



Freeway Mitigation and Enhancement Ideas



Prepared by the City of Phoenix Planning Department

July 1998



▲ Introduction ▲

Since World War II, freeways have reshaped American cities, speeding urban automobile movement and opening up new regions for development. They have also created blight in many neighborhoods.

Often freeways created the most prominent public works structures in a neighborhood or even a community. However, the design and location of these structures typically responded to goals of safety, efficiency and cost and did not consider community disruption or appearance. Some freeway structures, particularly elevated portions of freeways, cut through neighborhoods, isolating schools, parks, shopping and friends. The structures themselves are often barren of landscaping, constructed of heavy appearing concrete or steel which create dark, often unmaintained and uninviting locations beneath them.

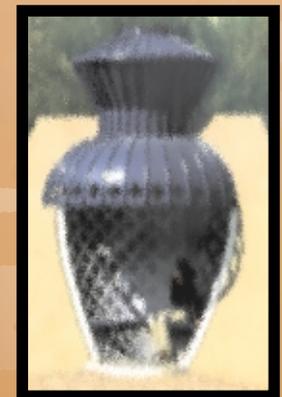
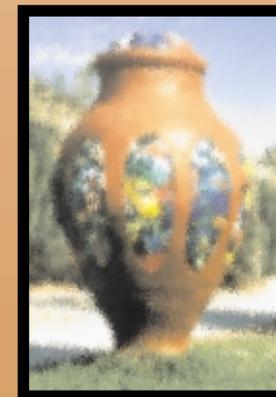
However, it is possible to design freeways with a sensitivity to the areas through which they pass. Depressed freeways, following natural barriers, can minimize the disruption to neighbors and minimize noise impacts. Structural elements can be designed as pieces of urban design. Landscaping the outer edges of freeways can be done to screen traffic, blending the roadway with adjoining neighborhoods. And public art can be integrated into designs to reflect neighborhood traditions and the community's cultural heritage.

Many examples in the Phoenix and Tucson metropolitan areas illustrate newly built freeways that can become an asset to their neighbors. The Piastewa Peak Parkway, including the award-winning Thomas Road interchange for example, was built to a high quality of design and landscaping and incorporated not only contemporary and historical artistic elements, but involved surrounding neighbors in its actual design.

The Miracle Mile interchange in Tucson reflects a community artistic expression to turn massive concrete walls into art pieces. The Sky Harbor Expressway, the Hohokam Expressway and the Agua Fria and Pima Freeway are incorporating Native American themes and designs near interchanges.

There remains a need to improve and upgrade older portions of the Phoenix area's freeways. Many of these were built before visual and design features were considered essential to the community. Some are built elevated for extended distances, further creating a visual and psychological barrier within their communities. The need for noise mitigation and including design standards for overpasses and other structures were not in place at the time they were built.

A freeway mitigation program in the City of Phoenix was established in 1988 to deal with the issue of compatibility of freeways to their adjoining neighborhoods. Freeway mitigation was created by voter approval of bond money to prepare plans and fund projects which could mitigate blighting effects caused by freeways on the city's neighborhoods recognizing that the physical presence of freeways makes them part of the neighborhood environment, impacting neighborhood identity, increasing isolation, and reducing privacy.





One of the goals of freeway mitigation is to improve the long-term compatibility of the freeway with adjacent and nearby land uses. Where opportunities exist to add to or retrofit freeways with enhancements to change their appearance, this will provide an opportunity to enhance compatibility and bring back neighborhood identity and strength. The following are freeway mitigation neighborhood enhancement plan objectives:

- ▲ Incorporate enhanced freeway design elements that improve its visual appearance;
- ▲ Create identifying elements for neighborhoods, like pedestrian zones and other features that identify public entry points to the neighborhoods;
- ▲ Incorporate enhancements at locations where the public and adjacent residents have access, such as trails, parks, and landscaped areas along the freeway;
- ▲ Create a sense of place or visual identity in neighborhoods along the freeway;
- ▲ Enhance landscaping that provides better screening of the freeway, softens the appearance of noise walls and improves the compatibility of the freeway with adjacent neighborhoods.

