
FARGO CITY COMMISSION NORTH BROADWAY BRIDGE UPDATE

02.22.2021

UPDATE ON NORTH BROADWAY BRIDGE - LOCATION



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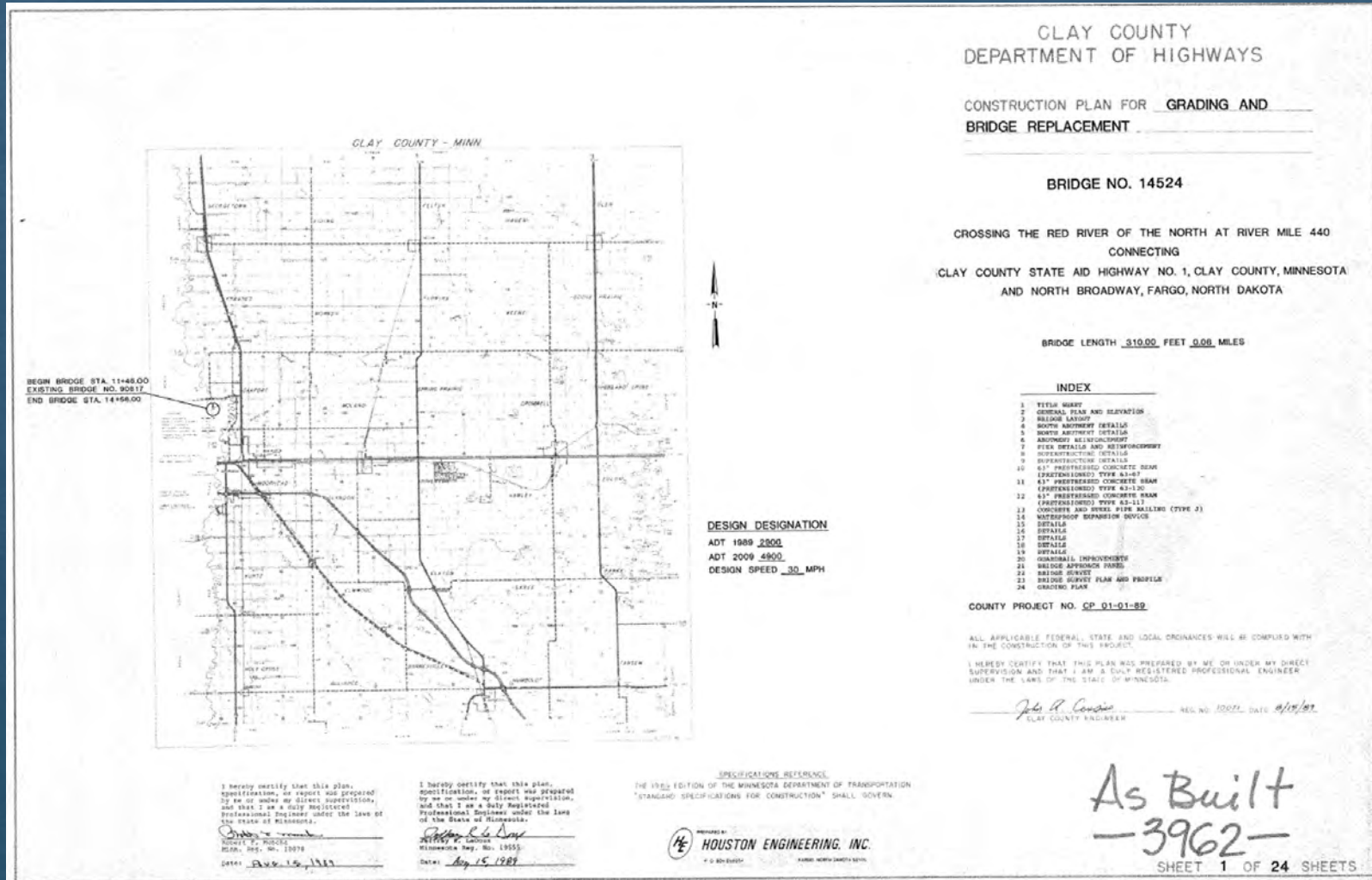


