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Restructuring the spaces under elevated expressways: a case study of the spaces below the Interstate-10 overpass at Perkins Road in Baton Rouge, Louisiana

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RESTRUCTURING THE SPACES UNDER ELEVATED EXPRESSWAYS: A CASE STUDY OF THE SPACES BELOW THE INTERSTATE-10 OVERPASS AT PERKINS ROAD IN BATON ROUGE, LOUISIANA

A Thesis

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TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

ABSTRACT

General information about the development the United States Interstate System, different theories of urban design, and samples of projects developed under elevated highways structures were used to illustrate the issues associated to the development of elevated highway within urban areas. After building the framework for the study of the spaces below elevated highways a comprehensive study of the contextual, spatial, and functional characteristics of the spaces below the Interstate-10 at Perkins Road was conducted over a period of 9 months. As a result of this study a master plan was developed to addresses the issues affecting the spaces below the Interstate-10 overpass at Perkins Road and surrounding communities.

The areas surrounding the Interstate-10 overpass are part large area known by locals as the Perkins Road Historic Business District. This area of northern Perkins Road is an active commercial corridor surrounded by large subdivisions. During the development of the Interstate-10 overpass on the 1960's this area suffered drastic changes causing the removal of businesses and relocation of entire families. Despite these adverse effects Perkins Road commercial corridor has maintained its unique character but the under develop state of the spaces below the Intertate-10 overpass have restricted further development of the area.

CHAPTER 1: INTRODUCTION

Framework

With Congressional approval of the Federal-Aid Highway Act of 1956, multi million-dollar highway construction projects took place all over the United States. The objectives of the congress were to finish the already started highway system, to alleviate the traffic congestion in urban areas, and to support the national defense program. The process of planning and implementation of an integrated highway system around the nation took place in a short period of time resulting in unexpected negative consequences in entire urban areas (Scott, 1969). Some of the negative effects of the swift implementation of highways in urban areas included divisions of well-established communities, relocations of entire families, excessive noise, and unwanted views that changed drastically the urban landscape.

With the construction of highways in urban areas, empty spaces would result. The spaces along and under elevated highways affect the way we experience the city. They disconnect neighborhoods, produce undesirable views, and act as physical and psychological barriers making the pedestrian experience unpleasant (Trancik, 1986). Furthermore, the unclear territoriality of these spaces sometimes leads to land misuses such as dumping debris, abandoning of cars, or illegal activities. The inappropriate use of the vacant spaces under elevated highways can lead to social and economic problems in addition to being unsightly and lowering the value of adjacent properties (Halprin, 1966).

Undeveloped spaces below elevated highways have the potential to be transformed into major corridors, gathering areas or recreational spaces that integrate the

elevated highway and their surrounding environment. Places like the Burnside Bridge Project in Portland, Oregon; the Bridgemarket under the Queensbro Bridge in Manhattan, New York; The African American Heritage Mall in Overton, Miami, and The Expressway Park in Baton Rouge, Louisiana among others, are examples of designs made to revive the left over spaces under elevated highways as well as their surroundings neighborhoods.

Problem Statement

The problem was to take the spaces below an elevated highway within the East Baton Rouge Parish, analyze them visually, and explore the possibility of incorporating them into the surrounding communities through a comprehensive design that maximizes the functionality of the space while improving safety and the aesthetic qualities of the area. The spaces below the Interstate-10 overpass at Perkins Road were selected as the case study for the purposes of this thesis. This area exhibits the negative characteristics associated with the development of an elevated highway crossing through an urban area yet remains a desirable destination within the Baton Rouge area. Currently, these spaces need to be reorganized and provided with proper parking facilities, light fixtures, sidewalks, landscaping, and site amenities among other things. This thesis proposes to address the issues mentioned before through a design intervention supported by comprehensive study of the spaces below the Interstate-10 overpass at Perkins Road and surrounding neighborhoods.

Scope

In order to establish the framework for the study of the spaces below Interstate-10 overpass at Perkins Road and develop a design for this area, this thesis includes a discussion of the development of highways in the United States and the federal programs

aimed to improve the highway and interstate systems, a description of the different types of urban highways and their impact, and an examination of projects developed under elevated highways in urban areas. After the framework for the study of spaces below the Interstate-10 overpass at Perkins Road is established, the current conditions of this site are analyzed in order to develop a design for this area. The outcome of this thesis will be the development of a master plan and a set of details of a friendly commercial and pedestrian environment that will provide an identity to this part of Baton Rouge. The work produced on this thesis excludes the production of construction drawing, and design implementation.

There are limitations to the fulfillment of this thesis. Time constraints, distance between the examples selected, and limited availability of information concerning similar projects restrict the discussion of the case studies. The information used to develop the design for the spaces below the Interstate-10 at Perkins Road was obtained from site observations, casual interviews with local business owners, information provided by governmental agencies such as Baton Rouge Department of Public Works, Louisiana State Department of Transportation and Development, Federal Highway Administration Division, and Louisiana State University Office of Community Design and Development.

Objectives

The goal of this thesis is to analyze a local case to illustrate larger issues associated with the spaces below elevated highways within urban environments. In doing so, this thesis will identify the problems related to the current condition of the spaces below the Interstate-10 overpass at Perkins Road and develop a solution through design intervention. The main objectives of this thesis are described in the following list:

- Develop a master plan that will improve the current conditions of the spaces below the Interstate-10 at Perkins Road.
- Enhance the aesthetic quality of the study area.
- Maximize the use of the space below the Interstate-10 overpass through the improvement of parking and pedestrian facilities.
- Provide better public transportation facilities.
- Eliminate unsafe conditions.
- Minimize the impact of the elevated highway in its surroundings.
- Improve the connections between Perkins Road Historic Business District and adjacent neighborhoods through the redevelopment of the spaces below the Interstae-10 at Perkins Road.

Method

The method of approach to the problem of application of a specific design intervention to the spaces below the Interstate-10 overpass at Perkins Road is shaped by several steps. First, a literature review is conducted to establish the framework for the study of the spaces below elevated highways within urban environments. Next, an inventory analysis of the spaces below the Interstae-10 at Perkins Road is performed to determine the existing conditions of the site. This inventory and analysis places a value or judgment on the site conditions based on the designer's perspective. A user analysis is also developed through site observation with the purpose of determining the requirements of the study area. After completing the analysis of the current conditions of the site the findings are summarized into a program plan. The program elements are then combined into the best overall design solution.

CHAPTER 2: CONCEPTUAL FRAMEWORK

Introduction

The goal of this chapter is to familiarize the reader with of the development of the highway system in the Unite Sates, the different types of highway structures and their impact on the urban environment, and to discuss different urban design theories used to study the site. These topics where selected with the intention of establishing a framework for the development of the spaces below the Interstate-10 overpass at Perkins Road in Baton Rouge, Louisiana.

Overview of Highway Development

By the late 1930s, the pressure for construction of transcontinental superhighways was building. It even reached the White House, where President Franklin D. Roosevelt repeatedly expressed interest in the construction of a network of toll superhighways as a way of providing more jobs for people out of work. Roosevelt proposed three East to West and three North to South routes and thought that these would be sufficient (Weingrff, 1996).

This situation encouraged the creation of the Federal-Aid Highway Act of 1938. The purpose of this act was to direct the Bureau of Public Roads to study the viability of a six-route toll network. The outcome of this act was a two-part report that proposed toll roads and free roads across the nation. Part One of that report declared that the amount of transcontinental traffic was insufficient to support a network of toll superhighways.

Some routes could be self-supporting as toll roads, but most highways in a national toll network would not (Weingroff, 1996).

The second part of the report was a master plan for the highway development, which recommended 43,000-kilometers of a no-toll interregional highway network (Weingroff, 1996). According to the master plan the highway network would follow existing roads wherever possible thereby preserving the investment in earlier stages of improvement. The report also stated that more than two lanes of traffic would be provided where traffic exceeded 2,000 vehicles per day. Within large cities, the routes could be depressed or elevated and limited-access belt lines would be needed for traffic wishing to bypass the city and to link radial expressways directed toward the center of the city. Inner belts surrounding the central business district would link the radial expressways while providing a way around the district for vehicles not destined for it (Weingroff, 1996).

On April 27, 1939, Roosevelt transmitted a report encouraging Congress to consider action on a special system of interregional highways. Through this report the President stated that the system of highways would provide all necessary connections through and around cities, and should be designed to meet the requirements of the national defense and the needs of growing traffic on a longer range (Weingroff, 1996).

During this time, America was on the verge of joining the war under way in Europe delaying the massive highway program. However, the president was taking into consideration the post-war period and he feared the continuation of the depression if American soldiers returned from the war and were unable to find jobs. The president

thought that if a major highway program would be established part of the problem could be answered (Weingroff, 1996).

On April 14, 1941, the president designated a National Interregional Highway Committee to investigate the need for a limited system of national highways. This committee provided a report that recommended an interregional highway system of 63,000 kilometers. The report went into detail concerning urban freeways stating that these freeways would employ a powerful force on the shape of the future city(Weingroff, 1996). Therefore, it was important for the network to be located so as to advance desirable urban development (Weingroff, 1996).

As a result of this report, Congress established the Federal-Aid Highway Act of 1944. This Act maintained the status of the previous one but its biggest departure was in Section seven. This section authorized designation of 65,000 kilometers towards the establishment the Interstate Highway System (Weingroff, 1996). This movement divided the highway community between urban and rural interests. A dispute for priority between these two sectors required an increase in the involvement of the federal government. The disagreement between these two groups resulted in the inability to consent on the major changes needed to address accumulated highway needs.

Section Seven of the Federal-Aid highway Act of 1944 was primarily concerned with were to connect the principal metropolitan areas, cities, and industrial centers in order to serve the national defense, and connect at suitable border points with Canada and the Republic of Mexico (Weingroff, 1996). This section of the Federal Highway Act authorized the interstate system but it did not included special requirements to give the interstate highways a priority based on their national importance. Furthermore, Section

Seven did not authorized special funding, increase in the federal participation, or made a federal commitment to construct the system (Weingroff, 1996).

As a consequence of the authorization of the interstate system the Public Roads Administration as well as the Bureau of Public Roads was summoned to move quickly to implement Section Seven of the Federal-Aid Highway Act of 1944. States were called upon to submit recommendations on which routes should be included in the interstate system. The Public Road Administration also began to work with state and local officials to develop interstate plans for the larger cities. In addition, the Public Road Administration worked with the American Association of State Highway Officials to develop design standards for the interstate system (Weingroff, 1996).

On Aug. 2, 1947, the Public Road Administration announced the designation of the first 60,640 kilometers of interstate highways, including 4,638 kilometers of urban thoroughfares and 3,732 kilometers extra for additional urban circumferential and distributing routes, but the construction of the interstate system moved slowly (Weingroff, 1996). There were many states that did not want to redirect federal-aid funds from local needs to the construction of the interstate system and others complained that the standards were too high. Also, the heavily populated states, finding that federal-aid funding was so small in comparison with the need, decided to authorize construction of toll roads in the interstate corridors to help reduce the expenses of the construction.

By July of 1950, the United States was again at war, this time in Korea, as a result the focus of the highway program shifted from civilian to military needs. Later on, the Federal-Aid Highway Act of 1952 authorized $25 million for the implementation of the interstate system (Weingroff, 1996). This was the first time that funds were authorized

for the construction of the interstate. In January of 1953, when President Dwight D. Eisenhower took office, the states had completed 10,327 kilometers of the interstate system improvements at a cost of $955 million and half of the money expended came from the federal government (Federal Highway Administration 1976). Congress, having held extensive hearings in 1953 was able to act quickly on the Federal-Aid Highway Act of 1954, which authorized an additional 175 million dollars for the interstate highway system (Weingroff, 1996).

On April 27 of 1956, the Federal-Aid Highway Act of 1956 was created to provide for the development of 65,000 kilometers of highways for the National Interstate System. The completion of this section of the interstate system was built over a period of 13 years. This time the federal share was 90% of the cost or $24.8 billion (Weingroff, 1996). These funds were awarded on a cost-to-complete basis. That is, the funds were distributed in such a ratio that considered each state's estimated cost of completing the system in comparison to the total cost of completing the system in all states. The ratio was determined on the basis of cost estimates prepared by the Bureau of Public Roads (Weingroff, 1996).

The Federal-Aid Highway Act of 1956 also established uniform interstate design standards to ensure uniformity of design, full control of access, eliminated railroad-highway crossings at-grade, and ground level intersections. These regulations also established the use of interchanges as the means to access interstate highways and prohibited the establishment of service stations and other commercial establishments within the interstate right-of-way. The use of toll roads, bridges, and tunnels could be

included in the system if they met the standards and their inclusion supported development of an integrated system (Weingroff, 1996).

Until 1957 the interstate system had expanded only by 1,600 kilometers. That same year $25 billion were approved through the Fiscal Year 1969 to complete the construction of the interstate network (Weingroff, 1996). The Federal-Aid Highway Act of 1956 helped to link the nation, boosted productivity and sustained a more than tenfold increase in the gross national product since the start of the program (Weingroff, 1996).

In 1958 the Voluntary Bonus Program was established through the Federal-Aid Highway Act of 1958. This program controlled the outdoor advertising signs adjacent to the Interstate System and it was the first attempt of the Federal government to control outdoor advertising signs within the highway system. This act provided that 0.5% of the construction cost of the highway system would be available as a monetary incentive to those states that met the National Standards for highway construction and controlled advertisement along the interstate and National Highway System (Weingroff, 1996).

Continuing what was established through the Bonus Program, President Lyndon B. Johnson signed the Highway Beautification Act on October 22, 1965. This act increased the scope of controlling signs, outdoor advertising, junkyards and enhancement of the landscape included in the primary system of transportation (Weingroff, 1996). In November of the same year the federal government assigned the first $6 million to the states under the Highway Beautification Program to help control junkyards and outdoor advertising. That same amount of money was also distributed to the landscaping and scenic enhancement. The Highway Beautification Act of 1965 provided for the reimbursement of 75% of the costs of controlling outdoor advertising and junkyards, and

a 100% of the cost of landscaping work for those States who initiated projects and supervised the work (Highway beautification Act, 1965).

Section One of the Highway Beautification Act of 1965 regulated out door advertisement in the interstate and primary road system. It mandated the states to establish programs that effectively controlled outdoor advertisement within 660 feet of the right-of-way of an interstate or highway (Highway beautification Act, 1965). These regulations excluded directional and other official information, signs advertising the sale or lease of property, and signs located in areas zoned industrial or commercial. The Highway Beautification Act of 1965 also provided just compensation to the sign owners and landowners affected by this program (Highway beautification Act, 1965).

Section Two of the Highway Beautification Act required states to provide effective means for the control of junkyards located within a 1,000 feet of any interstate or primary road (Highway beautification Act, 1965). This act stated that junkyards should be properly screened from the view of the main traveled way or from industrial areas, and required just compensation for the owners of junkyards affected by this program.

The last section of the Highway Beautification Act of 1965 authorized the appropriate development of the landscape on roadside and medians of the interstate and main road system. This was a popular part of the overall highway beautification program because it provided 100% of federal funding (Highway beautification Act, 1965).

The Highway Beautification Act of 1965 was amended later and required State and local governments to accept determinations of "customary use" of size, lighting, and spacing for those signs located in commercial and industrial areas (Highway

beautification Act, 1965). These amendments also allowed States to remain eligible for bonus payments if they complied with the Voluntary Bonus Program of 1958, and limited the removal of nonconforming signs to availability of federal funds.

In 1970, a Highway Beautification Commission was created by the Federal-Aid Highway Act of 1970 with the purpose of analyzing the problems associated to the aesthetic enhancement of highways. This commission made recommendations to carry out the necessary changes to increase the effectiveness and workability of the highway programs (Weingroff, 1996). As a consequence, the Federal-Aid Highway Act of 1974 was created with the purpose of extending the control of signage beyond 660 feet of the right-of-way to all signs outside urban areas and visible from the main-traveled way. This new regulation also included landmark signs as an allowed category and increased the number of signs eligible for compensation before they could be removed (Weingroff, 1996).

In 1976, an amendment to Federal-Aid Highway Program provided the Secretary of Transportation with the authority to approve an exemption of signage removal in a defined area for which it could be demonstrated that removal would cause a substantial economic hardship. This amendment also required to the Secretary of Transportation to encourage the states to adopt programs that guaranteed the removal of certain signs providing directional information for the traveling public about facilities in the interstate, be delayed until all other nonconforming signs are removed (Weingroff, 1996). This act also regulated the authorization of Federal participation in the establishment of tourist information centers and alternate information systems. Furthermore, it directed a restudy of the Federal regulations and National standards for directional signs outside the right-

of-way and logo signs within the right-of-way of the Interstate and National Highway Systems. Unfortunately, this bill de-emphasized landscaping and scenic enhancement by eliminating the availability of federal funding for the program (Weingroff, 1996). However, it authorized but did not appropriate funds for landscaping and litter removal.

Later on, with the approval of the Federal-Aid Highway Act of 1981 early completion of the Interstate system was established as top priority of the federal highway program. Among other things enacted in this bill, there were a series of environmental requirements for the construction of highways. This act led to the establishment of the Surface Transportation Assistance Act of 1982 extending the completion of the interstate system until September of 1991 (Weingroff, 1996). Safety and transportation enhancements were also issues addressed through this act.

The next reforms to federal highway policy accompanied the reauthorization of highway funding with the Surface Transportation Act of 1987. This act changed the authority over apportioning funds for interstate projects from Congress to the Secretary of Transportation and updated the rules of federal funding to compensate the persons and businesses displaced by highway developments. It also established a new speed limit of 65 miles per hour on rural segments of the interstate highways.

In December of 1991, president Bush signed into law the Intermodal Surface Transportation Efficiency Act of 1991 or ISTEA, establishing a new vision for surface transportation in America. This act formed by 28 major categories was the authorizing legislation providing for the development of new highways, highway safety, and mass transportation for the Fiscal Years 1992-1997 with a total funding of $155 billion

(Intermodal Efficiency Act, 1991). The ISTEA is summarized into the following objectives:

- To establish a National Highway System consisting of existing Interstate routes, part of the Primary System of transportation, and focus Federal resources on roads.
- Provide more flexibility for local and State governments in determining transportation solutions and the tools of enhanced planning and management systems.
- Promote new technologies to push the Nation forward into 21st Century transportation.
- Allow the use of the private sector as a source for funding transportation improvements, reduced the restrictions on the use of Federal funds for toll roads, and permitted private entities to own such facilities.
- Make highway funds available for activities that enhance the environment.
- Establish a new program to enhanced safety on highways.
- Create State uniformity in vehicle registration and fuel tax reporting.

Among the programs introduced by the ISTEA the most significant to the development of this thesis is the Transportation Enhancement Program. This new program offered broad opportunities and federal money to take unique and creative actions to integrate transportation systems into our communities and the natural

environment (Intermodal Efficiency Act, 1991). Through this program the Federal government invested over $24 billion around the country in facilities for walking and bicycling, historic preservation, scenic beautification, land acquisition, and environmental mitigation. In 1998 President Clinton signed into law the Transportation Equity Act for the 21st Century or TEA-21, which reauthorized the Transportation Enhancement Program until 2003. The extension of this program assured $620 million annually to transportation agencies in all states through 2003 (Transportation Efficiency Act, 1998).

To be eligible for the Transportation Enhancement Program, projects must be transportation related; have a sponsor that complies with the Transportation Enhancement Program guidelines; and be developed as a joint effort between the Department of Transportation of the given State, the Federal Highway Administration and the sponsor (Transportation Efficiency Act, 1998). Besides these basic criteria, established by the Federal government the project must fit into one of the following enhancement categories:

- Provide facilities for pedestrians and bicycles
- Provide safety and educational activities for pedestrians and bicyclists.
- Acquisition of scenic easements and scenic or historic sites, scenic or historic highway programs (including the provision of tourist and welcome center facilities).
- Landscaping and other scenic beautification.

- Historic preservation, rehabilitation and operation of historic transportation buildings, structures, or facilities including historic railroad facilities and canals.
- Preservation of abandoned railway corridors including the conversion and uses them for pedestrian or bicycle trails.
- Control and removal of outdoor advertising, archaeological planning, and research.
- Environmental mitigation to address water pollution due to highway runoff or reduce vehicle caused wildlife mortality while maintaining habitat connectivity.
- Establish of transportation museums.

The TEA-21 Century was established to build on the initiatives established by the ISTEA. This act was created with the purpose of meeting the challenges of improving safety, protecting and enhancing communities and the natural environment by establishing new programs and reauthorizing programs existing ones, such as the Transportation Enhancement Program (Transportation Efficiency Act, 1998). To boost America's economic growth and achieve the above-mentioned goals the TEA- 21 incorporates the following features:

- The assurance of a guaranteed level of Federal funds for surface transportation through fiscal year 2003 provides an extension of the Disadvantaged Business Enterprises Program.

- Strengthens the safety programs across the Department of Transportation.
- Establishes new incentive programs with the purpose of savings life and property.
- Promotes more flexibility in the use of funds, emphasizes on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions.
- Establishes new programs, such as Border Infrastructure, Transportation Infrastructure Finance and Innovation.
- Promotes research and its application to maximize the performance of the transportation system, and emphasizes the use of Intelligent Transportation Systems.

Through the TEA-21, the Federal government reaffirmed its commitment to enhance communities, and improve transportation systems by providing an additional $3.8 billion fund for the Surface Transportation Program (Transportation Efficiency Act, 1998). This represented a 40% increase from the ISTEA in funding through the year 2003, averaging about $630 million per year. As part of this program the Transportation Enhancement Program is funded through a 10% seaside from the Surface Transportation Program.

With, the reauthorization of the Transportation Enhancement Program through the establishment of TEAct-21 in 1998 the Department of Transportation of the State of Louisiana was presented with the opportunity to administer Federal funds towards

enhancement programs (Louisiana Department of Transportation, 2002). According to the Secretary of Transportation of the State of Louisiana, Dr. Kam K. Movassaghi "the ultimate goal of, this program is to create a balanced system of transportation that would consider environmental, cultural, economic, and social conditions encompassing pedestrians and bicyclists, as well as the motoring public providing the citizens a richer experience while traveling" (Louisiana Department of Transportation, 2002). The availability of this type of Federal programs in the State of Louisiana has provided for the beautification of existing transportation facilities therefore benefiting communities while improving transportation facilities through the State of Louisiana.

Types of Highway Structures

This section of Chapter Two briefly discusses the different types of highway structures and compares them in terms of the require space, and the impact produced on their surroundings. Figure 2.1 illustrates all the different types of highways in a cross section and compares them in terms of required space.

There are some general effects produced by the introduction of a highway into urban areas. According to the U.S. Department of Transportation and the Federal Highway Administration the different types of impacts that might be produced by the development of a highway can be classified as:

- Physical: includes wall or barrier effects produced by highways, increase in noise or vibrations, and shadowing effect.
- Social and psychological: this category includes changes in population (i.e., such as redistribution of population and loss or increase in

population), changes in the interactions of persons or groups, isolation or separation of certain people, changes in social values, and perceived impact on the quality of life.

- Visual and Environment: this category includes changes in the aesthetic character of communities.
- Land Use: includes the creation or loss of land as the result of the development of a highway, and changes in land use and density.
- Economic Conditions: the introduction of a highway in an urban area may encourage new businesses to establish in the area or cause the relocation of existing ones. It also may affect the local economy in a short-term during the construction activities or produce a long-term impact by blocking the access to businesses. Other introduced changes could be the increase or reduction of visibility to the commercial area, and changes in property value.
- Displacements: this category includes the number residences, businesses or any institution displaced within the same neighborhood and the changes produced in the neighborhood's character due to the displacements.
- Safety: this category is includes the positive or negative changes in crime levels, accidents and emergency response in the area where the highway is located.

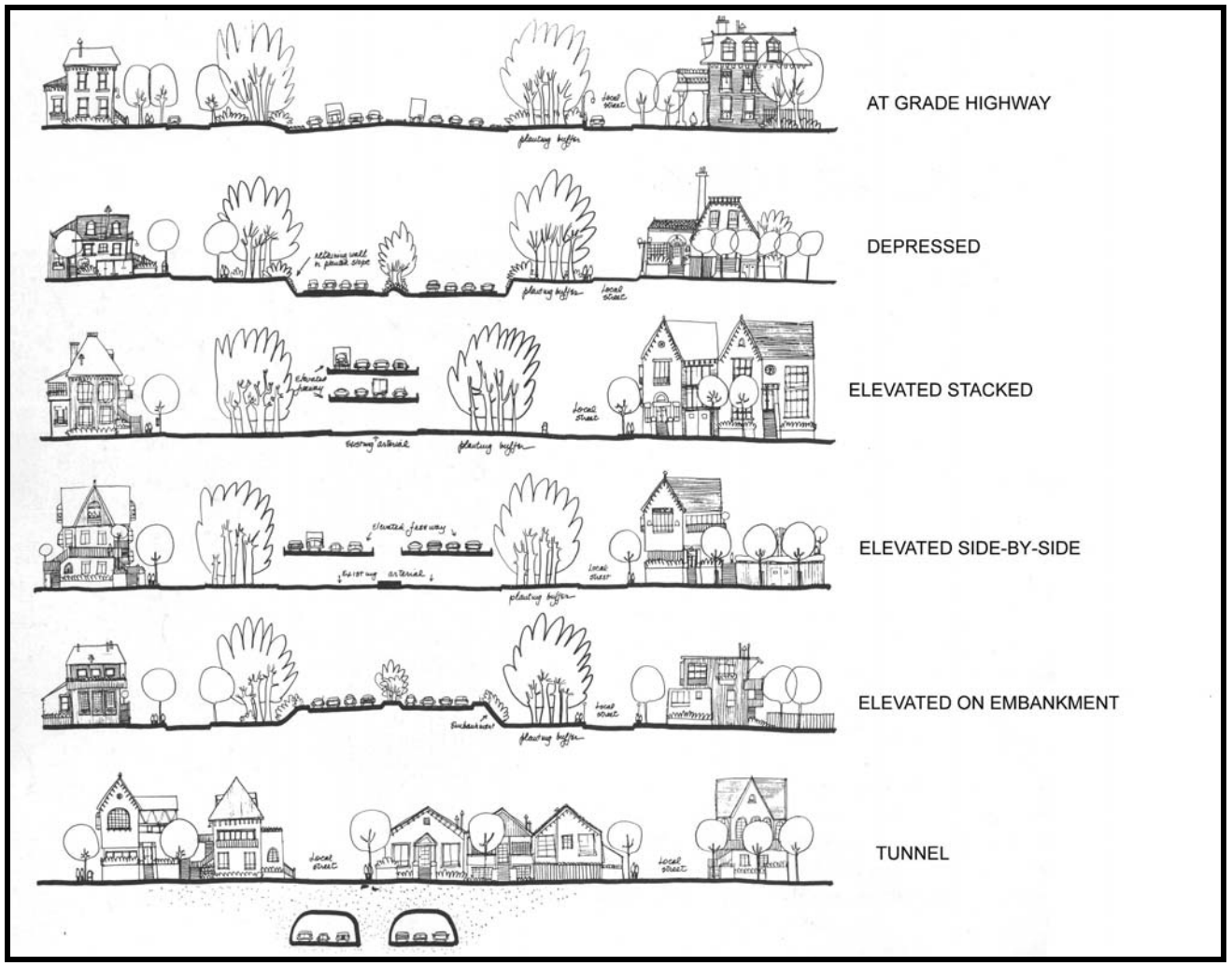

Figure 2.1 Types of Elevated Highways: This image illustrates all the different types of highways in a cross section. Note the space they occupy. (Halprin, 1966. *Freeways*, p. 81).

At-Grade Highway

When viewed in a cross section Highways at-grade require the widest right-of-way of all the other types of highways. Typically this highway requires the space to accommodate four lanes of traffic, the respective shoulders, and the median. Besides the space occupied by the highway and its right-of-way more land at the sides is required to buffer from sight and noise from adjacent area, particularly when these are residential areas (Halprin, 1966). Other characteristic of this type of highway is the additional space needed to build ramps and bridges to permit free circulation and access to adjacent roads.

At-grade highways can also have an adverse effect on communities, especially if there is not enough space allowed for buffering. The rationale is that the less visible the freeway and the less noise, emissions, and other negative effects are experienced the higher the land value to residential owners (Buffington et al.1997). On urban areas at-grade highways cut across the existing grid, disrupt the pattern of neighborhoods, and often they need to be blocked from pedestrian access due to the dangerous conditions created by high-speed cars (Halprin, 1966). Contrasting with the disadvantages of at-grade highways the high visibility offered by this type of highway is desirable in commercial areas (Buffington et al. 1997).

Depressed Highway

The depressed highway as the one previously discussed requires a wide acquisition of acquisition of right-of-way. According to Halprin's book *Freeways*, this type of highway requires around 150 feet from adjoining property line to adjoining property line to accommodate eight lanes of traffic and assuming the use of vertical

retaining walls (Halpring, 1966). If buffering strips and local streets at the sides are used, the right-of-way can exceed 400 feet (Halprin, 1966).

When compared to other types of highways the depressed highway is simpler to access from local streets and allow easier pedestrian crossings. It also produces less visual and noise impact on its surroundings making it a preferable feature in residential areas (Halpring, 1966). In addition residential land value is correlated to the accessibility to the highway, the easier the access too the highway the higher the land value (Buffington et al. 1997).

Elevated on Embankments

The construction of highways on embankments requires the same amount of right-of way as the depressed highways. This type of highway requires large extensions of land to slope down the embankments and minimize the effect on surrounding areas (Halrping, 1966). The access to and from to existing streets is relatively easy and comparable to those of the depressed highway. Tunnels through the embankment allow vehicular and pedestrian crossovers at-grade level.

The impact produced by embanked highways to surrounding communities can be the worst of all the types of highways (Halprin, 1966). The embanked highways produce a wall effect, which works as a dividing element and visual barrier among sectors of the city. On the other hand this quality of the embanked highway can be used as a form-giving element or as a subdivision of housing units (Trancik, 1986).

