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16. Abstract The goal of the study is to describe the visual character of the highway corridors, to identify the major visual problems and resources, and to suggest ways of addressing these issues in future projects. Data for the study was gathered by field study of the highways and in-depth interviews with a small group of El Paso residents. The study indicated that the users of the highway formed an overall image of the roadway rather than dividing it into good and bad landscapes. This image generally described the roadway as dirty, trashy, and drab. The field studies noted that in most cases, the scale of the roadway in relation to the motorist was visually disturbing. It is recommended that efforts to address these issues follow two primary criteria: 1) use grass or aggregate groundcovers to give a clean appearance to the groundplane, and 2) install dense tree masses where appropriate to counteract the poor scale relationships. The study also noted that El Paso's highways do not go far enough in communicating the presence of significant cultural elements. The study found a number of cultural elements that had enormous development potential in this regard. Recommendations to enhance these areas center on improved signage and use of cultural symbols. The report also recommends that TxDOT provide leadership in forming coalitions designed to address the issue of El Paso's image on a large scale. This approach will be a more efficient use of development dollars by a coordination of goals resources with city planning agencies and local action groups.			
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**ANALYSIS OF THE VISUAL CHARACTER OF THE MAJOR HIGHWAY  
CORRIDORS OF EL PASO, TEXAS**

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Research Report 944-2  
Research Study Number 7-944  
Research Study Title: Construction Landscape Program

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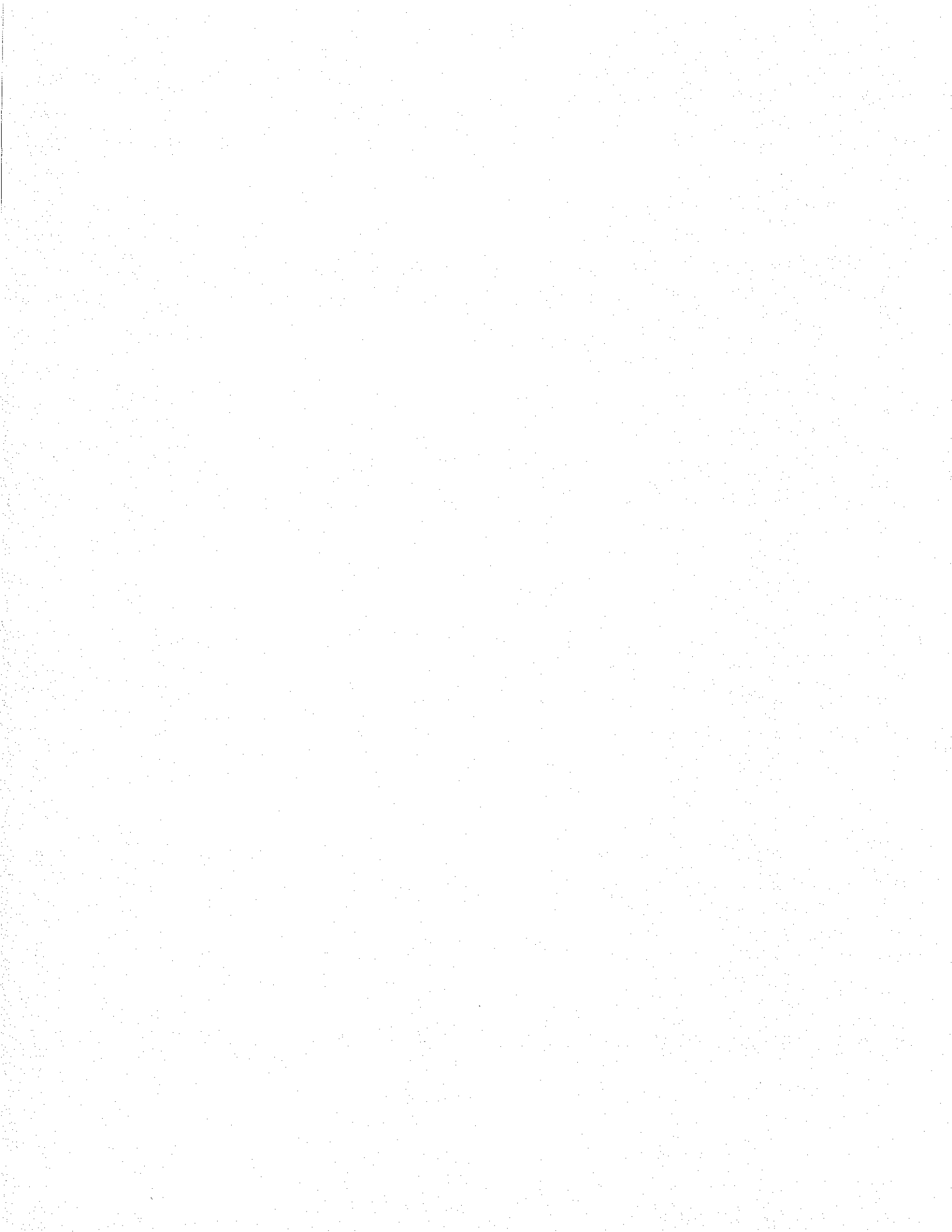
November 1994

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## **IMPLEMENTATION STATEMENT**

This study is an assessment of the visual quality of the major highway corridors in El Paso. It identifies major visual issues, establishes goals, and makes recommendations on how TxDOT can best approach decision making with regard to future roadway projects. The study approaches visual quality from the perspective of the corridor rather than a single project site. This approach provides a better recognition of long-term enhancement planning issues such as projected maintenance capabilities, funding needs, coordination with local planning agencies, and better integration with future highway development projects. The incorporation of long-range enhancement planning into early planning and design will result in a savings of time and money at the same time providing the level of visual quality cities are demanding.



## **DISCLAIMER**

The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the Federal Highway Administration or the Texas Department of Transportation. This report does not constitute a standard, specification, or regulation. Jim Schutt and Terry Larsen prepared this report.





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## SUMMARY

This study comprises an analysis of the visual character of the major highway corridors in El Paso, Texas. The corridors studied are: Interstate Highway 10 between Mesa Drive in the west to Loop 375 in the east, Loop 375 (the Border Highway) from IH10 to Santa Fe Street, and US Highway 54 where it enters the city in the north to the Border Highway (see Figure 1).

Data for the study was gathered by field study of the highways and in-depth interviews with a group of 20 El Paso residents. In addition, interviews were conducted with TxDOT maintenance personnel and City of El Paso planners.

The study indicated that the users of the highway formed an overall image of the roadway rather than dividing it into good and bad landscapes. In the case of I10, this image generally described the roadway as dirty, trashy, and drab. The field studies noted that in most cases, the scale of the roadway in relation to the motorist was visually disturbing. In addition, the view of the highway from the local streets is largely unattractive due to the extensive use of concrete, especially the riprap slopes.

### THE INTERSTATE 10 CORRIDOR

Problems of scale and untidiness plague I10. These can all be solved with the introduction of aggregate and grass groundcovers. The scale issue, however, will require the introduction of large elements that divide the roadway into smaller segments.

These two design criteria, a neat ground surface with some color value and trees masses to modify scale, are the most critical to future design projects. These simple design concepts will also be reasonable because maintenance activities can be kept to relatively low-cost and easily performed tasks.

The visual quality of I10 near the center of town is primarily determined by the character of the structures rather than by the character of spaces as in the eastern sections. Scale is not as big a problem here as the quality of detailing and the way the highway fits into the urban scene. Tidiness in this section relates to the character of the structures themselves.

The western sections of I10 contain much to see in the way of symbols of El Paso, and

vistas change frequently. UTEP, Juarez, the Rio Grande, ASARCO, the mountains, and the Pass all occur in a relatively short length of roadway. Making order of this section will be difficult but can best be approached by developing this area as a formal entry into the city.

### **THE BORDER HIGHWAY**

Loop 375 (the Border Highway) from I10 to Santa Fe Street in downtown El Paso, has a number of positive features. These include the Mission Trail, border crossings, parks, the Rio Grande, the Chamizal Memorial, and of course, Mexico. Most enhancement issues in this corridor involve taking advantage of opportunities rather than correcting mistakes. The challenge for this roadway will be to protect these views over time from encroachment by commercial and residential developments. Screening with walls and trees will be appropriate in most situations. The best locations for landscape enhancements will be at interchanges and the intersections with local streets.

Loop 375 from I10 to the border crossing and Zaragosa should be developed as an alternative entry to downtown El Paso. A portion of this section has an historical designation for the Mission Trail. Interesting signage and landscape development should be used to enhance this section.

The Border Highway from Zaragosa to US Highway 54 was uniformly liked by everyone interviewed. While it does not have the magnitude of views I10 does, it is edged by green fields and trees in many places. Even though the river is not visible because of the levee, Mexico is easily seen in most places. The border fence on the US side is visually disturbing, but visitors to El Paso will likely find this segment very interesting.

### **US HIGHWAY 54**

There are four distinct visual zones to the Patriot Freeway (US Highway 54): desert, desert/development, highly developed, and severely engineered. Like I 10, the Patriot Freeway also has scale problems through most of its length. Tree masses will help alleviate this condition.

As it nears the I10 interchange, the roadway presents the same basic problem of oppressive concrete structures similar to the depressed section of I10 downtown. Color should

be introduced into the surfaces wherever possible, and planters for trees should be installed.

The bare soil problems are more palatable in the upper sections due to the desert landscape nearby, but grass establishment should be stressed. Tree masses should be heavily employed to unite this corridor into a more unified whole. Importantly also, the significance of the Patriot Freeway is not communicated to the greatest degree possible. The heritage of Ft. Bliss and the significance of the Patriot Freeway should be developed as a theme for this entry into El Paso.

### **IMPLICATIONS FOR PLANNING**

El Paso's highways do not go far enough in communicating the presence of significant cultural elements. The study found a number of cultural elements that had enormous development potential in this regard. Recommendations to enhance these areas center on improved signage and use of cultural symbols.

TxDOT should take the lead role in providing leadership to form coalitions designed to address the issue of El Paso's image on a large scale. This approach will be a more efficient use of development dollars by a coordination of goals and resources with city planning agencies and local action groups.





## **INTRODUCTION**

This study has been requested as part of a larger effort by the El Paso District Aesthetic Committee to investigate and develop alternatives to enhance the visual character of El Paso's highways. The purpose of the study is to conduct a visual analysis of the major highway corridors in El Paso for the District office of the Texas Department of Transportation. The goal of this work is to identify the major visual characteristics of the roadways and determine how they contribute to the visual character of the highway. This information will then be used to develop guidelines and specific recommendations for future roadway projects.

The recommendations presented take into consideration a number of important issues. Primary of these is the mission of the Texas Department of Transportation. The goal of this agency is the safe movement of people and goods. While the visual quality of the roadway is recognized as an important component of planning, this study recognizes that enhancement efforts must fit within an existing structure of responsibilities, capabilities, directions, and funding.



## **VISUAL IMAGE FACTORS**

The view from the roadway communicates an image of the city. This image may be positive or negative. The highway should be a positive feature of the city both in terms of aesthetics and as an expression of its culture. To do so will require a more comprehensive approach that addresses key issues affecting the visual character of the roadway. This approach will hinge on two concepts. The first is that of the physical contrast and unity between highway structures and the adjoining urban landscapes. The second is the role of the highway as a communicator of the culture of the city.

### **CONTRAST AND UNITY**

In the context of developed urban areas, visual unity between the roadway and the city may be expressed by the degree of similarities and contrasts they share and how the boundary between them is defined. The types of materials used will help determine the strength and character of visual linkage to adjacent landscapes. An attractive transition between roadway and developments alongside them provides a neatness and order to the roadway.

In addition to their relationship to the landscapes outside its boundaries, elements within the roadway should relate throughout the length of the corridor. This fosters a consistency that acts as a unifying element over long distances through the city.

Key also to the quality of the image of the roadway and the city are the issues of cleanliness, neatness, and attractiveness. Clean implies just that. Dirty, littered landscape will always foster a negative image. Neatness relates to the orderly way elements fit together. Things must look like they are being cared for. Attractiveness relates to the overall form, composition, and character of elements in the corridor. This includes large concrete structures, signage in and outside the roadway, and landscape elements such as trees and shrubs. Elements outside the right-of-way also affect the attractiveness of the roadway.

### **ROADWAY AS COMMUNICATOR**

The roadway can also provide information about the culture of the city. Unfortunately,

the roadway contributes little to the understanding of what we see and often little about what lies beyond our view. Signage that hints of interesting places or features just outside the view of the motorist can add a richness to the roadway. Interesting place names of historical significance can add color and mystery. Many such names exist in El Paso, and some are already used, including Chamizal, Sunset Heights, and Ysleta. Other names should be incorporated where possible. For example, the Trans-mountain highway goes through Smugglers Pass. What is the significance of this name?

Typically, highways throughout the country use similar structures. This can have the effect of creating the "anywhere USA" syndrome. This effect is reinforced by the large numbers of national chain restaurants and retail stores. The roadway should reflect the uniqueness of its environment by incorporating materials and cultural images into its structures, signage, and other elements of projects. A good example is the famed mural collection in El Paso. None of these murals are visible from the roadway, and yet residents speak proudly of them. Opportunities should be found to bring these unique cultural expressions to the roadway. If billboards can be allowed to clutter our roadways, why not real art?

The incorporation of cultural imagery into the roadway will require a coordination of goals and efforts at state, city, and neighborhood levels. TxDOT should take the lead in creating enhancement programs that will enable city agencies, businesses, and local communities to participate in helping to define the character of this imagery.

## **ENHANCEMENT PROJECT PLANNING ISSUES**

One of the problems of landscape enhancement projects in large cities in Texas is that they are usually approached on a piecemeal basis. Attention is paid only to the section that is capable of being included in the present project budget and since the projects are all designed separately, landscape styles can vary widely. This can lead to a potpourri of landscapes that make unifying themes nearly impossible.

In addition, most landscape budgets are arbitrarily assigned to a proposed site without defined, long-term development goals. This often results in inordinately high amounts of money being spent in some areas and very little or nothing in others. This usually results in a series of

isolated elaborate landscapes separated by blandness.

The other major problem with this approach is that it precludes long-term maintenance planning. As local municipalities continue to demand improved roadside landscapes, TxDOT has found that the cumulative costs of maintenance of added projects can be significant. While the maintenance demands of only one site may appear appropriate, will maintenance demands be acceptable in five years after three more sites have been completed? Corridor planning will allow planners to establish acceptable maintenance levels so that surprises can be eliminated.

Our experience and investigation of this issue has led to the conclusion that prediction of contractor maintenance costs is very difficult if not futile. Contractor bids are highly variable and difficult to estimate within an acceptable range. Landscape types, however, are quite predictable in their maintenance requirements. For example, trees live longer and require less care over time than do shrubs. It will be more effective for planners if they will establish the types of landscape maintenance practices that are acceptable for their area based on cost, safety, degree of expertise required, length of time care will be required, and the relative importance of the projects themselves. This study has used these issues as guiding criteria in formulating its recommendations and suggestions.



# DATA GATHERING

## FIELD SURVEY

Separate research teams drove each corridor numerous times and took notes regarding its visual character. The corridors studied are represented in the map in Figure 1. The driving survey sought to identify both attractive and unattractive features within the corridors. The corridors were later divided into segments based on distinct characteristics that might suggest different approaches to landscape enhancements within them. The following corridor analyses discuss these segments. (Maps of these segments are presented after every analysis as they would be driven when entering the city, left to right on the I10 and Border Highway maps.)

