

## BEAM ME UP SCOTTY

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### SPECIAL POINTS OF INTEREST:

- The 3,900-foot flyover is the longest and tallest bridge structure in the history of the Lubbock District.
- Each steel girder used on the flyovers weighs approximately 57,000 pounds.
- More than 6,200 feet of noise wall will be placed along the freeway to benefit the 66 property owners.



Photo by Michael Stroope

The pieces fit together like a carefully crafted jigsaw puzzle, each piece fitting snugly and precisely into the next. And, as the pieces are placed, the picture comes together.

Like a giant snake, the combination of concrete and steel beams will join together to form the longest and tallest highway bridge structure in the history of the Lubbock District—the 3,900-foot flyover at US 62/82 and West Loop 289.

Several months ago, TxDOT began laying beams across the gigantic columns already in place to support the future highway bridge.

But each piece will fit into the next like a specially made glove—each piece manufactured to curve at just the right spot.

The large steel custom-made girders are used in special instances where you are either spanning long distances or you are in a curve.

And if Lubbock motorists notice that the beams look a bit rustic? That's exactly what was intended.

They are weathered steel, and they will definitely have a rustic look.

The large steel beams are swinging into place, interspersed with concrete beams

that will be used in places that don't require the specially-designed steel girders. Thousands of bolts will hold together the steel girders that will be supported with a shoring tower until each piece is connected and secured. Cranes raise the beams more than 60 feet into the air, balance them on a shoring tower and secure them in place with the large bolts.

Despite the enormity of the job, traffic has not been significantly impacted during this first phase. Most of the beam placement over the Loop main lanes is taking place at night. For the next few months, TxDOT will continue to shut down the main lanes at night as contractors raise and place the beams to form the bridge over the Loop.

TxDOT is looking at the end of the year to finish the placement of the beams. The flyover is part of Phase 3A of the Marsha Sharp Freeway project.



# FREEWAY ARTWORK ENHANCES COMMUNITY

Gone are the days of gray concrete and boring freeway structures with the only hint of color coming from the green weeds poking through the cracks in the cement.

Instead, TxDOT and the members of the Lubbock Chamber of Commerce’s “Lubbock—Giant Side of Texas” image committee, are suggesting something more aesthetically pleasing.

Cotton bolls, guitars, windmills, sunsets and expansive horizons—all these images and more will grace the retaining walls of the Marsha Sharp Freeway. When it is finished, the new freeway will showcase an abundance of public art that will put the major metropolitan areas to shame.

TxDOT Bridge Division Artist Michael Ford designed the aesthetic features which

celebrate Lubbock’s strengths including agriculture, ranching, and the arts. The themes for the freeway artwork parallel the Chamber’s giant side campaign that kicked off last year.

The Lubbock artwork is not Ford’s first attempt at freeway aesthetics, however. The Austin artist designs public art for highways all over the state of

Texas. His creations range from wheat and windmills that grace the retaining walls on US 287 in Childress, to Ridley sea turtles on the JFK Causeway in Corpus Christi. Ford also places his mark on each of his creations—a small gecko adorns each piece of artwork. The creature is intricately woven into the artwork making it a challenge for viewers to find the tiny, whimsical mammal.

TxDOT is also partnering with the Louise Hopkins Underwood Center for the Arts in an effort to pro-

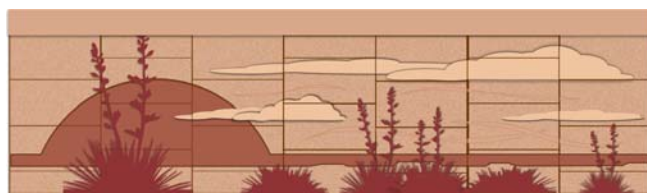
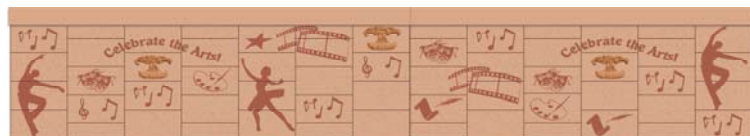
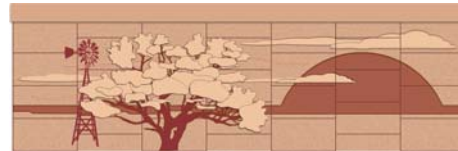
mote the growth of public art in Lubbock. The center recently commended the department for including original art in the Marsha Sharp Freeway design.