Elevated Stacked

The elevated stacked highway poses the advantage of requiring a minimal amount of right-of-way when compared to the side-by-side elevated highway (Halpring, 1966).

This type of highway structure only requires the space to accommodate the traffic lanes, the shoulders, and the structural columns but the access ramps occupy a considerable amount of land. Elevated stacked highways as well as the side-by-side elevated highways provide a maximum street crossover and pedestrian flow at ground level. Also, these two types of highway structures often produce is the least impact on land value if compared to all the other highway types except for tunnels (Buffington et al. 1997).

A disadvantage of elevated stacked highways is the complicated access to it from other streets. This undesirable feature of this type highway is caused by the elevation of the second deck, which is somewhere around 40 feet above the ground (Halprin, 1966). Other adverse effects of this type of structure are unwanted views and overpowering effect produced by the magnitude of the structure, isolation of residential areas, and destruction of waterfronts (Halprin et al.1966).

Side-by-Side Elevated Highway

This type of highway requires more right-of-way space than the elevated stacked but it is comparable to other types of highways (Halpring, 1966). It requires the space to accommodate the traffic lane, median and respective shoulders. The access to this structure is simpler than for the elevated stacked since they tend to be lower than elevated stacked.

The negative impact produced by elevated side-by-side highways to a community can be worse than the one produced by the elevated stacked highway since the width of this structure is double (Halprin, 1966). Other negative effects of this structure, such as shadowing, noise, disconnection of neighborhoods, and undesirable views are comparable to those of the elevated stacked highway. However, the negative effects

produced by elevated highways can be reduced trough careful design and more important the incorporation of the spaces below into their surrounding urban environment.

Tunnels

Tunnels are an important and desirable system in cities. They can be used to transport vehicles under rivers, parks, or important landmarks without disrupting the activities above (Halprin, 1966). Not only does this type of highway system eliminate the risks of pedestrians crossing through highways, it also preserves communities and eliminates the physical and psychological impacts produced by highways crossing through a city. The access to and from existing streets is relatively simple and could be compared the access of depressed highways Halpring, 1966).

Although tunnels can provide many benefits to a city they can deprive motorists form experiencing the city and long tunnels can be unpleasant for some people. Other negative issues associated to tunnels are the unpleasant effects produced in portals, which affect the visual character of neighborhoods, and the high cost of constructing them could present a problem for some cities (Halprin, 1966).

Approaches to Urban Design

Understanding some of the basic concepts used to analyze urban environments is crucial to establish a framework for the study of the spaces below the Interstate-10 overpass at Perkins Road in Baton Rouge, Louisiana. Many of the ideas formulated in this section are based on the works of the landscape architect and urban designer Roger Trancik, the architect Fumihiko Maki, and the urban designer Kevin Lynch.

Figure-Ground Theory

Figure-ground is defined by Roger Trancik in his work *Finding Lost Space*: *Theories of Urban Design* as: "a graphic tool for illustrating mass-void relationships; it is a two-dimensional abstraction in plan view that clarifies the structure and order the urban spaces" (Trancik 1986). The two basic components of figure-ground drawings are the buildings or solid mass (figure) and the surrounding open spaces (ground). These types of studies are used to identify the textures and patterns of the urban fabric as well as the problems associated with the order of the spaces. Figure 2.2 is an example of a figure-ground drawing.

Figure-ground drawings have the disadvantage of leading to a static or two-dimensional notion of the space (Trancik 19886). In practice the figure ground relationship is not possible or even desirable but it should be used as a conceptual guidance principle in city design to clarify the structure of urban areas and to establish coherence between spaces of different sizes (Trancik 1986). Figure-ground theory is the starting point to understand the urban form. This approach to spatial design is considered a valuable tool used to study and manipulate the pattern of solid and spaces in the urban environment (Trancik, 1986).

The easiest way to create positive space is by working with horizontal buildings, which provide an appropriate ground coverage area (Trancik, 1986). Contrasting to this there are numerous vertical elements in the modern urban environments such as skyscrapers and block towers which lack the appropriate ground coverage making it difficult to achieve a cohesive urban space. These vertical elements over a large ground

plane are perceived as objects on the landscape and result in vast open areas hardly ever used or enjoyed (Trancik 1986).

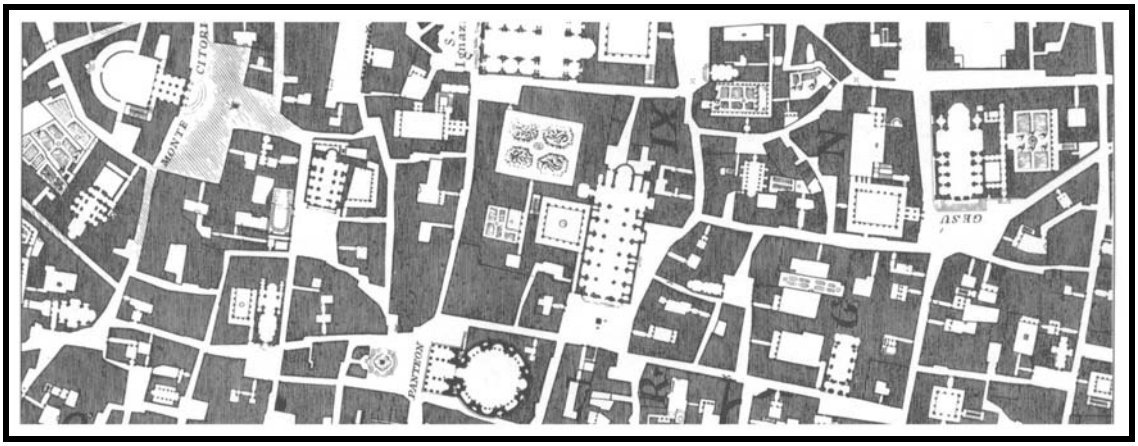

Figure 2.2 Figure-Ground Drawing Giambattista Nolli. Map of Rome. Illustrates the relationship of traditional open space and building mass (Trancik, *Finding Lost Space*, 1986, p.99).

There are six different urban patterns created by the various combinations between solids and voids, the shape and locations of buildings, the design of site elements, the channeling of movement, the terrain, and natural features. Figure 2.3 illustrates the different patterns of solids and voids created in urban areas. In conclusion, figure-ground is a graphic tool based on the manipulation and organization of urban solids and voids used to create a dialog between voids and solids in an urban environment (Trancik, 1986).

Linkage Theory

This theory is described as the study of the organization of the lines connecting parts of the city and the design of the spatial datum for these lines relating building to

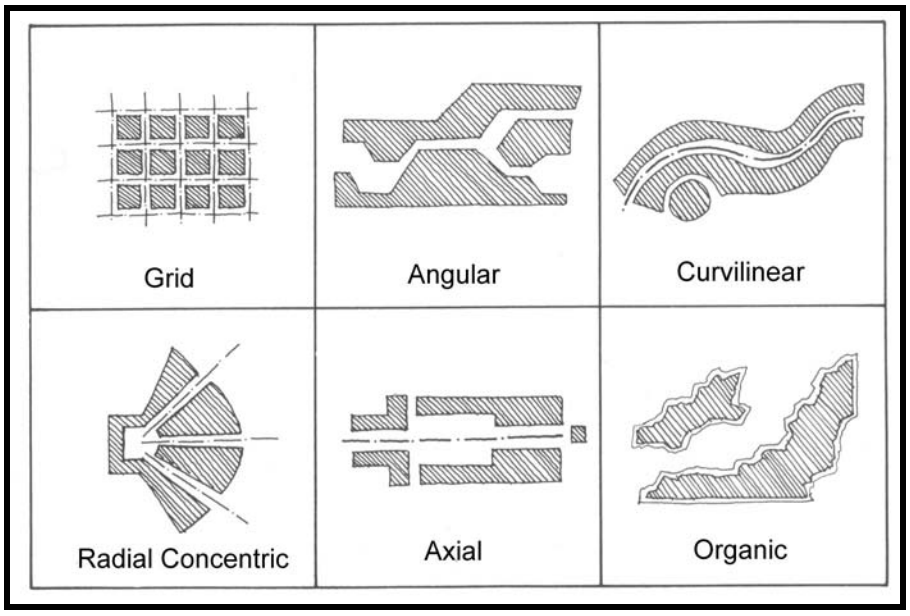

Figure 2.3. Types of Urban Patterns This image illustrates the patterns created by the different relationships between mass and void (Trancik, 1986, *Finding Lost Space*, p.101).

space (Trancik 1986). "Spatial datum" is described as: "the site lines, directional flow of movement, an organizational axis or a building edge" (Trancik 1986). Some of the physical elements that form connections between parts of the city are the streets, pedestrian ways or linear open spaces. This approach to spatial design emphasizes the circulation diagram rather than the spatial diagram of the figure-ground theory. Movement systems and efficiency of the infrastructure takes precedence over patterns of defined outdoor spaces.

The scheme of organizational lines in an urban area when studied as a whole indicate a system of connections or "linkages" that need to be considered when proposing changes in the spatial environment of an urban area (Maki 1964). According to the architect Fumihiko Maki in his work *Investigations Into The Collective Form* these lines

are considered to be “the glue of the city” and when all the layers of activities of the city are united physical form emerges as a result (Maki 1964). The main purpose of the circulation studies is to make comprehensible connections between elements of a city making the entire urban space comprehensible by articulating his parts (Maki 1964).

The architect Fumihiko Maki lists three different types of urban forms created by the systems of connective lines (see figure 2.4). These forms represent the basic shapes that emerge from the combination of all the connective lines in an urban environment. The first type is the “Compositional Form” and is made by individually tailored buildings in abstract pattern when viewed in plan view. “Linkage” is implied here rather than obvious as a result of this random pattern a reciprocal tension results from the positioning and shapes of the freestanding objects. “Linkage” elements in this class of form are static and formal in nature (Maki 1964).

The second form described is the “Megaform” (see figure 2.4). This type of urban space is created by individual components that are integrated into a larger framework with the “linkages” physically imposed (Maki 1964). The structure of mega-form encloses the internal space and the perimeter is formally defined. This structure is unresponsive to exterior space, it tends to turn its back on the physical context and create its own environment (Maki 1964). Figure 2-4 illustrates an example of “Megaform”

“Group Form” is the third type of form created by the connective lines in urban areas. This form is illustrated on figure 2.4. This form is present typically in the organization of many historic towns. In Group-Form the “linkage” evolves naturally as part of the organic structure that generates it. This from is characterized by a consistency of materials, a response to topography, respect to human scale, and by sequences of

spaces defined by buildings, walls, gateways, and tower rising steeply to a point, as on a church (Trancik, 1986).

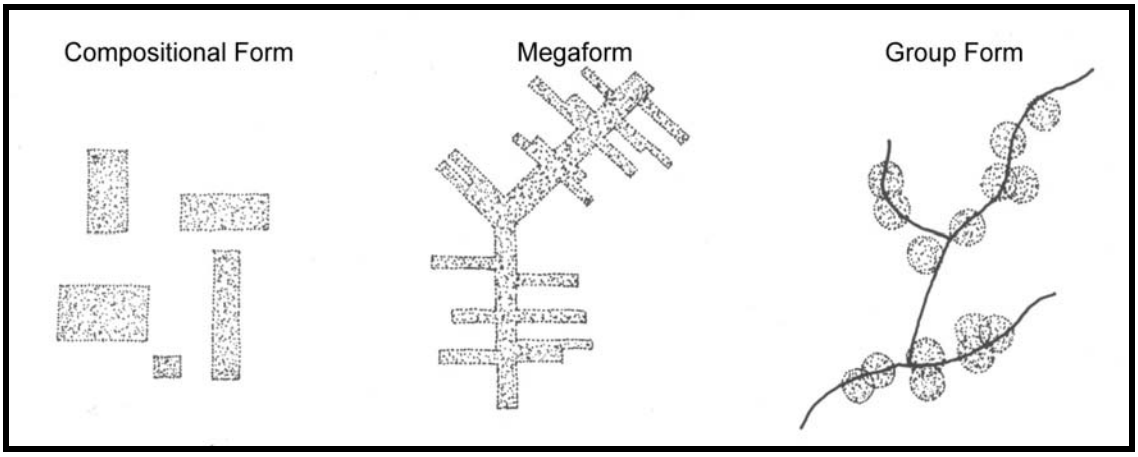

Figure 2.4 Types of "Linkage": These are forms derived from the connection previously established or imposed. (Trancik, 1986, *Finding Lost Space,* p.107).

Place Theory

In order to understand this theory we must define place as: "a space that has a distinct character" (Trancik, 1986). "Place Theory" or the study of place is an attempt to understand the context of the physical place. The essence of this theory resides in considering the social and cultural values of the place, visual perceptions of the users and an individual's control over the immediate public environment (Trancik 1986). This approach to urban design recognizes the unique character of each place given by its surroundings. The contextual meaning of a place is an outcome of the cultural or regional content of the area and consists of concrete things such as colors, shapes and textures, as well as intangible things like cultural associations, and the flavor given by the human use over time (Trancik 1986). The practitioners of this theory give physical space

richness by incorporating unique forms and details native to its setting as means of enhancing the sense of the place (Trancik 1986). According to Roger Trancik some of the approaches to the "place theory" are:

- The organic or vernacular: is a response to the natural systems.
- The new classicist: looks at the formal devices to connect the old and the new elements of an urban area.
- The contextuallist: is a nostalgic approach to the city an emulation of the evolution of the city.
- The Mental mapping of Kevin Lynch: approach the urban environment, using as a base the way people perceive and experience the city.

Other approaches manipulate the way people experience the urban environment through a sequence of spaces or let people determine the design of certain place by letting them decide which will be use for certain space.

CHAPTER 3: EXAMPLES OF PROJECTS DEVELOPED UNDER ELEVATED HIGHWAYS.

Introduction

Reviewing some of the most significant precedents to the development of the spaces below elevated highways within urban environments is important to establish the base for this thesis. Through the analysis of the Expressway Park in Baton Rouge, Louisiana, Burnside Bridge Project in Portland, Oregon; the Bridge Market under the Queensboro Bridge in Manhattan, New York; and Overtown's Pedestrian Mall and Transit Access in Miami some of the basic issues associated to this types of urban space will be established. Some of the problems that are associated with these examples spaces could be generalized as a typical characteristic of the spaces below highway overpasses.

Expressway Park, Baton Rouge, Louisiana.

The Expressway Park is located on the southeast side of downtown Baton Rouge, Louisiana below the interchange were the Interstate-10 and Interstate-110 converge. Currently the expressway park occupies 40-acres of land under the interchange and includes playground areas, basketball and tennis courts, a baseball field and a community center.

After the completion of this section of the interstate in 1964 the residential areas surrounding the elevated highways were divided by 25-acres of underdeveloped land (Rome, 1965). These spaces were poorly kept and often used to store wrecked cars promoting criminal activity in the area (Rome, 1965). The communities surrounding the interchange, which showed signs of deterioration after the development of the elevated highway, were not benefiting from this situation. By 1967 a series of studies, which

explored the possibilities of developing this area, had been conducted by faculty and students of the School of Landscape Architecture of Louisiana State University. It was until September of 1997 when Lamar Advertising Co awarded a $3,000 grant to the group of landscape architecture students to develop a report on their findings. Early in the 1970's and with a series of ideas gathered on previous reports the Baton Rouge Recreation and Parks Commission transformed the 25-acres of land under the interchange were the Interstate-10 and Interstate-110 converge into a recreational known as the Expressway Park (Sonnier, 1978). At the time this park was popular among the residents of the area but a series of accidents on the expressway above during the late 1970's caused concern among the residents and city officials causing the closure of the Expressway Park in various occasions (Sonnier, 1978).

On August of 1978 the highway officials lowered the speed limit of the Interstate-10 westbound ramp above the Expressway Park due to a series of minor accidents that occurred on this ramp going to the Mississippi River Bridge. These accidents were attributed to a fault in the design of this ramp. In September of that same year a tractor-trailer bumped into the ramp dumping its cargo on the Expressway Park below (Sonner, 1978). This accident provoked the temporary closure of the park and creating a concern among the residents of the area.

From 1979 until 1994 nine accidents occurred in the Interstate-10 ramp involving trucks bumping into the ramp and dumping their cargo into the Expressway Park. Plastic tubes, plywood and even livestock where some of the things that fell in to the park (Kalmbach, 1994). As a consequence of these bizarre accidents some of the residents in the area felt unsafe using the park and encouraged their children to stay away from it

On August 6, 1994 a truck caring around 100 cattle bumped into the curve of the Interstate-10 ramp landing on the southbound lane of the Interstate-110 that runs below. On this accident the driver of the truck was badly injured and the passenger was killed (Millhollon, 2001). Approximately 30 cattle died or had to be killed due to their bad state. This accident prompted the intervention of the authorities, which to that moment have not provided a solution to the ongoing problem (Millhollon, 2001). As a result of the accident the state highway officials constructed a 71/2-foot concrete retaining wall foot ramp designed to withstand the impact of a truck while protecting them from tumbling over and dumping the cargo into the Expressway Park. The total cost of improving the curve and widening the lane was $4.1 million (Myers, 1998). Since the problems associated to the Interstae-10 curve at the interchange were repaired no more accidents has been reported but trucks still have problems going into this ramp (Myers, 1998).

Program Elements

The Expressway Park recreation facilities consist of basketball and tennis courts; a baseball field, and a new playground facility located in the corner of South and East Boulevard. This playground area was designed and built by Baton Rouge Parks and Recreation in the year 2000 and opened on fall of 2001. The Expressway Park facilities also include a recreation center used for a wide variety of activities such as classes, programs, and activities during the summer months. Some of the activities that take place in the community center includes: basketball, art, free play, karate, senior activities, and girl's basketball.

Maintenance and Management

Maintenance and management of the Expressway Park is responsibility Baton Rouge Parks and Recreation Commision (BREC).

Limitations

The unusual nature of the accidents that occurred on the highway above the Expressway Park caused skepticism among residents of the area reducing considerably the number of visitor in this area. The Expressway Park had to be closed on various occasions during the 1970's and 1980's due these accidents, which involved trucks dumping their cargo into the park. Unforeseen situations like these caused by a fault in the design of the curved ramp of the Interstae-10 above the Expressway Park reduced the potential of this facility to become a major recreational area in Baton Rouge.

Significance of the Project

The Expressway Park is an excellent example of the effects produced by an elevated highway structure within residential areas and how these problems could be could be lessened through a comprehensive design intervention. The major problem in the Expressway Park area was the dangerous curve going into the Interstae-10 ramp above the park but it was repaired in 1994 and no accidents have been reported since then. Unfortunately the numerous accidents that preceded the repairs to the Interstaet-10 ramp left their impression among the residents of the area, which to this date feel unenthusiastic about the park facilities. According to reports prepared by Baton Rouge Park and Recreation Commission the Expressway Park received 107,075 visitors during last year. These numbers could indicate that the members of surrounding communities might feel safer using the Expressway Park facilities.

Burnside Bridge Project, Portland, Oregon

The Burnside Bridge Skateboarding Facility is a 10,000 square feet area located on the northeast side of the Willamette River under the Burnside Bridge in Portland, Oregon. This area is known as a major industrial sector of Portland, with the exception of a few commercial establishments. Before the development of the skateboarding facility under the Burnside Bridge, drug dealers, prostitution, and dumping were common activities under the bridge. Despite these conditions some skateboarding activity took place in this area (Jones and Graves, 2000).

The Burnside Project dates back to the late 1980's. The development of this skateboarding facility was somewhat unconventional; it began with the approval of a $40,000 bond measure to fund the establishment of a new skateboarding facility within the city of Portland, Oregon. Following the approval of these funds city officials integrated a committee formed by business owners, "skaters", parents, and other members of the community. The function of the committee was to determine the location of the new skateboarding facility. After a few meetings the places to host this facility were narrowed to three locations.

Difficulties between members of the committee appeared when each of communities selected to host the new skateboarding facilities expressed their opposition against the committee decision. This situation frustrated the "skaters" participating on the committee so much that they abandoned the meetings shortly thereafter (Johns and Graves, 1998-1999).

Mark "Red" Scott, one of the skaters that left the meetings, took matters into his own hands and adopted the task of finding a place to build a new skateboarding facility.

After searching for a place, he figured that the best place to build a skateboarding park were the spaces beneath the Burnside Bridge. This area was ideal for the "skaters" because it was located within a warehouse district where no one will bother them, it offered protection from the harsh climate of the region, and it's location was central to the skaters (Jones and Graves, 1998-99). After the "skaters" appropriated the area by increasing their presence they began to work on the site that later became to be known as The Burnside Project.

Development Process

The overall vision, siting, and initial design was the initiative of Mark Scott and a group of friends. The design process of the Burnside skateboarding facilities took place at a fast pace as mentioned in an interview by Mark Scott (Jones and Graves, 1998-1999). The "skates" began the construction of the skateboarding facilities by working with donated concrete left over from construction sites. This forced them to design on site. Other materials needed for the construction process such as fill for the ramps and bowls, and wood to build the forms were made out of debris collected around the site. Concrete forms and welding were done with the help of Scott's friends who had experience as builders. They started by building smaller ramps to clean off curbs, and as more donated material was available, they stitched everything together.

Program Elements

The purpose behind the selection of the spaces below the Burnside Bridge was to develop a place that could provide the necessary shelter from the harsh climate of the Pacific Northwest, centrally located but isolated from residential areas. The eradication of other problems, such as drug dealing, dumping, and prostitution was not part of the

development of the Burnside Project but it was a favorable side effect of the creation of this skateboarding facility. The solution of these problems helped the "skaters" to gain the support of the business owners of the area. The Burnside Project program elements included: small and big ramps, bowls, fences, and places to sit and observe the activity. The development of the program was based on the immediate needs of "skaters" for a recreation area.

Maintenance and Management

Once the Burnside Project was completed and the proper permits were awarded by city officials all the maintenance and management of the park became responsibly of the "skaters". This led the "skaters" to develop a set of basic rules that were to be followed by all the users this facility. Later on, with the increase in popularity of the skateboarding facility a foundation-type account was established with the help of a local business owner. This account is supported by donations from companies such as Nike and others who wish to use the facilities to film or shoot photos. These funds are primarily used to sustain the needs of the facility in terms of material for repairs, changes to the park layout, and maintenance in general (Jones and Graves, 2000).

Limitations

The success of the Burnside Project is accredited to the constant renovations of the existing facilities. Usually, if one of the features of the facility (i.e. bowls, ramps, railings, etc.) becomes obsolete the "skaters" will replace it. These changes are supported by the money received trough donations. If the availability of money decreases, the type of changes made and the maintenance of the area will be restricted, thus affecting the users satisfaction with the facility.

Significance of the Project

The unique quality of the Burnside Project lies in the way, which the "skaters" were able to develop a successful recreational area. Furthermore, the significant feature of this skateboarding facility is the flexibility of the space to evolve with the needs of the users. The development process of this project is an example of success achieved through the joint effort of the developers/designers and community members. The Burnside Project has become one of the best-known skateboarding facilities in the Nation and is a model for the development of other skateboarding facilities around the United States (Jones and Graves, 2000).

Queensboro Bridge, New York, New York

Located at 409 East 59th Street between 1st Avenue and York Avenue the Queensboro Bridge opened to traffic on March 30, 1909. Architect Henry Hornbostel and engineer Gustav Lindenthal designed the Queensboro Bridge originally called the Blackwell's Island Bridge. The main section underneath the bridge consisted of a buff-colored canopy of tile vaults designed by Rafael Guastavino, an architect from Barcelona. Rafael Guastavino and his son worked together and adapted a centuries-old vernacular technology called the "boveda Catalan" or Catalan vault. (Szenasy, 2000).

This beautiful arcade underneath the Bridge served as a year-round marketplace where vendors sold fruits and vegetables and quickly became to be known as the Bridgemarket (Szenasy, 2000). With the onset of the depression, the market closed during the 1930's and was later used by the New York City Department of Transportation. On November 23, 1973, the New York City Landmarks Preservation Commission designated the Queensboro Bridge a landmark (Lace, 2000).

Over the next 20 years, several different entrepreneurs attempted to develop space below the Queensboro Bridge but community groups were opposed the against the rehabilitation of the area fearing an increase in traffic. This situation deferred any ideas for a restoration of the spaces below the bridge. It was not until July of 1995 that all parties agreed on a design concept and The Landmarks Preservation Commission unanimously approved all revisions for the future development of 98,000 square feet under the Queensboro Bridge (New York City Major's Office, 1998).

In 1997, London based company Conran Holdings signed a lease for 42,000 square feet for a furniture and house wares store "The Terence Conran Shop", and 25,000 square feet for two restaurants named Gustavino's and Club Gustavino's. The Conran shop was the first tenant under the Queensboro Bridge opening on December 8, 1999. On February 14, 2000, Guastavino's restaurant opened. Named for Rafael Guastavino, and located on the ground floor, the restaurant has seating accommodations for 300 people. On March 16, 2000, Club Guastavino's opened on the second floor, serving up to 100 people (Goldberg, 2000).

Program Elements

The design program for the spaces below the Queensboro Bridge included a new plaza fully landscape with street trees, and architectural furnishings, a market, two restaurant and a furniture/house ware store. Through careful planning the designers were able to reincorporate the original historic market fountain at the eastern end of the plaza. The design by the architectural firm Hardy, Holzman, and Pfeiffer incorporated the program elements mentioned before while preserving the original vaulted ceilings

creating a unique space that displays the unique architecture of the spaces below the Queensboro Bridge.

Maintenance and Management

Both, the restaurant and the market are independently managed and maintained but the maintenance of the plaza in front these places is responsibility of the city.

Limitations

The spaces below the Queensboro Bridge have been successful despite the constantly changing trends among the commercial areas within New York City. It is unclear if the early success enjoyed by establishments below the Queensboro Bridge will be sustained over a long period of time. Other noticeable limitations of the spaces below the Queensboro Bridge are the lack of parking spaces, the complex spaces surrounding the bridge which conceal the commercial establishments below the bridge, and the highly transited streets surround the site which creates difficulties to access the commercial establishments.

Significance of the Project

The successful rehabilitation of the once existing bridge market and the ability of the designers to incorporate new and existing elements of the Queensboro Bridge are the unique features of this place. The main attraction of the spaces below the Queensboro Bridge are the vaulted ceiling and columns designed by Rafael Gustavino which has been successfully showcased with the renovation of the bridge. Furthermore, the rehabilitation of the spaces below the bridge reclaimed valuable land for public use and provided the community with an open space.

Overtown Pedestrian Mall, Miami, Florida

Overtown's Pedestrian Mall and Transit Access is located within a historic African-American community a few blocks from downtown Miami, Florida. This pedestrian mall runs for two blocks, North to South, under Miami's Metrorail elevated structure between northwest First Avenue and northwest Third Avenue.

Established in 1896, Overton once supported 40,000 residents, four hotels, a supermarket, a coca-cola bottling plant, four weekly newspapers, and several nightclubs. According to an article written by William Thomson in *The Journal of Landscape Architecture*, this community used to be the center of the African-American culture in the South of Florida (Thomson, 1995). The development of highways across this area during the 1950's divided the neighborhood leaving many places without enough population to sustain the retail base of Overtown. As a consequence, many businesses in the area were forced to close deteriorating this vibrant sector of Miami. Following the closure of businesses in the area a considerable amount of the residents left Overtown looking for jobs and a better place to live. Finally the riots of 1980 that swept Miami tore apart the already deteriorating community causing the closure of the few remaining businesses (Thompson, 1995).

In an attempt to revive Overtown during the 1980's Miami's Dade County authorities authorized the construction of a metro rail station in this neighborhood to encourage the development of new businesses in the area. The establishment of the metro rail produced little changes in the area, which made the authorities look for another alternatives (Thompson, 1995).

During the early 1990's, Dade County Community Redevelopment Authority initiated the removal of dilapidated dwellings, making empty lots available for new developments in an effort to stimulate the development of Overtown. This effort from the authorities was part of a multi-phase program dating back to 1984 (Feuer, 2002). The program included the redevelopment of a 30-block area of the city including the southeast quarter of Overtown. As part of this plan the authorities envisioned the acquisition of historic sites within Overtown with the purpose of building a pedestrian mall connecting historic sites and downtown Miami (Thompson, 1995).

In 1994, the approval of a federal grant materialized the plans for Overtown's Pedestrian Mall. The development of 24,000 square feet pedestrian mall required the participation of a number of city and country agencies including Dade County Art in Public Places. Through this agency Gary Moore a local artist and Jerry Marston, a landscape architect of Wallace, Roberts, and Todd collaborated to develop the design for Overtown's Pedestrian Mall (Thompson, 1995).

As recalled by Marston in an article of the Journal of Landscape Architecture the project took on a fast pace after a series of community meetings (Thompson, 1995). Once Moore and Marston developed the concept for the pedestrian mall in1994, the project was set on a fast track scheduled for completion in 4 months. This pedestrian mall was designed with the intent of reflecting the African-American influence and history of Overtown through colorful paving patterns, benches reassembling drums, and lighting features that also function as trellis (Feuer, 2002).

After the construction of Overtown's Pedestrian Mall in1995, the city of Miami began to offer incentives to investors and developers to attract new business into the area.

Currently, the renovation of some of the historic buildings in this area still taking place as part of a long-term plan of the city to develop this historic area of Miami. According to the Marston, "the pedestrian mall looks like a stage, but it has not bee activated yet" (Iuspa, 1995).

Program Elements

Overtown's Pedestrian Mall and Transit System integrated the existing metro rail station into the surrounding community and promoted the incorporation of other means of transportation such as public buses, bicycles, and vehicles. The main purpose of the pedestrian mall was to reestablish a pedestrian connection between downtown Miami and Overtown, and to promote the development of Overtown. An important program element of Overtown's Pedestrian Mall is the diffusion of the cultural heritage of Overton through the integration of historic sites, colorful paving patterns, furnishings, a main plaza, and public theatres that convey the African-American history of this community.

Maintenance

Maintenance of Overtown's Pedestrian Mall and Transit System is in the care of Dade County's Department of Public Works.

