Lessons Learned in Constructability and Impacts on Work Zone Safety

2026 National Work Zone Management Conference

Lessons Learned in Constructability And Impacts on Work Zone Safety



Carlos J. Rodriguez, P.E. Kittelson, LLC

Work Zone Liability




ACME
CONTRACTORS
70 TON
ROTATOR


STOP




STOP

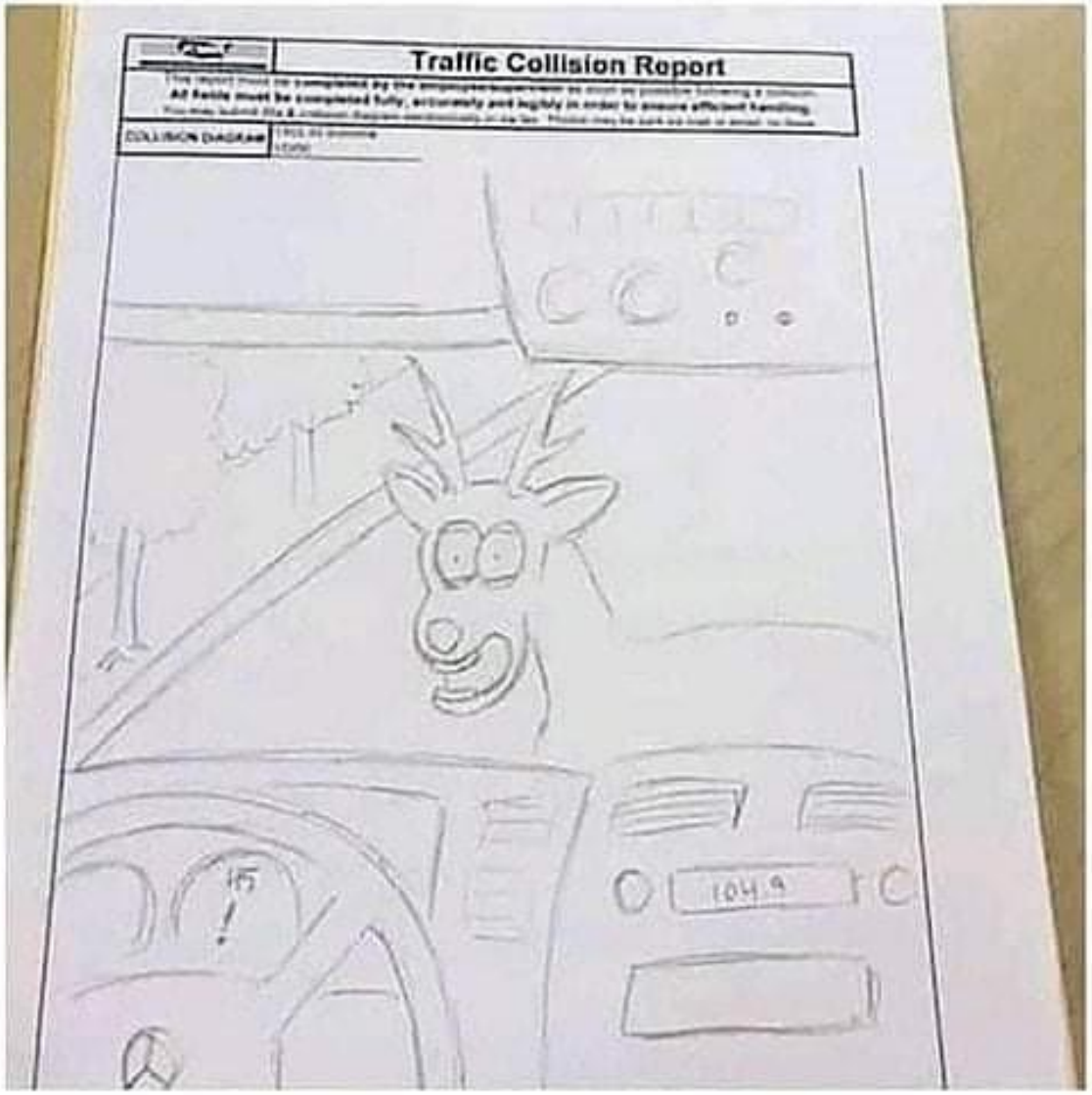





KNIFE RIVER
AN MDU RESOURCES COMPANY
4x4
39.003137


TEXAS
EXEMPT
219•640

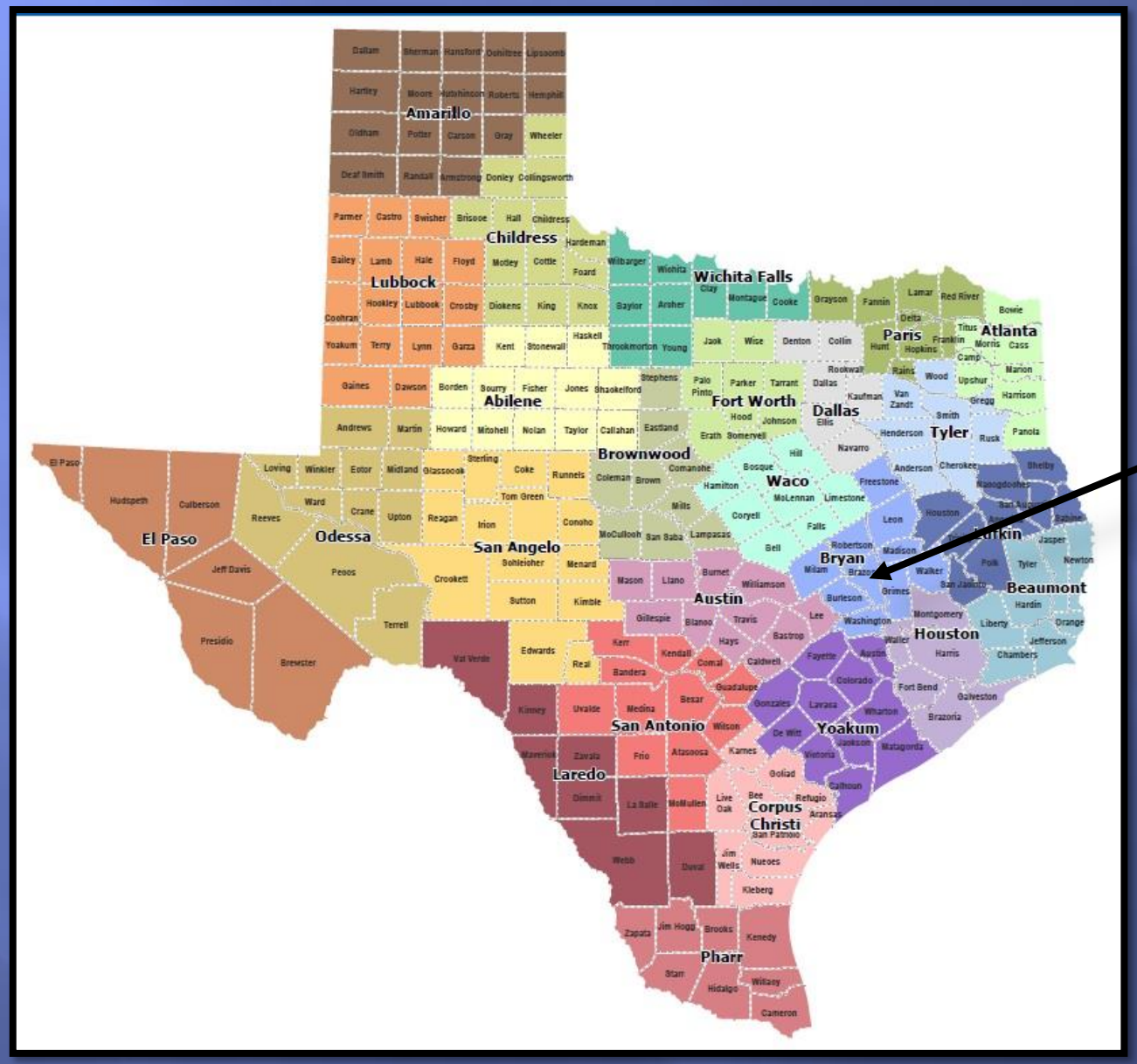
When the insurance company wants a diagram of the accident




BUILDING
A STRONGER
TOMORROW
SAFE
PEOPLE
STRONGER
COMMUNITIES
Jeep
Grand Cherokee
Texas
Department
of Transportation
4x4
Illinois
FZP 4187
BETTER
ROADS
BRIGHTER
FUTURES


YIELD

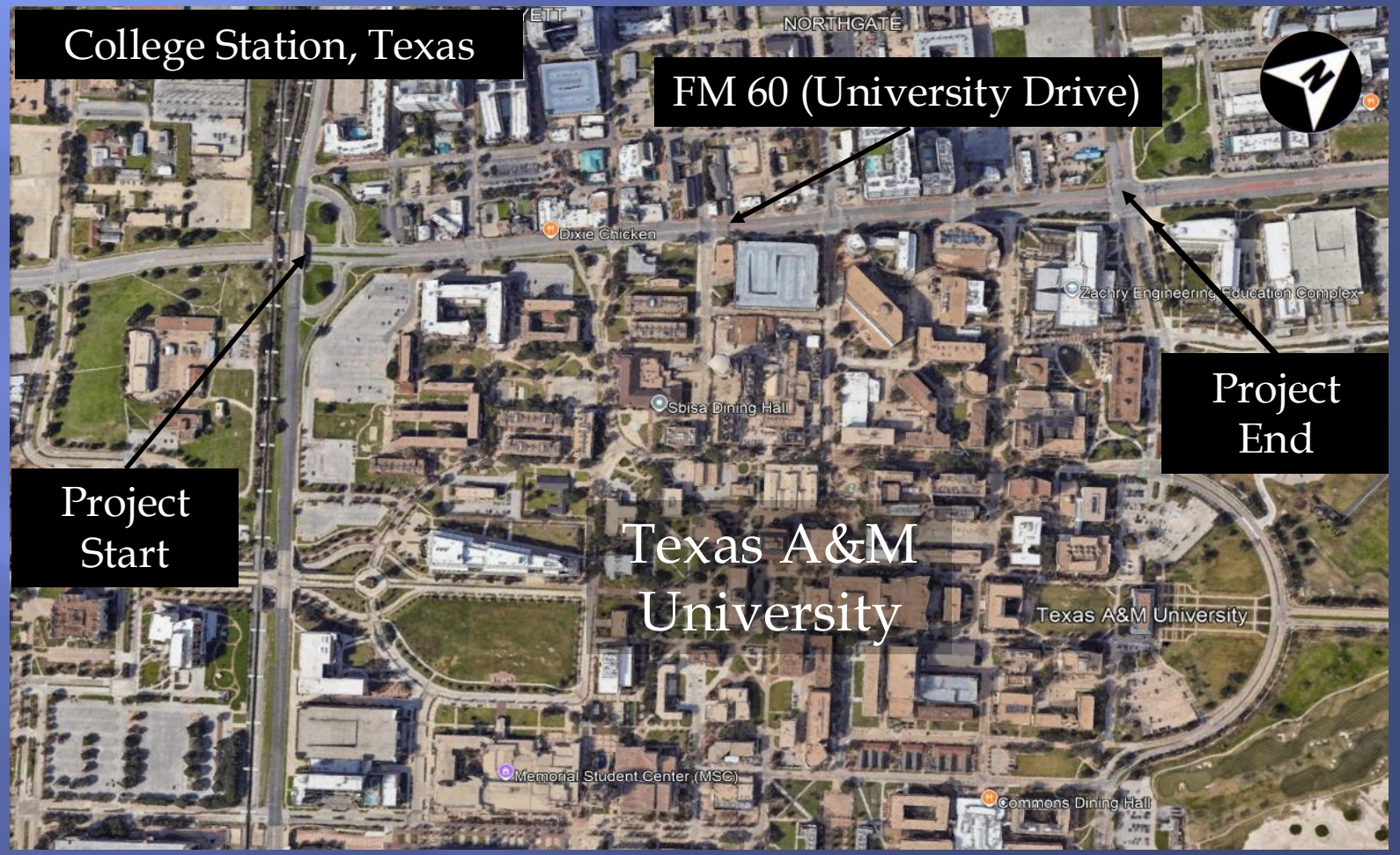
FM 60 PEDESTRIAN PROJECT



BRAZOS COUNTY

2012

Project Location



TxDOT Project Information

- Convert the Houston St/College Main corridor to become a pedestrian mall removing vehicular traffic at the University Drive intersection with these two roads
- Contractor: Knife River Corporation-South
- Participants: TxDOT, City of College Station and Texas A&M University