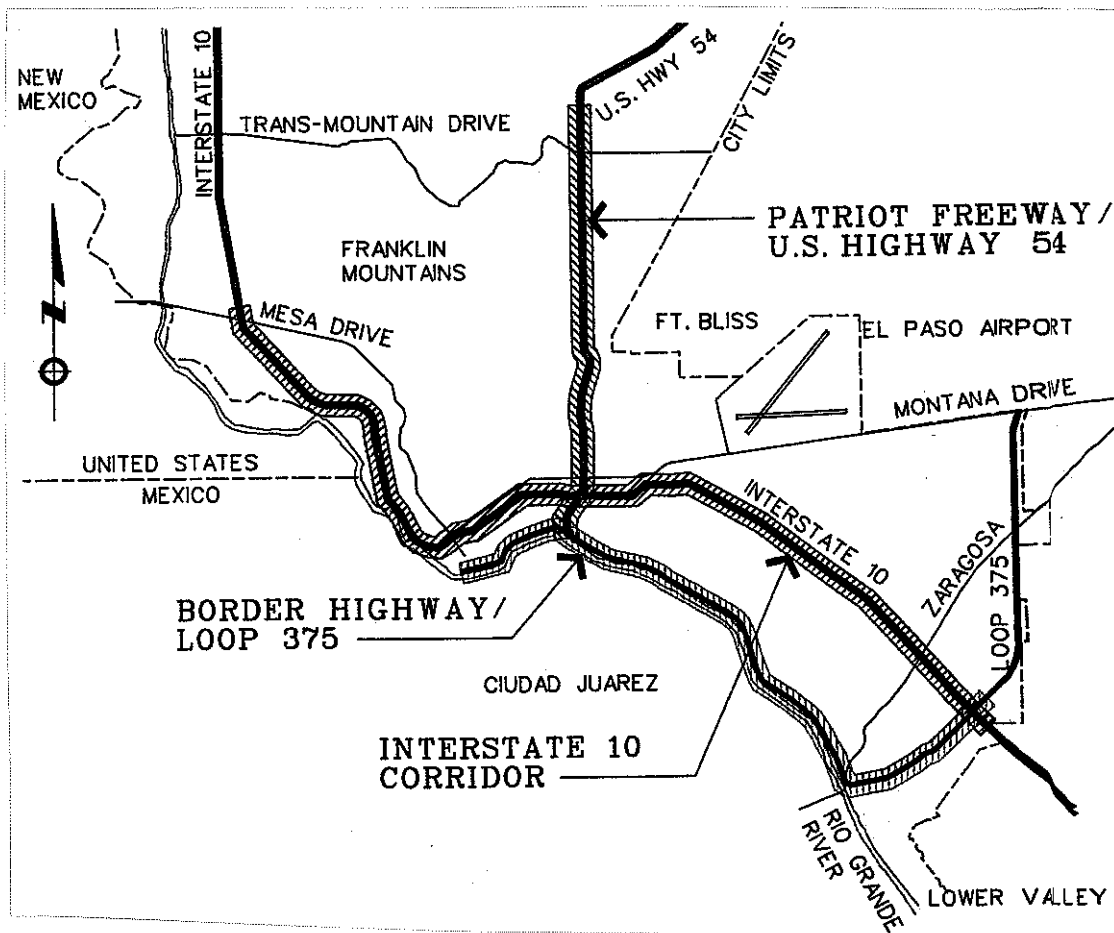


FIGURE 1. HIGHWAY CORRIDORS CONSIDERED IN THE STUDY.

## **INTERVIEW SURVEY**

In addition to the driving survey, the design team selected twenty residents of El Paso to participate in an interview survey. The purpose of the survey was to help identify issues and establish goals based on the input from the general public. The questions asked during each interview focused on these main topics:

- ◆ symbols of El Paso,
- ◆ attractive and/or distinctive features,
- ◆ unattractive features or places,
- ◆ existing visual quality of the roadway corridors,
- ◆ evaluations of past enhancement efforts,
- ◆ response to specific types of enhancements, and
- ◆ preferred landscape features or treatments.

### **Summary and Analysis of Responses**

The mountain was cited as very important to most respondents. It was frequently referred to as beautiful and, at the right time of year, colorful. When asked where they would direct a tourist in El Paso, responses most often included the Mission Trail, Juarez, Franklin State Park, Merchant's Park, and downtown El Paso. Neither the zoo nor the 'pass' itself was mentioned. The most frequently mentioned historic attractions were the Mission Trail, the Chamizal Memorial, and the Historic Districts north of I10.

Interviewees had difficulty naming specific, attractive or unattractive places along any major roadway. Often they could not name one of either. Their feelings were probably best answered regarding a visitor's first impression of El Paso. Most felt that a visitor's first impression would not be a good one. "Dirtiness" was frequently cited, but "hot, dry, weedy," and "lots of concrete" were also mentioned. Positive comments mentioned the view of Juarez and the green of the lower valley. It is interesting to note that the railroad yard and the ASARCO smelter were not mentioned at all.

The fact that specific places were so difficult to name is revealing. It would seem to



indicate that most drivers do not pay close attention to roadside landscapes. This may be due to the nature of the traffic on these roadways. It's just too intense to do anything but watch your driving. It was clear, however, that they could describe the overall experience of the corridor. This would suggest that the corridor is being perceived as an image much larger than that of a group of trees. People may be responding more to the overall "feel" of the place rather than any specific element.

When asked about specific types of landscape treatments they would prefer, Phoenix, Arizona, was often cited as an example. These comments were quickly followed with the statement, "but I know we can't afford that here." Trees were mentioned most often. Interviewees often remarked about the trees along the Border Highway and in the lower valley. Some felt that a few of the existing landscape projects along the highway looked "unfinished," "not enough green." The trees at the Cejudo Vista Mall were the most frequently mentioned attractive area on I10. Median plantings on local streets were also widely appreciated. One respondent commented, "...it's more attractive than dirt!" Some felt that the roadside should reflect the desert character of the surrounding environment. Native vegetation and desert-type plants were cited as the preferred vegetation for the roadway. It was clear, however, that the color green, specifically trees, are noted and well received.

When asked to comment on the use of color in roadway enhancements, the response was overwhelmingly positive. Many interviewees mentioned the murals that decorate the city and suggested including similar features in the roadside. Lack of color within the roadway was mentioned regarding the substantial amounts of concrete on I10 and US Highway 54.

All persons interviewed believe the appearance of the roadway is important to El Paso. All also felt that the general public would be willing to support efforts to improve the visual quality of El Paso's roadsides. Many referred to the median planting projects on Lee Trevino and Mesa Drive as examples of local willingness to participate in enhancement projects.



## CORRIDOR ANALYSIS

### THE INTERSTATE 10 CORRIDOR

The I10 corridor on the east side of town is generally plagued by a problem of scale and untidiness. The fact that little landscape planting exists in the corridor is probably not as important as the fact that the area is untidy, dirty, and drab. These can all be solved with the introduction of aggregate groundcovers or grass in most areas. The scale issue, however, will require the introduction of large elements that divide the roadway into smaller segments.

These two design criteria, a neat ground surface with some color value and tree masses to modify scale are the most critical to future design projects. As noted in the interviews, people seem to have a mental image of the overall character of the highway rather than the quality of isolated pieces. This suggests that for much of the eastern part of the corridor, small details would not have a significant effect on the motorist's mental image of the highway. Accent shrubs should be considered in these areas. However, extensive use of small shrub plantings and intricate detailing of materials such as those found at the Governor's Achievement Project between Piedras and Copia will not have sufficient impact to justify their cost.

This simple landscape concept will be reasonable in its maintenance requirements over long periods of time. Primary maintenance activities (assuming uncontrolled crossing of medians is prevented) will include irrigation system maintenance, litter pickup, repair of disturbed aggregate, and use of herbicides to control unwanted vegetation. In some of the easternmost sections, mowing may be required. It is unrealistic to assume that maintenance cost will not rise as more landscape enhancements are installed. However, costs can remain reasonable if the types of maintenance activities can be kept to relatively simple, easily performed tasks.

While this analysis focuses on the view of the city as seen from the roadway, more attention should be focused on the view from the local streets. Many of these views are of extensive amounts of concrete riprap or trashy detention ponds, and the effect is an ugly intrusion into the human activities along the roadside.

The more densely developed sections along I10 inside the US 54 interchange are more conducive to detailed landscape projects. The close proximity of businesses and residences

encourages closer scrutiny because the scale of the highway is reduced along this stretch. Architectural details of cultural significance will have their place in this section.

The visual quality of I10 near the center of town is primarily determined by the character of the structures rather than by the character of spaces as in the eastern sections. Scale is not as big a problem here as the quality of detailing and the way the highway fits into the urban scene. Tidiness in this section relates to the character of the structures themselves. Overpasses, support columns, riprap, fencing, guardrails, sign bridges, and median dividers are some examples. Measures to counter these problems include the introduction of color on otherwise drab surfaces and exploring alternative designs when replacements or upgrades are required. Landscape plantings will help some in dealing with the harshness of paved surfaces, and more places should be provided for them. Shrubs will have a larger impact in this section.

When the mainlanes dip below the grade of the local streets, as in the downtown area, an important visual connection to the city is lost. Where this occurs in El Paso, the more human-scaled and often more colorful local scenes are replaced with a space that is harshly drab and completely discordant to the environment above. These interludes of visual blight add strong negative impressions to the character of the city as gathered from the roadway. In each case, however, the problem is not inherent with the functional layout of the roadway. It is the type and magnitude of materials used coupled with the scale of the spaces that cause problems. While these are more easily addressed in the design stage, they are by no means precluded once the project is completed.

The western sections of I10 contain much to see in the way of symbols of El Paso, and vistas change frequently. UTEP, Juarez, the Rio Grande, ASARCO, the mountains, and the Pass all occur in a relatively short length of roadway. Making order of this section will be difficult but can best be approached by developing this area as a formal entry into the city. This means more attention to the character of roadway structures, signage that conveys a desirable image, and introducing scenic overlooks.

## **INTERSTATE 10 VISUAL ANALYSIS AND RECOMMENDATIONS**

### **City Limits to Geronimo Street**

The entry into El Paso on I10 from the east begins amid scattered light commercial developments in fairly flat terrain (see Figures 6 & 7). Open views of the green farmland south of the roadway stretch to the river and to Mexico beyond. The contrast between the lush vegetation of the area and the desert plants along the roadway make this view rather dramatic and pleasant. Development gradually increases, and the view from the top of the Zaragosa Street Bridge is a decidedly suburban one.

Zaragosa is the beginning of the Mission Trail. While there are some signs (one is quite small), none are sufficient to convey the importance of the missions or inviting enough to encourage visitors to visit them. The entry to El Paso in this area should be developed along the theme of the Mission Trail. Signage and landscaping should relate to the image of the missions and be large enough to convey the importance of these historic features and the culture around them.

This section is quite consistent in alignment and the type of developments along its edges. The highway has only two slight bends before reaching the Basset Commercial Center at Geronimo Street. The vertical alignment changes at overpasses and one underpass at Lee Tevinio Drive. These changes are important because they divide the sequence into segments that keep the arrow-straight alignment from becoming overly boring.

The positive features of this section are:

- ◆ View of the mountains,
- ◆ View towards Mexico,
- ◆ Businesses with landscape improvements alongside the roadway,
- ◆ Changing views of mountains and Mexico, and
- ◆ Entry to the Mission Trail.

The negative features of this section include:

- ◆ Dirtiness of soil-covered areas. Uncontrolled crossing of medians exasperate the problem.

- ◆ Billboards intrude on view of mountain.
- ◆ Large areas of concrete riprap. These highly reflective surfaces become overwhelmingly harsh in El Paso's summer sun.
- ◆ Little color intensity or variation. This renders the edges of the paved surfaces indistinct.
- ◆ Lacks a strong welcoming feature or character to signal entry into the city.

### **Recommendations**

There are two primary design goals for this segment. One is to create a neat, clean appearance for the roadway; the other is to reduce the scale of the highway.

#### **Guidelines:**

1. The soil areas should be covered to create a clean, uniform surface. Install groundcovers of grasses or colored aggregate to define pavement edge, introduce color, and visually integrate roadway with adjacent landscape developments.
2. Crossing of medians in unauthorized areas must be eliminated. These areas should be landscaped with structures and elements that will prevent crossings. The materials used might be stone or stucco. Changes in grade may also be used in conjunction with these structures. Avoid the use of metal guardrails if possible. Do not use cable barriers.
3. Target for landscaping those sections of roadway where adjacent developments have already introduced improvements. This will create a stronger visual connection to the surrounding developments (see Figures 2 & 3).
4. The scale of the roadway requires the use of large-canopy trees. Trees should be planted in large numbers, installed as closely-spaced masses. Where necessary, barriers should be considered to allow the installation of trees in narrow medians (see Figures 4 & 5). Because shrubs catch blowing litter so easily, they should be used very sparingly except where screening is desired.
5. Indigenous landscape materials should be used to create visual interest and stronger relationship with surrounding landscapes. This is best accomplished by the use of

colors, color contrasts, and textures that exist in the area. The texture of adobe would best match the sandy soils. Closer to the mountain, stone with prominent rust-reds will be appropriate. Aggregates as groundcovers should be dark enough to delineate clearly the edge of the pavement. To reduce glare and better delineate the pavement edge, white and grey aggregate should be avoided.

6. As existing riprap is replaced or repaired, stone riprap should be considered for use in its place. Where possible, vertical surfaces using stone should be introduced on slopes to break monotonous lines and add interest. Some of these could provide planting areas

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FIGURE 2. INTERSTATE 10 WITH ATTRACTIVE LANDSCAPE  
CLOSE TO THE ROADWAY.



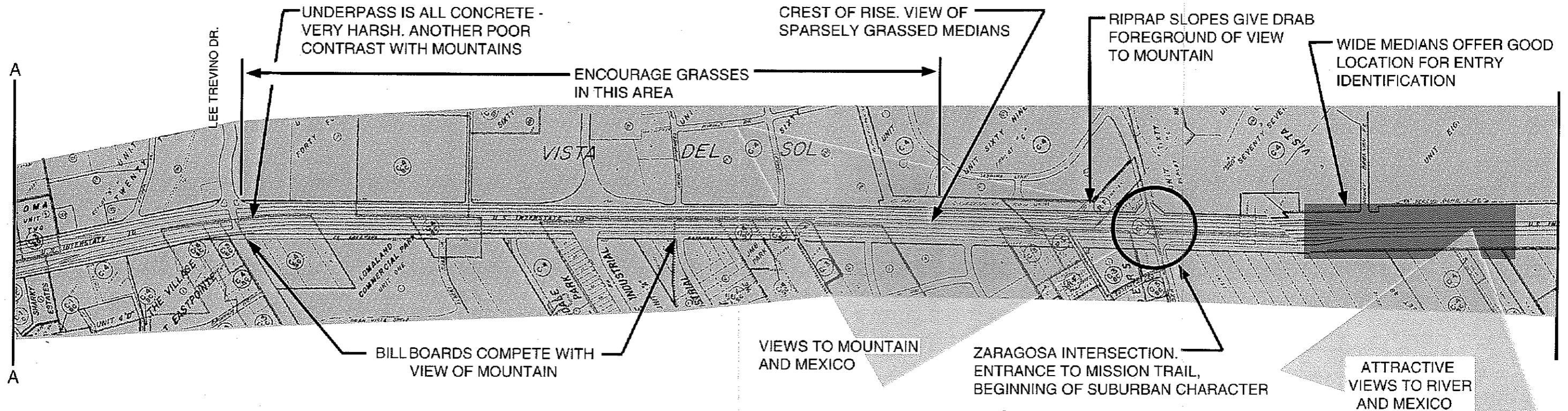
FIGURE 3. EFFECT OF ADDING TREE MASSES TO MEDIANS  
ADJACENT TO EXISTING LANDSCAPING.



