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Federal-Aid Highway Program Manual (FHPM) 7-7-8 (PPM90-5)
March 27, 1973

I-35 Multiple Use and Joint Corridor Development Study

DULUTH, MINNESOTA

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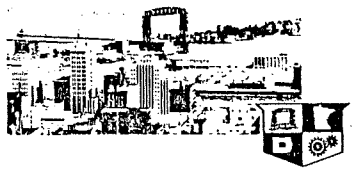
transmittal letter



DULUTH

DULUTH, MINNESOTA 55802

OFFICE OF THE MAYOR
ROBERT BEAUDIN
MAYOR

James Harrington, Commissioner
Minnesota Department of Transportation
411 Transportation Building
St. Paul, MN. 55155

Dear Jim,

The I-35 Multiple-Use and Joint Corridor Development Study reflects the growing concern of Americans to integrate highways and their surroundings into an harmonious whole and to make effective use of the adjacent land within our cities.

Too often land beneath and adjacent to freeways is overlooked; even worse, it is allowed to become a negative force within our environment. Today we recognize that not only the land, but the air rights surrounding our freeways can be used for joint development, especially in urban areas. Therefore, we have explored the joint development concept in conjunction with the extension of I-35. This study demonstrates the possibilities of making rights-of-way do double and even triple duty.

For Duluth, joint development is a means by which the community can accomplish long sought goals, such as consolidation of the downtown area. By utilizing air-rights over I-35, the downtown business area can be consolidated, providing needed development space for major retailers and insuring the continued economic stability of the downtown area.

Of no less importance than the city's economic needs, is the realization that Duluth has a unique location. No other place can duplicate the same scenic vistas and rugged shoreline. It is our concern for a protected environment, as well as the belief that such beauty is to be enjoyed and experienced, that prompted park and open space development at this desirable location. This park area assures residents and visitors that the remaining shoreline will be preserved for public use.

The development of plaza space within the downtown is also viewed as an important city objective. A plaza at Lake and Superior fulfills the City's desire to create open space within the downtown area, provides an overview of Lake Superior, and clearly defines the eastern edge of the central business district. This joint development feature does double

duty by also providing long term parking to replace those spaces lost by highway development.

Evident in the planning for the historic district, is Duluth's desire to preserve and enhance it's own local culture and heritage. We heartily agree with the former Secretary of Transportation, William T. Colemen's statement of January 14, 1977, that, "...It is our strong conviction that a Nation's public works reflect the strength and depth of its cultural heritage."

It is hoped you will find the joint use projects discussed in this study do, "In the final analysis,...accomplish the broadest transportation objectives and," indeed do, "generate benefits which far outweigh any additional costs."

And finally we concur with Colemen's further statement that, "...Since transportation systems claim a large portion of those (public) funds, we recognize that in the spirit of the past, and with care for the future, the Department of Transportation must make a strong commitment to a policy which will assure that all public funds allocated to transportation be spent with due consideration for their design, artistic and cultural impact."

This City recognizes the opportunities provided by joint development and is prepared to participate in projects needed to minimize adverse effects of the highway and achieve local development objectives.

Sincerely,

Robert C. Beaudin
Mayor

preface

The extension of I-35 around Duluth's downtown area must be undertaken in a manner which minimizes the adverse impacts of the highway facility and at the same time maximizes social and physical objectives formulated by the City. This study, undertaken by the City of Duluth, defines ten multiple use projects needed to minimize adverse impacts and achieve local objectives.

Consistent with the provisions of the Federal-Aid Highway Program Manual (FHPM) 7-7-8 (PPM 90-5), this multiple use and joint corridor study analyzes and evaluates localized impacts of the freeway extension and provides recommendations regarding future physical, social and economic patterns. It includes project costs, a financial plan, and a schedule of actions to establish financial participation by various public and private entities and a time-frame in which these improvements should be provided.

This joint development study is a continuation of the Duluth Corridor Study, an interdisciplinary study for the location and design of the transportation facility, undertaken by the firm of Eckbo, Dean, Austin and Williams in 1972. Many of the multiple use projects now being studied are a direct result of concepts presented in this earlier report.

I-35 Multiple-Use and Joint Corridor Development Study Participants

Supervision and Coordination
- -City of Duluth
- -Downtown Development Corporation

Architectural Design and Planning
- -Architectural Resources, Inc.
- -Thomas-Vecchi, Architects

Transportation Planning
- -Bather, Ringrose and Wolsfeld, Inc.

Guidance and Participation
- -Minnesota Department of Transportation
  District Office in Duluth and Office of Environmental
  Services in St. Paul

multiple use and joint development concept

FHPM 7-7-8 (PPM 90-5), dated March 27, 1973, sets forth the philosophy, purpose, authority, and procedural requirements for the joint development of highway corridors and the multiple use of roadway properties.

This document indicates that:

> *In executing the Federal-aid highway program one important objective is that to the extent possible and practicable highways, in addition to their basic purpose of fulfilling the important goal of improved transportation, should make a positive contribution toward enhancement of the environment through which they pass and assist communities in attainment of their stated goals and objectives.*
>
> *Section 128, Title 23, United States Code, as amended, is a clear indication that highway planning can be used in the accomplishment of this purpose. In implementing this policy every encouragement should be given to making maximum utilization of the highway rights-of-way for both public and private development, provided there is no impairment to the full use and safety of the highway. To take full advantage of this policy and to attain the greatest benefit for the community, highway departments should encourage the greatest possible participation of local government agencies and the private sector. In many instances financial participation by other agencies of government or the private sector will be necessary.*

Joint development is defined as the set of actions taken in concert by a State Highway Department, other government agencies, private organizations, and individuals to prepare for and construct a new highway including those activities to develop, redevelop, or adjust the land uses and local network of services affected by the new highway. Further, joint development refers to joint use or occupancy of a specific land area for more than one purpose, such as the use of highway right-of-way by non-highway type facilities, structures, or activities. It may include public or private uses over, under, or bordering the roadway limits. Similarly, other land within the highway corridor may offer an opportunity for joint development.

The term "highway corridor" means the general path of a proposed highway including the zone affected by the facility. It thus bears a broader meaning than the actual location of the roadway.

The I-35 corridor in Duluth includes the downtown area, the Arena and convention facilities, and the Harbor. The freeway will provide improved access to these areas and influence future development patterns. Consequently the impact of the highway facility on this larger area has been carefully considered in the identification and study of the ten multiple-use and joint development projects.

introduction

Background

I-35 has been completed through West Duluth to the edge of the downtown area at Mesaba Avenue. In June, 1974, interstate designation was established from Mesaba easterly to 68th Avenue East along the DM&IR Railroad corridor. Although there has been a great deal of controversy over continuation of the roadway to 68th, there is general agreement that the section of I-35 around the downtown area to approximately 8th Avenue East should be completed as soon as possible. In order to develop a plan which would meet the needs of the community and reflect the views of as many individuals and groups as possible, Mayor Robert Beaudin formed a Citizen's Advisory Committee on I-35 in December, 1975.

Mayor's Advisory Committee

In establishing the Committee, one of Mayor Beaudin's primary objectives was to assure that its composition would reflect the many divergent views regarding extension of the freeway. To insure that all views were represented on the Committee, names were solicited from a wide variety of business, labor, and environmental organizations, together with the suggestions from community clubs and neighborhood organizations and individual citizens. The suggestions for Committee members included persons of both the pro-freeway and anti-freeway persuasions. Their names and organizations which they represented are shown in the listing below.

LAUREN LARSEN, CHAIRMAN	Former Citizens Committee
WILLIAM ABALAN	Downtown Merchants Association
DAVID ALLISON	Downtown Development Corporation
BARBARA EATON	League of Women Voters
DONNA J. EKBERG	Duluth Preservation Society
RONDI ERICKSON LEWIS	London Road Residents' Association
HAROLD FREDERICK	Duluth Plan
THOMAS GRUESEN	London Road Businesses
EARL LILJEGREN	Central Labor Body
MYRTLE A. MARSHALL	Business and Professional Women
MARY E. MITCHELL	Junior League
CLIFFORD OLSON	City Councilor
JOHN L. PEYTON	Stop-the-Freeway Group
ROBERT A. SEITZ	Isaac Walton League
RODNEY WIBBENS	Community Clubs
JOYCE WILLIAMS	Planning Commission

In defining the task of the Committee, the Mayor noted that it is extremely important to the City of Duluth that the design and location of the roadway around the Central Business District be established as soon as possible to facilitate the planning and redevelopment necessary to revitalize the downtown area.

The Committee recognized that the roadway location and design must not only serve the purpose of safe and efficient vehicular movement, but would have significant physical, social, economic, and environmental implications which must be considered in the review process.

To assure that these considerations would be part of the review process, the Committee set up goals and objectives to guide them in determining the location and design of the roadway. In order to accomplish their objectives, the Committee decided to utilize a three-step approach. First, a review was made of existing studies on the issue, including consideration of previously suggested alternates; secondly, there was consideration of new data and design alternatives; and third, the selection of a preliminary solution.

