

LANDMARK PRESERVATION COMMISSION
FINAL DESIGN SUBMISSION

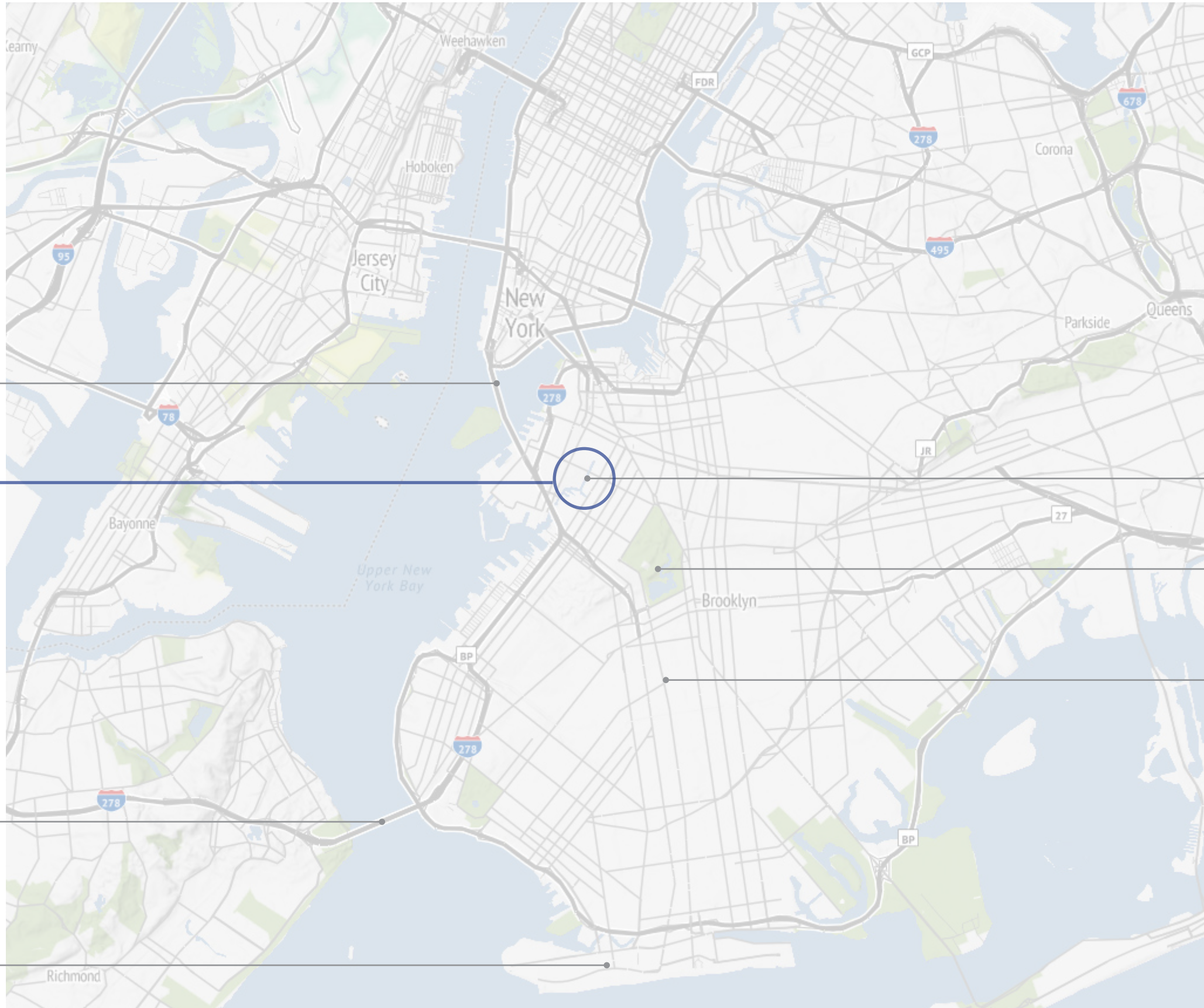
**REHABILITATION OF
CARROLL STREET BRIDGE
EAST ABUTMENT**

NYCDOT

H&H

09/2024





HUGH L CAREY TUNNEL

PROJECT LOCATION

GOWANUS CANAL

PROSPECT PARK

BROOKLYN COLLEGE

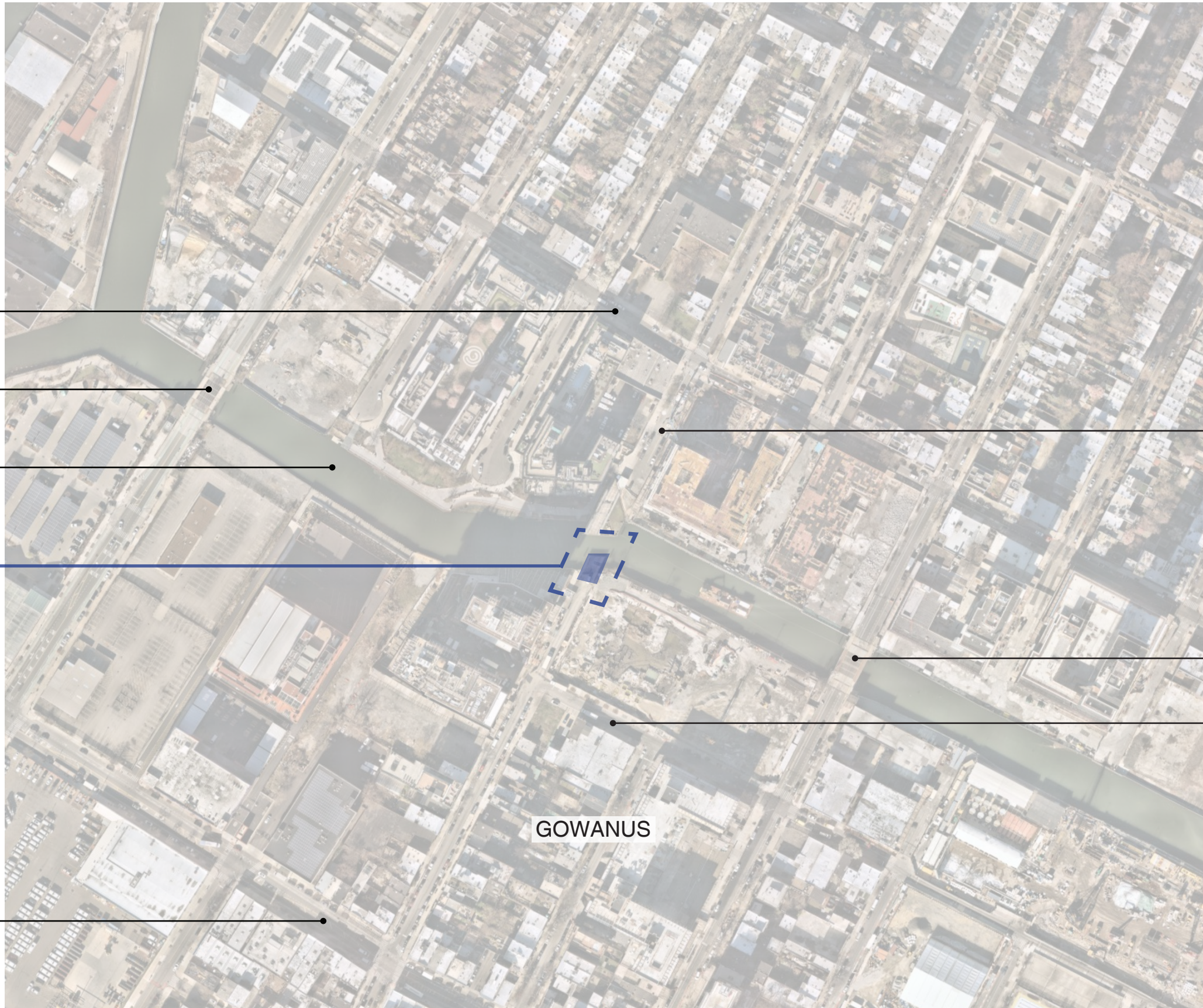
VERRAZZANO BRIDGE

CONEY ISLAND



**CARROLL STREET BRIDGE
EAST ABUTMENT REHABILITATION**
09/2024

BOROUGH PLAN
SCALE: NTS



BOND STREET

3RD STREET BRIDGE

GOWANUS CANAL

PROJECT LIMITS

3RD AVE

CARROLL STREET

UNION STREET BRIDGE

NEVINS STREET

GOWANUS

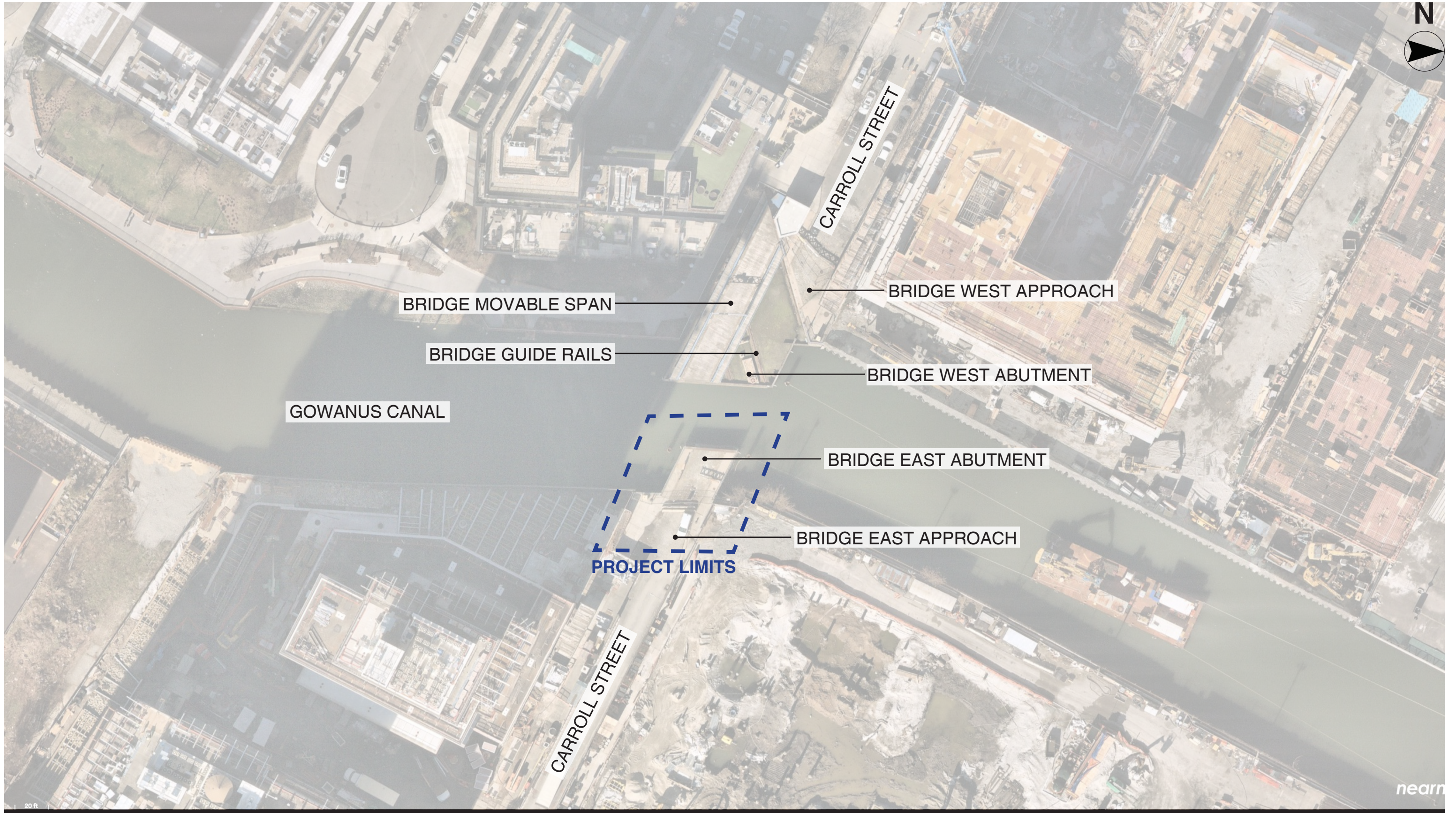


