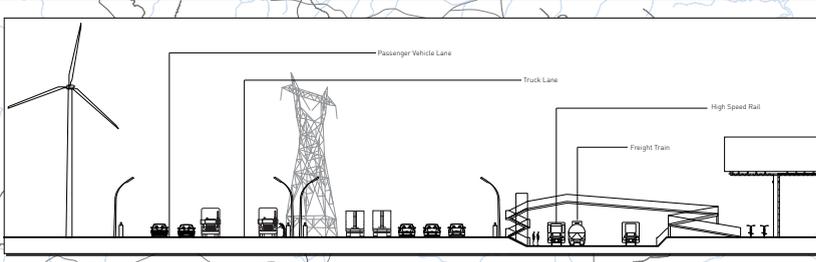


# MAPPING THE BORDER

These drawings, diagrams and maps on these panels are the glossary and grammar of the border-text. They illustrate the linear and nodal, technological and natural, systemic and political elements that comprise and define the idiosyncratic cultural landscape of the borderland. The timeline outlines the cyclical call and response of political gestures and subsequent materialization in the form of fences and diversions, controls and permissions. The two maps depict the unusual and exemplary regional and urban conditions of the borderlands. Finally, the landscape sections illustrate the several current manifestations of the physical border, from the exclusionary and militarized to the subversive and atmospheric.



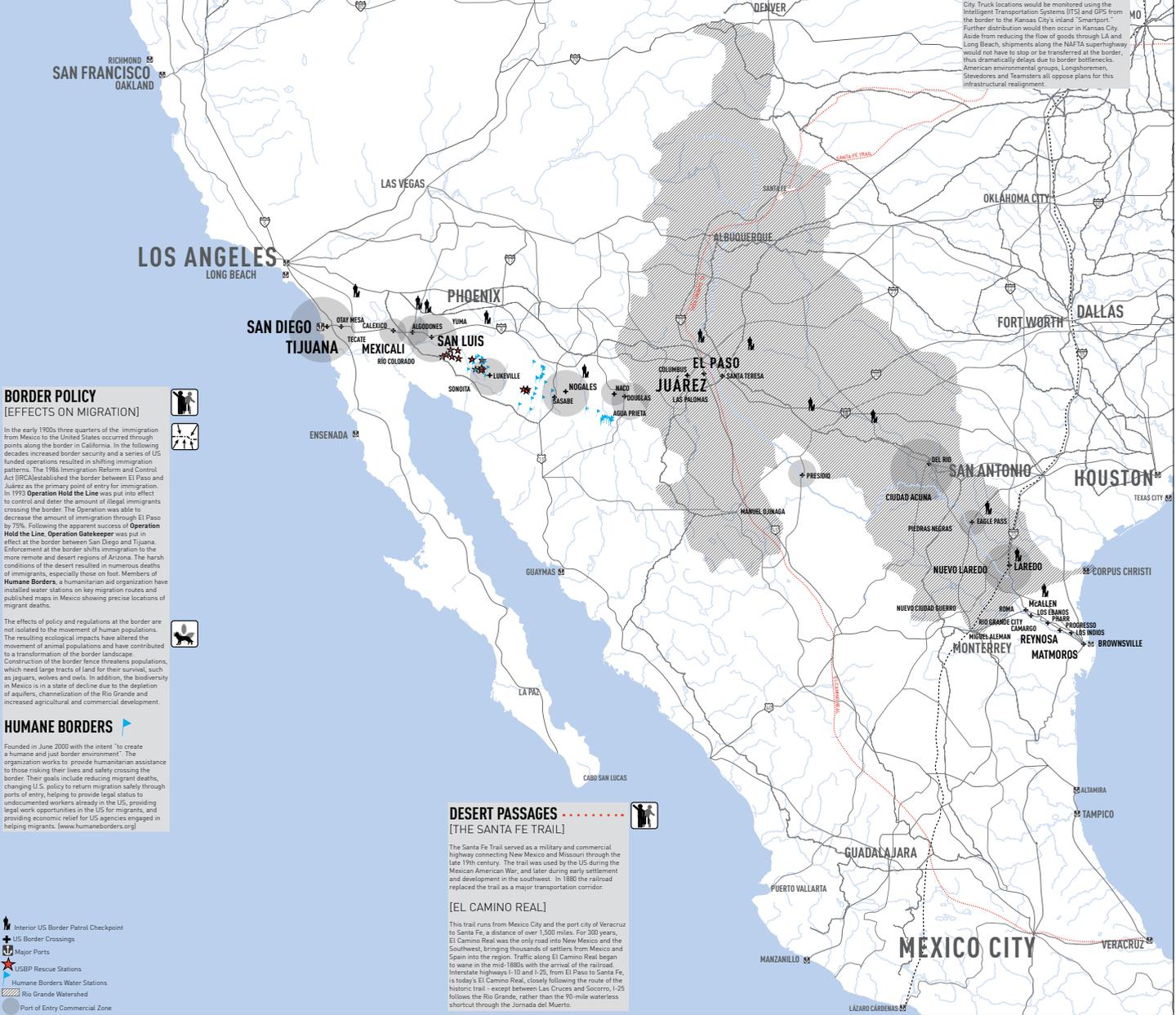
## INLAND PORTS [THE NAFTA SUPERHIGHWAY]