“Public art does more than beautify,” said Kathryn Oler, executive director for the center. “It makes a statement about a community.”

Lubbock Chamber of Commerce 2005 Chairperson Linda Gaither added that the artwork covers a broad spectrum of Lubbock culture.

“This artwork is an outstanding depiction of Lubbock’s many facets, and we appreciate the opportunity to work with the Texas Department of Transportation on this effort,” she said.

**“Public art does more than beautify. It makes a statement about a community.”**  
Kathryn Oler



## NOISE CAN BE MITIGATED

Things can just get too noisy sometimes—particularly on a freeway. In fact, it’s the noise level on a freeway that concerns TxDOT’s environmentalists.

“If the decibel level is too high,” explained Davis Melton, Lubbock District environmental administrator, “then we have to consider noise abatement measures.”

And, at places along the Marsha Sharp Freeway, decibel levels are at or exceed 66 dBA. At this level the district is required to consider noise mitigation. Mitigating noise along a highway means using one or more of the four alternative noise abatement measures available. These include traffic management, alteration of horizontal and/or vertical alignments, buffer zones or noise barriers.

Traffic management measures involve traffic control devices that reduce the speed of traffic. Alteration of horizontal and/or vertical alignments could mean actually moving the road further away from the affected noise receivers. Using a buffer zone re-

quires the state to buy more right of way adjacent to the highway project.

But, the most commonly used noise abatement measure is noise barriers such as the noise walls that are planned in four locations along the freeway.

These noise walls are strategically placed to reduce decibel levels to the adjacent residents. TxDOT suggested the locations for the noise walls—the residents decide if that’s what they want.

**“That’s more than a mile of traffic noise barriers that we are putting in place on this freeway.”**

**Davis Melton**

“They vote, and they have the option to not do the noise abatement,” Melton added. “In fact, on the east end, the citizens voted for no walls because they didn’t want to impede commercial development in that area.”

While noise walls reduce noise levels, they also have a downside. Noise barriers restrict access to adjacent areas having a negative impact on businesses by restricting views and access on the part of potential customers.

“We never put up noise walls in business areas for that reason,” Davis added.

But, noise walls can be beneficial, particularly in mostly residential areas.

There are four locations along the freeway where the walls will be placed. Wall number one will be placed along the freeway from Chicago Avenue to

Bangor Drive. Length is 1,621 feet and it will be 11 feet high. Cost of this wall will run about \$335,000.

Walls will be placed at three other locations: From Vicksburg Avenue for about 1,600 feet along 27th Street, from Toledo Avenue for about 1,500 feet, and east of Toledo Avenue for about 1,100 feet.

More than 6,200 feet of wall will be placed on the Marsha Sharp Freeway project to benefit the 66 residents.

“That’s more than a mile of traffic noise barriers that we are putting in place on this freeway,” Melton noted.

It equates to \$1.3 million in cost or about \$20,000 per person.

Future noise wall on Marsha Sharp Freeway.



## BRIDGING THE GAP NOT AN EASY JOB

**W**hen it comes to bridges, the Lubbock District is about to be an expert.

There are 39 bridge structures on the Marsha Sharp Freeway, each one of them individually designed to suit traffic volumes and handle access issues at each location along the freeway.

These massive structures can tower as much as 75 feet in the air. And, building a bridge of this size is a complicated process, said Will Barnett, Lubbock District engineer and freeway project inspector.

“In bridge building, things are aerial—up in the air. Access to and from is limited,” he added. “Where you stage your equipment is dictated by how far that equipment can reach. It takes a really large pump truck to reach some of the work locations. It’s moving that equipment from location to location that takes up so much time and extends the duration of the project.”

Construction work on some bridges is further complicated when a project calls for different substructure shapes, he noted.

“It’s much easier to lay steel and finish the project

when you have squared columns,” he added.

But, he added, in the interest of adding some aesthetic value to the freeway project, plans call for intricate column shapes that include inverted Ts and flared hammerhead caps. These styles are more intricate and it takes more time to lay and tie in the steel.