Challenges

- High volume area for vehicles and pedestrians
- Drainage with unknown utilities
- Coordinating a traffic control plan to inform the traveling public and pedestrians/bicyclists how to safely navigate the busy construction zone
- Rebuilding two connecting ramps during the Christmas break


Houston St
BEFORE


Texas Aggie BOOK Store
DURING


BIKE LANE
DURING


University Dr
AFTER


Mama Sake
4.7 19 reviews
AFTER


© 2022 Google
© 2022 Google
© 2022 Google
BEFORE

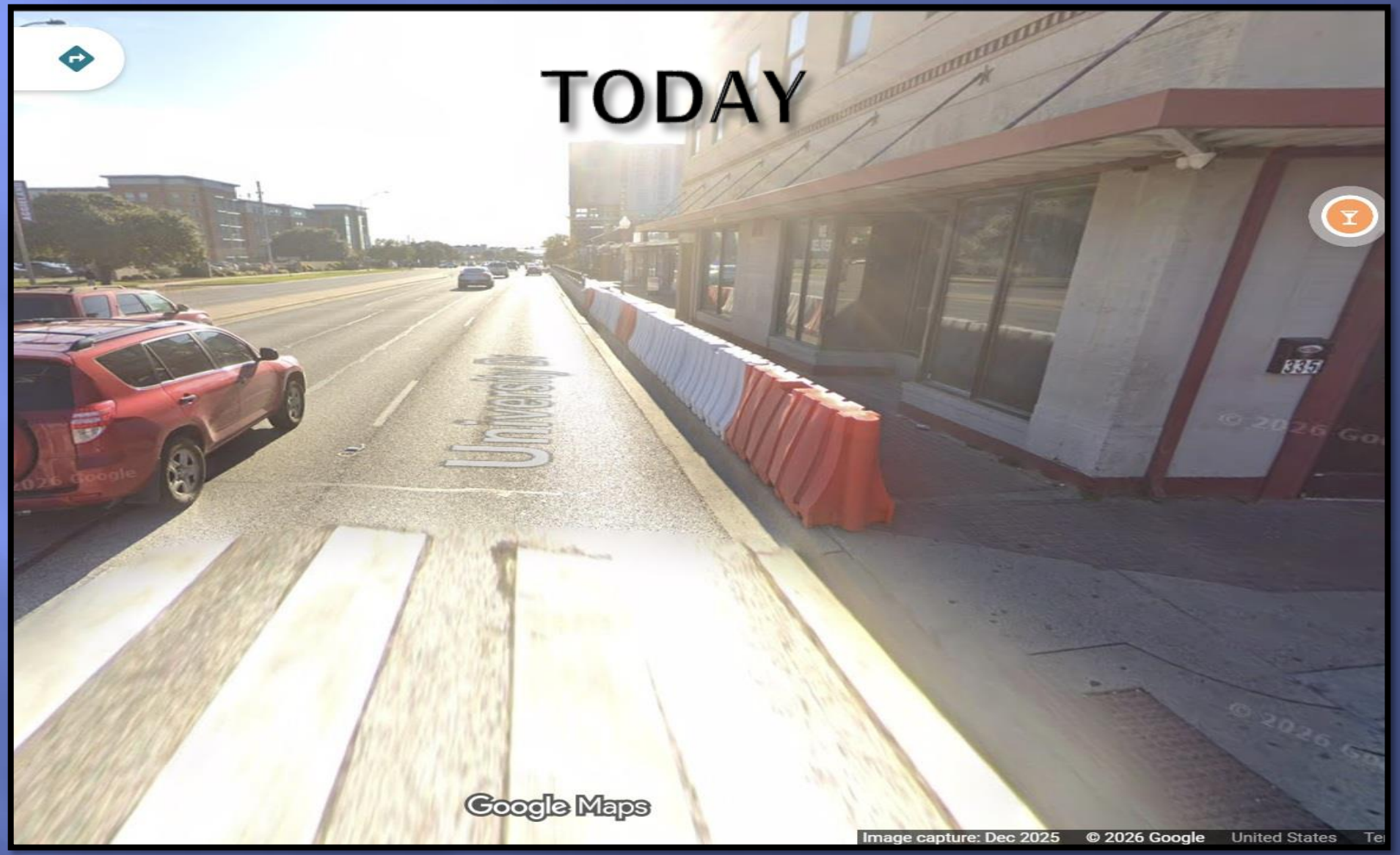

AFTER

Contractor Humor




University Dr
BEFORE


University Dr
©2020 Google
AFTER


TODAY
University
Google Maps
