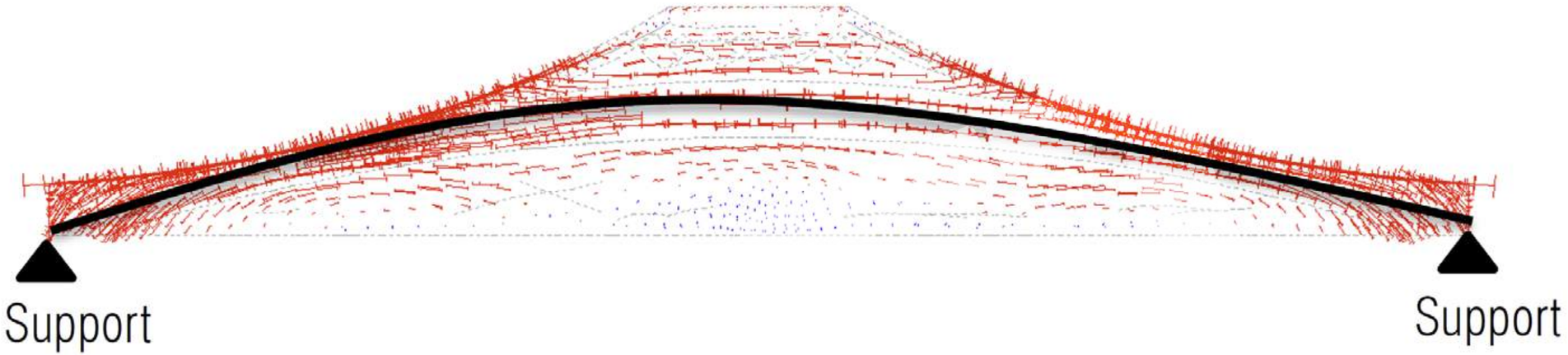




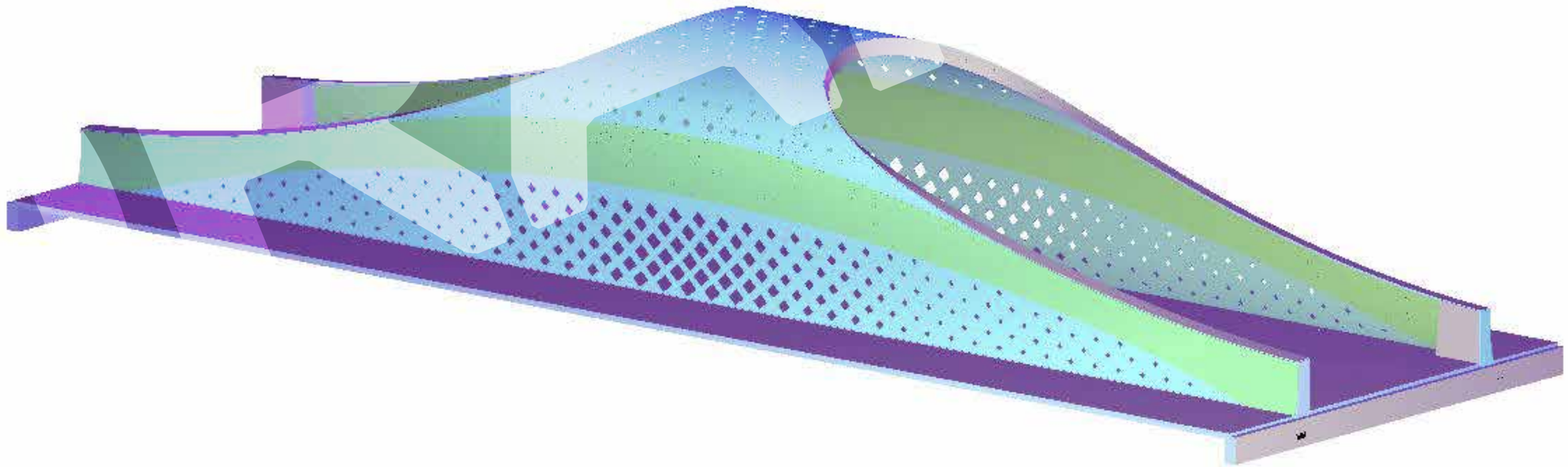
Cherry North

Structure

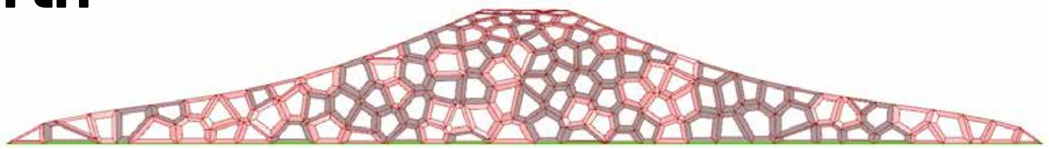
Compression Forces



Perforation Pattern
Follows Force Pattern

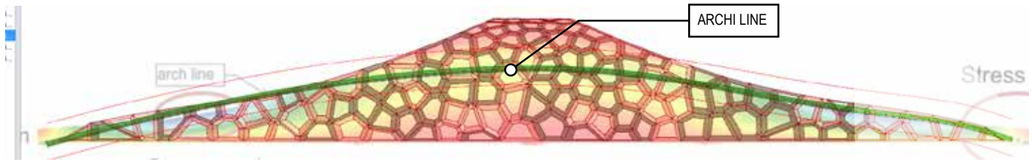


Cherry North
Pattern

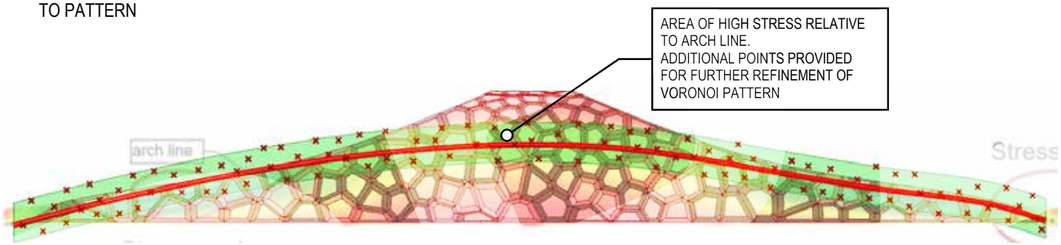


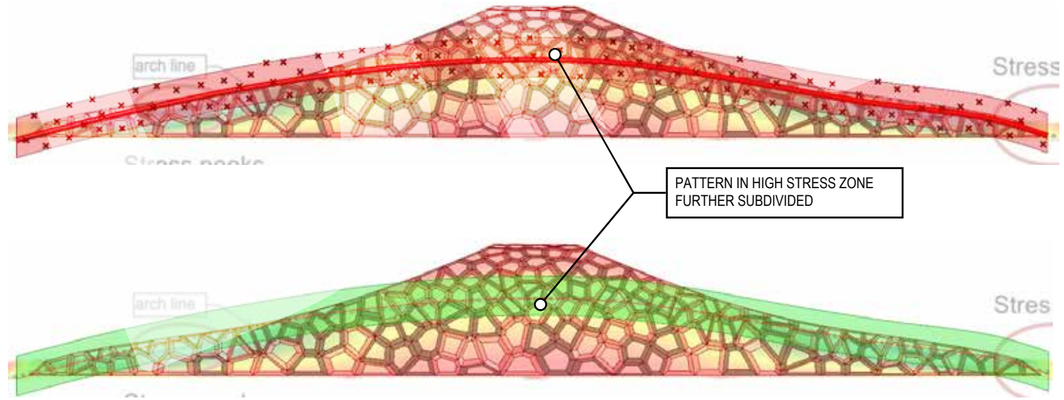
BASE VORONOI PATTERN

VORONOI PATTERN REFINEMENT IN HIGH STRESS ZONE

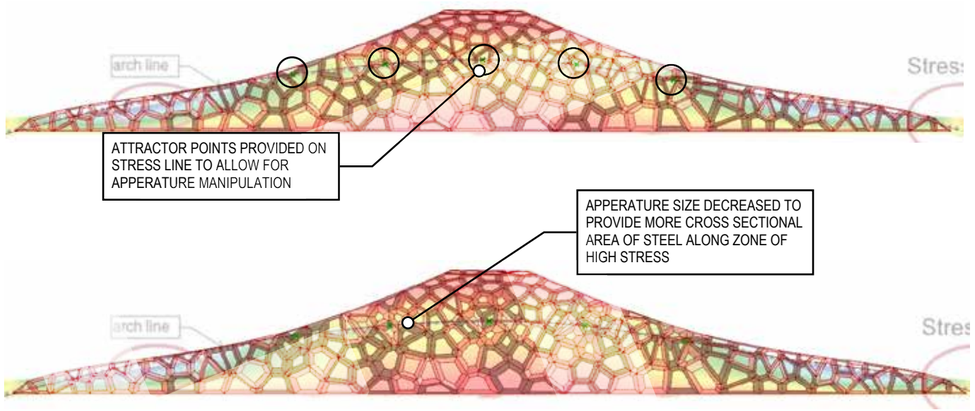