UPDATE ON NORTH BROADWAY BRIDGE - LOCATION



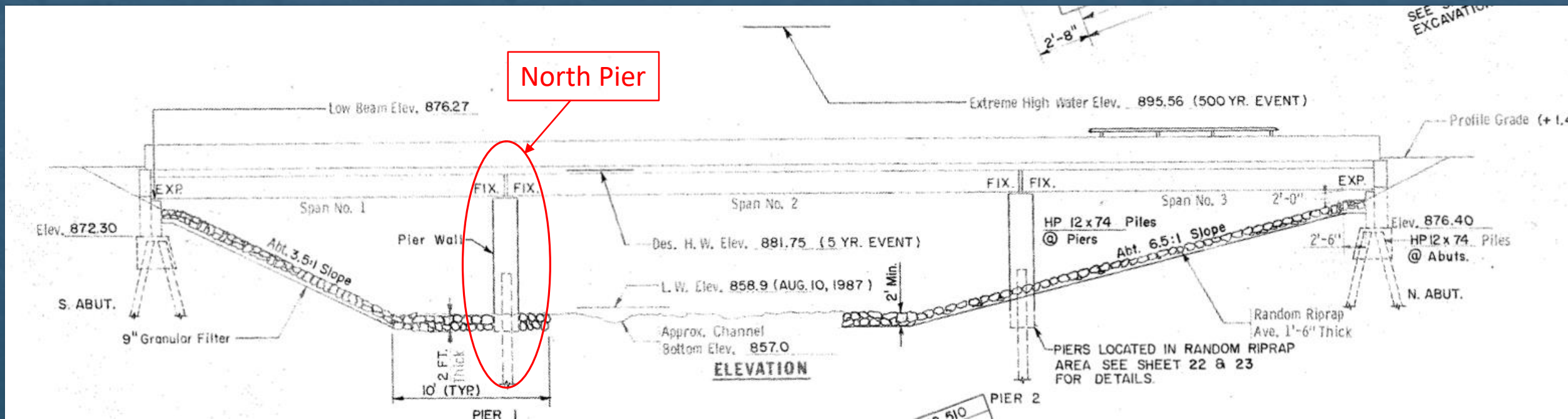
UPDATE ON NORTH BROADWAY BRIDGE - HISTORY