Limitations of the Project

According to Jerry Marston, the success of Overtown's Pedestrian and Transit System depended on the ability of the city to encourage developers to invest in this community. This was a restraint during the months after the completion of this project. This type of long-term solution to the problems of Overton also produced disappointment among members of the community who failed to understand the broader scope of the

project (Thompson, 1995). For some of the residents of the area this project is a waste of money from governmental agencies, that does not offer an immediate solution to the problems of unemployment, housing and homeless people in the area.

Significance of the Project

One of the most remarkable element of this project is the walkway's unique paving pattern that transmits the African-American influence in Overtown. Other issues such as the absence of constant noise, natural illumination of the site permitted by the lightness of the elevated metro rail structure, the integration of different means of transportation within the same project, provision of outdoor spaces for the development of cultural activities, and active participation of the community during the development process contributes to the success of Overtown's Pedestrian Mall and Transit System (Thompson, 1995). This unique feature has been the object of many awards such as the 1995 Merit award from the National Endowment for the Arts, and the 1996 Paver Module Award. This project also won a 1999 Merit Award from the American Society of Landscape Architecture. The award was offered for the project's ability to generate to some extent the revitalization of this poor sector of Miami.

CHAPTER 4: SITE INVENTORY AND ANALYSIS

Introduction

This chapter examines the existing site conditions and analyzes their impact as precursors of a master plan for the spaces below Interstate-10 at Perkins Road. According to the urban design theories discussed in Chapter 2, the analysis of the existing site conditions were divided into neighborhood character, figure-ground, and circulation patterns. The evaluation of these conditions is based on the opportunities and limitations as perceived by the designer during site observations.

The first part of this chapter is dedicated to the analysis of the neighborhood characteristics. This discussion will help to establish the context of the study area. The neighborhood character include: site location and background, demographics of the area, existing land uses, zoning, community capacity, architecture, views, topography, drainage, soil, climate, and vegetation. Once the neighborhood's character is defined, the physical form of study area is analyzed by using figure-ground drawings. The final discussion of this chapter corresponds to the analysis of the circulation patterns within the study area, including: pedestrian and vehicular circulation, parking conditions, and public transportation.

Neighborhood Character

The purpose of this section is to analyze and understand the cultural, human, and physical characteristics of the study area. These key elements will help to define the essence of the site therefore helping in the development of a design that corresponds to the needs of the community while respecting the unique flavor of the area.

Site Location and Description

The site is defined as a rectangular strip of land 120 feet wide by 1,800 feet long, located under the Intersate-10 overpass at Perkins Road approximately 1.3 miles to the northeast of Louisiana State University in Baton Rouge, Louisiana. Its boundaries are Perkins Road viaduct on the North, Christian Street on the West, Butler Street on the South, and Ferndale Avenue on the East. Currently the site is divided into four sections by Hollydale Avenue, Perkins Road, and Christian Street. Surrounding the site there is a commercial area known by locals as Perkins Road Historic Business District bordered by Zee-Zee Subdivision to the South and Hundred Oaks Subdivision to the North. Figure 4.1 shows the location of the site within the city and the state, and figure 4.2 illustrates the current layout of the site.

Background

The site is a byproduct of the development of the Interstate-10 overpass crossing through the Perkins Road northern commercial area. During that period of time, this commercial area of Perkins Road went through a series of transformations causing the alteration or removal of some of the buildings in the area. The end product of the construction of the Interstate-10 overpass in this area was a bare strip of land, which divided the commercial district and disconnected the neighborhoods surrounding it. Despite the fairly recent development of the site, this commercial sector of Perkins Road and the neighborhoods surrounding it have a rich background.

From the early 1990's until 1909 the development of northern Perkins Road moved slowly. At that time Perkins Road was unpaved, and a dairy farm occupied most part of the land to the North of the site. Today, this is where the Baton Rouge City Park

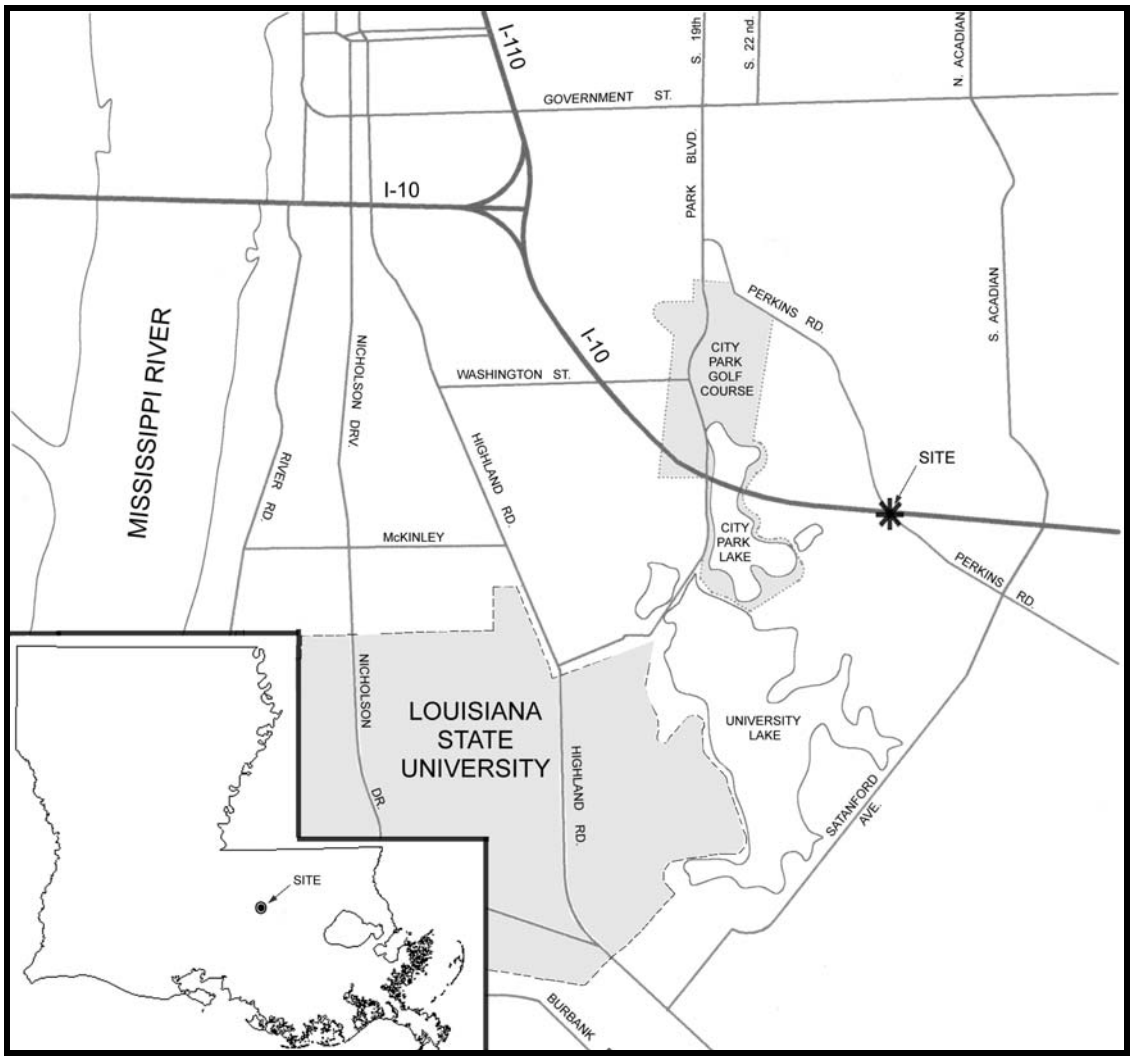

Figure 4.1 Site Location Map This image illustrates the location of the site within the Baton Rouge area.

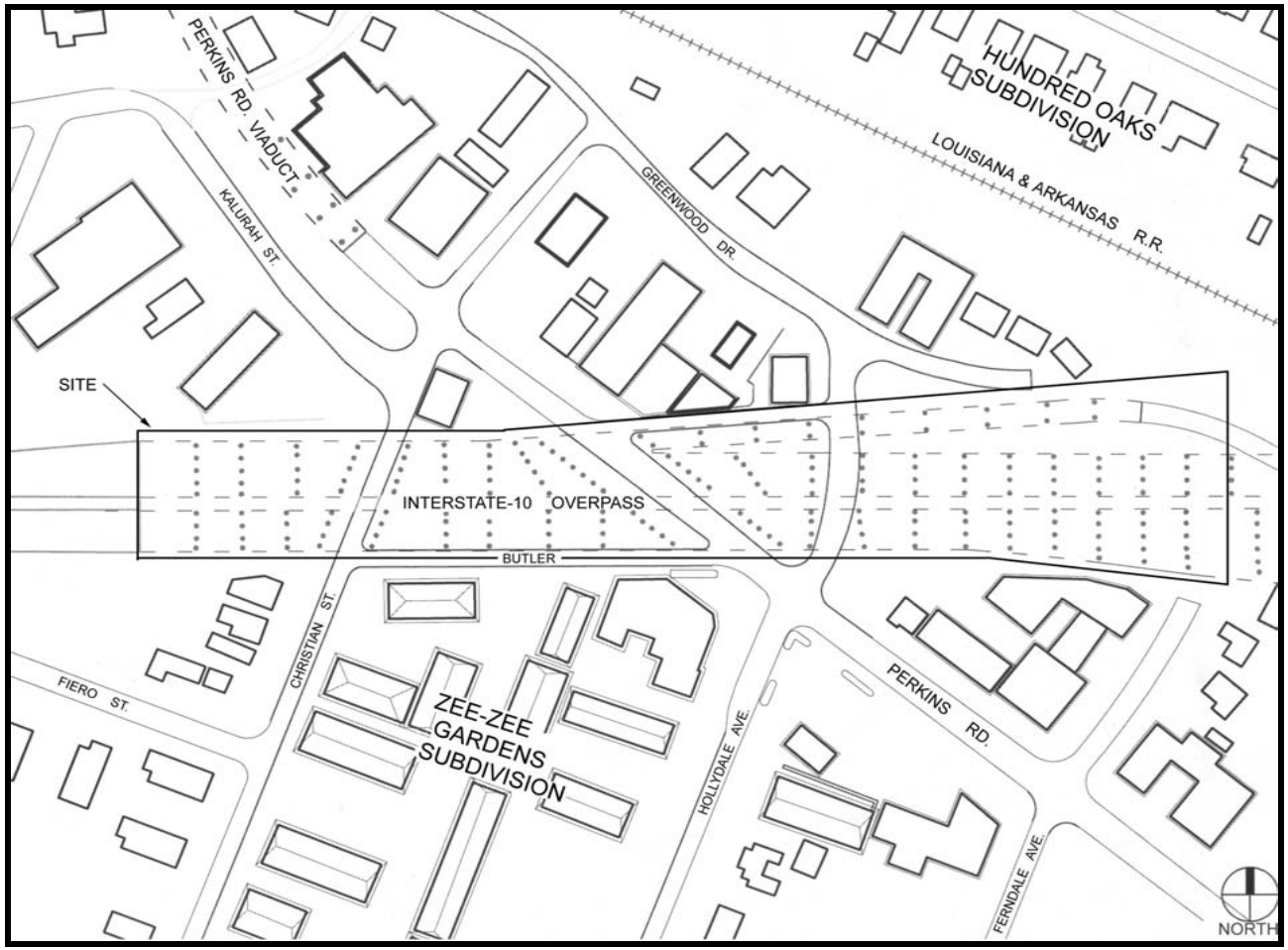

Figure 4.2 Current Site Layout This image show the spaces below the Interstate-10 overpass at Perkins Road.

is located (San Born Map Co., 1983). The establishment of Esso Standard Oil Company to the North of Baton Rouge in 1909 increased the industrial activity within the city creating a demand for more residential areas initiating the expansion of the city (Heck, 1970). As a consequence of the demand for residential areas large subdivisions started to be developed along Perkins Road and by 1925 the subdivisions Zee-Zee Gardens and Hundred Oaks, the subdivisions that surround the site today, were already opened. In 1926, Louisiana State University moved from the areas surrounding the State Capitol Grounds to its current location, to the South of Downtown Baton Rouge, reinforcing the development of the residential areas along Perkins Road (Heck, 1970).

During the 1920's, the small commercial area along the Perkins Road viaduct began to flourish, both with the development of Zeeland Place and Hundred Oaks Subdivisions to the North side of the Louisiana and Arkansas Rail Road tracks, and Zee-Zee Gardens to the South side of Perkins Road. Early in the 1930's, this business area extended from the intersection of Perkins Road and the Louisiana and Arkansas Rail Road tracks to Ferndale Avenue, approximately three blocks (San Born Map Co., 1983). At the time, this area was shaped by a series of small-scale neighborhood-geared businesses, and a warehouse occupied by a wood carpentry shop. The number of businesses operating in the area I the early 1930's ranged from nine to eleven (San Born Map Co., 1983).

Among the commercial establishments, in the area there were around six retail stores, three offices, two auto repair shops, two gas stations, a church, and a post office (San Born Map Co., 1983). Adjacent this commercial district there was a low-density residential area with a few apartment buildings no higher than two-stories on the South side. Figure 4.3 illustrates the development of the area in the late 1920'searly 1930's.

The approval of the Federal-Highway Act of 1944 authorized the construction of 63,000 kilometers of highways. Shortly thereafter, federal funds were approved through the Federal-Aid Highway Act of 1952, accelerating the planning and implementation process of the Interstate Highway System in all the United States, including Louisiana.

Consequently, the planning of the Interstate-10 took on a fast pace during the 1950's. The fast pace planning process ultimately lead to the construction of the Interstate-10, which began on Washington Street in 1963, to the West side of the site across from the City Park Lakes. The last section of the Interstate-10, from Siegen Lane to the Asencion Perish line, was completed in 1979. According to the Louisiana Highway Department, 52.7 million dollars were spent on the construction of this section of Interstate-10 for the East Baton Rouge Parish.

The introduction of the Interstate-10 overpass in the northern section of the Perkins Road commercial district during the early 1960's brought unforeseen changes to this area as well as to the neighborhoods that surrounding it. This highway structure separated the Hundred Oaks Subdivision from the commercial area by eliminating the intersection of Greenwood Drive, Ferndale Avenue and Daggett Avenue. It also divided Zee-Zee Gardens Subdivision in two by slicing through Elisalde and Ebony Avenues. Some of the buildings in the path of the elevated highway had to be removed or transformed in order to accommodate the highway structure. Other drastic changes to the area included: excessive noise produced by vehicles traveling through the elevated highway, unwanted views, large shaded areas, and the addition of two new roads along the highway overpass. Figure 4.4 shows the site and surrounding commercial district after the construction of the Interstate-10 overpass.

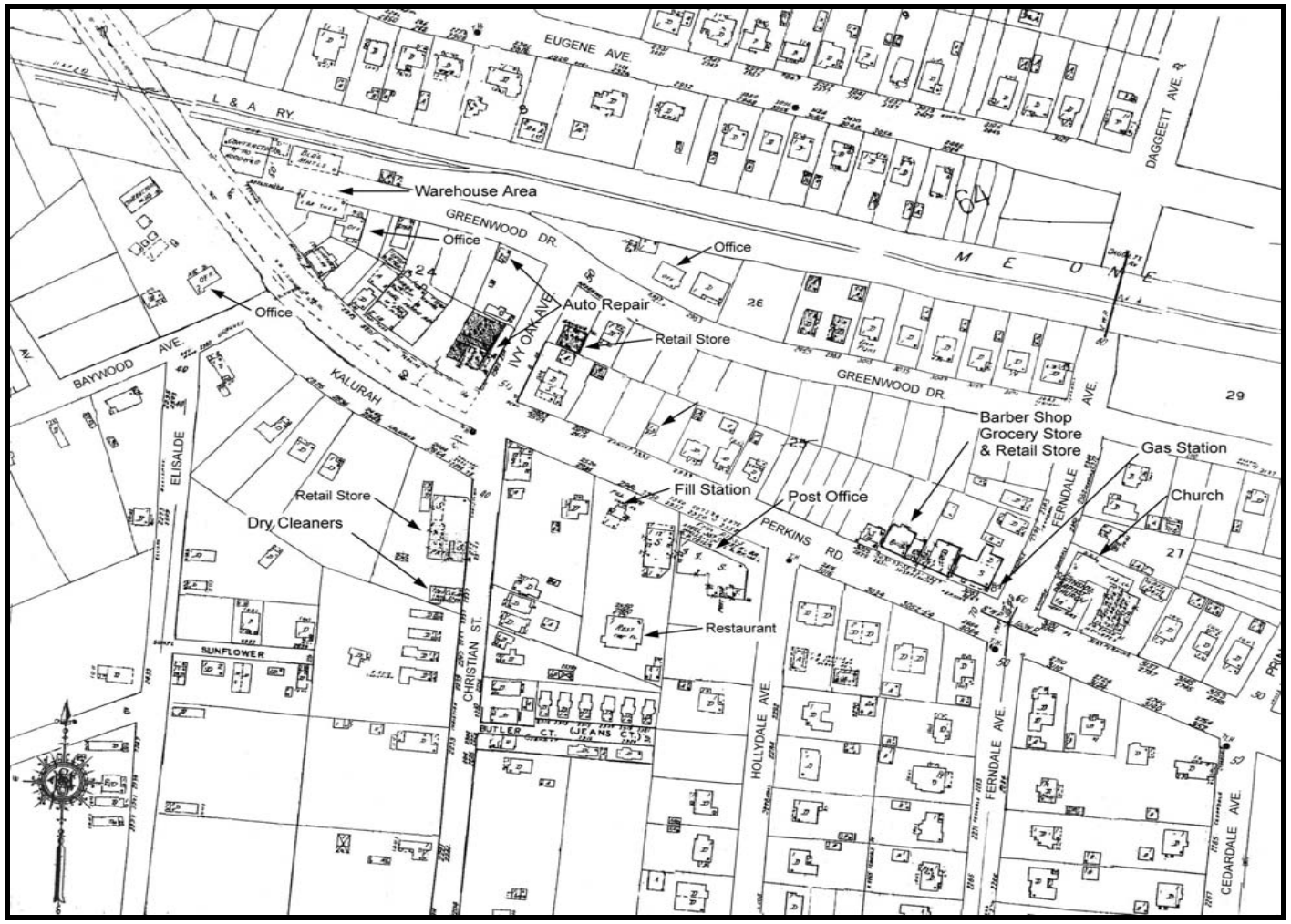

Figure 4.3 1928 Sanborn Fire Insurance Map This image illustrates the development of the Perkins Road overpass area during the 1920's.

Currently, northern Perkins Road business area is an important commercial sector of Baton Rouge. It is also well known around the city as a bustling bar zone. The Perkins Road Historic Business District, as designated by the local merchant association, is also known as the focal point of the annual Saint Patrick's Day Parade. This area not only is an important destination for those seeking a neighborhood oriented business atmosphere, but also a social gathering place.

Demographic Characteristics of the Area

Census tracts 23 and 26.01 are used to define the study area for this section of Chapter Two. Figure 4.5 illustrates the relationship between the site and the census tracts analyzed. The selection of this area was dictated by the central location of the site within these two census tracts. The demographic characteristics of the study area were obtained from the 1970, 1980, 1990, and 2000 United States Census. The census data provided basic information such as race, age, income, education, housing, and occupation. This data is useful in understanding the people of the neighborhoods surrounding the site and how these communities are either supported or separated by them.

The census data for the communities adjacent to the site reveals an increase in the population from 8,118 residents in 1970 to 10,504 residents in 1980. During the following decade the population decreased to 6,306 residents and no significant changes were registered during the decade of 1990-2000. These neighborhoods are predominantly white with 3.5% of the population being African-American. The 1990 census data reveals that 80.5% of the residents of these communities are older than 18-years of age. The 2000 Current census statistics reveals that 27.9% of the population in the study area has obtained a bachelors degree or a higher level of education and 17.2%

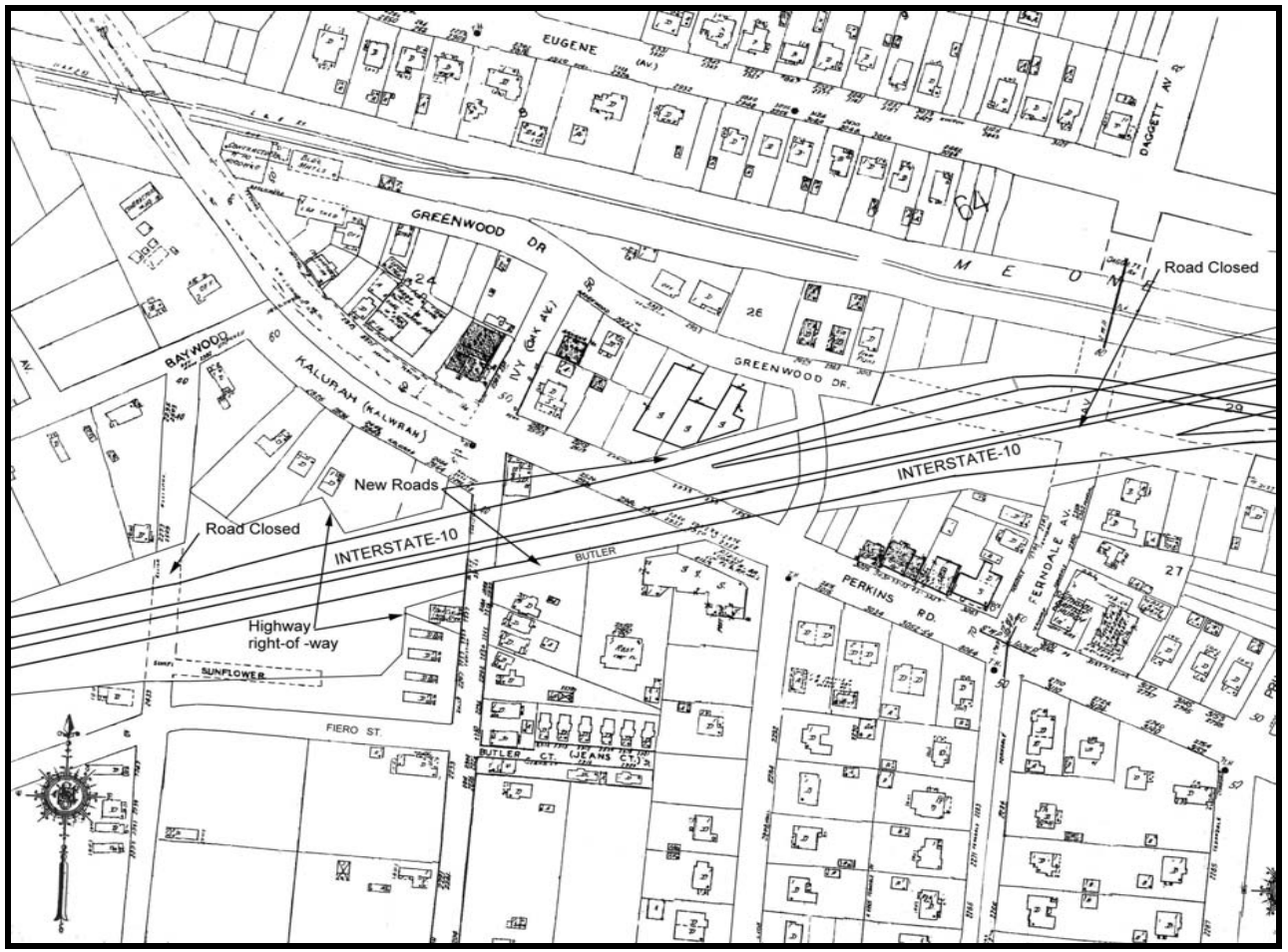

Figure 4.4 Mid 1960's Map of Perkins Road Historic Business District The arrows indicate the changes that took place in the area after the development of the Interstate-10.

have earned a high school diploma. However, 4.9% of the population has an education below high school level. These details illustrate the varied education levels within the study area.

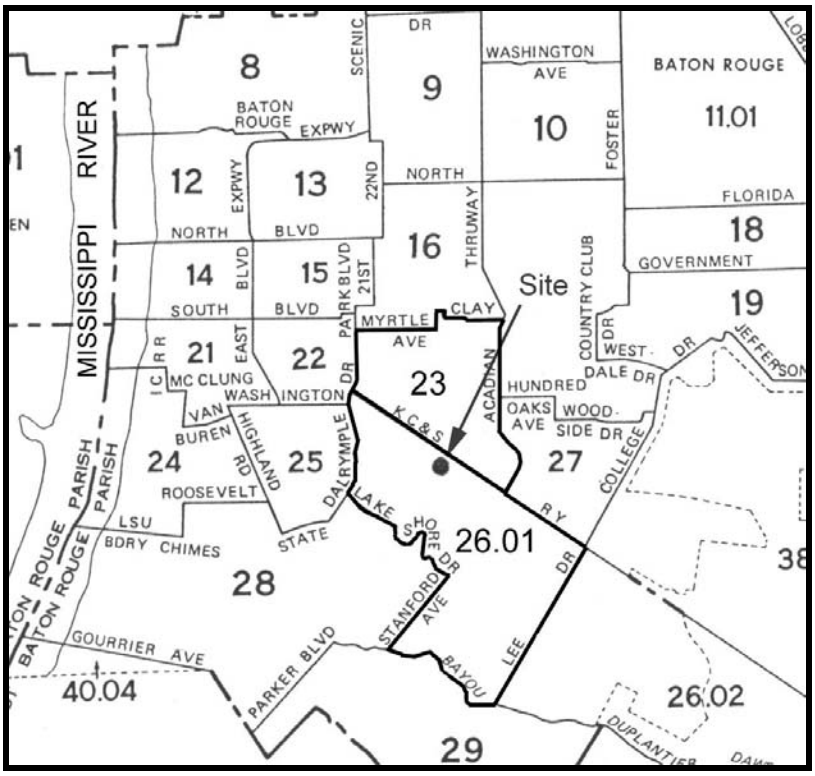

Figure 4. 5 Census Tract Map This image illustrates the location of the site in relation to the census tracts.

According to the 1990-census information 64% of the residents in the study area had an income higher than $25,000, which was above the $23,500 average income per capita for the East Baton Rouge Parish for that same year. Despite the high percentage of residents earning more than the average income per capita there is a 17.6% percent of the

population earning $14,000 or less per year. See Appendix A for a table illustrating detailed demographic information for the study area.

Analysis: The demographic analysis of the study area revealed that no drastic changes in the population have occurred in the past 20 years. This information indicates that the communities surrounding the site are well established and have little room for new growth. An interesting aspect of these neighborhoods is their diversity in terms of age groups, the racial disproportion of the community, and the high level of education attained by most member of the community. The racial and education homogeneity of the residents of these area reinforce the sense of community within these neighborhoods.

Land Use and Ownership

Existing land use is divided into four major categories: residential, industrial, commercial, institutional, and vacant spaces. The last category comprehends the lots that contain no physical structure within their boundaries. Residential areas also were divided into light residential, which includes single-family dwellings, and high-density residential, which includes multi-family dwellings. The general land uses are illustrated in figure 4.6. This section also includes existing land ownership of the area.

The study area consists of the commercial core along Perkins Road Perkins Road, which occupies 11.9% of the total land use. Large residential areas occupying 78.7% of the study area surround the commercial core. These residential areas are divided into light residential, which occupies 75.8% of the residential area, and a small high-density residential area, which occupies 2.9% of the total residential area. Other land use types in the area include the Intrstate-10 right-of–way that occupies 8% of the land, vacant lots which occupy 1.2% of the study area and 0.18% of the land includes institutional land use such as art galleries.

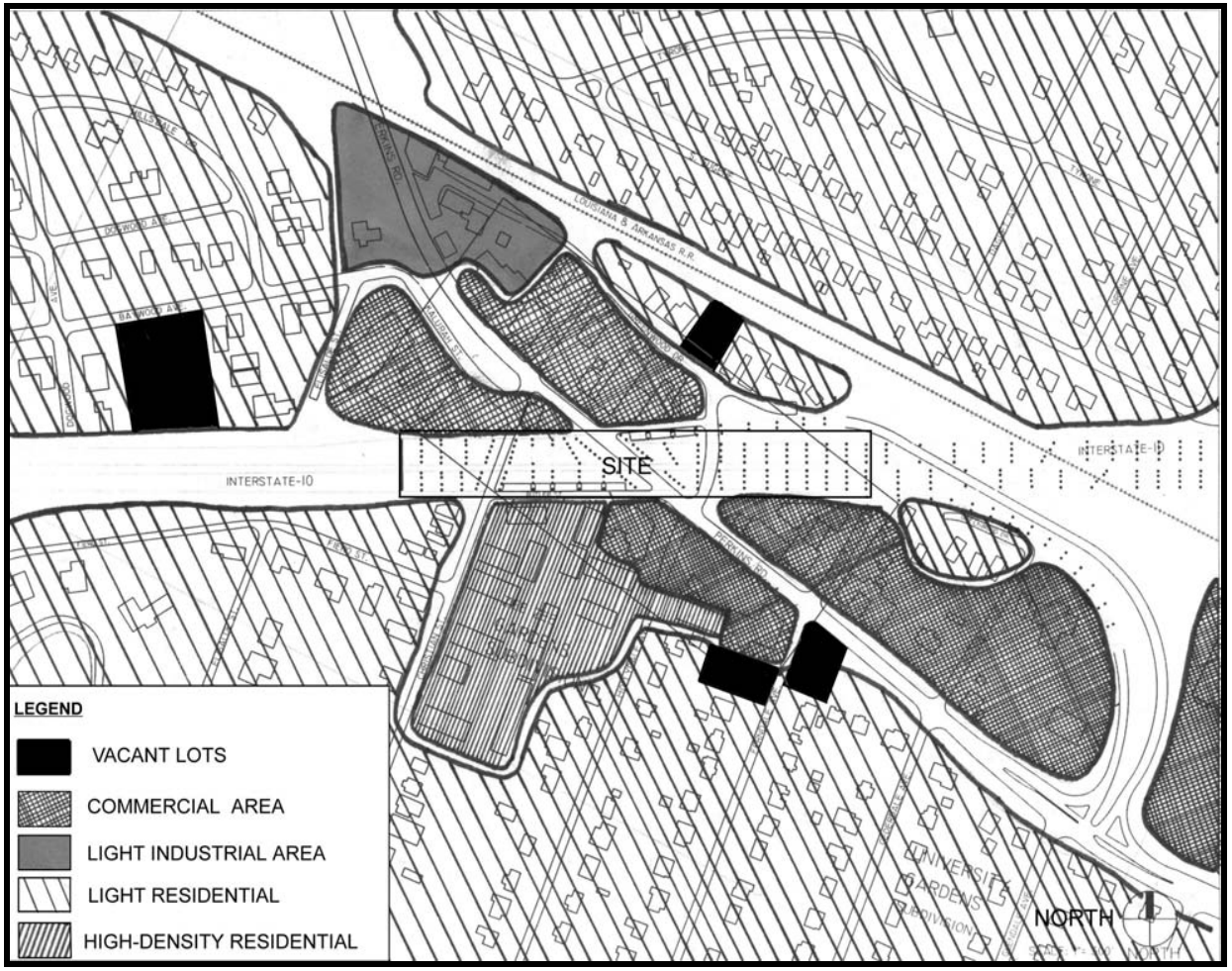

Figure 4.6 General Land Use Map This image illustrates the existing land use patterns in the study area.