CARROLL STREET BRIDGE EAST ABUTMENT REHABILITATION

09/2024

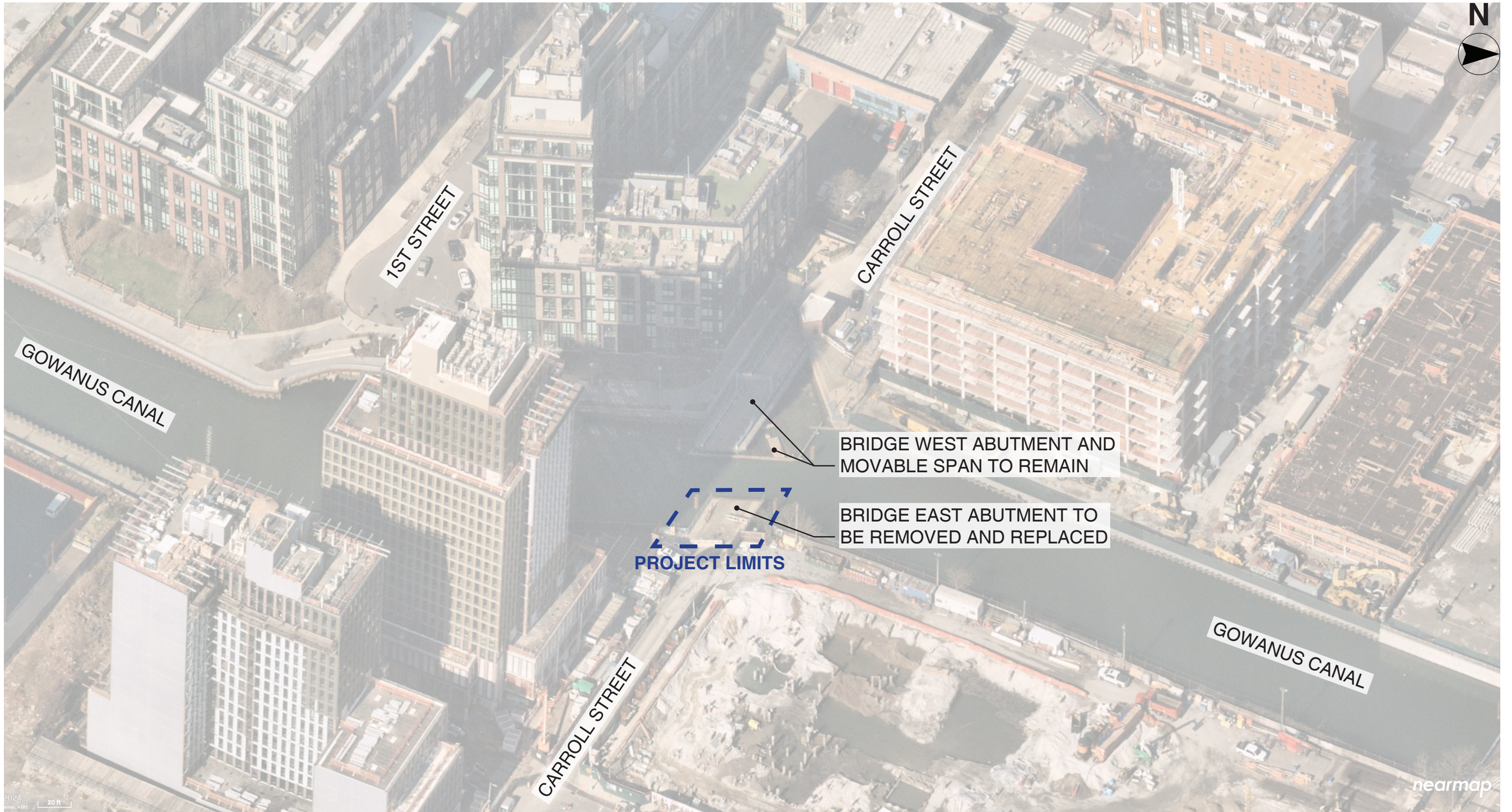
NEIGHBORHOOD PLAN

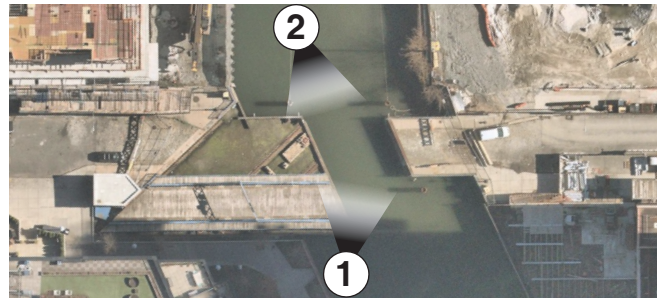
SCALE: NTS



**CARROLL STREET BRIDGE
EAST ABUTMENT REHABILITATION**
09/2024

**SITE PLAN
SCALE: NTS**

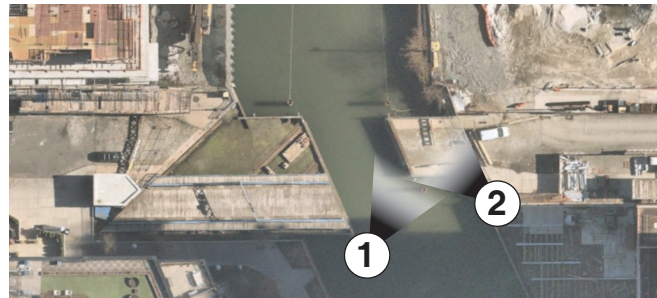




① CARROLL ST BRIDGE VIEW
LOOKING NORTHEAST
*PHOTO OF BRIDGE SOUTH ELEVATION
FROM GOWANUS CANAL*



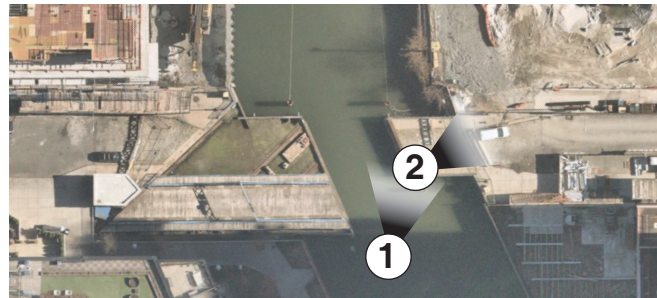
② CARROLL ST BRIDGE VIEW
LOOKING SOUTH
*PHOTO OF BRIDGE NORTH ELEVATION
FROM GOWANUS CANAL*



① EAST ABUTMENT VIEW
LOOKING EAST
PHOTO OF EXISTING TIMBER BULKHEAD



