

I-45 NHHIP Segment 3A

Design Changes & Reevaluation - Handling the Water

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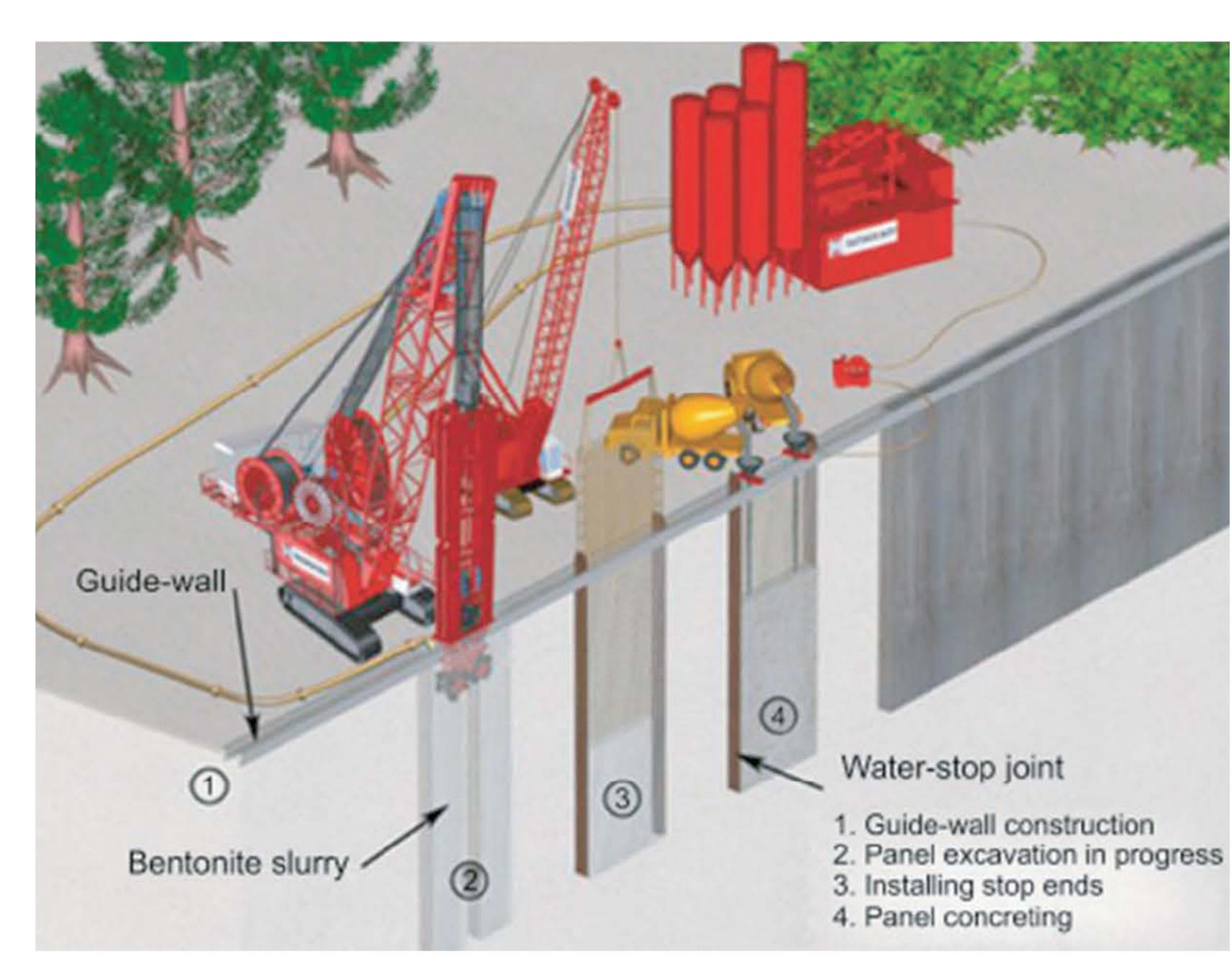