“What that means is that there are lots of nooks and crannies that you have to fill in with the steel,” Barnett said. It takes a lot more time.”

Using steel girders also makes bridge building more complicated. The steel gird-

ers are custom designed to fit curves and places where you have long spans. Steel beams have to be laid sequentially. They also have to be welded and require several hundred bolts per splice.

“Most bridge work is sequential, not linear,” Barnett added. “When you are pouring concrete forms, you have to pour all the forms for that one shape. Then you strip down the form and construct another one for another shape.”

He added, “You can’t leapfrog your concrete form pours. It becomes time-consuming because you have to pick up and move the equipment to a new location rather than pouring in a linear fashion or one right after the other.”

Decking on a bridge is also time-consuming, Barnett said.

“There’s so much surface area to cover,” he added. “You’re talking covering an

area that’s at least as big as a football field.”

### Here are some interesting bridge facts:

- There are **233,373 square feet of concrete on the bridge decks** on the West Loop project.
- The 3A project has **348,471 square feet or 8 acres of bridge deck**.
- Phase 2 is the largest. All the bridges on phase 2 add up to **399,811 square feet** or the equivalent of **nine football fields**.
- **11,660,000 pounds** of steel girders being used on the three freeway phases in contract.
- On the three phases in contract, TxDOT will use **101,325 feet or 19 miles** of concrete beams.

**“In bridge building, things are aerial...Access to and from is limited.”**  
**Will Barnett**



Photo by Michael Stroope

## BRIDGE SCHEDULE

- **Southbound flyover** at West Loop 289 and Brownfield Highway is 3,900 feet long and 62 feet high. It is the longest and tallest bridge structure in the history of the Lubbock District. Construction started last month on the connector bridges and will be completed next spring.
- **Eastbound flyover** at West Loop 289 and Brownfield Highway is 1,700 feet long and 41 feet tall. It has two steel caps that pass through the beam girders instead of the girders sitting on top of the cap as in traditional bridge design. This bridge will be completed next spring.
- **19th Street Westbound Connector** is 2,264 feet

long with 887 feet of steel girders. It's 30 feet tall at its highest point. This flyover will feature an anti-icing system to prevent icing in the winter. Completion is scheduled for the winter of next year.

- **19th Street Eastbound Connector** is 1,570 feet long. Completion is scheduled for the winter of next year.
- **The University Street Bridge** will feature a Spanish Colonial design to match Texas Tech University. The bridge will be 202 feet long and 198 feet wide. Contractors will begin work on the University Street intersection in early 2007 and will be completed in

the spring of 2008.

- **Texas Tech Parkway bridge** will be 191 feet long and 171 feet wide. The Spanish Colonial design was used to match the other structures on the Texas Tech campus. Contractors are working on the bridge which will be finished next Spring.
- **US 62/82 main lane bridges** at West Loop 289. The westbound bridge will be 2,400 feet long and 44 feet high. The eastbound bridge is also 2,400 feet long but slightly higher at 46 feet. Scheduled for completion next spring.



Photos by Michael Stroope

We are on the web.

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## Marsha Sharp Freeway project schedule

**Phase 1:** Widening West Loop 289—main lanes and frontage roads—from Slide Road to 34th Street, building the 50th Street interchange and the frontage roads on US 62/82 from Chicago to just past the Loop. This \$46.5 million project finished early this year.

**Phase 2:** Includes building the entire freeway—frontage roads, interchanges and main lanes from Salem Avenue to Avenue L. This \$131 million construction project kicked off in May of last year and is scheduled for completion at the end of 2008.

**Phase 3A:** Building the main lanes from Chi-

cago Avenue to about a mile past the West Loop and the construction of two major flyovers at US 62/82 and the Loop. This \$32 million project started last year and will wrap up at the end of this year.

**Phase 3B:** This \$34.3 million project includes building the 34th Street and Slide Road interchange and the main lanes from Chicago Avenue to Salem Avenue. This phase lets in December of this year and is scheduled for completion in late 2008.

**Phase 4:** Construction of the interchange at IH27 and Fourth Street. This \$60 million project will begin in 2009 and

completes in late 2011 or early 2012.

**Phase 5:** Construction of main lanes and frontage roads from Lubbock to Wolfforth. This \$50 million project begins in 2012 and completes in late 2014 or early 2015.