FIGURE 4. INTERSTATE 10 AT CIELO VISTA MALL.



FIGURE 5. EFFECT OF ADDING DARK AGGREGATE AND TREES TO MEDIANS.



SUBURBAN CLUTTER INCREASES AFTER COMING UP OUT OF UNDERPASS AT LEE TREVINO

DEVELOPEMENT INCREASES

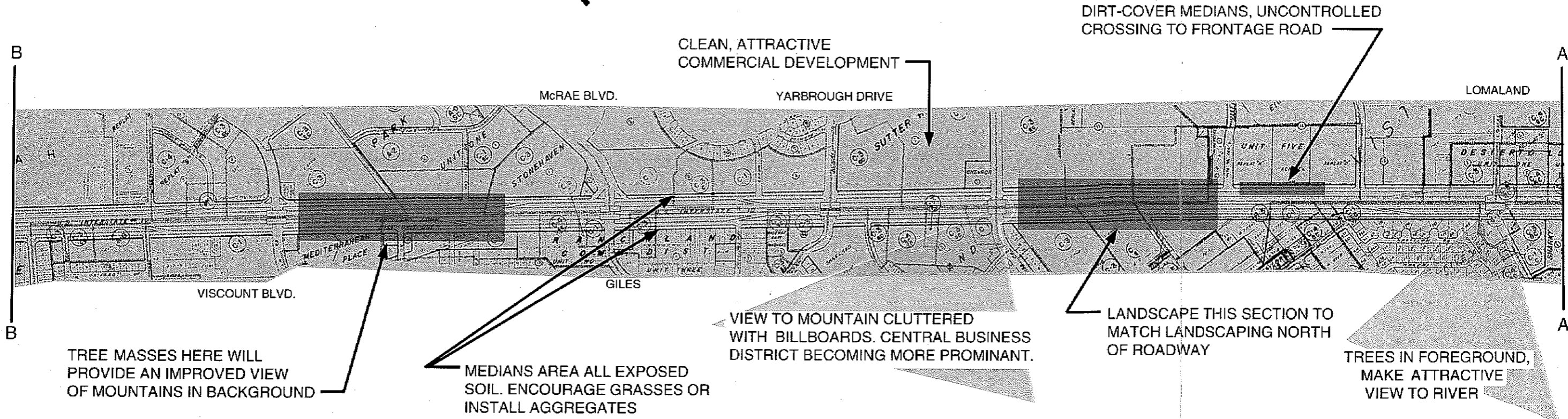


FIGURE 6.I-10 from ZARAGOSA RD. to GERONIMO DRV. (cont. on next sheet)

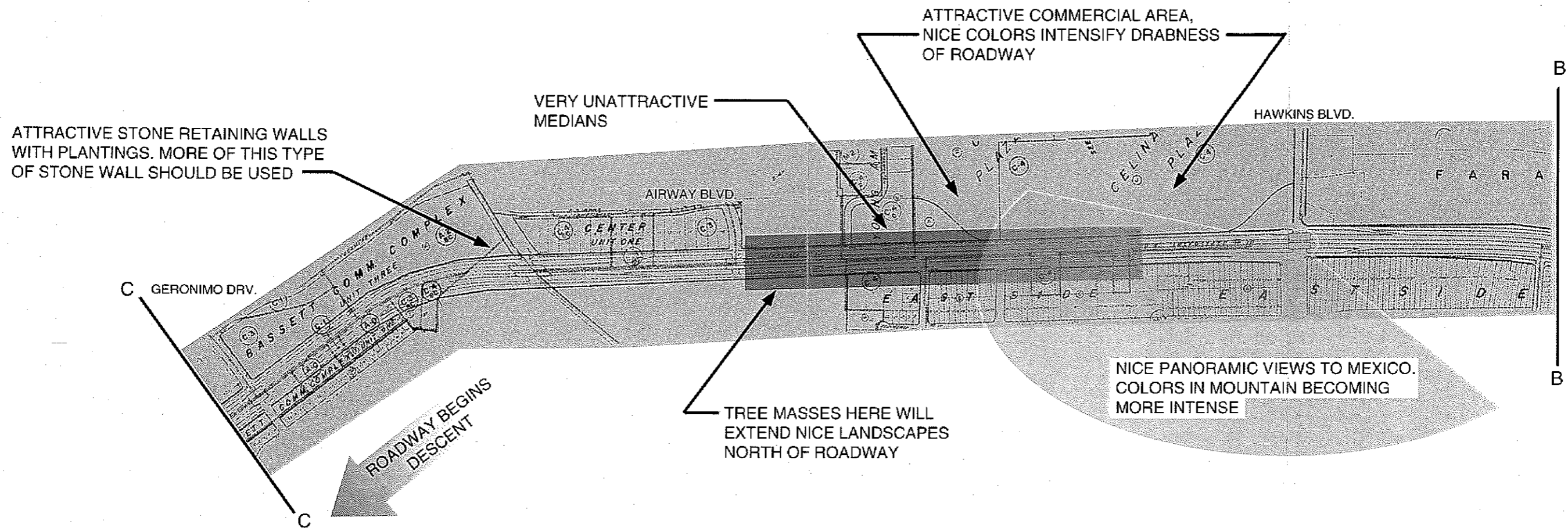


FIGURE 7. ZARAGOSA RD. to GERONIMO DRV. , cont.

## **Geronimo Street to US Highway 54**

Interstate 10 makes a series of turns in the Geronimo-to-Piasano area (see Figure 8). This is a significant event considering the long, straight section that preceded it. These turns are accentuated by noticeable drops in elevation. By the time we have completed the last turn, development in the surrounding landscape has become more dense, and we have had our first good glimpse of downtown El Paso with Juarez in the background. The roadway from Piasano to US 54 is elevated for about half its distance and then sinks below Reynolds Street. Large amounts of concrete riprap in this area form the introduction to the interchange of US 54 and Interstate 10.

The "Spaghetti Bowl," as it is often referred to, does not spring upon the motorist suddenly; rather, the motorist slides into it gently. It is a dominating structure in size but has a rather "light" quality due to its height and the fact that it does not completely obscure the mountain behind it. Its lines compliment rather than conflict with the mountain. The interchange provides a strong psychological break in the experience of the roadway. Once through it, impressions of the preceding section are erased and replaced with the new character of the surrounding landscape.

The "Spaghetti Bowl" is unique. Whereas many interchanges of this nature are devoid of plants, this interchange is one of the greenest sections of roadway in the corridor. The detention ponds on the north have deep, green grass and numerous trees that are visible from I10. The south side is a park that also contains grass and trees. Couple these features with the shade that is offered by the flyovers, and the effect is quite agreeable. This is one of the reasons the interchange is such a strong break in the sequence along I10.

The positive features of this section are:

- ◆ Roadway geometry offers some different views.
- ◆ Numerous adjacent properties have some landscaping.
- ◆ Elevated sections tend to de-emphasize the frontage roads and focus views towards Mexico and downtown El Paso.
- ◆ "Spaghetti Bowl" contains attractive vegetation.

The negative features of this section are:

- ◆ Large amounts of riprap are poor contrast to mountain and the stone walls near the right-of-way.
- ◆ Very few areas available for planting.

### **Recommendations**

The design goals for this section should be to add color to the roadway and to replace the large riprap areas with more attractive materials.

#### **Guidelines:**

1. Cover the riprap slopes with native stone or use planters at the base of the riprap to elevate tree masses (see Figures 9 & 10).
2. Color should be added to the roadway by introducing color onto the median barrier, median fences, and overhead structures.
3. Install tree masses in plantable areas. Cover exposed soil with aggregate.
4. Keep the edges of the detention ponds within the I10 and US 54 interchange neat and close to the mainlanes.

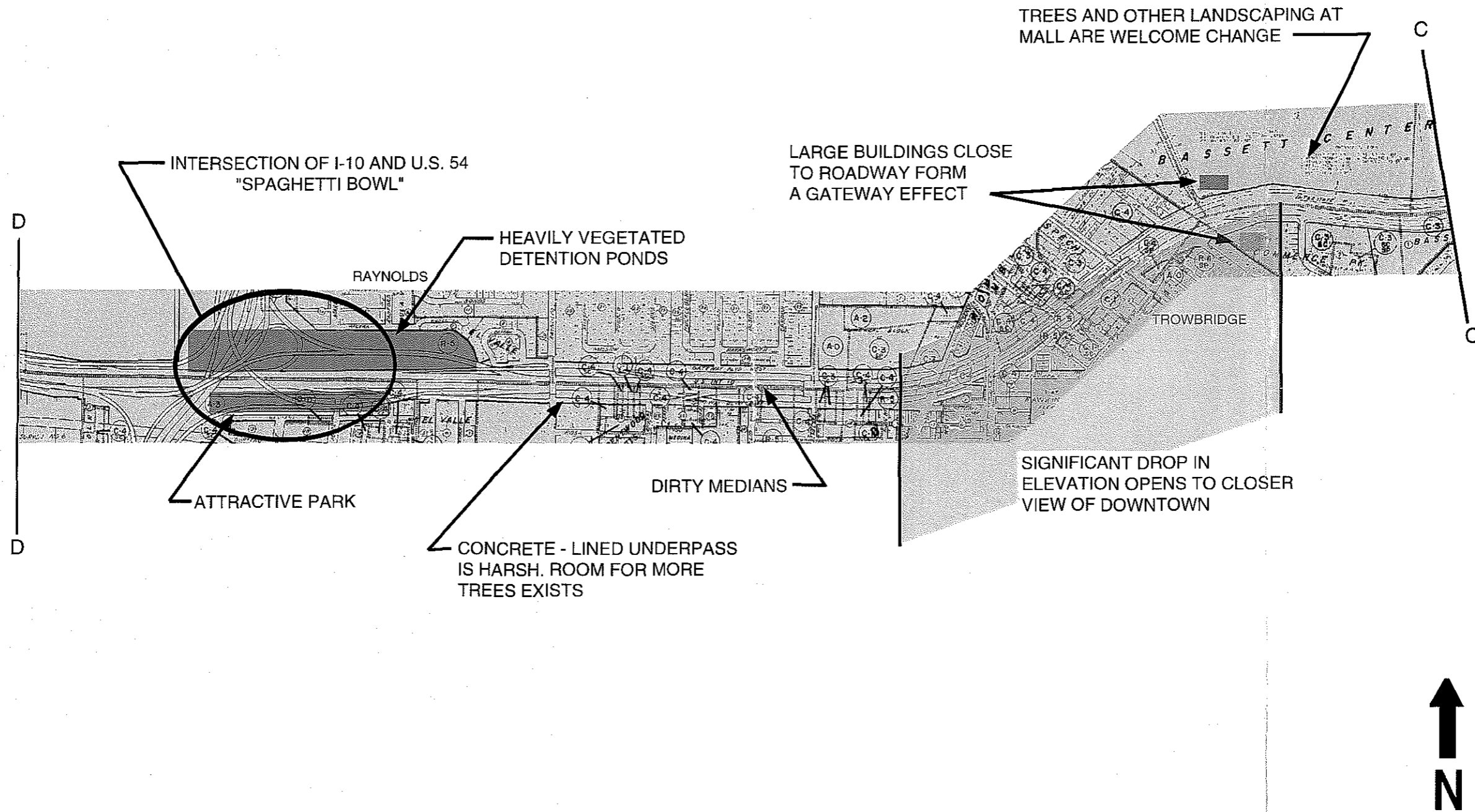


FIGURE 8. I-10 from GERONIMO DRV. to U.S. HIGHWAY 54

## **US Highway 54 to Cotton Street**

The "Spaghetti Bowl" ends the way it began: gently (see Figure 13). Once past the last entrance ramp, the character of the urban landscape is noticeably different. Development along the right-of-way here is in smaller tracts. Structures are smaller and closer to the mainlanes. Complex, urban detail is everywhere in the view.

The view from the top of the Copia Street overpass offers our first good glimpse of the downtown area. Unfortunately, the view includes open detention ponds filled with trash and surrounded by an unappealing chainlink fence. After the highway drops to near level with the frontage road, it rises to cross Piedras and Raynor Streets. Here the view tends to focus towards Mexico, downtown, and the Franklin Mountains. Not much is noticed of the frontage roads in this section.

Positive features in this section include:

- ◆ Rising and falling of the roadway is interesting, offering a changing viewpoint.
- ◆ Numerous adjacent properties with landscaping.
- ◆ Great panoramic views of El Paso.
- ◆ Attractive existing landscape project on south side.

Negative features include:

- ◆ Drab roadway contrasts poorly with the small, more colorful businesses nearby.
- ◆ Concrete detention basins are very prominent and very unsightly.

### **Recommendations**

The design goals for this section are to add color to the roadway and to screen the detention basins.

#### **Guidelines:**

1. Add color to guardrails and barrier curbs.
2. Install plantings that will visually extend plantings from adjacent developments.



3. The first option is to pave over the detention basins and install aggregate groundcover on top of them. Small planter areas could be constructed that will allow some vegetation to be introduced. If this option is not practical, shrubs should be used to screen the basin. Walls may be too harsh an element given their contrast with the planting across from basins.



FIGURE 9. TYPICAL RIPRAP SLOPES AS SEEN FROM FRONTAGE ROAD.

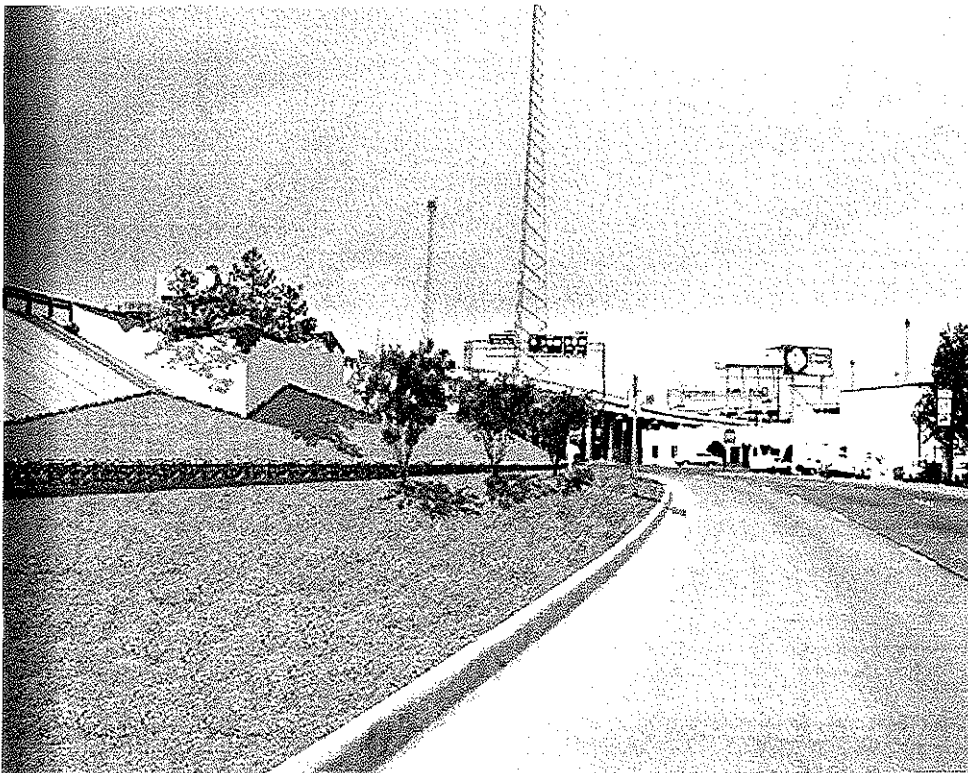


FIGURE 10. EFFECT OF ADDING AGGREGATE WITH PLANTER AND TREES.