SOIL ANCHORS

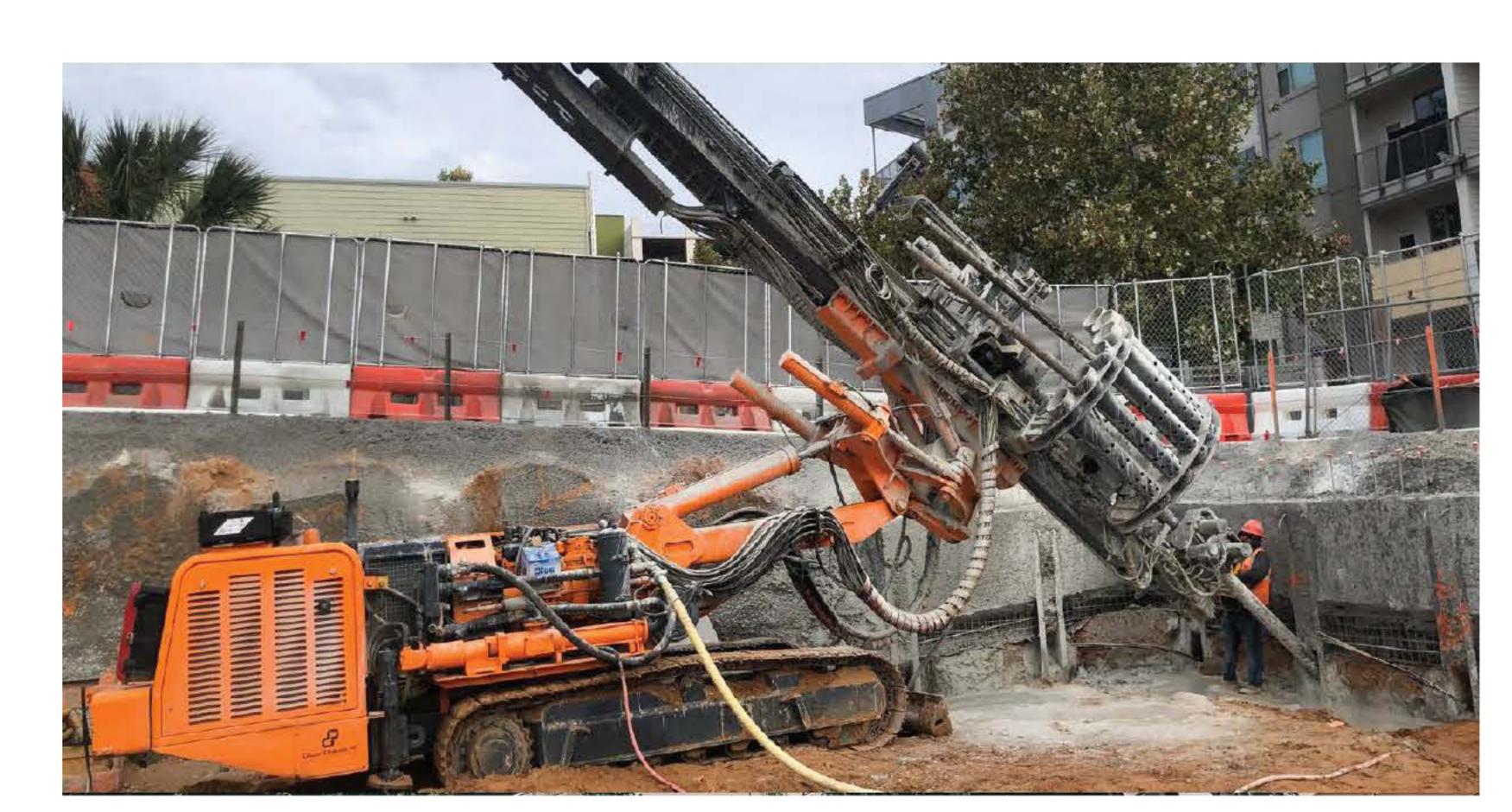
Build retaining wall soil anchors to provide support.