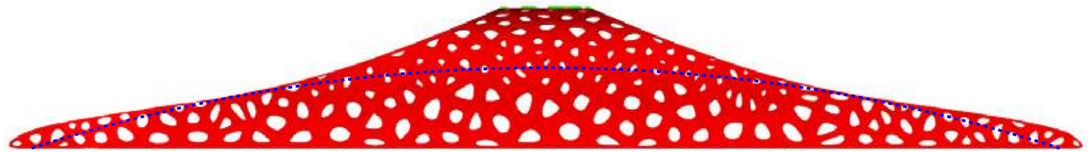
STRESS PATTERN AND ARCH LINE RELATIVE TO PATTERN



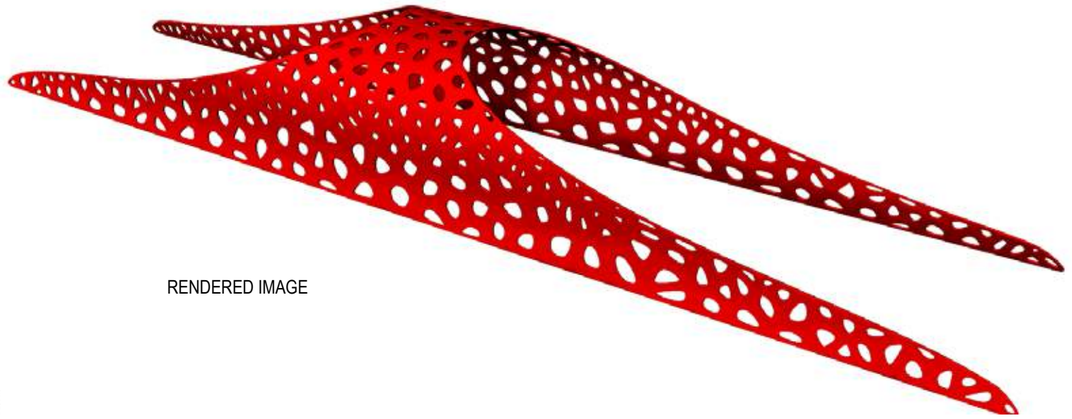


VORONOI APPERATURE REFINEMENT IN HIGH STRESS ZONE





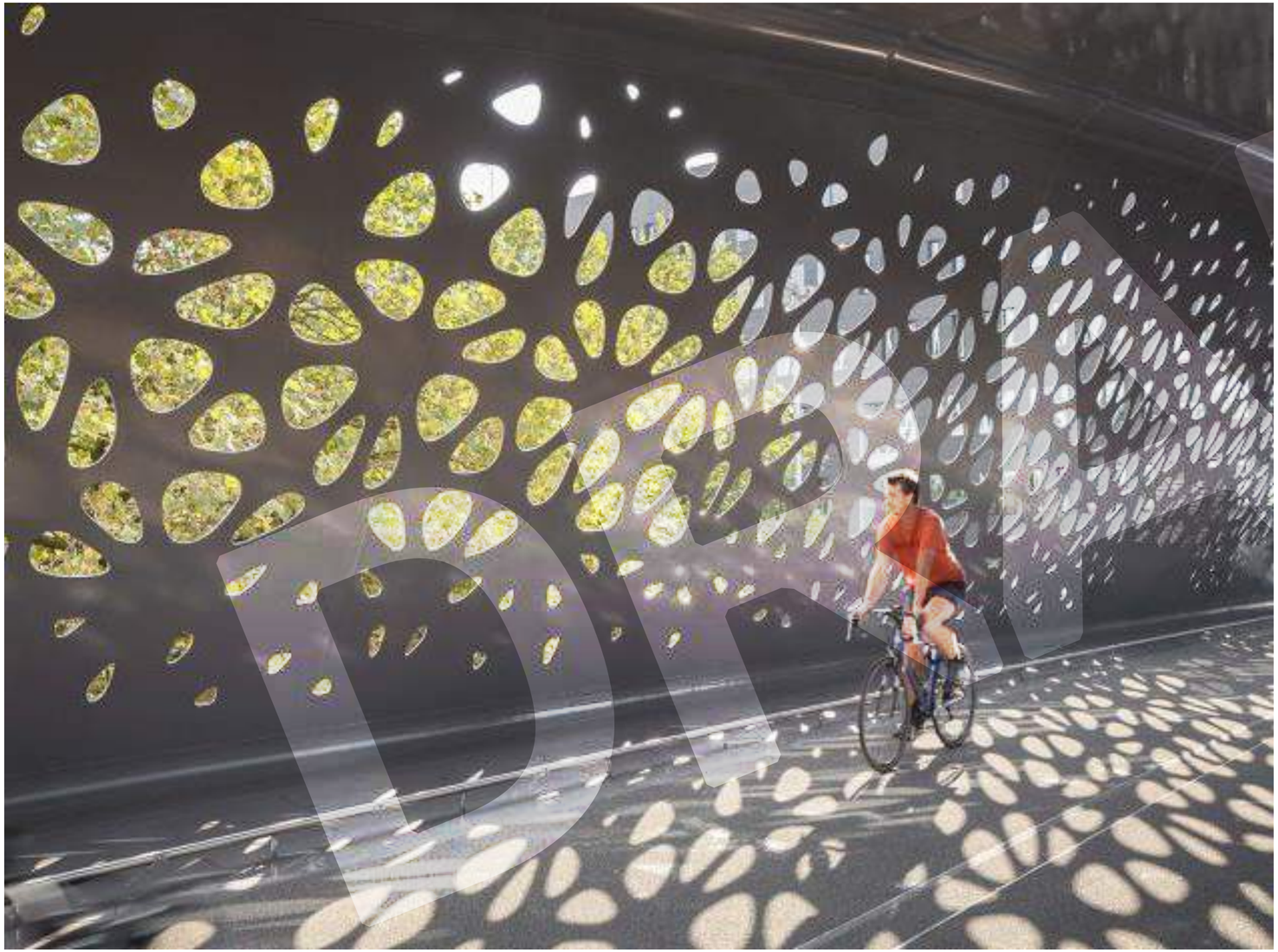
FINAL PATTERN



RENDERED IMAGE

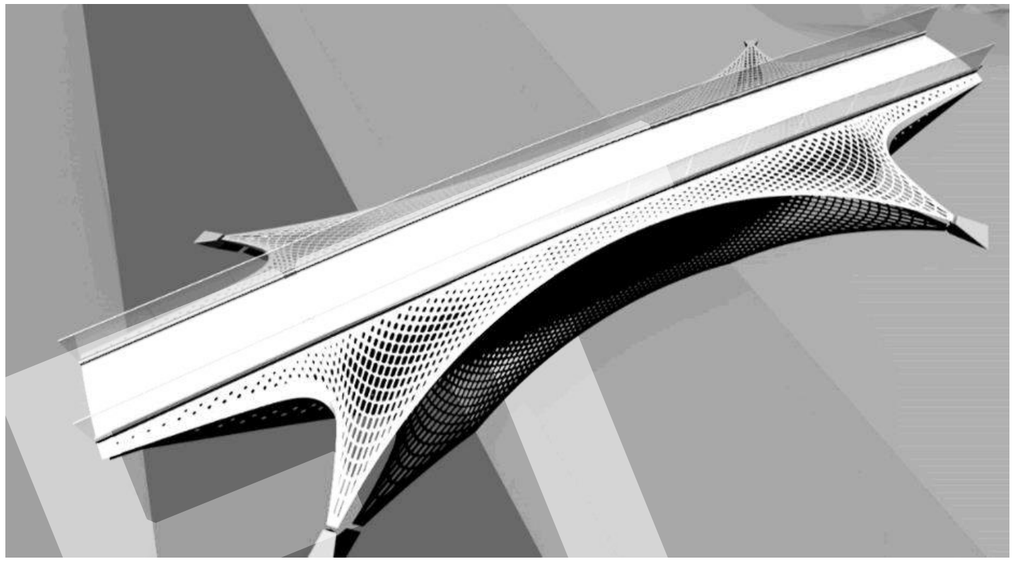
Pattern Studies

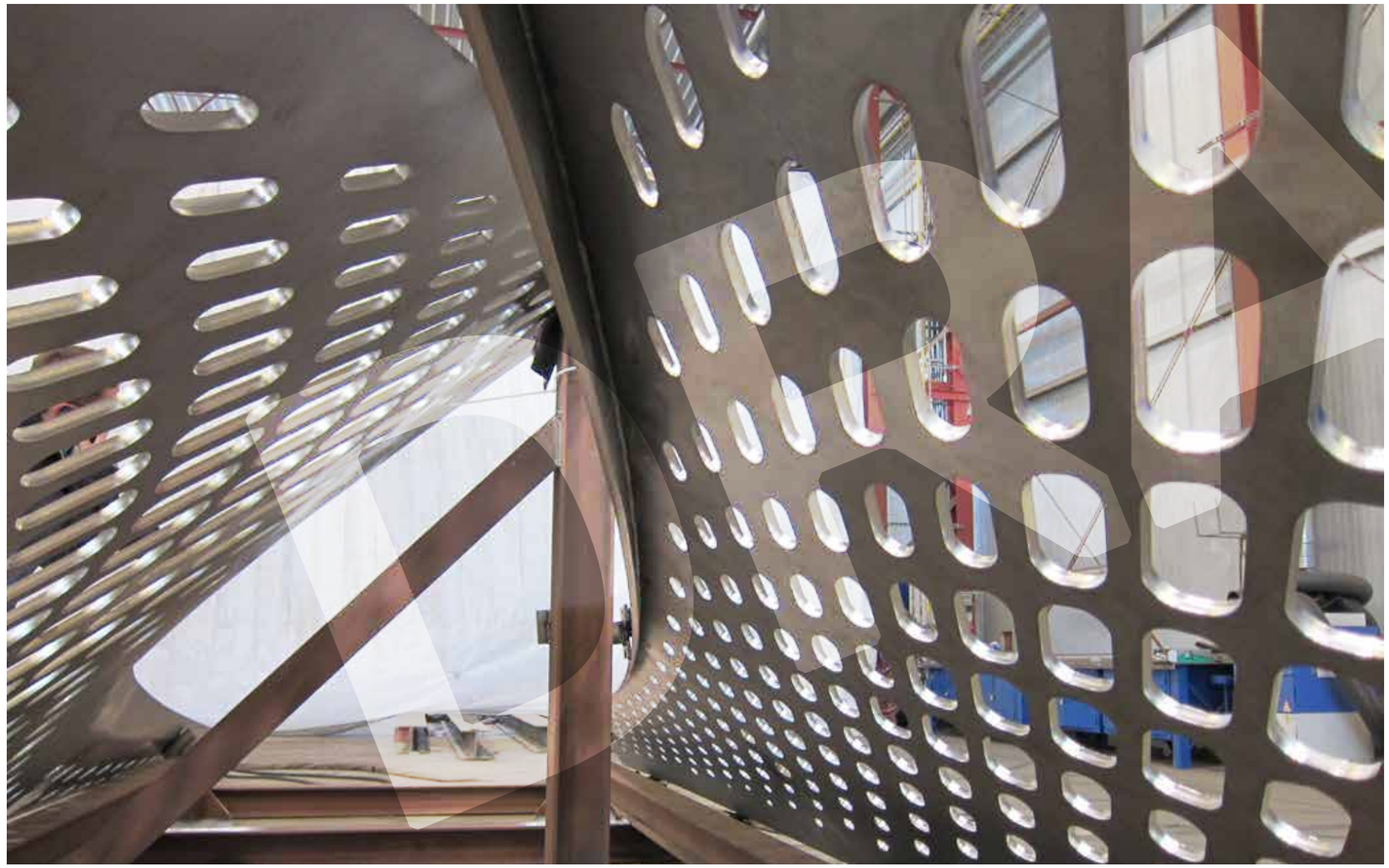
Precedent Park Bridge Spoor Noord (Antwerp)



Pattern Studies

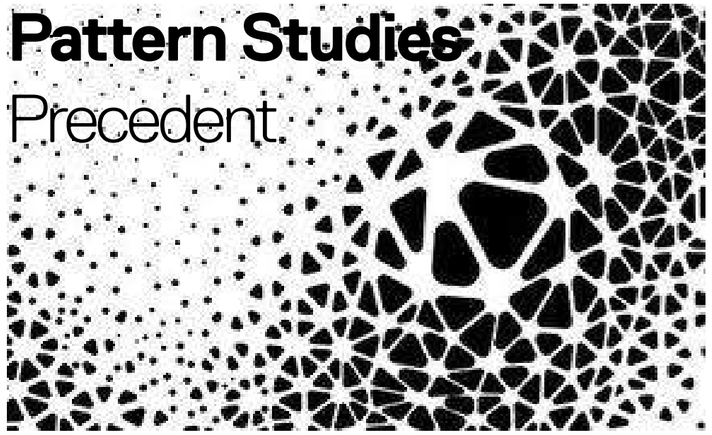
Trumpf Bridge (Ditzingen)