A considerable amount of land within the study area is property of the state. This land includes the space occupied by the Interstate-10 overpass and it's respective rights-of-way. The remaining businesses, industry and residential areas are individually owned. According to the 1990 Census data the property/owner ratio within the study area is 2/1. That is, two owner residents per each non-owner resident. This ratio is generally known as an indicator of stability within a community.

Zoning

The actual site corresponds to the right-of way-of the Interstate-10 and currently is not zoned. All the properties surrounding the site are classified as light commercial C-1 or C-AB. Surrounding these commercial areas, there are large subdivisions zoned light residential A-1. These residential areas correspond to well establish subdivisions with little room for development. There is a general residential A-4 area located to the south side of the site between the light commercial and light residential areas. This general residential area is occupied by a series of apartment buildings two-stories in height. On the North side of the site, between Kalurah Street and Greenwood Drive, there is a small area zoned light industrial M-1. The actual zoning categories of the site and surroundings are illustrated on figure 4.7. All zoning categories mentioned in this section are described in Appendix B.

Analysis: The light-industrial zones M-1 to the North of the site should be changed to light-residential A-1 or light-commercial C-1 to prevent industrial development and increase the land value of the properties surrounding these area. Other problems experienced in this area are: the lack of transition zones between the parking areas and commercial or residential area, and the poor implementation of landscaping ordinances.

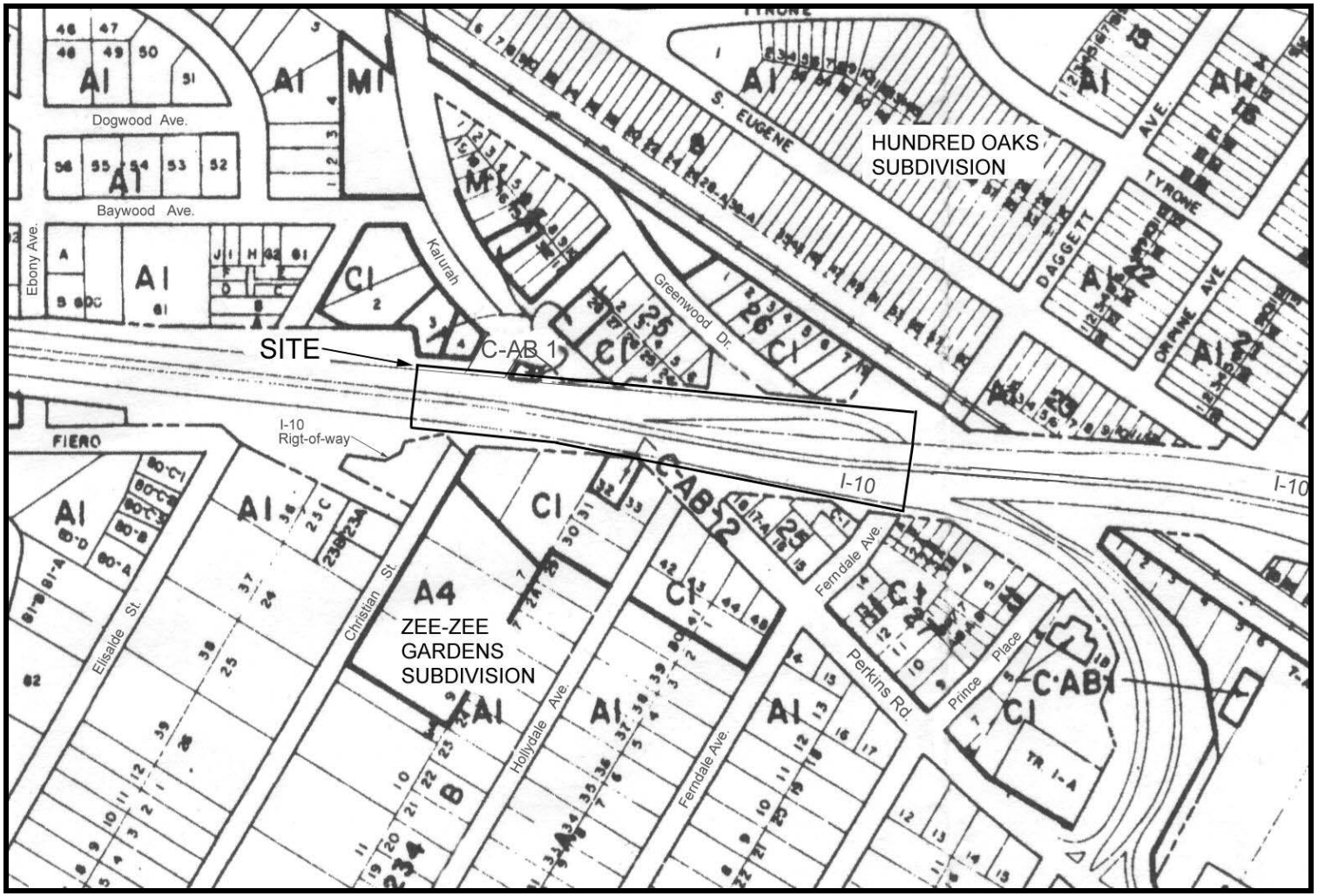

Figure 4.7 Zoning Districts This image illustrates the current zoning within the study area. Note the light industrial area M-1 to the North of the Interstate-10 (Baton Rouge Department of Public Works).

Community Capacity

Community Capacity is defined as the community's total available resources and the ability of these resources to adequately serve the needs of the community. A neighborhood with high community capacity is one that has many resources, which serve as a binding force, promote social interactions, and provide for the need of the community members. Figure 4.8 illustrates the community capacity.

The unique mixture of commercial establishments, offices and institutions within the study area appear to form the ideal community capacity. This commercial sector of northern Perkins Road not only caters the needs of local residents the neighborhood-geared atmosphere of the area attract customers from all around Baton Rouge.

The commercial capacity of Perkins Road Historic business District includes: 5 Restaurants, 4 Restaurant/bars, 2 Grocery stores, 2 hair salons, a gift shop, a gas station/mini mart, an architectural design office, a hardware store, a handcraft shop, a massage studio, an antique shop, a brewery shop, a book store, a wood carpentry shop, 2 dry cleaners, a drugstore, a insurance office, and a barber shop. Also, within this community there are institutions such as the Culinary Art Institute of Louisiana, the Anahatha Yoga Center, and 2 art galleries.

Analysis: The lack of or poor conditions of the sidewalks through out the study area and the absence of a connections between the residential areas to the North of the site and the commercial area reduces the pedestrian activity therefore limiting the amount of interactions among community members in the streets. At first sight the community capacity of the study area appears to support all the basic needs of the residents of the area but there are some differences such as the lack of a church, schools, banks and a

postal office within this neighborhoods, which may cause the community members to gravitate other areas.

Architecture

The style and scale of the buildings in the area of the site play an important role shaping the character of the Perkins Road Historic Commercial District. The structures in this area, most being one to two stories tall, were created back in the 1940's and 1950's with some exceptions such as the structure occupied by Zee-Zee Gardens Restaurant Bar, which date back to the early 1930's. Being a commercial area since the late 1920's, almost all the buildings of Perkins Road Historic Business were made for commercial purposes using brick as the main construction material. The architecture is mainly utilitarian and do not fall under a particular architectural style. However, the neighborhoods beyond this commercial area offer a variety of architectural styles such as Creole cottages, ranch, romantic, classical revival, and modern houses. The architectural style of Perkins Road Historic Business District is characterized by building no higher than two stories built out of brick. This architectural style represents a typical commercial strip present in many towns throughout North America. Figure 4.9 illustrates an image of a typical commercial building within the study area.

The Interstate-10 overpass is a predominant architectural element within the Perkins Road Historic Business District. This modern structure dates back to the early 1960's and is constructed out of concrete and continuous steel girders supported by multiple columns. The columns range between 18 and 16 feet, and 8 feet in diameter. This type of highway structure is illustrated on figures 4.10 and 4.11.

Analysis: The overwhelming scale of the Interstate-10 overpass presents a major problem to the character of Perkins Road commercial area. This structure towers over

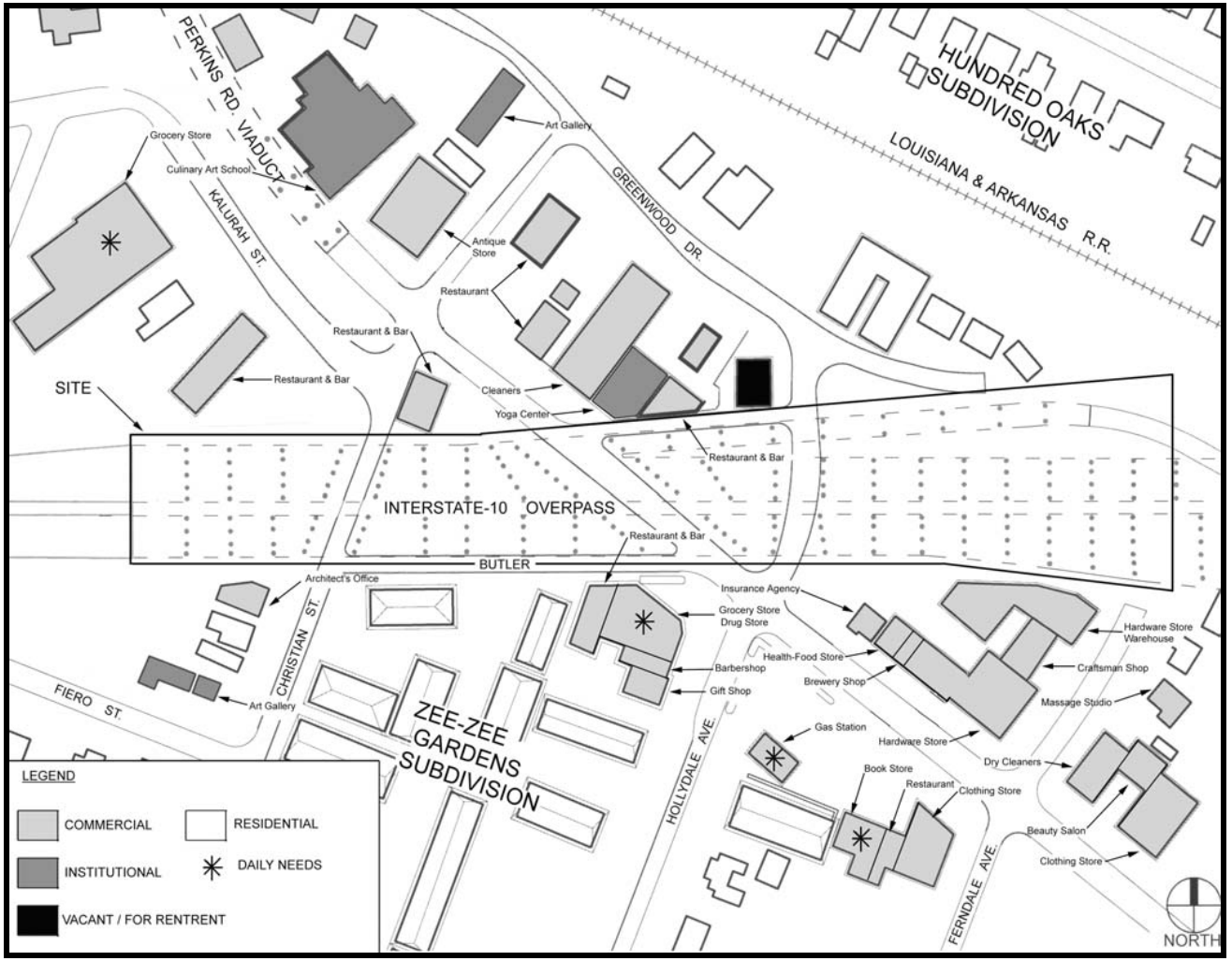

Figure 4-8 Community Capacity. This image illustrates in detail, the different resources available within the study area.

most of the buildings, making it the focal point of the commercial corridor. At ground level, the numerous columns of the structure can produce a sense of disorder and confusion.

Figure 4.9 Typical Architectural Style This image illustrates the typical architectural style of the commercial establishments within the study area (Office of Community Design and Development, 2001).

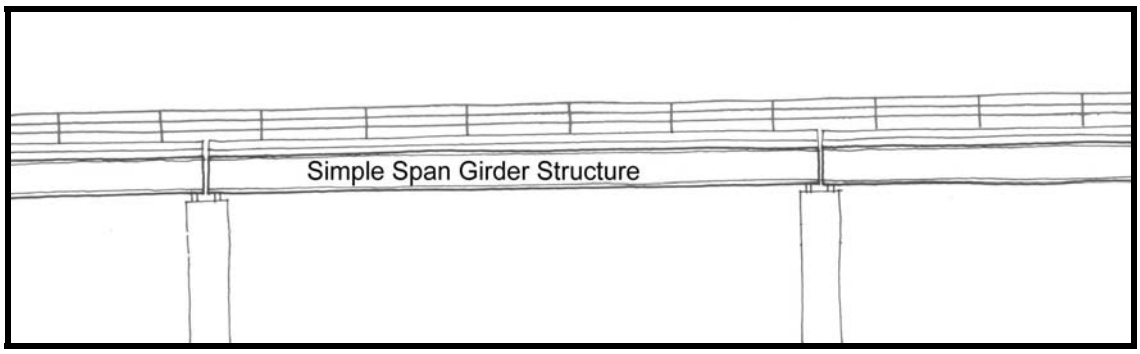

Figure 4.10 Interstate-10 Overpass Structure This image illustrates the type of elevated highway structure within the site (Rapuano et all. *The Freeway in the City,* 1968, p. 70).

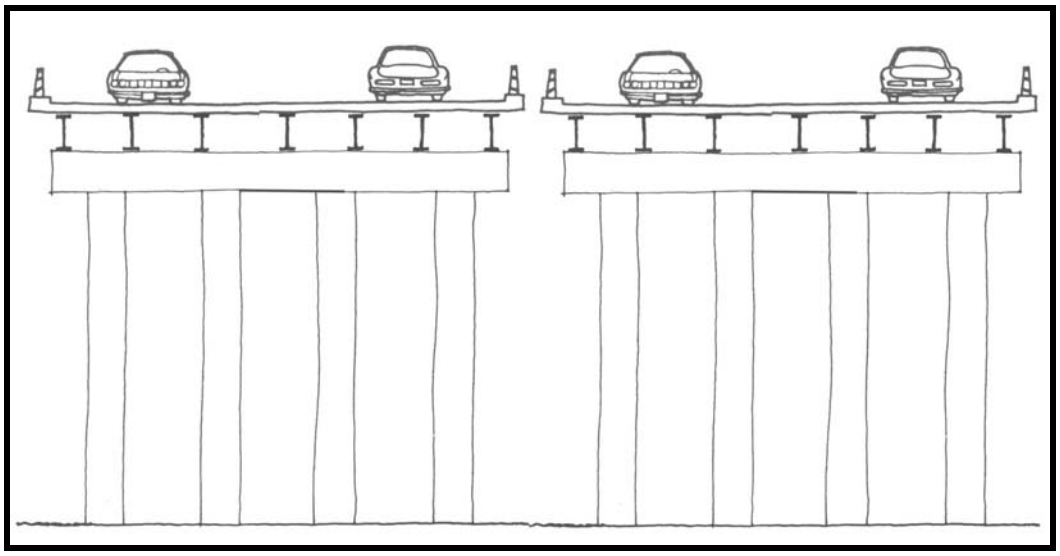

Figure 4.11 Cross Section of Interstate-10 Overpass This image illustrates a cross section of the type of elevated highway structure over the site (Rapuano et all. *The Freeway in the City,* 1968, p. 70).

Views

The spaces below the Interstate-10 at Perkins Road are divided from East to West by Hollydale Avenue, Perkins Road, and Christian Street into four sections. When looking West from Christian Street into the smallest of the four sections, one sees overgrown vegetation and an abandoned boat. The two middle sections, between Christian Street and Hollydale Avenue, are unpaved parking areas, which appear to be better maintained that the other vacant areas below the highway overpass. The largest section of all, from Hollydale Avenue to Ferndale Avenue, appears to be neglected but it is used often for parking. When looking into this area, one can see graffiti on the wall of buildings, piles of debris, and overgrown vegetation. Figure 4.12 shows one of the entrances to this area.

Analysis: The views into the spaces below interstate-10 overpass are generally aesthetically poor and obscure often producing an unpleasant sensation. These spaces

can also be perceived as unsafe. These conditions are the result of a poor maintenance, bad illumination, and lack of visibility from nearby streets into the spaces below the highway overpass.

Perkins Road is the main access to this commercial area. Therefore views into the site from this street should be prioritized. Figure 4.13 shows one of the main views of the site from Perkins Road. Other important views such as the strong axial view created by the Interstate-10 overpass when observed from ground level, figure 4.14, should be exploited as focal points within the site. Figure 4.15 is an inventory of desirable and undesirable views within the study area.

Figure 4.12 View of the Spaces Below Interstate-10 overpass Note the accumulation of garbage and overgrown vegetation in the foreground (Louisiana State University Office of Community Design and Development, 2001).

Figure 4.13 View of the Interstate I-10 Overpass This image illustrates a more pleasant view of the Interstate-10 from Perkins Road viaduct. This is image shows the shaded areas created by the elevated highway (Louisiana State University Office of Community Design and Development, 2001).

Figure 4.14 View of the Site from Perkins Road View facing West. Note the axis created by the elevated Highway Structure (Taken by researcher, Spring 2002).

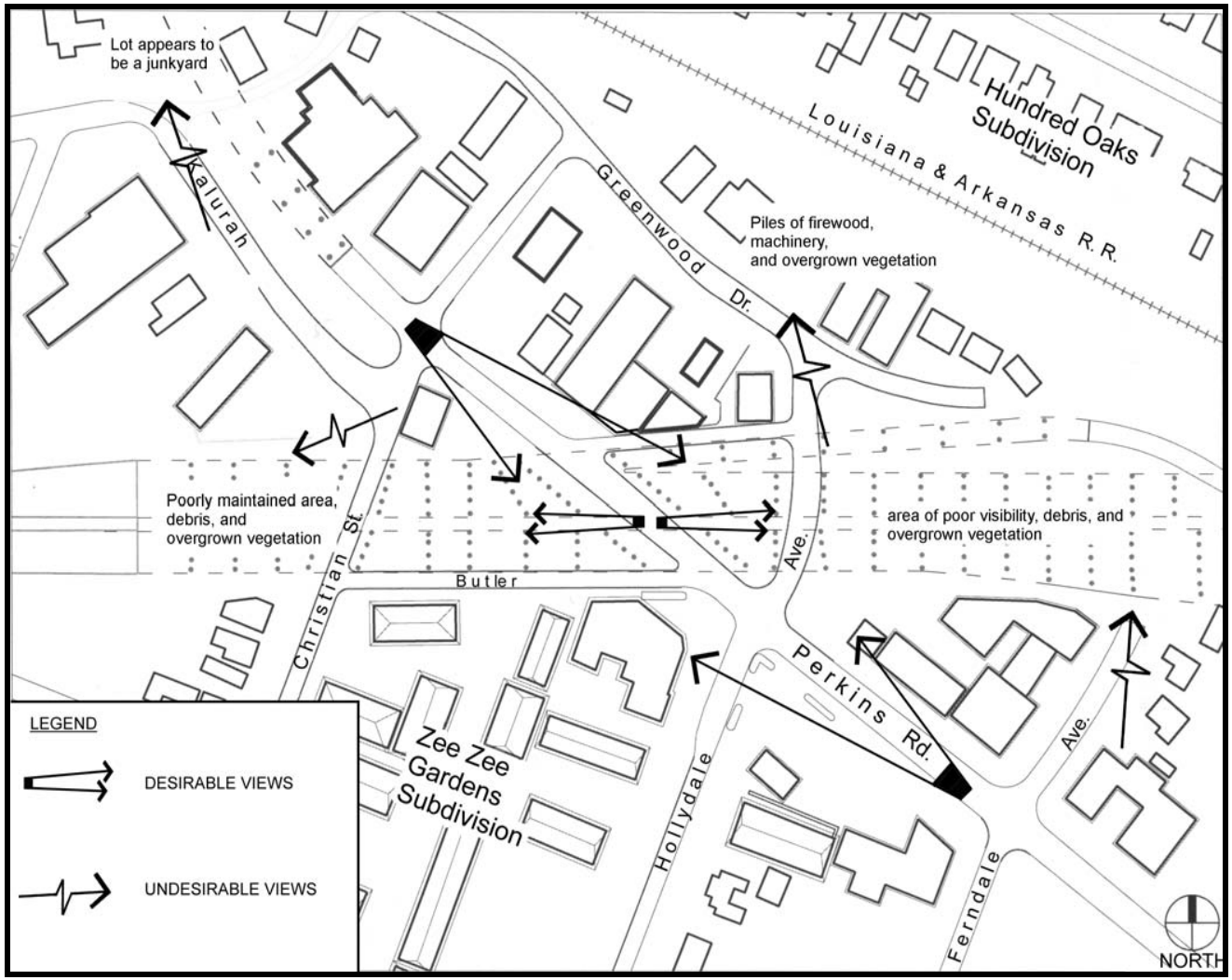

Figure 4.15 View Inventory This Image illustrates desirable and undesirable views within the study area.

Drainage and Topography

Although Perkins Road Historic Business District is relatively flat, there are changes in elevation within the neighborhoods surrounding the site. These elevation changes are best experienced when traveling along Elisalde Avenue. The highest elevation adjacent to the area is fifty-five feet above sea level and is located between Dogwood Avenue and Hillsdale Drive (to the northeast of the site). The lowest point, are The City Park Lakes.

Storm water collected within the study area, including water collected on the Interstate-10 overpass, is carried through a combination of surface and closed drainage systems to The City Park Lakes. The water collected on the Interstate-10 overpass is carried through a closed drained system that opens into the spaces below. From this point, the water runs on the surface to a series of catch basins located long the South side of the overpass and draining eventually into the City Park Lakes. Details of the drainage system and elevation changes of the study area are shown in figures 4.16 and 4.17.

Analysis: The drainage system of the Interstate-10 overpass at Perkins Road is a potential hazard for the spaces below the overpass in the event of a spillage accident. The closed drainage system of the highway opens into the spaces below. Therefore any material spilled on the highway overpass will communicate down to the spaces below. According to information obtained from Greg Jones a landscape architect with the Department of Public Works of the East Baton Rouge Parish, an accident involving the spillage of molasses occurred in the late 1980's on a section of Interstate-10 between the City Park Lakes and the site. This situation was controlled without any complications, and the spilled material that went into the drainage system was contained in the smallest lake of the City Park Lake system and later was properly cleaned.

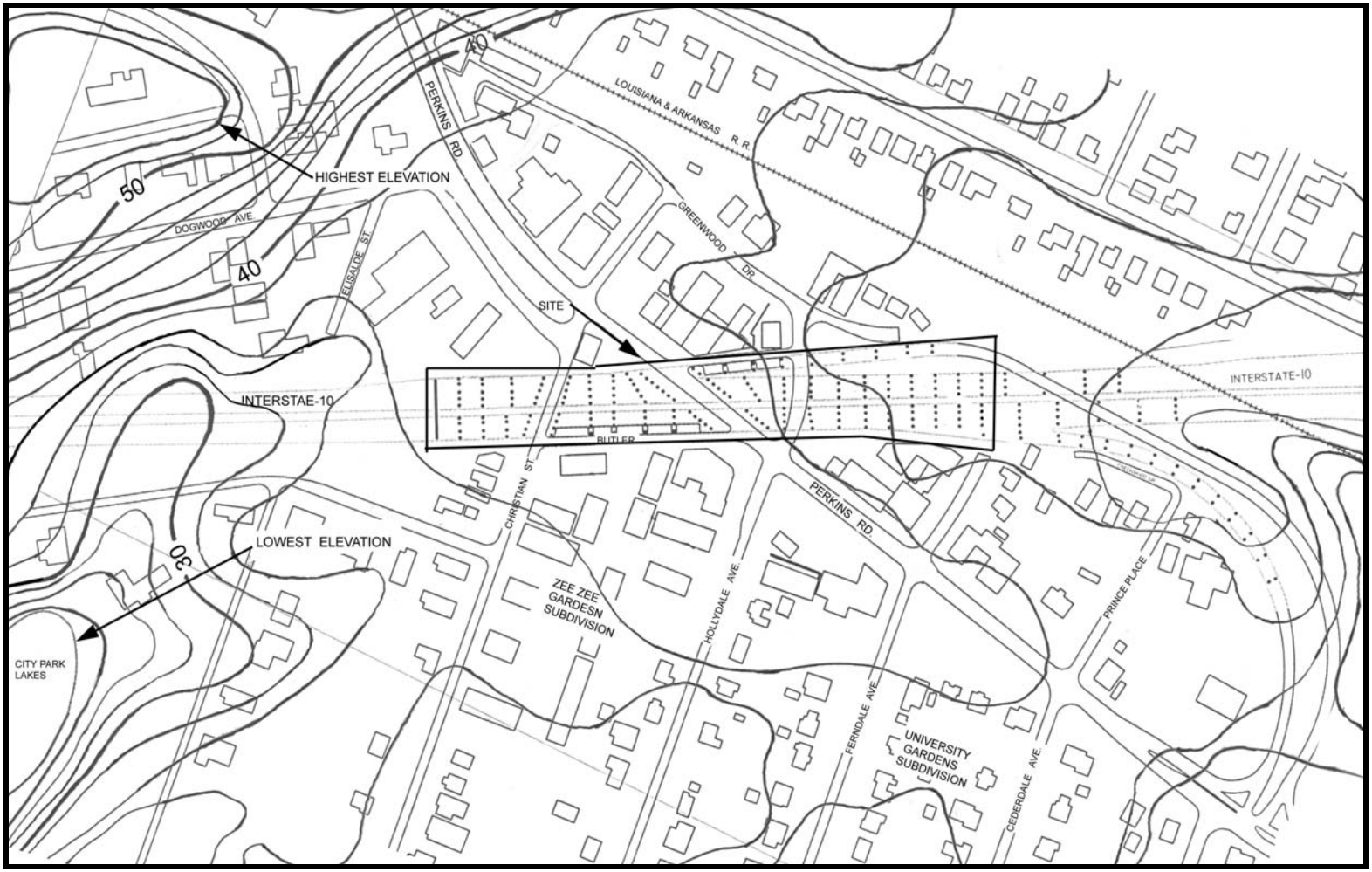

Figure 4.16. Topography of the Study Area This image illustrates the contour lines and elevations within the Perkins Road Historic Business District. The highest elevation in this area is 55 feet above sea level located on the top right corner on the image.

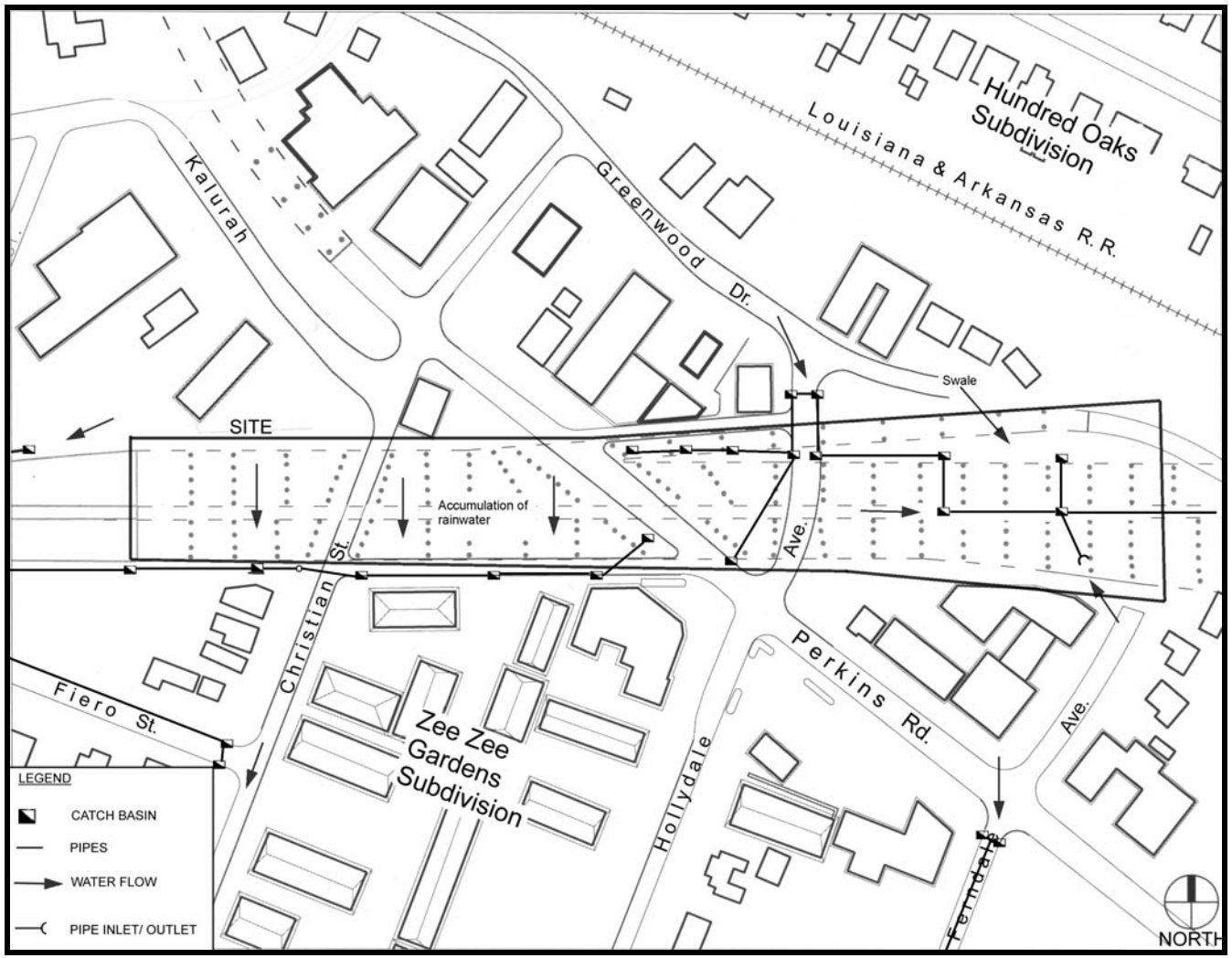

Figure 4.17 Current Drainage Conditions of the Site This image illustrates the flow of water on the surface.