Additional right of way (ROW) is needed in Segment 3A to make room for the construction of special retaining walls due to groundwater that is close to the surface.



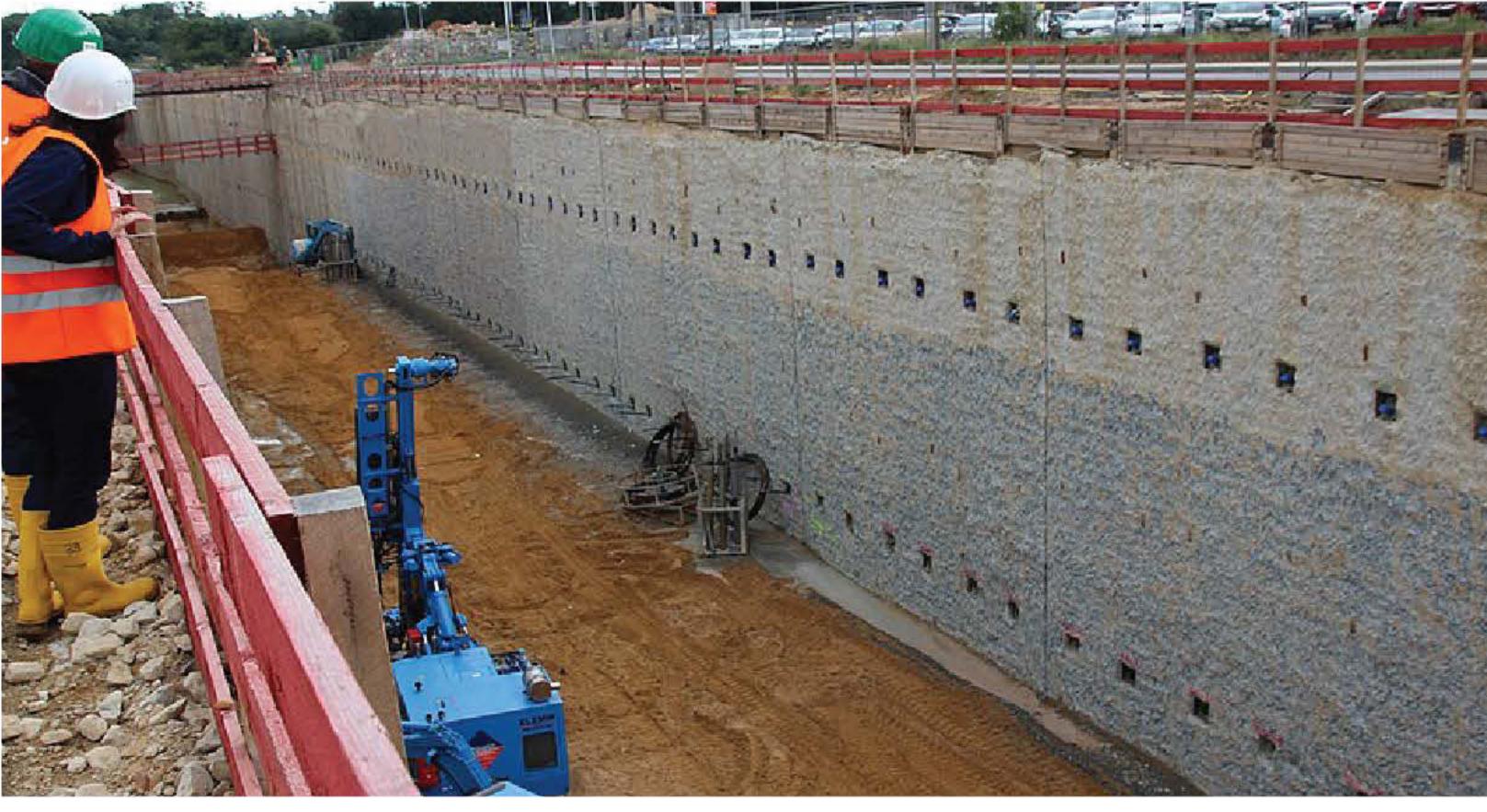
In this segment, the majority of the I-69 mainlanes will be lowered, with the intersecting streets crossing above the mainlanes. To support the lowered mainlane roadway, retaining walls known as Diaphragm walls or D-walls, provide a barrier between the roadway and the soil behind the wall.