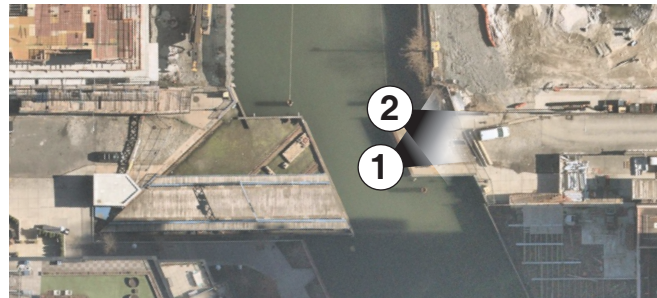
② EAST ABUTMENT VIEW
LOOKING NORTHEAST
*PHOTO OF EXISTING WINGWALL,
TIMBER CRIBBING, AND RAILING*



① EAST ABUTMENT VIEW
LOOKING NORTHEAST
PHOTO OF EXISTING TIMBER CRIBBING



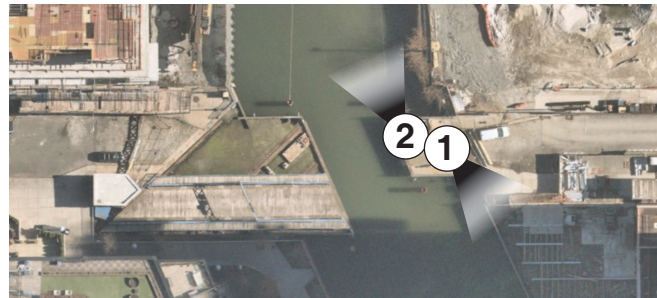
② EAST ABUTMENT VIEW
LOOKING EAST
PHOTO OF EXISTING BARRIER GATE



① EAST ABUTMENT VIEW
LOOKING EAST
*PHOTO OF EXISTING BARRIER GATE
AND NORTH SIDEWALK*



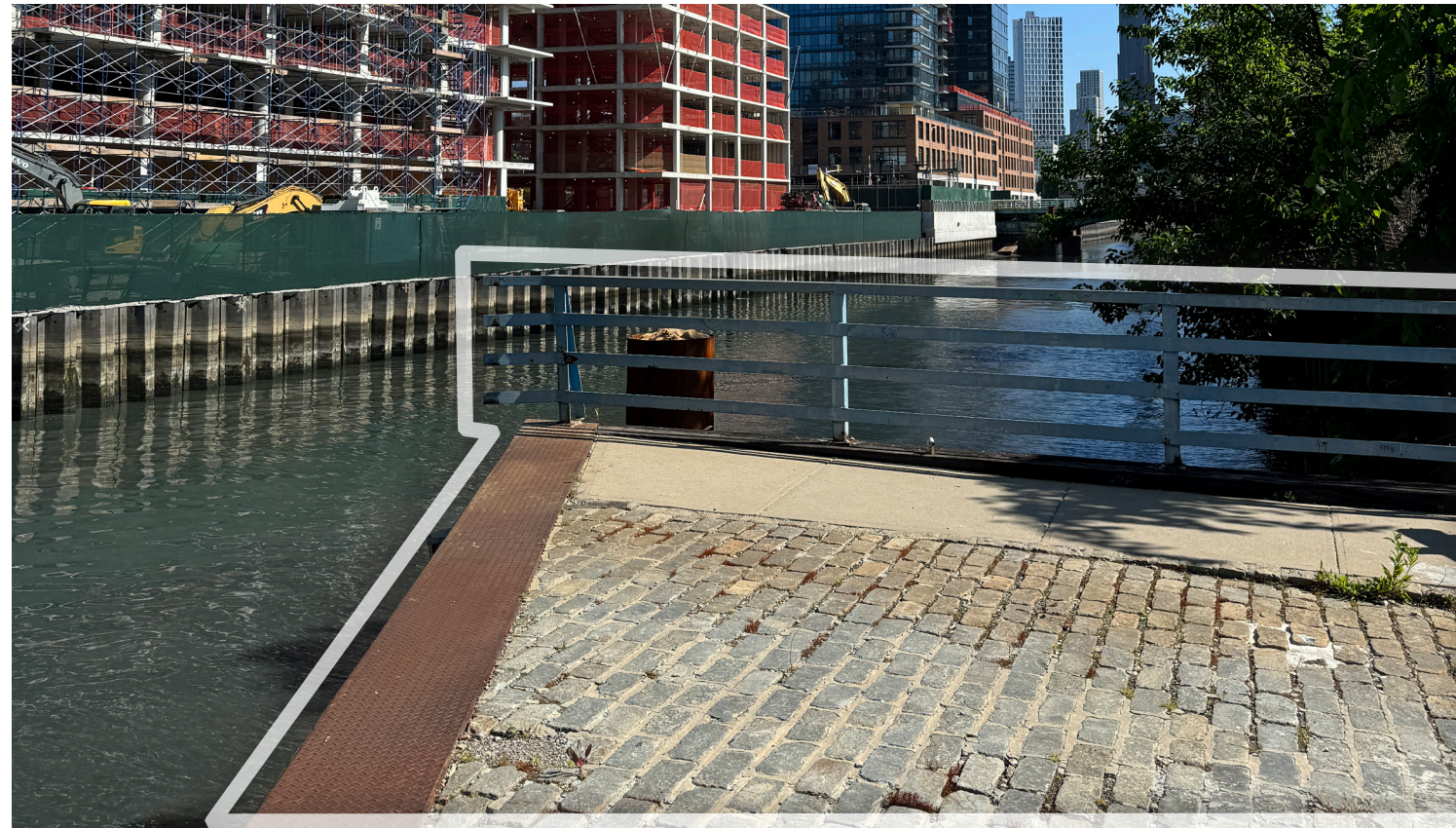
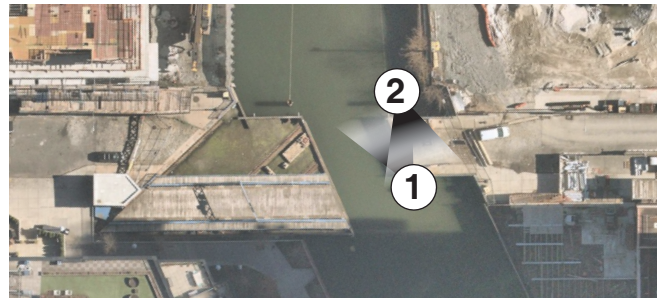
② EAST ABUTMENT VIEW
LOOKING SOUTHEAST
*PHOTO OF EXISTING BARRIER GATE
AND STONE PAVERS*