Image capture: Dec 2025 © 2026 Google United States


TODAY

BEFORE

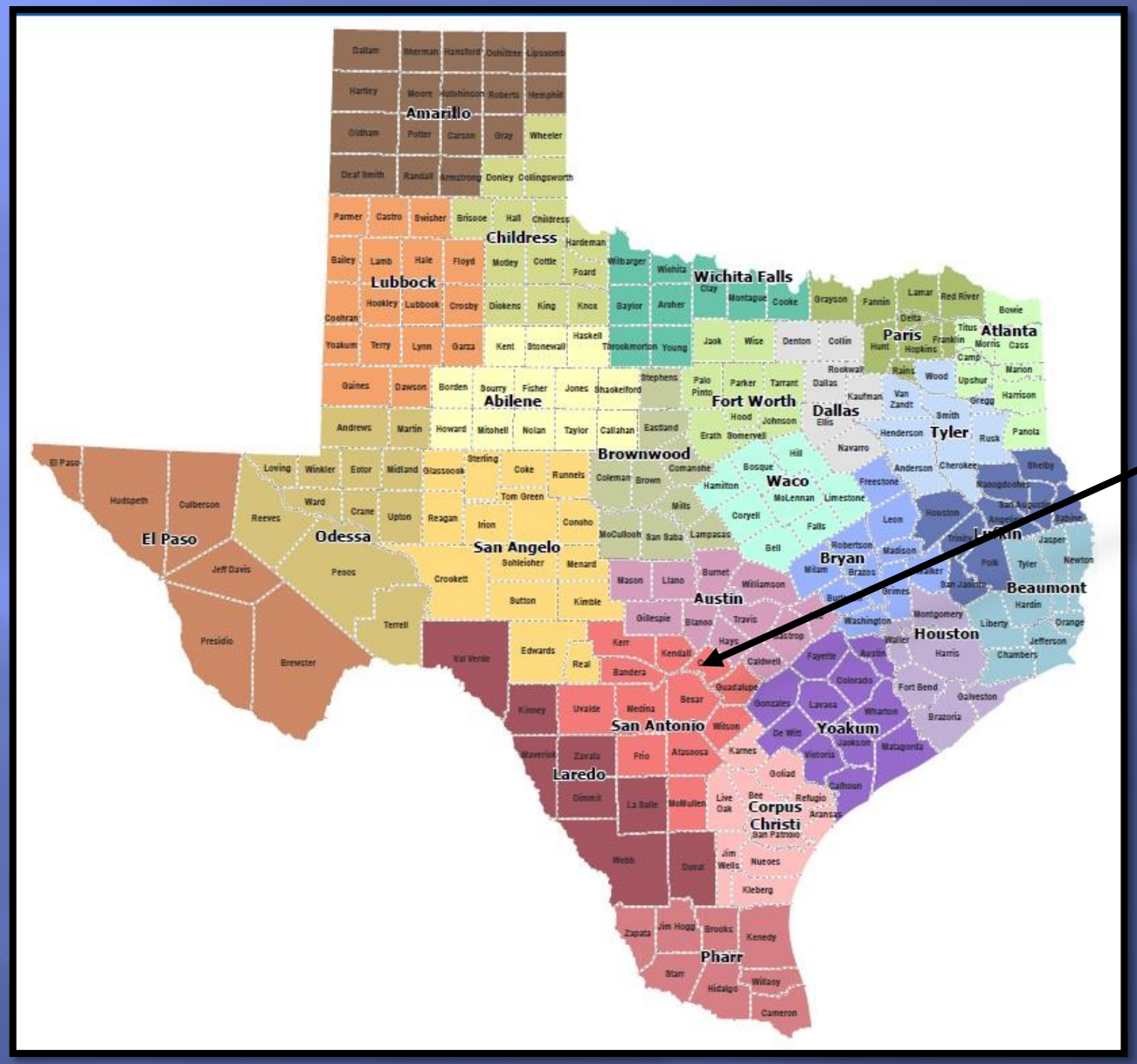


AFTER




YIELD

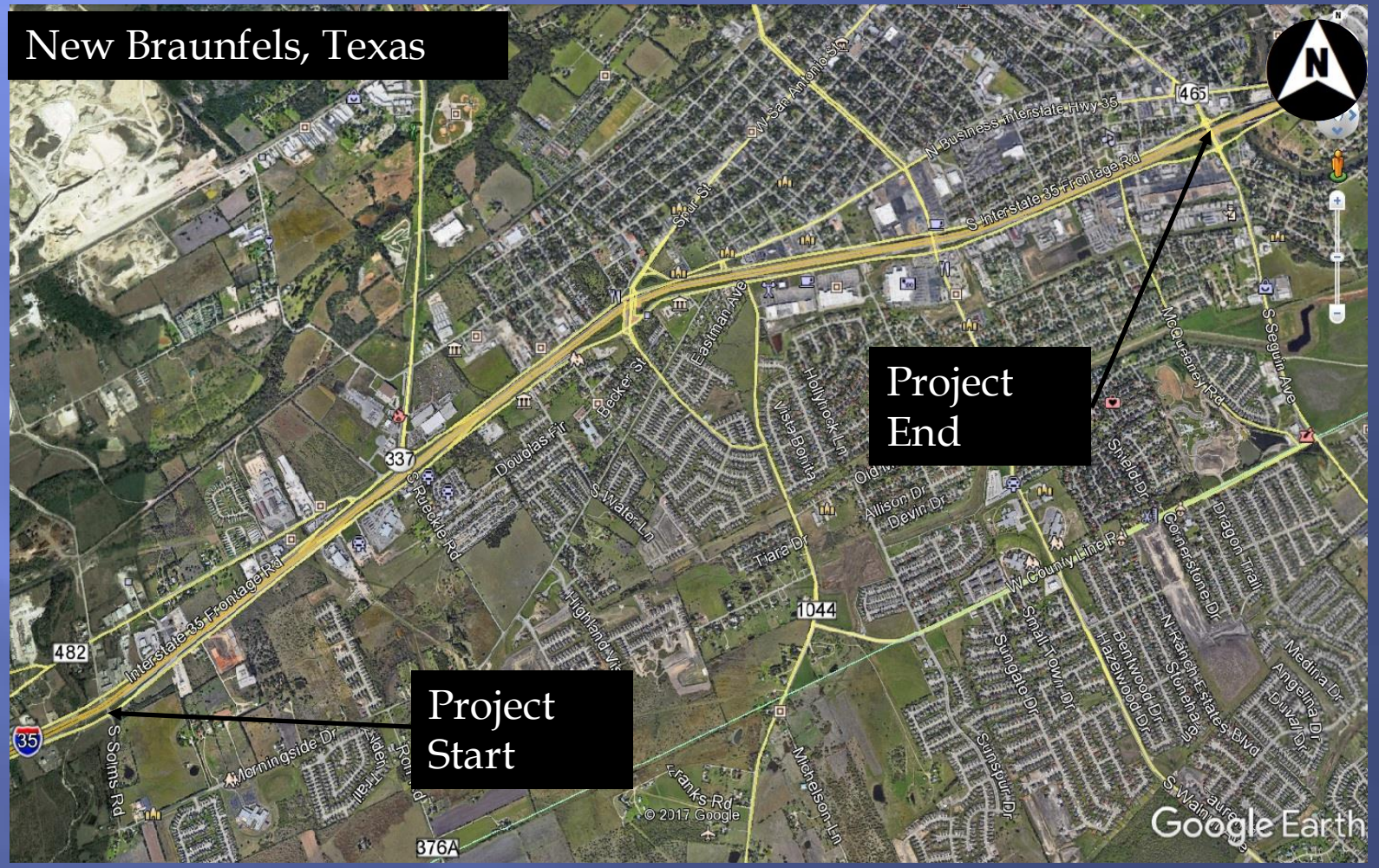
IH 35 PAVING PROJECT



COMAL COUNTY

2017

Project Location



TxDOT Project Information

- Thin Bonded PFC Overlay, Base Repairs, Mill/Inlay HMA, MBGF and Pavement Markings Work
- Contractor: Angel Brothers Holding Corp.
- CEI: HNTB

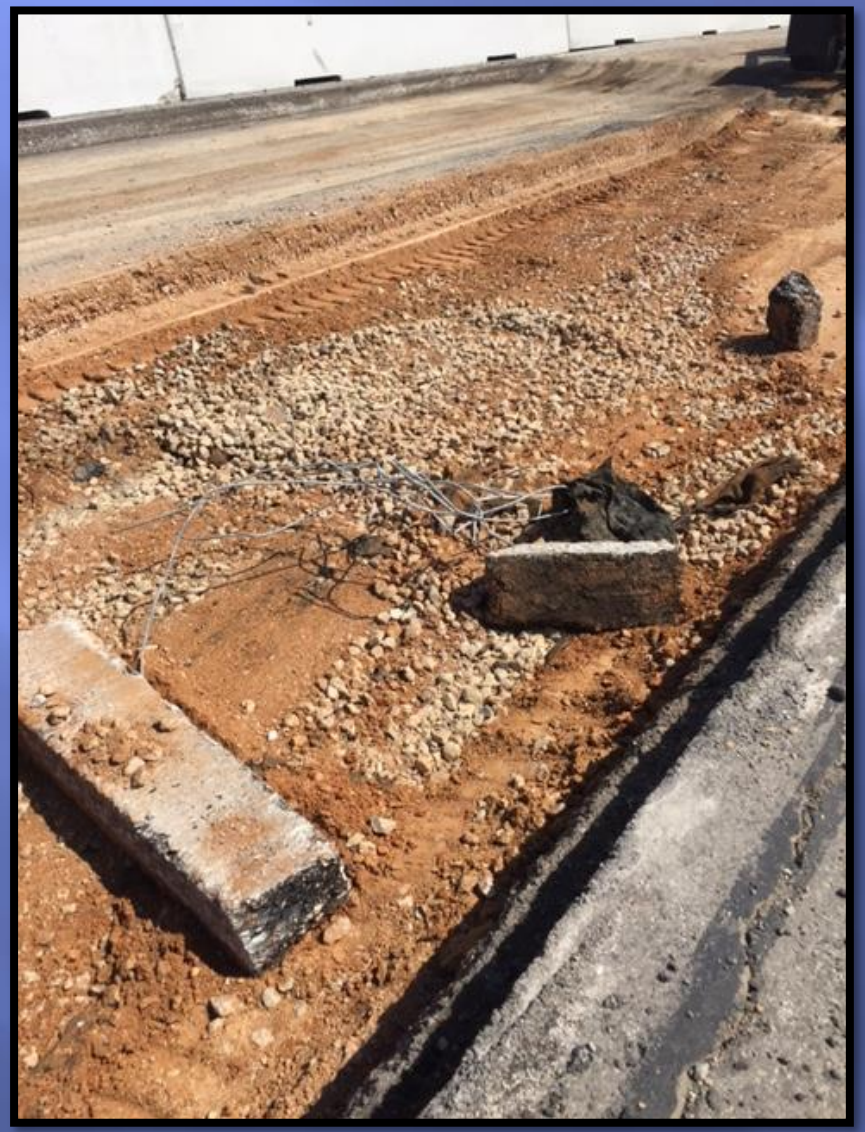
Challenges

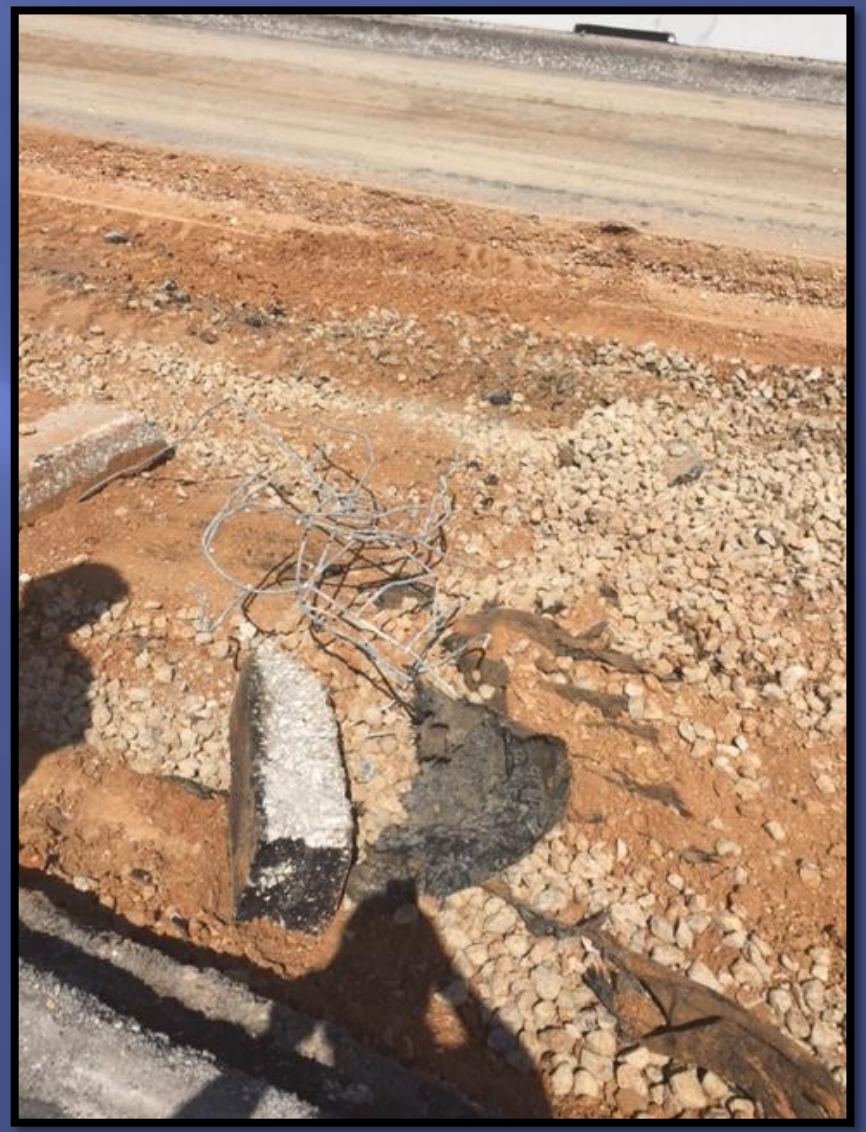
- Milestone Duration – Three at 19 days each
- MSE Straps Encountered – Full depth repair of mainlanes near MSE Walls
- Pumping Subgrade
- Undetermined Water Source