On July 28, 1976, the I-35 Citizen's Advisory Committee presented a formal recommendation for the design solution of the extension of I-35 to Tenth Avenue East. The Committee's recommended design incorporates that part of the highway from Mesaba Avenue to approximately Eighth Avenue East, with the transition zone merging the highway into London Road between Eighth and Tenth Avenues East. This plan was selected because the Committee felt it accomplished their stated social, environmental, and economic objectives, and would meet the federal and state highway standards.

In the development of the recommended design, the Committee had as a major goal the integration of the highway into the environment of the community. As a result, special care was taken to identify potential problem or opportunity areas where the roadway design or adjacent land uses could be modi-

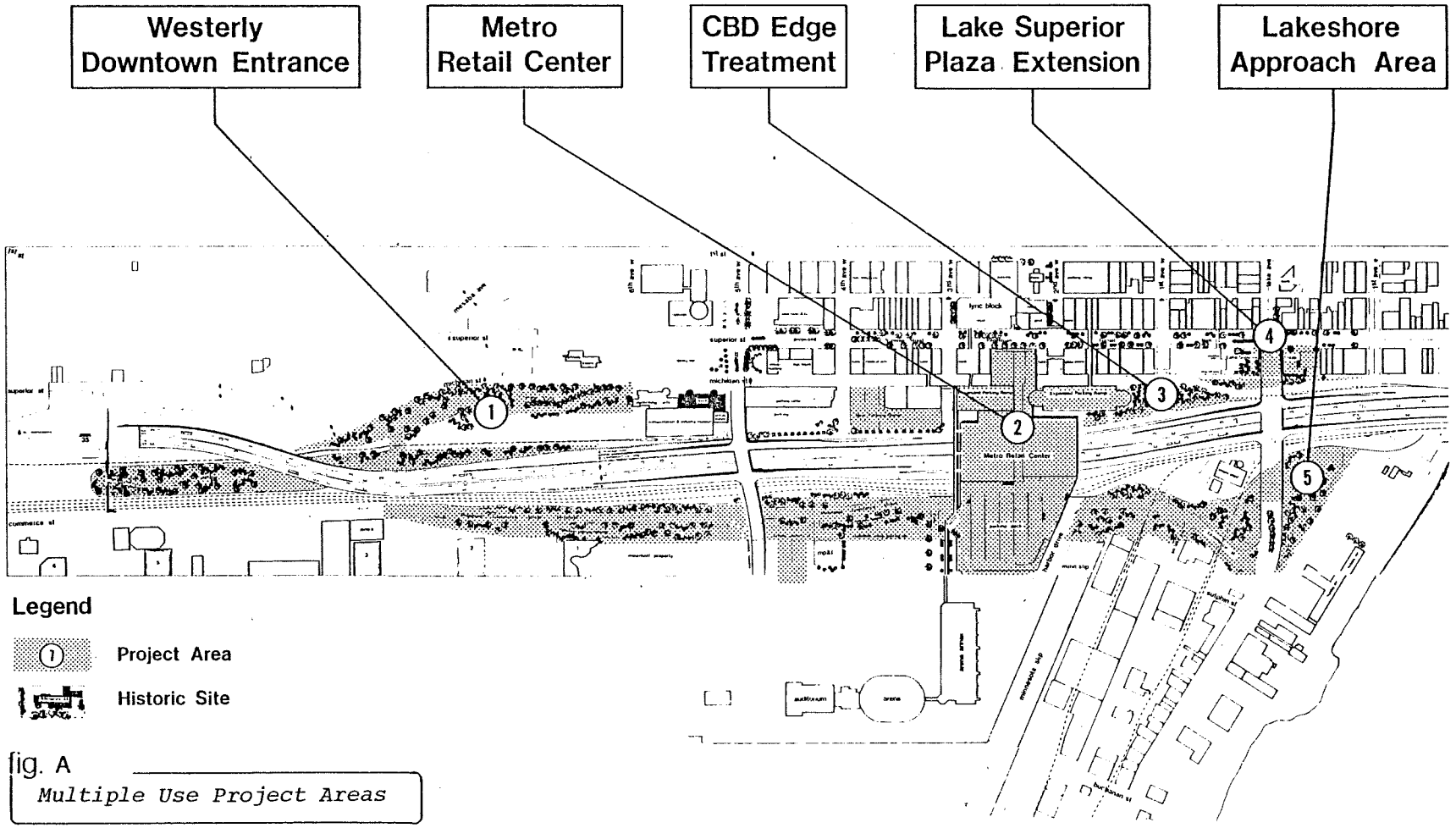


fig. A
Multiple Use Project Areas

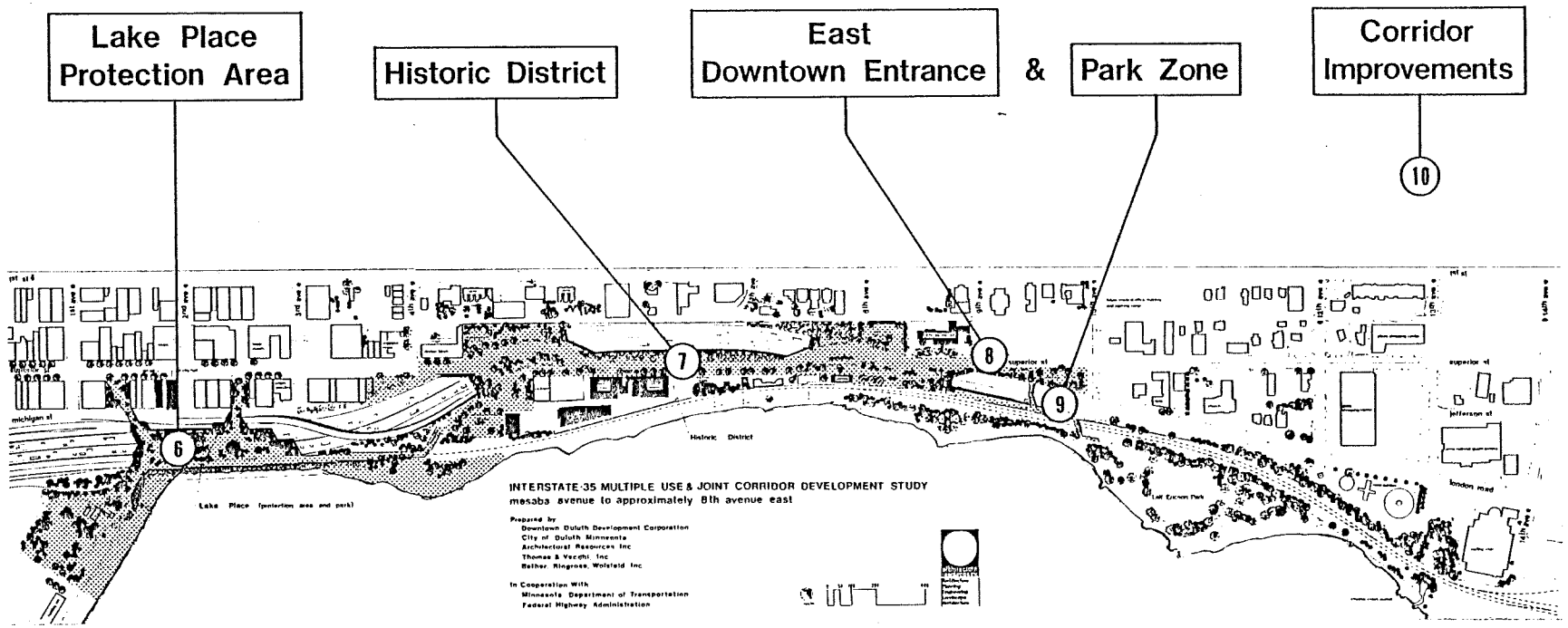
tied to minimize the impacts of the roadway and enable the City to realize the full economic, social, and environmental potential from construction of the freeway extension. These special areas, because of their importance, have been selected for continuing study by the Committee as part of the Multiple Use and Joint Corridor Development Study.

Identification of Joint Use Opportunities

The Multiple Use and Joint Corridor Development Study includes an investigation of ten joint use opportunities along the freeway corridor and their relationship to other public and private development programs in the area. The following paragraphs briefly describe the projects. (See Figure A.)

1. Westerly Downtown Entrance - Visually improve and identify the entrance to downtown and provide, on highway right-of-way, parking needed by adjacent existing and proposed cultural facilities.

2. Metro Retail Center - This project envisions the construction of a platform, which would span the highway corridor between Duluth's central retail and office core and the Arena-Auditorium Complex, thereby creating a strong



physical and visual linkage and access between the two areas, and provide a development site acceptable to major retailers.

3. CBD Edge Treatment - This landscaping will visually improve and identify the edge of the Central Business District.

4. Lake Superior Plaza Extension - The additional traffic on Lake Avenue at the edge of the retail core will intensify the need for long-term parking and pedestrian improvements. Therefore, a multi-level fringe parking facility will be provided with plaza development on top at the Superior Street level.

5. Lakeshore Approach Area - This street realignment and new access drive will make it possible to improve lake vistas and to provide parking facilities to serve the adjacent lakeshore park.