This image shows crews installing a retaining wall soil anchor.

ORIGINAL PROPOSED ROW FROM (TYPICAL) O.6 * Wall Height (Typical) NATURAL GROUND PROPOSED PROPOSED PETAINING WALL TIE-BACK ANCHORS Competent Soil Layer

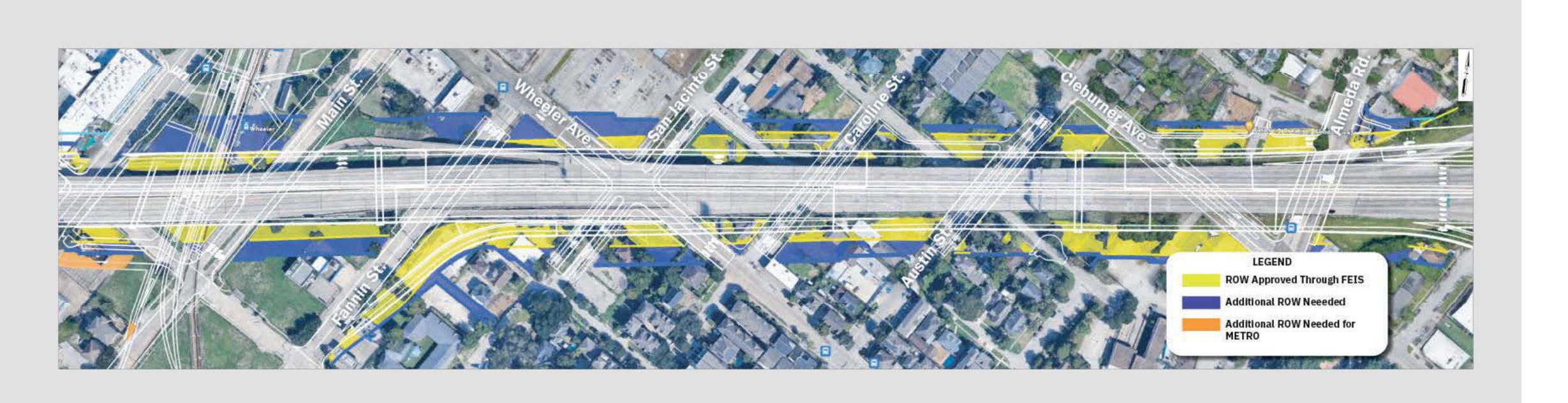
Immense water pressure can be put on retaining walls. Water right against the wall can push up against it, and the groundwater level behind the wall can sink. The retaining wall soil anchor is there to stabilize the wall against these forces. The soil anchor must be placed at an angle and extended into stronger soils.



Retaining walls are built with soil anchors installed behind them.

ADDITIONAL ROW NEEDED

This graphic shows in yellow the Segment 3A ROW needed when the I-45 NHHIP received environmental approval. The blue shows the additional ROW needed as a result of the proposed Segment 3A design changes.