Milestone Milling Operations

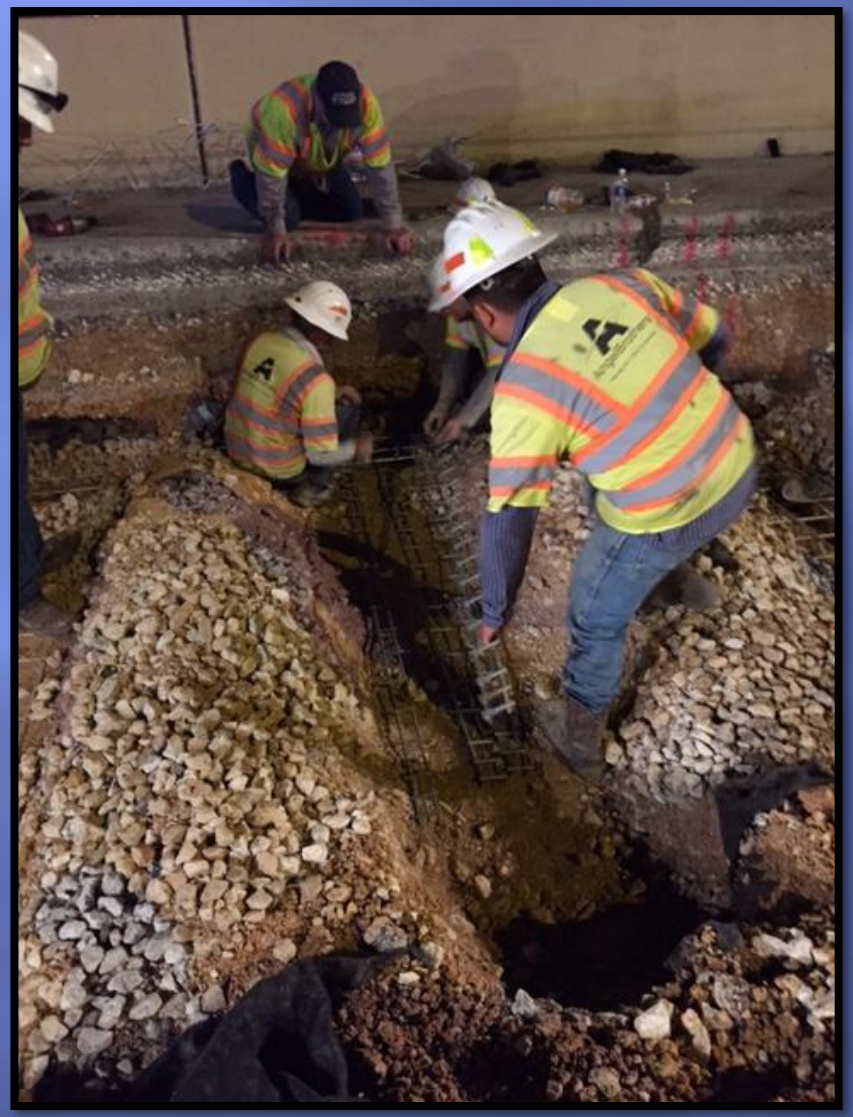


Mangled MSE Straps





Repairing MSE Straps





Repaired MSE Strap



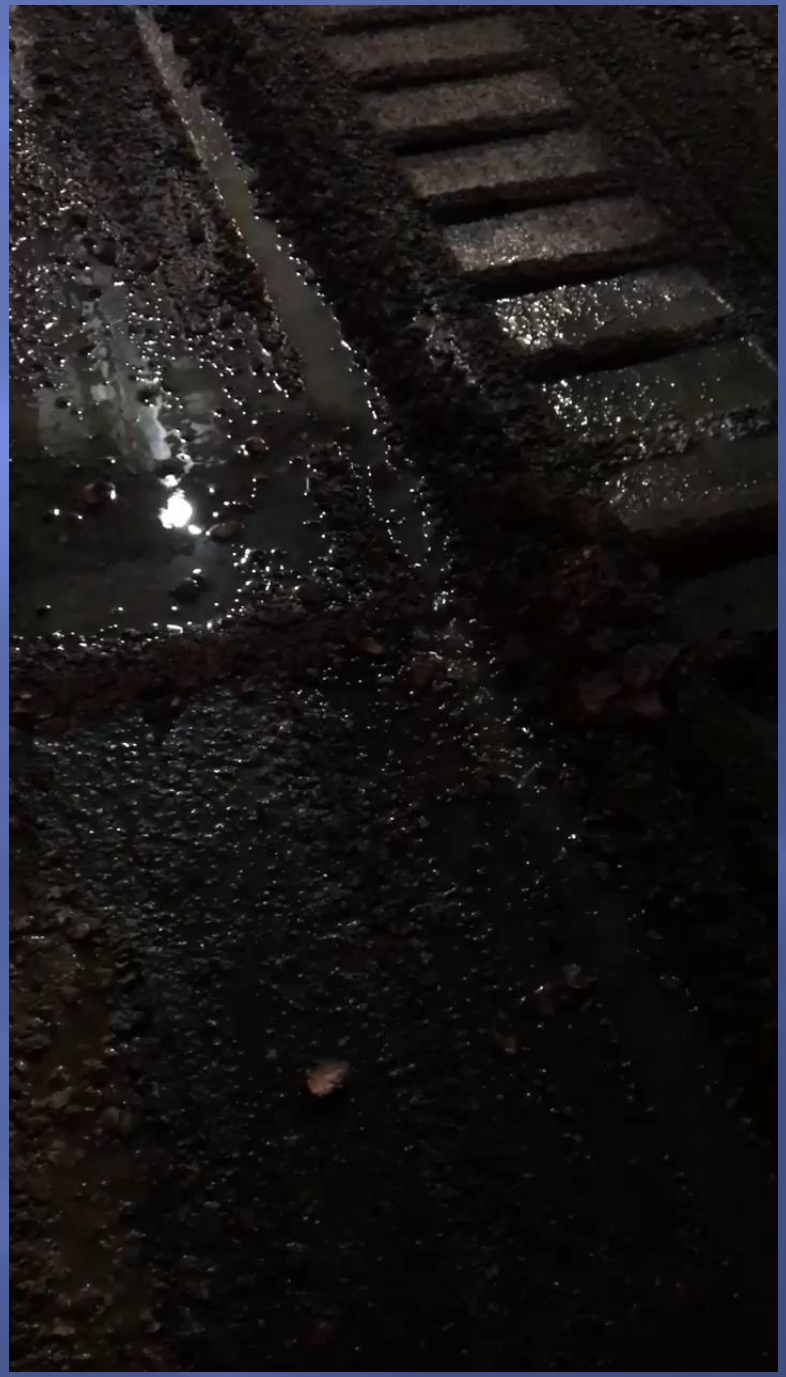
Soft Spots in Subgrade





Unidentified Water Source









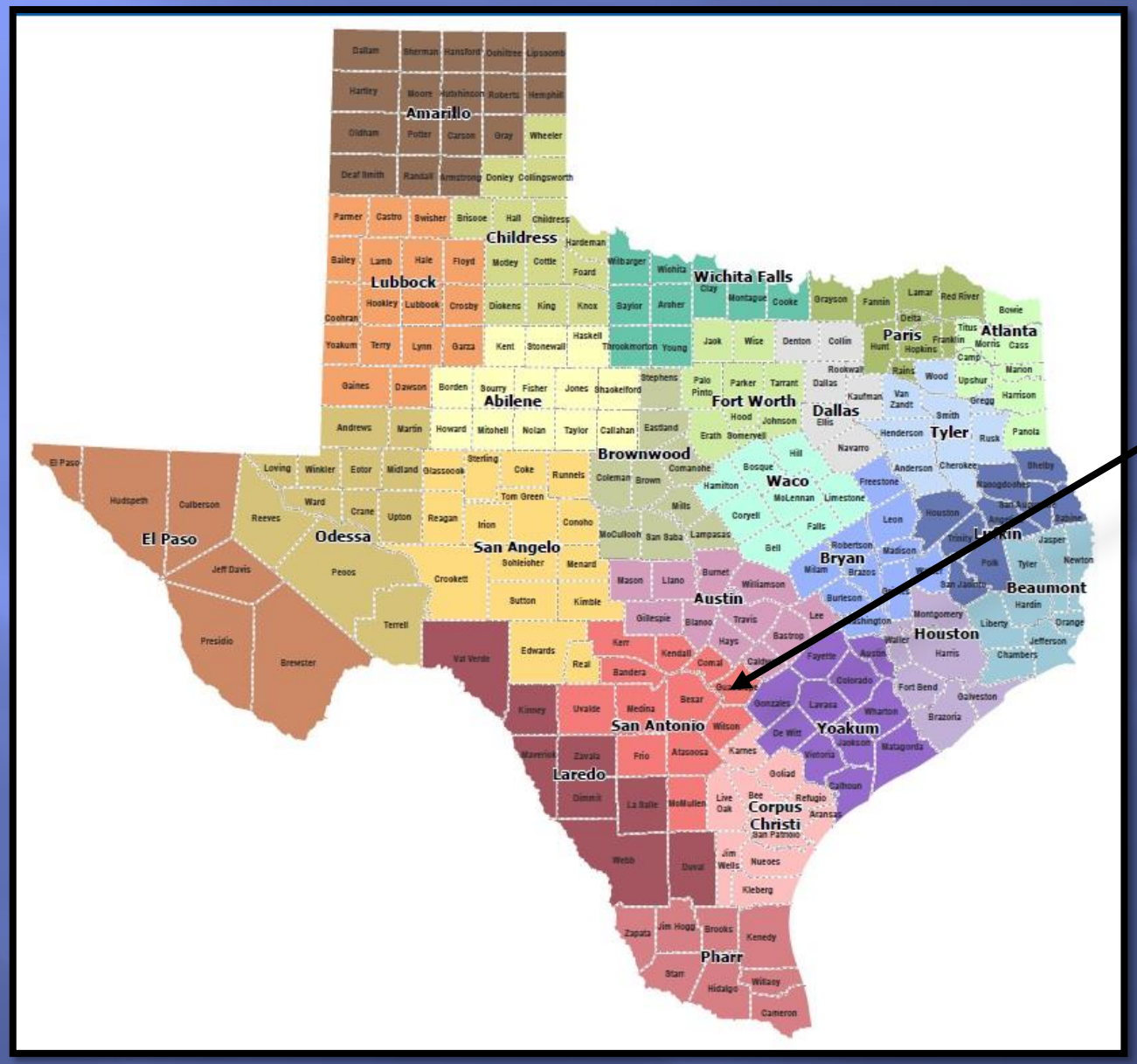
Resolution to Challenges

- Good Communication
- Sense of Urgency
- Quick Decision Making
- Technology Used for Communication
- Contractor Accepting Risk for Material Use
- Technology Used for Traffic Control
- Availability
- Cooperation with City of New Braunfels

Passed this sign and my 10 y/o daughter says "looks like someone drove over the speed limit"