### **Cotton Street to Missouri Street**

The view from the Cotton Street overpass is significant (see Figure 13). There is a strong sense of arrival in this section. At this point, downtown El Paso opens into complete view, and the effect is that of arriving into the heart of El Paso. Small businesses only a few yards from the mainlanes reinforce the feeling of arriving downtown. The railroad yard south of the roadway is a few feet lower than the roadway and so tends to blend into the foreground. Consequently, it does not seriously conflict with the overall character of the downtown scene.

Positive features include:

- ◆ The best view of downtown from the highway.
- ◆ Old train depot is a prominent landmark.
- ◆ A real sense of arrival.

Negative features include:

- ◆ Foreground of view from Cotton Street bridge has bare soil areas that conflict with the nice landscapes adjacent to the roadway.

#### **Recommendations**

The design goal for this section is to improve the foreground view of downtown El Paso and to enhance the train yard and depot.

Guidelines:

1. Introduce trees masses into available areas to add color and soften the foreground view.
2. Remove the chainlink fence alongside the train yard. Filter the view of the yard with a partial screen made of materials that will relate to those used in the depot.



FIGURE 11. VIEW OF OLD TRAIN DEPOT



FIGURE 12. CHAIN-LINK FENCE REMOVED AND ACCENT SCREENING INSTALLED

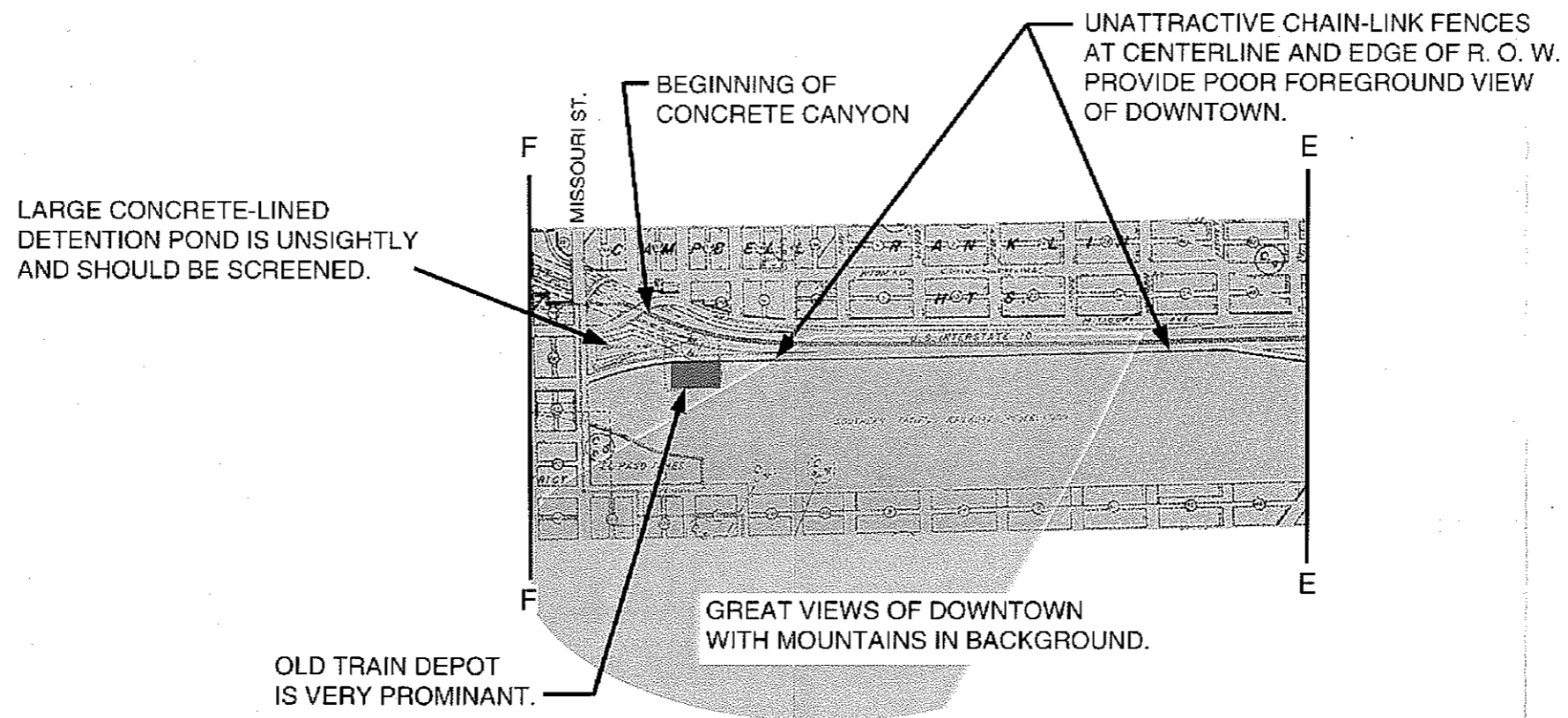
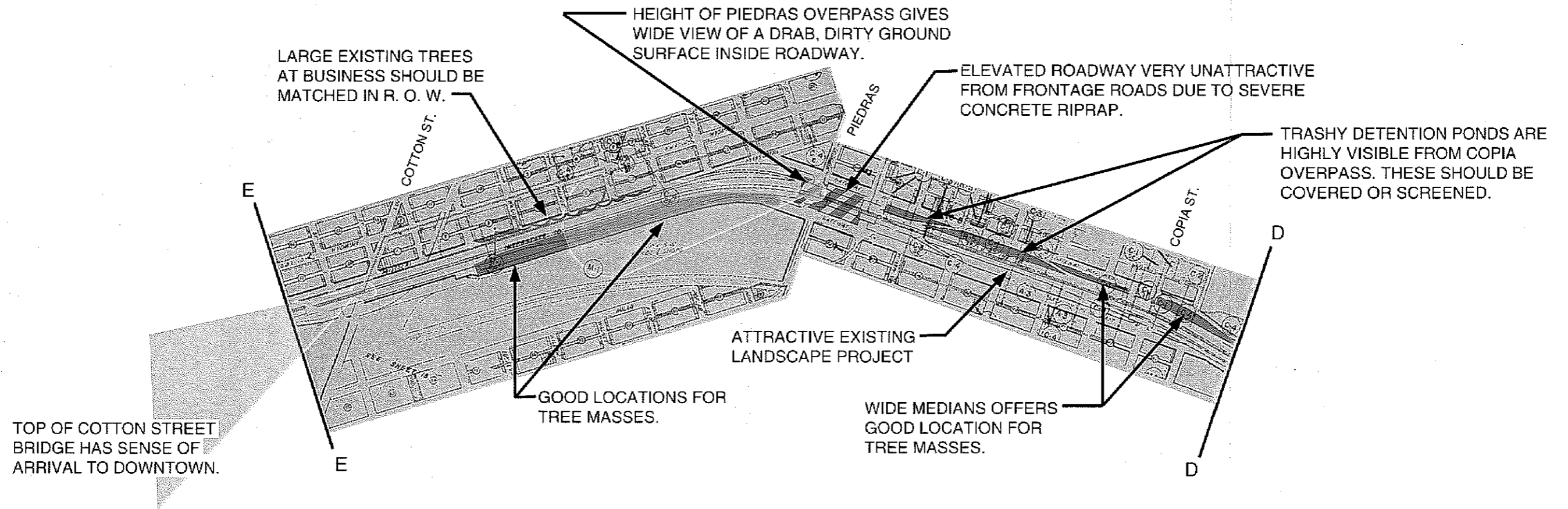


FIGURE 13. U.S. HIGHWAY 54 to MISSOURI ST.

### **Missouri Street to Executive Center Boulevard**

The strong sense of arrival so recently felt is abruptly replaced with a sinking feeling. This section has been referred to as the "concrete canyon" and rightly so (see Figure 16). This is an oppressive section in its own right, but it is made worse due to the contrast with the intimate views of downtown just experienced above. The extensive use of concrete riprap continues out of the canyon and extends to the Schuster exit and UTEP. The feel of this section of roadway is so conflicting with that of the rich urban scene above that it can leave a strong negative impression. This is the last scene the motorist sees of the heart of the city. The exit to the Sunset Heights Historic District occurs just after leaving the "canyon." This exit is marked, but entrance to the area is not inviting, and motorists have little time to make their decisions.

The proximity of Juarez to the south after leaving the canyon is the closest the motorist gets to Mexico and the Rio Grande without leaving the highway. This is a very interesting view for visitors. The Pass is also located in this section, just past Schuster Avenue, and this is the closest the motorist gets to the mountain. Unfortunately there is no way for the motorist to stop and explore this scene. This is true of the entire stretch from the canyon to the ASARCO plant. The elevation of the roadway offers a wide and varied vista, but there is no way to stop and let the eye explore it.

The ASARCO plant was never mentioned as a negative feature in the interviews. Actually, the smokestack is a very prominent landmark. Even though Smelertown no longer exists, the name suggests rich images to those unfamiliar with its history. This fact could be exploited to add richness and color to a visitor's impressions.

The approach into downtown El Paso from the west creates a very poor image. The buildings of the inner business district are seen over concrete riprap and the announcement of the exit into the area does not welcome or encourage the motorist. The entry into the concrete canyon hides all traces of the downtown area, and when motorists emerge on the other side, the heart of the city is behind them. The whole sense of arrival is too abrupt and leads quickly to a sense of departure.

The area between the ASARCO plant and the concrete canyon should be carefully enhanced to provide a strong, positive gateway image into the city. Future connection of Loop

375 to I10 in this area could make this an even more unappealing entry if not done sensitively. Future roadway extensions from Loop 375 should be as close to grade as possible to avoid marring the views of the Rio Grande and Juarez.

Positive aspects of this section include:

- ◆ Great vistas, view of UTEP, Juarez, ASARCO, and Rio Grande River.
- ◆ Close proximity to important historic and geologic features.
- ◆ Opportunity for an entry image for El Paso.

Negative aspects of this section include:

- ◆ Extremely harsh concrete surfaces in the concrete canyon and beyond, very drab, no color contrasts, and no areas available for planting.
- ◆ Lack of opportunity for the motorist to understand the landscape scene.
- ◆ Smelter by-products litter the right-of-way.

### **Recommendations**

Design goals are to:

1. Improve the character of the underpass by relating it to the downtown area.
2. Add color to the roadway and replace the large riprap areas with more attractive materials.
3. Provide scenic overlooks for motorists to stop and view the area.

Guidelines:

1. Improve the character of the underpass zone by introducing color in the structures. This may be accomplished by staining the overpasses and the support structures. The long retaining wall on the north side of the roadway should be painted in a mural-like pattern which will accentuate the movement along its length. Lighting under the overpasses should also be considered (see Figures 14 & 15).

Introduce materials into the canyon that will relate the section to the urban city above.

Brick is the first choice and should be introduced as a facade on vertical surfaces or used to create dummy structures to mimic some of the structures above. Use stone on riprap slopes.

Install planters to introduce plant material into the canyon area. Stone planters should be confined to the lowest areas next to the travel lane. Elevated planters should be constructed in brick to relate to the structures behind them in the downtown area.

2. Introduce signage that will invite the motorist off the highway and into the historic district. The signage should be constructed in materials and in forms that relate to the historic district and should be well lit at night.
3. Room exists for turnouts on the outside of the eastbound lanes and possibly on the inside of the westbound lanes. These elements should be considered when the occasion arises to replace much of the deteriorating riprap in this area.
4. Remove the black slag from the embankments along the right-of-way at the ASARCO smelter and replace with native desert vegetation. Regrade the straight, flat, tops of embankments in this area to mimic the more natural, rounded forms seen in the desert.



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FIGURE 14. ENTERING CONCRETE CANYON FROM WEST



FIGURE 15. EFFECT OF INTRODUCING COLOR AND PLANTING AREAS.

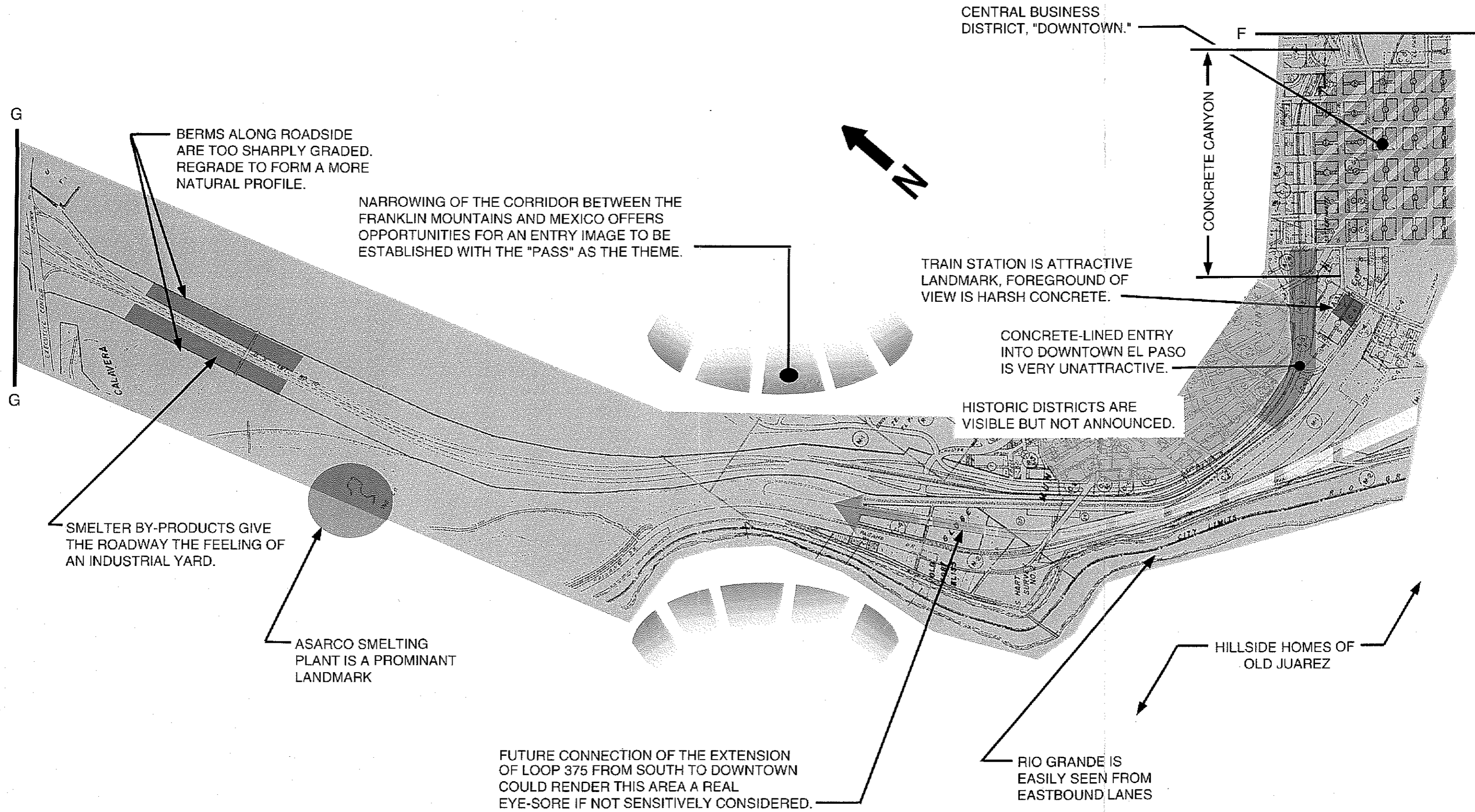


FIGURE 16. MISSOURI STREET to EXECUTIVE CENTER BLVD.