6. Lake Place Protection Area - In order to protect the roadway and rail line from Lake Superior overspray, it will be necessary to provide a protective structure between the rail line and the lake. The deck of the protective structure will be developed as a multi-use activities area in conjunction with the development of a lakeshore park system.

7. Historic District - The construction of multi-use bridge structures over Superior Street at the entrance to the Historic District will be necessary to minimize the impact of the roadway on the Historic District, retain vehicular and pedestrian access, utilities, and parking areas, and provide a visual setting to further enhance the area and to help the community realize the full development potential of this district.

8. & 9. Easterly Downtown Entrance and Park Zone - These improvements will visually improve and identify the entrance to downtown and provide safe overhead pedestrian and bicycle connections between Superior Street and Leif Ericson Park near Tenth Avenue East to replace present surface movement patterns which will be eliminated by London Road improvements.

10. I-35 Corridor Improvements - Site work improvements involving planting, earthwork, groundcover, lighting, signing, wall treatments and graphics must be coordinated for the entire corridor to insure compatibility of design solutions.

Approach to Study

The Federal Highway Administration and the Minnesota Department of Transportation agreed to undertake this study to refine the design concepts for the ten project areas, determine costs, and develop a financing plan for implementation. The study is being funded by the Minnesota Department of Transportation using Federal-Aid monies.

The Duluth Downtown Development Corporation coordinated the study for the City of Duluth utilizing consulting assistance for planning, design, and cost estimating. Architectural Resources developed the project analysis for Projects 1, 3, 5, 6, 7, 8, 9 and 10. Thomas - Vecchi Architects developed the project analysis for Projects 2 and 4. Bather, Ringrose and Wolsfeld, Inc. provided transportation planning analysis and recommendations contained in the technical memoranda included in the Appendix.

Close contact has been maintained with the Minnesota Department of Transportation to insure that the study is closely integrated with roadway planning. It was used in preparation of the final Environmental Impact Statement and will be utilized in development of final highway plans and specifications.

The Multiple Use and Joint Corridor Development Study has been developed in two parts - project analysis and financing plan/implementation schedule.

In the analysis section, each project area is identified, along with a description of existing land use and social and economic patterns that will be affected by the new highway facility. City objectives have been developed for integration of the highway and existing and proposed land uses along the highway corridor. The project justifications explain how each multi-use project will minimize the negative impact and capitalize on opportunities provided by the freeway extension. Design solutions describe the type and degree of use, and configuration. Preliminary architectural drawings are provided as a basis for cost estimates.

The financing plan combines cost estimates from all projects into an overall scheme specifying total costs and the sources and amounts of funding required to implement the projects. The schedule of implementation actions establishes a time-frame for development of each project depending on such factors as priority and coordination with roadway construction.

Purpose of Projects

It is a stated purpose of the Federal Highway Administration in FHPM 7-7-8 (PPM 90-5) that:

> *...highways, in addition to their stated purpose of fulfilling the important goal of improved transportation, should make a positive contribution toward enhancement of the environment through which they pass and assist communities in attainment of their stated goals and objectives.*

The joint use projects planned along the I-35 corridor in downtown Duluth will not only help to minimize the adverse impacts caused by the freeway extension, but will also assist in attainment of the City's downtown goals and objectives as described in the Duluth Downtown Development Program. (See Appendix 2.)

1. Joint corridor development provides the opportunity to revitalize the downtown commercial area by using right-of-way for public improvements needed to attract private development.

A major recommendation of the Duluth Downtown Development Program was the need for development of new department store space. Although downtown has many specialty shops, it lacks sufficient department store space to adequately support such shops.

Project Two proposes the construction of a platform over the freeway to be leased for private construction of major retail facilities. This development will satisfy the City's objectives of providing the downtown with a new image, strengthening the existing retail core, and stimulating additional downtown investment.

Joint development will provide a stimulus for revitalization of the area east of Lake Avenue. There are presently many deteriorating buildings and marginal uses in this area. Joint development provides the opportunity to redevelop the area as an entertainment district, with Project Four, the Lake Superior Plaza Extension, as the entrance. The connections to the Lake Place Protection Area, Project Six, will eliminate several of the deteriorated buildings and provide an incentive for redevelopment of the area.

The FHWA has participated in other joint development projects to assist localities in achieving economic objectives.. (See Financing Plan - Precedents.) In Baltimore, Maryland, the freeway was elevated to accommodate private industrial development underneath the roadway. Even though it was not necessary to elevate the highway for traffic-related purposes, the FHWA and the State of Maryland shared the additional costs on a 90/10 basis. The land was sold to the private developer for a nominal amount. In Washington, D.C., a platform is being constructed over I-95 on a 90/10 basis for various kinds of development, including two unsubsidized, market-rate housing projects. In Omaha, Nebraska, the FHWA and the State of Nebraska shared costs on a 90/10 basis to pave, light, landscape, and provide pedestrian benches on a ten block strip of highway owned land under a downtown freeway. The City leases the area for a nominal amount and in turn subleases a portion of the parking area to a private parking operator who charges market rates. The revenue produced exceeds the amount needed for operation and maintenance.

Several parking areas are proposed along the I-35 corridor in downtown Duluth. A major issue facing the downtown area is the need for adequate and convenient parking. There is an existing shortage of parking in many parts of downtown, especially along the eastern and western edges. In addition, more than 700 parking spaces are being eliminated for I-35 right-of-way. New parking is needed to meet these shortages and to serve new development along the corridor. Providing this parking in highway right-of-way will preserve scarce land in the CBD for private, tax-producing development. (See Figure B.)

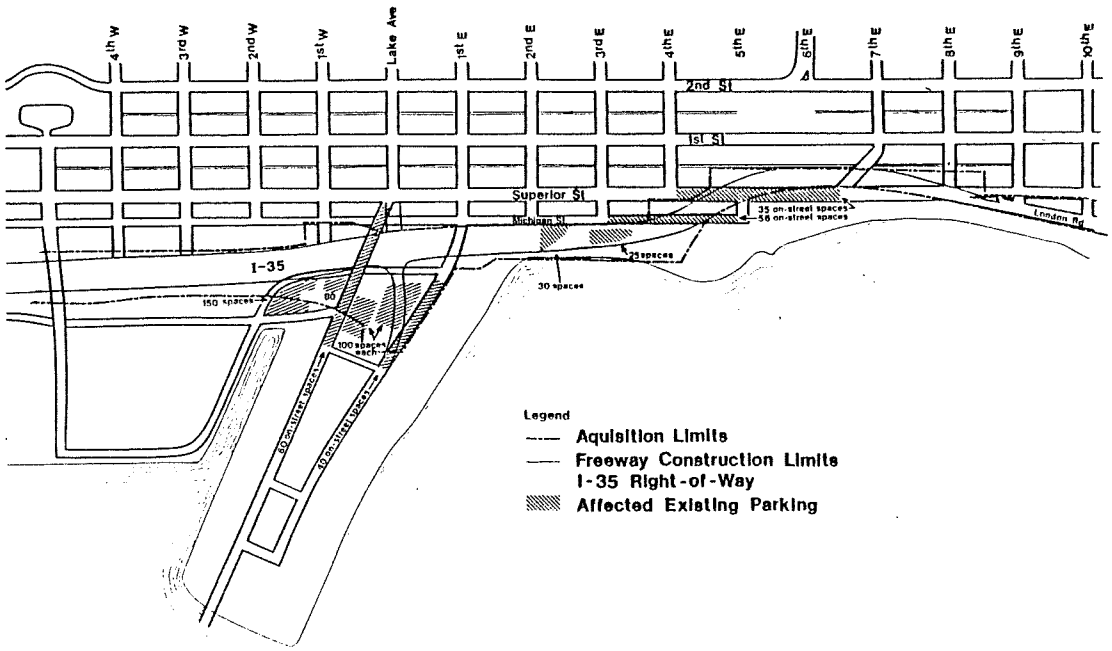


fig. B

Parking Spaces Eliminated by I-35

2. Joint corridor development can help to preserve the continuity of surface activity that would otherwise be disrupted by the roadway.

A pedestrian/bikeway route along the length of the corridor will restore the pedestrian and bicycle circulation between the western areas of Duluth and downtown and between downtown and the waterfront that would otherwise be seriously restricted by the extension of I-35. The downtown area is a vital link in the Duluth Bikeway Plan because it is the center of activity for most bicyclists.

Bikeways and Pedestrian Walkways in Conjunction with Federal and Federal-Aid Highways, FHPM 6-1-1-1, states:

> *The provision of bicycle and pedestrian facilities on Federal-Aid highway projects is encouraged. The construction of bicycle facilities and walkways may be approved as either incidental features of highway construction projects primarily for motor vehicular traffic or as independent bikeway or walkway construction projects where all of the following conditions are satisfied:*
>
> *(1) The facility will not impair the safety of the motorist, bicyclist, or pedestrian.*
>
> *(2) The facility will be accessible to users or will form a segment located and designed pursuant to an overall plan.*
>
> *(3) A public agency has formally agreed to:*
>
> *(a) operate and maintain the facility.*
>
> *(b) ban all motorized vehicles other than maintenance vehicles and, when snow conditions and state or local regulations permit, snowmobiles.*
>
> *(4) It is reasonably expected that the facility will have sufficient use in relation to cost to justify its construction and maintenance.*

The bikeway route along the I-35 corridor is an incidental feature of the freeway construction and is designed to meet all requirements specified in FHPM 6-1-1-1.