The proposed **North American Supercorridor**, or NAFTA Superhighway, would enable goods from Asia and the Far East to enter North America through the Mexican ports such as Lazaro Cardenas. The plan's backers—transportation and logistics brokers, retailers, and manufacturers, argue that the NAFTA Superhighway would reduce strain on union-controlled transportation facilities at American ports.

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Customs protocols include pre-screening of shipments at departure ports in Asia to clear Mexican customs in Lazaro Cardenas. Once at the port of arrival, shipments would pass through multiple X-ray and gamma ray scans before being loaded onto trucks and rail for transportation to the "inland port" of Kansas City. Truck locations would be monitored using the Intelligent Transportation Systems (ITS) and GPS from the border to the Kansas City's inland "Smartport". Further distribution would then occur in Kansas City. Aside from reducing the flow of goods through LA and Long Beach, shipments along the NAFTA superhighway would not have to stop or be transferred at the border, thus dramatically reducing border bottlenecks.

American environmental groups, Longshoremen, Stevedores and Teamsters all oppose plans for this infrastructural reassignment.



## BORDER POLICY [EFFECTS ON MIGRATION]

In the early 1900s three quarters of the immigration from Mexico to the United States occurred through points along the border in California. In the following decades increased border security and a series of US funded operations resulted in shifting immigration patterns. The 1986 Immigration Reform and Control Act (IRCA) established the border between El Paso and Juarez as the primary point of entry for immigration. In 1997 **Operation Hold the Line** was put into effect to control and deter the amount of illegal immigrants crossing the border. The Operation was able to decrease the amount of immigration through EI to 75%. Following the apparent success of **Operation Hold the Line**, **Operation Gatekeeper** was put in effect at the border between San Diego and Tijuana. Enforcement at the border shifts immigration to the more remote and desert regions of Arizona. The harsh conditions of the desert resulted in numerous deaths of immigrants, especially those on foot. Members of **Humane Borders**, a humanitarian aid organization have installed water stations on key migration routes and published maps in Mexico showing precise locations of migrant deaths.

The effects of policy and regulations at the border are not isolated to the movement of human populations. The resulting ecological impacts have altered the movement of animal populations and have contributed to a transformation of the border landscape. Construction of the border fence threatens populations, which need large tracts of land for their survival, such as jaguars, wolves and owls. In addition, the biodiversity in Mexico is in a state of decline due to the depletion of aquifers, channelization of the Rio Grande and increased agricultural and commercial development.