▲ Purpose ▲

The purpose of this book is to offer suggestions and ideas to community groups who are looking at either new freeway design or the upgrading of an existing freeway. This is not intended to be a design guide, but it offers suggestions as to how design and art elements have been successfully integrated with freeways and freeway interchanges. In this way, applications can be drawn for new situations or opportunities for improving the visual appearance and relevance of urban freeways.

▲ How to Use this Book ▲

Originally, this book was compiled for the City of Phoenix Black Canyon/Maricopa Freeway Specific Plan, for gathering ideas and suggestions from residents about the enhancement of the elevated Maricopa Freeway. The variety of enhancements included here have been or will be implemented on freeways in Arizona, primarily in the Phoenix metropolitan area. This book can be used at all types of public meetings associated with city, state or federal agendas regarding freeway enhancements.

In public meetings, this book is an excellent resource where public opinion on future freeway enhancements is important. Residents do not necessarily have to suggest the same type of enhancement, but there may be some aspect of a particular color, design or treatment that they would like to see in their area. This way, when public recommendations for enhancements are suggested at meetings, their ideas can be included in design concepts or specific mitigation plans.

In summary, this idea book is intended to stimulate discussion about the opportunities that may exist for visual improvement of freeways. By including costs and specific freeway locations, it can be a useful tool for communication between individuals or community groups and public or highway officials.



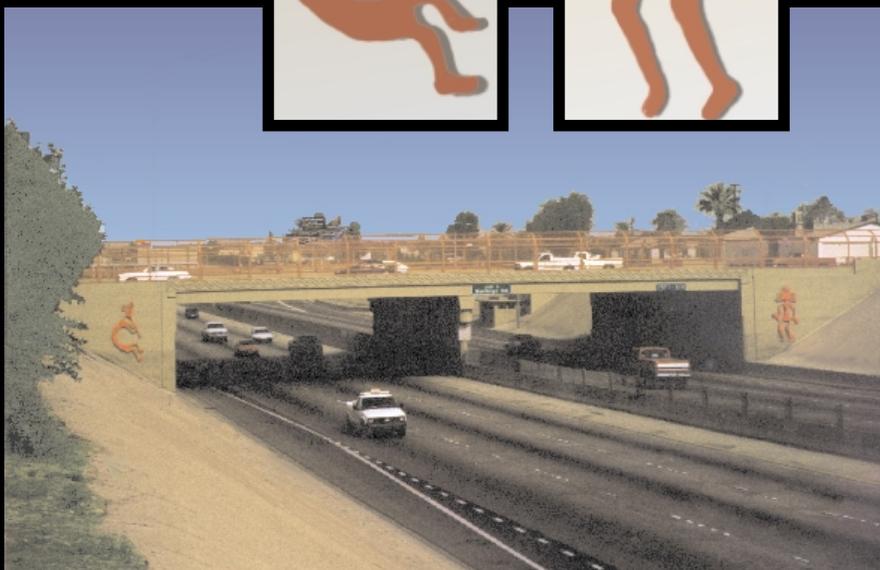


Photo: Hohokam figures (2 showing, 4 total)
Project: Reconstruction of Buckeye Road Bridge
Project Area: Buckeye Road over I-17 Freeway
Material: Painted metal
Cost: \$15,000/4 figures

Photo: Hohokam Bird
Project: Enhancement of approaches to Sky Harbor Airport
Project Area: Sky Harbor Airport overpass
Material: Styrofoam, fiberglass mesh, cement and paint
Cost: \$4,000

Photo courtesy of Robert Pikora

Photo courtesy of Robert Pikora



Photo: Hohokam Family of Snakes land graphic
Project: Enhancement of approaches to Sky Harbor Airport
Project Area: Sky Harbor Airport overpass
Material: Multi-colored decomposed granite, metal forms
Cost: \$0.57/square foot or \$25,000/acre

Photo courtesy of Joseph R. Salazar

Photo: Hohokam Gecko land graphic
Project: Enhancement of approaches to Sky Harbor Airport
Project Area: Sky Harbor Airport embankment
Material: Multi-colored decomposed granite, metal forms
Cost: \$0.57/square foot or \$25,000/acre