### **Executive Center Boulevard to Mesa Drive**

The section from Executive Center to Mesa Drive is distinctly desert (see Figure 17). This contrasts with the entry to El Paso on the east side where lush vegetation and green farm fields in the lower valley stretch for miles. The west side appears more rugged. The long view to the west into New Mexico presents a clean horizon and beautiful sunsets. The Franklin Mountains to the east provide an imposing backdrop for the desert sloping up to its base and the development alongside the highway.

The desert landscape comes very close to the roadway in many places through this section. This allows closer inspection of the plant life. Where the width of the roadway is magnified in urban El Paso, the highway is dwarfed by wide vistas and miles of desert. This intimacy with the desert is broken in only a few places, most noticeably at the intersections of Sunland and Mesa Drives where they cross Interstate 10.

Positive features of this section include:

- ◆ Many long views.
- ◆ Closeness of desert landscape to the roadway.
- ◆ View of Franklin Mountains.
- ◆ Few billboards mar the views.

Negative features of this section include:

- ◆ A lot of powerlines are visible in the first half of this section.
- ◆ The Sunland Park intersection presents a harsh combination of grey aggregate and concrete.

#### **Recommendations**

The design goal in this section is to remove eyesores from the edge of the roadway and allow desert vegetation to recolonize disturbed areas over time. Litter pickup in some stretches would improve the tidiness of the area. Landscape improvements in the form of plantings in this section will have a difficult time competing with the scale of the surrounding desert. The exception would be the addition over time of more large-canopy trees to the Sunland Park interchange.

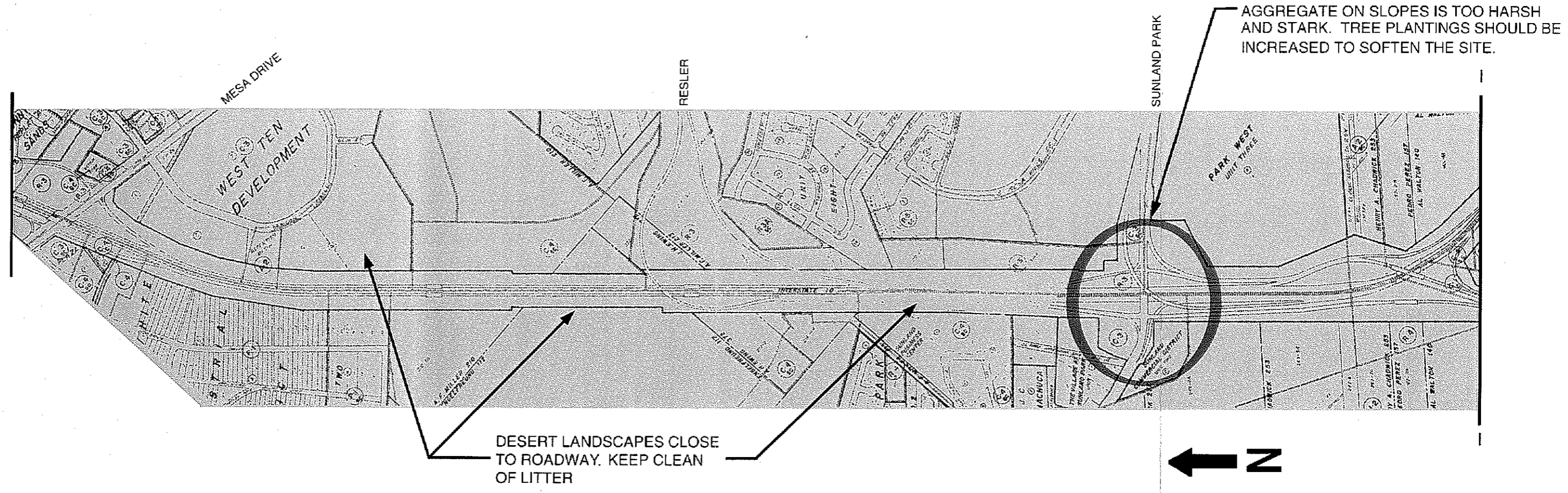
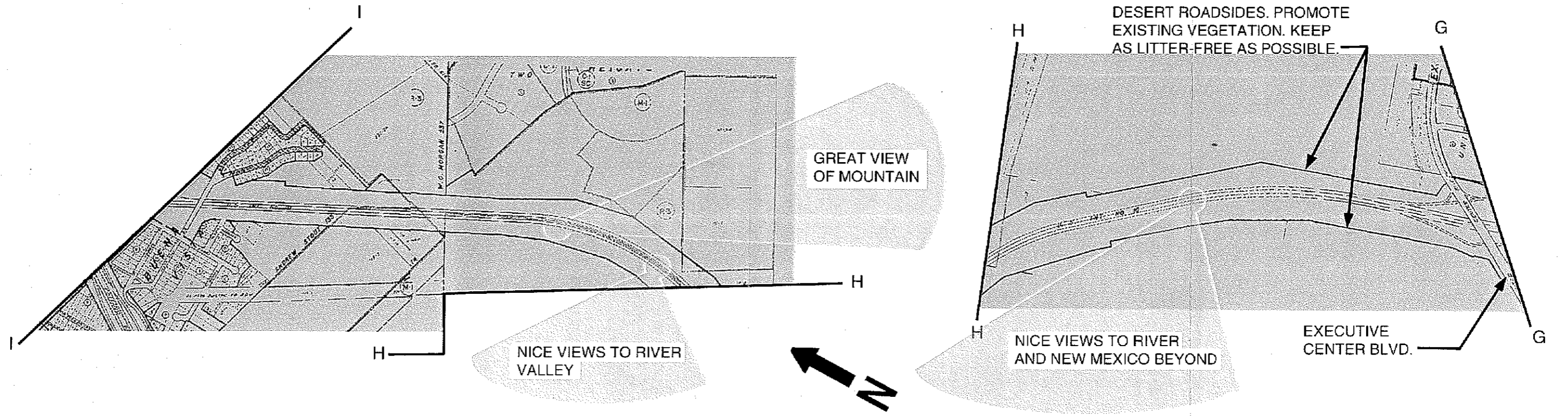


FIGURE 17. EXECUTIVE CENTER BLVD. to MESA DRIVE

## **LOOP 375, THE BORDER HIGHWAY**

Loop 375 (the Border Highway) from I10 to Santa Fe Street in downtown El Paso has a lot of positive features. So many, in fact, that most enhancement problems in this roadway involve taking advantage of opportunities rather than correcting mistakes. A lot of consideration should be given to enhancing this section as an entry into El Paso. The fields of the lower valley, the Mission Trail, three border crossings, parks, the Rio Grande, the Chamizal Memorial, and of course, Mexico, combine to make this stretch both visually interesting and culturally significant. (This task would have been made easier if when the Loop 375 and I10 interchange was designed, its alignment could have made the border highway an easier choice for the motorist.)

Another challenge for this roadway will be to protect these views over time from encroachment by commercial and residential developments. Appropriate screening should be installed to prevent visual clutter accumulating in the foreground of views. Landscape enhancements must also be sensitive to the views. The best locations will be at interchanges and the intersections with local streets.

## **BORDER HIGHWAY ANALYSIS AND RECOMMENDATION**

### **Loop 375 from I10 to Zaragosa (Avenue of the Americas)**

The as-yet unfinished section of Loop 375 from I10 (see Figure 18) to the border crossing and Zaragosa has tremendous possibilities to be developed as an entry to the heart of El Paso. The effect of descending in elevation while arriving at a significant "place" such as the Rio Grande creates a strong sense of arrival. This is an important psychological event and should be enhanced to the fullest. Since the commercial and industrial areas along this section are not yet fully developed, the opportunity exists for the highway to set the character for the area. A portion of this section has an historical designation for the Mission Trail. This should be enhanced through the use of interesting signage and landscape development.

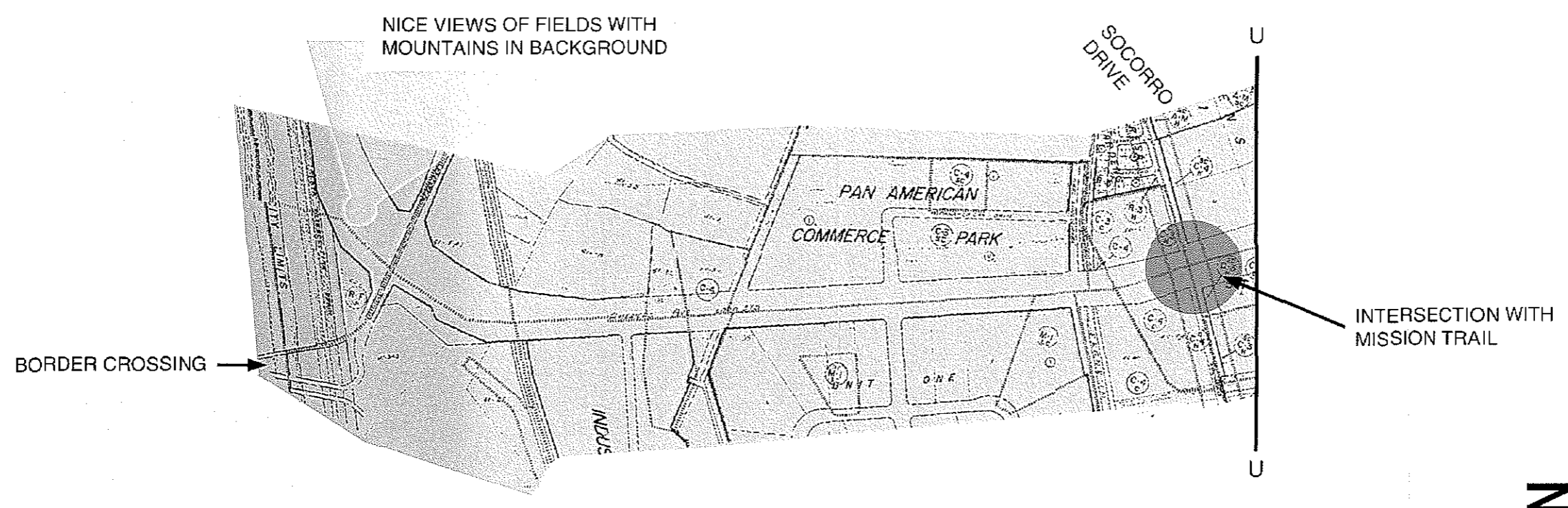
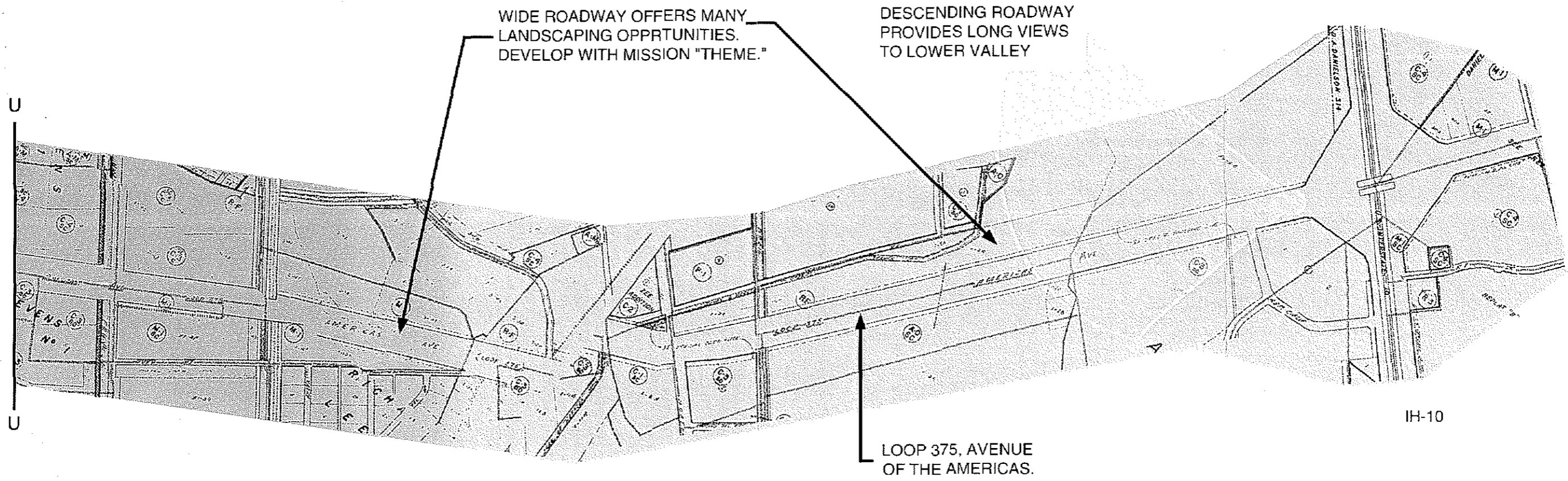


FIGURE 18. LOOP 375 from I-10 to ZARAGOSA RD.

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## **Zaragoza to US Highway 54**

Everyone interviewed liked this section of roadway (see Figure 23). This stretch is exactly opposite in character from Interstate 10. While it does not have the magnitude of views I10 does, it is edged by green fields and trees in many places. The Franklin Mountains and the mountains framing Juarez provide an attractive view towards downtown. Due to flat terrain, the motorist sees only a thin strip of pavement in the opposite lanes. This keeps the scale of the pavement from overpowering the views.

While the river is not visible because of the levee, Mexico is easily seen in most places. Most of its banks along the river are densely covered in trees and the effect is quite pleasant. The prison-yard character of the border fence on the US side is visually disturbing but also interesting in its powerful presence. The presence of the border guards lend an air of heightened reality to the scene, of being close to the middle of a significant event. New visitors to El Paso will likely find this roadway very interesting.

Small patches of residential and light commercial development occur along the highway in this section. Some of the residential areas are screened. Those that are not present a largely unattractive view of their backyards. This is true also of the commercial development. These are quite unsightly and mar an otherwise consistent, pastoral scene.

### Positive features include:

- ◆ Long views over green fields and parks. Trees stand out against the sky.
- ◆ At-grade travel lanes are unobtrusive from the motorist's vantage point.
- ◆ Presence of the Rio Grande.

### Negative features include:

- ◆ Exposed salvage yards.
- ◆ Unattractive residential areas.

## **Recommendations**

The design goal for the Border Highway is :

1. the preservation of present views and
2. screening of residential and commercial areas. (In its sign ordinance, the city of El Paso has designated the Border Highway from Santa Fe on the west to Zaragosa in the east as a scenic corridor and has prevented the erection of billboards within 500 feet of the right-of-way. The city is to be commended for its foresight.)

### **Guidelines:**

1. Screening fences along existing commercial and residential developments in some areas should be erected. (Ordinances should be reviewed to ensure that residential areas assume responsibility for maintaining a visual screen along the subdivision.)
2. Isolated groves of trees should be planted to screen commercial and residential areas and to frame some of the views towards downtown El Paso. Groups should be small, 5 to 10 maximum, staggered in random patterns. Mesquite or Willow are the only species that should be used (see Figures 19 through 22).