## HUMANE BORDERS

Founded in June 2000 with the intent "to create a humane and just border environment". The organization works to provide humanitarian assistance to those risking their lives and safety crossing the border. Their goals include reducing migrant deaths, changing U.S. policy to return migration safely through ports of entry, helping to provide legal status to undocumented workers already in the US, providing legal work opportunities in the US for migrants, and providing economic relief for US agencies engaged in helping migrants. ([www.humaneborders.org](http://www.humaneborders.org))

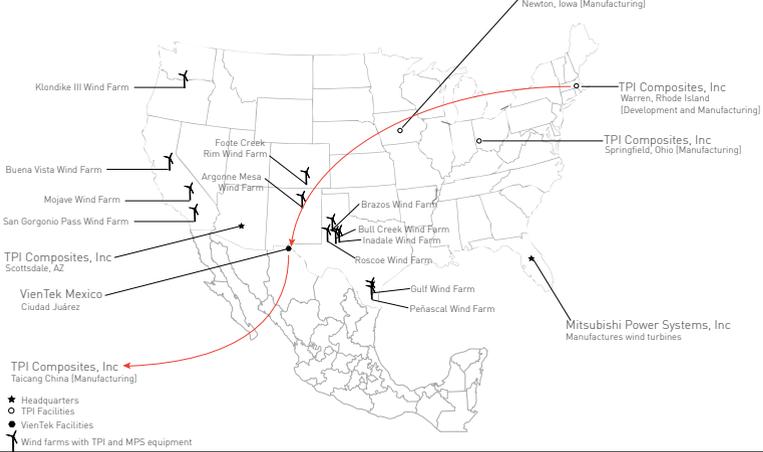
## DESERT PASSAGES [THE SANTA FE TRAIL]

The Santa Fe Trail served as a military and commercial highway connecting New Mexico and Missouri through the late 19th century. The trail was used by the US during the Mexican American War, and later during early settlement and development in the southwest. In 1880 the railroad replaced the trail as a major transportation corridor.

## [EL CAMINO REAL]

This trail runs from Mexico City and the port city of Veracruz to Santa Fe, a distance of over 1,300 miles. For 300 years, El Camino Real was the only road into New Mexico and the Southwest, bringing thousands of settlers from Mexico and Spain into the region. Traffic along El Camino Real began to wane in the mid-1800s with the arrival of the railroad. Interstate highways I-10 and I-25, from El Paso to Santa Fe, is today's El Camino Real, closely following the route of the historic trail - except between Las Cruces and Socorro, I-25 follows the Rio Grande, rather than the 90-mile waterless shortcut through the Jornada del Muerto.

## TPI REGIONAL DISTRIBUTION



## VIENTEK DISTRIBUTION

Blade type and distribution 2003-2008



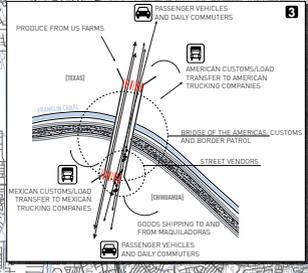
# JUÁREZ/EL PASO: BORDER METROPOLIS

Juárez/El Paso is a double city, an interdependent, isolated metropolis. The two cities form singular border or transfer point in the system of the borderlands.

This place of passage is inscribed in the historical identity of the two cities. El Paso, originally named El Paso del Norte is the site of a pass to the North through the geographic boundary of the Franklin Mountains. The political demarcation of the border overlays the natural boundaries of river and mountains, sometimes conforming to them, sometimes cutting across the landscape in straight surveyor's lines, heedless of geography.

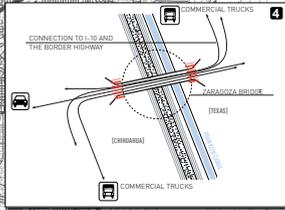
At the scale of the city the border expands from a line, realized as an intricately layered infrastructural system that parses the double city. In addition to the fences, barriers, surveillance systems and control points that explicitly control the movement of people and goods across the border, successive layers rail lines, freeways, canals and the rectified river facilitate movement along the border, divert water out of the river, and reinforce the separation imposed by the fences.