Photo courtesy of Robert Pikora

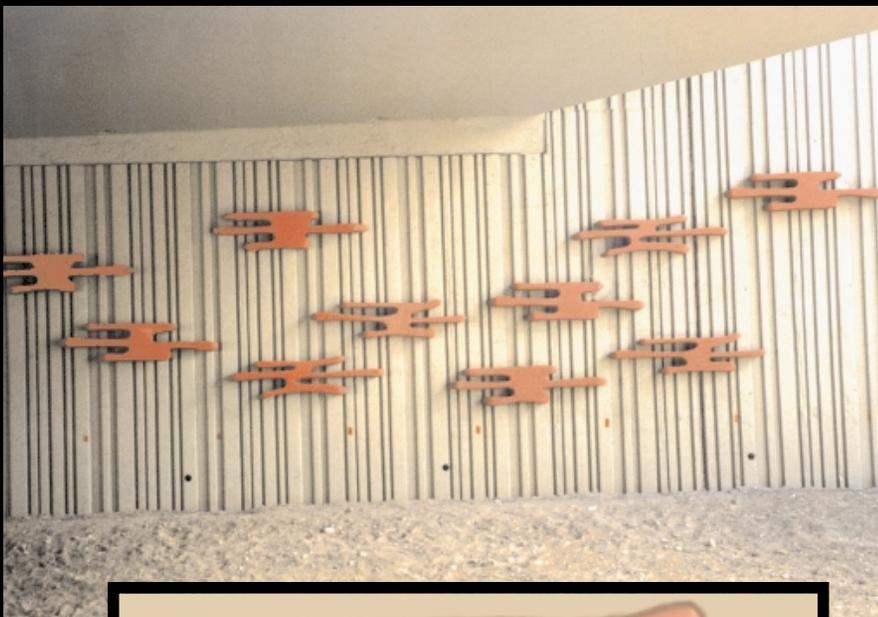


Photo: Hohokam Birds in Flight
Project: Enhancement of approaches to Sky Harbor Airport
Project Area: Sky Harbor Airport underpass
Material: Styrofoam, fiberglass mesh, cement and paint
Cost: \$350 each or \$24,500 for 75 birds

Photo: Hohokam Coatimundi land graphic
Project: Enhancement of approaches to Sky Harbor Airport
Project Area: Sky Harbor Airport embankment
Material: Multi-colored decomposed granite, metal forms
Cost: \$0.57/square feet or \$25,000/acre

Photo courtesy of Joseph R. Salazar

Photo courtesy of Joseph R. Salazar

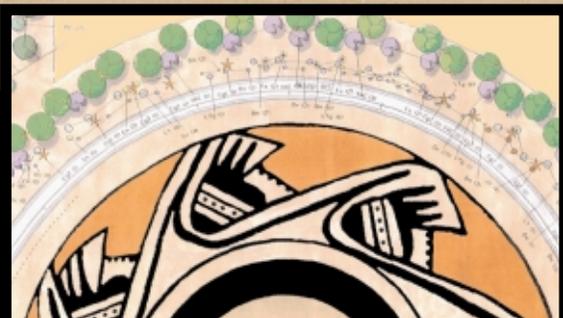


Photo: Hohokam Basin land graphic
Project: Enhancement of approaches to Sky Harbor Airport
Project Area: Sky Harbor Airport onramp to Hohokam Expressway
Material: Multi-colored decomposed granite, painted river rock, and metal forms
Cost: \$0.57/square foot or \$25,000/acre

Photo: Hohokam Pottery land graphic and desert landscaping
Project: Enhancement of approaches to Sky Harbor Airport
Project Area: Hohokam Expressway and Red Mountain Freeway
Material: Multi-colored decomposed granite, painted river rock, metal forms, and desert landscaping
Cost: \$0.57/square foot or \$25,000/acre (land graphic)
 \$1.50-\$2.25/square foot (landscaping)

Photo courtesy of Robert Pikora
 Land graphic rendering courtesy of Joseph R. Salazar