① EAST ABUTMENT VIEW
LOOKING SOUTH
*PHOTO OF EXISTING SOUTH SIDEWALK,
RAILING, AND CURB*



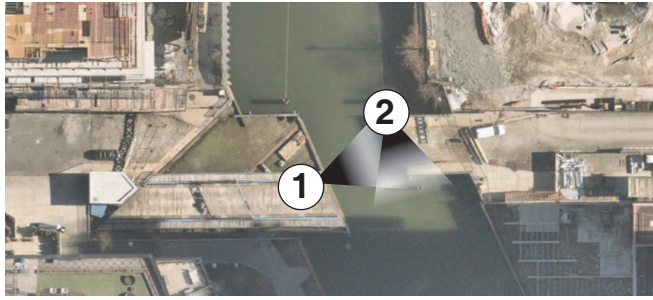
② EAST ABUTMENT VIEW
LOOKING NORTH
PHOTO OF EXISTING RAILING



① EAST ABUTMENT VIEW
LOOKING NORTH
*PHOTO OF EXISTING STONE PAVERS,
NORTH SIDEWALK, BRIDGE PLATE,
AND RAILING*



② EAST ABUTMENT VIEW
LOOKING SOUTH
*PHOTO OF EXISTING STONE PAVERS
AND SOUTH SIDEWALK*



What is the reason for the East Abutment rehabilitation?

The original Carroll Street Bridge constructed in the 1880s is a historical landmark in the City of New York and one of the last operable retractile bridges within city limits and spans over the Gowanus Canal. In 2022, during an on-going EPA Superfund contract to clean the Gowanus Canal, the Contractor was installing steel pipe piles around the perimeter of the timber east abutment structure. As a result of the pipe pile installation, the timber cribbing began to settle vertically and horizontally towards the navigation channel. As a result, the retractile span can no longer extend to its closed position and properly meet up with the east abutment structure. The east abutment structure must be replaced in order to restore function of the bridge and for the roadway to be reopened.

Structural options:

While developing options for the east abutment replacement, the design criteria was set to ensure a minimum 50-year design life as per standard protocol for bridge rehabilitations. The effective service life of timber marine structures have been decreasing over time, primarily based on the limitation of treatments that can be used. Creosote and other materials that were once widely used to ensure longevity of these structures is no longer acceptable for environmental reasons, thus making a useful service life of timber much too short for it to be a practical material as the primary structural elements. As such, we are modifying the structure to utilize steel and concrete, which will be able to achieve the designated service life, while a timber façade will maintain the aesthetic of the original approach structure.