Infrastructure to support and monitor trans-border transport and trade define the landscape of the metro region. The mobility of both people and goods is choreographed via bridges, checkpoints and screening stations. Materials and goods that traverse the border include minerals, agricultural products, subassemblies and raw materials for fabrication in the maquiladoras of Juárez, and finished consumer products. Students and workers commute daily to from Juárez/El Paso, and vice versa, in addition to those crossing into the US or Mexico for longer durations.



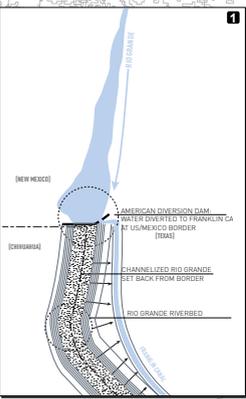
**BRIDGE OF THE AMERICAS**

Bridge of the Americas was built in 1996 and remains the only toll free crossing between Juárez/El Paso. The crossing consists of four bridges, two for northbound and southbound commercial trucks, and two for northbound and southbound passenger vehicles. It receives more than half the traffic crossing the international border between Juárez/El Paso. The heavy flows of traffic cause significant congestion and delays. Amidst the lines of vehicles waiting to cross, local street vendors sell candy, ice pops, and comic book hero memorabilia to turn a profit.



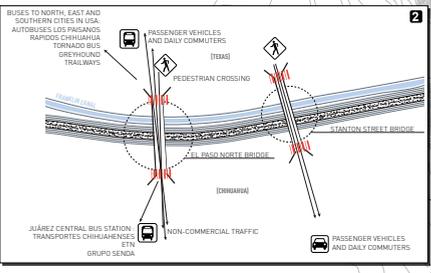
**ZARAGOZA BRIDGE**

The Zaragoza Bridge is used for much of the commercial trucking traffic over the border at Juárez/El Paso. There are many manufacturers in the immediate area off of the bridge and there is easy access to the border highway, the outer loop of El Paso, and Interstate 10. Roughly 450,000 trucks cross between Juárez/El Paso every year.