Photo courtesy of Joseph R. Salazar

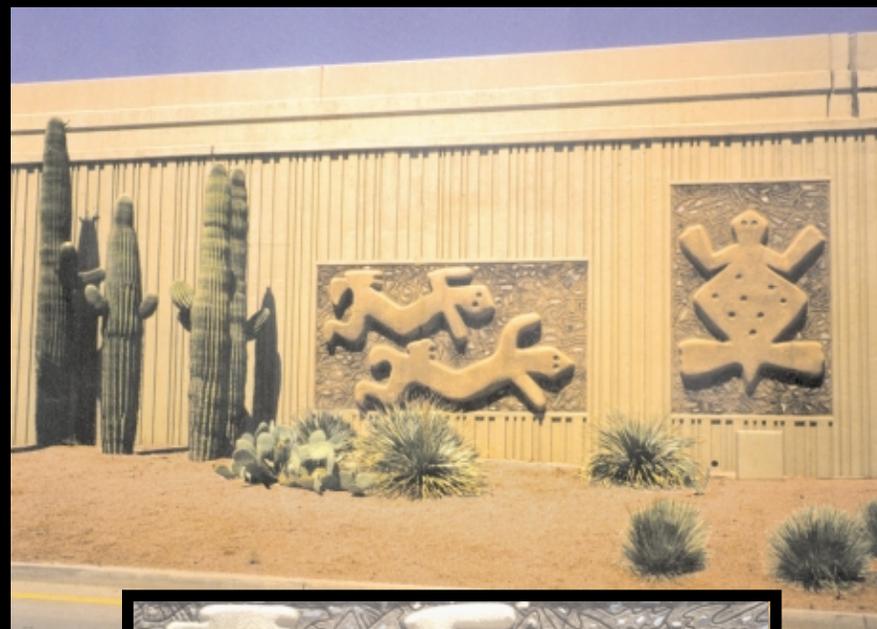


Photo: Adobe animal relief panels
Project: "Our Shared Environment"
Project Area: Piestewa Peak Parkway, north of Thomas Road at 20th St. and Greenfield Road
Material: Adobe on concrete panels
Cost: \$220,000 (total for Thomas Road overpass artwork, includes 34 adobe relief panels and six 24-foot tall, reptile-shaped columns, 1990)

Photo courtesy of Robert Pikora

Photo: Adobe animal relief panels
Project: "Our Shared Environment"
Project Area: Piestewa Peak Parkway, north of Thomas Road at 20th St. and Greenfield Road
Material: Adobe on concrete panels
Cost: \$220,000 (total for Thomas Road overpass artwork, includes 34 adobe relief panels and six 24-foot tall, reptile-shaped columns, 1990)

Photo courtesy of Robert Pikora

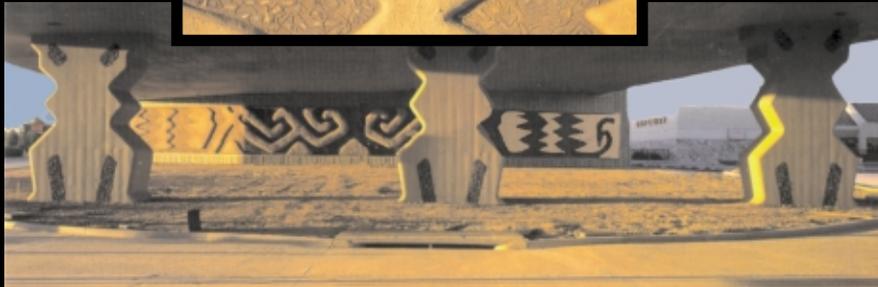


Photo: Adobe abstract relief panels
Project: "Our Shared Environment"
Project Area: Thomas Road and Piestewa Peak Parkway
Material: Adobe on concrete panels
Cost: \$220,000 (total for Thomas Road overpass artwork, includes 34 adobe relief panels and six 24-foot tall, reptile-shaped columns, 1990)

Photo: Adobe abstract relief panels
Project: "Our Shared Environment"
Project Area: Piestewa Peak Parkway overpass, south of Thomas Road at 20th Street and Cambridge Avenue
Material: Adobe on concrete panels
Cost: \$220,000 (total for Thomas Road overpass artwork, includes 34 adobe relief panels and six 24-foot tall, reptile-shaped columns, 1990)

Photo courtesy of Phoenix Arts Commission

Photo courtesy of Robert Pikora



Photo: Desert and low water use landscaping
Project: Piestewa Peak Parkway
Project Area: Piestewa Peak Parkway and Osborn Road
Material: Desert and low water use vegetation, decomposed granite
Cost: \$1.50-\$2.25/square foot (landscaping)
\$0.50/square foot (decomposed granite)