THIS BRIDGE WAS CONSTRUCTED IN 1990



UPDATE ON NORTH BROADWAY BRIDGE - HISTORY

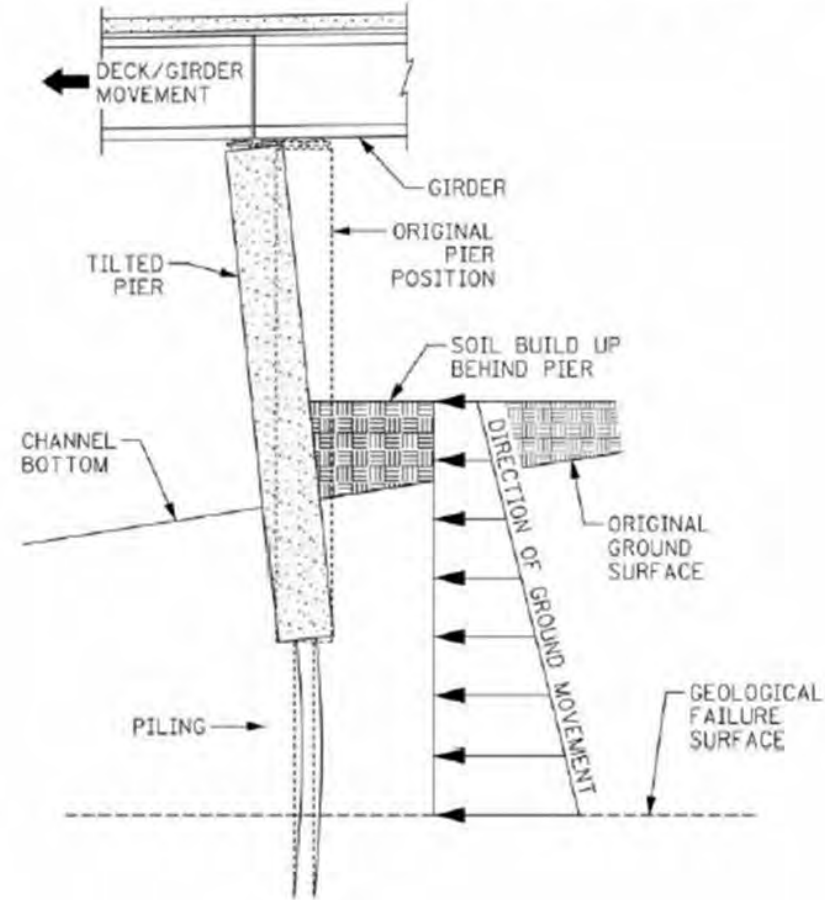
TYPICAL THREE SPAN BRIDGE



UPDATE ON NORTH BROADWAY BRIDGE - HISTORY

IN THE MID-90'S, ANNUAL INSPECTIONS FOUND THE NORTH PIER TILTING SOUTH (TOWARDS THE RIVER)

Figure 2. North Pier Response to Ground Movement (Prior to Expansion Joint Closure)

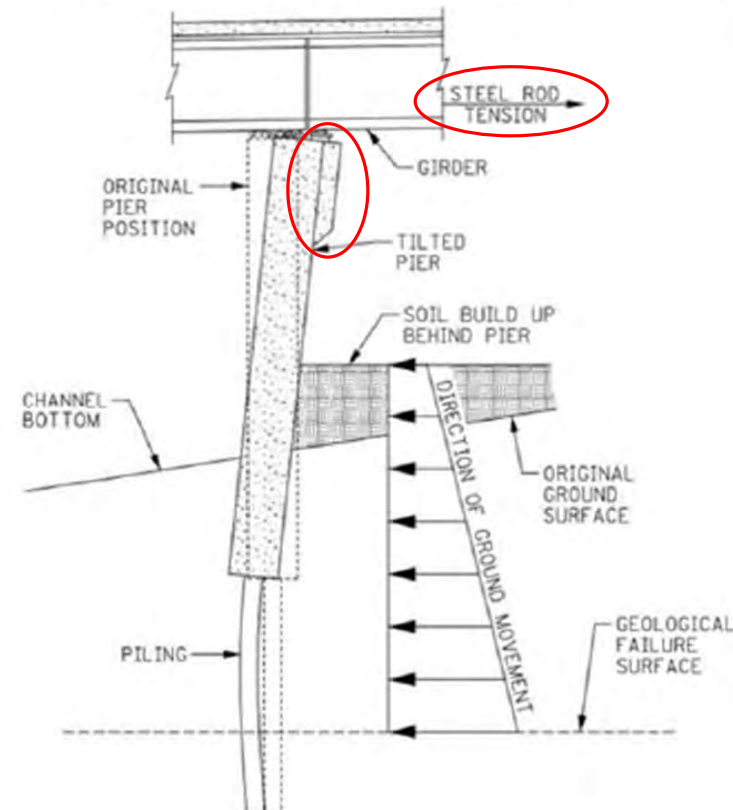


UPDATE ON NORTH BROADWAY BRIDGE - HISTORY

IN 2000, CLAY COUNTY AND THE CITY OF FARGO COMPLETED A PROJECT MEANT TO “CORRECT” THE TILTING PIER

- ADDED TO THE PIER TO HELP PROVIDE ADDITIONAL SUPPORT FOR THE GIRDER DUE TO THE MOVEMENT
- ADDED STEEL RODS TO HOLD THE TOP OF THE PIER FROM TILTING MORE
- UNFORTUNATELY, THE BOTTOM OF THE PIER CONTINUED TO MOVE SOUTH AFTER THE PROJECT

Figure 3. North Pier Response to Ground Movement (After Installation of Tie Rods in 2000)