FM 78 WIDENING PROJECT



2014

Project Location



TxDOT Project Information

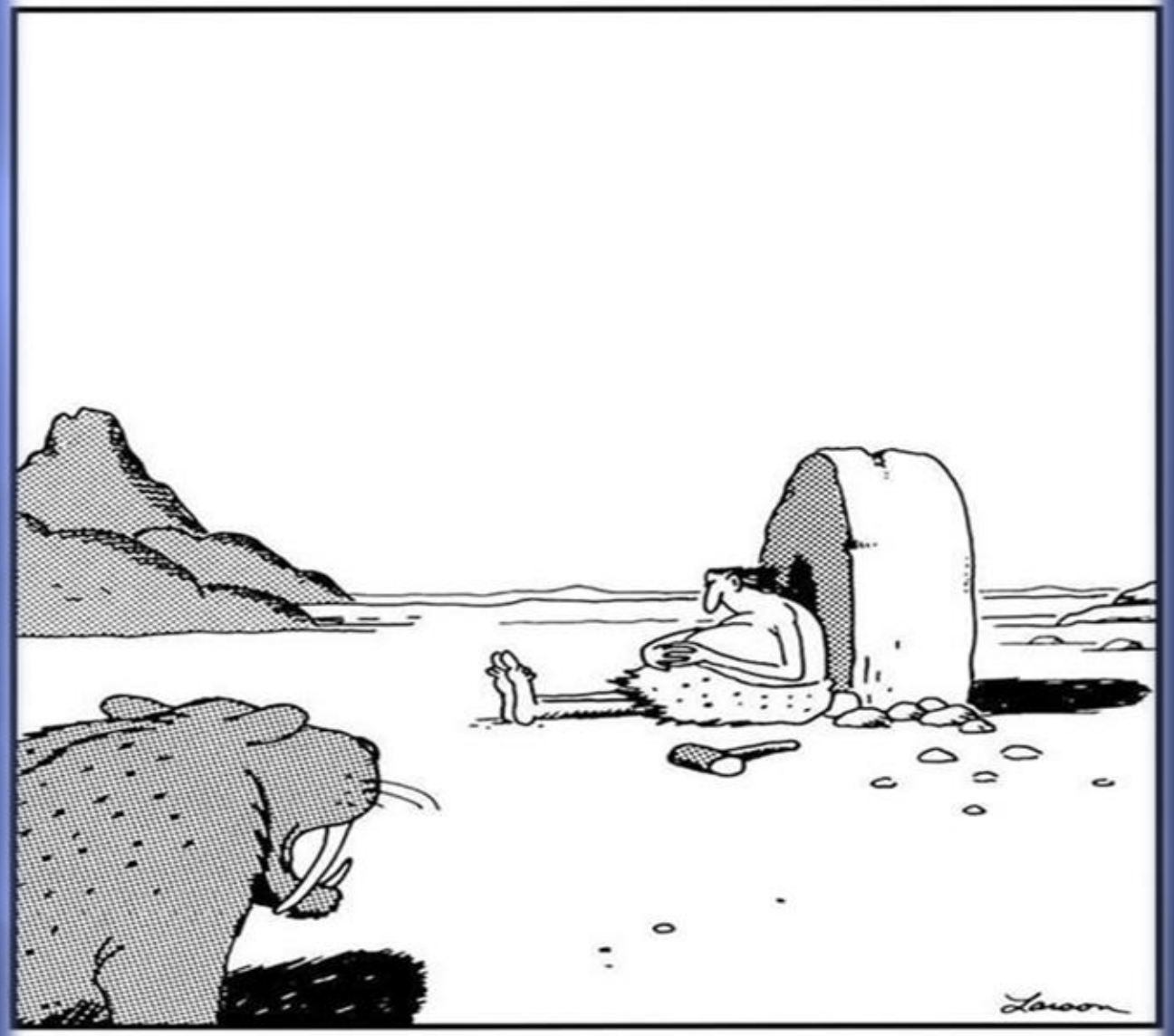
- Widen existing two-lane roadway to a two-lane road with a continuous left turn lane and shoulders in Marion, TX.

Challenges

- Ingress and egress of contractor vehicles with limited ROW adjacent to Railroad ROW
- Fiber optic line in roadway

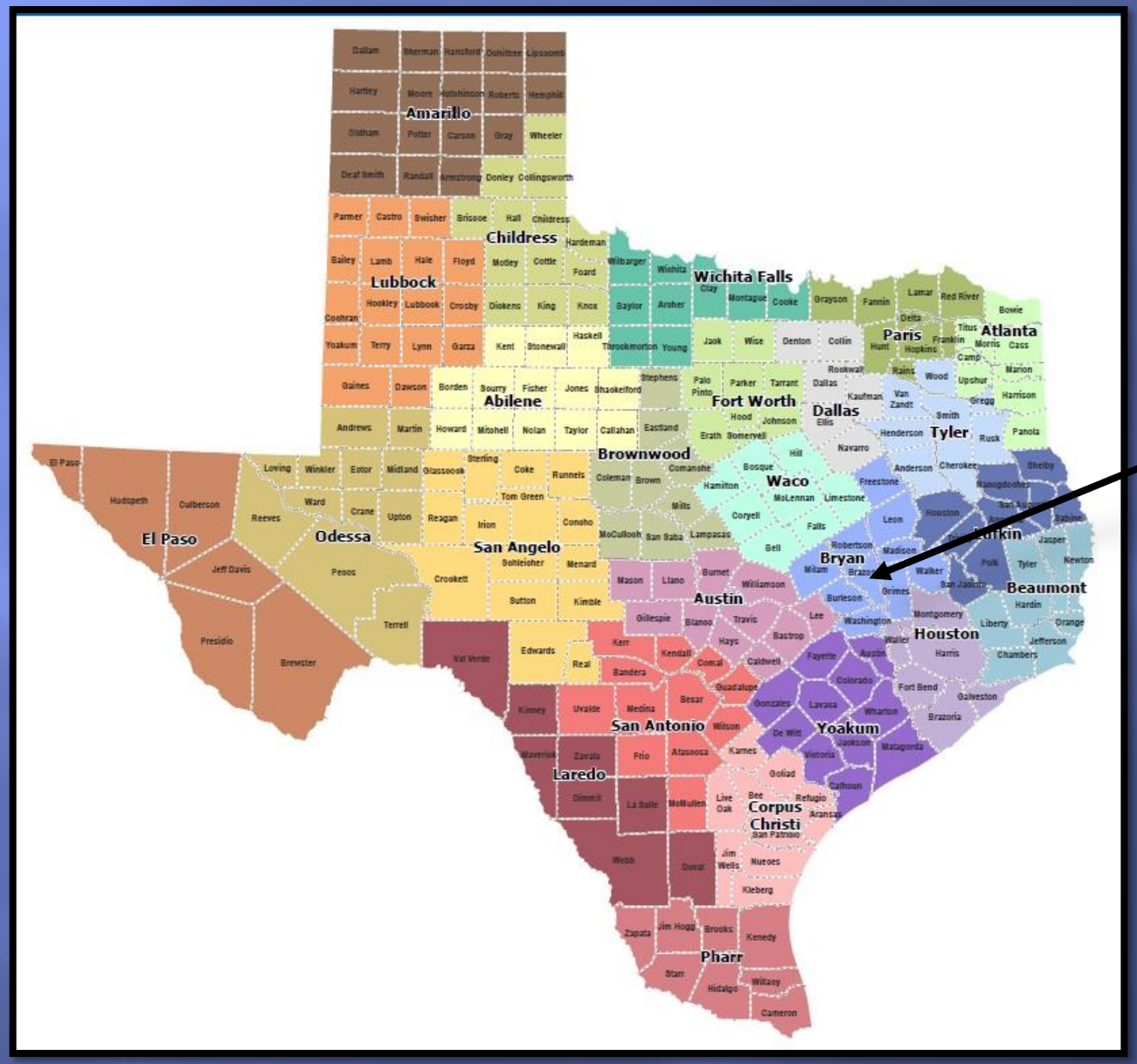
Resolutions/Lessons Learned

- Allow fiber-optic line to remain in place where it was relocated
- Ensure correct centerline (existing vs. proposed) is utilized for utility relocation permit
- City held meetings with TxDOT and contractor to address traffic delays and routing of haul trucks through town
- Contractor agreed to fix local roads in town to mediate damage from haul trucks



Thag Anderson becomes the first fatality as a result of falling asleep at the wheel.

SH 6 BRIDGE @ OLD RELIANCE



BRAZOS COUNTY

2010

Project Location




Search Google Maps
N Earl Rudder Fwy
Bryan, Texas
Google Street View
Mar 2008 See latest date
©2019 Google
©2019 Google
N Earl Rudder

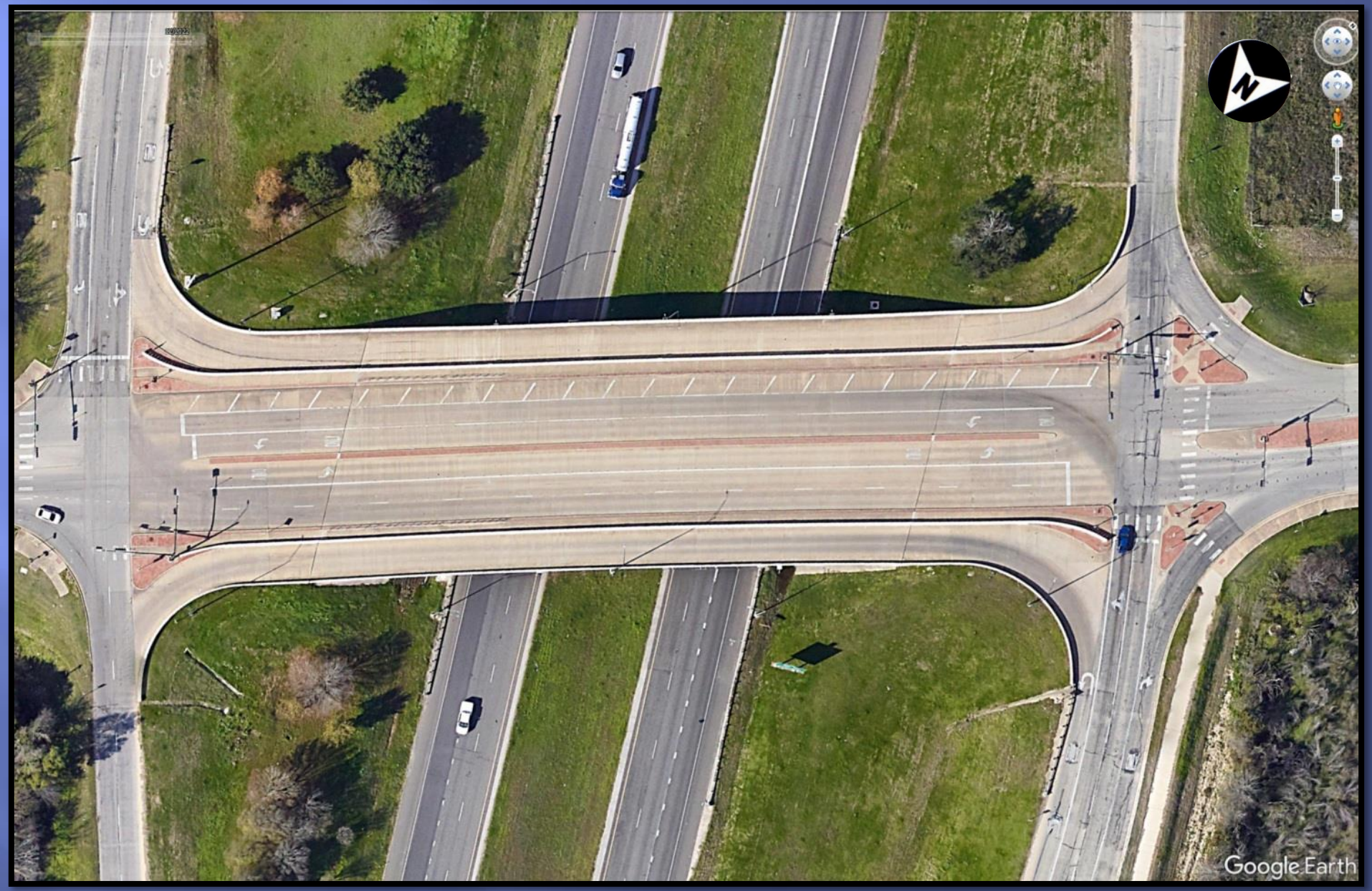

Google Earth

TxDOT Project Information

- Demo and reconstruct bridge over SH 6

Challenges

- Weekend work with total freeway closure
- Protecting the existing highway below from demo of bridge deck