Photo: Desert and low water use landscaping
Project: Piestewa Peak Parkway
Project Area: Piestewa Peak Parkway, north of Osborn Road
Material: Desert and low water use vegetation, decomposed granite
Cost: \$1.50-\$2.25/square foot (landscaping)
\$0.50/square foot (decomposed granite)

Photo courtesy of Robert Pikora

Photo courtesy of Robert Pikora



Photo: Desert and low water use landscaping
Project: Piestewa Peak Parkway
Project Area: Piestewa Peak Parkway, south of Bethany Home Road at 18th Street and Montebello Avenue
Material: Desert and low water use vegetation, decomposed granite
Cost: \$1.50-\$2.25/square foot (landscaping)
 \$0.50/square foot (decomposed granite)

Photo: Southwest art sculpture, desert and low water use landscaping
Project: Desert Storm Park, Piestewa Peak Parkway
Project Area: 16th Street and Georgia Avenue, north of Colter Street
Material: Styrofoam and paint figures on concrete relief panel, desert and low water use vegetation
Cost: \$4.00-\$10.00/square foot (sculpture)
 \$1.50-\$2.25/square foot (landscaping)

Photo courtesy of Robert Pikora

Photo courtesy of Robert Pikora



Photo: Sun and Mountains relief painting; freeway turrets
Project: Piestewa Peak Parkway
Project Area: McDowell Road and Piestewa Peak Parkway
Material: Painted concrete
Cost: Relief panels and turrets included in cost of parkway construction

Photo: "Untitled" mural
Project: Piestewa Peak Parkway
Project Area: McDowell Road overpass
Material: Paint on concrete relief panel
Cost: \$21,700 (1988)

Photo courtesy of Robert Pikora

Photo courtesy of Phoenix Arts Commission

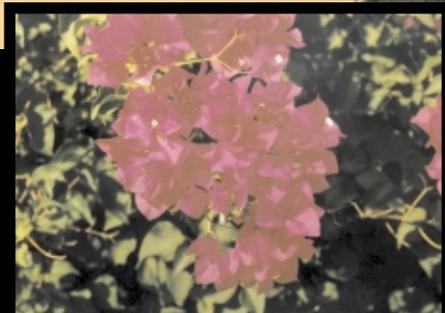


Photo: Teapot vessel, desert and low water use landscaping
Project: "Wall Cycle to Ocotillo"; Piestewa Peak Parkway
Project Area: 17th Street and Tuckey Lane, south of Glendale Avenue
Material: Painted steel, desert and low water use vegetation
Cost: \$474,000 for 35 artworks from I-10 to Glendale Avenue (1992); \$1.50-\$2.25/square foot (landscaping)

Photo: Octopus and Fishbowl vessel
Project: "Wall Cycle to Ocotillo"; Piestewa Peak Parkway
Project Area: 18th Street and Claremont Street, north of Bethany Home Road
Material: Polychromed concrete and steel, desert and low water use vegetation
Cost: \$474,000 for 35 artworks from I-10 to Glendale Avenue (1992); \$1.50-\$2.25/square foot (landscaping)

Photo courtesy of Robert Pikora

Photo courtesy of Robert Pikora



Photo: Guardian vessel
Project: "Wall Cycle to Ocotillo"; Piestewa Peak Parkway
Project Area: 20th Place and Palm Lane, north of McDowell Road
Material: Polychromed concrete and steel
Cost: \$474,000 for 35 artworks from I-10 to Glendale Avenue (1992)

Photo courtesy of Freeway Mitigation Team

Photo: Hummingbird vessel and seating area
Project: "Wall Cycle to Ocotillo"; Piestewa Peak Parkway
Project Area: 18th Street and Fairmount Avenue, south of Indian School Road
Material: Painted steel and concrete
Cost: \$474,000 for 35 artworks from I-10 to Glendale Avenue (1992)