Soil Conditions

The soil on the site is primarily imported fill. This soil is typically found in areas that have been filled and used for building foundations. Usually, this type of soil has poor drainage, slow permeability and is low in natural fertility with a strongly acidic to moderately alkaline reaction (United States Department of Agriculture, 1972).

Analysis: The poor fertility and permeability of the soil in the site requires the implementation of special treatment to improve these conditions in order to successfully implement a planting design.

Climate Conditions

Southern Louisiana's hot, humid climate is best characterized as sub-tropical. The average annual rainfall in this region is 65.5 inches. The average seasonal temperatures range from 57° Fahrenheit in the winter to 78° Fahrenheit in the summer (United States Department of Agriculture, 1972).

Analysis: The harsh climate during the summer months is characterized for its intense rains and high temperatures. These conditions can be uncomfortable for pedestrians, provided that there are no street trees to provide shade. Furthermore, the bus stops in the area offer no protection from the climate. Fortunately, the Interstate-10 overpass provides some protection from the rain and sun. Despite this advantages offered by the overpass structure, it prevents light and rain from reaching the vegetation beneath it.

Vegetation

Crape myrtles are the most widely used street tree in the study area. These trees are primarily planted in front of commercial establishments for aesthetic purposes but there is no coordinated effort to use them as unifying element. Other trees, like live oaks,

hackberries, pine trees and sycamores are found through out the study area in fewer numbers. Figure 4.18 illustrates the existing vegetation inventory.

Analysis: Randomly planted trees throughout the study area especially in front of commercial establishments along Perkins Road tend to break the continuity of the space. Any future planting design should reinforce the importance of Perkins Road as the main access to Perkins Road Historic Commercial District. In addition, the planting design should reinforce the small scale of the existing buildings and decrease the impact of the elevated highway within the study area. Special consideration must be taken when selecting the plant material to be placed under the Interstate-10 overpass. These plants must smaller than 12-feet, tolerate heavy shade, and conditions.

Figure-Ground

The figure-ground drawings of the Perkins Road Historic Business District help to understand the relationship between the building mass of this area and the open spaces surrounding them. Through the analysis of these diagrams three distinct spaces were recognized within the study area. The first space identified is the area below the Interstate-10 overpass. These spaces are characterized by the numerous structural columns of Interstate-10 overpass that divide the area into a series of small spaces. The commercial area surrounding Perkins Road forms the second type of space. This area is defined by the tight formation of the buildings along Perkins Road. The last distinctive space corresponds to the neighborhoods surrounding the study area. The form of the spaces within these neighborhoods is less tight and follows a grid pattern that shifts as the streets intersect Perkins Road or meet the interstate. Figures 4.19 illustrate the figure-ground drawings of the study area and spaces below the Interstate-10 overpass.

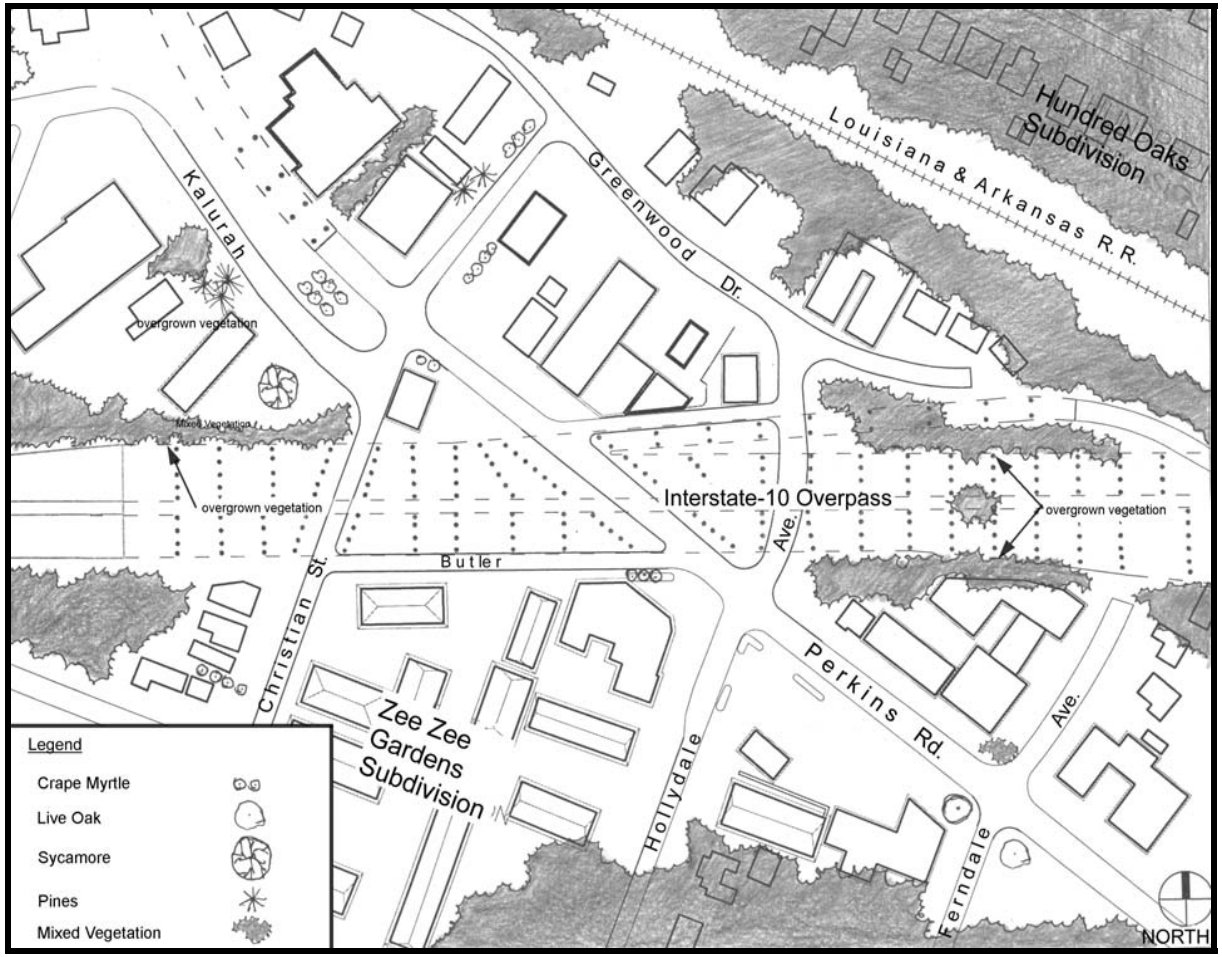

Figure 4.18 Vegetation Map This image illustrates vegetation and street trees in the study area. Note the overgrown vegetation along the Interstate-10 overpass blocks view into the spaces below the Interstae-10 overpass.

Analysis: The complex spaces created below the Interstate-10 overpass by the numerous columns can be confusing and create voids that separate the commercial areas along Perkins Road. The tight formations of the buildings along Perkins Road give form to the space along the street in a desirable manner but this form is no carried all the way through this commercial area. Within the commercial areas there are some spots where the continuity of these spaces is lost.

Circulation

The analysis of the circulation patterns is important to establish the desired circulation lines within the study area. These lines are the connection between important places in this area. Circulation within the study area is divided into vehicular circulation, pedestrian circulation, parking areas, and public transportation.

Pedestrian Circulation

The highest concentration of pedestrian activity within the study area takes place along Perkins Road and underneath the Interstate-10 overpass. In other areas such as Kalurah Street, the intersection of Perkins Road and Christian Street, and the intersection of Perkins Road and Ferndale Avenue pedestrian circulation is less predominant. Currently, walkways within in the study area are not clearly defined, in poor condition or nonexistent. Connections to the residential areas to the North of the site are through narrow sidewalks along Perkins Road viaduct or by a trail that runs below this structure. Figure 4.20 illustrates the details of the pedestrian circulation and conflict areas between pedestrians and vehicles.

Analysis: The biggest problems affecting pedestrian circulation within the study area are: the absence of sidewalks or the inappropriate conditions of existing ones, poor

Figure 4.19 Figure-Ground of the Study Area This image illustrates the solid structures in black and the space as white showing the forms created by the buildings.

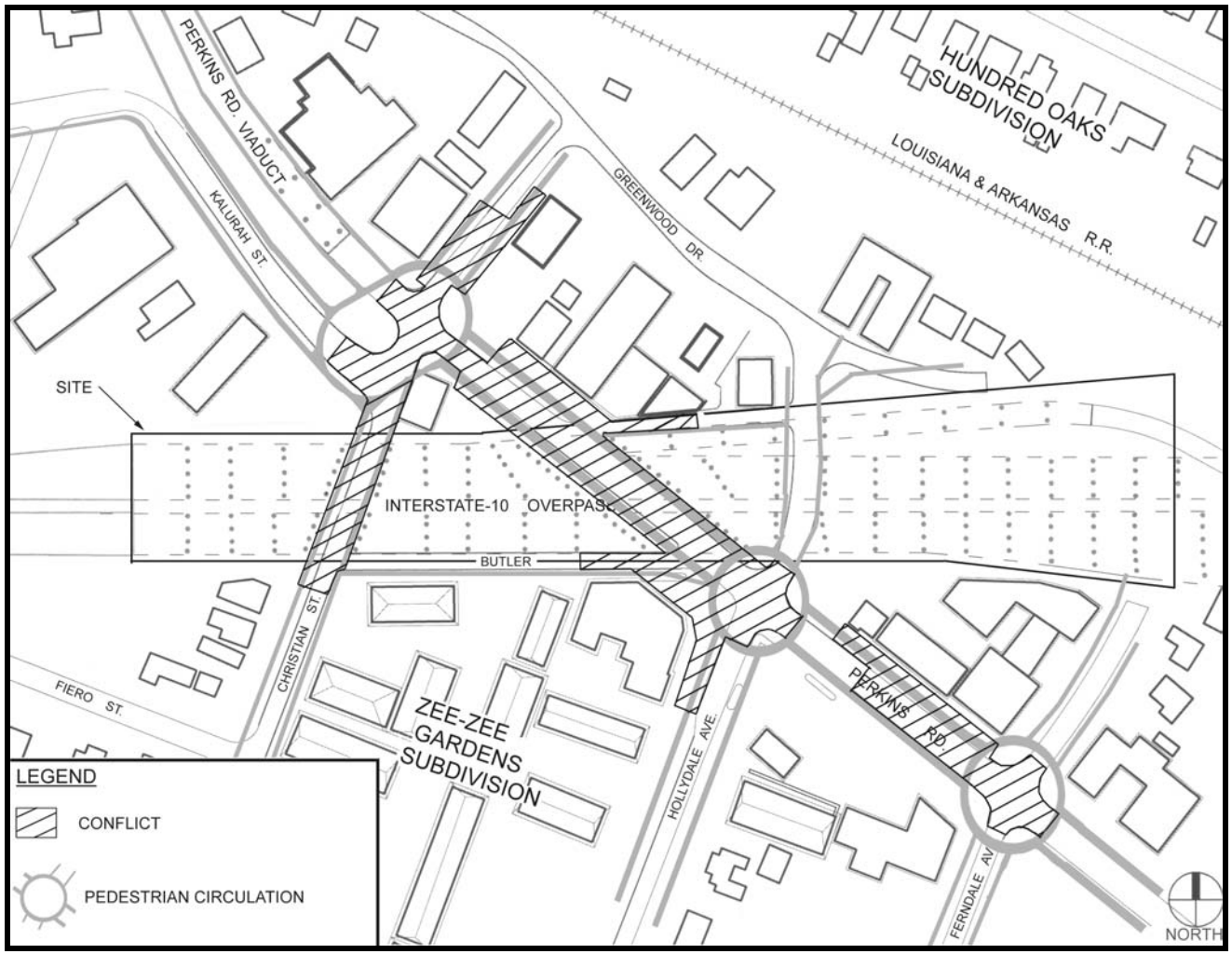

Figure 4.20 Pedestrian Circulation. This image illustrates pedestrian circulation and areas of conflict between vehicles and pedestrians.

definition between parking areas and walkways, and the inadequate connections between the residential areas and Perkins Road Historic Business District. As a consequence of these conditions, pedestrians are often forced to walk on the shoulder of the road to avoid walking through grassy areas or dirt. Some of existing sidewalks are in fairly good shape, often, these sidewalks are blocked by parked cars. The connection between the neighborhoods to the North of Perkins Road and the study area is through narrow sidewalks along Perkins Road viaduct. These walkways are in good conditions but they are appear to be unsafe due to their proximity to the diving lanes. Another existing connection to these residential areas is through a trail that runs under Perkins Road viaduct. Pedestrians using this trail must cross trough desolate areas filled with abandoned machinery and over the railroad tracks to reach the commercial district of Perkins Road. Another inconvenience to pedestrians are the cars parked in front of the commercial establishments along Perkins Road, which often block the walkways forcing pedestrians to use the shoulders this street. There are some critical points of conflict between vehicles and pedestrians at the entrances to the parking areas below the interstate and along Perkins Road at the intersections of Christian Street, Butler, and Ferndale Avenue.

Vehicular Circulation

Vehicular circulation in the study area is mainly two-way excluding a section of Christian Street, which is one way from Perkins Road to Greenwood Drive. According to the 1999 traffic counts by the Traffic Engineering Division of the Department of Public Works of the East Baton Rouge Parish, Perkins Road has an average of 13,247 cars per day from Hundred Oaks Avenue to the ramps of Interstate-10. The heaviest transited

road in this area is Interstate-10, with an average of 118,341 cars per day from Dalrymple to the ramps of Perkins Road. The highest volume of cars within the study area appears to be around 12:00 pm, between 4:00pm and 6:00pm, and after 7:00pm. Details of the vehicular circulation of the area are shown in figure 4.21.

Analysis: Noise produced by the vehicles traveling on the Interstate-10 overpass does not appear to affect the commercial establishments adjacent to this structure. The noise problem appears to be worse on the West side of the overpass were the elevated highway meets the ground. A major problem in the study area, considering the amount of pedestrians passing through the Perkins Road Historic Business District, is the high speed at which vehicles often travel through this area. Another issue that affects the flow of vehicles along Perkins Road is the layout of parking spaces perpendicular to this road. This type of parking layout is unsafe for the reason that it forces the drivers to backup and transect Perkins Road in a perpendicular manner.

Parking

Currently there is space to accommodate 90 to 100 cars in the spaces below the Interstate-10 overpass from Christian Street to Hollydale Avenue. This parking area is mainly used by those commercial establishments facing the highway overpass such ass Ivar's, Georges and Zee- Zee Gardens bar and restaurant. Currently, these parking areas are not paved, lack the proper pedestrian connections, physical impaired accessibility, appropriate lighting, and do not offer any protection to the columns supporting Interstate-10 overpass. The largest of these parking areas is currently experiencing drainage problems which causes the accumulation of water all along the main drive way. The parking areas below the interstate overpass also have a numerous entrances and lack the

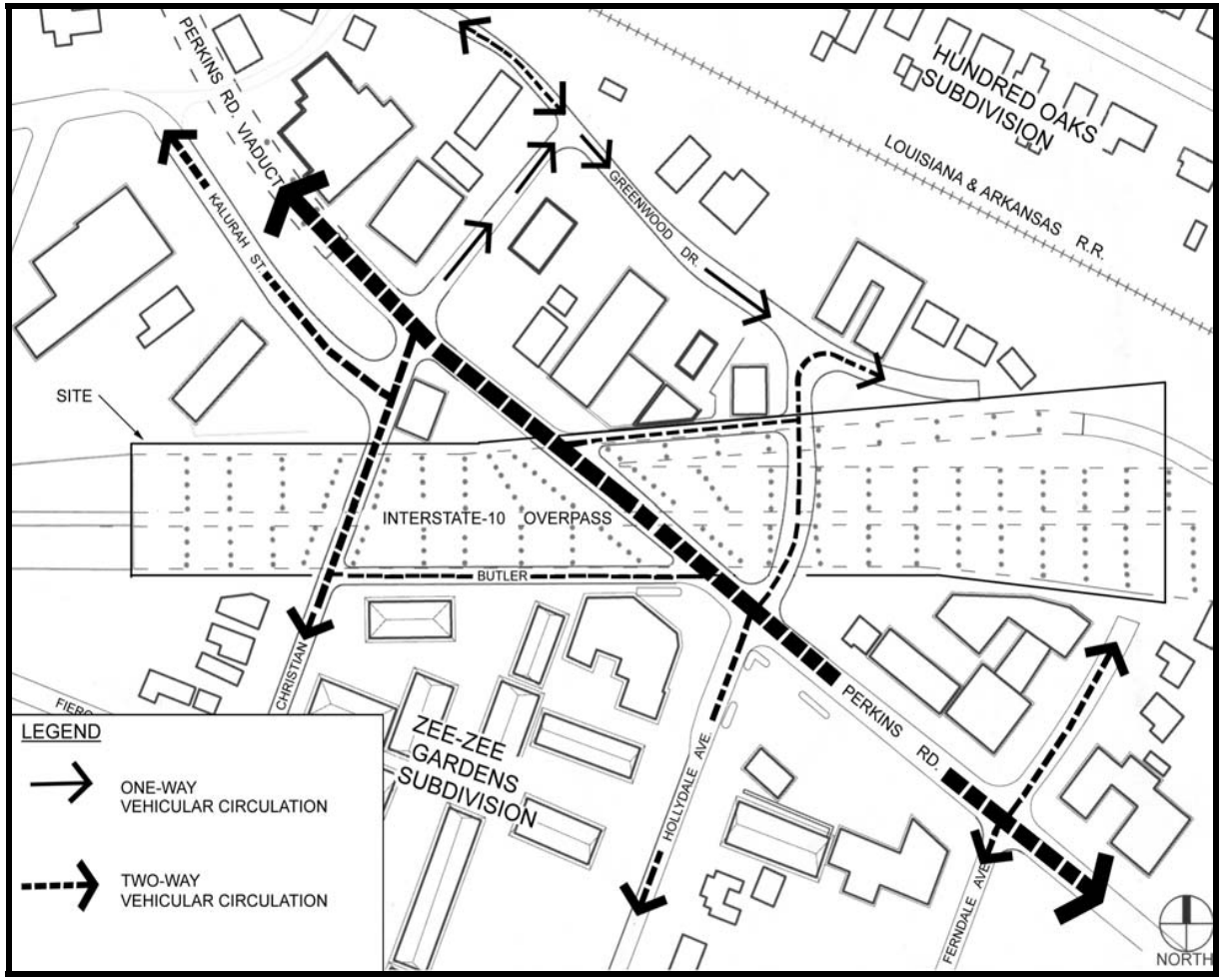

Figure 4.21 Vehicular Circulation This image illustrates vehicular circulation patterns around the site. Note the one-way circulation that occurs on the northern section of Christian Street and along Greenwood Drive.

appropriate circulation. In some of these areas overgrown vegetation blocks the visibility from the streets making these parking areas unsafe. Figure 4.22 illustrates the current conditions of the parking areas.

Analysis: According to the capacity of the business adjacent to the site there is a need for 325 parking spaces within the study area. A major problem within the parking areas under the Interstate-10 overpass is the lack of protection offered to the columns of the highway structure. This issue presents a high risk for all the users of the parking areas as well as to the users of the highway overpass. Other minor problems such as the lack of proper pavement, directional flow, designated parking spaces, proper lighting, and poor drainage make the usage of the parking spaces below the Interstate-10 overpass uncomfortable for the customers of this commercial area. Some of these spaces such as the ones at the end of Ferndale Avenue are isolated and lack the proper visibility from the street or "eyes on the street". According to Oscar Newman in his work *Creating Defensible Spaces* the lack of visibility from nearby homes or stores make these spaces less secure. According to information obtained from an interviews with the owner of Perkins Hardware store a couple of robberies in this area where attributed to the isolation of these spaces. There are other problems with the spaces below the Interstate-10 such as the multiple entrances to these spaces, and the layout of the columns, which can be confusing for some drivers. Other parking areas located along Perkins Road are arranged perpendicularly to the road occupying the walkways.

Public Transportation

Capital Transportation Corporation offers public transportation services within the study area by means of route College-5. This route connects the bus terminal located in

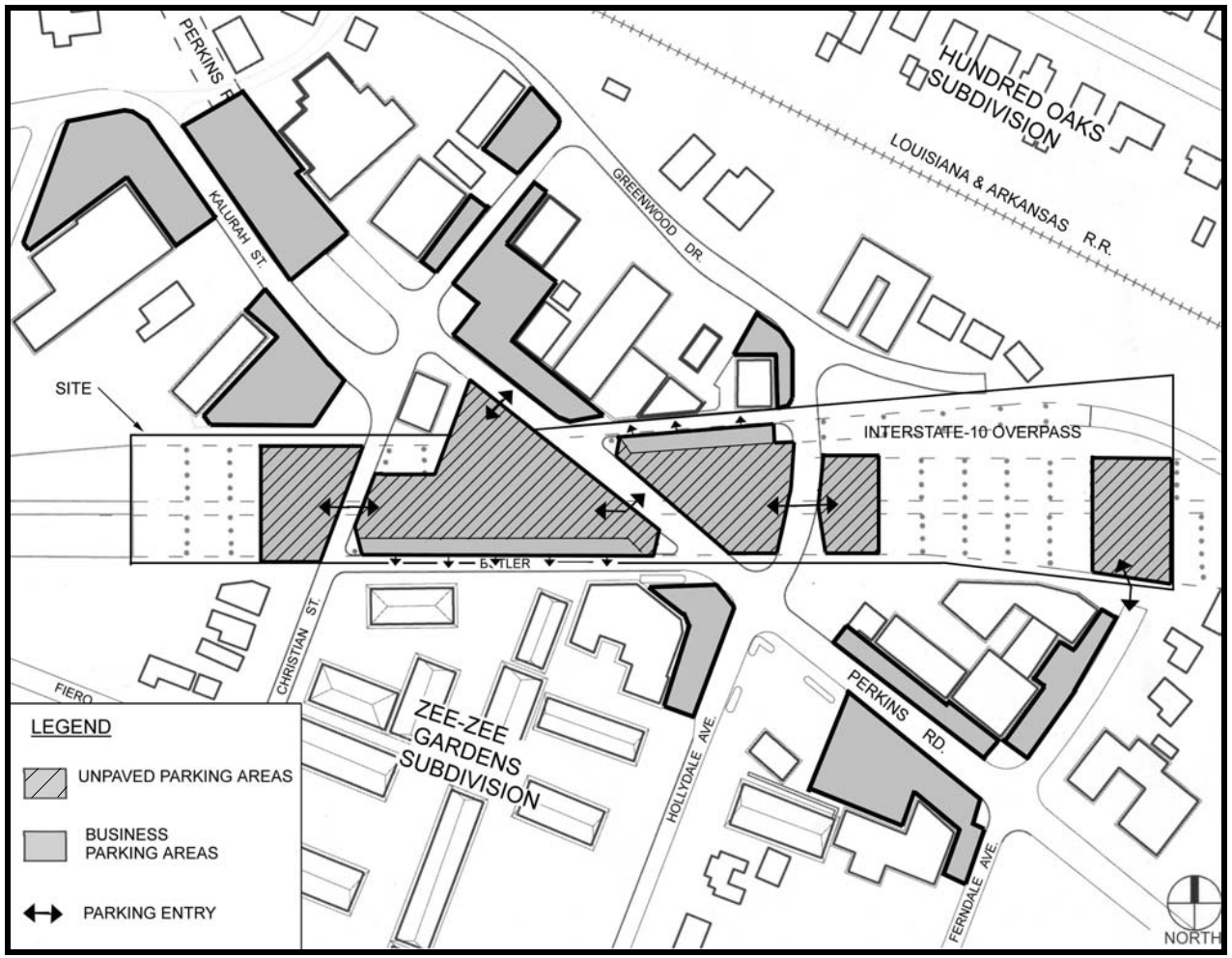

Figure 4.22 Current Parking Layout Note the large amount of parking areas within the study area. Currently, most of the site is used as a parking area.

Downtown Baton Rouge, Perkins Road Historic Business District, and City Place Shopping Center. The bus stops within the study area are located along Perkins Road at the intersection of Christian Street, and Ferndale Avenue. Public transportation services during the week are from 6:30 am to7:10 pm and on Saturdays are from 7:30 am to 7:00pm. Figure 4.23 illustrates route College-5 and the bus stops on the site.

Analysis: The lack of facilities, such as seating areas or protection against the weather, on the designated bus stops forces the users of this service to wait for the bus seating on curbs or standing up completely unprotected from climatic conditions. The absence of an extended service after 7:00pm limits the number of customers of those commercial establishments that are open until late at night.

Summary

In order to address the issues associated with the current conditions of the spaces below the Iterstate-10 overpass at Perkins Road one must understand the background, character, form, and function of this area. To facilitate the study of all the previously mentioned aspects an inventory analysis was divided into the following categories: neighborhood character, figure-ground diagrams, and circulation patterns.

The information covered in these areas was obtained from many sources such as the Baton Rouge Department of Public Works, Louisiana State University Office of Community Design and Development, Federal Highway Administration Louisiana Division, Louisiana Department of Transportation, interviews with business owners within the study area, and site observations. The following paragraphs describe the character of the study area and discuss the opportunity for design intervention.

The historical review of the study area reveals that the Perkins Road commercial area evolved as part of Zee-Zee Gardens and Hundred Oaks Subdivisions. By 1925 these

neighborhoods were already established and this part of Perkins Road was beginning to flourish as a commercial area. Early in the 1930's the Perkins Road commercial area occupied three city blocks and was formed by a mixture of offices, retail stores, a dry cleaner, auto repair shops, a post office, and a Baptist church. During the early 1960's,

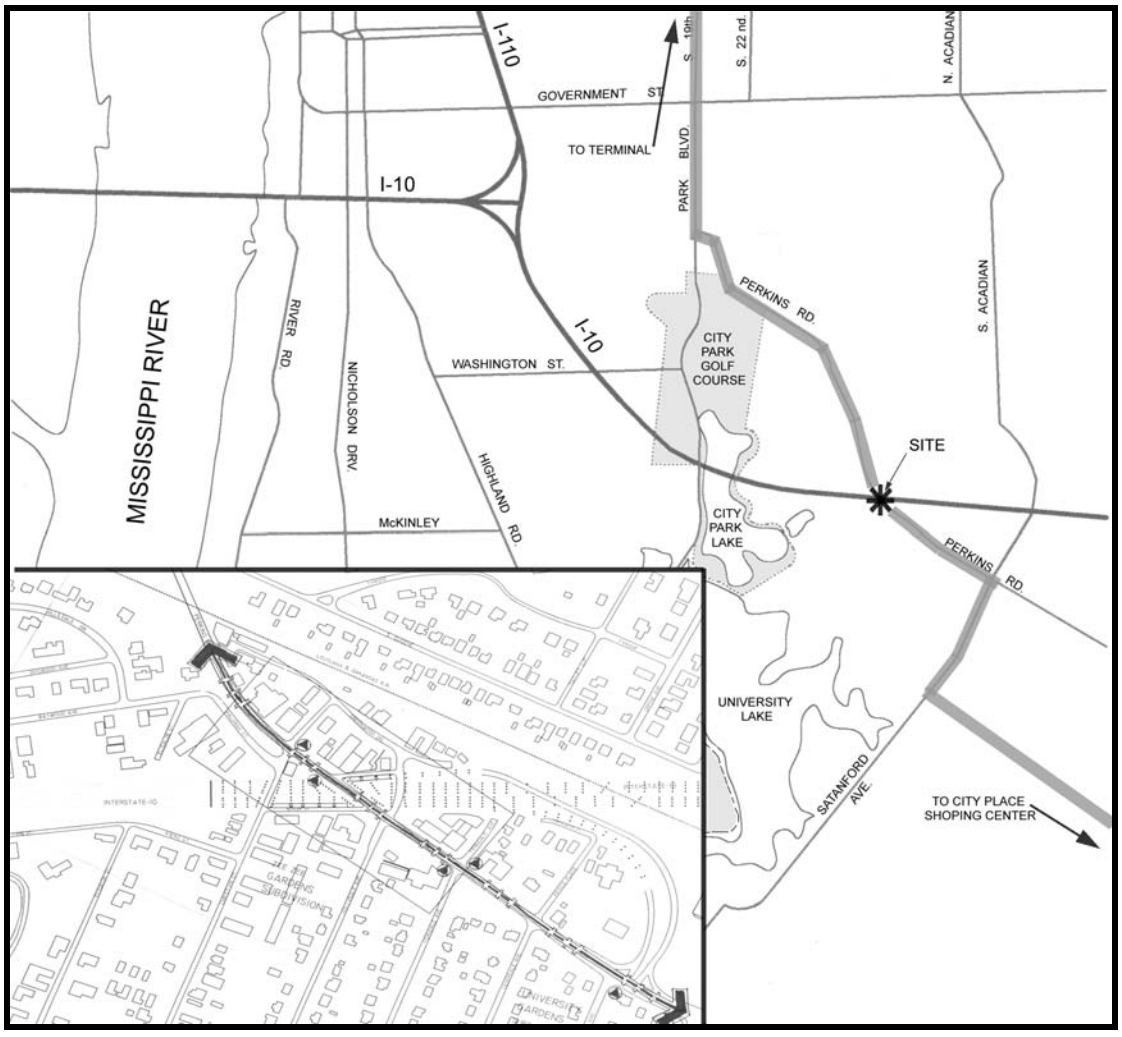

Figure 4.23 Public Transportation. This image illustrates the route College-5 and the bus stops along Perkins Road.

this small business area went through series of changes caused by the construction of the Interestate-10 overpass crossing through the center of this commercial area. The development of the elevated expressway separated Hundred Oaks Subdivision from Perkins Road commercial area, divided the Zee Zee Gardens Subdivision, and forced the relocation or transformation of commercial buildings. Furthermore, the resulting underdeveloped spaces below the Interstate-10 overpass at Perkins Road divided the commercial area and left a gap that became a no-mans land.