Google Earth

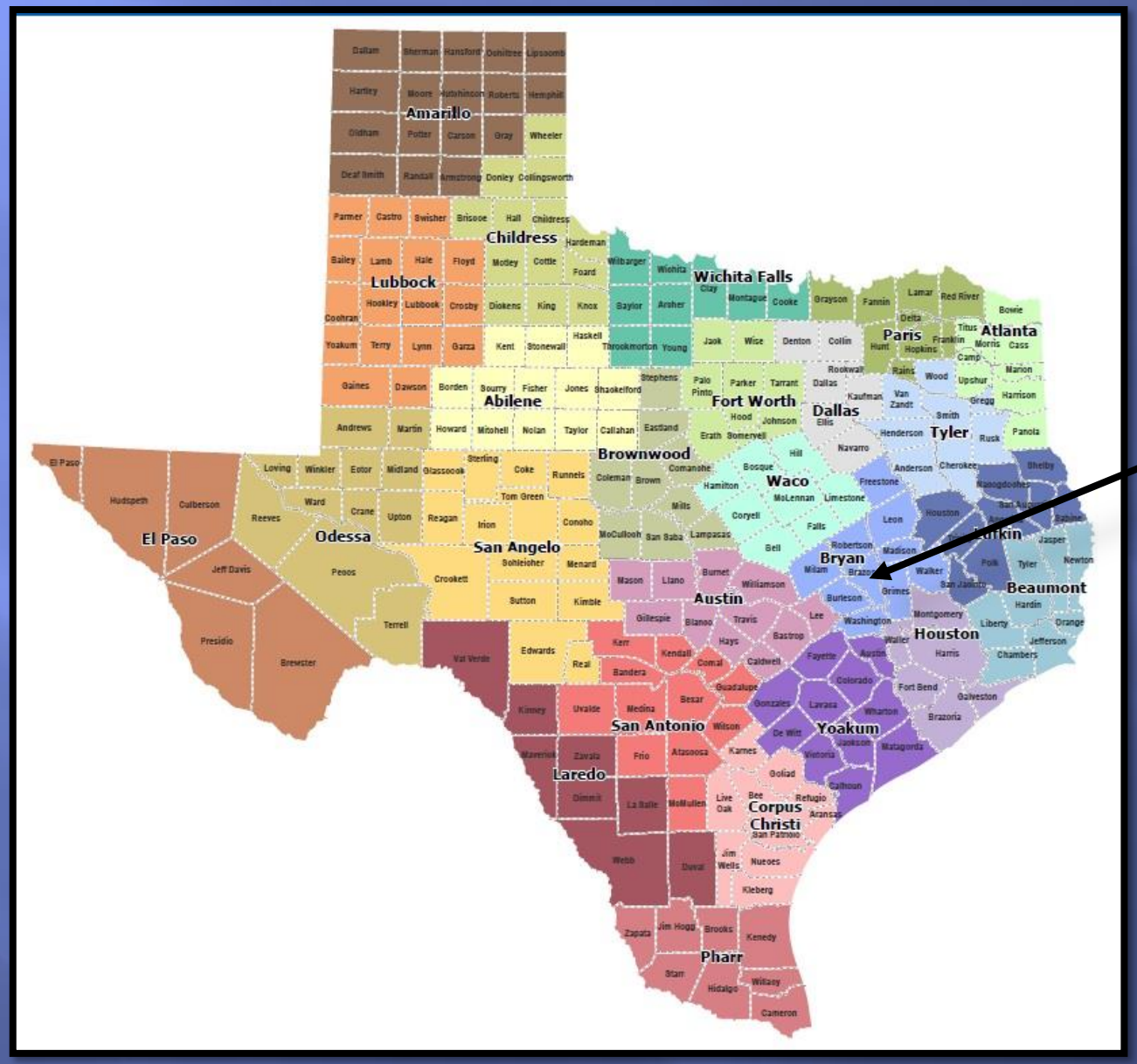
Resolutions/Lessons Learned

- Coordination with Department of State Health Services at least 10 days prior to demo
- Coordination with City of Bryan, emergency services, and local media
- Install 2 feet of embankment over the pavement to protect roadway

Looks like some vehicles have found an alternate route. We best start some new construction over there too.