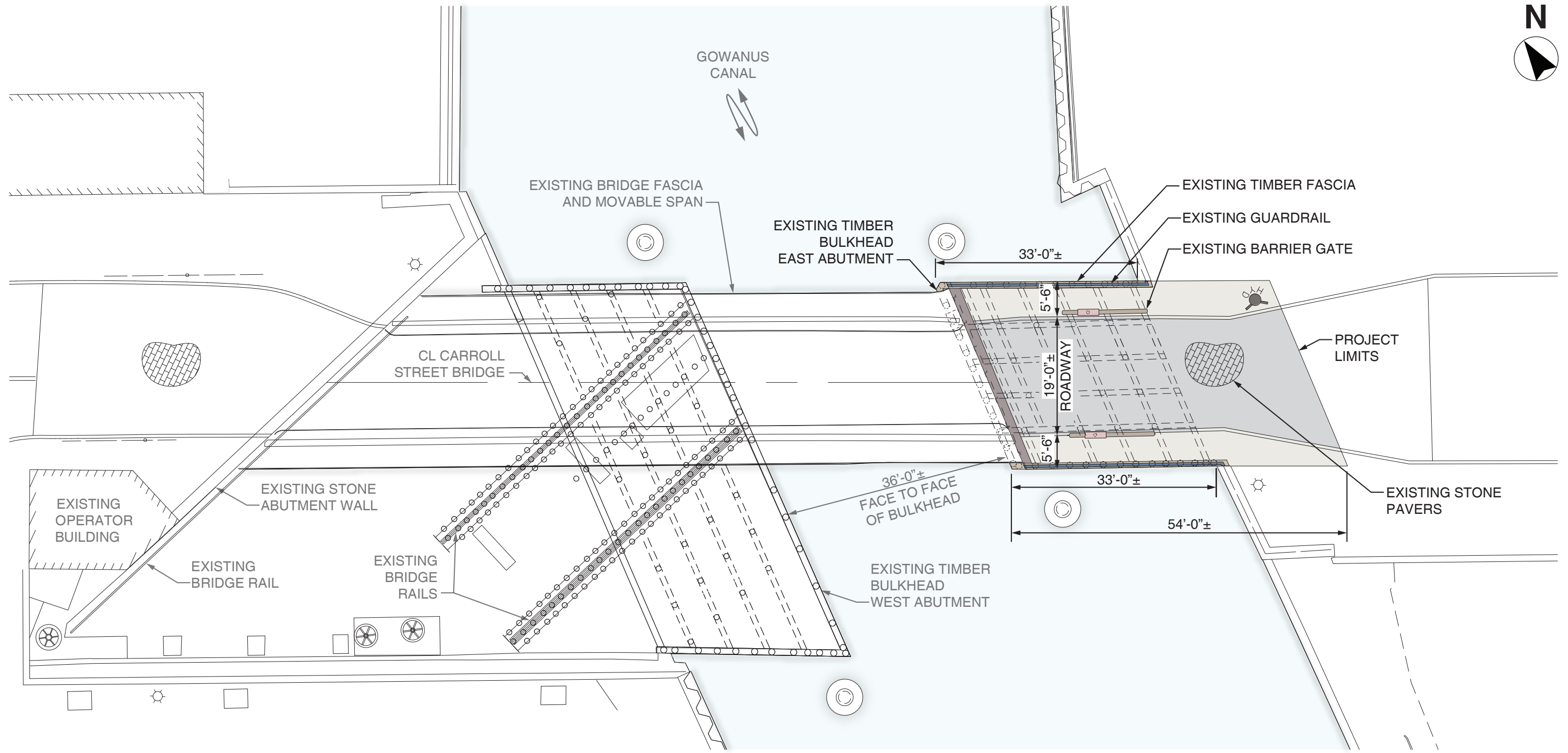


① SOUTH BRIDGE SEAT VIEW AT EAST ABUTMENT
PHOTO OF CRIBBING SETTLEMENT TAKEN AT BRIDGE SEAT



② FRONT VIEW OF EAST ABUTMENT
PHOTO OF CRIBBING SETTLEMENT AT EAST ABUTMENT WEST FACE



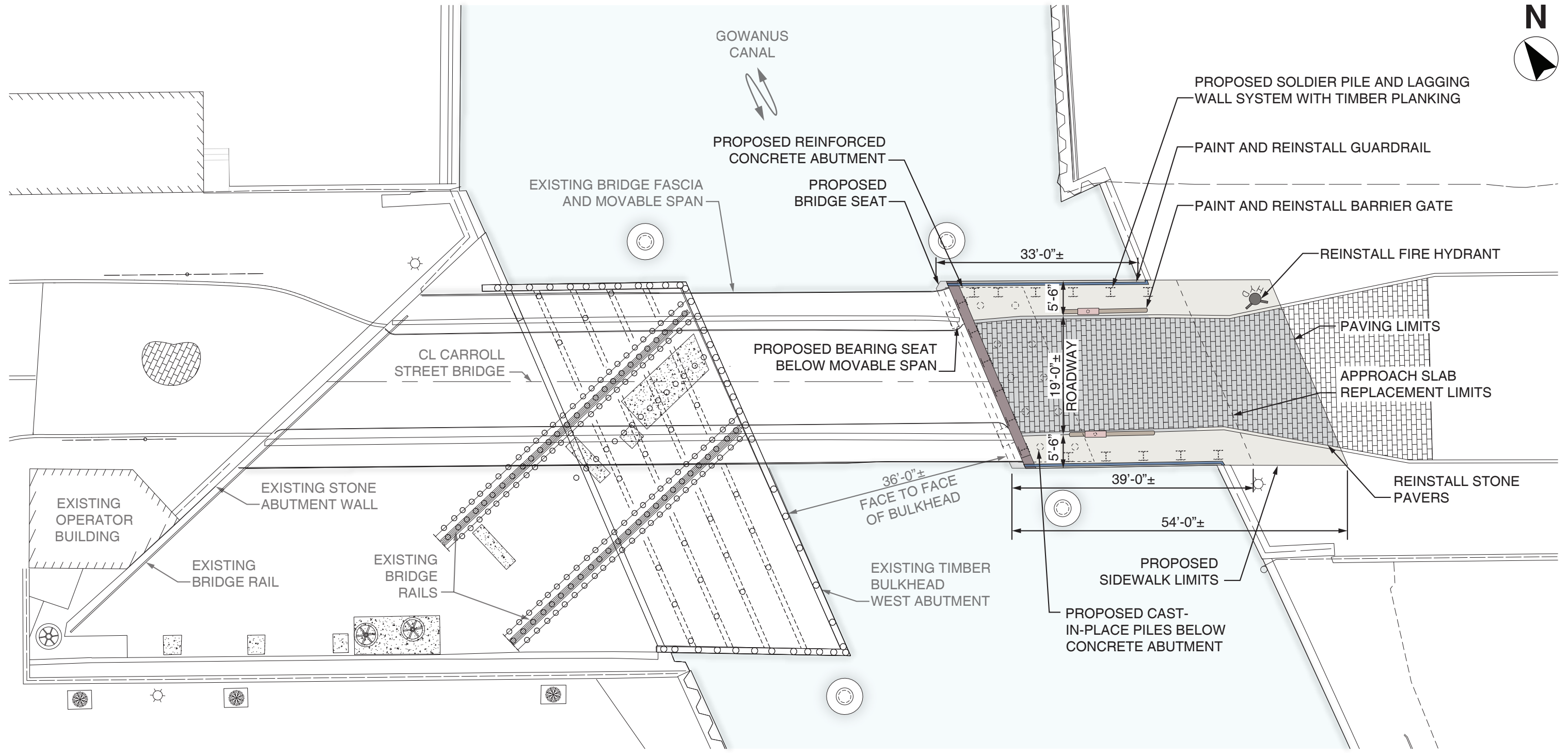


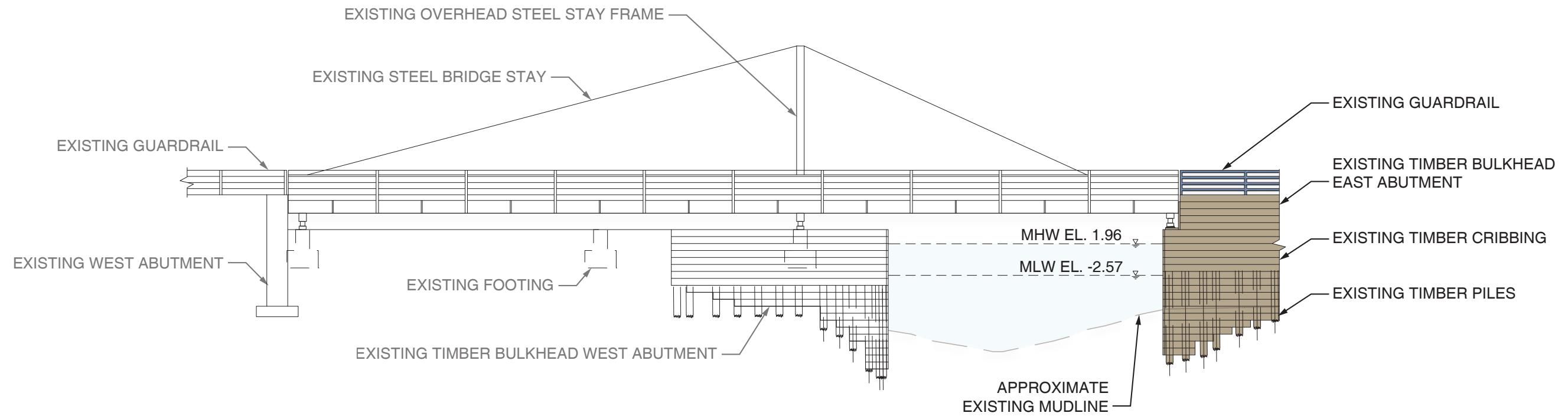
EXISTING CARROLL STREET BRIDGE PLAN



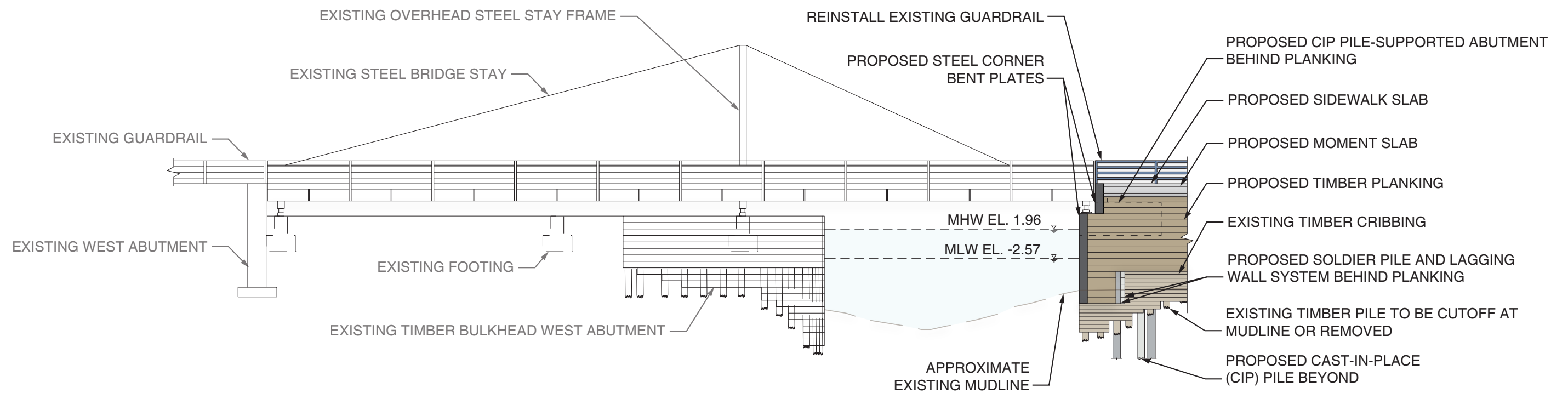
**CARROLL STREET BRIDGE
EAST ABUTMENT REHABILITATION**
09/2024

EXISTING PLAN
SCALE: 1/16"=1'-0"