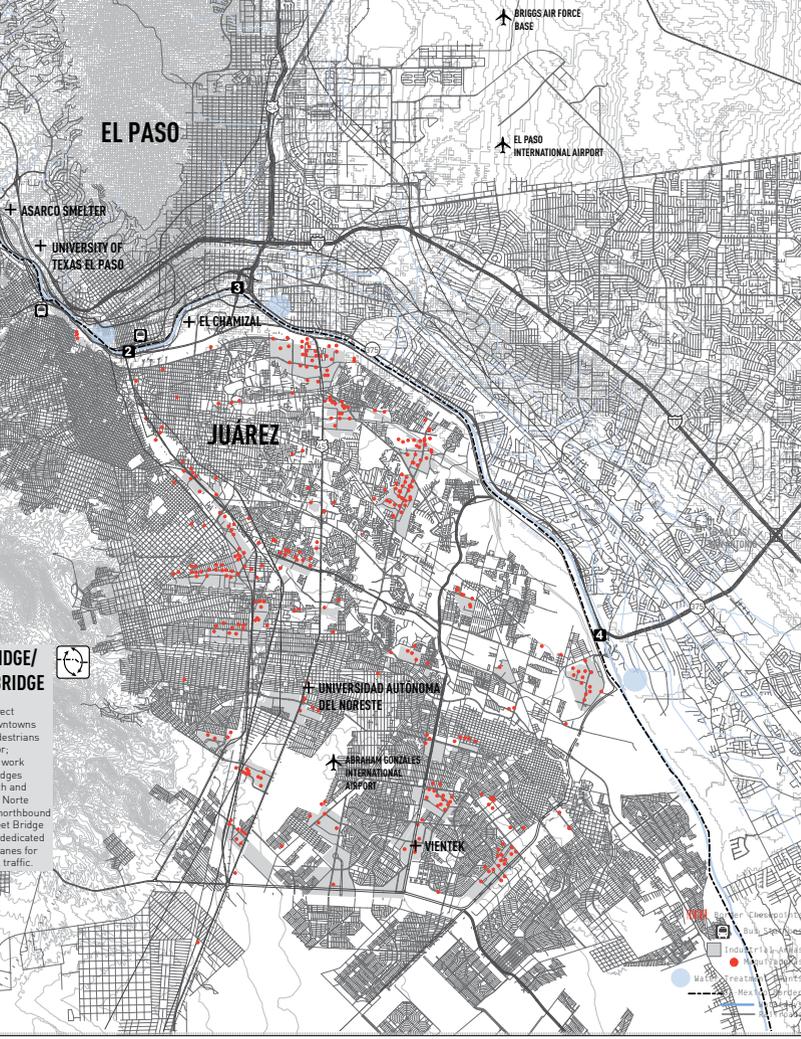
**AMERICAN DIVERSION DAM**

Located two miles up stream from El Paso, the American Diversion Dam was completed in 1938 as part of the Rio Grande Project. The eighteen foot radial gate dam is 284 feet long and diverts water, from the Rio Grande, 2.1 miles to the east of the Franklin Canal at a capacity of 2100 cubic feet per second. The Rio Grande Riverbed is trenched and remains as a remnant setback.



**EL PASO NORTE BRIDGE/ STANTON STREET BRIDGE**

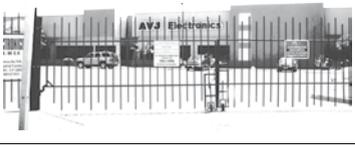
These bridges provide the direct connections between the downtowns of Juárez/El Paso. 12,000 pedestrians cross daily through this sector, typically commuters for daily work in the US. Primarily these bridges serve automobiles going north and southbound. The El Paso Del Norte Bridge is entirely devoted to northbound traffic, while the Stanton Street Bridge has one northbound lane for dedicated commuter traffic, and three lanes for southbound non-commercial traffic.



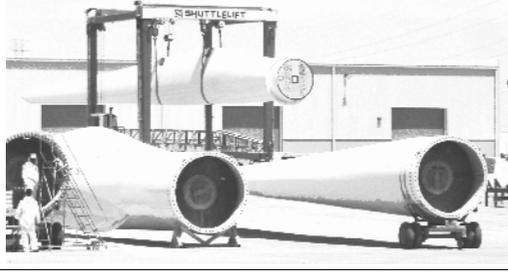
## MAQUILADORAS

Mexican maquiladoras import materials on a tax-free basis for assembly or manufacturing, which are then re-exported to the originating country. Maquiladora workers and operators are subject to fluctuations in world demand for goods, as well as major economic shocks such as the 1982 and 1994 Peso devaluations. Liberalization of international trade including NAFTA, resulted in the construction of over 3,000 Maquiladoras along the US/Mexico border, forming an industrial belt and reinforcing continental patterns of industrial migration away from union strongholds in the north of the United States.

Increasing industrialization of China and Southeast Asia, the reorganization of the American auto industry and its suppliers, and the current credit crisis has resulted in the recent contraction of the Mexican border economy.



- [MAJOR MAQUILAS IN JUÁREZ]
- Agri-Estrella
  - Altec
  - Autoconectores de Chihuahua
  - Bright Star de Mexico
  - Cessna Aircraft
  - Century Mold
  - Carlisle FSP
  - CIRPRO
  - Daniel Measurement
  - Delphi
  - Durabox-RAM
  - Electrocomponents
  - Elektrasia
  - Ford Motors
  - Good Year
  - Hawker/Beechcraft
  - Honeywell
  - ITT
  - Leacorp
  - Levelt
  - Lexmark
  - Mitsubishi
  - PAICE Industries
  - REXEL
  - Tecnología de Moción
  - TeleFlex
  - TPI
  - VTC-West
  - VISTeon
  - Wrangler
- Logos for Cessna, Delphi, Ford, Good Year, Honeywell, ITT, Lexmark, Mitsubishi, PAICE Industries, REXEL, tpi, and Teleflex MEDICAL.