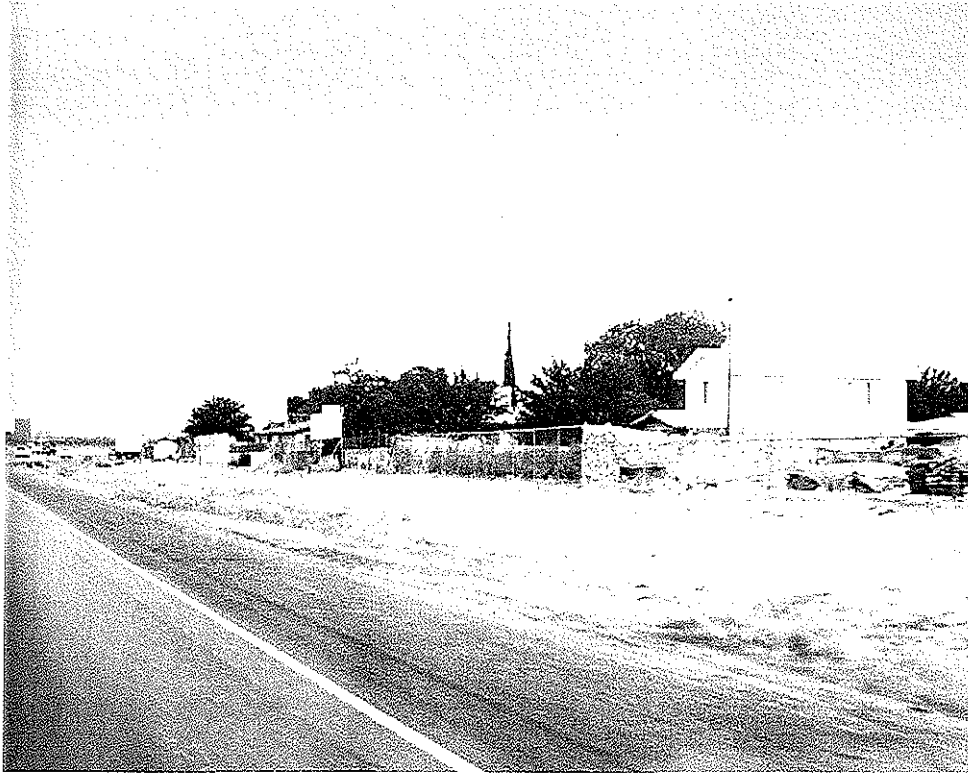


FIGURE 19. UNSCREENED RESIDENTIAL ALONG THE BORDER HIGHWAY.



FIGURE 20. EFFECT OF ADDING WALLS WITH TREE PLANTINGS



FIGURE 21. UNSCREENED COMMERCIAL AREA ON BORDER HIGHWAY.



FIGURE 22. EFFECT OF ADDING WALLS AND TREE PLANTINGS

### **Border Highway and US Highway 54 Interchange**

This interchange signals the change from the more pastoral vistas of the lower valley to the more developed urban city (see Figure 23). The interchange itself contains a lot of concrete riprap on slopes and so contrasts unfavorably with the softer landscapes just seen. Fortunately, however, there are a number of plantable areas within the interchange that will allow the introduction of tree masses that will add color and soften the structures.

#### **Recommendations**

The design goal is to reduce the harshness of the concrete riprap in the interchange.

##### **Guidelines:**

1. Trees planted in the interchange should be same species used along the lower sections of roadway. Since irrigation is not likely to be feasible, smaller plant sizes should be installed and allowed to establish slowly over time.

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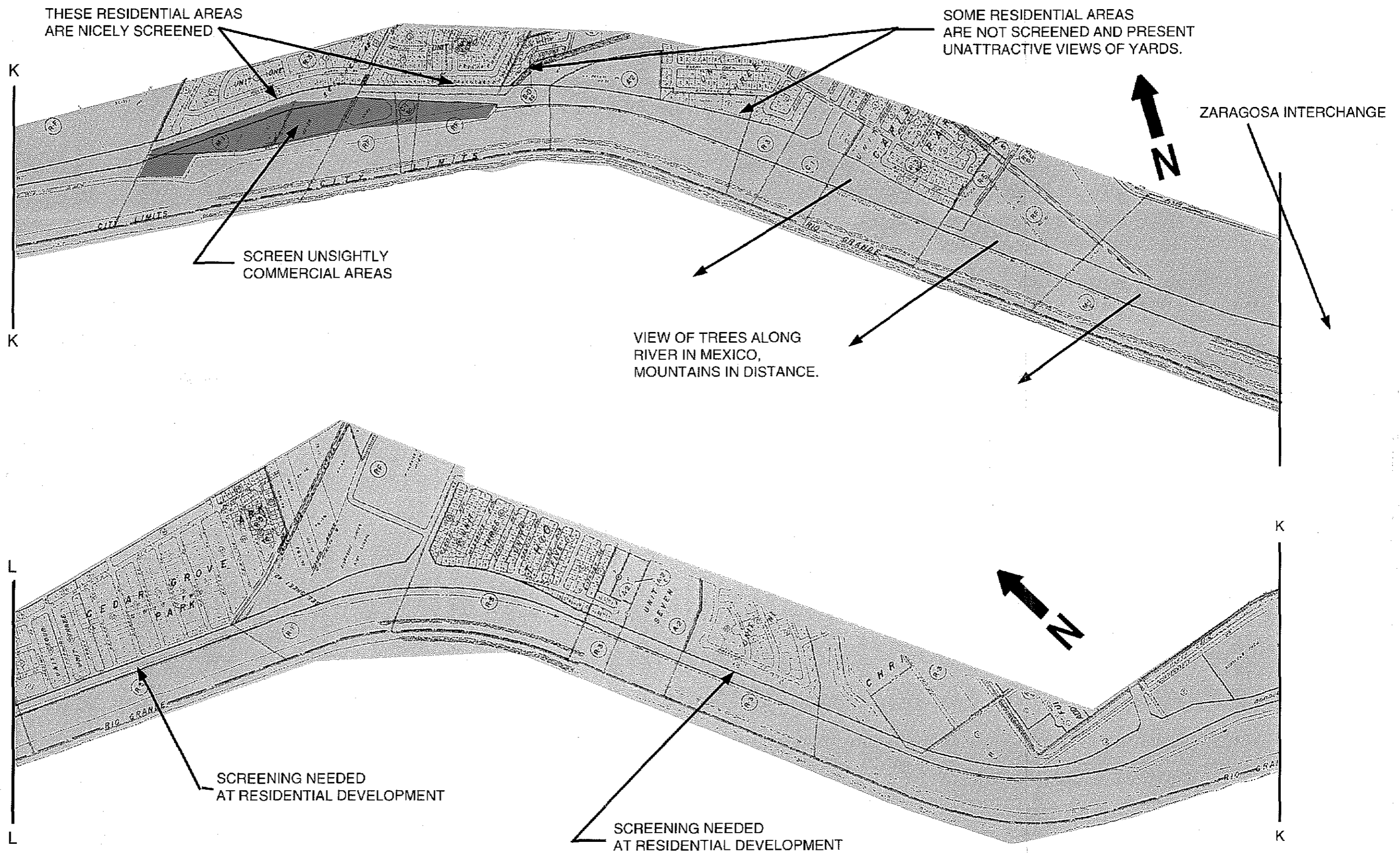


FIGURE 23. BORDER HIGHWAY from ZARAGOSA to U.S. HWY 54 (Cont. on Next Page).

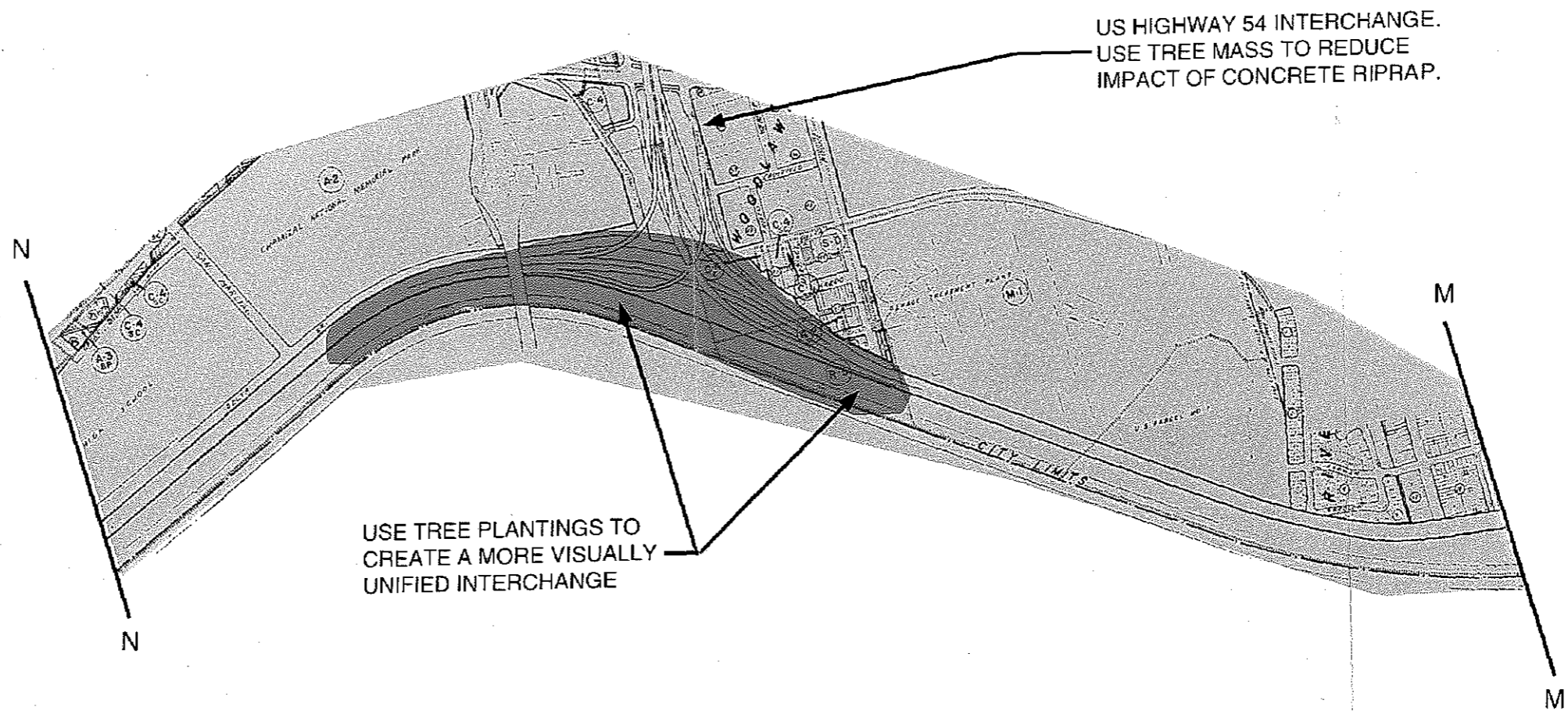
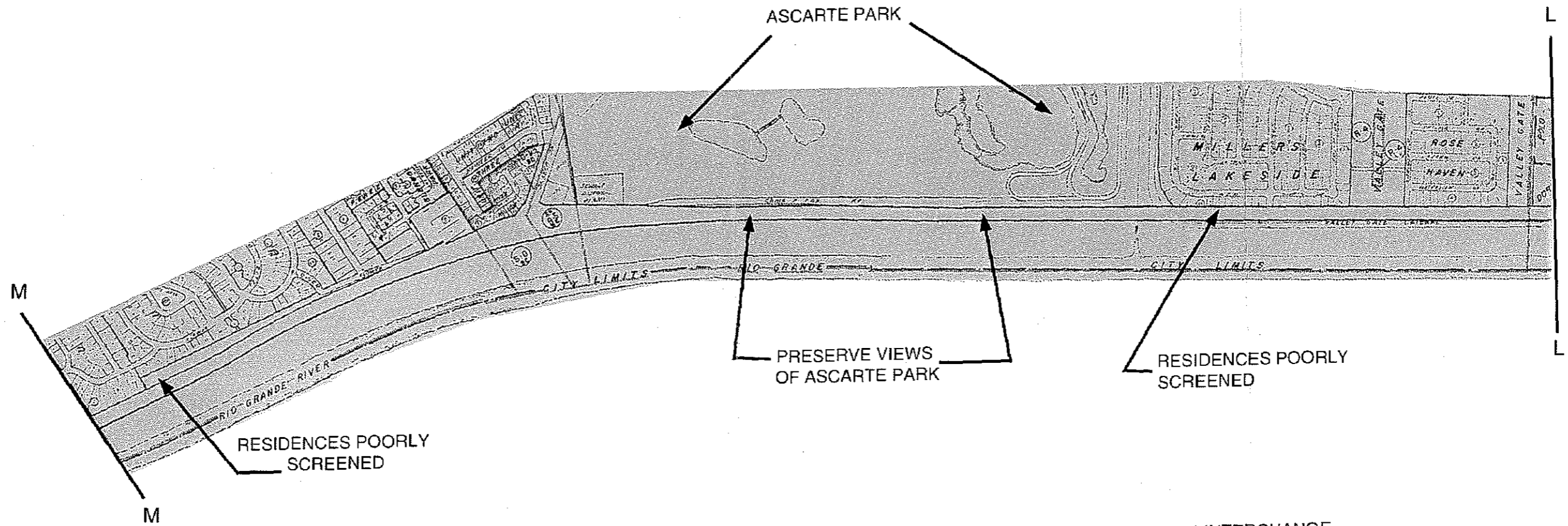


FIGURE 24. BORDER HIGHWAY from ZARAGOSA to U.S. 54, cont.



## **US Highway 54 Interchange to Downtown El Paso**

This section of roadway has views characterized by complex urban clutter (see Figure 25). Some of this includes old industrial areas and train yards. Some of the residential areas close in to the downtown are bordered by a stone wall, and this does impart a neatness and order to the roadway in that section. The opposite side of the roadway, however, is quite unattractive with its earth berm and dilapidated chainlink fence. Some of these areas have room for landscape treatments that could help create a more attractive entry into the downtown area.

### **Recommendations**

The primary design goal for this section is to present a clean, neat image into downtown El Paso.

#### **Guidelines:**

1. Use stone walls to screen the south side of the highway.
2. Install landscape plantings in available areas close to the residential areas in the downtown area. Due to lower speeds in this section, shrubs will have more visual impact.