After the development of the Interstate-10 in an attempt to preserve the commercial tradition of northern Perkins Road business area the local merchant association named the sector Perkins Road Historic Business District, referring to all the commercial establishments from the Interstae-10 ramps to Perkins Road viaduct. Despite the drastic transformation Perkins Road Historic Business District went through during the development of the Interstate-10 overpass businesses in the area prospered and today this area is an important commercial sector within Baton Rouge. Currently, the Perkins Road Historic Business district is formed by a mixture of restaurants, bars, shops, offices, and the Culinary Art Institute of Louisiana all in a neighborhood-geared atmosphere.

The character of the Perkins Road Historic Business District is expressed through the materials, small scale of the buildings, and the varied architectural styles of the neighborhoods surrounding the area. Many of the structures within the study area were originally built for utilitarian purposes, being a commercial area since the 1930's. Buildings in this commercial area are rectangular made of a combination of brick, wood, and steel no higher than two stories. This type of architecture is typical of many traditional commercial areas around the United States. According to the 1990 Census statistics most of the structures in the study area were built between 1940 and 1950, but

there are a considerable amount of buildings from that date back even further. Land uses within the study area have changed little since the establishment of Perkins Road Historic Business District. However, the relocation of the Culinary Art Institute of Louisiana from downtown Baton Rouge to Perkins Road Historic Business District in the year 2000 introduced an institutional element into the area. Other land uses, such as residential and commercial, are well established and functioning, but the small industrial area to the North of the site has become less predominant through the years.

The residential areas surrounding the site are predominantly white, with a median household income higher than the average for the East Baton Rouge Parish. Most residents of these communities have attained a bachelor degree or a higher education level. The average age of the resident in this area is between 35-45 years. The analysis of the demographic characteristics of the study area reveal common traits that reinforce the sense of community among the residents of the area. The following list summarizes the issues and opportunity areas identified throughout the site inventory and analysis.

Neighborhood Character

- The spaces below Interstate-10 lack character.
- The overall identity of the Perkins Road Historic Business District is weak.
- The neighborhood-geared business character of the Perkins Road Historic Business District needs to be reinforced.
- Undefined entrances to the Perkins Road Historic Business District fail to create a sense of arrival.
- Poor connections between residential areas and Perkins Road Historic Business District.

Zoning:

- There is a lack of buffer zones between parking, commercial, and residential areas.
- Buildings setbacks are too far from the Perkins Road.

Architecture:

- The scale of Interstate-10 overpowers the buildings adjacent to this structure.
- The human scale of Perkins Historic Business District needs to be preserved.

Views:

- Unwanted views under the Interstate-10 overpass are produced by accumulation of debris and overgrown vegetation.
- Views along Perkins Road need to be improved since this is the primary entrance to the site.
- Poor illumination under the Interstate-10 overpass makes the area appear unsafe.
- Lack of screening of utility areas produce unwanted views within the study area.

Drainage:

- Accumulation of storm water on the spaces below the Interstate-10 produced by poor drainage of the surfaces.
- The Interstate-10 overpass drainage system opens into the spaces below potentially affecting this area in case of a spillage accident.

Vegetation:

- Poorly conceived plantings along Perkins Road interrupt the continuity of the space.
- There are uncomfortable sun-exposed walkways.
- Randomly planted trees and plant material in front of commercial establishments make the area appear disorganized.
- Lack of street furnishings such as light poles, benches, and trash cans.

Figure-Ground

- There is no established hierarchy between the different types of spaces (commercial, residential, and the spaces below Interstae-10).
- Vague definition of the street space along Perkins Road.

Circulation

Pedestrian Circulation:

- Poor conditions of walkways.
- Absence of physically challenged accessibility.
- Sun exposed walkways.
- Lack of pedestrian connections between neighborhoods and Perkins Road Historic Business District.

Vehicular Circulation:

- Need to establish proper vehicular circulation within parking spaces below the Interstate-10.

- Entries to parking areas below Interstate-10 overpass are not properly identified.

Parking:

- According to the capacity of the commercial establishments adjacent to the Interstate-10 overpass minimums of 120 parking spaces are needed.
- There are no parking spaces for the physically disabled in the spaces below the Interstate-10. • Entrances to parking areas under the Interstate-10 overpass are not properly defined and dangerous.
- The spaces below the Interstate-10 are poorly illuminated.
- Most parking areas under the Interstate-10 are unpaved.
- The structural columns supporting the Interstate-10 overpass are not protected from the cars that use the area as parking.

Public Transportation:

- Extended bus services are needed to increase the number of customers during the weekends and nights.
- Bus stops are poorly defined.
- Bus stops lack the appropriate facilities (seating areas, protection climatic conditions, lighting etc.).

CHAPTER 5: PROGRAM DEVELOPMENT

Introduction

The program is a summary of all the research that serves as a checklist to compare with the proposed design (Booth, 1990). According to Booth "a program is a list or outline of all the elements the design solution must include and satisfy." The program is an integral part of this thesis, is were the elements and requirements needed to produce a design solution for the issues concerning the empty spaces below the Interstate-10 at Perkins Road are listed.

The program elements for the redevelopment of the spaces below the Interstae-10 overpass were developed after identifying the problem areas through site inventory analysis. The information used to determine the needs of was obtained from federal, state, and local agencies such as the Federal Highway Administration Louisiana Division, Louisiana Department of Transportation, and The Baton Rouge Department of Public Works. Information was also obtained from the Louisiana State University Office of Community Design and Development, site observations, and interviews with business owners in the study area.

Neighborhood Character

The image, quality of spaces, and contextual characteristics of the study area influence the program elements in this section.

Identity

- Provide the spaces below the Interstate-10 overpass with an identity.

- Preserve and reinforce the "neighborhood-geared" character of Perkins Road Historic Business District.
- Change the appearance of the warehouse at the end of Ferndale Avenue.

Zoning and Land Use

- Change light industrial zones M-1 to light commercial zone C-1.
- Maintain the low-density commercial aspect of Perkins Road Historic Commercial District.
- Implement buffer zones on parking areas.
- Provide vacant lots on south side of the overpass with proper zoning.

Architecture

- Preserve the human scale of the structures throughout the study area.
- Minimize the adverse effect produced y the massive scale of the Interstae-10 overpass.
- Promote the development of tight building structures such as the ones existing in the area.

Views

- Screen undesirable views giving primary consideration to those areas, which lack the appropriate maintenance.
- Organize views within the spaces below the interstae-10 overpass.
- Enhance the views looking into the spaces below the Interstate-10 overpass.

Drainage and Topography

- Restore the catch basins that are not working properly.

- Incorporate drainage system of the overpass into the principal drainage system below grade.

Vegetation and Street Furnishings

- Provide street trees and plantings along principal roads.
- Screen parking lots.
- Provide street furniture such as benches, light posts, garbage receptacles and signs.

Figure Ground

The program elements in this section area related to the figure-ground studies of this area. These elements affect directly the shape of the space surrounding the site as well as those within this commercial district of Perkins Road.

- Promote the development of buildings tight together
- Reduce the amount of open spaces within the study area.
- Improve the transition among the areas separated by the Interstae-10 overpass in this commercial sector of Perkins Road.

Circulation

The program elements associated to the circulation within the site and surrounding areas affect the way vehicles and people move around the site. This also affects the way the people experience the site.

Pedestrian Circulation

- Improve the conditions of existing walkways.
- Develop pedestrian connections between the residential commercial and parking areas.

- Improve the aesthetic quality of the pedestrian environment.
- Provide access ramps compliable with the ADA regulations.
- Reduce areas of conflict between pedestrians and vehicles.

Vehicular Circulation

- Establish an adequate vehicular circulation within the parking areas under the Interstae-10 overpass.

Parking

- Develop 325 parking spaces for commercial use.
- Improve parking facilities such as illumination, paving material, accessibility, and entries.
- Improve parking layout under the Interstate-10 overpass.
- Consolidate the scattered parking spaces through out the Perkins Road Historic Commercial District.
- Establish proper lighting system on parking areas
- Identify proper entrances to the parking areas under the Interstate-10 overpass.
- Protect the structural columns of the Interstae-10 overpass.

Public Transportation

- Identify main bus stops
- Provide seating areas and overhead protection.
- Improve bus stop existing facilities.

CHAPTER 6: DESIGN PROPOSAL

Introduction

The design for the spaces below the Intestate-10 at Perkins Road is a direct response to the issues and opportunities identified through the site analysis. After gathering and analyzing all the information from the site the conclusions were compiled into a program presented in the previous chapter. The summary of the program elements and their respective design solutions are presented in tables 6.1 and 6.2. This chapter also presents a thorough discussion of the concept and design.

Concept

Since late 1920's the northern Perkins Road commercial strip, known as Perkins Road Historic Business District by the locals, has been the home of many neighborhood-geared business satisfying the needs of surrounding subdivisions. During the late 1950's early 1960's the development of the Interstate-10 overpass crossing through this commercial area caused the relocation of families and segregated the subdivisions to the North of Perkins Road changing the character of this neighborhood commercial area.

Despite the drastic changes this small commercial district of Perkins Road went through it has continued to be a desired destination among the locals and resident of the East Baton Rouge Parish. Today Perkins Road Historic Business District is a bustling commercial zone that thrives with visitors on a daily basis.

Regardless of the success of the Perkins Road Historic Business District as a dynamic business hub the lack of sidewalks, unpaved parking areas, no physically impaired accessibility, and poor aesthetic quality of the commercial areas in particular the

Table 6.1 Program Elements and Design Solution

PROGRAM ELEMENT	DESIGN SOLUTION
NEIGHBORHOOD CHARACTER	**NEIGHBORHOOD CHARACTER**
IDENTITY • Promote and reinforce the "neighborhood-business" character of the commercial strip. • Provide the spaces below I-10 overpass with an identity. • Change the appearance of the warehouse at the end of Ferndale Ave.	IDENTITY • Promote and reinforce the "neighborhood-business" character of the commercial strip. • Provide the spaces below I-10 overpass with an identity. • Change the appearance of the warehouse at the end of Ferndale Ave.
ZONING & LAND USE • Eliminate light industrial zoning (M-1). • Implement buffer zones on parking areas. • Provide vacant lots on south side of I-10 overpass with the proper zoning.	ZONING & LAND USE • Eliminate light industrial zoning (M-1). • Implement buffer zones on parking areas. • Provide vacant lots on south side of I-10 overpass with the proper zoning.
ARCHITECTURE • Preserve human scale of Perkins Road Historic Commercial District. • Bring down the massive scale of the I-10 overpass.	ARCHITECTURE • Preserve human scale of Perkins Road Historic Commercial District. • Bring down the massive scale of the I-10 overpass.
VIEWS • Improve views along Perkins Road. • Organize views within the spaces below the I-10. • Screen at-grade section of I-10. • Improve visibility from streets into spaces below the I-10.	VIEWS • Improve views along Perkins Road. • Organize views within the spaces below the I-10. • Screen at-grade section of I-10. • Improve visibility from streets into spaces below the I-10.

(table cont.)

PROGRAM ELEMENT	DESIGN SOLUTION
FIGURE GROUND • Reduce the amount of open spaces within the study area.	**FIGURE GROUND** • Develop a new commercial building on vacant lots to the South of the I-10 overpass.
CIRCULATION PEDESTRIAN CIRCULATION • Improve conditions of existing sidewalks. • Provide connections between residential, commercial, and parking areas. • Improve aesthetic quality of pedestrian environment. • Minimize the conflict areas between vehicles and pedestrians. VEHICULAR CIRCULATION • Establish proper vehicular circulation within parking lots below I-10 overpass. • Reduce conflict between pedestrians and vehicles. PARKING • Organize scattered parking. • Provide 325 parking spaces for commercial use. • Improve parking facilities such as: illumination, drainage, entries, and pedestrian access to parking areas. • Protect the structural columns of I-10 overpass located within parking areas PUBLIC TRANSPORTATOIN • Improve bus stops signage. • Improve bus stop facilities.	**CIRCULATION** PEDESTRIAN CIRCULATION • Redesign existing sidewalks so they meet the basic standards provided by the Baton Rouge Unified Development Code of. • Design sidewalks into residential areas • Use paving materials and planting material to improve aesthetic quality of the sidewalks. • Provide access ramps on all walkways. • Design pedestrian crosswalks. VEHICULAR CIRCULATION • Provide access roads along I-10 overpass to improve circulation of main parking lot under I-10 overpass. • Establish proper entries to parking areas and provide sidewalks with 6” curbs. PARKING • Combine scattered parking spaces into a 130 parking spaces lot under the I-10 overpass. • Implement B-1 zoning on major parking areas. • Pave unpaved parking areas and provide them with lighting, drainage, and accessible parking spaces. • Provide the base of the overpass column with architectural lighting. • Create a central pedestrian deck connecting parking areas with commercial areas. • Provide 6” curbs around the columns of the overpass for extra protection. PUBLIC TRANSPORTATOIN • Redesign bus stops signs for this particular area. • Establish a main bus stop bus with waiting areas. • Provide all bus stops with lighting, seating areas, and overhead protection.

spaces below the Interstate-10 has limited the development of this area. Currently there is a need to provide proper facilities for residents and visitors of the area in a functional and aesthetically pleasing manner.

As designers we cannot recreate the conditions that once existed on Perkins Road Historic Business District previous to the development of the Interstate-10 overpass. However, we can combine elements of the environment that surrounds the Interstate-10 overpass with elements of the highway structure to create a comprehensive design that unifies the spaces below the Interstate-10 overpass with surrounding commercial areas. This design ventures into the spaces below and around the Interstate-10 overpass reestablishing the connection between commercial areas to the North and South of the elevated highway making these spaces efficient and appealing.

The proposed design solution evolved from the conceptual layout that provided a small amount of flexibility within each designated area of the site. The elevated highway and the already established commercial areas, which gave little room for further development produced the restraints to the development of the design.

Function was an important issue addressed in this design since the principal elements within the study area appeared to be unorganized. The design for the Perkins Road Historic Business District organizes all of the existing and proposed elements in relation to the commercial and residential land uses that surround the site. Organizing these elements within the spaces below the Interstate-10 provided the opportunity of developing new commercial areas, bringing together scattered parking, and creating new connections between the commercial areas and adjacent neighborhoods.

This design also takes advantage of the central location of the spaces below the

unique quality of the site supports the concept of developing the site into a node were people will arrive and then move within the Perkins Road commercial strip. This idea of transforming the site into a distribution node played an important role in the development of a logical yet functional design scheme between different elements within the study area.

Conceptual Layout

The conceptual layout establishes the location of proposed elements such as: recreation areas, new commercial areas, improved walkways, and parking areas within the study area. In order to fully develop the concept, and consequently this design, the relationship between the existing land use surrounding the Interstate-10 and the proposed elements was considered as part of the conceptual layout. The right organization of these elements was crucial for the adequate development of this particular design. Figure 6.1 illustrates the conceptual theme and figure 6.2 presents the conceptual layout, which illustrates the relationship between proposed and existing elements.

Master Plan

This master plan is only a guide for future development of the spaces below the Interstate-10 at Perkins Road. It is meant to be an example that will help the decision makers within the communities of this area during the decision making process directed towards the development this site. Inevitably, unexpected events will require changes in the master plan. However, in order to develop a unified design changes to the master plan should take place only after careful consideration. The final master plan is presented in figure 6.3 followed by a description of major changes in the area. Details and sketches of scenes from this plan are illustrated in Appendix C.

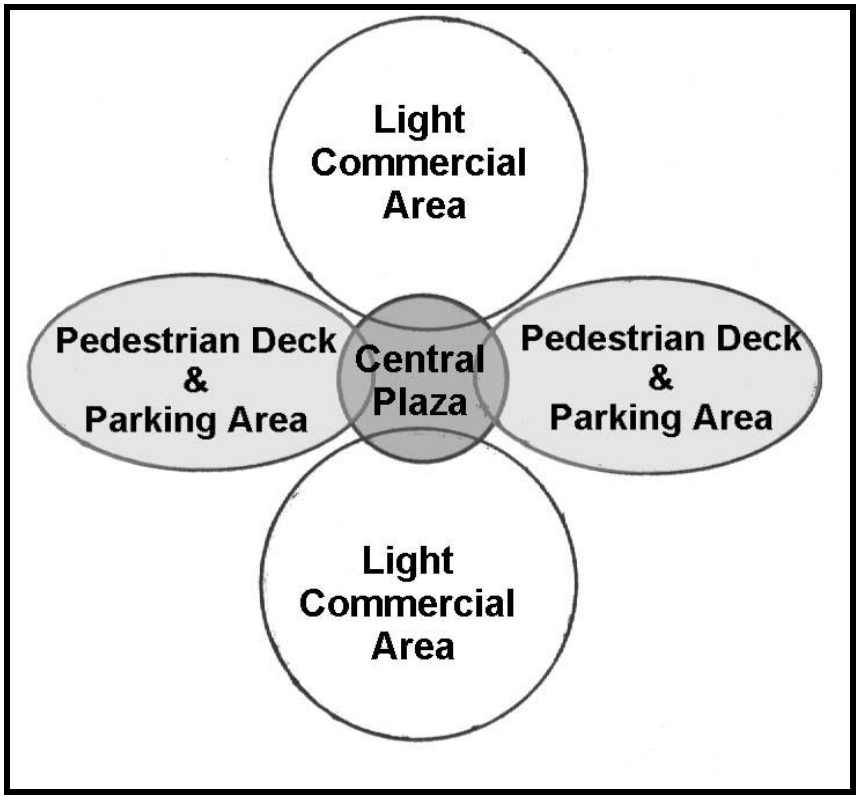

Figure 6.1 Conceptual Theme

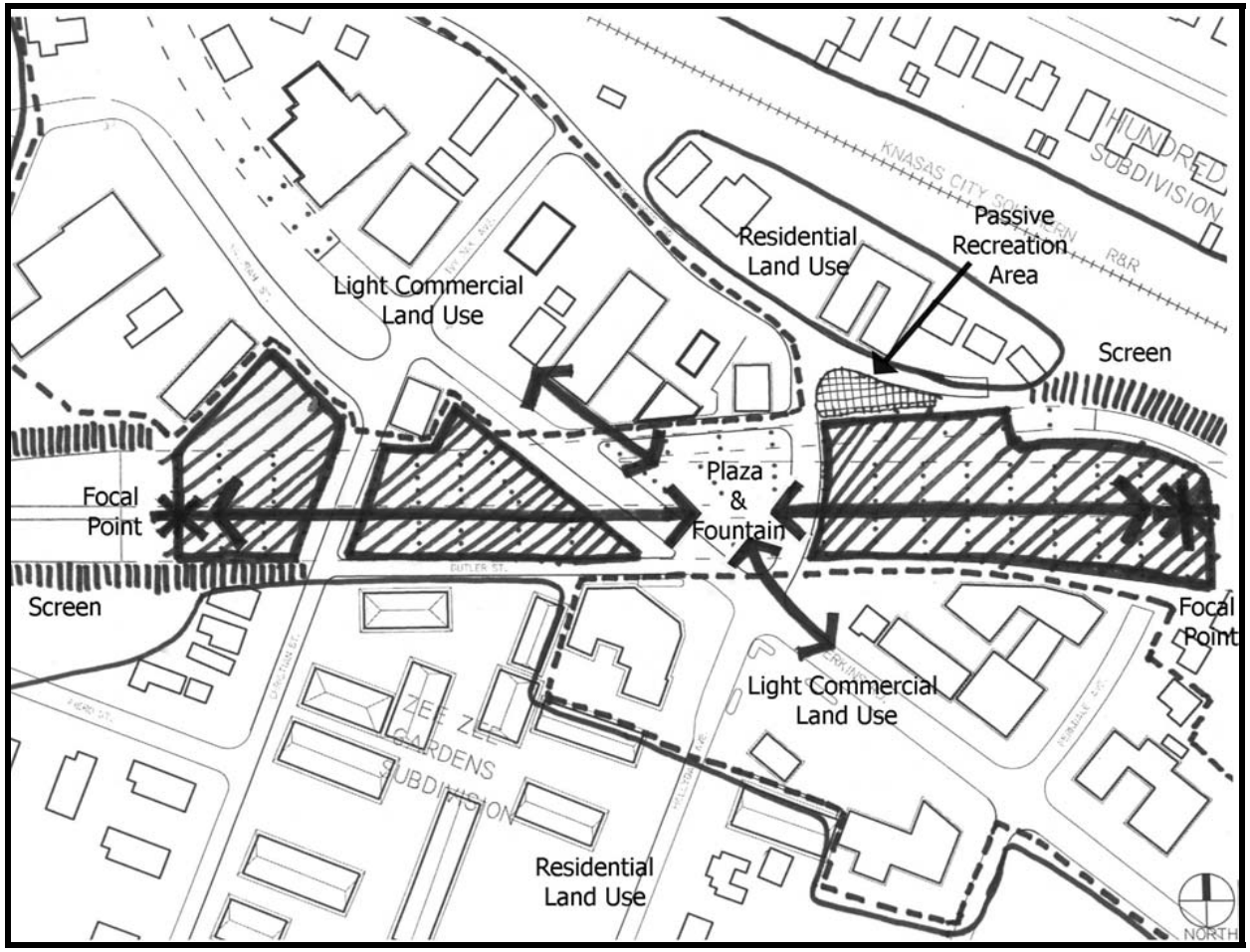

Figure 6.2 Conceptual Layout This diagram illustrates the final conceptual layout. Note the relationship between the spaces below the Interstate-10 and surrounding land uses.

Description of Master Plan

This section presents a description of the principal elements of the final design. Explanations are included for improved walkways, parking, pedestrian deck, plaza, fountain, passive recreation area, and new commercial establishments.

Improved Walkways

Sidewalks along Perkins Road historic Business District are redesigned for safety and easy access to the different commercial establishments in this area. This design eliminates the problem of vehicles parked on sidewalks by developing sidewalks with 6-inch curbs and replacing all perpendicular parking along Perkins Road with parallel parking. Access ramps are provided on specific crossings and in all corners to make this area completely accessible to the physically challenged. Street trees are planted along sidewalks to enhance the character of the street, provide shade, and to screen the views of the Interstate-10 overpass. The new sidewalks should be designed using brick pavers at the joints and around the planting beads to integrate the design of the new sidewalks with the architecture of existing buildings. See Appendix C-1 for a detailed description of the improvements made to the commercial sidewalks.

Currently the neighborhoods surrounding Perkins Road Historic Business District lack proper pedestrian connections to the commercial core forcing the residents of the area to walk on the roads creating a dangerous conflict between vehicles and pedestrian within these residential areas. The design solution suggested is to provide sidewalks that will connect the neighborhoods to the Perkins Road Historic Business District. These sidewalks will facilitate the access of pedestrians to the commercial core increasing the

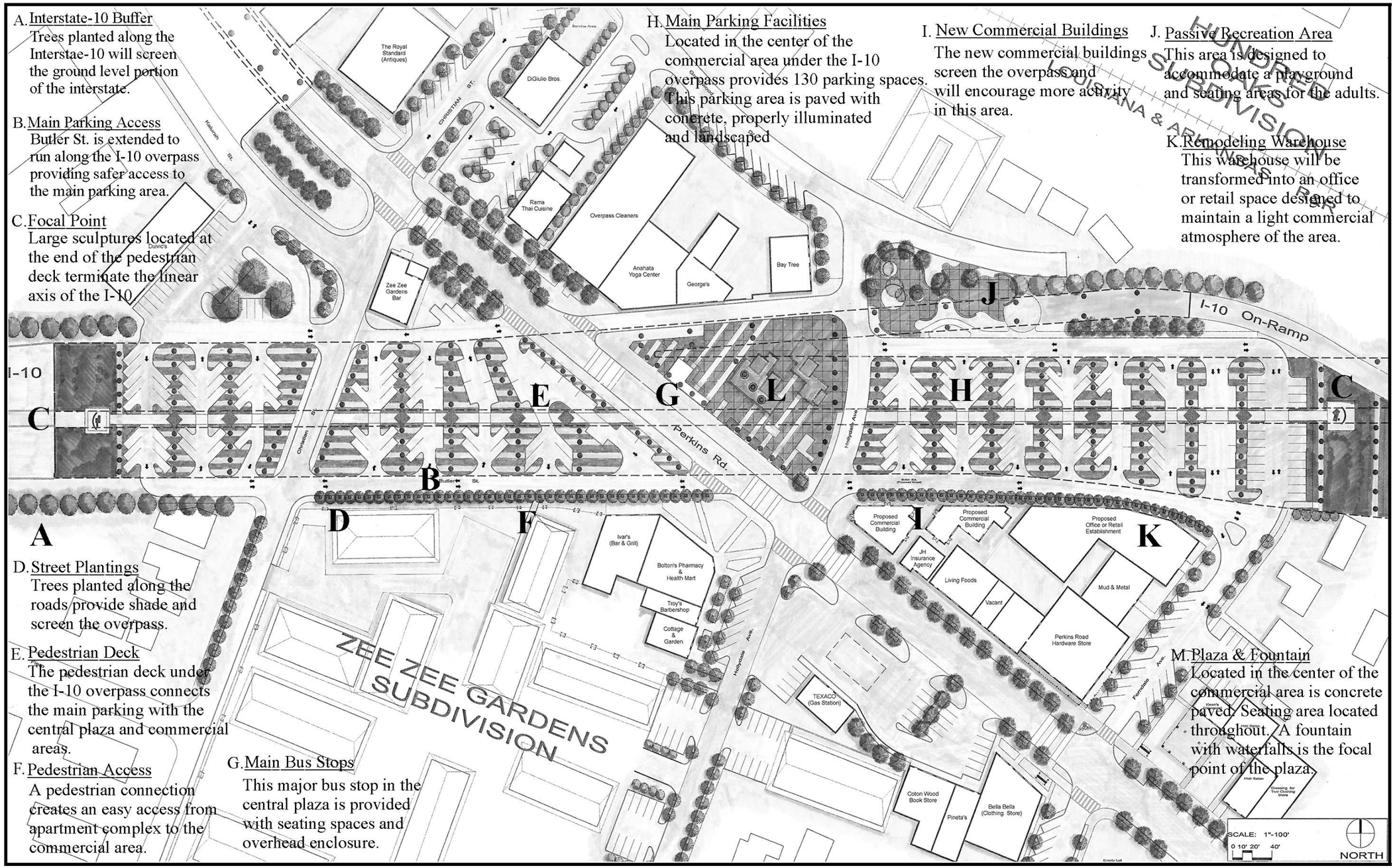

Figure 6.3 Master Plan This image illustrates the final design for the spaces below the Interstate-10 overpass at Perkins Road.

number of local customers on the area. See the Appendix C-2 for a detailed description and images of the residential sidewalks.

Parking

Developing new commercial buildings will increase the 325 parking space requirement to 340 spaces. The new parking lot under the Interstate-10 overpass will provide 130 parking spaces for commercial use and 190 parking spaces will be located throughout the business areas surrounding the Interstate-10 overpass increasing the availability of parking to 320 spaces.

The difference between required parking and the parking provided is not going to affect traffic flow or commerce of this sector of Perkins Road. The variety of commercial establishments in this area experience different parking needs throughout the day depending on their specific operating hours. For example: retail establishments will require parking between 8:00am - 5:00pm while restaurants need parking availability at lunch hour or between 5:00pm - 10:00pm. However, while collecting data from the site a maximum of 280 cars parked throughout the study area were observed. See Appendix C-3 for a detailed description and images of the main parking lot.

Bus Stops

Major bus stops within the study area are provided with seating spaces, overhead protection, and new signage to identify them clearly. These improvements along with the addition of a major bus stop facility located in the new plaza under the Interstate-10 overpass should increase the number of visitors to the area but further study of the public transportation service should be considered in order to maximize the services offered to this area.

Pedestrian Deck

Creating a pedestrian corridor running under the Interstate-10 overpass from East to West between the two decks of the highway structure was considered after realizing the potential of this area to become a connecting corridor between the commercial and residential areas surrounding the highway structure. This deck will connect parking areas under the Interstate-10 overpass with the central plaza and the different commercial areas adjacent to the overpass. Developing the pedestrian deck in this location will take advantage of the linear axis created by the elevated highway. This central axis is terminated by two focal points on both ends. A plaza with two fountains located in the center of the pedestrian deck will be the main feature carrying pedestrians from the parking areas into the center Perkins Road commercial area. See Appendix C-3 for images and a detail description of the pedestrian deck.