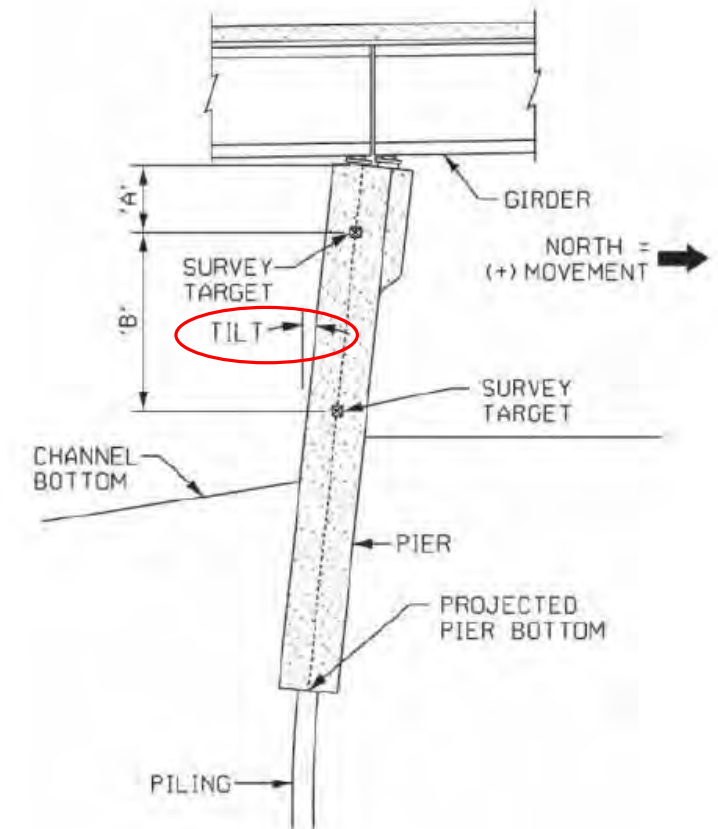


UPDATE ON NORTH BROADWAY BRIDGE - HISTORY

A BRIDGE/GEOTECHNICAL STUDY WAS COMPLETED IN 2020

- **STUDY OUTCOMES:**
 - **RECOMMENDATION TO MONITOR BRIDGE PIER AND CLOSE THE BRIDGE IF THE PIER TILTING WORSENE**

East Edge Tilt Angle ϕ (deg.)	West Edge Tilt Angle ϕ (deg.)	Maximum Monitoring Interval	Bridge Status
$\phi < 2.05^\circ$	$\phi < 3.25^\circ$	Monthly	Open
$2.05^\circ \leq \phi < 2.30^\circ$	$3.25^\circ \leq \phi < 3.50^\circ$	Weekly	Open
$2.30^\circ \leq \phi$	$3.50^\circ \leq \phi$	Weekly	CLOSE BRIDGE