The multi-use bridge structures proposed as part of Project Seven will minimize the impact of the roadway on the Historic District by retaining the vehicular and pedestrian links with the downtown area and Leif Ericson Park. In addition, they will help the City achieve its objectives of preserving historic buildings and enhancing the character of the Historic District by providing site improvements on highway right-of-way that complement the unique character and lakefront location of the Historic District.

Improvements to London Road resulting from the freeway extension will disrupt existing surface movement patterns between Leif Ericson Park and adjacent residential neighborhoods. The pedestrian/bicycle bridge in Project Nine will provide safe overhead access near Tenth Avenue East.

3. Joint corridor development creates new opportunities for providing needed open space and amenities at the same time as minimizing the negative impacts of the freeway.

The City, and particularly the downtown area, has a unique hillside setting overlooking St. Louis Bay and Lake Superior. These water bodies are visible from many points in the downtown area, especially by looking south on the avenues. The freeway and its ancillary elements would act as a physical, visual, and psychological barrier separating downtown from the lakefront if joint corridor development is not undertaken. Landscape and Roadside Development, FHPM 7-6-3 (PPM 90-3) directs that:

> *Federal-Aid highway projects for new construction or for major reconstruction of highway sections shall be located and designed to insure:*
>
> *(1) that the overall facility has a pleasing appearance appropriate to its environment, and*
>
> *(2) that the overall facility is provided with reasonable and practicable landscape and roadside development.*

Because of a change in the roadway alignment, the Minnesota Department of Transportation presently owns excess right-of-way along the corridor beyond what is needed for highway construction. (See Figure C.) While it is recognized that such land would ordinarily be sold to pay for highway expenditures, this area must be used for joint corridor development to insure compatibility between the freeway and the unique waterfront area, and to maintain safe pedestrian/bicycle access between downtown and Lake Superior.

Project Four, the Lake Superior Plaza Extension, will help to minimize the impact of the freeway by providing parking to replace some of what will be eliminated by right-of-way acquisition. In addition, a plaza at the Superior Street level will soften the impact of surrounding buildings and streets, and will help satisfy a goal of the Duluth Downtown Development Program of providing open spaces for walking, sitting, and bicycling.

The Lake Place Protection Area, Project Six, will protect the freeway from severe weather on Lake Superior, but will also insure combined pedestrian/bicycle access, provide a visual link between the downtown area and Lake Superior, and provide open space for various social, cultural, and recreational activities.

The Minnesota Department of Transportation estimates that a disposal site must be found for approximately 250,000 cubic yards of material cut for construction of I-35. Joint corridor development will provide an opportunity to dispose of approximately 130,000 cubic yards of this material, while providing improvements to visually enhance the environment surrounding the freeway.

Interpretive signing will be developed to identify cultural and natural features along the corridor as part of the Tour du Lhut signing system. This system is sponsored by the National Endowment for the Arts under the City Scale Program, and is intended to guide both residents and tourists through the city. Tour du Lhut will provide a system of uniform, easily identified graphics that will guide the new resident, established resident, tourist, and other visitor to important points of interest. It will reduce the clutter of unrelated graphics by consolidating and concentrating information and will improve communication and the aesthetic qualities of the cityscape at the same time.

Joint corridor development planning provides a mechanism for insuring that the freeway will not only serve the traffic needs of an area, but will also respond to the particular economic, environmental, and social needs of the locality. The following sections describe the ten projects envisioned along the I-35 corridor in downtown Duluth, a financing plan, and a time-frame for their implementation.

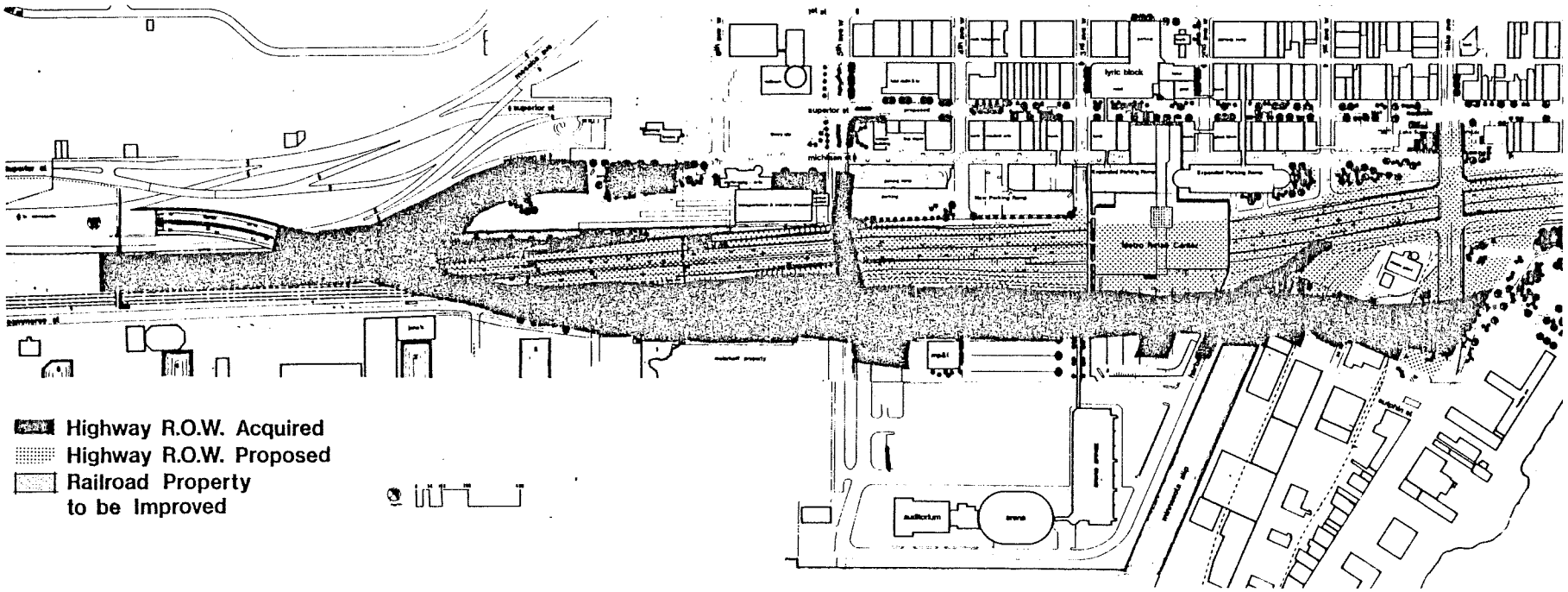
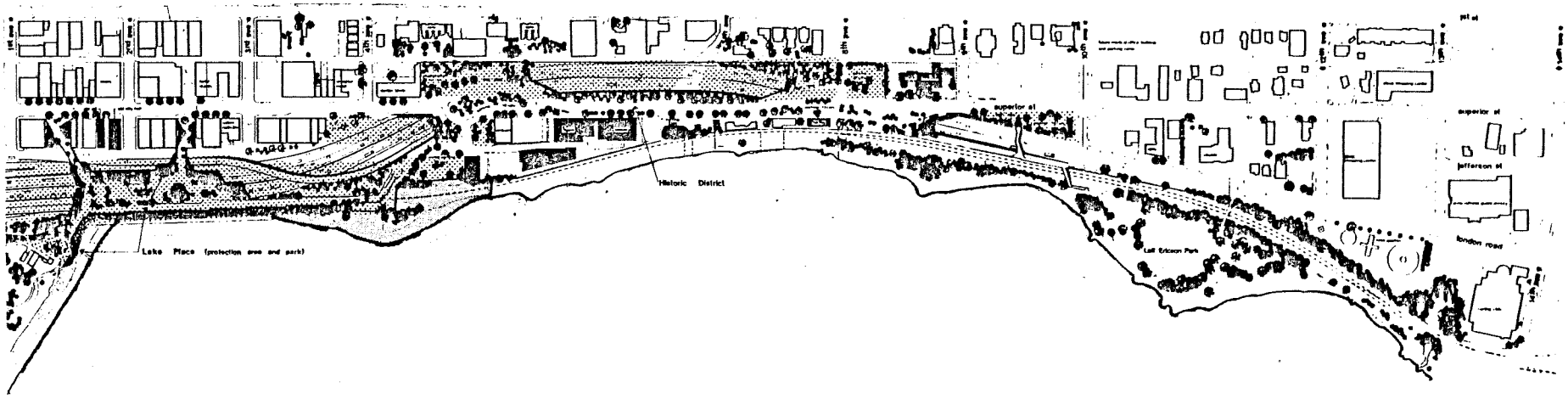


fig. C

I-35 Highway ROW


Historic District
Lake Place (protection area and park)
Leif Ericson Park
superior st
jefferson st
london road

project 1 - Westerly Downtown Entrance

project 1 - Westerly Downtown Entrance

I. Introduction

> *If found to be consistent with highway designs, any portion of right-of-way may be used for green strips, play areas, parking or other highway related public use, or for any other public or quasi-public use which would assist in integrating the highway into the local environment and enhancing other publicly supported programs.* (Management of Airspace, FHPM 7-4-3.)