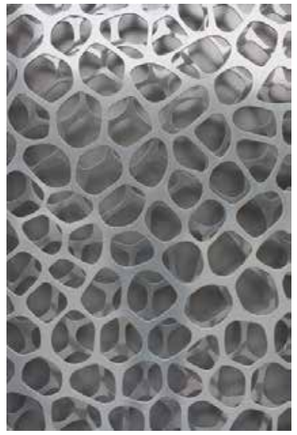


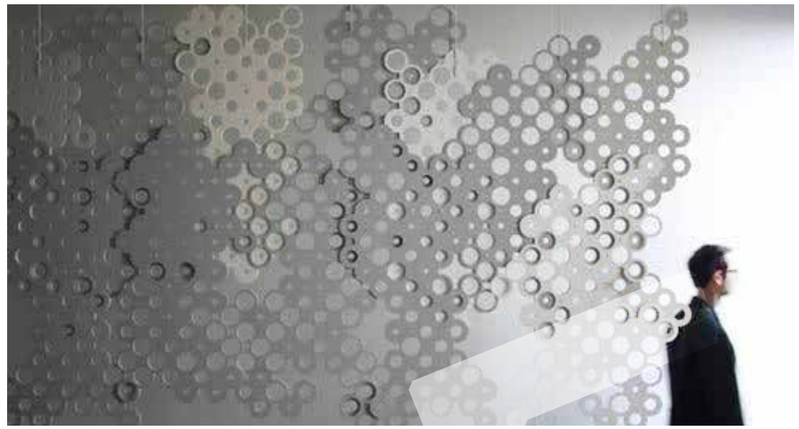


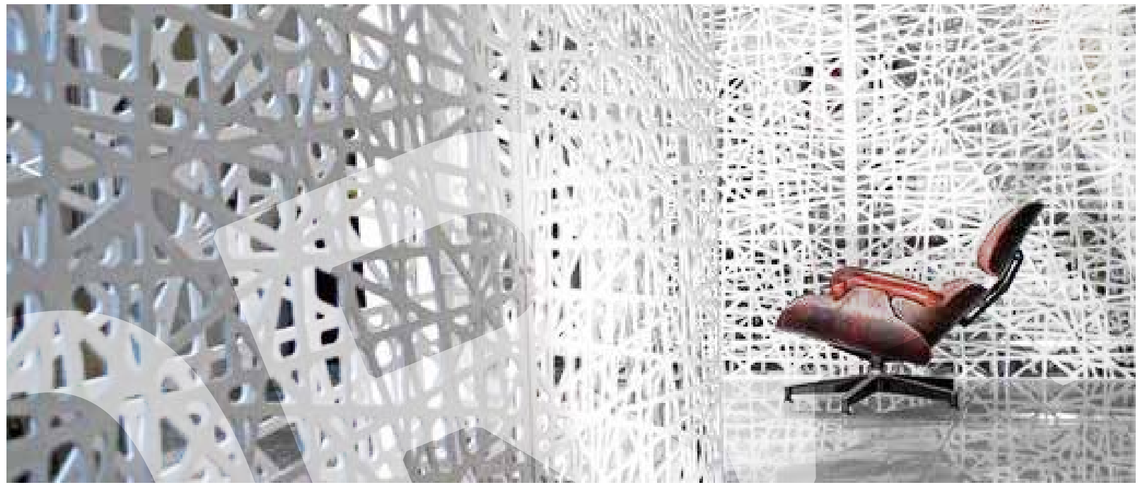
Pattern Studies

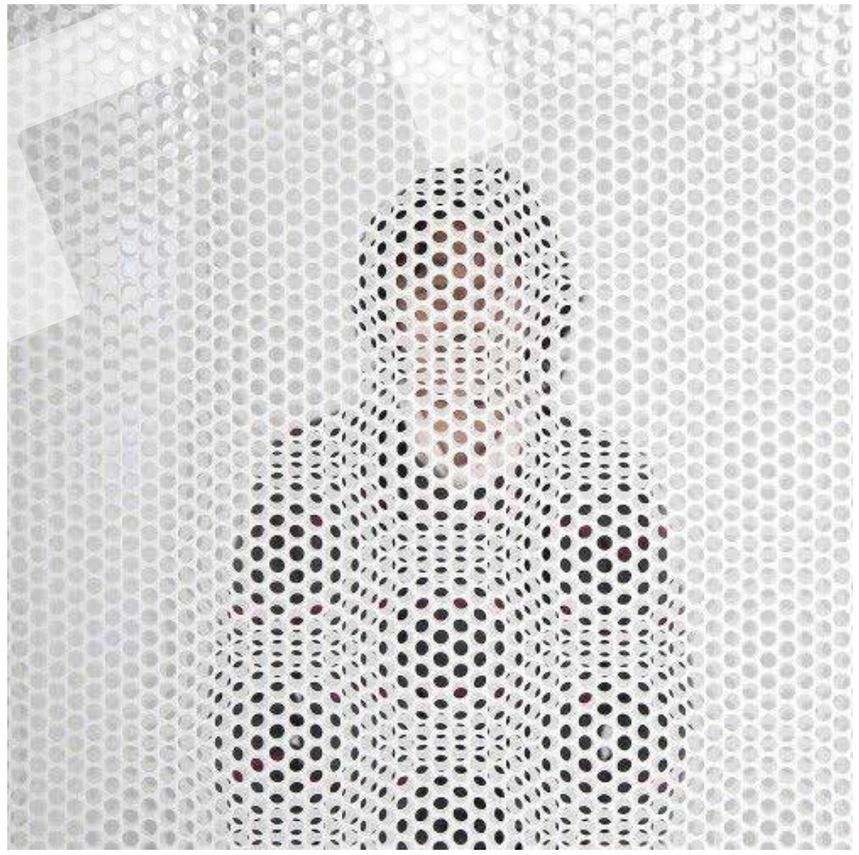
Precedent

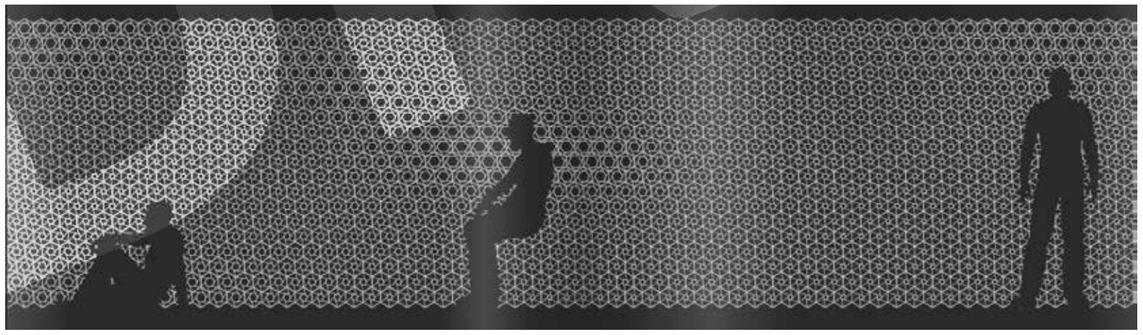












Cherry North

View from South Bank

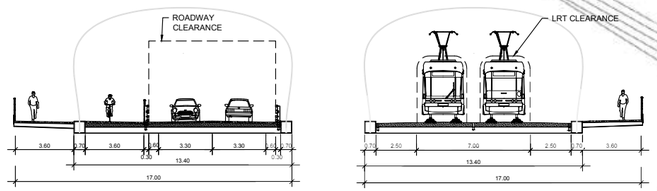
Cherry North

Macro Geometry Adjustment

To Align with structural forces

Cherry North

Stair Integration & Lookouts - Axonometrc.



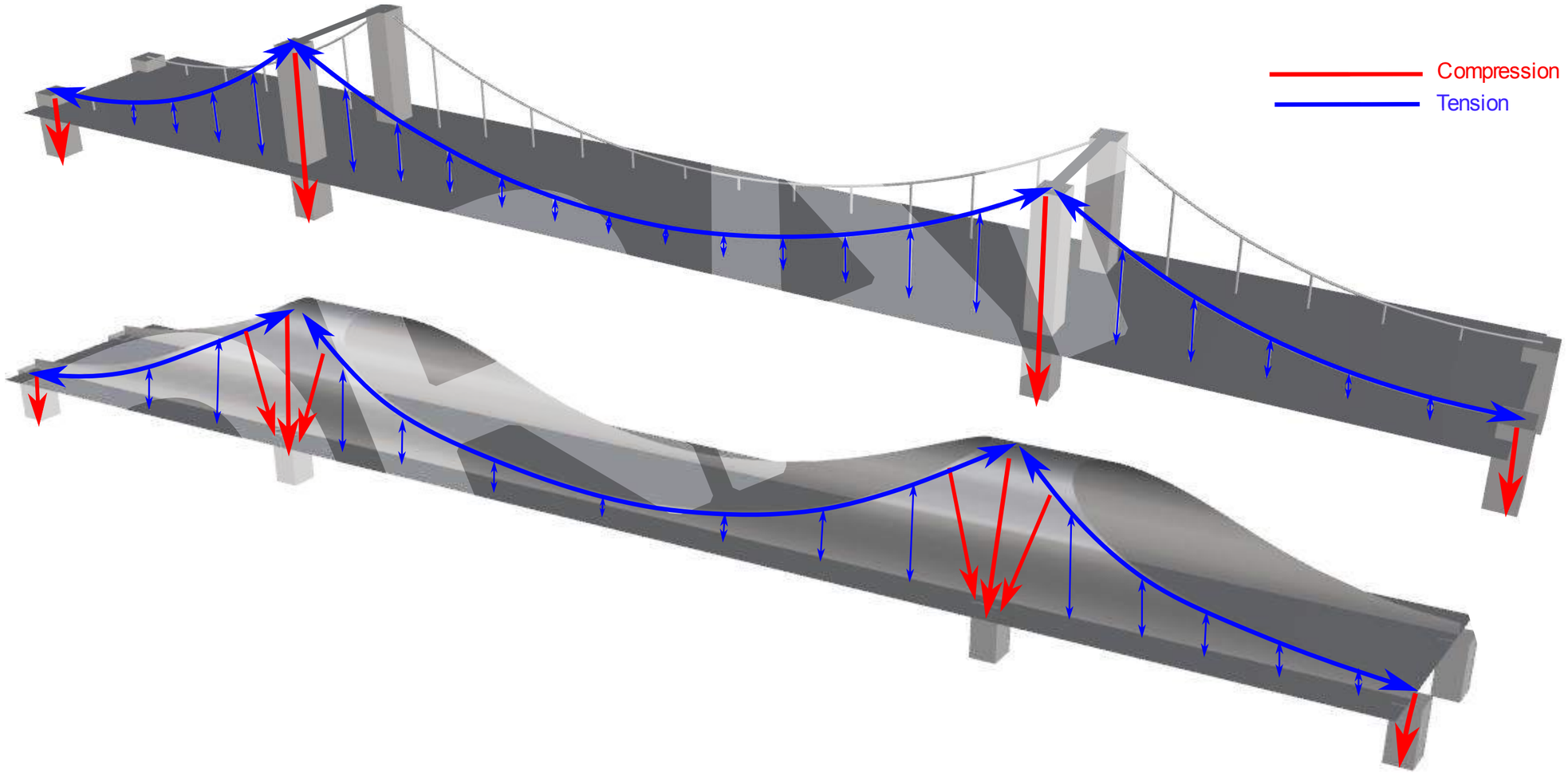
ROAD

LRT

Cherry South

Force Flow

- The futuristic shell bridge can be compared to a suspension bridge.
- The concentrated forces on the intermediate supports are raddialy arranged.