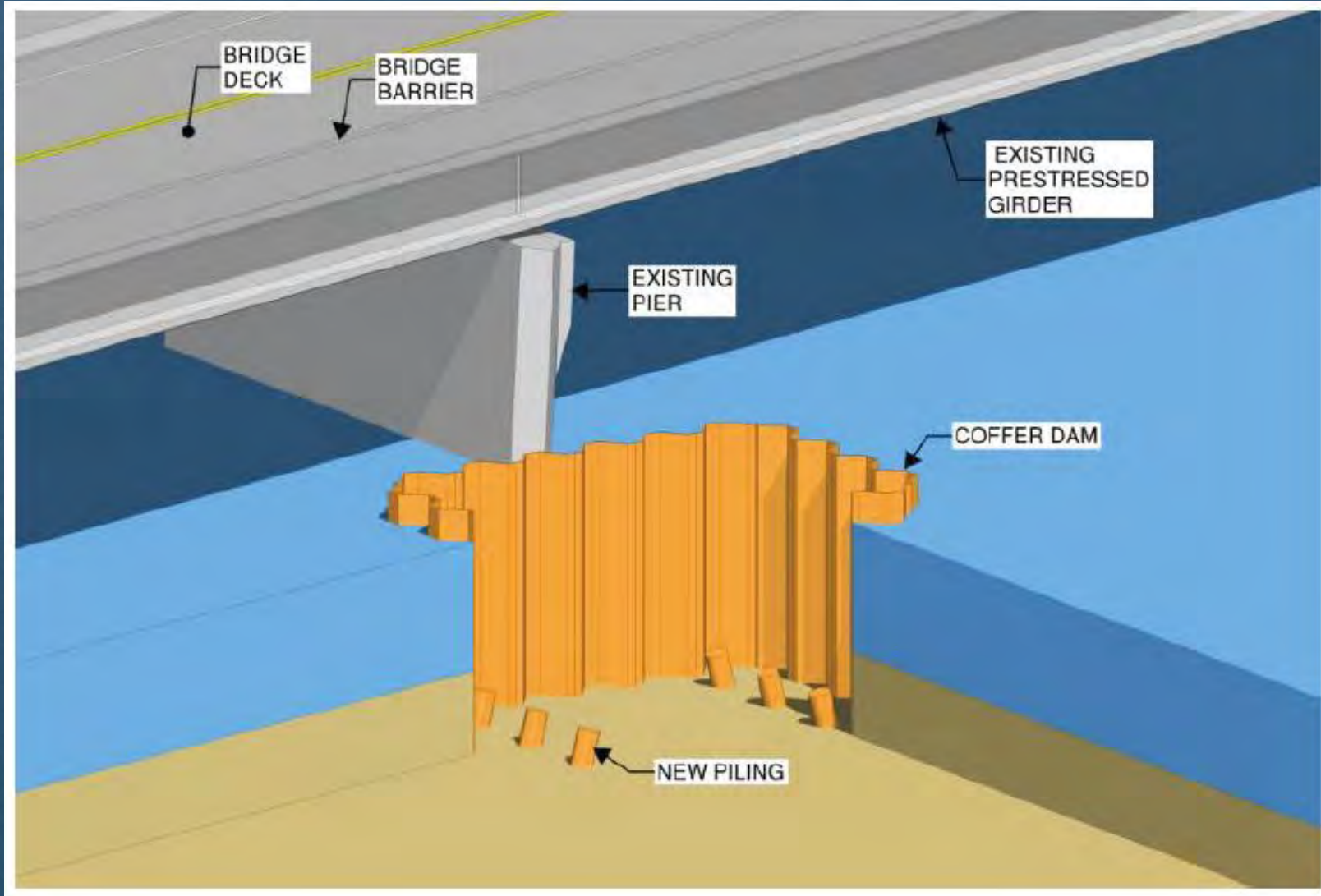
UPDATE ON NORTH BROADWAY BRIDGE - CLOSURE

**RECOMMENDED
CLOSURE BY BRIDGE
ENGINEER ON
FEBRUARY 10, 2021 DUE
TO WORSENING TILT**



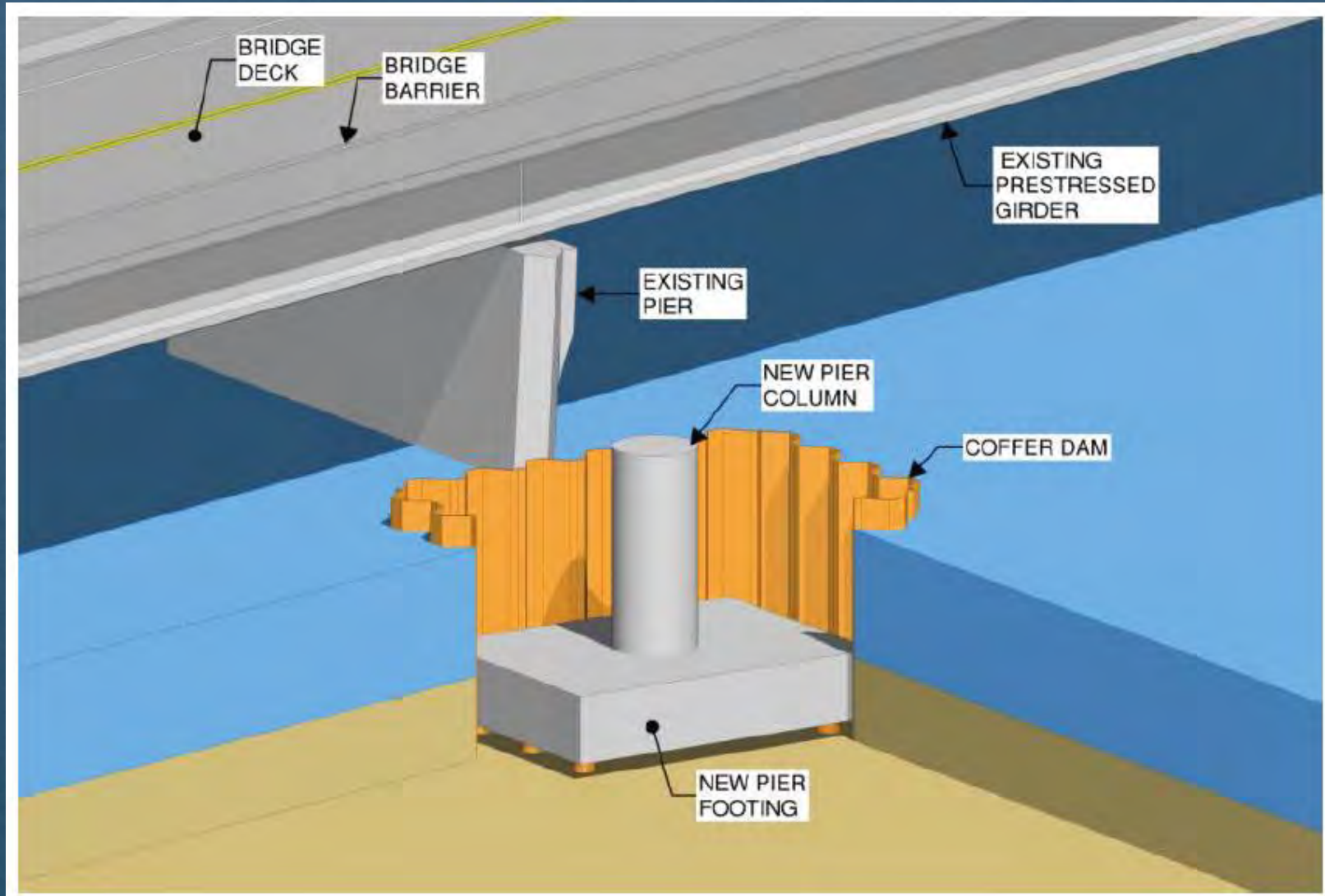
UPDATE ON NORTH BROADWAY BRIDGE – BRIDGE REHAB

- INSTALL COFFERDAM AND NEW PILING



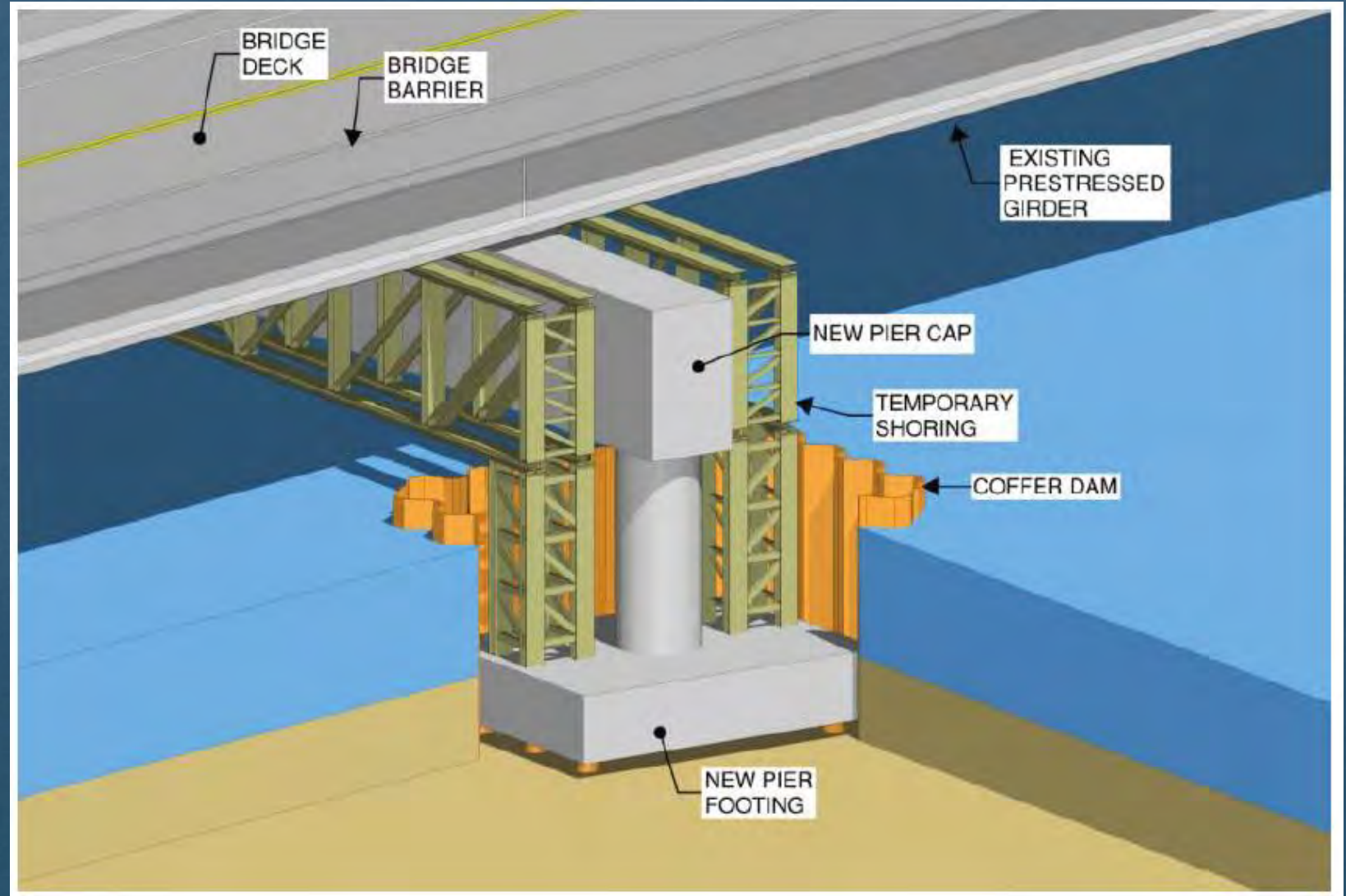
UPDATE ON NORTH BROADWAY BRIDGE – BRIDGE REHAB