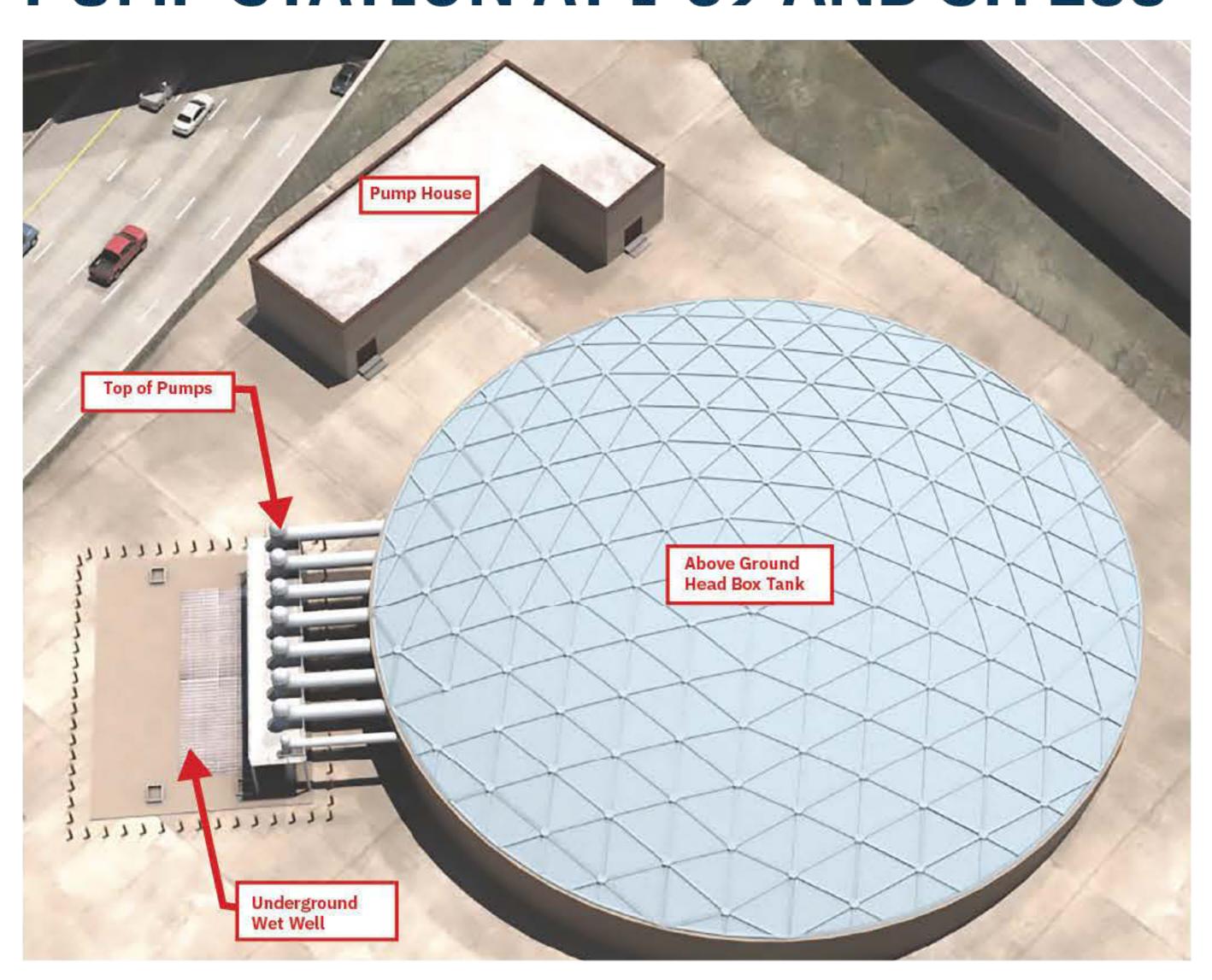
PUMP STATIONS

Install pump stations within existing right of way to pump water during heavy rain events.



Build new pump stations at I-69 and SH 288 and at I-69 and Main St.