Project One will provide major landscape treatment at the westerly edge of the CBD and parking to serve adjacent public facilities. Design elements along the roadway will be standardized from this point. A pedestrian/bicycle connection will be established as part of the Duluth Bikeway Plan, providing a critical link between West Duluth, the CBD, and lakefront. (See Appendix 4.)

II. Area Identification

Project One is located in the area west of the Fifth Avenue West overpass, between Superior Street on the north, Commerce Street on the south, and the existing pedestrian overpass on the west. The parcel just east of the pedestrian overpass between Commerce Street and the existing railroad grades is undeveloped railroad property that must be used to accomplish the pedestrian/bicycle connection. This is not a part of highway right-of-way, but it is anticipated that Burlington Northern, Inc. will donate the land as a public service.

The project area encompasses the existing railroad marshalling yards, the St. Louis County Heritage and Arts Center/Lake Superior Museum of Transportation and Industry, and the Gateway Towers apartment complex. Adjacent land uses include the Arena-Auditorium Complex and a large land area along the waterfront presently used in a limited industrial nature. This parcel, because of its proximity to the Arena and waterfront, has been designated as a potential redevelopment area involving possible marina, housing and commercial improvements.

The vertical alignment of the freeway is such that approaching the CBD from a westerly direction, the roadway is approximately thirty-three feet above grade. The through lanes slope downward to grade level at the Fifth Avenue West overpass. Ramp elevations at Fifth Avenue West are approximately thirty-six feet above grade.

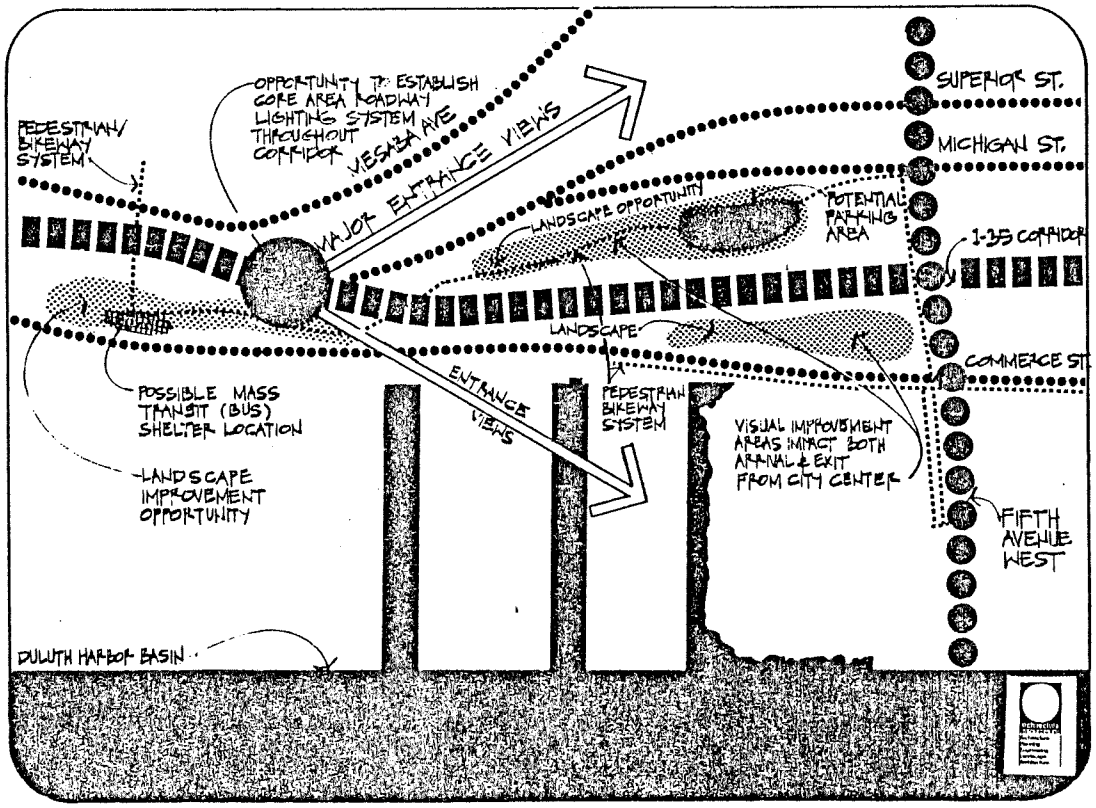


fig.1-1

Objectives: Westerly Downtown Entrance

III. Area Impacts

1. Proximity of the roadway to the area cultural center may create changes in the air quality and noise level.

2. Proximity of the roadway to the undeveloped waterfront parcel will create potential conflicts on the appropriate development of the property.

3. Extension of the roadway will provide a visual entry point to the CBD and establish a positive sense of direction/orientation for the driver.

4. Extension of the roadway will aggravate the existing situation of difficult bicycle/pedestrian access between western areas of Duluth and the CBD, and between the CBD and the waterfront.

IV. Project Objectives (See Figure 1-1.)

1. Improve the visual entrance to the western edge of the CBD.

2. Establish a parklike character along roadway and provide other improvements to create visual continuity and positive driver orientation.

3. Establish continuity between Gateway Towers Joint Use Project (major landscape improvements) and Project One (major landscaping, parking, pedestrian/bicycle connection).

4. Enhance adjacent public facilities, including the Duluth Public Library and the cultural center, by providing support facilities such as parking, landscape improvements, and pedestrian/bicycle connections.

5. Encourage positive development of adjacent waterfront property by providing corridor improvements.

6. Permit safe and accessible connections across the roadway by bicyclists and pedestrians.

7. Provide a pedestrian/bicycle connection around the CBD that will be incorporated into the existing Duluth Bikeway Plan and the overall state and federal systems.

V. Project Description

Major landscape treatment will be provided on highway right-of-way in several areas of Project One. (See Figure 1-2.) Improvements will include reshaping of existing contours and planting of native plant species. All improvements will be coordinated with the Gateway Towers Joint Use Project (major landscaping).

A 57 space parking lot will be developed on the north side of the roadway, west of the cultural center. This parking will help to alleviate the existing parking shortage in the area and meet the future needs of adjacent public facilities. Landscape treatment will be provided to buffer the parking area from the roadway and help to integrate the parking into the surrounding environment.

A bikeway-walkway will be provided in Project One to link with West Duluth, the CBD, and the lakeshore. Several alternatives were explored to determine the appropriate design solution, but most were rejected either because they were not economically feasible or because of their inability to achieve a safe, convenient connection with the CBD and the Arena. The proposed solution uses an existing pedestrian overpass, undeveloped railroad property, and excess highway right-of-way to provide a connection with the CBD, the Arena, and the waterfront.

From a westerly direction, the bikeway/walkway will extend along Superior Street until it meets the existing pedestrian bridge over the freeway. (See Figure 1-4.) It will cross to the south side of the freeway, where it will connect with a ramp sloping down to a natural earth berm constructed between the freeway and the railroad marshalling yards. From the planted earth berm, which will be built on a gradual slope, the pedestrian/bicycle connection will continue easterly, passing under