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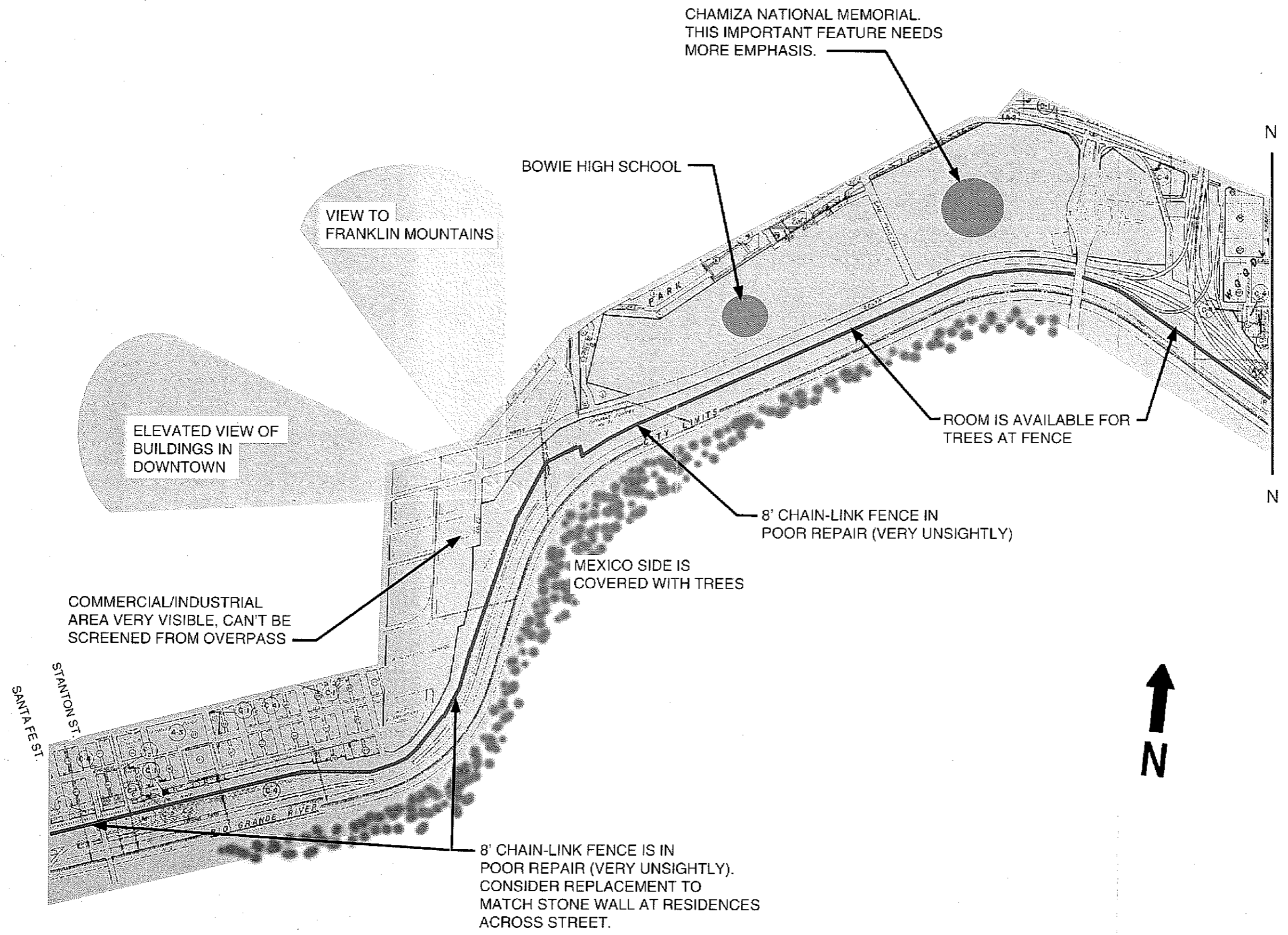


FIGURE 25. BORDER HIGHWAY from U.S. 54 to SANTA FE ST.

## **US HIGHWAY 54**

There are four distinct visual zones to the Patriot Freeway (US Highway 54): desert, desert/development, highly developed, and severely engineered. The roadway also has scale problems through most of its length, similar to those on I10. The ground surfaces are only sparsely covered with grass but are not scarred with tire tracks. The sometimes bare soil is more palatable in the upper sections due to the desert landscape nearby.

Due to the increases in development nearer to town, tidiness becomes an increasingly important issue. Because the medians here are fairly wide, grasses rather than aggregate will be the better choice. As it nears the I10 interchange, the roadway presents the same basic problem as the depressed section of I10 downtown. The exception here is that scale is a real problem. Tree masses will be the best solution for tying these distinct landscapes together into a unified whole.

The significance of the Patriot Freeway is not communicated to the degree possible. Actually, the highway seems rather indifferent to the military reservation as a whole. The heritage of Ft. Bliss and the significance of the Patriot Freeway should be developed as a theme for this entry into El Paso. Landscape developments conceived in coordination with Ft. Bliss could result in some powerful cultural images. The highway could provide an attractive foreground for military hardware displays or a commemorative for Patriot Missile's role in the Gulf War. Many people find these types of displays very interesting as evidenced by the frequency of their use in many other sections of the country.

## **US HIGHWAY 54 ANALYSIS AND RECOMMENDATIONS**

### **City Limits to Hondo Pass**

The drive into El Paso from the north (see Figure 28) is the beginning of a long transition from the desert into the city. Because the roadway descends as it nears the city, the motorist is offered many wide views of the highway and distant horizon in front of him. The roadway forms a dividing line between the densely developed residential to the east and the undisturbed desert of the Castner Range and the Franklin Mountains to the west. The well-established tree masses to

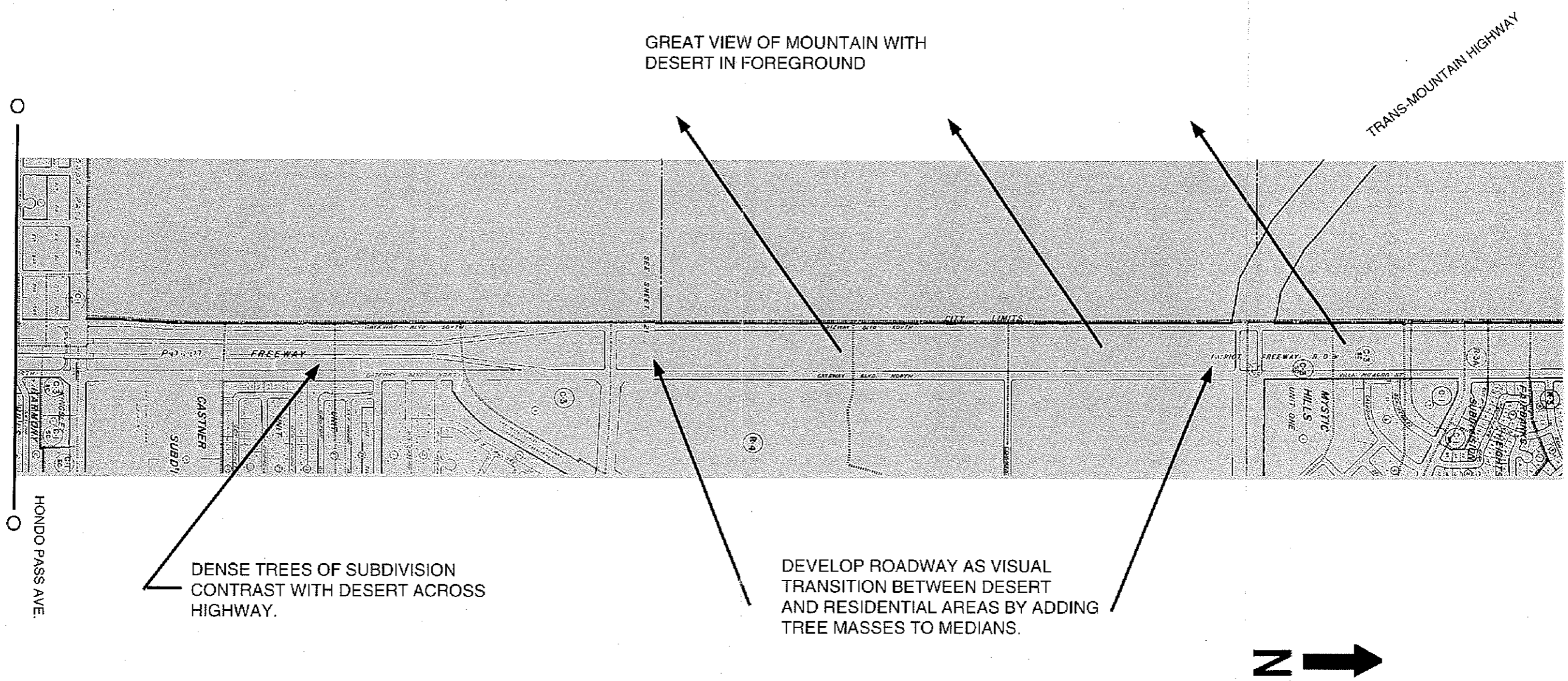
the east are in vivid contrast to the desert vegetation opposite them. The nearness of the Franklin Mountains is very dramatic throughout this section.

### **Recommendations**

The design goal for this section is to use the roadway to form a visual transition between the developments in the east and the desert in the west.

#### **Guidelines:**

1. Install generous tree masses in the medians on the east side of the roadway. Install a maximum of one-quarter of this number of trees in isolated masses on the west side of the roadway. Arrange these in random small groups of three to seven plants.
2. Encourage the development of grasses throughout this roadway section by overseeding in sparse areas. Where feasible, regrade large areas to slow or temporarily impound water to create better stands of grasses.



GREAT VIEW OF MOUNTAIN WITH  
DESERT IN FOREGROUND

TRANS-MOUNTAIN HIGHWAY

HONDO PASS AVE.

DENSE TREES OF SUBDIVISION  
CONTRAST WITH DESERT ACROSS  
HIGHWAY.

DEVELOP ROADWAY AS VISUAL  
TRANSITION BETWEEN DESERT  
AND RESIDENTIAL AREAS BY ADDING  
TREE MASSES TO MEDIANS.



FIGURE 26. CITY LIMITS to HONDO PASS AVE.

### **Hondo Pass to Pershing Drive**

The scale of the roadway from here to the I10 interchange is uncomfortable primarily due to the width of the roadway (see Figure 29). This is aggravated by the ample areas of exposed soil between the mainlanes and frontage road and between the frontage road and the right-of-way. This gives the roadway a barren, exposed feel that is in unfavorable contrast to the trees outside of the roadway.

#### **Recommendations**

The design goal for this section is to reduce the scale of the roadway.

##### **Guidelines:**

1. Install large masses of trees in the median areas along the roadway (see Figures 26 & 27). These trees should be randomly spaced in large groves. The groves should be nearly continuous but open and close to allow views. Tree varieties should include Mesquite, Eldarica Pine, and Desert Willow. It would require an enormous quantity if shrubs were to be used in this large space; therefore, they should be avoided except where screening at fences warrants.

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FIGURE 27. BARE SOILS CONTRAST POORLY WITH DENSE TREES OUTSIDE ROADWAYS



FIGURE 28. EFFECT OF ADDING TREE MASSES NEAR EXISTING TREES

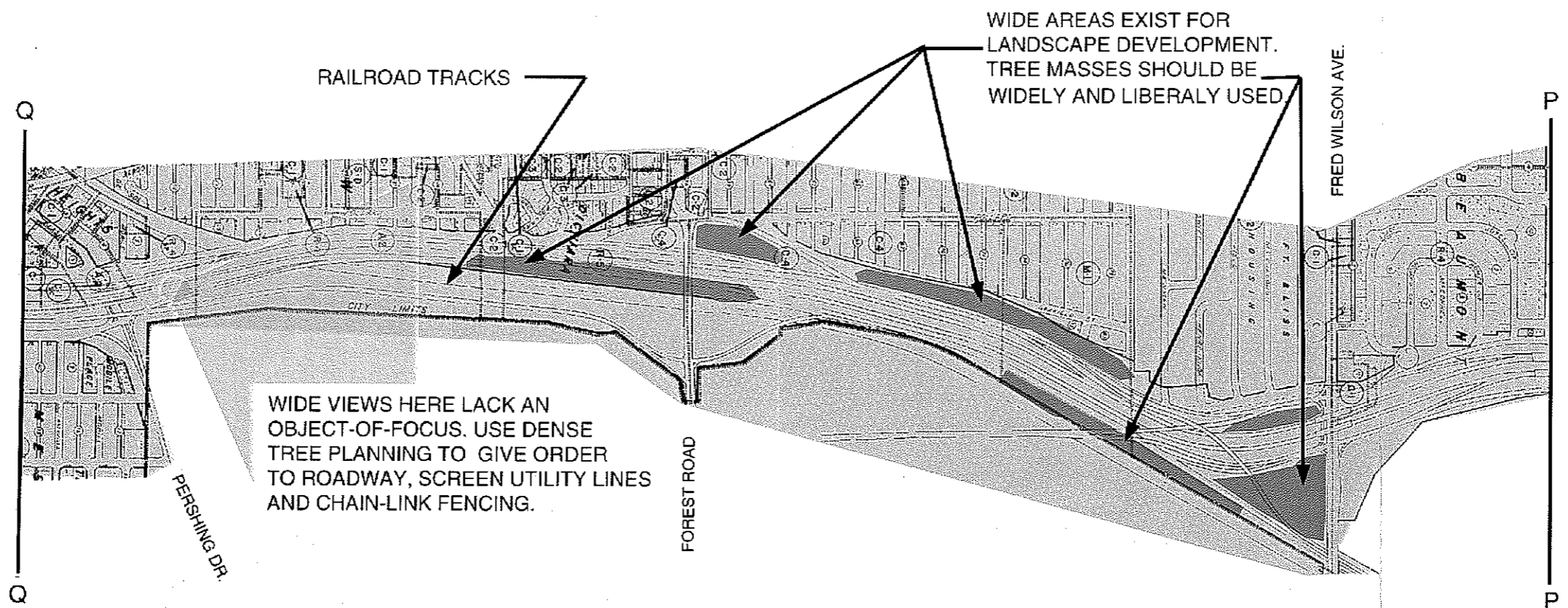
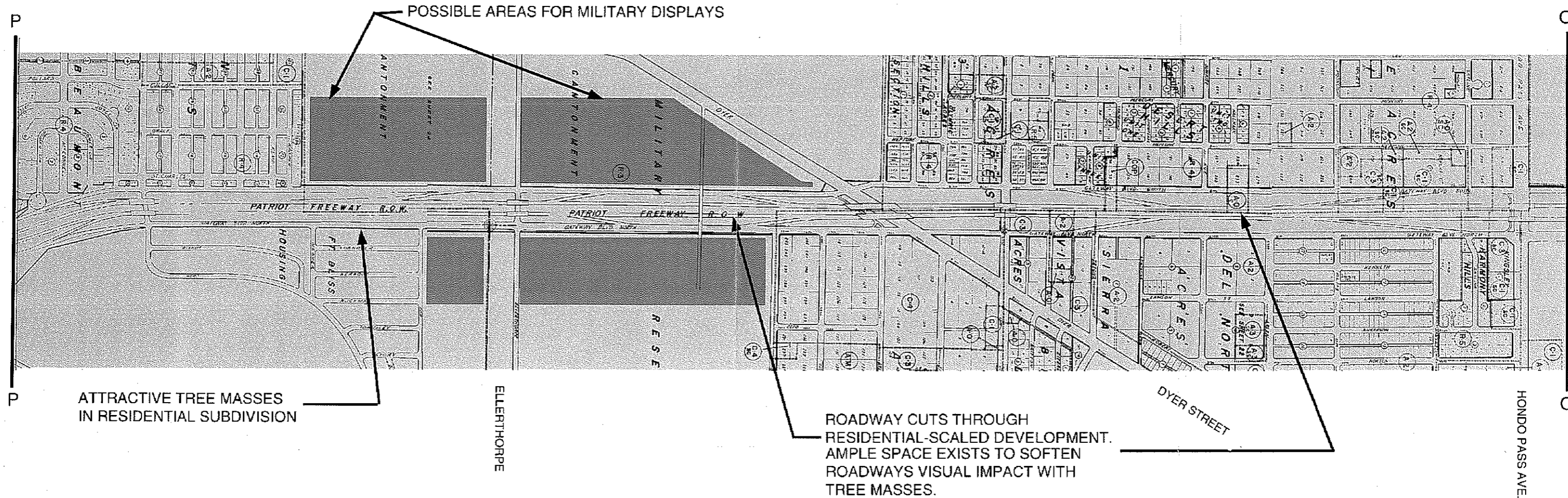


FIGURE 29. HONDO PASS to PERSHING DRIVE

## **Pershing Drive to the Interstate 10**

From Pershing to I10, the right-of-way is very wide (see Figure 33). The east side of the roadway is separated from Ft. Bliss by a set of railroad tracks and a wide expanse of open land. The barrenness and the scale of this stretch is also uncomfortable. Most of the non-paved areas of the roadway are bare soil, but ample areas for landscape plants exist. A few interesting old buildings of Ft. Bliss can be seen from the roadway through this area.