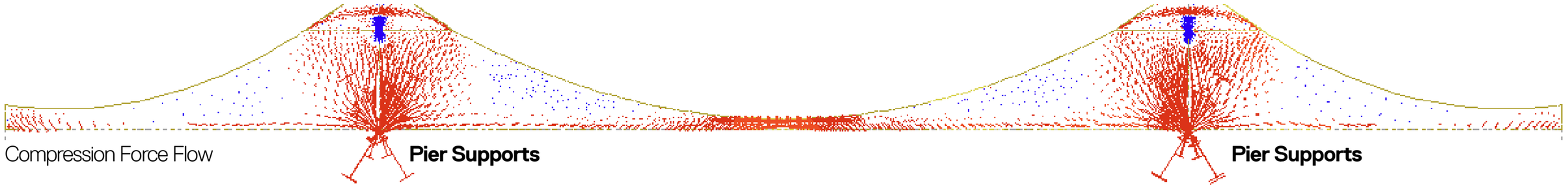
Cherry South
Reference Projects

Golden Gate Bridge

George Washington Bridge

Cherry South

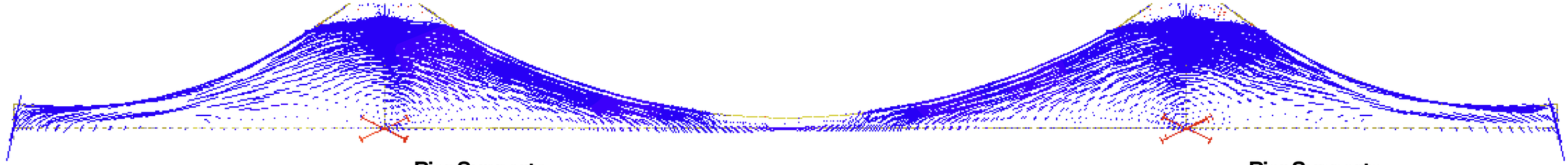
Structure



Compression Force Flow

Pier Supports

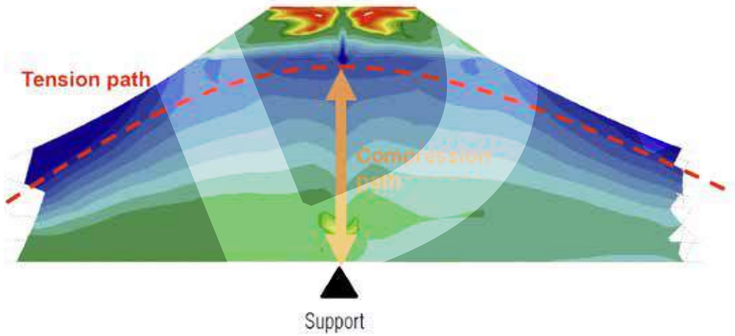
Pier Supports



Tension Force Flow

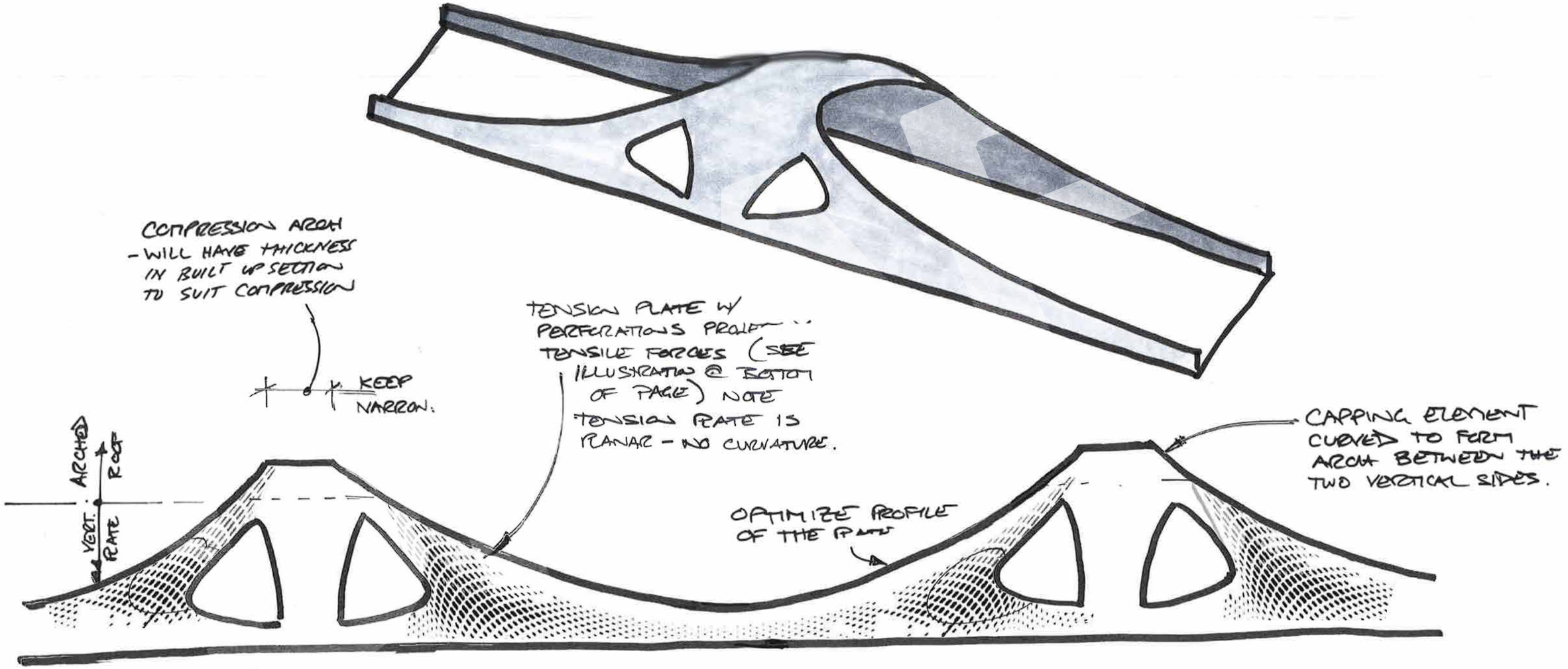
Pier Supports

Pier Supports



Cherry South

Perforation



Cherry South

View From Parkland.