**VienTek JUÁREZ [WIND ENERGY]**

VienTek was established in March of 2002 as a joint venture between TPI Composites and Mitsubishi Power Systems (MPS), a major supplier of wind turbines in the United States. Juárez was chosen as a location for the manufacture of TPI's fiberglass wind turbine blades due to the city's pool of highly-skilled craft workers, existing industrial infrastructure and engineering expertise, and the metro's proximity to wind farm installations throughout the south-central and western United States.

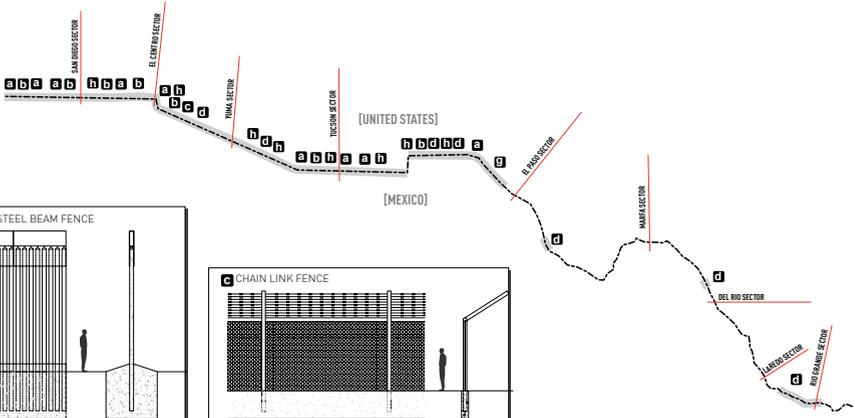
VienTek manufactures 30M class blades for the MPS MW162 turbine and has begun to manufacture 45M class blades for Mitsubishi's MW192 and MW195 turbines.

The 200,000 square foot facility in Juárez, Mexico employs 900 workers, including Mexican technicians, German and Mexican process engineers, and Japanese turbine designers. Transportation to and from the factory is provided for workers in addition to two meals per day. In response to the recent "security situation" of increasing violence in the city, both plant and transportation security has been increased for all employees.

# BORDER CONDITIONS

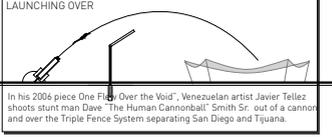
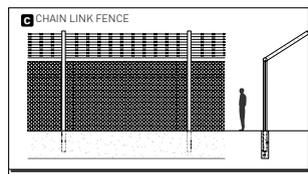
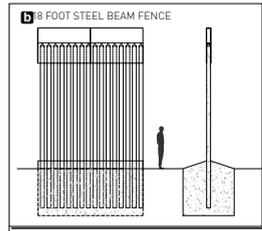
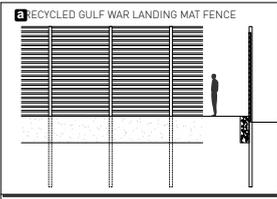
The United States devotes an unprecedented amount of resources to the built infrastructure of the border. \$1.2 billion has been spent on the most recent round of border fence construction and many estimates project the cost to maintain the fence over the next 25 years could run as high as \$50 billion. Under restructuring that took place after the attack on the World Trade Center, the Immigration and Naturalization Service was dissolved, and border security in the US was placed under the jurisdiction of the Office of Homeland Security. With this change the rhetoric of border enforcement was shifted significantly away from immigration control to one of national security and the global war on terrorism.

The infrastructure of border control ranges along the border's length from hardened zones of multi-layered fences in urban areas to barely marked open sections in sparsely inhabited desert regions. In the open desert vast distances and the harsh environment provide the most formidable deterrent to border crossing. The border is controlled with a combination of material barriers that physically impede movement and "soft" controls of surveillance systems and mobile border patrol units that keep watch over the landscape.