The end of this open land to the east marks the beginning of a very inhospitable segment of roadway that is very wide, monotone in color, and almost wall-to-wall concrete. The motorist still has a long view straight ahead but loses the residential areas to the sides as the roadway dips below the local streets. A lot of the same problems exist here that are found in the concrete canyon with respect to concrete overload. The scale of this section, because of its extreme width, is also uncomfortable. The median is paved in a grey aggregate. This has the effect of visually blending the median with the driving surface making the grey of the concrete even more oppressive.

### **Recommendations**

The design goal in this segment is to reduce the scale of the roadway and alleviate the oppressive character of too much concrete (see Figures 30, 31, & 32).

#### **Guidelines:**

1. Introduce color into structures by staining overpasses and supporting structures. The possible colors of these structures are varied, but generally darker shades of earthtones should be considered. Support structures are susceptible to ugly streaking due to the runoff of dirt and oils. Staining these columns darker than the overpasses would help hide this condition.
2. Add color to the groundplane by replacing existing grey aggregate with aggregate in the dark red or dark green range. This will make the edges of the roadway more prominent and reduce glare.
3. Install raised stone planters in medians to provide space for tree plantings. This will

add stronger separation between the travel lanes and reduce the apparent scale of the roadway.

4. Construct stone planter walls at the base of the riprap slopes. These slopes are not overly steep. Some of the riprap behind these walls should be removed to provide space for trees to be installed. A continuous line of trees will hide most of the concrete riprap and significantly reduce glare.



FIGURE 30. EXISTING VIEW OF DEPRESSED SECTION  
BETWEEN PERSHING AND I-10



FIGURE 31. EFFECT OF ADDING PLANTERS TO DIVIDE ROADWAY INTO DISTINCT CORRIDORS.



FIGURE 32. EFFECT OF ADDING COLOR TO STRUCTURES.

### **Interstate 10 to Loop 375**

This section is elevated for most of its length (see Figure 33). Some riprap is visible from the mainlanes, but a worse view is from the frontage roads. There are, however, some large open spaces that could harbor numerous trees. The trees would offer an improved foreground for the urban scene and mitigate the intrusion of the highway into the pedestrian activity of the local streets.

#### **Recommendation**

1. Install trees where possible to soften the riprap slopes.

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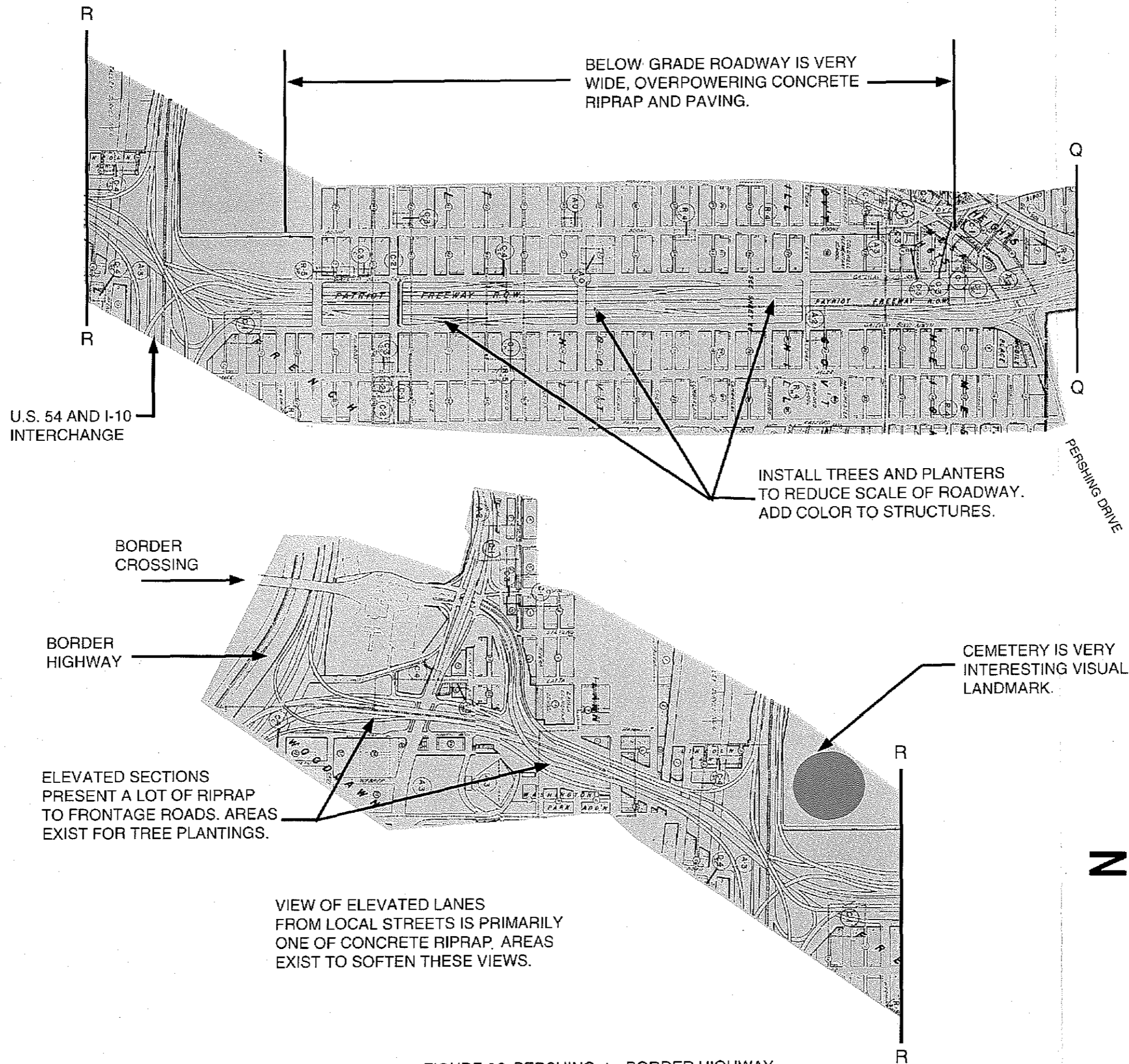


FIGURE 33. PERSHING to BORDER HIGHWAY.

## **RECOMMENDED MATERIALS FOR THE ROADWAY**

### **AGGREGATES**

Aggregates make an excellent groundcover for most landscape projects. They have been used extensively in existing projects. Aggregates selected in future projects should be deep, rich colors. Grey and white aggregate should be avoided because they blend well with the grey of the concrete surfaces. This blurs the edge of the roadway and increases roadway glare. Dark reds are recommended, but browns, dark beiges, and even greens will work well. Very dark colors that approach black may show small bits of trash too well and should also be avoided.

### **BUILDING MATERIALS**

Materials used in structures have a profound impact on the character of the scene and should be selected carefully. There are indigenous materials that could easily be incorporated into many landscape projects.

The ever-present stone will work well in any corridor. There may be some reluctance to use this material because it is so widely used. This should not be a deterrent. Its ease of construction, the fit with the surrounding environment and the range of colors available make stone a most versatile landscape material. If possible, use darker shades of stone to prevent the intense El Paso sun from washing-out the colors.

Brick is a material best suited for the more urban areas, particularly the corridor section in the downtown area. Brick should be used in the right-of-way to relate to nearby structures of the same material. This can create a great deal of visual interest.

Pavers have been used in some places in El Paso. This durable material presents a texture and pattern that, in general, will be visually lost due to the higher speeds of the major highways. Given the expense of this material, its use should be limited to areas where it is already in use by adjacent developments or where pedestrians will use the site. Otherwise, in most cases, stone should be considered for horizontal applications.

Adobe should be considered for use as a landscape element in the eastern portion of the I10 and Loop 375 corridors and the lower valley. There are probably some craftsmen available

who are capable of working with this ancient material. The visual tie to the sandy soils of the lower valley and similar structures along the Mission Trail would have delightful impact on the visual character of the highway.

Graffiti is a widespread problem in every major city in Texas. This should not eliminate wall surfaces from consideration for use as a landscape element. Two measures can reduce the risk of costly maintenance in this matter. First, it has been amply demonstrated that graffiti artists do not mar the many murals in El Paso. This may be because they respect the message the murals carry or they just appreciate having color and art in their neighborhoods. In either case, if more color, perhaps patterns of color, were included in the wall, the likelihood of vandalism may be reduced. Secondly, there are some effective products on the market today that allow graffiti to be removed relatively easy without damaging the wall surface.

#### **USE OF COLOR ON STRUCTURES**

Frequent reference has been made to the use of more vibrant colors in the roadway. Existing structures are excellent places to incorporate these changes. The introduction of color on overpasses will have a profound impact on the character of interchanges. These colors need not be uniform throughout the corridors. Colors may be used to give a unique identity to the intersections, as seen from the local collectors, while the mainlanes may have a different color scheme.

Figures 34 through 39 offer some examples that illustrate some important guidelines in color selection. It is easy to see that light shades will not provide enough of a distinction against the background sky. Darker accent colors give much stronger lines and make for a neater looking structure. The addition of these darker colors on supports and other connecting structures (Figure 39) create an even more pleasant effect.

The images shown represent only a few of the many options available. It can be said, however, that darker tones will read better (and hide dirt better) and that the color should be incorporated into connecting structures wherever possible.



FIGURE 34. EXISTING OVERPASS AT AIRWAY & I-10.



FIGURE 35. SINGLE SHADE ADDED TO OVERPASS ONLY.



FIGURE 36. ACCENT COLOR INTRODUCED.



FIGURE 37. ACCENT COLOR EXTENDED TO RETAINING WALL.

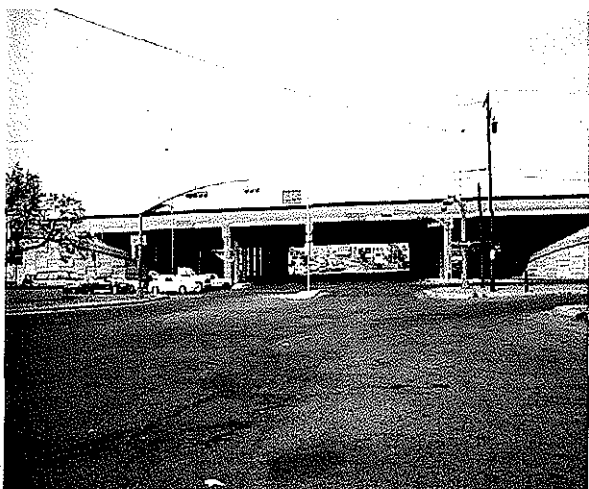


FIGURE 38. DARKER ACCENT COLOR SELECTED.



FIGURE 39. DARKER ACCENT COLOR ON BRIDGE SUPPORTS.

## **PLANT MATERIALS**

The often harsh climate of El Paso places constraints on the type and numbers of plants used on the roadway. The major issues regarding the types of plants selected are, in order of importance:

- 1) hardiness,
- 2) maintenance requirements, and
- 3) functional and aesthetic qualities.

The interviews found a clear preference for native plants, in particular, desert-type plants. While desert plants are completely appropriate in these environs, many of these types of plants are slow-growing, harder to acquire, and do not provide some of the qualities needed of plants in the roadway. The selection of plants for the roadway should be determined by design needs and maintenance requirements. None of the high-speed corridors are suitable for botanical exhibitions.

The variety of plants selected for use in the roadway should be kept to a minimum for two reasons. First, it is easier to establish consistency and unity over long distances with a few plants. Secondly, the role of plants in the context of most roadways is to change scale, soften lines, and add color. Plants in these environments should not be selected primarily for interesting textures or unique flowers, traits not easily appreciated from the roadway. Increased diversity of plants can appear complex and jumbled and require more exacting maintenance.

In order of preference, the trees used should be: Mesquite, Eldarica Pine, and Desert Willow. These all have proven to be hardy to El Paso and require minimum maintenance. Even though the Eldarica Pine is not native to the area, many people expressed a liking for the plant because of its size and dark green color. The pine provides a pleasant contrast to the Mesquite and Desert Willow, and it is the only large, evergreen plant suitable for use as a screen.

Shrubs that are adapted to the area are more plentiful, and each must be evaluated for their suitability. Due to maintenance requirements and the shorter life of most shrubs, they should be used sparingly. As with the trees, keeping the number of varieties used to a minimum will create less confusion and add order to an otherwise cluttered landscape. When used, shrubs will have their best effect if planted in large masses rather than as isolated individuals. It has been

demonstrated that plants with spines are a severe maintenance problem and catch inordinate amounts of litter.

## **IRRIGATION SYSTEMS**

The severe climate extremes of the El Paso area make the establishment of plants a difficult task. Compounding this is the added heat and exposed conditions found in the roadway. Irrigation systems should be incorporated into landscape developments whenever possible. Even though the cost of these systems may seem exorbitant, they should be considered as an investment to protect the larger amounts spent on the plants themselves. The types of landscape plantings suggested in this study are best served by drip systems. This is intentional. Drip irrigation systems can be precisely controlled, are easy to repair, and are highly efficient in their water application.

New irrigation technology over the past ten years has vastly improved low-water-use systems. Recent innovations include the incorporation of radio-controlled satellite controllers for use in the type of fragmented landscapes common to highway corridors. These sections may be controlled remotely from an office location that allows monitoring on a daily basis. Adjustments can be quickly made for rainfall, broken irrigation heads and inoperative valves. This greatly increases the ability to practice precise water conservation management. In our study of maintenance issues for roadway landscapes, it was noted that regular physical inspection of irrigation systems to prevent water waste was often a significant part of landscape maintenance budgets for the City of El Paso.

Grey-water systems should be developed. This type of system will significantly increase water conservation. Grey-water use in plant irrigation is increasing in other parts of the country, especially in arid climates. Studies so far have indicated no adverse effects on plants. This option should be investigated in greater depth to determine system needs and feasibility for El Paso.

## IMPLICATIONS FOR PLANNING

This study identifies major issues affecting the visual quality of the highway (and consequently, of El Paso) and suggests approaches to dealing with these issues. The information presented provides a direction that should be evaluated in light of the goals and directions of the El Paso District office of TxDOT.

Some of the recommendations in this study will require a broader approach to landscape enhancement programs. If the highway is to express a more positive image of El Paso, the citizens of El Paso must be involved. TxDOT should take the lead in organizing a joint corridor improvement effort that includes public and private sector interests. TxDOT is the only entity that has control over the entire length of corridors and has the professional planning adaptability to accomplish such a task. It will also be TxDOT's role to develop and sustain interest through its leadership and encouragement to all other parties.

The methods of public involvement may be varied. A key step will be the formation of a task force that will be responsible for soliciting the participation of various public agencies and local action groups. This group would also be responsible for educating the participants in the constraints and needs of the highway system. They would coordinate design goals between agencies and efforts to seek additional funding sources.

It is recommended that this study serve as a beginning point of a more detailed planning phase for El Paso's highways. This plan will utilize the input and information gathered through public workshops and discussion groups. The plan should be detailed but also somewhat conceptual. This would allow the bulk of detail design to be accomplished later by TxDOT or through consultants. The Conceptual Master Plan could serve as the framework under which design competitions might be held to explore different expressions of the plan's goals.

The degree to which the visual character of El Paso's highways improves will be dependent on the commitment of both TxDOT and the City of El Paso to a shared vision. Indications are the time is right for this vision to be discussed.