- **INSTALL NEW PIER FOOTING AND COLUMN**



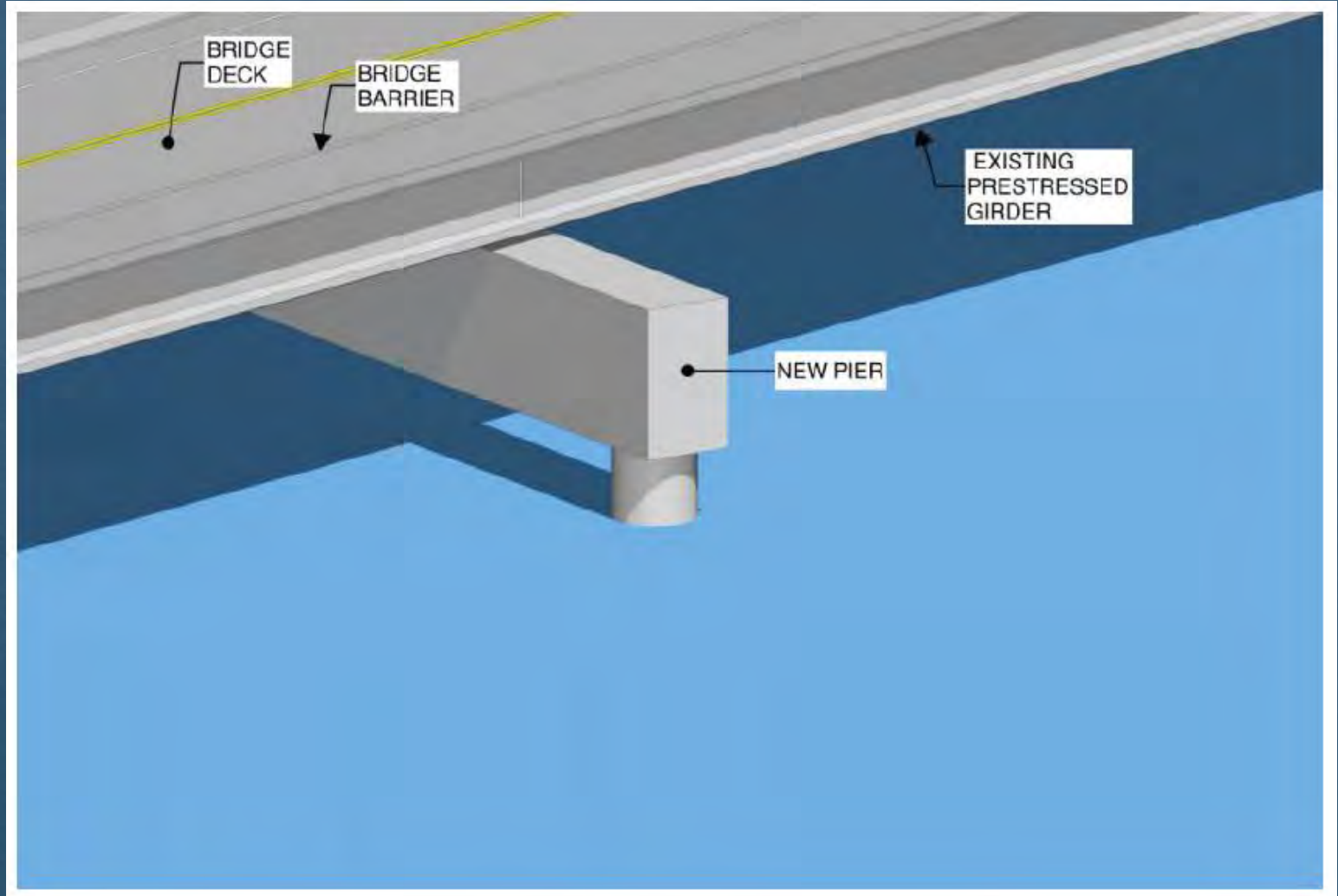
UPDATE ON NORTH BROADWAY BRIDGE – BRIDGE REHAB

- TEMPORARILY SUPPORT BRIDGE, REMOVE EXISTING PIER, AND INSTALL NEW PIER CAP



UPDATE ON NORTH BROADWAY BRIDGE – BRIDGE REHAB

- REMOVE TEMPORARY SUPPORTS, REMOVE COFFERDAM, AND REOPEN BRIDGE



UPDATE ON NORTH BROADWAY BRIDGE – NEXT STEPS