Photo courtesy of Freeway Mitigation Team



Photo: Blue niche vessel, desert and low water use landscaping
Project: "Wall Cycle to Ocotillo"; Piestewa Peak Parkway
Project Area: 18th Street and Osborn Road, north of Thomas Road
Material: Polychromed concrete and steel; desert and low water use landscaping
Cost: \$474,000 for 35 artworks from I-10 to Glendale Avenue (1992); \$1.50-\$2.25/square foot (landscaping)

Photo courtesy of Phoenix Arts Commission

Photo: Auto vessel, desert and low water use landscaping
Project: "Wall Cycle to Ocotillo"; Piestewa Peak Parkway
Project Area: 18th Street and Osborn Road, north of Thomas Road
Material: Polychromed concrete and steel; desert and low water use landscaping
Cost: \$474,000 for 35 artworks from I-10 to Glendale Avenue (1992); \$1.50-\$2.25/square foot (landscaping)

Photo courtesy of Phoenix Arts Commission

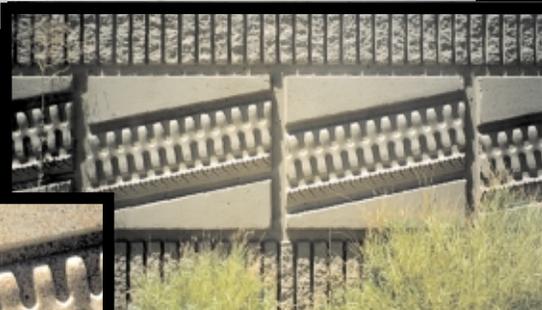


Photo: Tire tread pattern noise wall
Project: Piestewa Peak Parkway
Project Area: Piestewa Peak Parkway near 29th Street
Material: Painted steel and concrete
Cost: \$15-\$20/square foot (standard noise wall)
 \$23/square foot (estimate with special concrete forms)

Photo: Dreamy Draw Bikeway bridge
Project: Piestewa Peak Parkway
Project Area: Piestewa Peak Parkway near 29th Street
Material: Painted steel and concrete
Cost: \$1,089,233 (design and construction of bridge, 1992)

Photos courtesy of Joseph R. Salazar, Robert Pikora

Photo courtesy of Joseph R. Salazar
 Color rendering by Craig Wickersham



Photo: Flowering landscaping and decomposed granite
Project: Red Mountain Freeway
Project Area: 40th Street onramp to Red Mountain Freeway
Material: Lantana shrubs
Cost: \$1.50-\$2.25/square foot (landscaping)
\$0.50/square foot (decomposed granite)

Photo: Flowering landscaping and decomposed granite
Project: Papago Freeway
Project Area: Papago Freeway
Material: Sage shrubs
Cost: \$1.50-\$2.25/square foot (landscaping)
\$0.50/square foot (decomposed granite)