Cherry South

Plan & Elevation

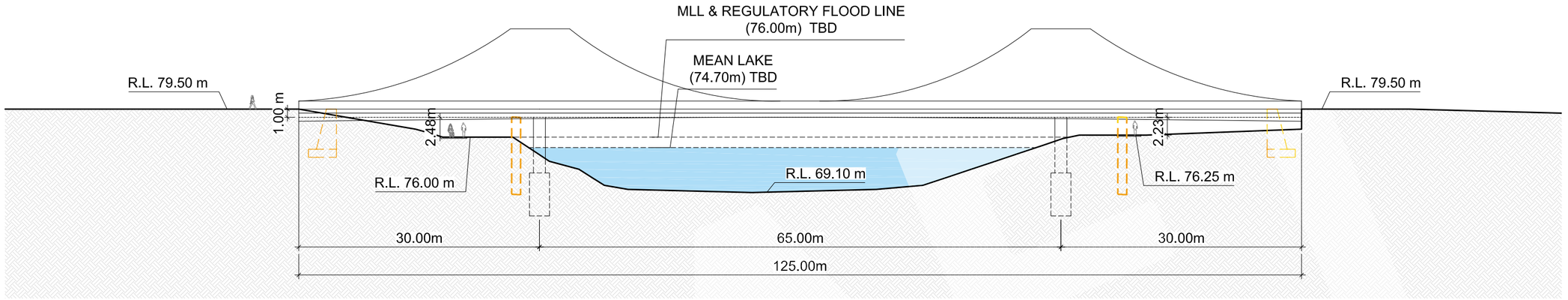
DUE DILIGENCE ABUTMENTS / PIERS

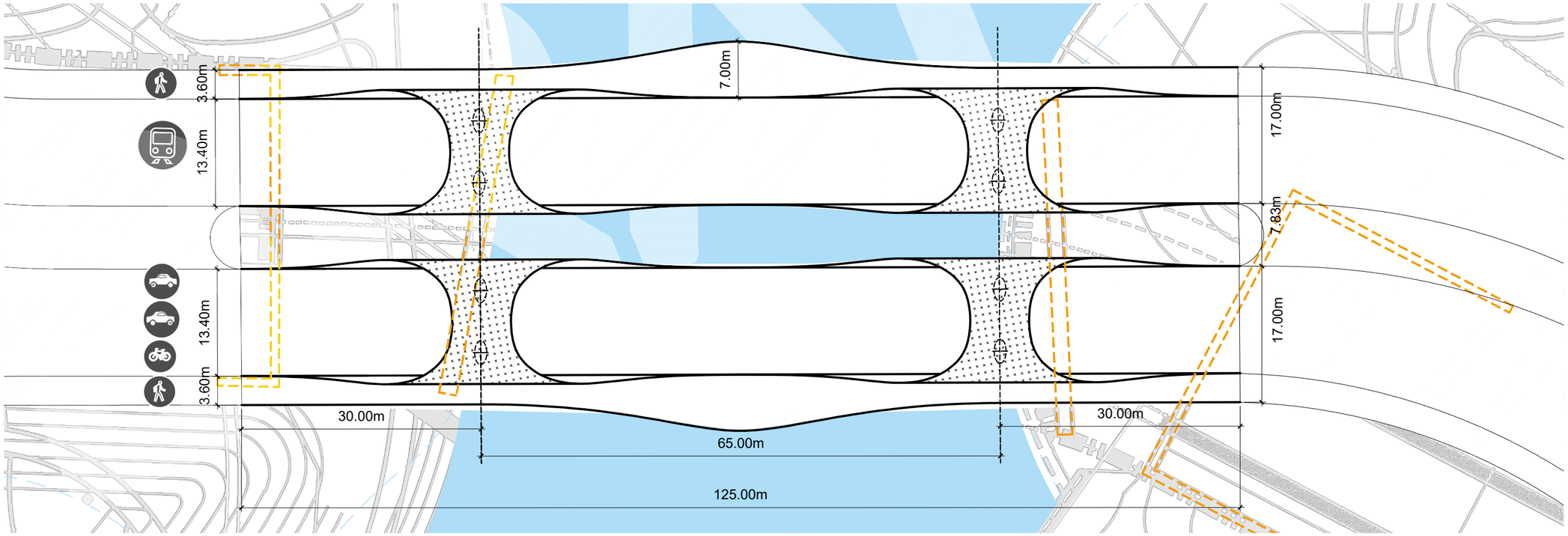
PROPOSED PIER ALIGNMENT

MVVA PROPOSED ALIGNMENT

0 1 5 10 20

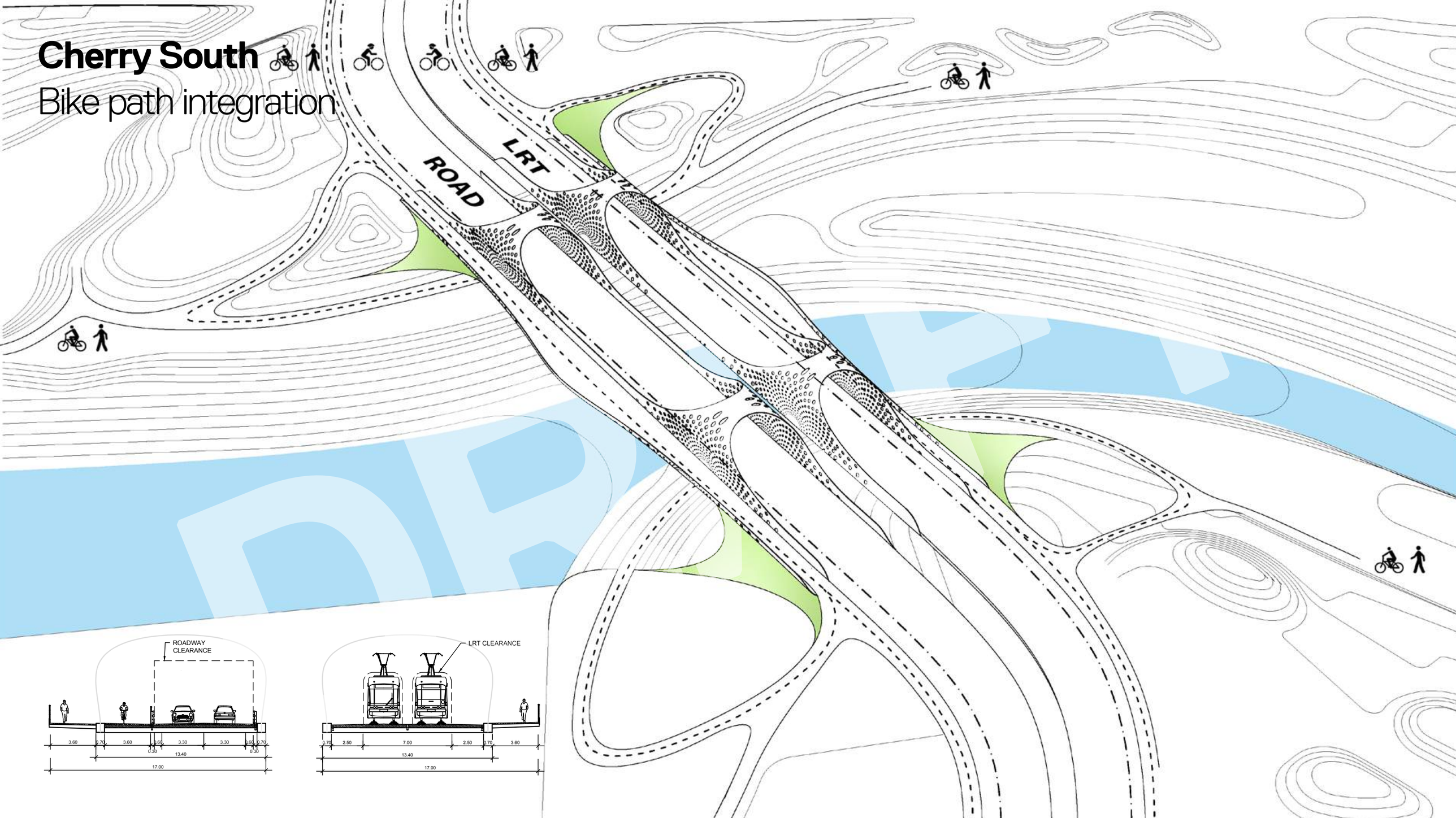
SCALE: 1/500





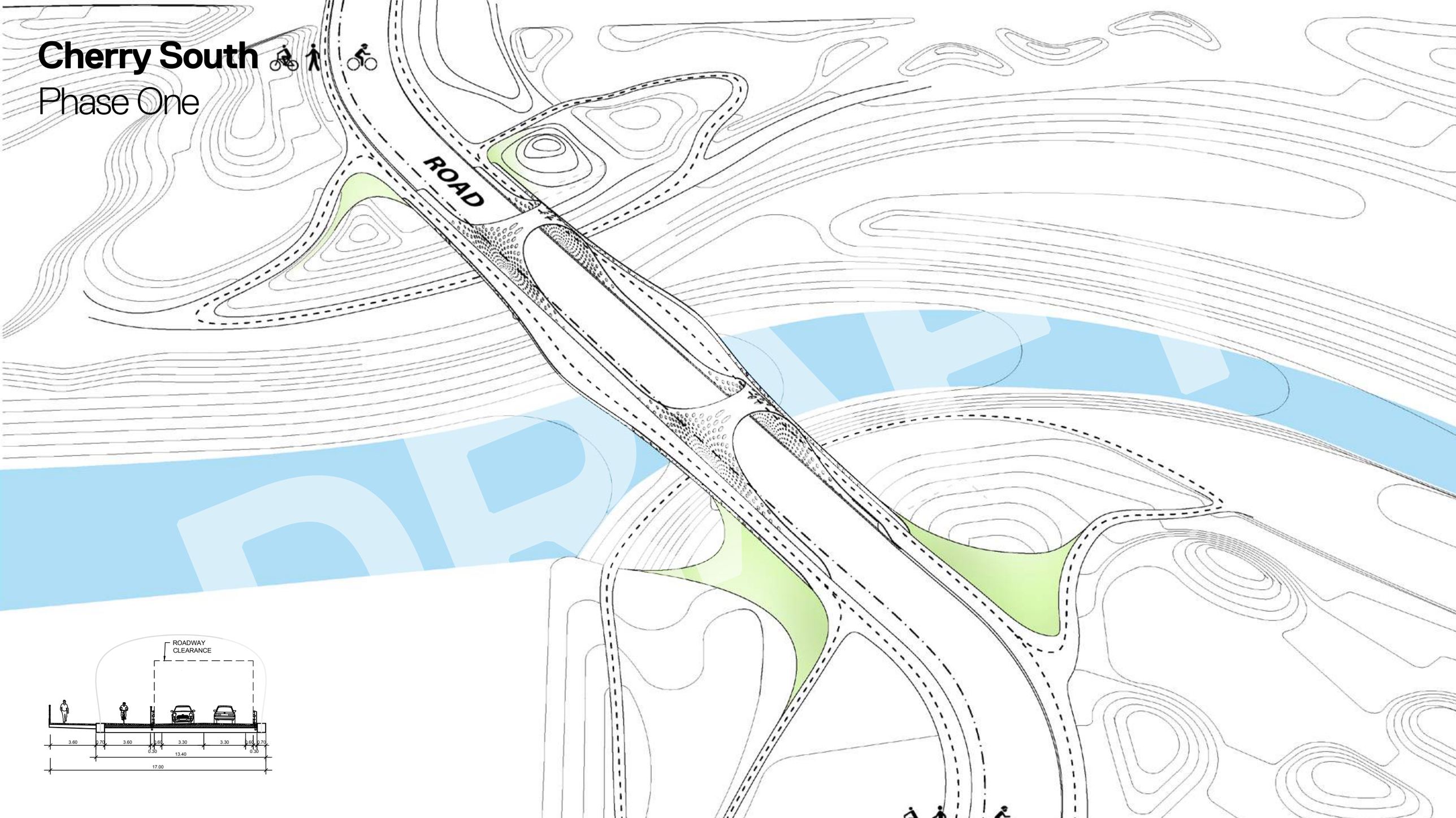
Cherry South

Bike path integration



Cherry South

Phase One



Commissioner

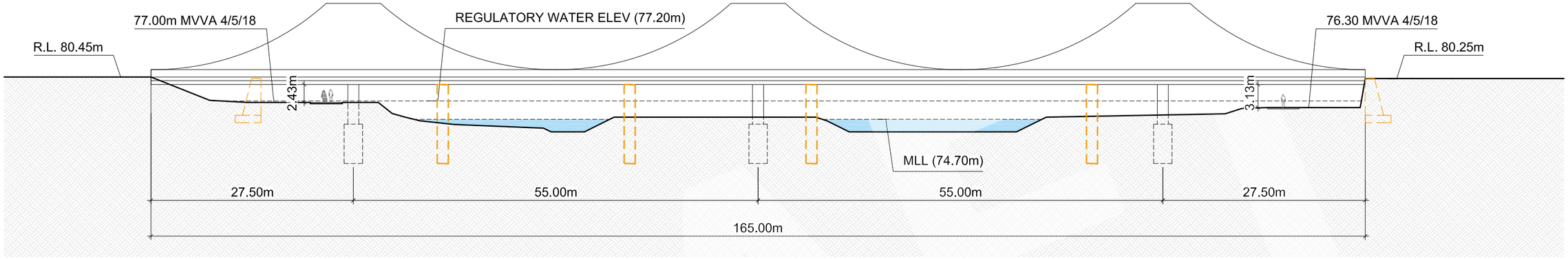
Plan & Elevation

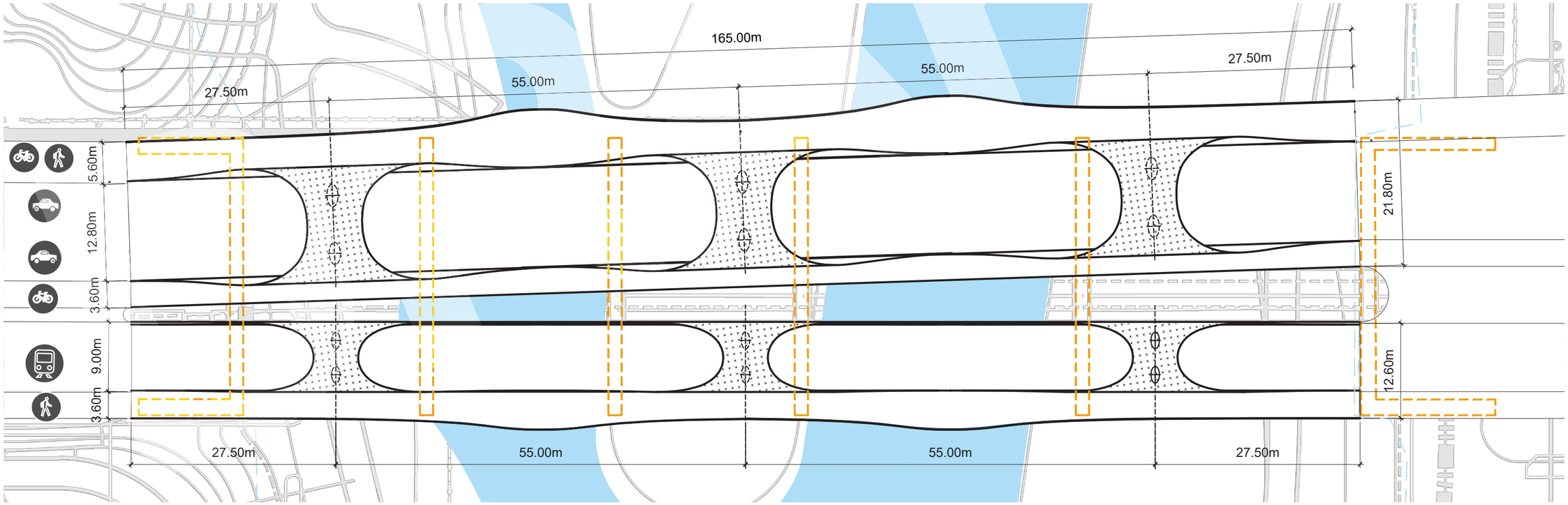
DUE DILIGENCE ABUTMENTS / PIERS

PROPOSED PIER ALIGNMENT