project limits

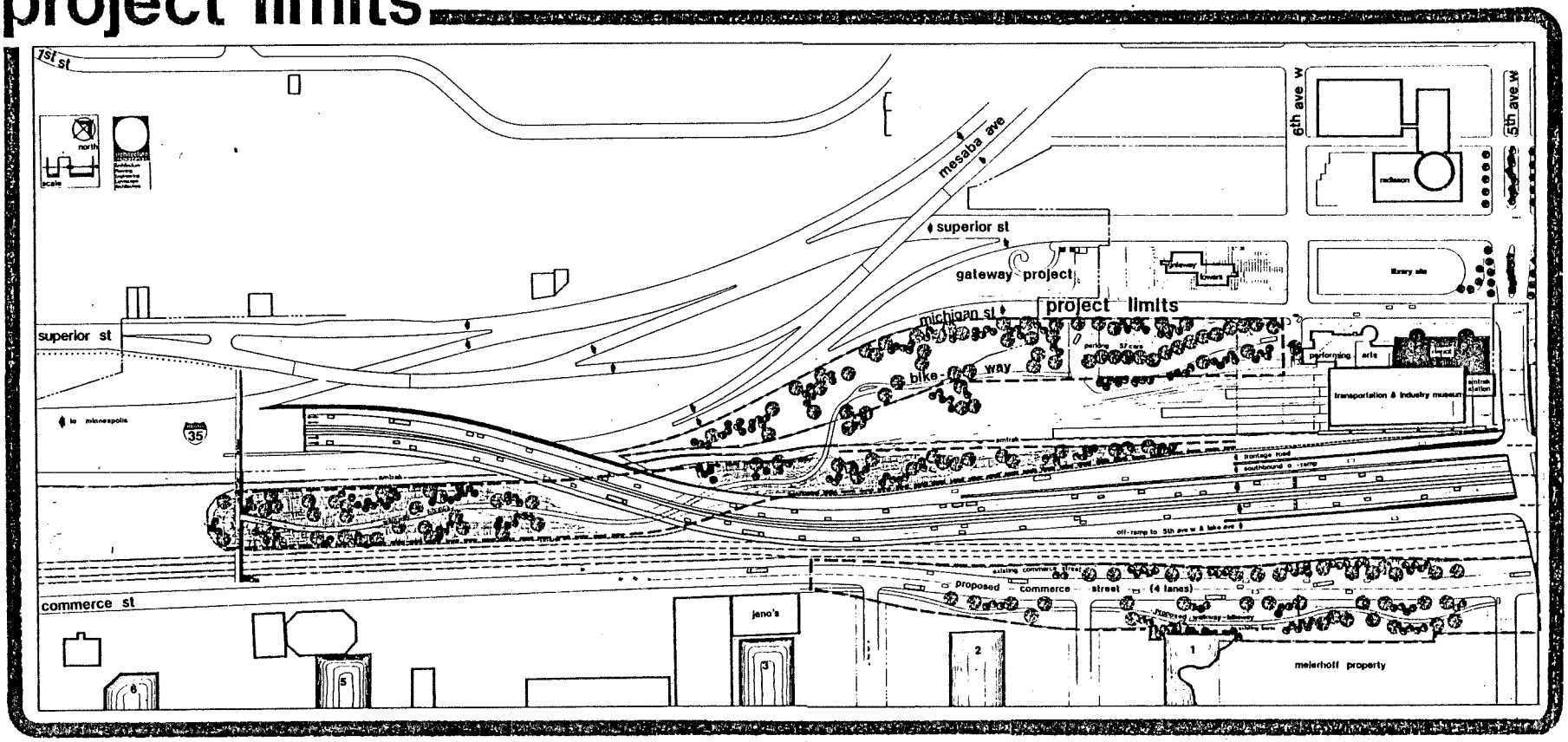


fig. 1-2

Westerly Downtown Entrance

the freeway ramps to the north side of the freeway and continuing along the south side of Michigan Street to the cultural center. From the cultural center the trail will cross to the south of the freeway on a Fifth Avenue West bicycle lane connecting with the Arena, Lake Place, and Park Point.

Design improvements along the pedestrian/bicycle connection will include low-level pedestrian scale lighting and plant materials similar to the overall corridor selections. The trail surface will be asphalt along its entire length, except for a small concrete portion ramping from the earth berm to the pedestrian overpass.

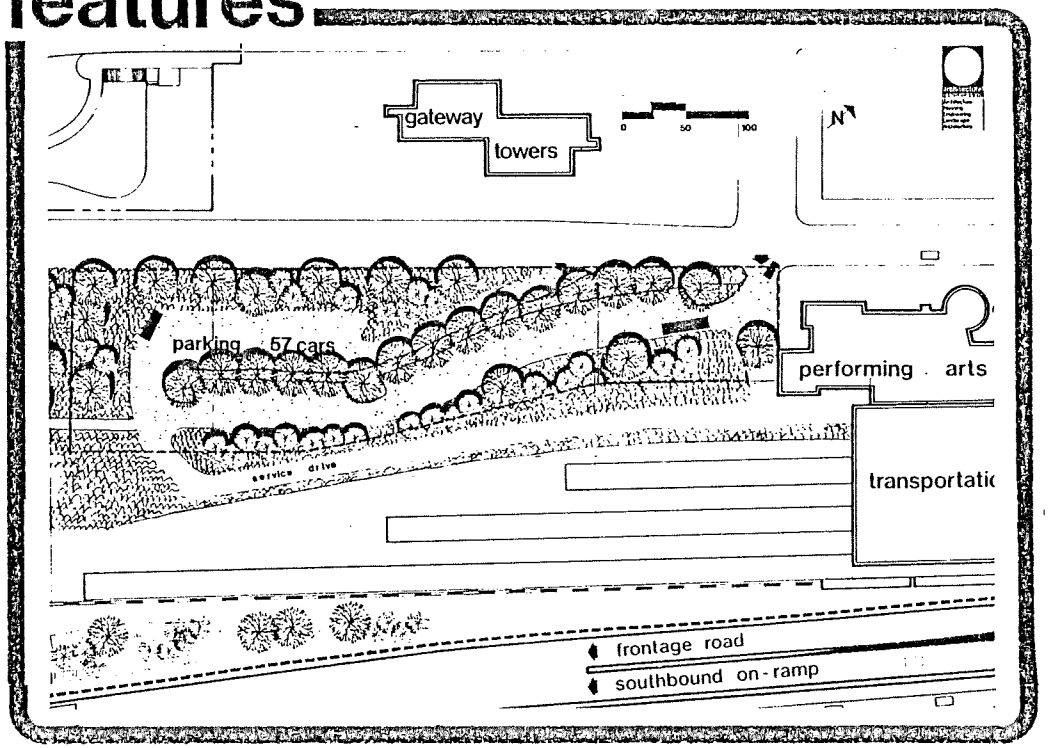


fig. 1-3
Westerly Downtown Entrance

VI. Project Justification

Landscape improvements proposed in this project area are consistent with federal guidelines established in Landscape and Roadside Development, FHPM 7-6-3 (PPM 90-3). Landscape improvements are needed along both sides of the roadway to (1) establish an entry setting and provide positive views of downtown and the waterfront, (2) reinforce significant historical and cultural features, and (3) minimize the impact on the roadway to the waterfront redevelopment parcel located south of the roadway.

Expansion of existing cultural facilities along the north side of the roadway and the construction of a new library in this area will generate a significant need for more parking spaces. The 1975 Transportation Plan for Downtown Duluth, prepared by Bather, Ringrose and Wolsfeld, Inc., recommended that 300 additional parking spaces were needed to serve the Civic Center, the Performing Arts Center, and the new library. Excess highway right-of-way west of the new Performing Arts Center is ideally situated to provide some of these needed spaces. A portion of this area is already being leased from the Minnesota Department of Transportation for cultural center parking, demonstrating the need for such continued use. Parking is an allowable use of highway right-of-way specified in Management of Airspace, FHPM 7-4-3.

A pedestrian/bicycle connection is needed through this area to preserve and improve access between western Duluth and the lakeshore/CBD. The proposed solution allows pedestrians and bicyclists to be removed from traffic congestion and safety hazards. Federal policy (Bikeways and Pedestrian Walkways in Conjunction with Federal and Federal-Aid Highways, FHPM 6-1-1-1) encourages the provision of bicycle and pedestrian facilities on Federal-aid highway projects. This trail is an incidental feature of the freeway construction, necessary to maintain safe pedestrian and bicycle access. The design meets all requirements specified in FHPM 6-1-1-1. (See Appendix 4.)

VII. COST ESTIMATE

This estimate is for joint development features located immediately to the west of the Performing Arts Center/Depot. (See Figure 1-3.) It assumes that fill material (25,000 c.y.) will be provided and compacted as a part of highway construction. All other site improvements proposed in this area are included below.

EARTHWORK. . . . . includes topsoil and finish grading	$ 4,200
SURFACING. . . . . includes base, asphalt surfacing, curbs and gutters, sidewalks, signs and storm drainage	60,000
PLANTING . . . . . includes turf, groundcover, vines, shrubs, deciduous and evergreen trees, and perennials	26,800
LIGHTING . . . . . includes pedestrian and area lighting and miscellaneous connections	9,000
TOTAL	$ 100,000