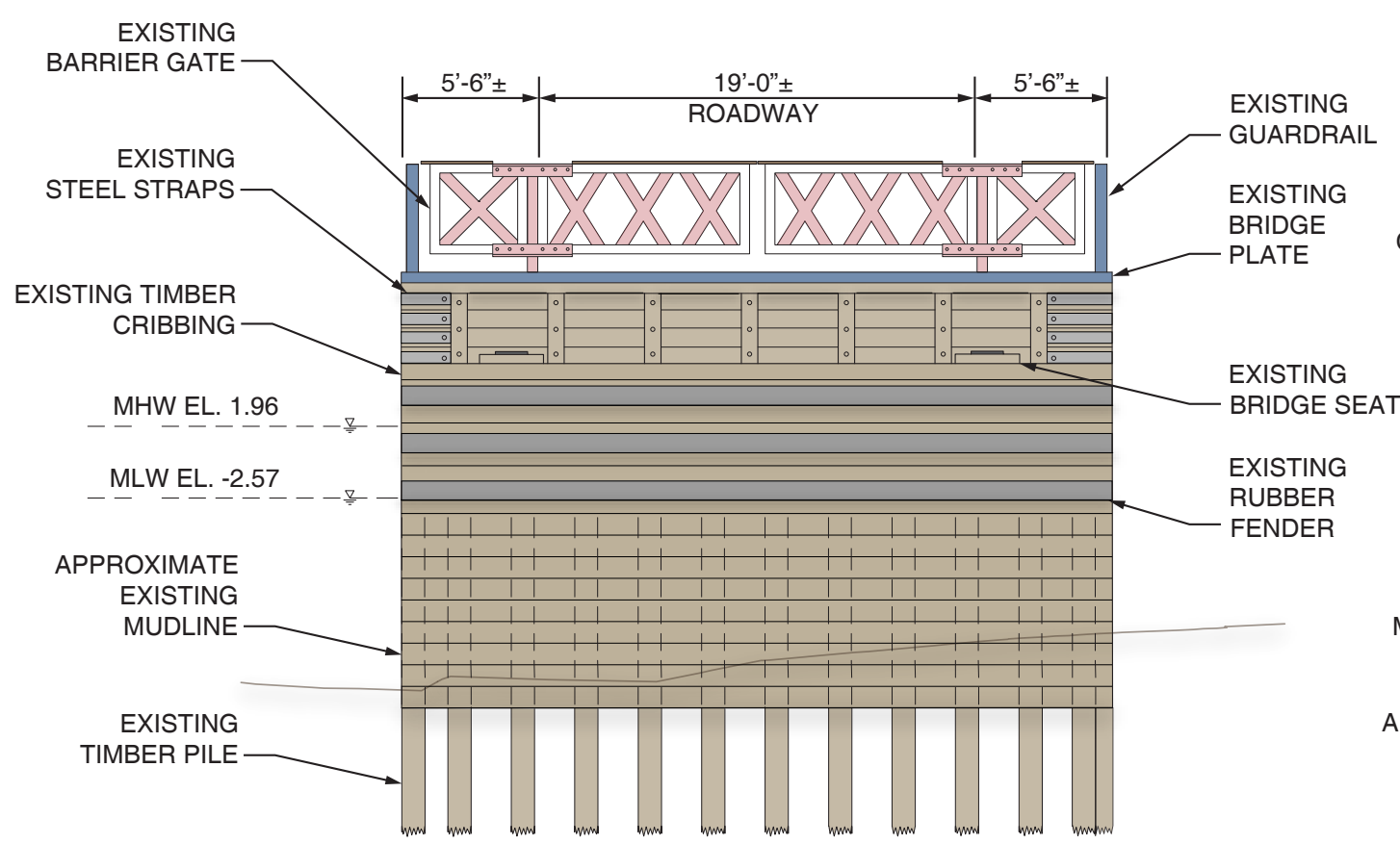




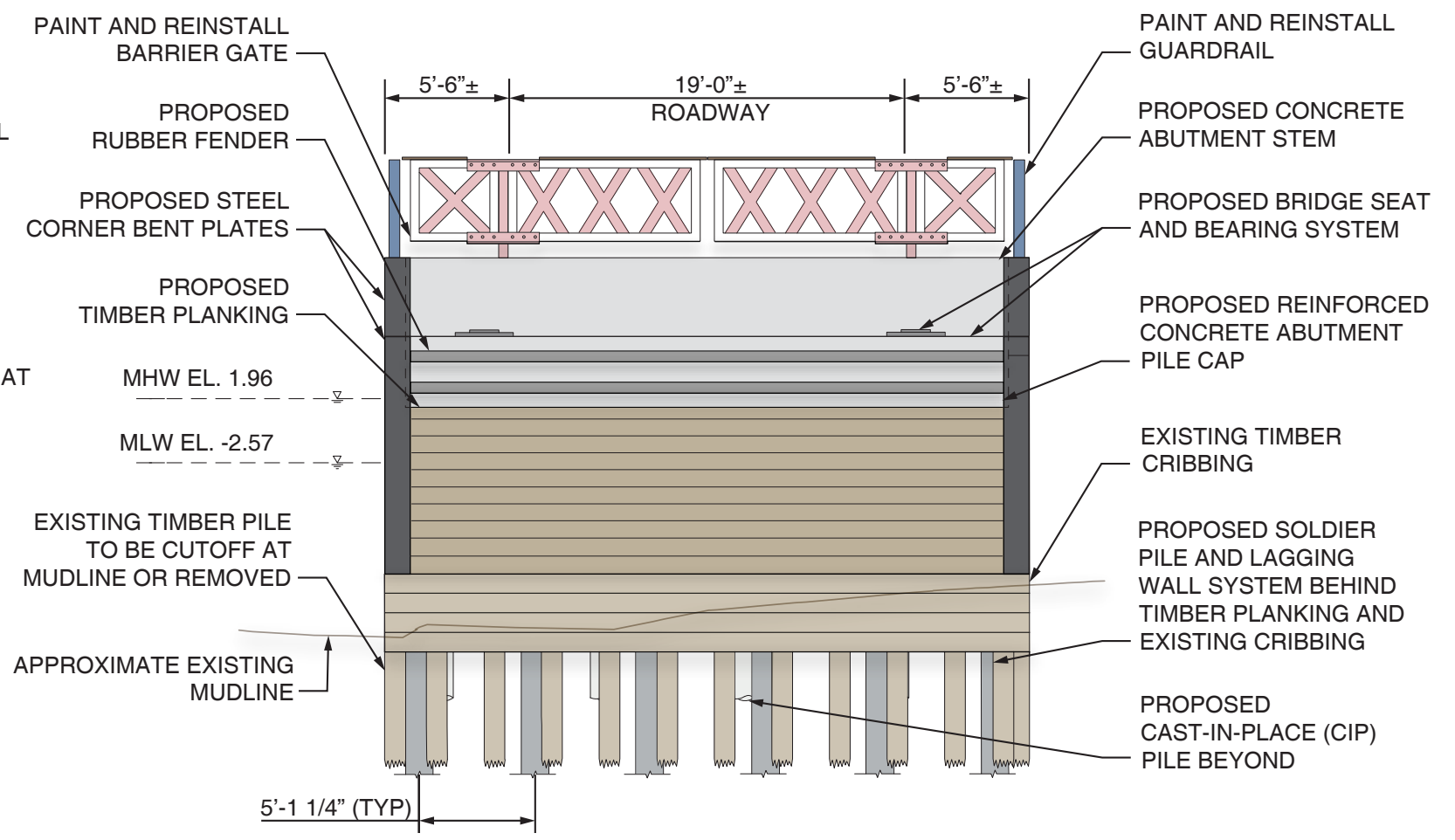
EXISTING CARROLL STREET BRIDGE ELEVATION



PROPOSED CARROLL STREET BRIDGE ELEVATION



EXISTING EAST ABUTMENT ELEVATION

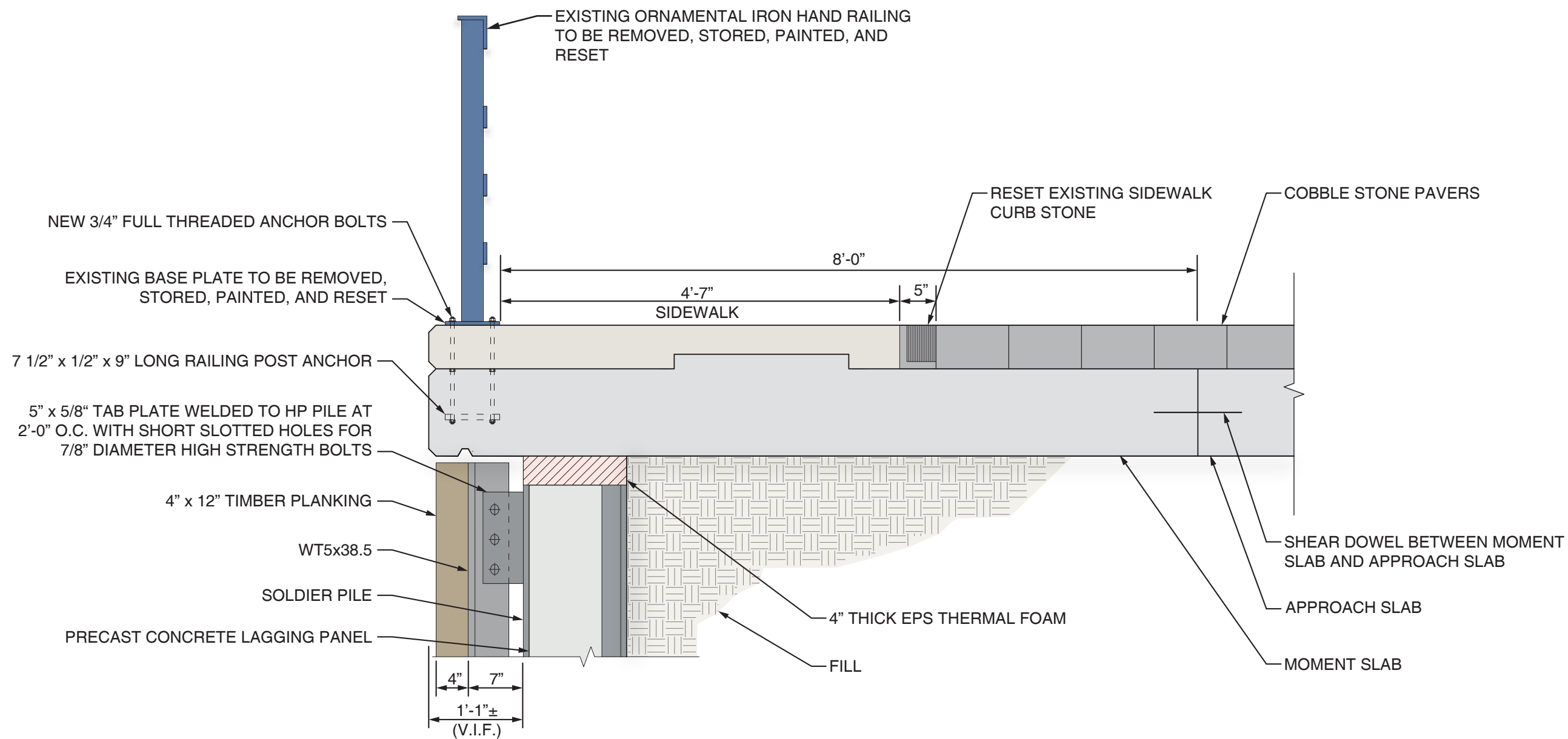