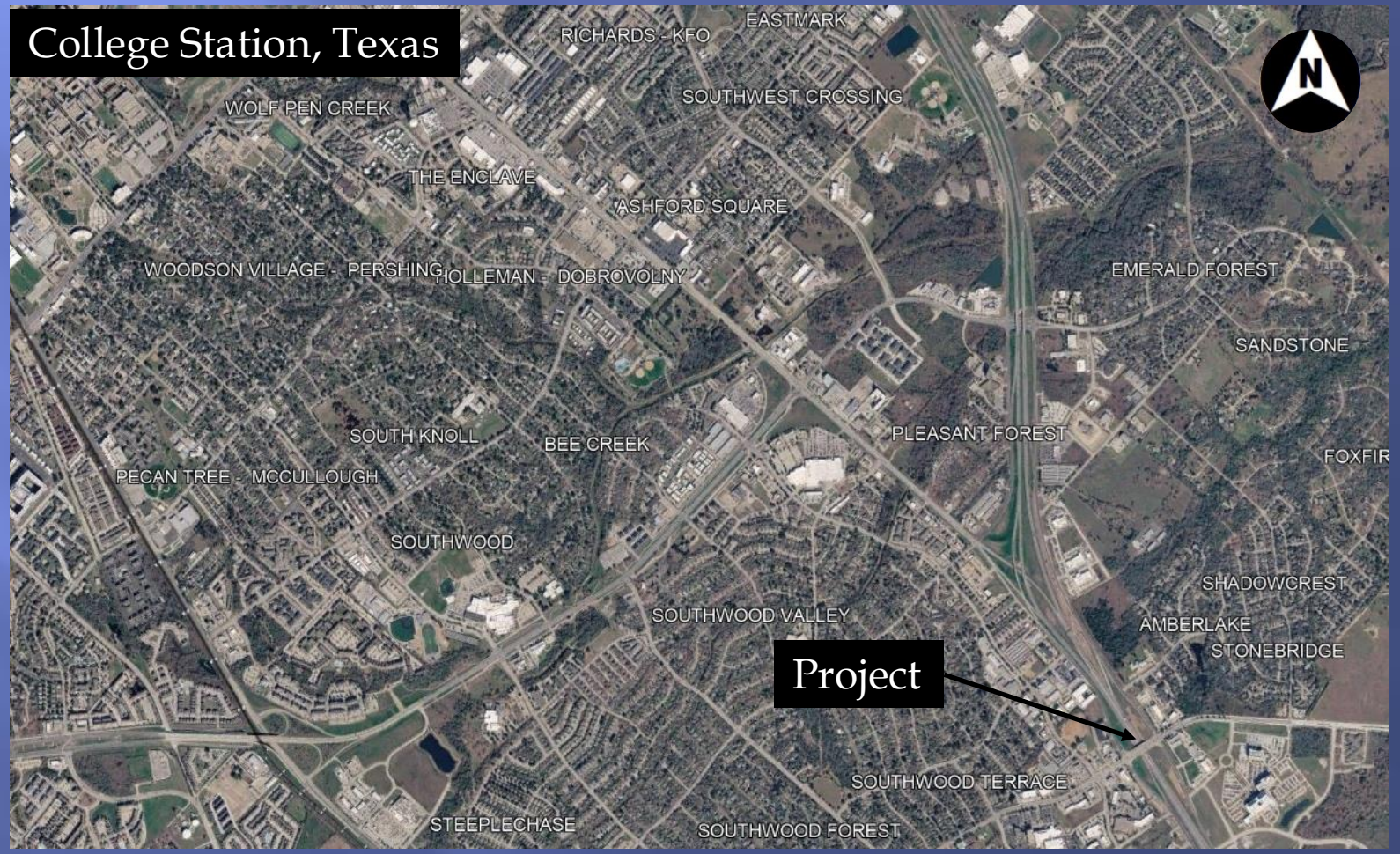
SH 6 BRIDGE @ ROCK PRAIRIE



BRAZOS COUNTY

2014

Project Location



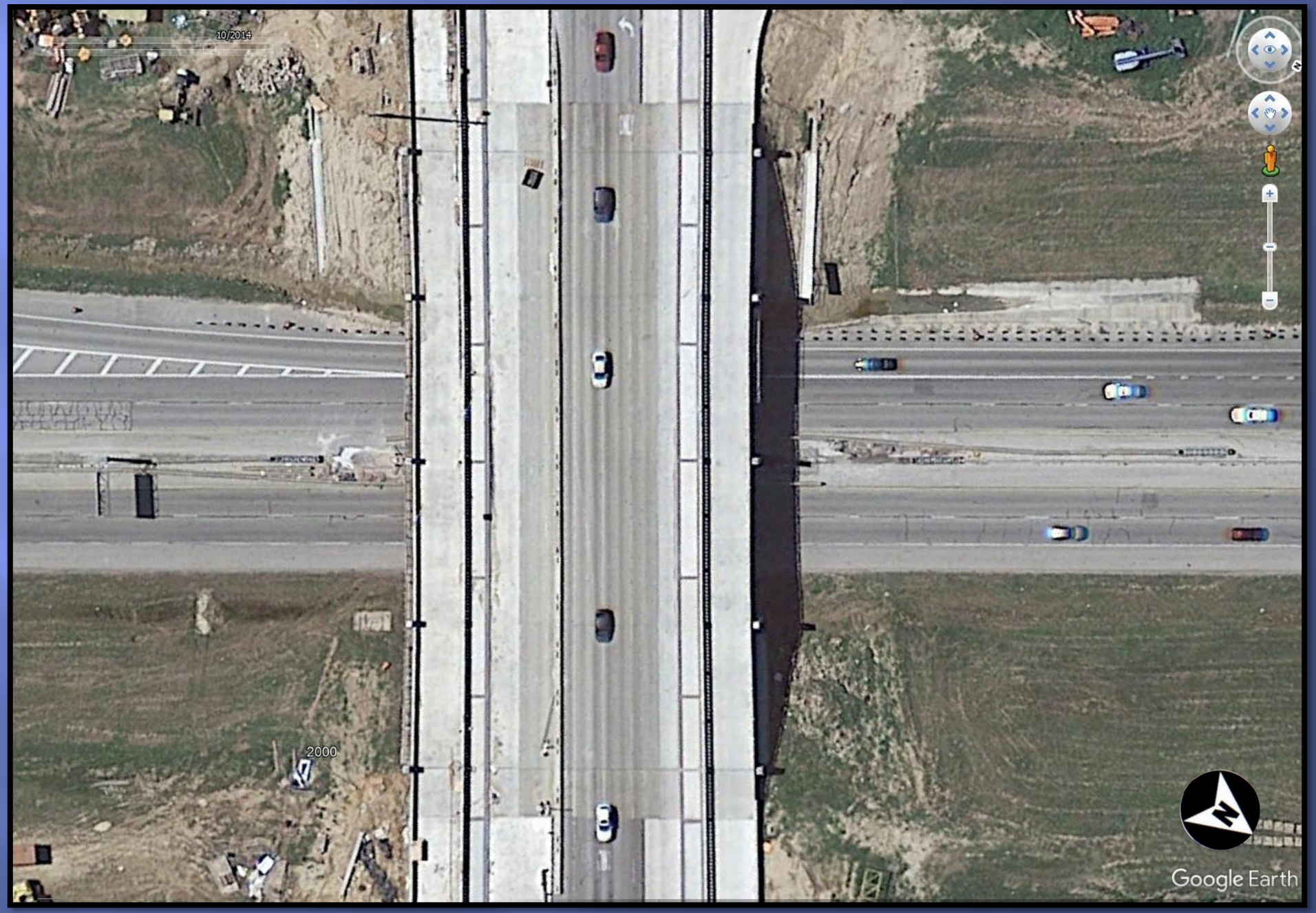

©2019 Google
©2019 Google
Earl Rudder

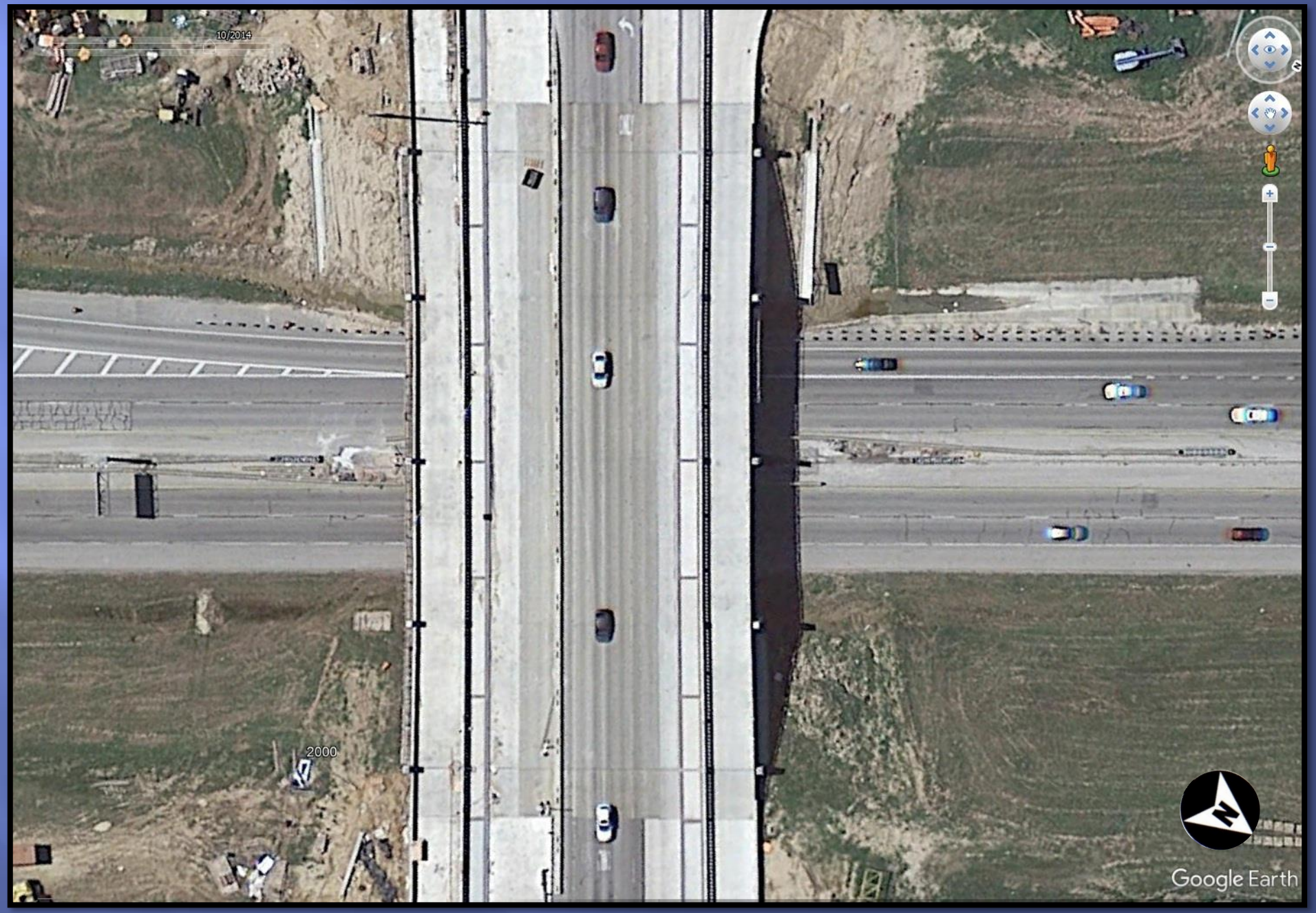
TxDOT Project Information

- Widen existing Rock Prairie Road bridge over SH 6

Challenges

- High speed highway
- Construction trucks entering and exiting median work area


10/2014
2000
Google Earth

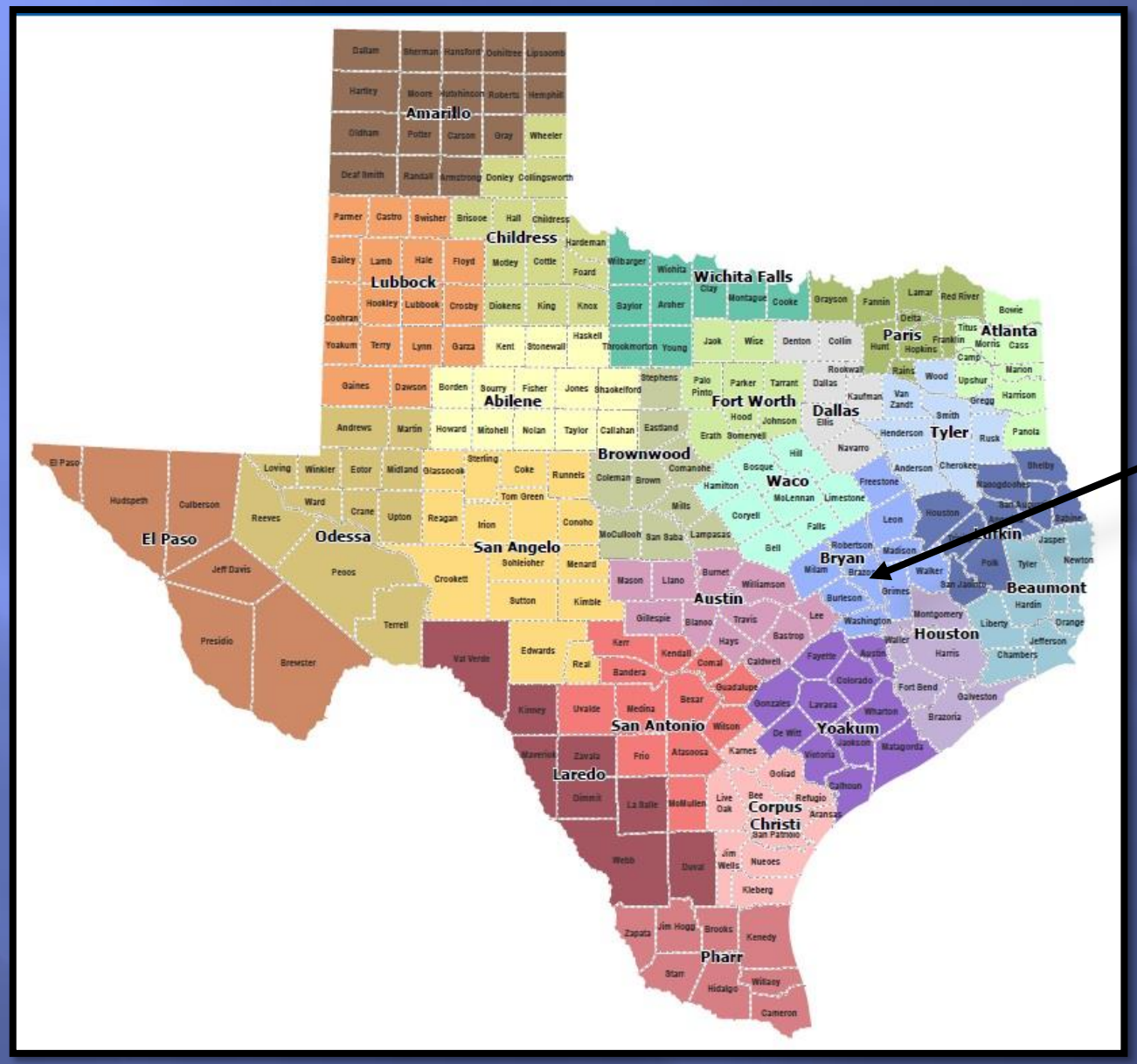

10/2014
2000
Google Earth

Resolutions/Lessons Learned

- Design an ingress/egress for construction vehicles using concrete traffic barrier and current traffic control