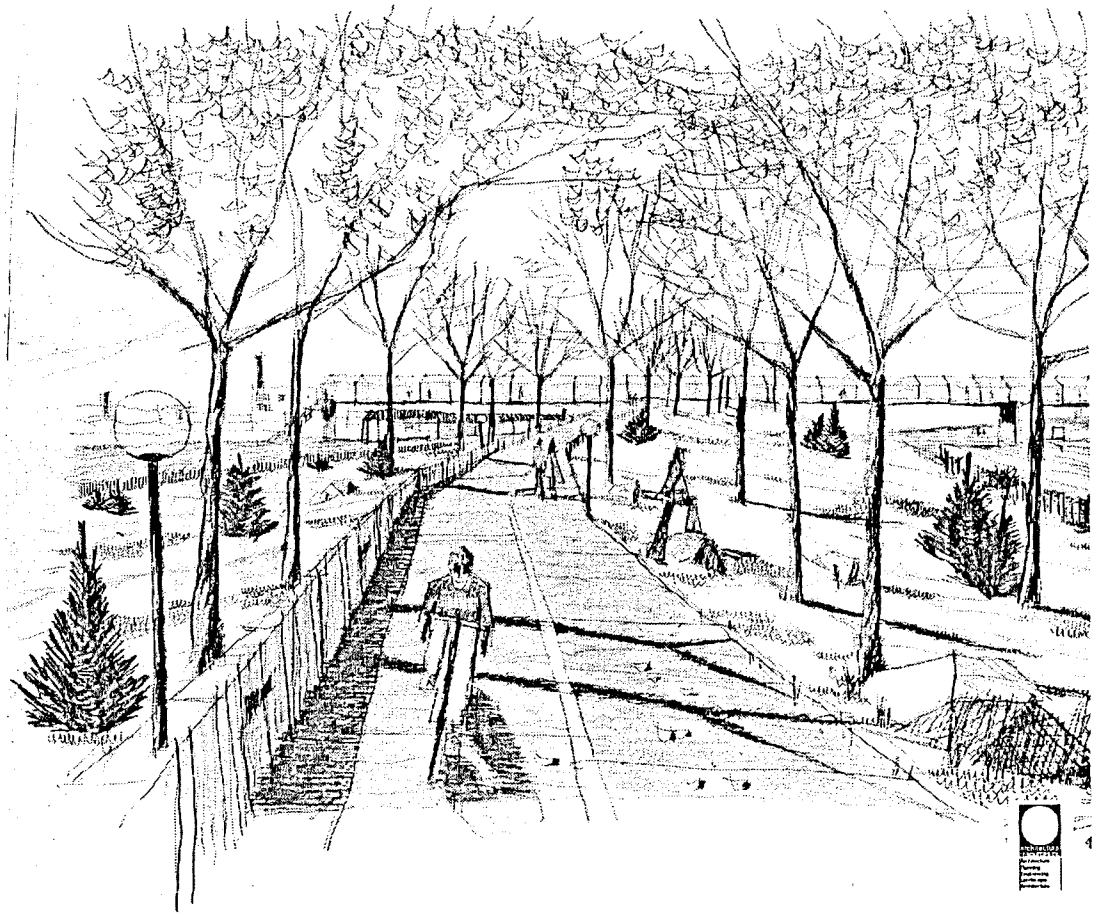


fig. 1-4

Walkway/Bikeway Connection: Westerly Downtown Entrance

project 2 - Metro Retail Center

project 2 - Metro Retail Center

I. Introduction

The extension of I-35 will create a unique opportunity to capitalize on the potential of a high volume traffic artery adjacent to the CBD. By platforming over the new freeway and extending that platform into the CBD, it is possible to overcome the natural constraints of Lake Superior and the steep topography which have dictated the obsolete linear configuration of the downtown area. (See Figure 2-1.)

Project Two will provide a platform in air rights over I-35 for the construction of a major retail center and public mall, extending over I-35 to Superior Street in the heart of the CBD. In addition, parking will be provided to serve the Metro Retail Center and all-day workers from the CBD.

II. Area Identification

Project Two is located in the area between Commerce and Superior Streets and between Second and Fourth Avenues West. The project area includes the existing railroad marshalling yards, which will be relocated for freeway construction, and a municipal surface parking lot which will be eliminated by Project Two improvements. Adjacent land uses include the Arena/Auditorium Complex on the south and existing parking ramps along the edge of the CBD.

In the vicinity of the retail platform, the roadway is flat and at grade level. The retail platform is 23 feet above the roadway. Horizontally, the roadway curves very gradually northward. The columns of the platform follow this slight curve and touch down at the medians between the roadway sections.

III. Area Impacts

1. The freeway extension will improve accessibility to the CBD and the Arena/Auditorium Complex.

2. The freeway extension will remove through traffic from Superior Street, eliminating much of the congestion downtown.

3. The freeway extension will (as do the existing railroad yards) separate the CBD from the Arena/Auditorium Complex and prevent the expansion of the CBD to the south.

4. Acquisition of freeway right-of-way will eliminate parking oriented to downtown workers. (See Figure B.)

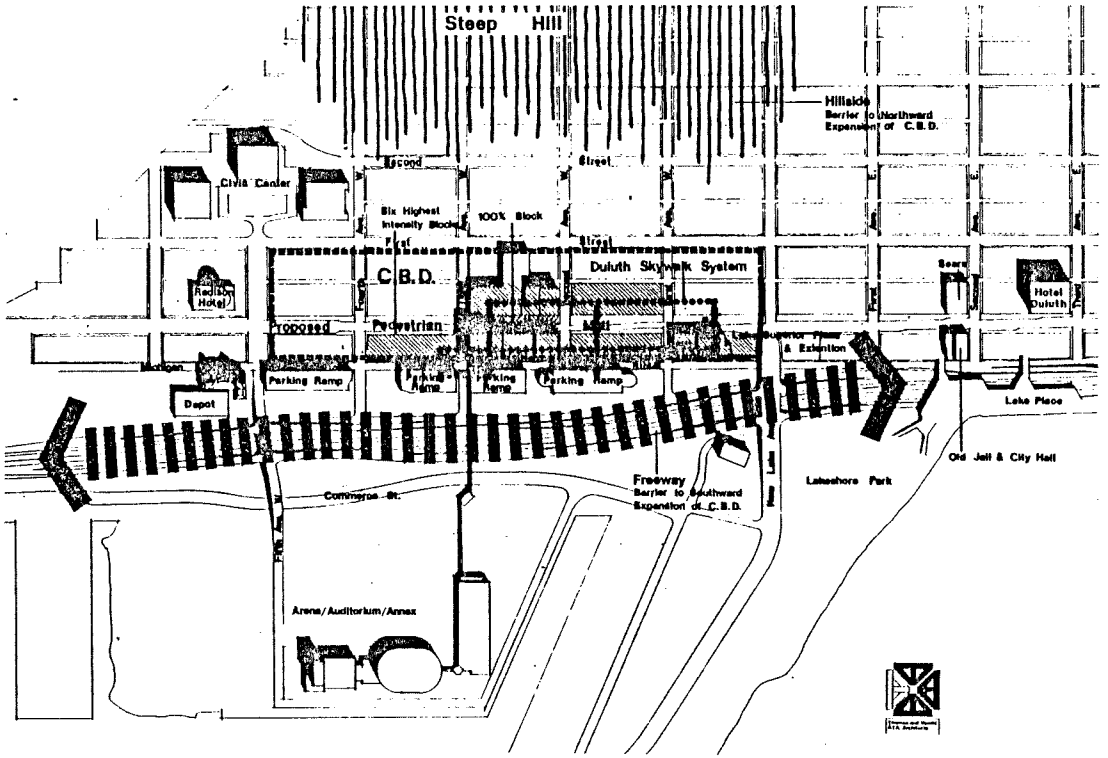


fig. 2-1
CBD Exhibit: Metro Retail Center

IV. Project Objectives (See Figure 2-2.)

1. Provide downtown with a new image by redevelopment along Superior Street and establishment of a visual and physical link with the Arena.

2. Promote use of the Arena/Auditorium Concourse by developing adjacent uses which will attract people to that facility.

3. Expand the CBD to the south by taking advantage of air rights and previously under-utilized areas between the CBD and the Arena.

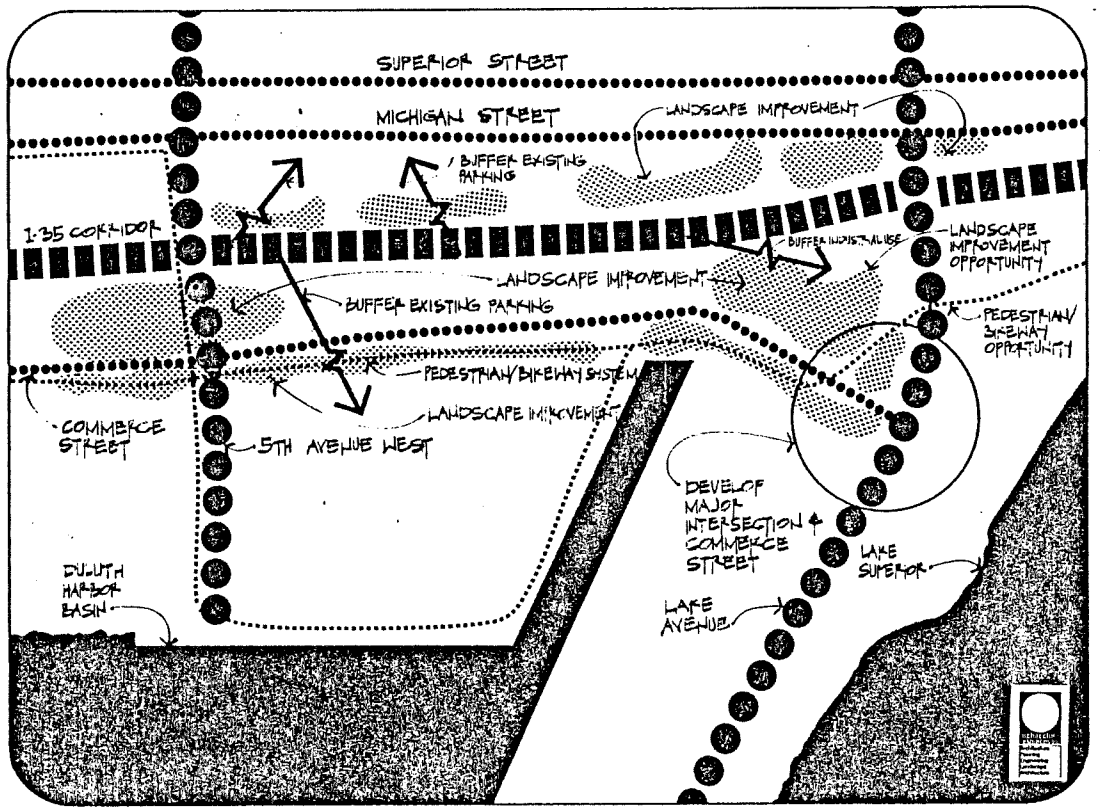


fig. 2-2

Objectives: Metro Retail Center

4. Arrange land uses to strengthen the CBD and stimulate investment downtown.

5. Consolidate and interconnect uses in the CBD by development of a climate controlled pedestrian system.

6. Discourage the entry of vehicles into the CBD by the development of fringe parking facilities and transit-related amenities.