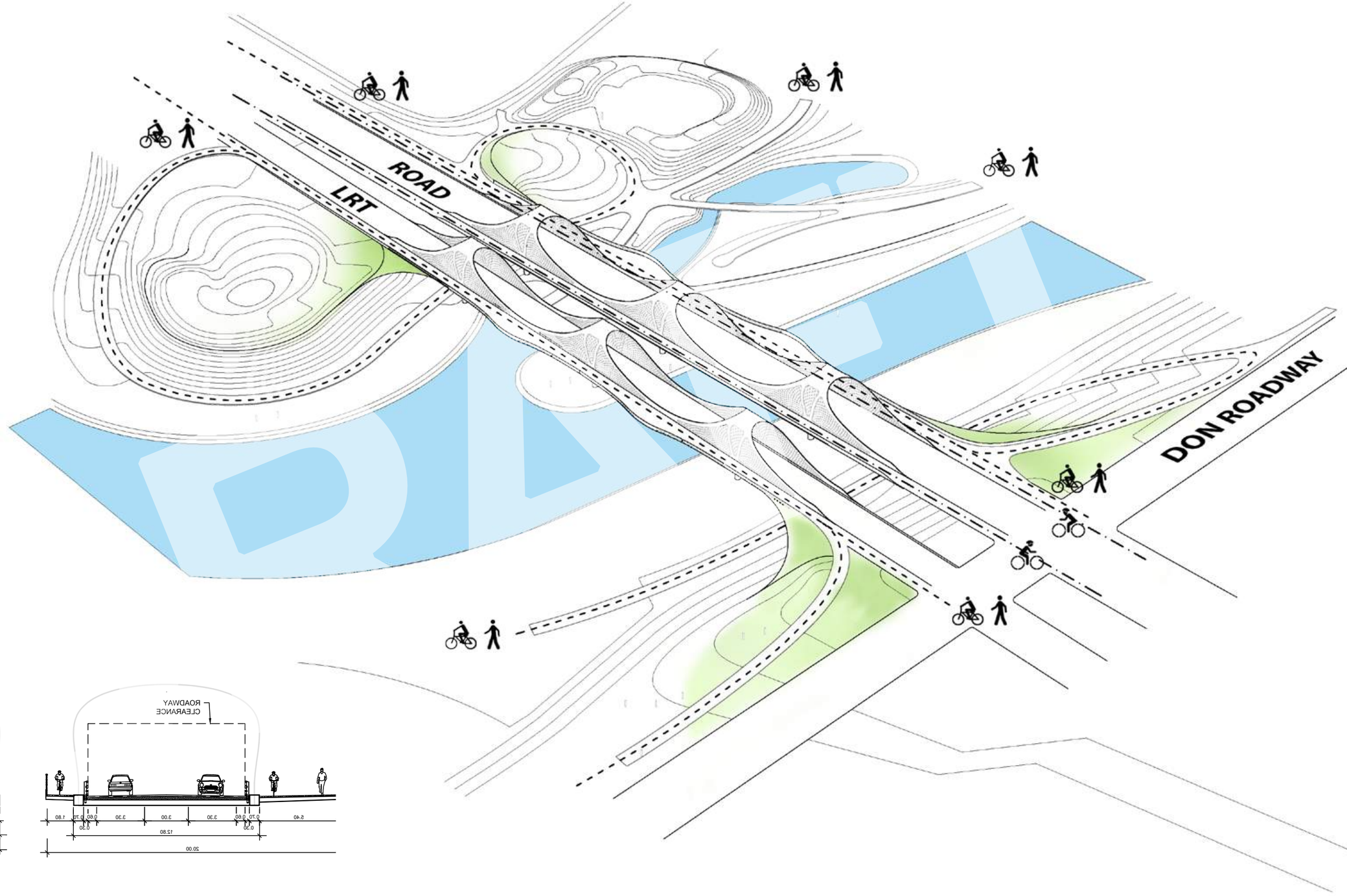
0 1 5 10 20

SCALE: 1/500

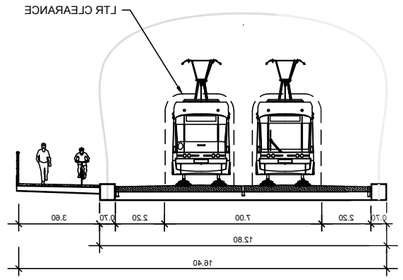




Commissioner
Integration

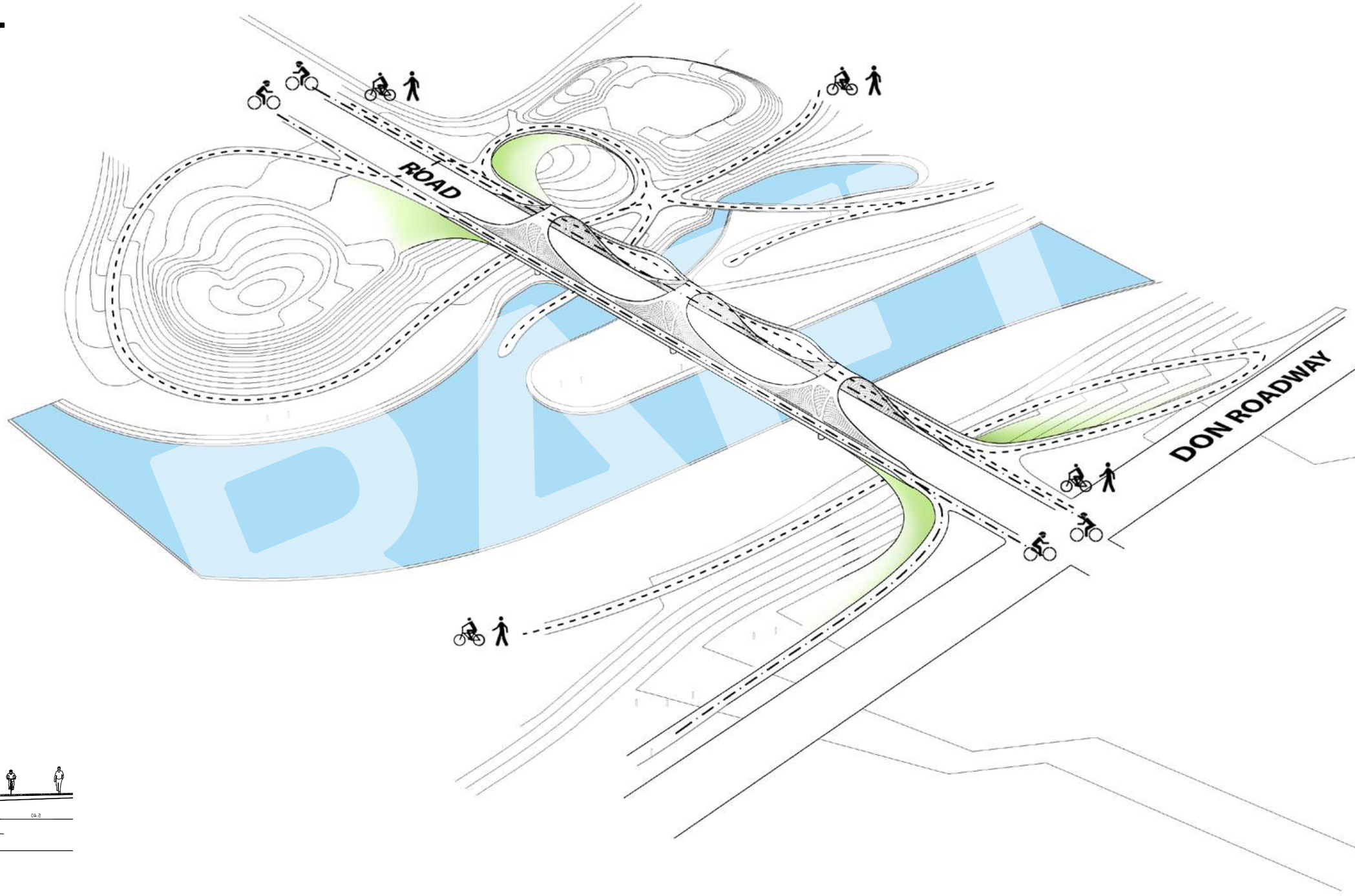


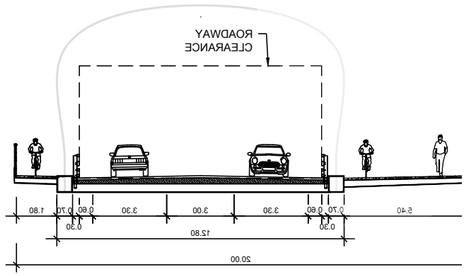
Bike & Landscape
Shared Bike Path and Landscape to be integrated into bridge.



Commissioner

Phase One



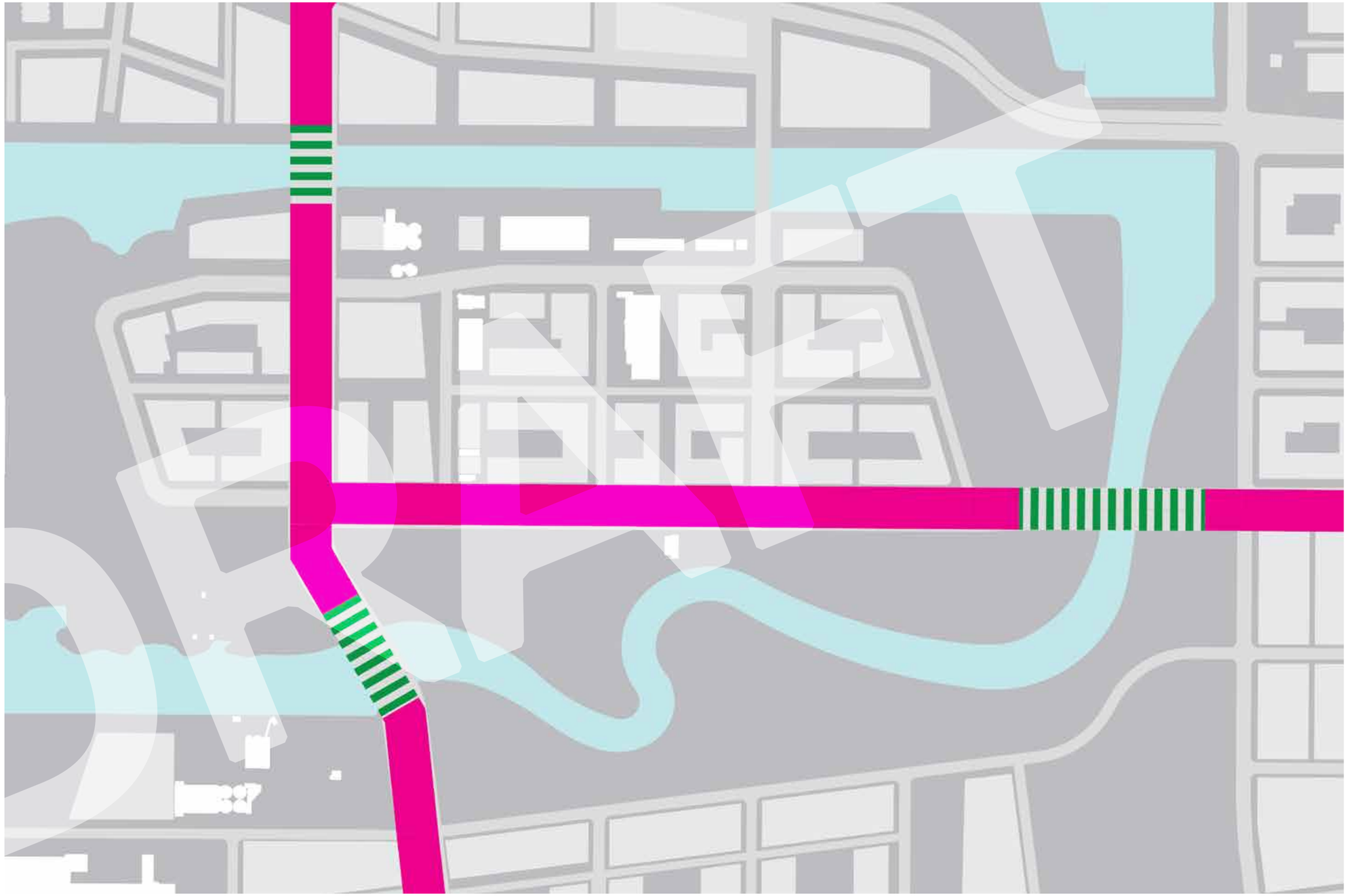


Commissioner

View From South East.

Gateway Bridge

Unifying



Villiers Island With a unified language

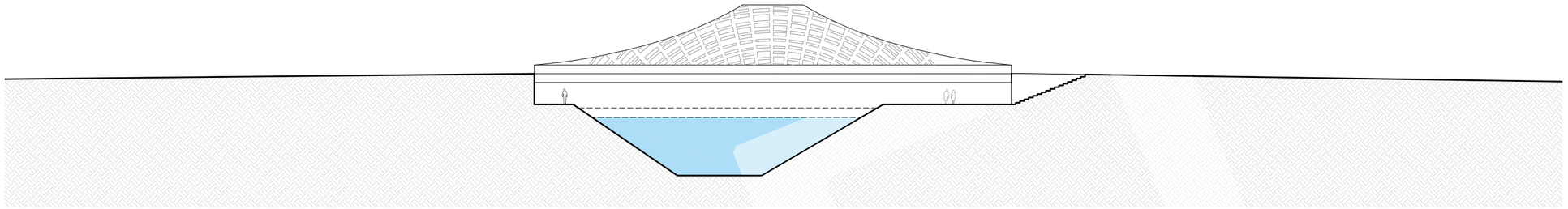
Perforation Patterns

Architectural Studies.