Plaza

The concept of developing a plaza under the Interstate-10 overpass came from the idea of creating a transition center between the commercial establishments located to the North of the Interstate-10 overpass and those on the south side of the overpass. Other influential aspects considered during the development of a plaza under the overpass was the need of a multi-use area in which residents and business owners of this area could celebrate different types of activities. On a regular basis this plaza will function as a transitional space and main focal point offering features such as a main bus stop, a fountain, and different seating areas. An important aspect of the location of this plaza is its accessibility from Perkins Road, which allows easy access to the public transportation services. See Appendix C-4 for details and a description of the area.

Fountain

The fountain located on the central plaza under the Interstate-10 will be the main focal point of this design. In order to integrate the highway structure and the new fountain this design incorporates some of the structural columns of the Interstate-10 overpass into the water feature adding a dramatic touch to this area. The fountain also consists of waterfalls and seating walls allowing the visitors to interact with the water. Including waterfalls into the design of the fountain will help to cover some of the noise produced by the cars traveling through the interstate-10 overpass. See the Appendix C-4 for images and a detail description of the water feature.

Passive Recreation Area

This design incorporates a passive recreation area into the North right-of-way of the Interstate-10 overpass located at the end of Greenwood Dr. This area is ideal for this type of activity due to the low vehicular traffic and the number of residences that are located in this end of the street. The play area will include seating spaces for the adults supervising children, a small playground, and will be visible from nearby streets. Incorporating this recreation area into the spaces below the Interstate-10 is recommended because this will bring activity into the spaces below the overpass thus creating safer conditions.

New Commercial Establishments

The inventory and analysis of the site revealed that there is an abandoned lot on the South side of the Interstate-10 overpass in the corner of Hollydale Ave. and Perkins Road corresponding to the right-of-way of the Interstate-10. The considerable size of this lot allowed the development of a new commercial establishment while permitting access

to the highway structure for repairs or maintenance. Any design proposal for the development of a new building in this corner should consider the scale and materials of surrounding structures in order to preserve integrity of this commercial area. Also, any development that takes place in this empty lot should consider the adverse effect produced by the overwhelming scale of the interstate overpass and address it by screening the elevated highway structure. See Appendix C-5 for more details and images of the new commercial development.

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APENDIX A
DEMOGRAPHIC CHARACTERISTICS OF THE STUDY AREA

Table A-1: Demographic Data of Study Area

	1970		1980		1990		2000	
	Tract 23	Tract 26.01	Tract 23	Tract 26.01	Tract 23	Tract 26.01	Tract 23	Tract 26.01
AGE								
0-14	789	1,604	670	288	451	601	414	542
15-24	507	975	651	340	282	368	352	569
25-34	358	612	1,017	434	551	647	552	698
35-44	294	463	338	162	445	657	427	529
45-54	379	628	321	192	230	285	453	498
55-64	490	563	535	241	168	376	219	244
65+	541	450	1,073	369	539	700	339	520
Total persons:	3,201	4,917	4,572	5,932	2,754	3,689	2,756	3,600
RACE								
White	3,175	4,590	2,885	3,637	2,678	3,458	2,658	3,352
African American	22	321	33	225	59	192	62	155
Other	4	6	18	12	19	17	36	93
EDUCATION							-	-
Less than High School	442	635	348	114	114	92	-	-
High School Diploma	499	629	441	384	384	338	-	-
Bachelor Degree	693	287	985	1,353	1,353	778	-	-
Graduate Degree					500	648	-	-

(table cont.)

	1970		1980		1990		2000	
	Tract 23	Tract 26.01	Tract 23	Tract 26.01	Tract 23	Tract 26.01	Tract 23	Tract 26.01
OCCUPATION							-	-
Managerial	498	563	702	917	787	1,042	-	-
Technical	760	1,200	501	732	396	538	-	-
Service	152	232	103	156	85	245	-	-
Other	81	15	176	281	128	42		
INCOME inn Dollars							-	-
<5000	78	40	172	122	82	60	-	-
5,000-10,000	307	88	154	293	96	107	-	-
10,000-14,000	247	118	196	235	72	107	-	-
15,000-24,000	228	118	353	430	247	290	-	-
25,000-45,000	58	210	348	510	390	610	-	-
50,000	28	27	119	175	390	530	-	-
HOUSING								
Owner Occupied	895	1,158	980	1,210	850	1,129	983	1,240
Renter Occupied	327	456	374	465	412	480	358	450
Vacant	93	138	34	27	89	15	76	72
Other	26	22	11	5	-	-	-	-

APENDIX B
ZONING DISTRICTS

These zoning categories were obtained from Section 8 of the Unified Development Code Of the East Baton Rouge Parish Planning Commission.

Zone A, Residential District

Zone A1, Single Family Residential:

The purpose of A1 is to permit low-density residential development with a maximum density of 4.1 units per acre. Accessory uses normally compatible with surrounding low density residential development may be permitted.

Conditional Uses:

- Bed and breakfast home – Limited to four (4) guestrooms within National Register Historic Districts or Sites or homes listed on the National Register of Historic Places or within homes a minimum of 50 years old. All parking areas must be completely screened from the street and adjacent residences. No signage is allowed. Must be owner occupied. Shall be located on a lot or tract with a minimum size of one acre. Guests are limited to a maximum stay of seven consecutive days. Homes that qualify based upon 50-year-old requirement shall not be located within a recognized residential subdivision unless the lot has frontage on a designated major street.

- Cemeteries and mausoleums – Must be located on a major street. All graves and buildings shall be setback at least fifty feet from all property lines. Shall not be located within a recognized residential subdivision.

- Childcare centers – Enrollment is limited to ten children. Hours of operation are between 6:30 a.m. and 6:30 p.m. A six-foot solid wooden fence is required between adjacent residences and outdoor play areas. No signage is allowed. Must be owner occupied. All parking areas must be completely screened from the street and adjacent residences. Shall not be located within a recognized residential subdivision.

- Educational, religious and philanthropic institutions– Plan Review is required for all such uses. Site Plan criteria shall be submitted as required in Section 4.101 Plan Review of the Unified Development Code."

- Preschools including Head Start and other Pre-K programs – not in conjunction with Child Care – In-Home Child Care facilities with enrollment not to exceed six (6) children and to be operated as a "Home Occupation" in accordance with the regulations as set forth in Chapter 2, and limiting hours of operation between 6:30 a.m. and 6:30 p.m. permitted in an A1 District.

Zone A4, General Residential:

The purpose of A4 is to permit compact multi family developments with a maximum density of 43.6 units per acre. A4 Districts must be located within an urban setting and on 4 lane major streets (Rezoning of properties to A4 will not be permitted after July 21, 1999.

Conditional Uses:

All conditional uses in the A3.1 Zoning District

Zone C, Commercial District

Zone C1, Light Commercial:

The purpose of this district is to permit retail commercial uses serving the surrounding community (Rezoning of properties to C1 will not be permitted after July 21, 1999.

Cellular transmitting and receiving facilities as described in Chapter 2 of the Unified Development Code, with a maximum height of one hundred and twenty (120) feet.

Zone LC-1, Light Commercial:

The purpose of this district is to permit a variety of commercial activities and multi family (medium density) residential uses that serve surrounding local areas. Businesses within this district are limited to 15,000 gross square feet of floor area per lot and a height of four stories.

Permitted Uses:

- Animal hospitals - All animals must be kept inside buildings.
- Apartments
- Art galleries
- Arts and crafts schools
- Billboards and signs
- Cemeteries and mausoleums: Must be located on a major street. All graves shall be set back a minimum of fifty feet from all property lines.
- Childcare centers

- Churches, Sunday schools, parish houses and other places of worship
- Commercial recreation facilities
- Commercial schools
- Conservation areas, nature or game preserves
- Country clubs
- Dry Cleaners–No on premise cleaning.
- Funeral homes
- Governmental buildings and facilities, Police, Fire, EMS, Libraries, Post office, offices and other facilities utilized for governmental functions and activities.
- Health club
- Home occupation
- Medical clinics
- Medical laboratories
- Multi-family residential
- Office buildings
- Offices
- Off-street parking
- Personal service shops
- Plant nurseries
- Private schools with a curriculum similar to public kindergartens, elementary and high schools
- Public schools
- Railroad passenger terminals
- Railroad rights-of-way with tracks and auxiliary facilities for track operation (but not including passenger stations, freight terminals, switching and classification yards, repair shops, roundhouses, power houses and fueling, or other maintenance uses).
- Repair and service shops: Limited to small equipment, household items, clothing and furnishings, but not internal combustion engine repair or service. All work must be done inside enclosed buildings and all storage of materials must be inside enclosed buildings.
- Restaurants
- Retail sales
- Self serve gas stations
- Special homes
- Studios of artists and photographers
- Town house
- Wireless transmitting and receiving facilities
- Zero lot line residential

Conditional Uses:

- Car wash - The structure must be located a minimum of 500 feet from the property line of any residential use. All lighting must be directed away from adjacent uses.
- Country clubs with alcohol: Must be approved for an alcohol license by the Alcohol and Beverage Control Board.
- Dinner theatres with alcohol: Must be approved for an alcohol license by the Alcohol and Beverage Control Board.
- Fraternal lodges with alcohol: Must be approved for an alcohol license by the Alcohol and Beverage Control Board.
- Glass installation: Must be located a minimum of 300 feet from the property line of any residential use.
- Mini storage facilities: Must be located a minimum of 300 feet from the property line of any residential use.
- Pilot juvenile diagnostic development centers: Must be located a minimum of 500 feet from the property line of any residential use.
- Reception halls with alcohol: Must be approved for an alcohol license by the Alcohol and Beverage Control Board.
- Used car sales: No service or repair of vehicles is allowed. Must be located a minimum of 300 feet from the property line of any residential use.

Zone C-AB-1, Commercial Alcoholic Beverage

This district permits businesses involved in the serving of alcoholic beverages for consumption on the premises, where alcohol sales are not the primary source of revenue.

Permitted Uses:

- All uses permitted in the C1 and LC-3 zoning districts
- Fraternal lodges serving alcohol
- Reception halls serving alcohol
- Restaurants serving alcohol
- Theatres serving alcohol
- Conditional Uses
- None

Zone M, Industrial District

M1 Light Industrial

The purpose of this district is to permit light manufacturing, fabricating, processing, and wholesale distribution activities located near or adjacent to major thoroughfares or railroads.

Permitted Uses:

- All uses except residential, adult businesses, commercial gaming, junk and auto salvage yards, and uses, which involve the sale or serving of alcoholic beverages.
- All use shall conform to the following requirements: uses may not create noise greater than 70 decibels when measured at the property line; uses may not emit smoke at periods of normal operation of a density greater than number one according to Ringlemann's Scale; uses may not emit particles from any flue or smoke stack in excess of 0.2 grains per cubic foot of flue gas at a stack temperature of 500 degrees F.; uses may not emit odors, gas or flumes beyond the property line; uses may not produce glare that can be seen from a property line; uses shall dust-proof all walks, driveways and parking areas so that no dust from these or any other operations escapes beyond the property line; and all operations must be conducted within a building or within an area enclosed by a solid fence or wall not less than six feet in height, where adjacent to or across the street from residential, office and commercial districts.

Zone B, Buffer Zones

Zone B1, Transition Zone

The purpose of this district is to permit office uses on parcels that are located between commercial and residential uses (Rezoning of properties to B1 will not be permitted after July 21, 1999. Properties zoned B1 prior to December 14, 1982 and existing structures (built prior to December 14, 1982) on properties zoned B1 after December 14, 1982 may also be used for any of the uses listed in the A1-A5 Zoning Districts.

Apartment Hotels under resident supervision and maintaining an inner lobby through which all tenants shall pass to gain access to the apartments and which may furnish services ordinarily furnished by hotels, such as drug store, barbershop, cosmetologist shop, cigar stand or news stand; provided that all such uses shall be located entirely within a building with no entrance from the street or visible from any sidewalk and no sign or display shall be visible from the outside of the building indicating the existence of such use, provided that no business or use shall be allowed which involves the sale or serving of alcoholic beverages for consumption on the premises;.

Parking lots, provided that the parking area shall be used for passenger vehicles only and in no case for sales, repair work, storage, dismantling, or servicing of any vehicles, equipment, materials, or supplies; no signs or advertising of any character except traffic directional signs painted on pavement shall be allowed; the parking area and connecting driveways shall be surfaced with concrete, asphaltic concrete asphalt, or any other type of permanent, dust free paving and the parking area and connecting

driveways shall be maintained in good condition and free of all weeds, dust, trash, and other debris; if lighting facilities are provided, they shall be so arranged as to reflect or direct light away from the adjacent residential district; required front yards shall be landscaped and maintained in good condition, and

Zone B, Off-Street Parking

The purpose of the B District is to permit off street parking (Rezoning of properties to B will not be permitted after July 21, 1999.

Off-Street parking, subject to all of the requirements for parking lots under Section 8.205 of the Unified Development Code and provided further that: Where there are adjacent residences or adjacent residential zoning, a five (5) foot side yard shall be provided, with no parking or paving permitted to extend into that side yard.

This district must adjoin an A3, A4, A5, B, N, GO, C, LC, HC, CW or M Zoning District on at least one side and shall have a minimum frontage of 50- feet.

APENDIX C
DETAIL DESIGN

Details designs illustrating proposed improvements for the spaces below the Interstate-10 at Perkins Road and surrounding areas are discussed on the following pages. The areas described in detail are the commercial and residential sidewalks, pedestrian deck, parking areas under the Interstate-10, the plaza, the fountain, and new commercial buildings.

Commercial Sidewalk Detail

The commercial sidewalks were identified as the walkways running along Perkins Road. See figures C.1 and C.2 for detailed images and sketches showing scenes of the commercial sidewalks.

a. Bus Stops

All bus stops within the study area shall be clearly labeled, fully accessible, and provided with seating areas. Main bus stops such as the one in the corner of Ferndale Avenue and Perkins Road and the one at the corner of Christian Street and Perkins Road shall be provided with some kind of overhead enclosure to protect users form harsh climatic conditions (sun exposure and rain). In order to integrate the bus stops into the overall design concept of Perkins Road commercial area all bus stops should be developed using materials such as: brick, concrete pavers, wood, concrete, iron and/ or any material that relates to the human scale of this commercial area.

b. Pedestrian Crossings

Crossings are strategically located at the intersections between Perkins Road and Ferndale Avenue, Perkins Road and Christian Street, and under the Interstae-10 overpass. These areas were identified as major crossings during the site analysis stage. Crossings shall be developed using a different color and paving material from the streets to alert the drivers that they are entering an area of high pedestrian concentration. The crosswalks should be made of pale colored crushed stone or by changing the texture of the road.

c. Signs

Sings indicating the arrival to Perkins Road Historic Business District should be located facing the traffic in the corners of Perkins Road and Ferndale Avenue and in the corners of Christian Street and Perkins Road.

d. Commercial Sidewalks

This section includes all sidewalks along Perkins Road from Ferndale Avenue to Christian Street. 6-inch curbs, 10-foot wide sidewalks, and access ramps with a minimum of 48-inches of width and a maximum gradient of 8% shall be required in all corners and crossings. The specified width of all commercial sidewalks should be sufficient to accommodate current and expected increase of pedestrian circulation. Providing parallel parking along Perkins Road and 6-incurbs on all sidewalks should

prevent vehicles form using commercial sidewalks as parking. All street planting areas along commercial sidewalks shall be developed in accordance to section 18.3 of the Unified Development Code of Baton Rouge City Parish Planning Commission.

Other features

This design substitutes the existing perpendicular parking along Perkins Road with a limited area of parallel parking. All parallel parking lots along the commercial sidewalks shall be 8-feet wide and 22-foot deep. In order to comply with the Americans with Disabilities Act 1 accessible parking spot shall be provided for every 25 parking spots (Public Law-101-136).

Street trees

The following lit illustrates street trees recommended by the Urban Tree Foundation. Any trees planted along a road or parking areas shall comply with the Baton Rouge Unified Development Code section 18.

Table C-1 Street Trees List

Botanical Name	Common Name	Size	Height	Class
Trachycarpus fortunei	Windmill Palm	small	15'-25'	B
Magnolia denudata	Yulan Magnolia	medium	35'-40'	B
Acer rubrum	Red Maple	large	50'-75'	B
Sabal causiarum	Sabal Palm	large	40'-50'	A
Pyrus calleryana	Bradford Pear	medium	25'-40'	A
Platanus occidentalis	American Sycamore	large	70'-90'	A
Ulmus Americana	American Elm	large	75'-90'	A
Betula nigra	River birch	large	20'-25'	B
Cornus florida	Flowering Dogwood	small	15'-25'	B
Celtis occidentalis	Common Hackbery	large	50'-75'	A
Cercis canadensis	Eastern Redbud	small	15'- 25'	B
Ginkgo biloba	Ginkgo	large	50' 75'	A
Koelreuteria paniculata	Goldenrain	medium	25'-40'	B
Lagerstroemia indica	Crape Myrtle	small	6'-25'	B
Liriodendron tulipifera	Tulip Tree	large	65'-90'	A
Pistacia chinesis	Chinese Pistache	medium	25'-40'	B
Quercus shumardii	Shumard Oak	large	70'-90'	A
Quercus virgianiana	Southern Live Oak	large	50'-75'	A

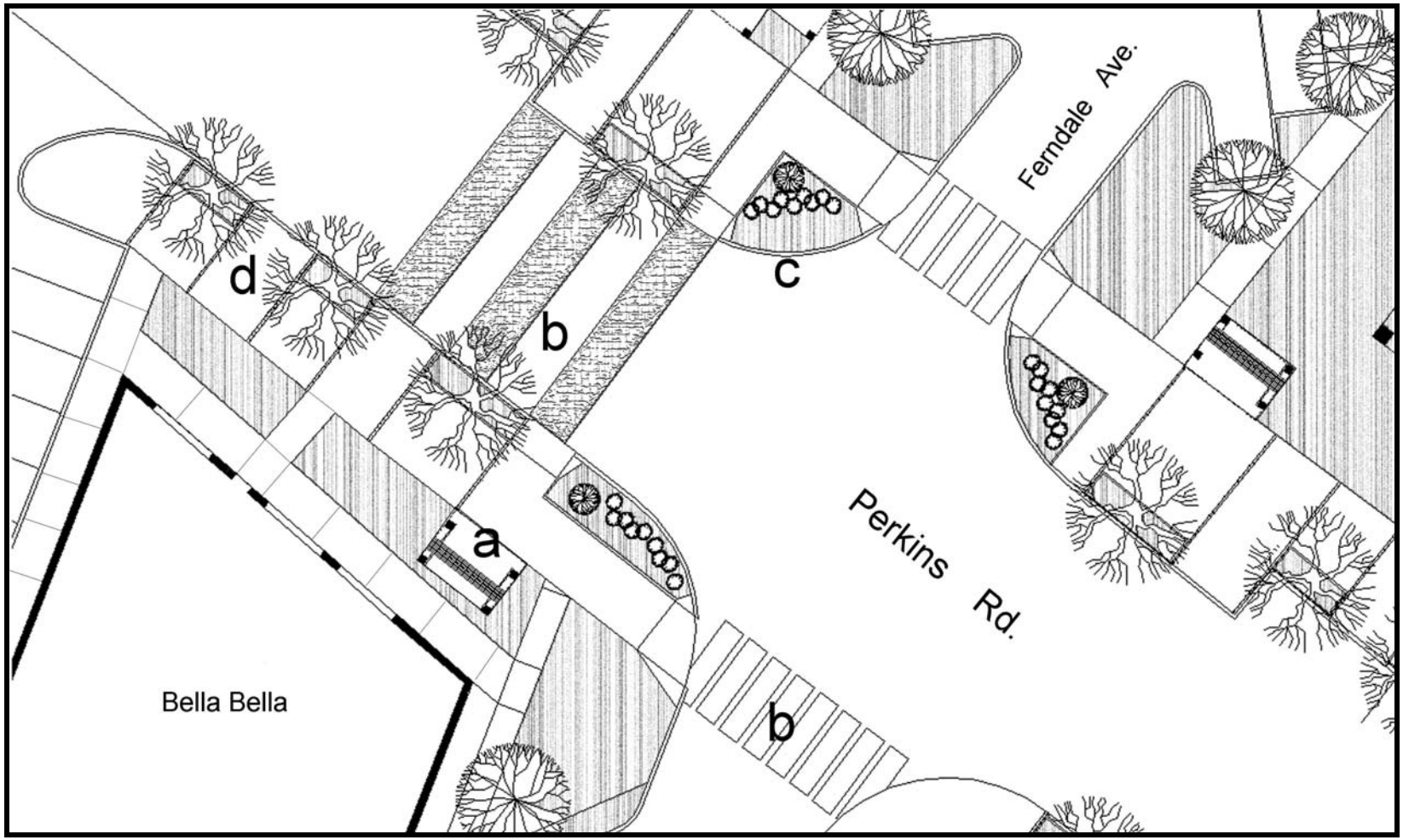

Figure C.1 Commercial Sidewalk Detail

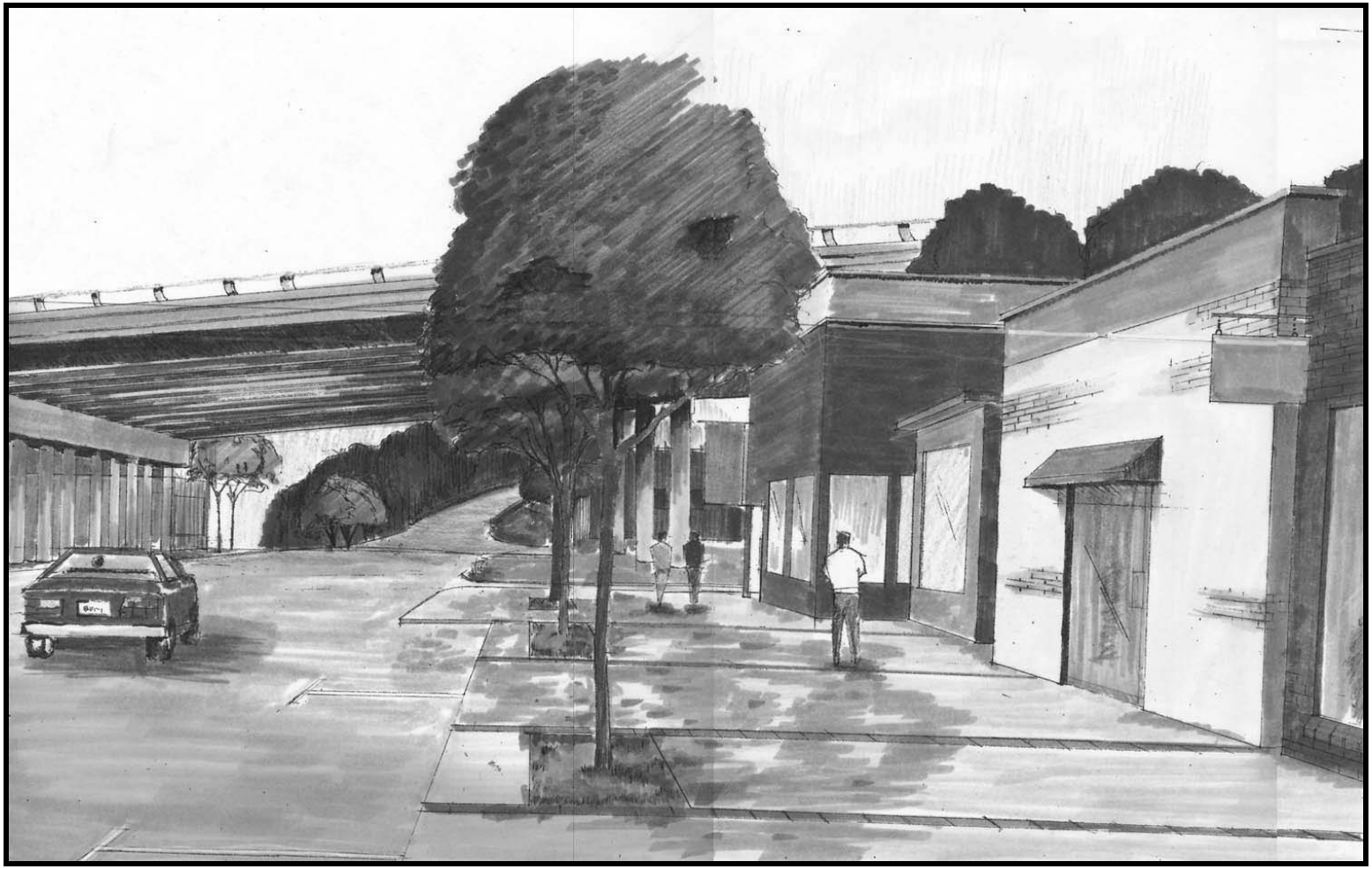

Figure C.2 Sketch of Commercial Sidewalk This image illustrates a typical commercial sidewalk along Perkins Road.

Residential Sidewalk Detail

Residential sidewalks were identified as those walkways going into the neighborhoods surrounding the commercial areas along Perkins Road. See figures C.3 detailed images of residential sidewalks.

a. Angled Parking

Parking spaces at a 45° angle are located close to the commercial establishments surrounding the roads entering the residential areas. These 45 angle parking spaces are 8-feet wide and 18.5 feet deep. For every commercial establishment and for every 25 parking spaces there should be an accessible parking.

b. Crosswalks

Simple crosswalks and access ramps area provided in every corners of residential sidewalks. The crosswalks should be painted in white to distinguish them from the road.

c. Residential sidewalks

These sidewalks should be developed in accordance Section 13.6 of the Baton Rouge Unified Code of Development. All sidewalk within residential subdivisions should be 4 inches deep and 4-feet wide along both sides of the road and provided of access ramps and crosswalks. Class B trees and shrubs should be planted in areas close to commercial establishments to screen commercial buildings and to create a transition from commercial to residential areas.

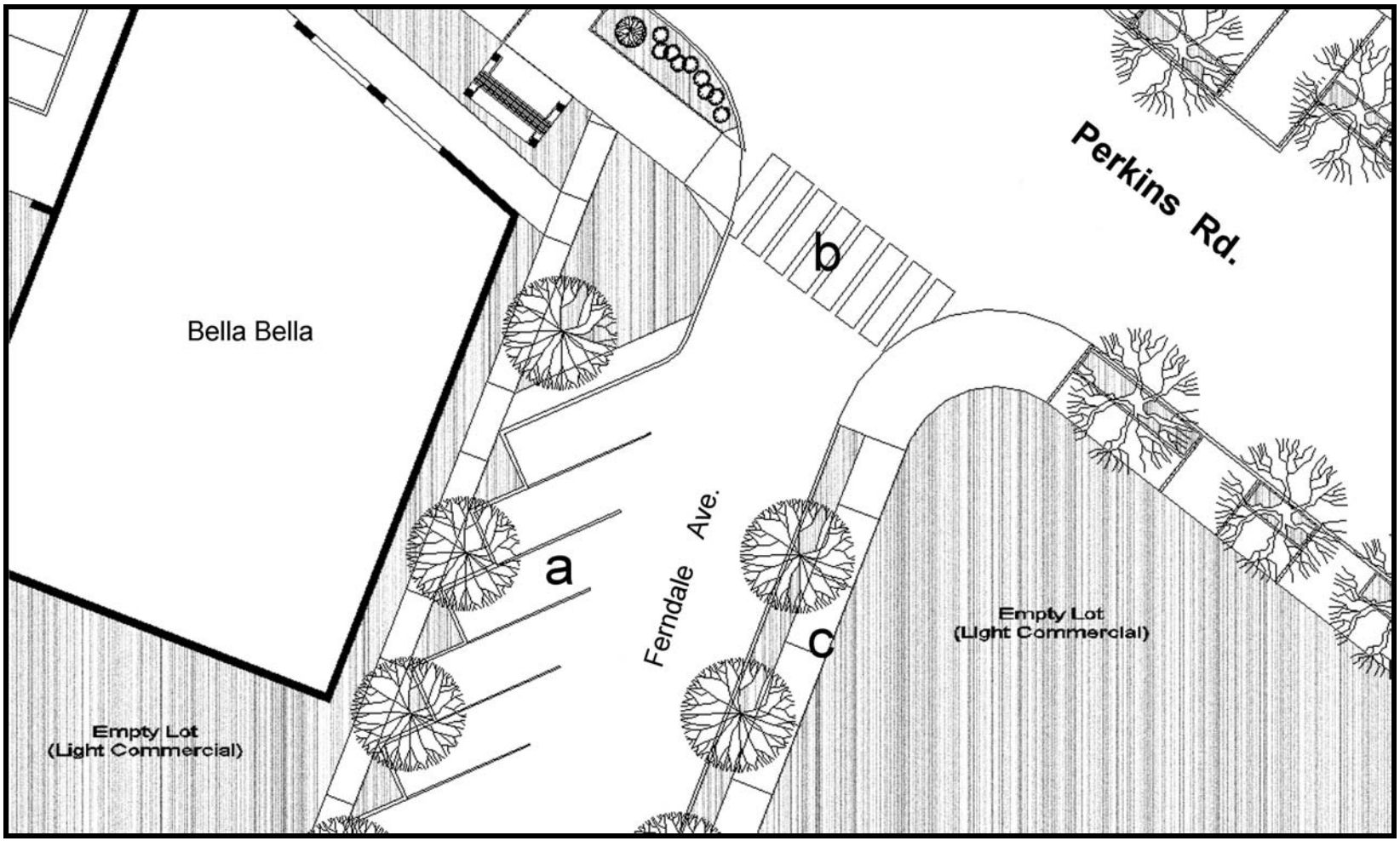

Figure C.3 Residential Sidewalk Detail

Pedestrian Deck and Main Parking Lot

The Pedestrian deck runs between the two decks of the Intestate-10 overpass connecting parking areas with the central plaza and commercial establishments along Perkins Road. Developing a central parking area with easy access to Perkins Road commercial area was fundamental for the development of the site. See a figure C.4 for detailed images of the pedestrian deck and parking areas under the Interstae-10 and figure C.5 illustrates is a sketch illustrating scenes from the pedestrian deck.

a. Interstate-10 Overpass Column Base

The base of the columns will be surrounded with lines of white crushed rock. Between the lines that surround the columns there will be mulch or dark colored decorative gravel. In areas with more exposure to sunlight planting beads will be located to buffer parking areas. Plants that could be used in these areas are: azaleas gingers, ferns, cast iron plant, hydrangeas, hostas, liriope, monkey grass, elephant ear some species of holly. Soil conditioning and irrigation must be provided to ensure the survival of the planting material.

b. Pedestrian DeckThis walkway was designed with the purpose of creating an easy connection between parking and commercial areas. The pedestrian deck runs from East t o West under the interstate-10 overpass and has sculptures at either end to end the linear axis created by the overpass. This walkway should be made of concrete with brick-pavers joints and fully accessible according to ADA standards.Butler Extension

Butler Street will be extended along the South side of the Interstate-10 overpass. This street will connect to Hollydale Avenue and Ferndale Avenue providing easy access to the parking areas under the Interstae-10 overpass. The sidewalk along Butler extension will be provided of class B trees (trees with an overall height of 25 feet). The street trees will be planted according Section 18 of the Baton Rouge Unified Development Code.

d. Parking

The parking areas under the Interstate-10 overpass consist 130 parking spaces with different layouts depending on the arrangement of the structural columns of the overpass. There are parking spaces at 45° angle, 90° angle and parallel to the columns. The stall width of the 45° angle parking spaces is 8-feet and its depth is 18.5-feet. The 90° angle parking spaces width is 8-feet and its depth is 18 feet deep. The width for parallel parking areas is 8-feet and the depth is 22-feet. All isles within this parking area at least 11-feet wide. For every 25 parking spaces an accessible parking space shall be provided. This parking area is made of concrete.