PROPOSED EAST ABUTMENT ELEVATION

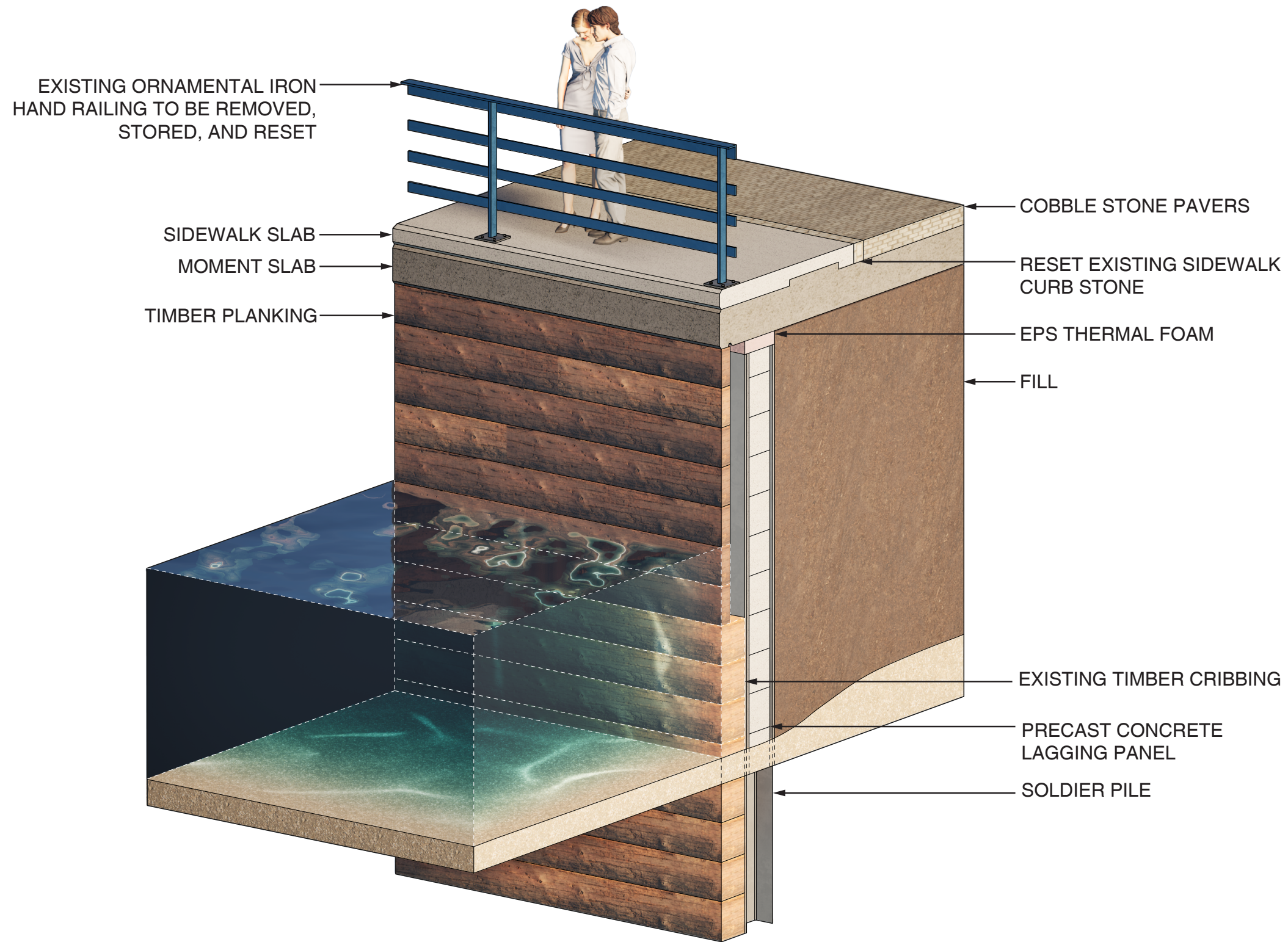


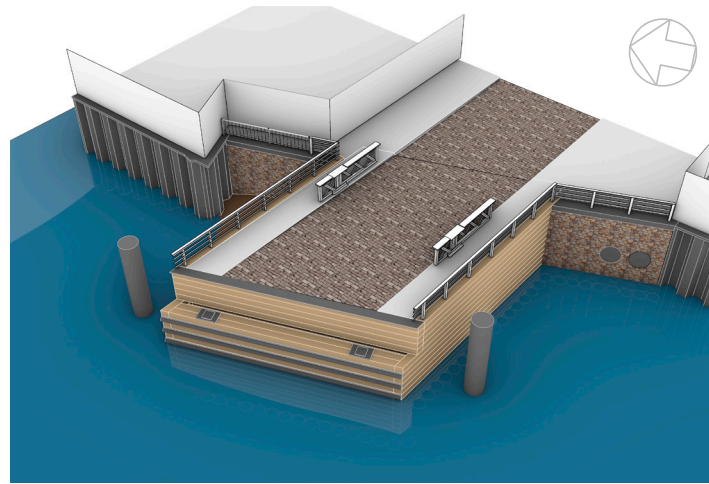
**CARROLL STREET BRIDGE
EAST ABUTMENT REHABILITATION**
09/2024

ABUTMENT ELEVATIONS
SCALE: 1/8"=1'-0"