- WORK WITH CLAY COUNTY STAFF TO FURTHER EVALUATE OPTIONS AND COSTS
 - POTENTIAL OPTIONS TO EVALUATE MAY INCLUDE:
 - REHAB (~\$2 MILLION)
 - REPLACE AT SAME ELEVATION/LOCATION (~\$4 MILLION)
 - REPLACE AT ELEVATION THAT WOULDN'T BE IMPACTED AT 100 YEAR FLOOD LEVELS (\$ TBD)
 - REMOVE BRIDGE (\$ TBD)

UPDATE ON NORTH BROADWAY BRIDGE – NEXT STEPS

- **OTHER ITEMS THAT NEED TO BE EXPLORED AND CONSIDERED:**
 - **WORK WITH ENGINEERING FIRM TO FURTHER EXAMINE THE BROADWAY ROAD STABILITY NEAR THE END OF ROYAL OAKS CUL-DE-SAC.**
 - **EXAMINE SHORT-TERM AND LONG-TERM TRAFFIC IMPACTS**
 - **GATHER FEEDBACK FROM RESIDENTS AFFECTED BY THE BRIDGE CLOSURE ON BOTH SIDES OF THE RIVER**
 - **RETURN TO THE CLAY COUNTY BOARD AND FARGO CITY COMMISSION WITH OPTIONS TO CONSIDER**

QUESTIONS

02.22.2021