PUMP STATION AT I-69 AND SH 288



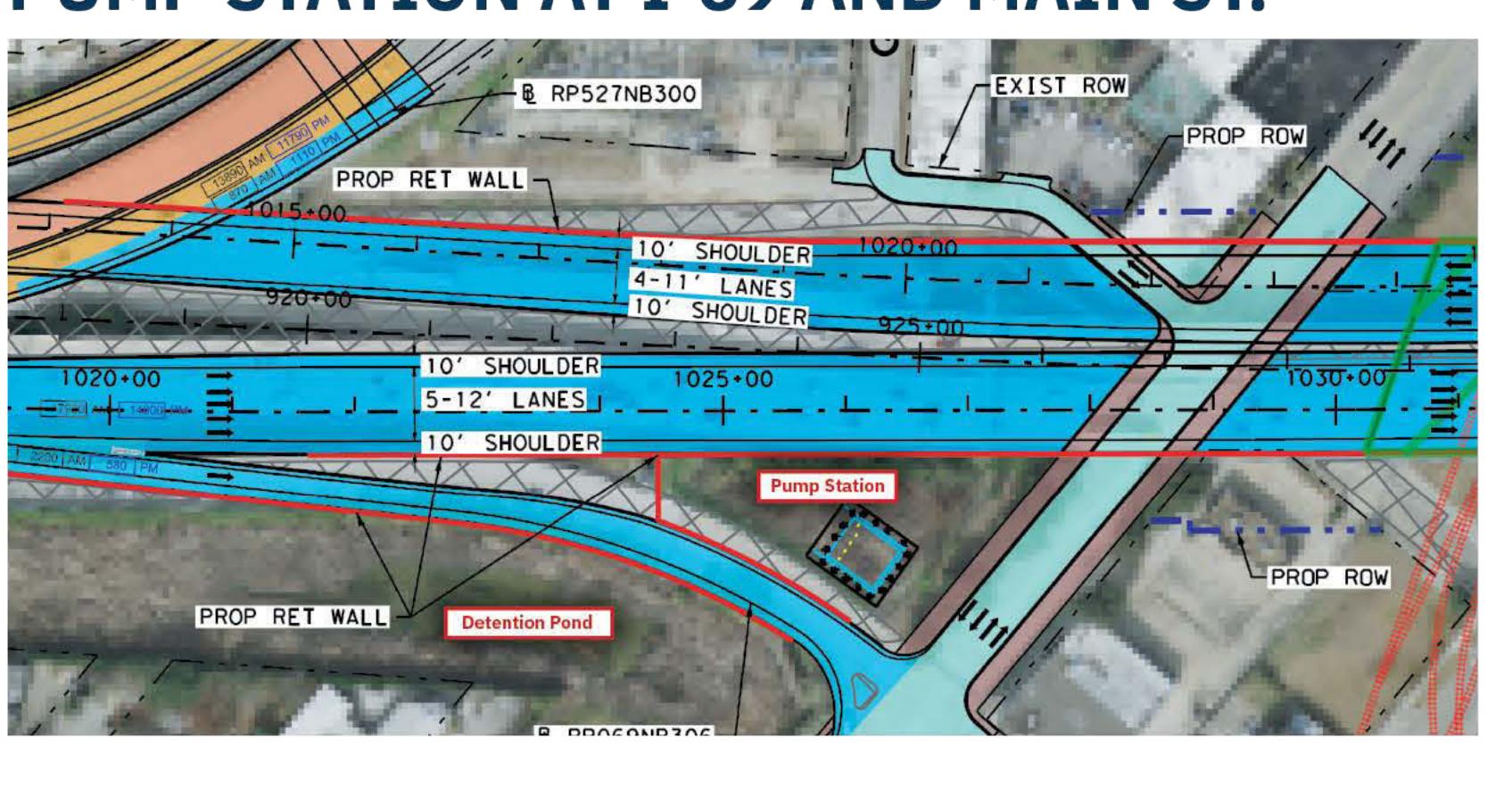
- Pumps will take in water from the storm sewer system and pump that water up into the head box.
- The head box stores the stormwater that the pumps take in, then releases it in a controlled way into the outfall pipe that drains south into Brays Bayou. This allows for the stormwater to enter the bayou more slowly, instead of a lot of water at once.

RENDERING FROM ALABAMA ST.



- This image depicts a potential design for the pump station located at the intersection of I-69 and SH 288.
- In the image, trees have been planted around the facility to provide beautification.

PUMP STATION AT I-69 AND MAIN ST.



- A new pump station will be built in between the I-69 northbound exit to Main St. and the I-69 northbound mainlanes.
- Improvements will be made to the nearby existing detention pond to hold stormwater during heavy rain events.