END
ROAD WORK
END
ROAD WORK
ROAD
WORK
END
ROAD
WORK
TikTok
@creatipnsross

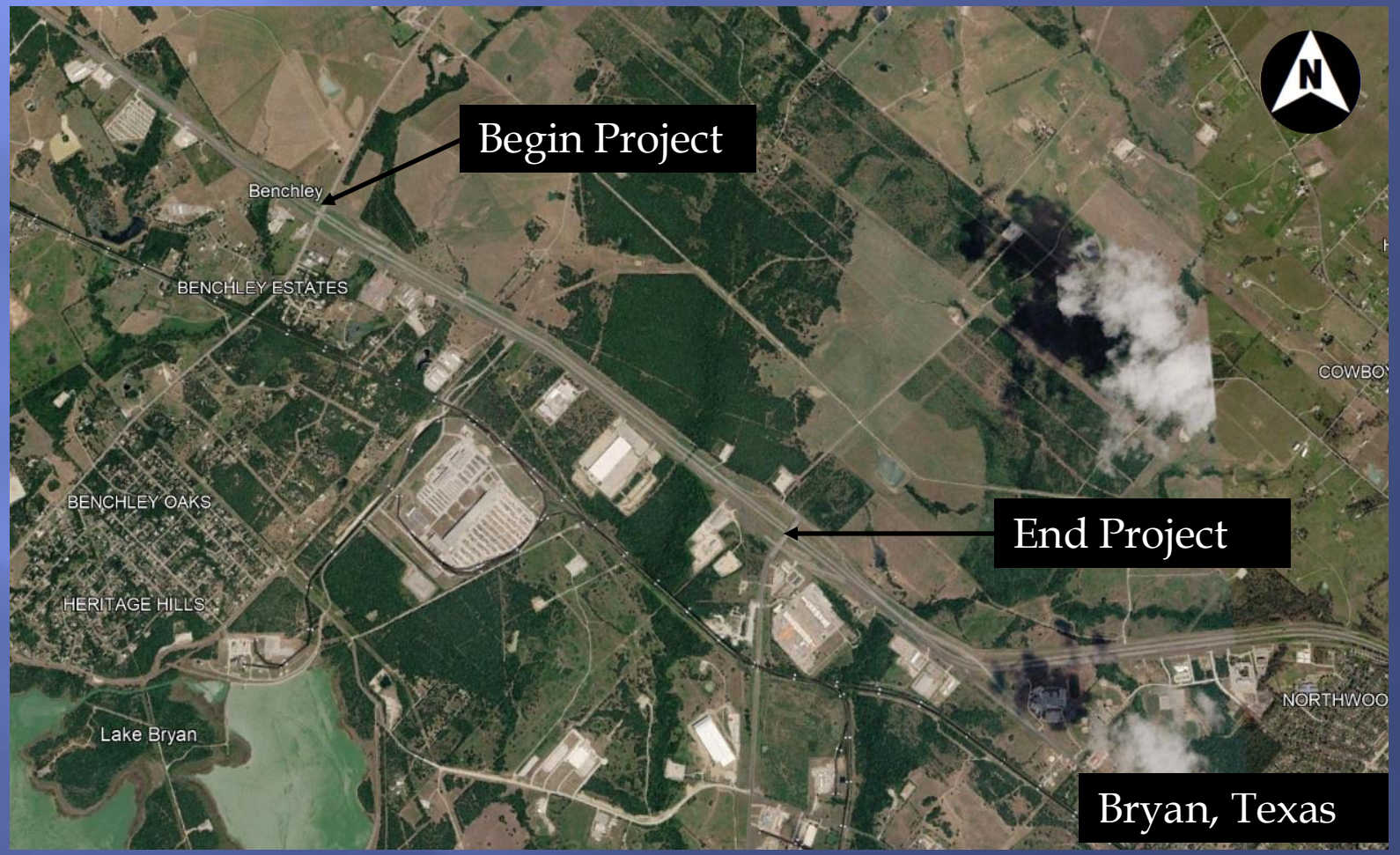
SH 6 BENCHLEY BUMPS



BRAZOS COUNTY

2006

Project Location



TxDOT Project Information

- Remove and reconstruct sections of SH 6 with expansive soils

Challenges

- High speed facility
- Excavations over 4.5′ adjacent to concrete traffic barrier with earth materials eroding at the vertical face

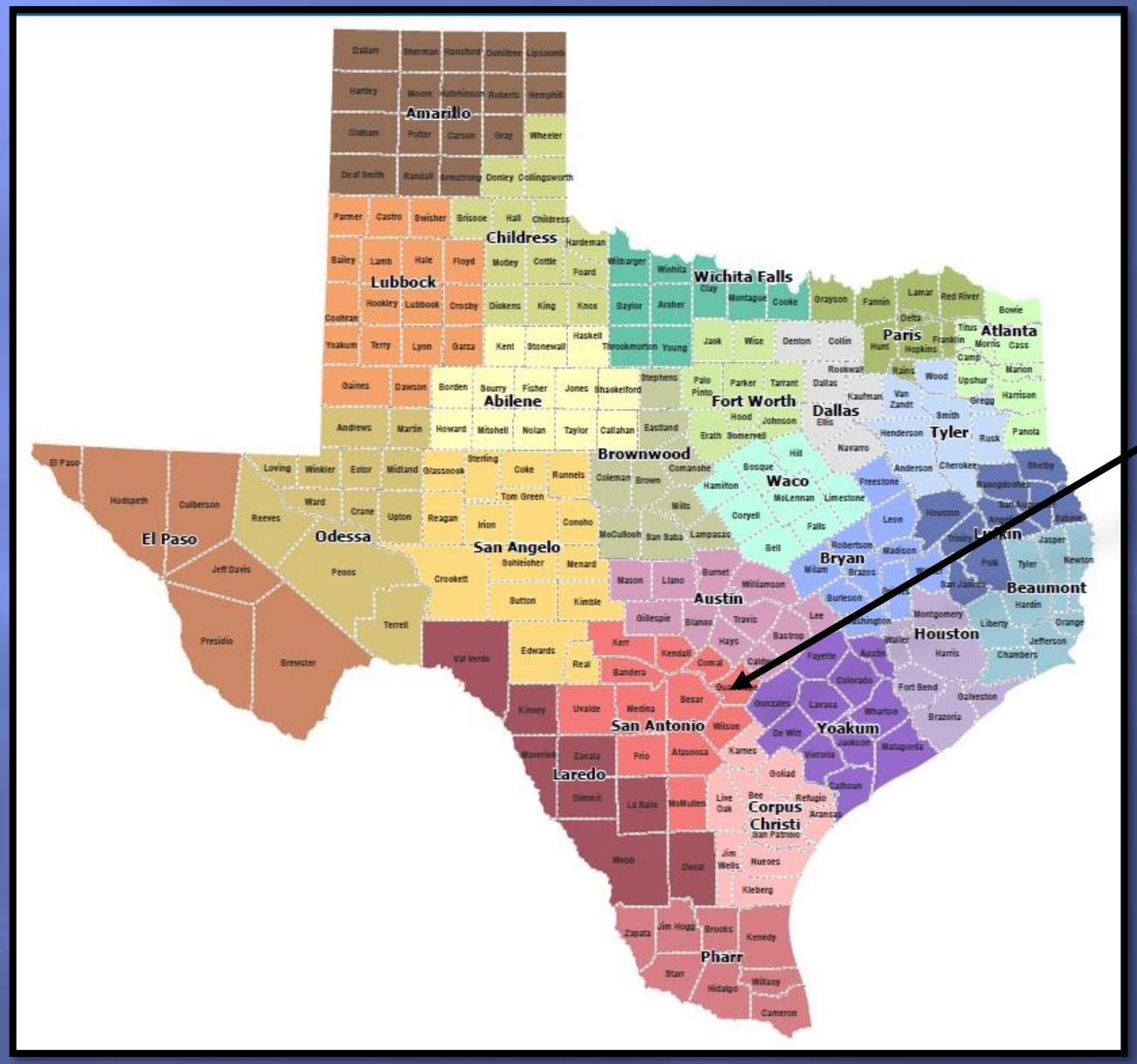
Resolutions/Lessons Learned

- Coordination with pavement engineer to mitigate the sloughing off of material on the vertical face by installing a temporary triangular wedge of material throughout the cut sections
- Pin the concrete traffic barriers limiting deflection when struck by errant vehicles

Not saying the potholes round here are bad but .....



FM 466 PAVING PROJECT



2015

Project Location

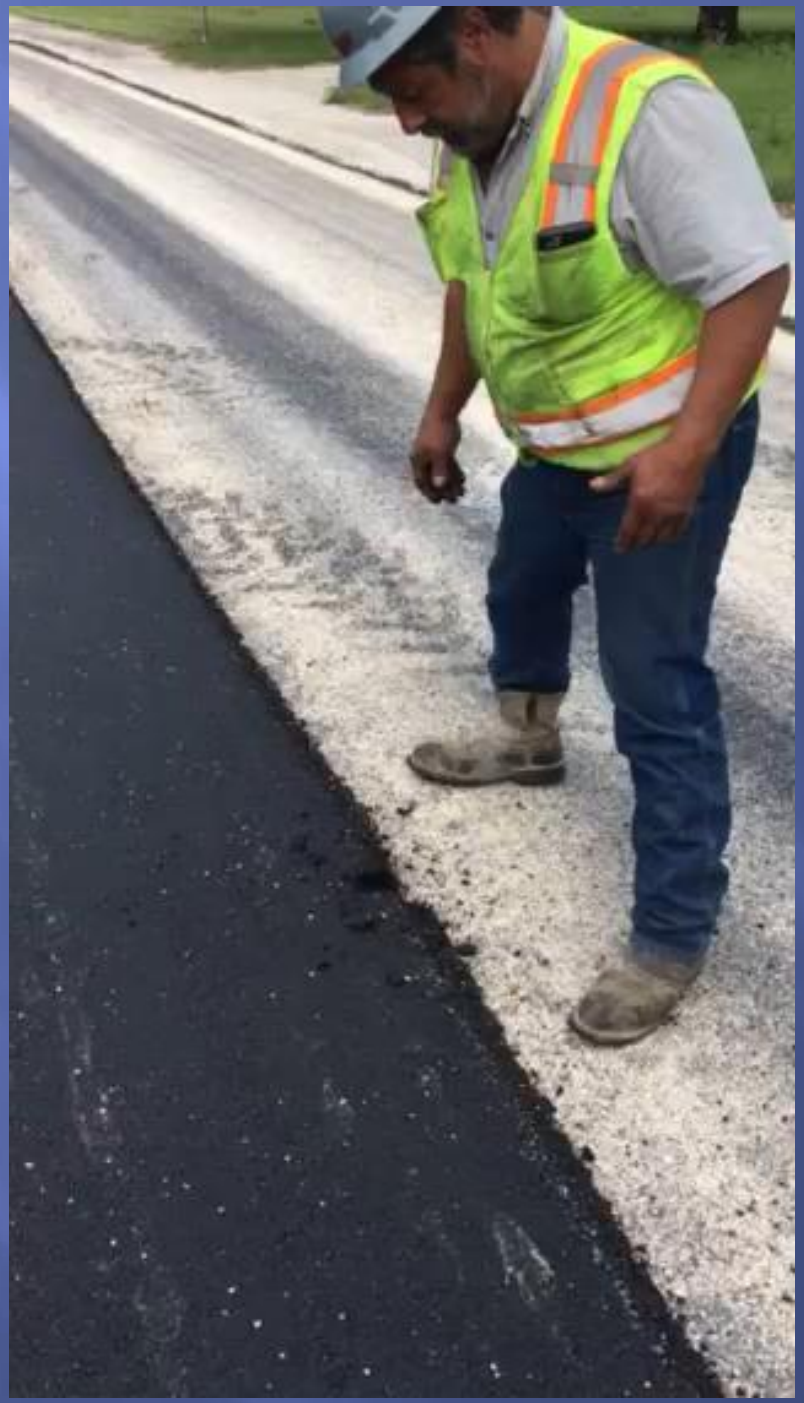


TxDOT Project Information

- Remove and replace Hotmix pavement.

Challenge

- Hotmix failure



Resolutions

- Tried changing the rolling pattern, to no avail
- Density testing passed, but still had failures
- Removed and replaced with new mat

Lesson Learned

- When using RC-250 Asphalt and Grade 5 Aggregate to seal the road and allow traffic, wait the required cure time (2 weeks) before placing the final HMA surface

FINAL CONSTRUCTION HUMOR


LOOSE
GRAVEL


PERFECT EXAMPLE
GIVE CYCLISTS SPACE
OF GOVERNMENT HELPING...

Elmer Fudd has a new job



Found an extra pair of boots at the worksite so I decided to give my boss a heart attack



Great Story






SUMMER IN TEXAS
WINTER IN TEXAS


END
OF
ROAD
Thanks for being here and listening to this guy!
DRIVE SAFE