



## Bridge/Structural Design

ISE structural staff is TxDOT pre-certified in the layout and design of minor and major bridges; complex, multi-level interchange bridges; as well as freeway and direct connector bridges and pump stations. Our bridge designs have utilized prestressed concrete U-beams, I-girders, box-beams; straight and curved steel plate girders / trapezoidal box girders for toll facilities and TxDOT projects.

Additionally, the ISE structural group is experienced in the layout and design of several transportation-related structures including HOV and Managed Lanes bridges; Railroad bridges and retaining walls; truss bridges; stream, river and Intracoastal Waterway bridge crossings; multi-column, hammerhead, cantilever and straddle bents; drill shaft, piles, and group foundations; bridge class culverts; depressed ramps/freeways; MSE, drill shaft and concrete retaining wall structures; permanent and temporary soil nail walls; wick drains and stone columns soil consolidation and strengthening; marine tieback bulkhead walls and container yard buried structures; special drainage junction boxes; special main lane and ramp toll gantry structures; and special overhead, cantilever, braced tee and bridge mounted sign structures.



IH 10/IH 610 Interchange



Forney Parkway over US 80\*

The ISE structural group performs the analysis and design of transportation structures utilizing its knowledge and experience to leverage their computer programs - PGSuper, BGS, CAP18, Vbent (Post-tensioning and single column bents), Wincore, Lpile bent and drill shaft walls, OSB, COSB, CULV5, PCBeam, Leap RCPier and Conspan, STAAD-PRO, RISA frame and finite element modeling, SAP2000, MDX Steel Design, Descus Steel Design, SNAP soil nail wall design, FLPier, Cwalsht, Prosheet, and SEISAB.

Our bridge/structural design experience includes the following projects:

- FM 1960 Widening and Reconstruction, TxDOT
- IH 35W Segments 3B and 3C, TxDOT
- SH 249, Tomball Tollway, HCTRA
- Hardy Toll Road AET Conversion, HCTRA
- IH 610/US 290 Multi-level Interchange
- SH 71/US 183 Multi-level Interchange\*
- IH 610/IH 10 Multi-level Interchange\*
- Holderrieth Road Segment 2, Harris County Precinct 2
- Williams Way Boulevard over Rabbs Bayou, Fort Bend County
- FM 2268 over Campbell Branch, TxDOT

\* denotes staff experience while with another firm