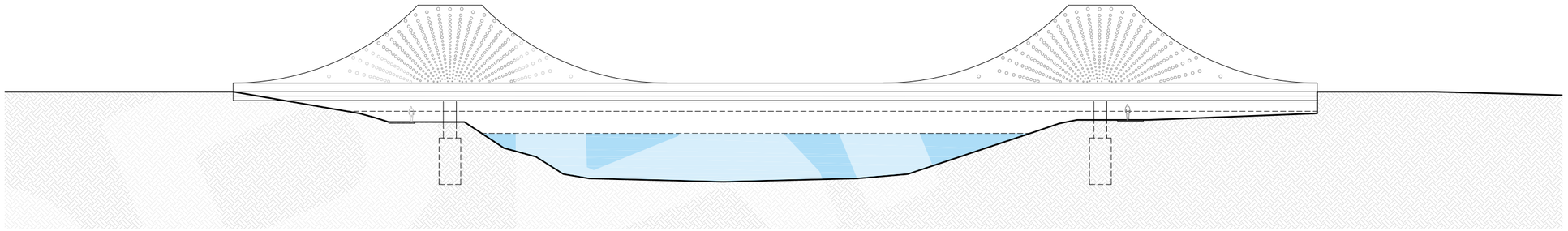
0 1 5 10 20

SCALE: 1/500

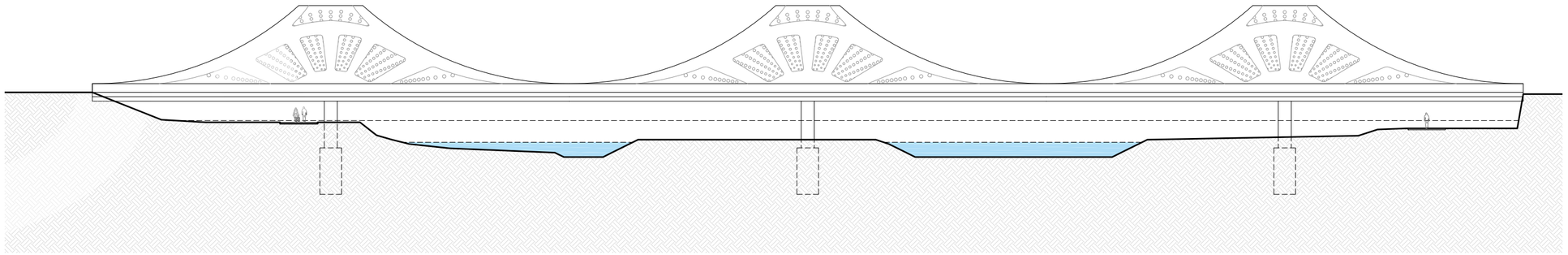
Cherry North Arch Perforation



Cherry South Radial Perforation

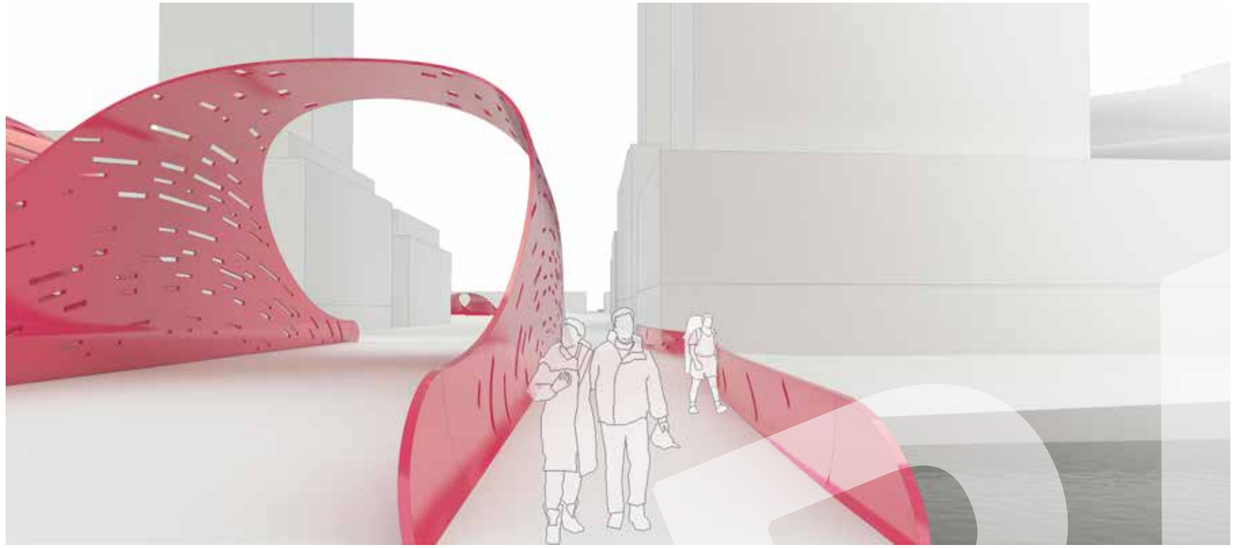


Commissioner Radial Perforation &
Expressed Stiffeners

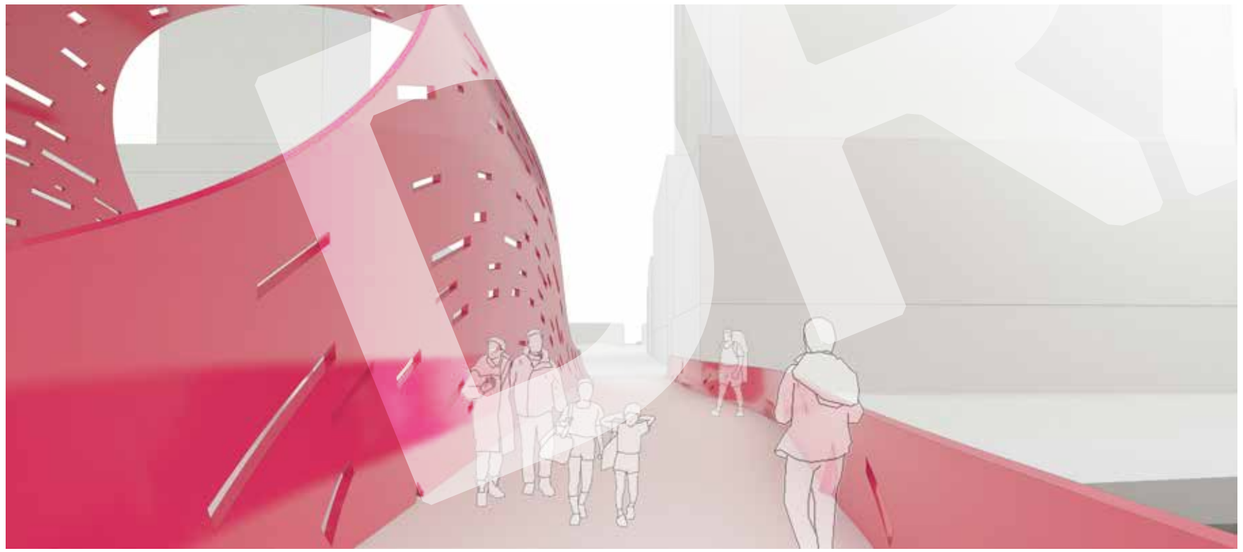


Gateway Bridge

Unifying - View’s down Cherry North.



Cherry North View from
Road Bridge towards
Cherry South Bridge.

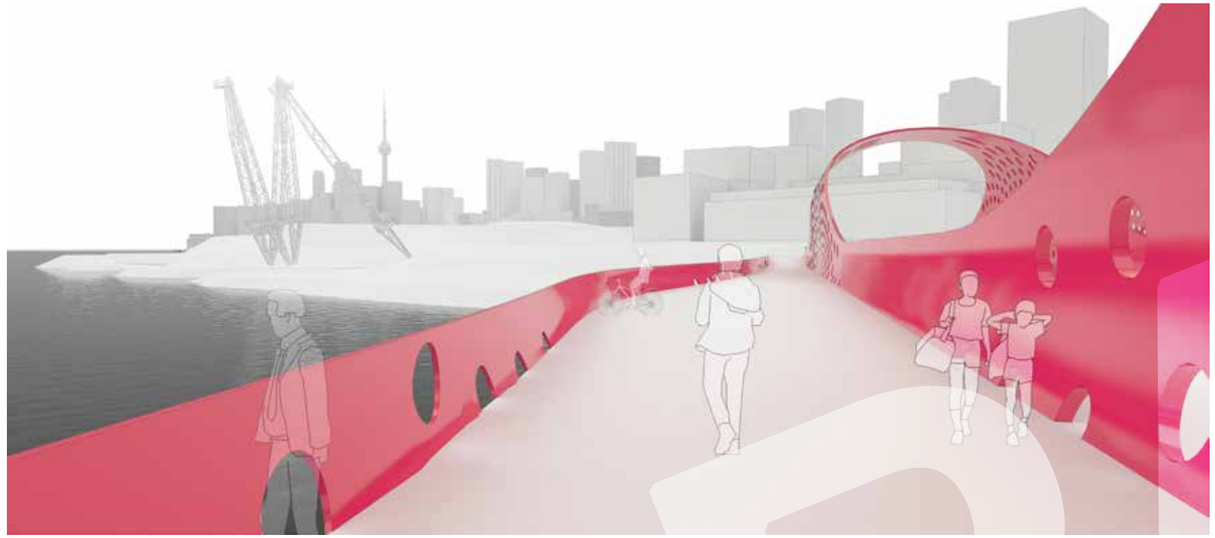


Cherry North View from
Road Bridge towards
Cherry South Bridge.

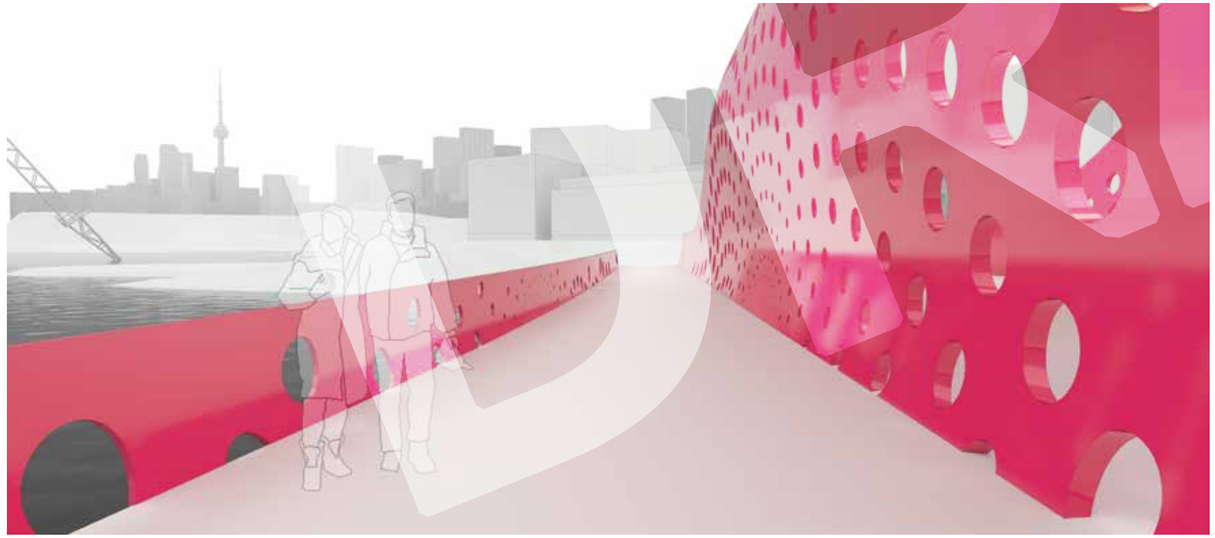
Cherry North View from
LRT bridge towards city.

Gateway Bridge

Unifying - View’s At Cherry South.



Cherry South View from Road Bridge towards City.



Cherry South View from Road Bridge towards City.

Cherry South View from LRT Bridge towards Commissioner Street Bridge

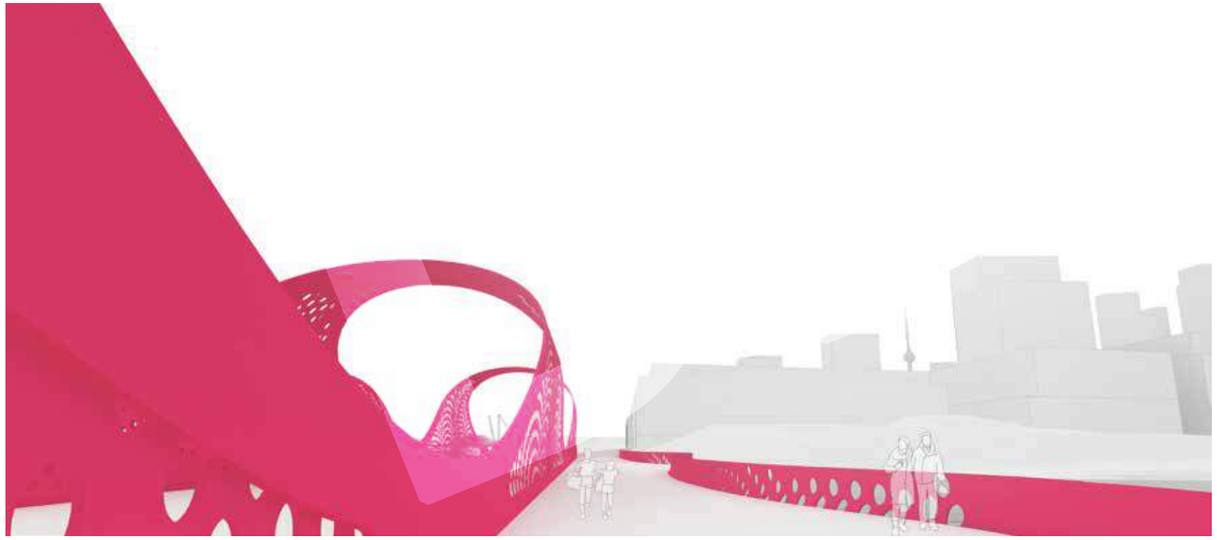
Gateway Bridge

Midspan Respite.

Gateway Bridge

Unifying - View’s at Commissioner Bridge.