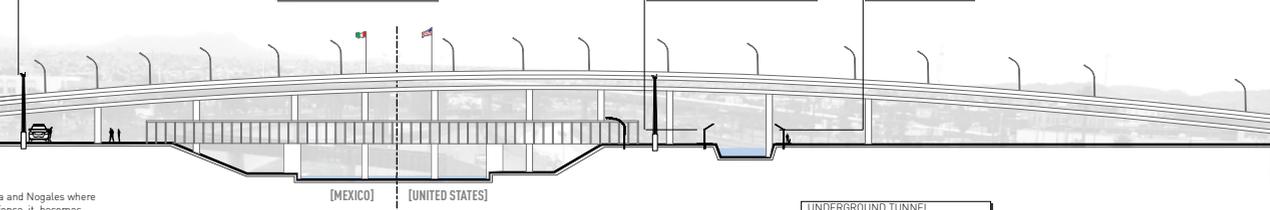
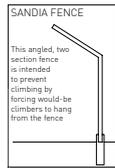
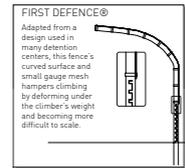
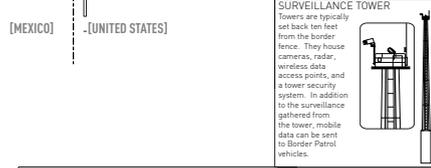
## TIJUANA/SAN DIEGO

To complete the Triple Fence System two new barriers have been added to the aging recycled mat fence. These new fence types are spaced 100 yards apart to create an open land for unobstructed views of smuggling attempts and mobilization parallel to the border.



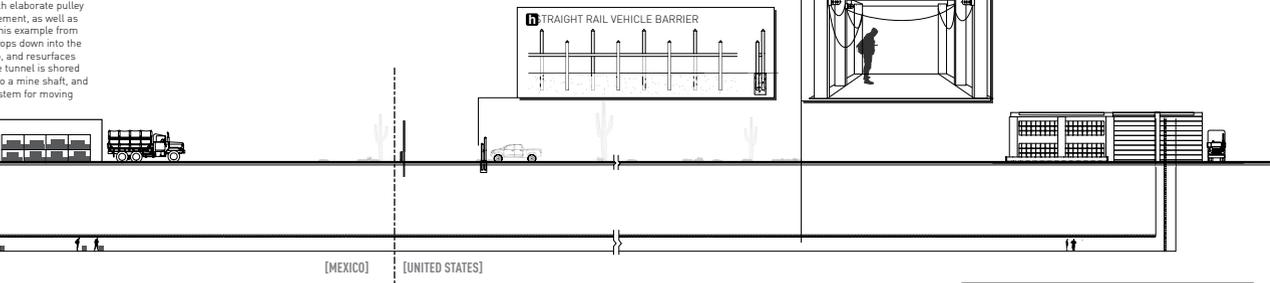
## RIO GRANDE/EL PASO

The Chamizal dispute from the early 1900s through the 1960s acted as precedent for how changes in the river's path could legally change both resident's citizenship and the country's border in a single flood. Starting in the 1940s the Rio Grande was emptied and channelized. The water from the Rio Grande remains in the US Franklin Canal for use in El Paso and to irrigate cotton fields and orchards in the US.