Other features

The parking areas under the Interstae-10 overpass are provided of floodlights to illuminate the columns, and light posts along the walkway. The drainage system of the Interstae-10 overpass will be connected to main drainage system below grade to avoid the risk of damage caused by a spillage accident on the overpass.

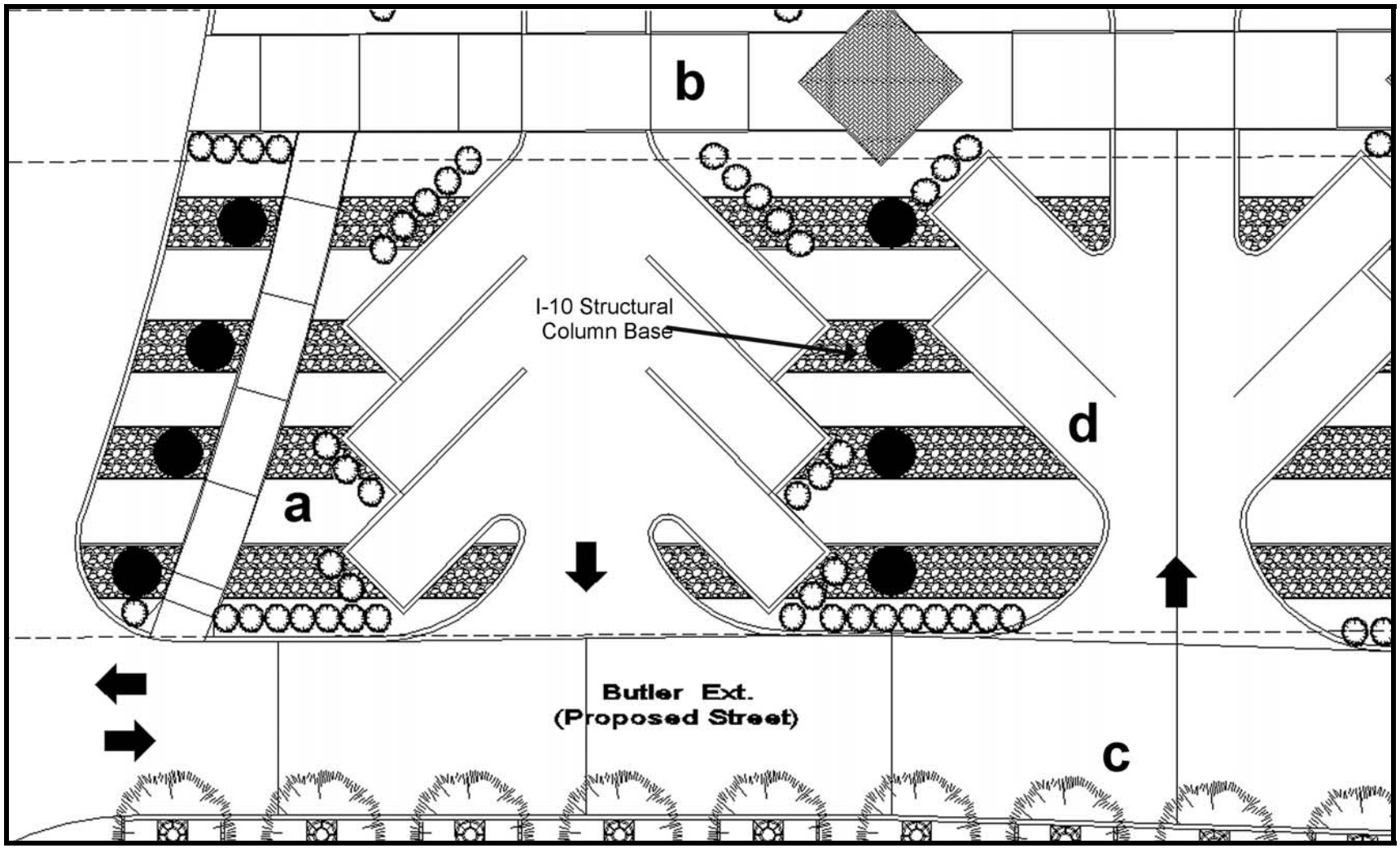

Figure C.4 Parking and Pedestrian Deck Detail This image illustrates the main parking area under the Interstate-10 overpass. Note the pedestrian deck at the top of the image.

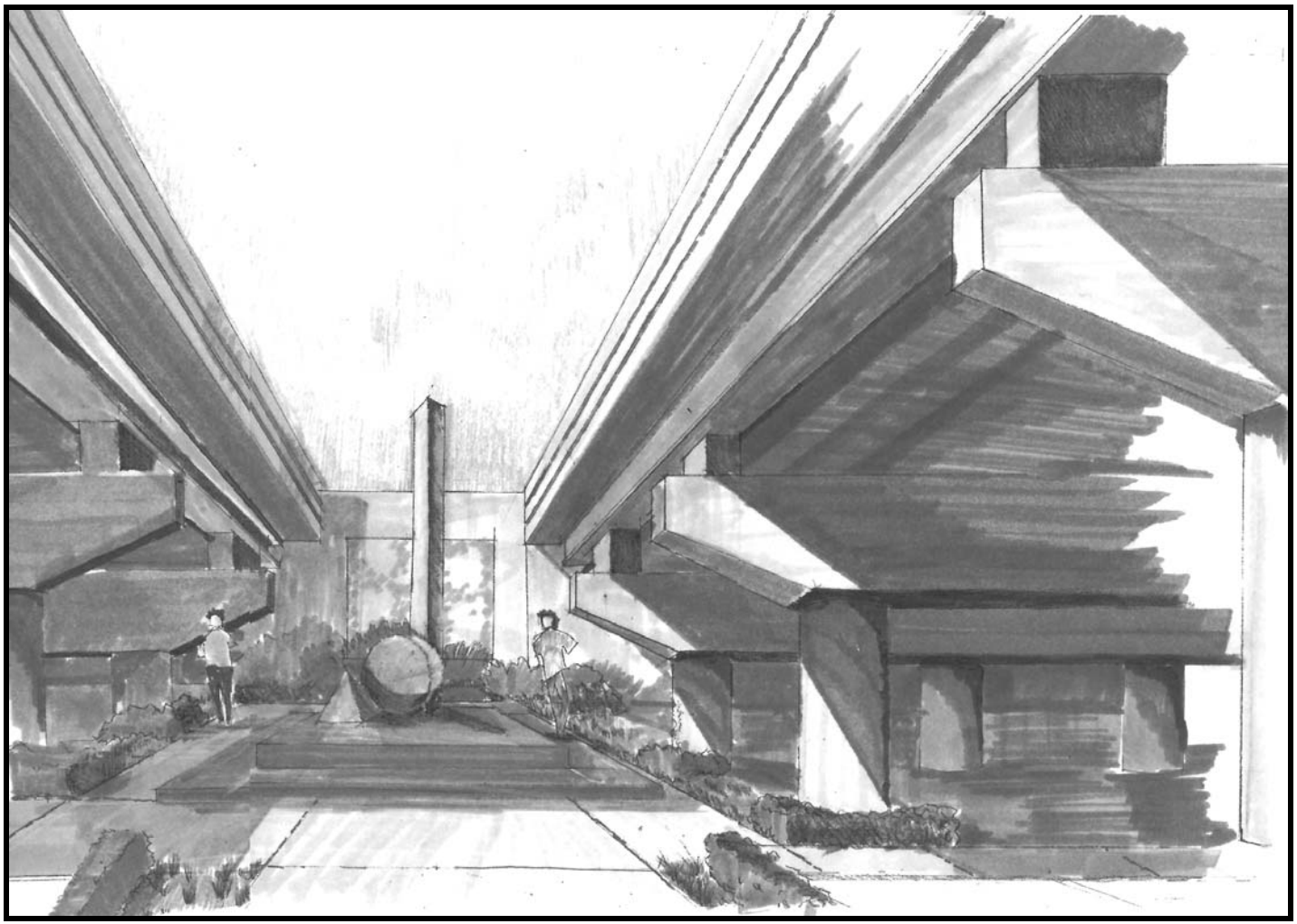

Figure C.5 Sketch of Pedestrian Deck Both ends of the pedestrian deck are provided of focal points. Note how the sculpture terminates the linear axis created by the Interstae-10 overpass.

Main Plaza and Fountain

The central plaza is located under the Interstate-10 overpass on a triangular shaped island bordered by Perkins Road and Hollydale Avenue. See figures C.6, C.7, C.8, and C.9 for detailed images of the plaza and fountain.

a. Plaza

Functions as a central distribution area, a transition that will connect the commercial areas on both sides of the Interstate-10 overpass and main pedestrian walkways along Perkins Road. This plaza will have some raised planters in areas with exposure to sunlight. The pavement on the plaza is a combination of colored concrete, brink-pavers and light colored to create lines that follow the layout of the structural columns.

b. Fountain

As the main focal point of this design the fountain is provided of seating walls and incorporates some of the structural columns of the overpass into its design. This water feature will mask some of the noise from Interstate-10 providing the area with a more pleasant atmosphere. Images of the fountain are illustrated on the following pages.

c. Sidewalks

The sidewalks along the plaza area paved in concrete and brick-paver joints to match with the sidewalk in commercial areas. Walkways in this area will be provided of bollards to prevent cars from obstructing them, access ramps, and proper lighting. Images of the sidewalks area illustrated on the following pages.

d. Bus Stop

In order to take advantage of the protection offered by the Interstate-10 overpass the bus stops in the corner of Christian Street and Perkins Road will be moved to the plaza. These new bus stops will become a major destination within the study area due to their central location and facilities offered such as: seating areas, proper lighting, and accessibility.

e. Crosswalks

Pedestrian crosswalks in this area are similar to those of the commercial sidewalks (see commercial sidewalks).

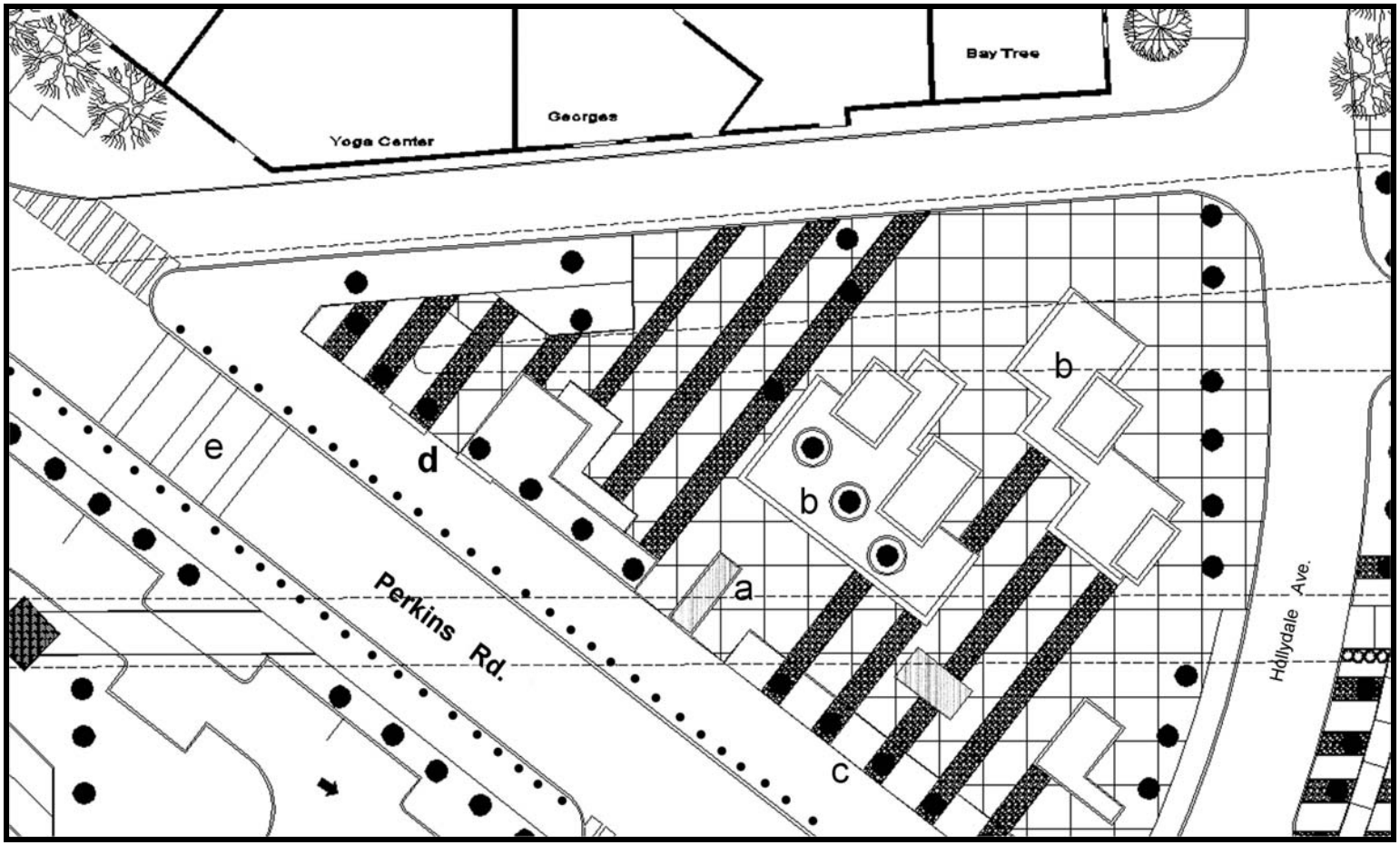

Figure C.6 Plaza and Fountain Detail This plaza is located on an island between Perkins Road and Hollydale Avenue. Note the water features at the center of the plaza.

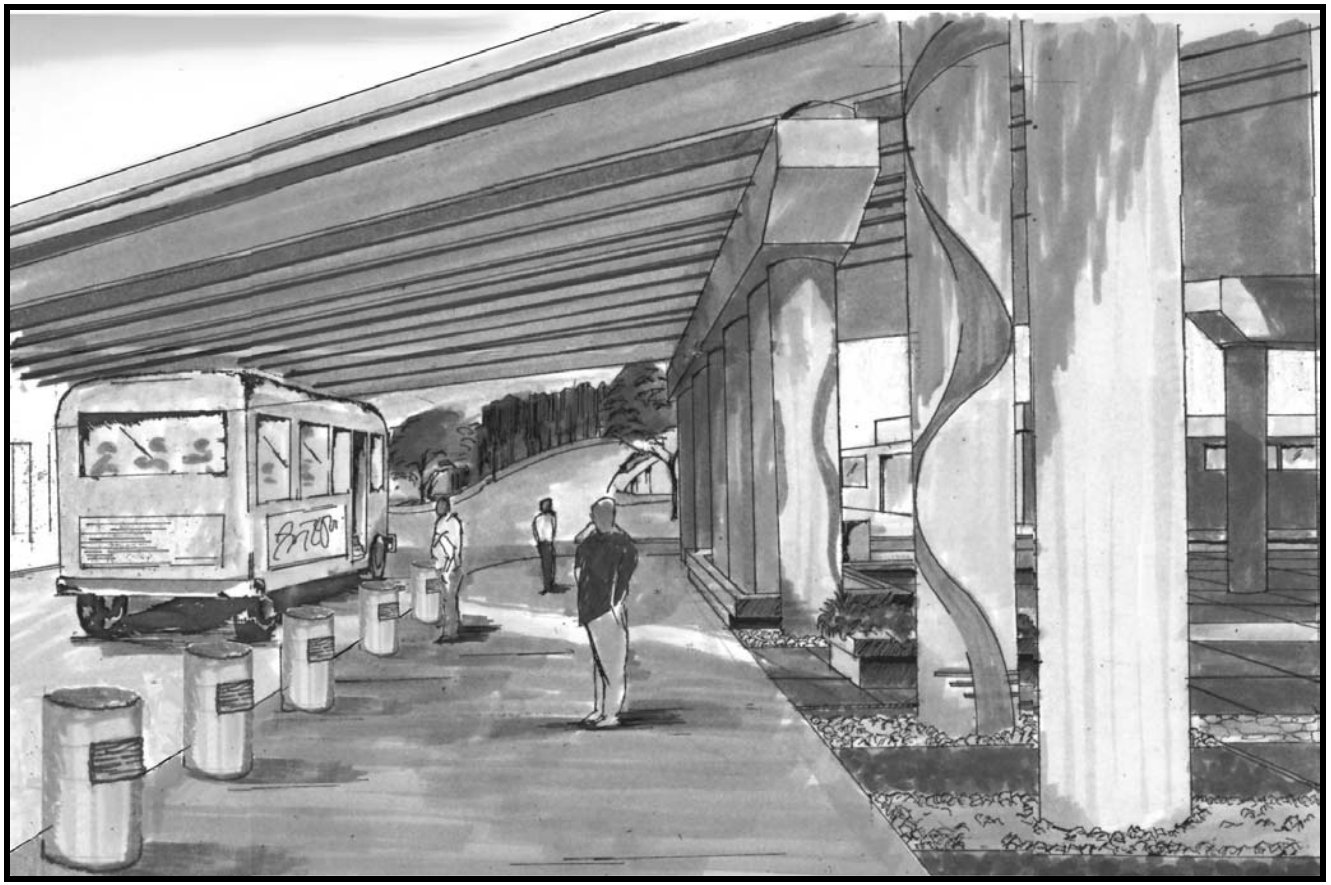

Figure C.7 Sketch of the Plaza This image illustrates the sidewalks along the central plaza. Note the designs on the columns.

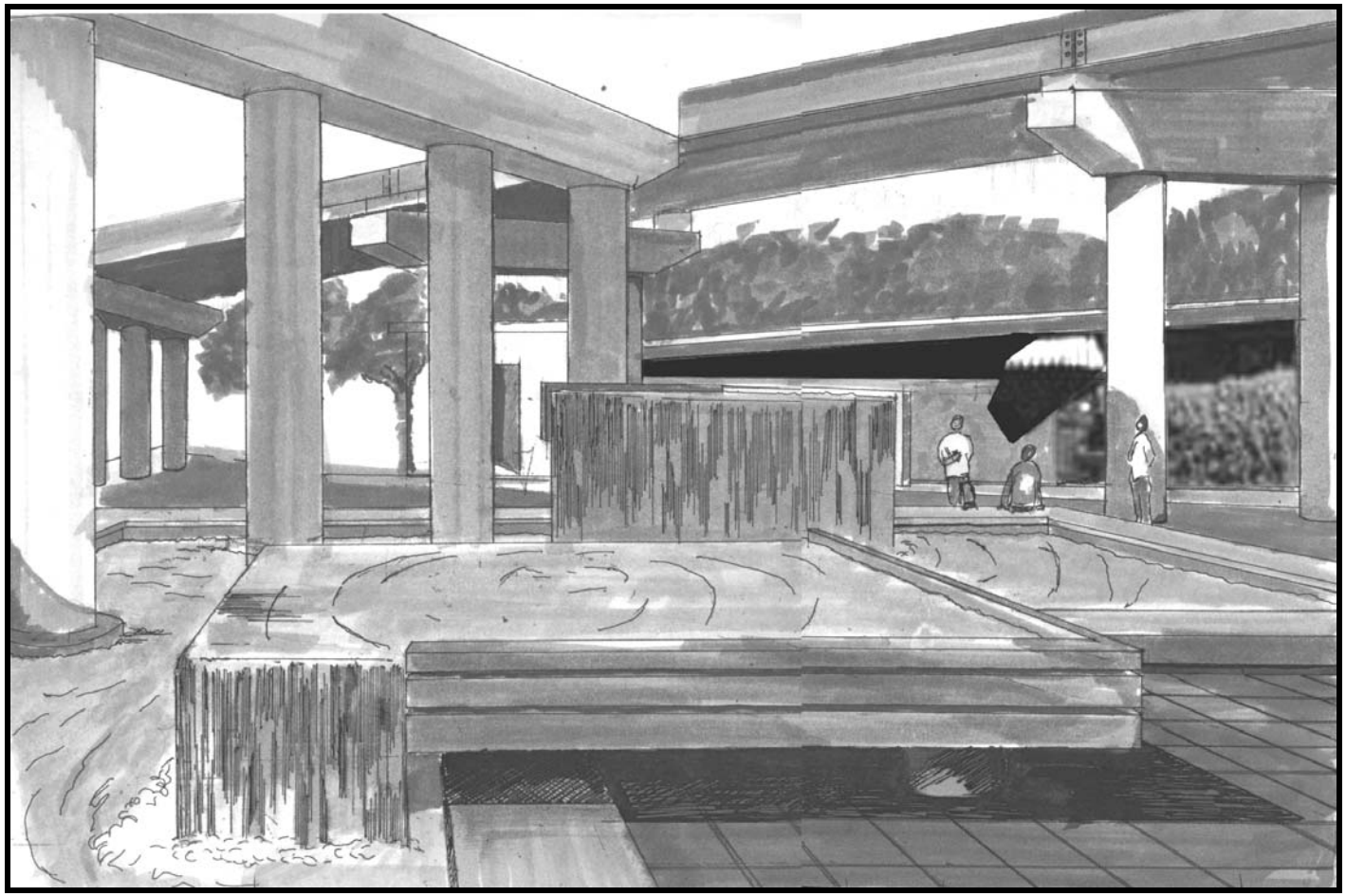

Figure C.8 Sketch of the Fountain Note the structural columns of the overpass which are incorporated into the design of the fountain.

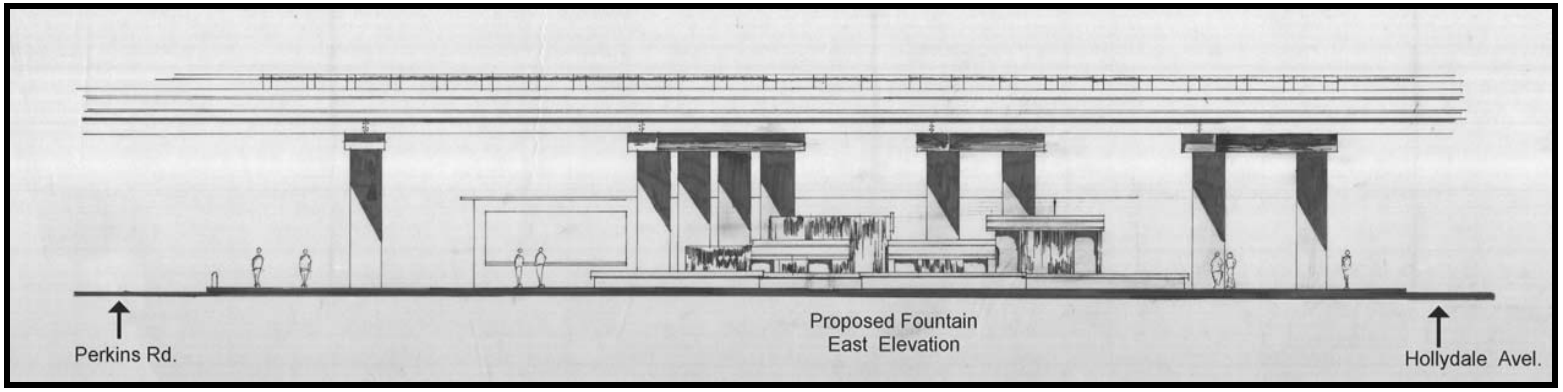

Figure C.9 Cross Section of the Plaza Note the relationship between the overpass and the fountain.

New Commercial Buildings

The new commercial buildings are to be developed on the South side of the Interstate-10 in the corner of Perkins Road and Hollydale Avenue. See figure C.10 for a detailed image of the new commercial buildings.

a. New Commercial Development

The proposed structure will have view into the spaces below the I-10 and allow pedestrians to cross through it and into the main commercial along Perkins Rd. The food establishments could use some of the internal spaces created by this building as an outdoor eating area.

b. Sidewalks

The sidewalks in this area are similar to those described in the Appendix C-1. They should be build using concrete, brick-paver joint, with rectangular planters bordered by brick-pavers.

c. Pedestrian Connection

The design of the new commercial buildings incorporates a corridor that provides an easy connection between the sidewalks along Perkins Road and those along Butler extension. This corridor will allow an easy access to the major parking area. The pedestrian connection between buildings is similar in design to the commercial sidewalks.

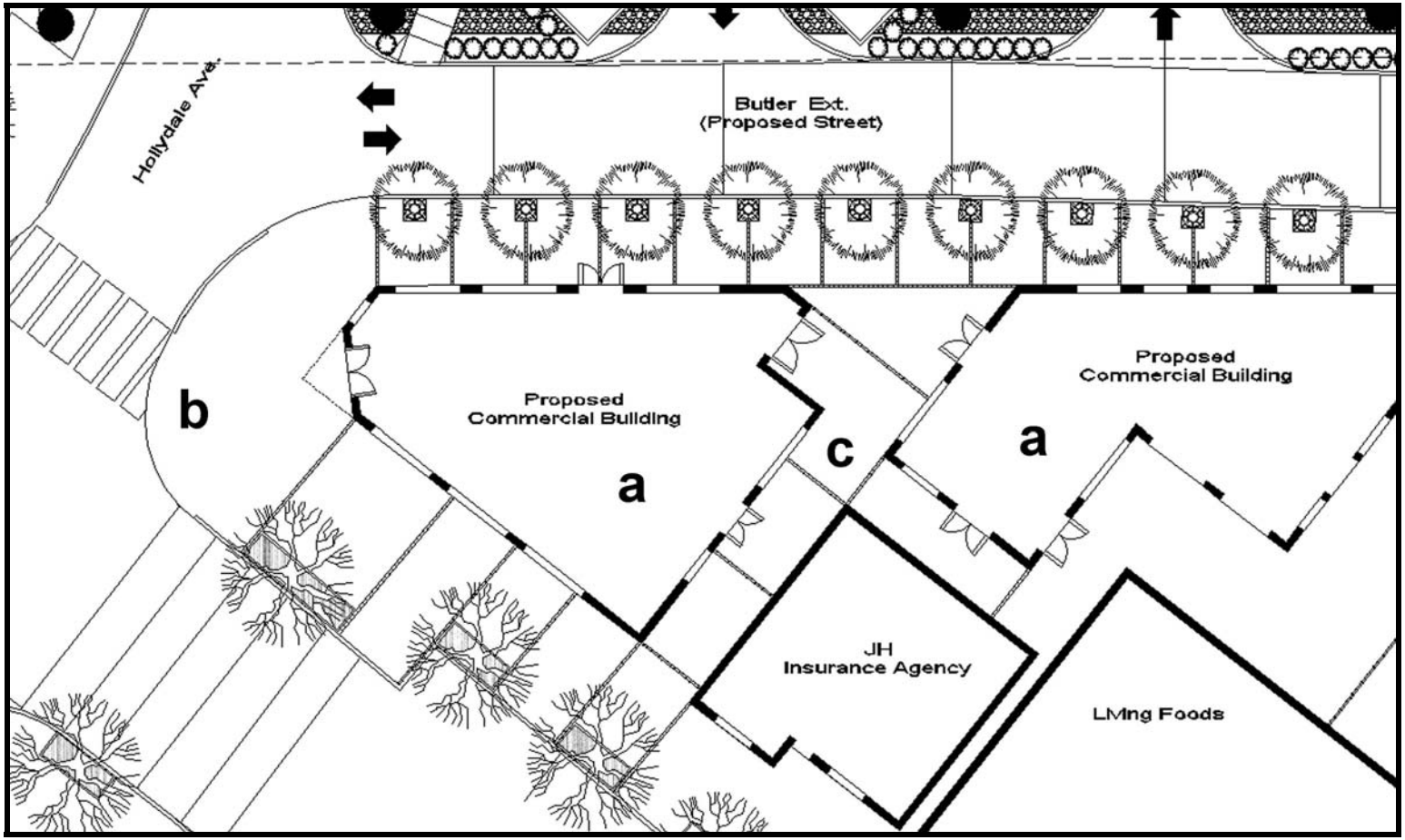

Figure C.10 New Commercial Building Detail The new commercial building is located in the corner of Perkins Road, and Hollydale Avenue and Butler extension. Note the walkway that connects the sidewalks Perkins Road and butler extension.

VITA

Ramon Irizarry was born on October 31, 1972, in San Germán, Puerto Rico. He graduated from Lola Rodirguez de Tio High School in San German, Puerto Rico, in 1990. He attended the Interamerican University of Puerto Rico and received a minor degree in music 1993. He received his bachelor's degree in agriculture from the University of Puerto Rico in 1998. Mr. Irizarry is currently a candidate for the degree of Master of Landscape Architecture, having completed all requirements during the Spring 2003.