Photo courtesy of Joseph R. Salazar

Photo courtesy of Joseph R. Salazar

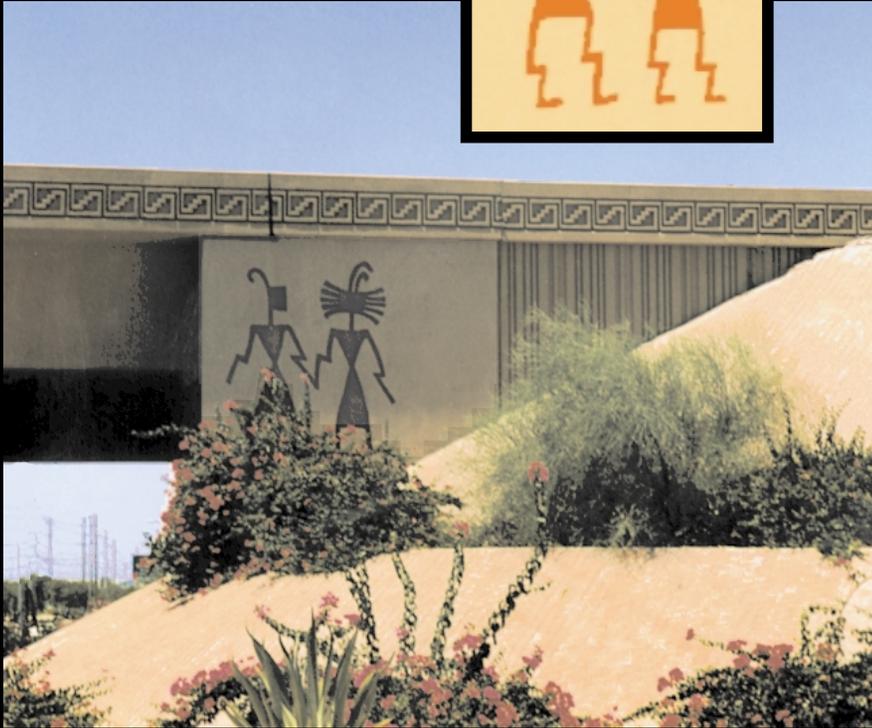


Photo: Hohokam icon figures and geometric patterns
Project: Enhancement of approaches to Sky Harbor Airport
Project Area: Hohokam Expressway and Washington Street overpass
Material: Painted concrete
Cost: \$3,000-\$5,000/bridge quadrant; two icon figures/quadrant; geometric patterns included in cost of bridge construction

Photo: Embankment landscaping
Project: Red Mountain Freeway
Project Area: Red Mountain Freeway and Van Buren Street overpass
Material: Desert and low water use vegetation; decomposed granite
Cost: \$1.50-\$2.25/square foot (landscaping)
 \$0.50/square foot (decomposed granite)

Photo courtesy of Robert Pikora

Photo courtesy of Robert Pikora



Photo: Southwest design on bridge structure
Project: Loop 101 Pima Freeway
Project Area: McKellips Road overpass
Material: Painted concrete
Cost: Design feature included in construction cost of freeway;
approximately \$25.7 million/mile

Photo: Southwest design on bridge structure
Project: Loop 101 Pima Freeway
Project Area: 90th Street overpass
Material: Painted concrete
Cost: Design feature included in construction cost of freeway;
approximately \$25.7 million/mile

Photo courtesy of Robert Pikora

Photo courtesy of Robert J. Bortfeld



Photo: Salt River Indian Community gateway sculpture
Project: Loop 101 Pima Freeway
Project Area: 90th Street connector vicinity
Material: Painted steel and concrete
Cost: Design feature included in construction cost of freeway; approximately \$25.7 million/mile

Photo: Southwest design on bridge structure
Project: Loop 101 Pima Freeway
Project Area: 90th Street connector overpass
Material: Painted concrete
Cost: Design feature included in construction cost of freeway; approximately \$25.7 million/mile

Photo courtesy of Robert J. Bortfeld

Photo courtesy of Robert J. Bortfeld



Photo: Southwest design on retaining wall
Project: Loop 101 Pima Freeway
Project Area: 90th Street connector vicinity
Material: Painted concrete
Cost: Design feature included in construction cost of freeway;
approximately \$25.7 million/mile

Photo courtesy of Robert J. Bortfeld

Photo: Southwest design on retaining wall
Project: Loop 101 Pima Freeway
Project Area: 90th Street connector vicinity
Material: Painted concrete
Cost: Design feature included in construction cost of freeway;
approximately \$25.7 million/mile

Photo courtesy of Robert J. Bortfeld



Photo: Scottsdale noise wall (test panel)
Project: Loop 101 Pima Freeway
Project Area: Scottsdale portion of Pima Freeway from Via Linda to Shea Boulevard
Material: Textured and painted concrete
Cost: \$2 million (esthetic treatment of bridge piers, noise and retaining walls; panels designed independently; special forms and colors required)

Photo: Scottsdale noise wall (test panel detail)
Project: Loop 101 Pima Freeway
Project Area: Scottsdale portion of Pima Freeway from Via Linda to Shea Boulevard
Material: Unpainted concrete
Cost: \$2 million (esthetic treatment of bridge piers, noise and retaining walls; panels designed independently; special forms and colors required)

Photo courtesy of Robert J. Bortfeld

Photo courtesy of Robert J. Bortfeld



Photo: Scottsdale noise wall (test panel)
Project: Loop 101 Pima Freeway
Project Area: Scottsdale portion of Pima Freeway from Via Linda to Shea Boulevard
Material: Textured and painted concrete
Cost: \$2 million (esthetic treatment of bridge piers, noise and retaining walls; panels designed independently; special forms and colors required)