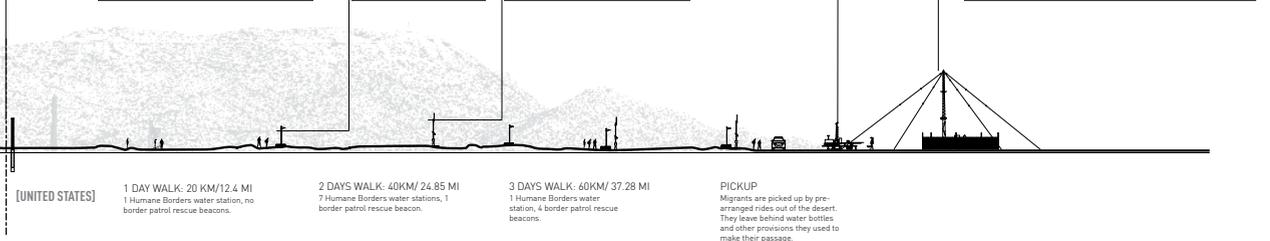
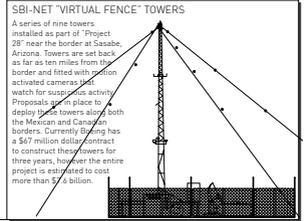
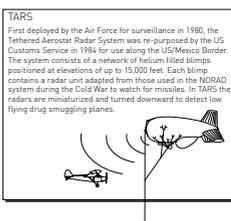
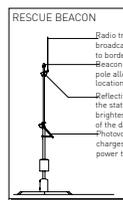
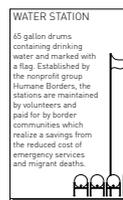
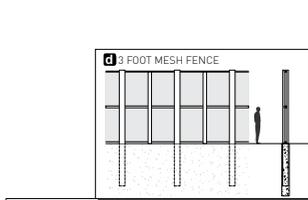
## TUNNELS

In dense, urban areas such as Tijuana and Nogales where buildings are set close to the border fence, it becomes viable for drug smugglers to simply tunnel under the border. Tunnels have been discovered as deep 80 feet below the ground. Some are fitted with elaborate pulley and gurney systems to facilitate movement, as well as lighting and ventilation systems. In this example from Nogales a 12x6 foot concrete shaft drops down into the earth beneath a warehouse in Mexico, and resurfaces inside another building in the US. The tunnel is shored along its length in a manner similar to a mine shaft, and provided with lighting and a pulley system for moving contraband.

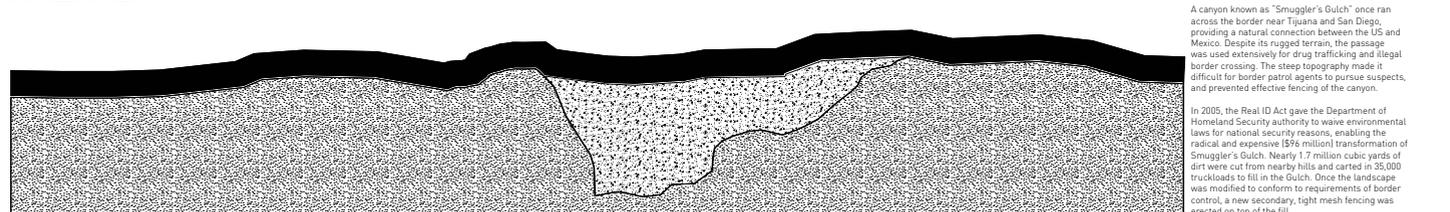


## DEVIL'S HIGHWAY

Devil's Highway is a 250-mile trail stretching from Caborca in Mexico's state of Sonora, across the US/Mexico border, through the desert to Yuma, Arizona. The road is followed by migrants trying to enter the US. The heightening of security at urban crossings resulted has resulted in an increased usage more of remote, more dangerous crossings by illegal migrants. In 2001, 14 men died of dehydration and heat exhaustion while attempting to cross the desert into the US with a coyote guide. As a result, both the US Border Patrol and the non-profit organization Human Borders have worked to provide water and emergency beacons to aid distressed migrants.



## SMUGGLER'S GULCH



A canyon known as "Smuggler's Gulch" once ran across the border near Tijuana and San Diego, providing a natural connection between the US and Mexico. Despite its rugged terrain, the passage was used extensively for drug trafficking and illegal border crossing. The steep topography made it difficult for border patrol agents to pursue suspects, and prevented effective fencing of the canyon.

In 2005, the Real ID Act gave the Department of Homeland Security authority to waive environmental laws for national security reasons, enabling the radical and expensive (\$96 million) transformation of Smuggler's Gulch. Nearly 1.7 million cubic yards of dirt were cut from nearby hills and carted in 35,000 truckloads to fill in the Gulch. Once the landscape was modified to conform to requirements of border control, a new secondary, tight mesh fencing was erected on top of the fill.