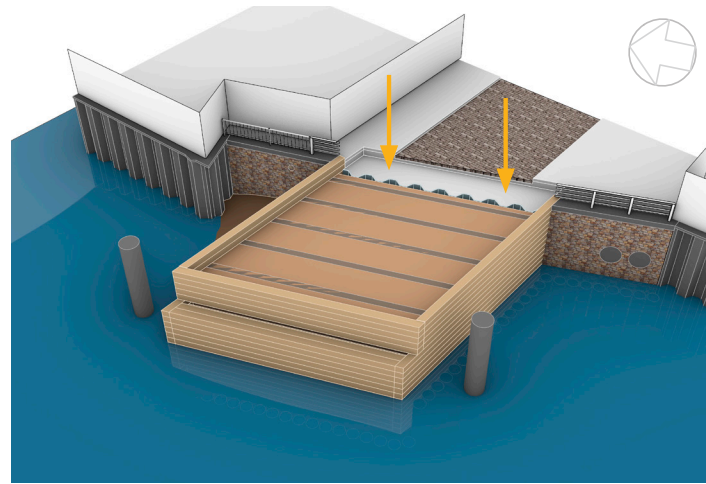


PROPOSED CARROLL STREET MOMENT SLAB SECTION

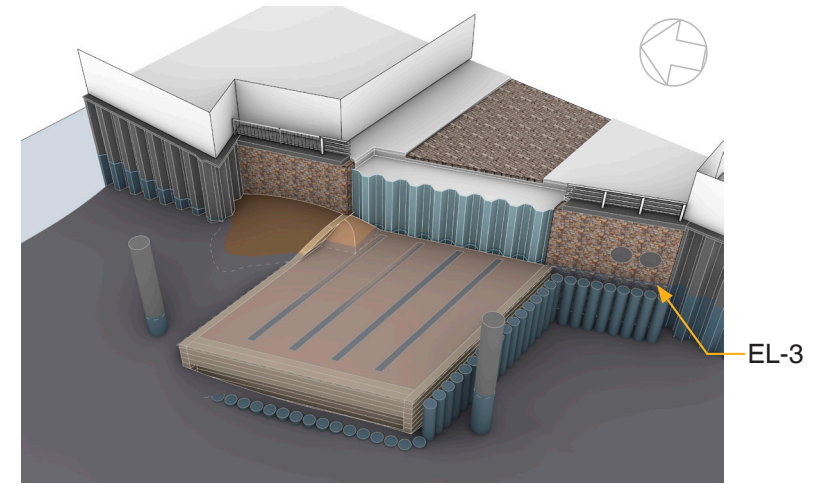




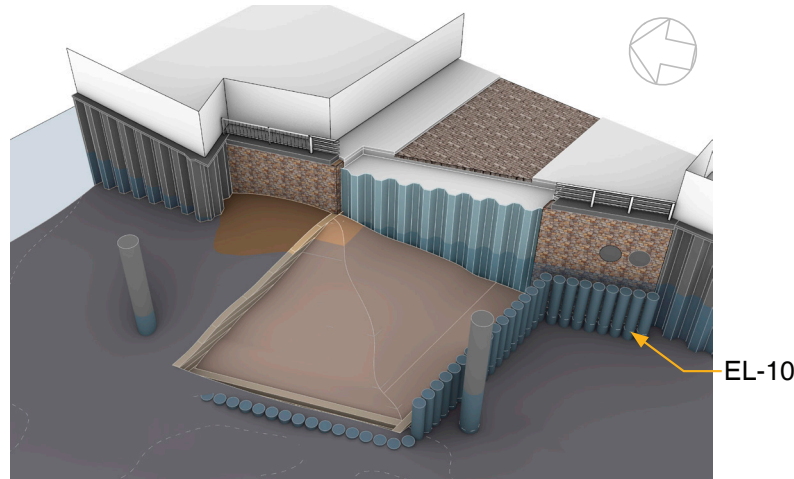
1- Existing Condition



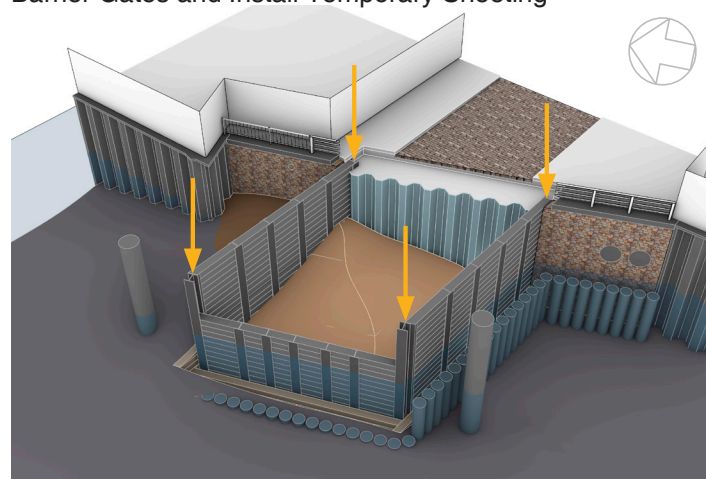
2- Remove Stone Pavement, Sidewalks, Railings, and Barrier Gates and Install Temporary Sheeting



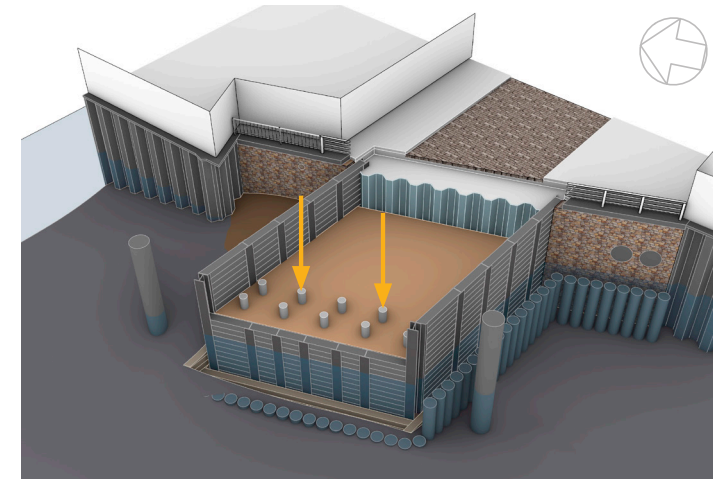
3- Remove Timber Bulkhead and Cribbing to EL-3



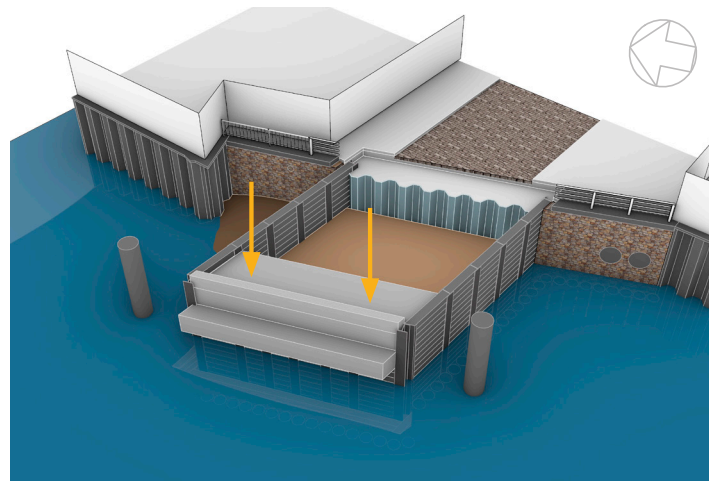
4- Remove Timber Bulkhead and Cribbing to EL-10



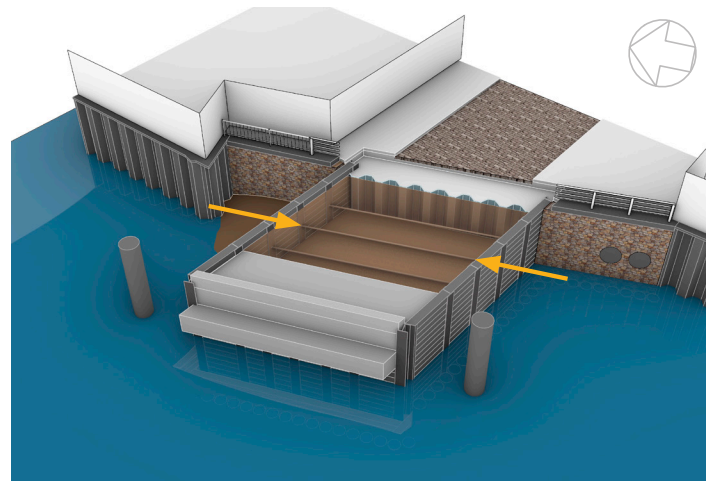
5- Install Soldier Piles and Lagging



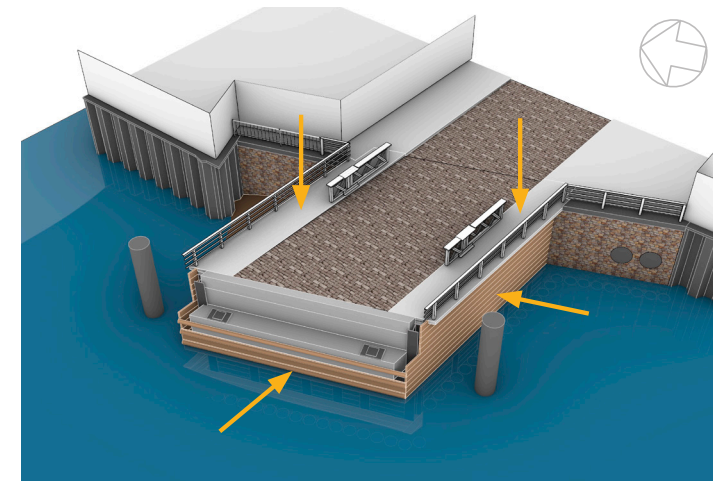
6- Install Micropiles and Partially Backfill



7- Install Abutment



8- Install Tie Backs and Backfill



9- Install Approach Slab, Timber Facing, Stone Pavement, Sidewalks, Railing, Bearings, Fender Rub Rails