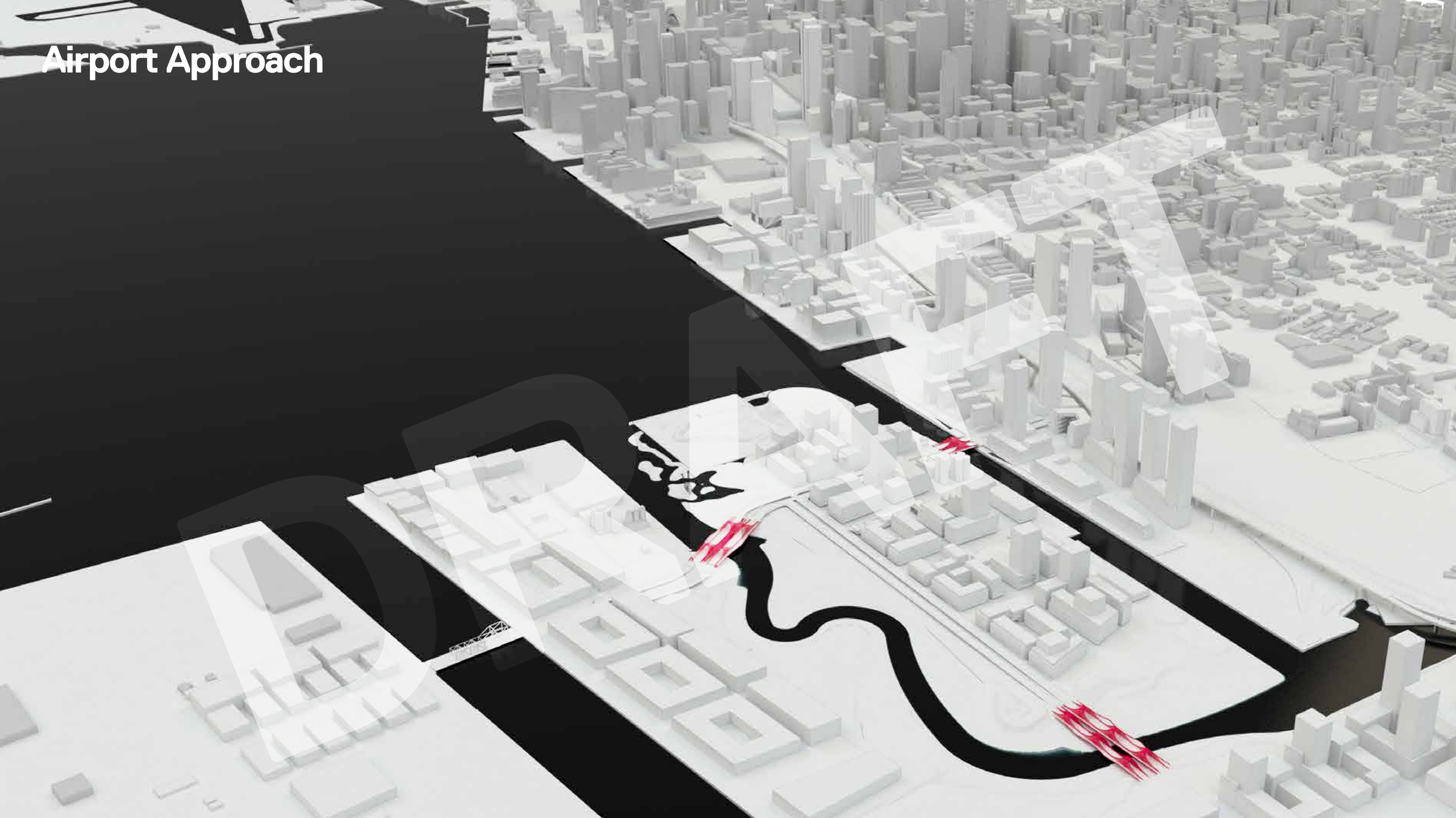
Commissioner View from
LRT Bridge looking east.



Commissioner View from
Road Bridge towards City.

Cherry South View from LRT
Bridge towards Cherry Street

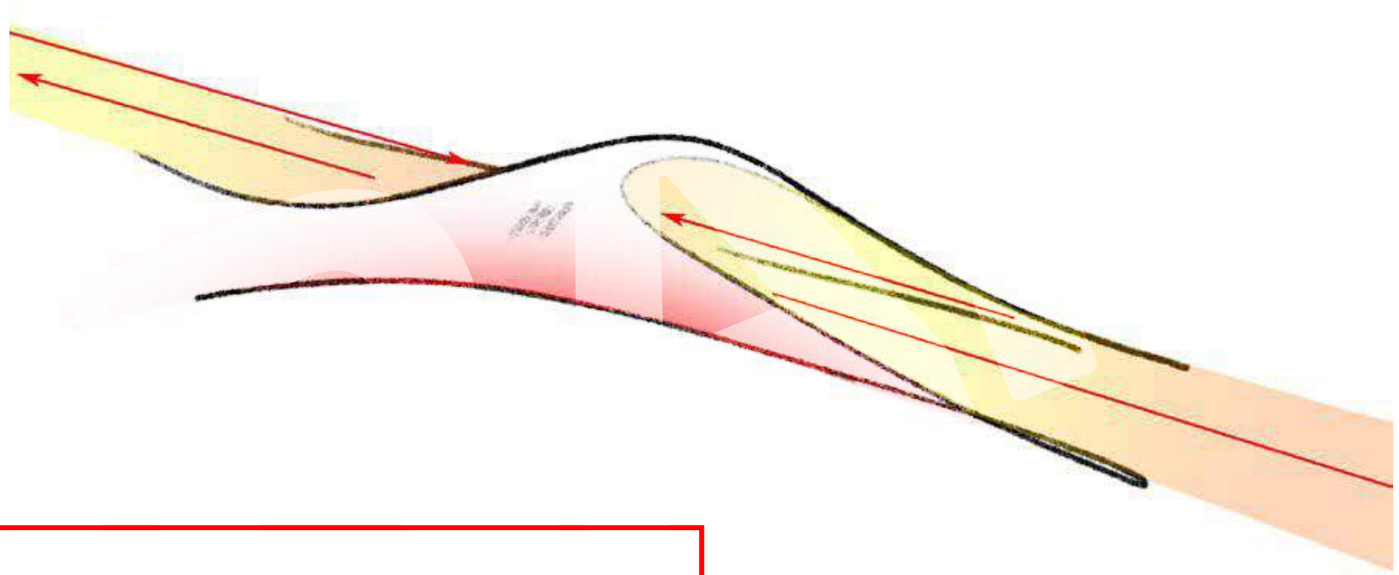
Airport Approach



View from Ferry

CONNECTED LIGHT

How can the lighting make the bridge experience better? How can lighting connect to the pedestrian in a meaningful way, not only to beautify but also to inform or make the experience more efficient?



CONNECTIONS

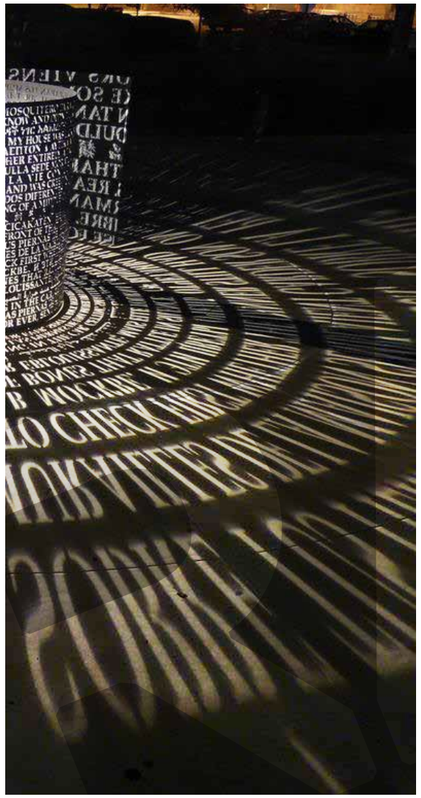
Water flow
Vehicular movement
Weather
Preference of the Occupants

Community Activities
Global Events
Bridge Usage and Activity
Seasons

Lighting Considerations

MBL

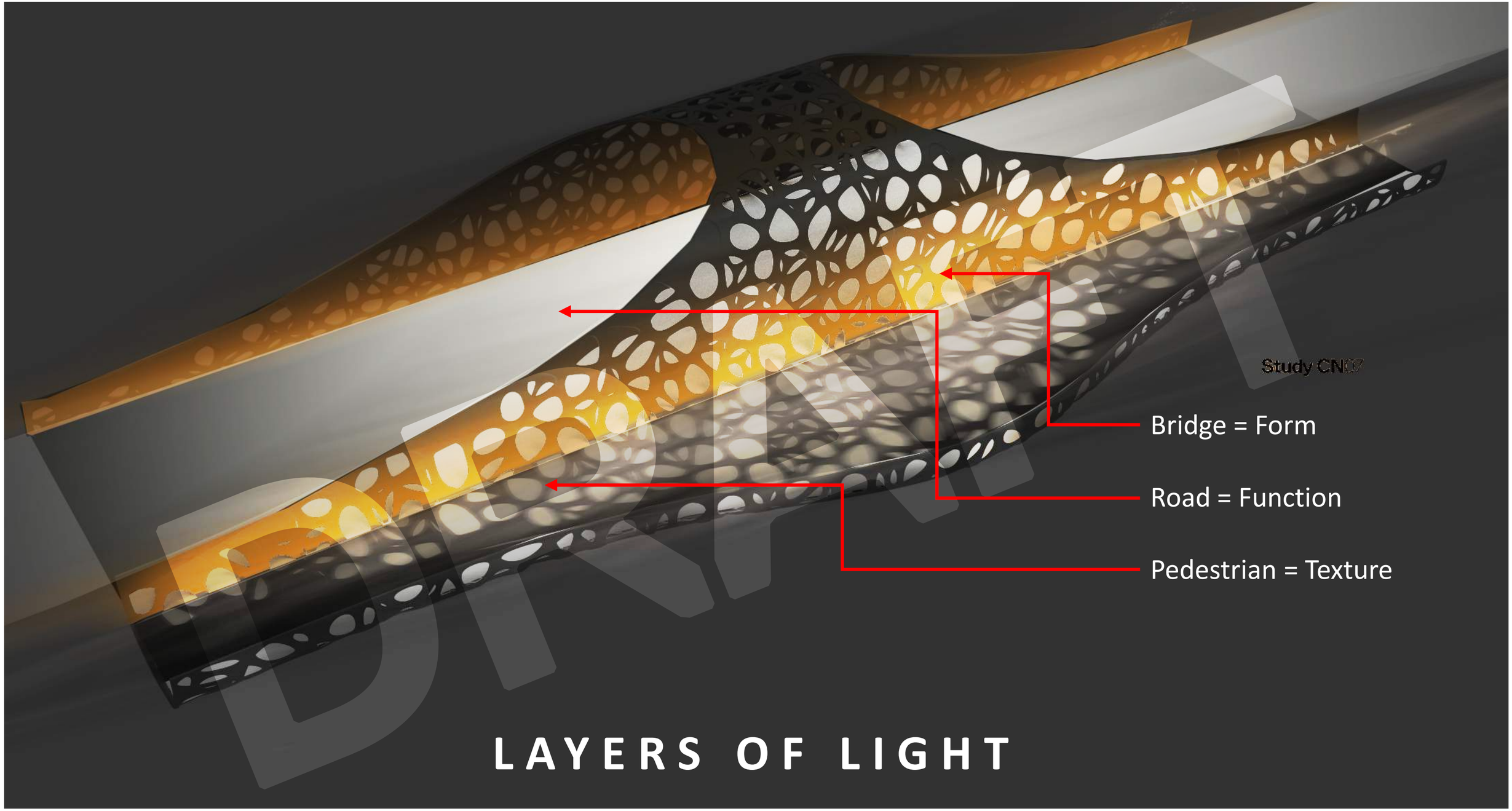
Soft Light



Hard Light

Hard Reflections

Soft Reflections



LAYERS OF LIGHT


DRAFT
Thank
You—