Photo: Scottsdale noise wall (test panel)
Project: Loop 101 Pima Freeway
Project Area: Scottsdale portion of Pima Freeway from Via Linda to Shea Boulevard
Material: Unpainted concrete
Cost: \$2 million (esthetic treatment of bridge piers, noise and retaining walls; panels designed independently; special forms and colors required)

Photo courtesy of Robert J. Bortfeld

Photo courtesy of Robert J. Bortfeld



Photo: Tile mural and concrete relief on bridge retaining wall
Project: Miracle Mile traffic interchange
Project Area: I-10 and Miracle Mile, Tucson
Material: Ceramic tile and painted concrete

Photo courtesy of Joseph R. Salazar

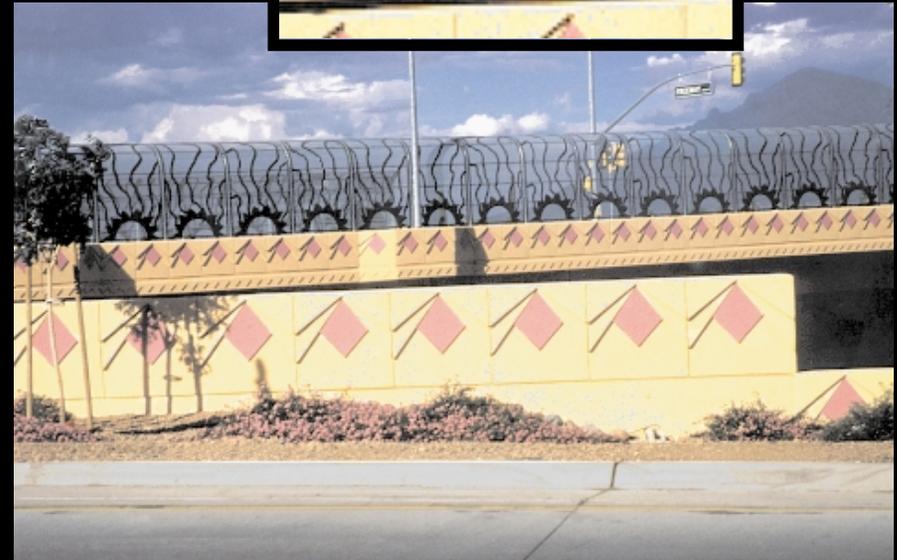
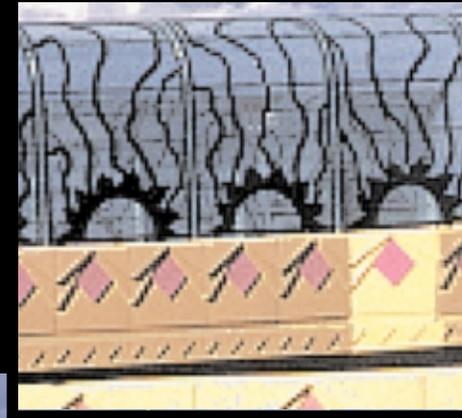
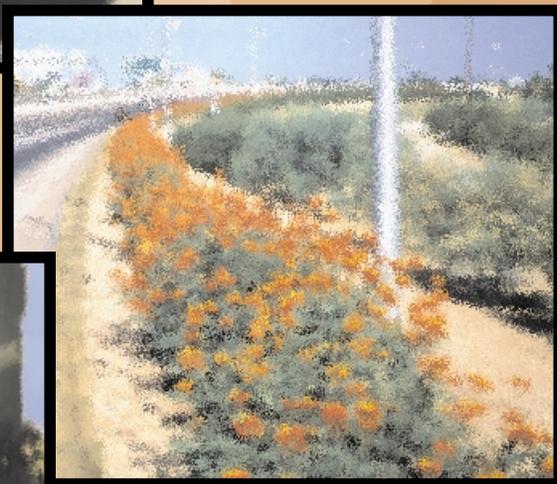


Photo: Stylized chain link fence and concrete relief on bridge overpass
Project: Miracle Mile traffic interchange
Project Area: I-10 and Miracle Mile, Tucson
Material: Painted steel and concrete

Photo courtesy of Joseph R. Salazar



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