V. Project Description

Project Two will provide a rectangular shaped platform over I-35, extending from relocated Commerce Street to Superior Street. In width, the platform extends easterly for 520 feet from the east edge of the Arena Concourse. A two-story retail complex will be developed on the platform with 260,000 feet of space for two major retailers and a variety of speciality shops. Periodic access points will be provided between the Concourse and the retail facilities.

A 50 foot wide mall will separate the two major retailers. This mall will be treated as public space providing amenities for the shopper, and will also act as a strong pedestrian circulation system between the parking areas and the CBD. This central mall area will be open to the second level mezzanine and will receive natural lighting from the rooftop skylights. Plants have been chosen for this area that will do well in this type of lighting.

Space for the major retailers will be provided on each side of the public mall on the platform directly over I-35. Specialty shops will be located along the mall's length as it extends into the CBD. Single story shops will be located at the touch down area along Superior Street. Some of these shops will be new; others will utilize existing structures that have functionally efficient retail space. Servicing for retailers will take place either from the top level of the parking deck which is attached to the southern edge of the platform or underneath the platform at the frontage road.

Parking will be developed in several locations to serve the Metro Retail Center. (See Figure 2-4.) A new parking ramp with 325 spaces will be constructed immediately northwest of the platform, between Third and Fourth Avenues West. This ramp will have access and entry points on Michigan Street and the southbound frontage road. An additional level with 116 spaces will be added to the Town Park ramp immediately northeast of the platform. An additional level with 66 spaces will be added to the First National ramp immediately north of the platform.

A parking deck will be attached to the southern edge of the platform with 401 spaces on the deck surface. This deck has been designed to give shoppers the feeling of parking on a large lot rather than in a ramp. The deck has a minimal overall slope of less than 2 percent, with a maximum slope of 5 percent. The deck extends approximately 400 feet from the platform into the Arena parking lot.

An intermediate level with 272 spaces will be placed underneath the deck's surface and over the northeastern edge of the Arena lot. This area is proposed as fringe parking for CBD workers, but may be changed depending on the availability of funding and negotiations with major retailers.

The sloped configuration of the parking deck permits Commerce Street to be realigned north of the Concourse access tower, creating approximately 462 additional spaces on the Arena lot for use by shoppers and CBD workers. Persons parking in this area can enter the Concourse without crossing Commerce Street.

Table 1 summarizes needed short and long term parking spaces.

VI. Project Justification

Provision of a platform in air rights over I-35 is wholly consistent with the scope and intent of federal policy established in Joint Development of Highway Corridors and Multiple Use of Roadway Properties, FHPM 7-7-8 (PPM 90-5), and Management of Airspace, FHPM 7-4-3 (PPM 80-10).. FHPM 7-7-8 advises that:

> *highways... should make a positive contribution toward enhancement of the environment through which they pass and assist communities in the attainment of their stated goals and objectives ... In implementing this policy every encouragement should be given to making maximum utilization of the highway rights-of-way for both public and private development...*

The Duluth Corridor Study (Eckbo Study), prepared by the Minnesota Department of Transportation, and the Downtown Duluth Development Potential, an economic study jointly funded by the State of Minnesota, the Duluth Area Chamber of Commerce, and the City of Duluth, both found a platform over the freeway to be indispensible to the attainment of the officially promulgated goals and objectives of the City of Duluth. (See Appendix 2.) Both the Eckbo Study and the economic study determined that private development over the highway corridor would fulfill the stated purpose of revitalization of the CBD, strengthening of its tax base, and restoration of its role as a diversified regional center.

table 1

Parking Facilities: Metro Retail Center

FACILITY	SPACES SHORT TERM	LONG TERM
Metro Retail Center Deck		
(Upper)	401	
(Intermediate)		272
(Lower)		340
New Ramp West of Metro Retail Center	325	
Addition to Town Park Ramp	116	
Addition to First National Ramp	66	
New Surface Spaces @ Arena	188	148
TOTAL	1096	760

The provision of the platform over I-35, in conjunction with highway construction, affords Duluth its last remaining opportunity not only to redevelop, but also to adjust the land uses in such a way as to make them conform to acceptable contemporary patterns. The predictable alternative is the continued decline of the CBD as a regional center precisely because of the inability of the "local network of services" to function effectively within the constraints dictated by the natural barriers of Lake Superior and the steep terrain.

The railroad tracks already form a strong physical barrier between the CBD and the Arena/Auditorium tourist and convention complex. The extension of I-35 alongside these rail lines will further intensify the division of the retail/hotel area from the tourist/convention center. The Arena/Auditorium Complex is the focus of Duluth's tourism and convention business. Its construction has allowed conventions and expositions involving greater numbers of people than had before been possible. The economic impact of conventions alone is presently about $30 million a year. A $5.5 million expansion has recently been completed, bring convention facilities at this complex to over 106,000 square feet. With this facility, Duluth can accommodate events and conventions equivalent to those in cities of a million people.

The expansion of the convention space at the Arena, and the Arena Concourse connection to the CBD (under construction) provided the impetus for redevelopment of the Lyric Block. Directly connected to the Arena via the Concourse is the 242 room Normandy North Hotel and retail space now under construction with an anticipated completion date of November 1977. While the Arena Concourse will help to bridge the freeway and connect these two areas, it is certainly not sufficient nor comprehensive enough to accomplish the city's main objective of reshaping and consolidating the CBD.

To accomplish this objective, and to provide the only practical way to overcome the natural constraints of the Lake and steep topography, a platform must be constructed over the freeway and extended into the CBD. By utilizing these air rights over I-35, the Arena/Auditorium Complex will be connected to traffic generators in the CBD.

Use of a platform meets the particular needs of Duluth by allowing a reshaping of the downtown, changing it from its obsolete linear configuration to a more compacted central core. Any attempt to perpetuate the existing strip commercial pattern as an alternative to the platform would be an exercise in futility, since the existing configuration is obsolete, fails to meet contemporary consumer standards for a functional downtown and will be unacceptable to developers and investors. A platform is the only marketable downtown concept Duluth has to offer, as negotiations with major retailers, developers, and investors have proven.

All other alternatives having been rejected, the City must now either proceed with platform development over the freeway, or write off present efforts to re-establish the CBD as a diversified regional center. In turn, since every market indicator points to an increasing dependence on the regional center function as the foundation of Duluth's economic base, an inability to proceed with downtown revitalization will have a profoundly adverse effect on the economy of the entire City.

FHPM 7-7-8 (PPM 90-5) requires that highways:

> *be designed and constructed... to conform to the particular needs of each locality.... Any State highway department which submits plans for a Federal-aid highway project involving the bypassing of, or going through, any city... shall certify to the Secretary that it... has considered the economic and social effects of such a location, its impact upon the environment, and its consistency with the goals and objectives of such urban planning as has been promulgated by the community.*

Provision of a platform over I-35 is consistent with the stated goals and objectives of the downtown planning program. (See Appendix 2.) It is emphasized that this proposal is the result of an intensive and highly sophisticated planning effort.

FHPM 7-7-8 (PPM 90-5) also states that:

> *Federal-aid funds may participate in the highway-related costs of construction of platforms in the airspace when: a) the use of such space is an integral part of the total corridor joint development and can be generally supported on the basis of the intensity of the land use in the corridor; b) the public use or tax benefits to the locality or the advantages to the highway program of the selected route location over alternative locations; and c) the proposed facility complies with the rules established in PPM 80-10 to protect the highway and its users.*

With regard to the intensity of land use in the corridor, the following points are emphasized:

1. The portion of the CBD directly north and adjacent to the proposed platform features the highest intensity uses in the center city with a heavy concentration of the city's first class office space, a clustering of its major lending institutions, its remaining major retail outlets, small shops, many of Duluth's most popular eating and entertainment spots, and ramp parking facilities. Already the most intensely developed part of the city, this area is being further developed by the construction of a major retail/hotel/parking complex, the Lyric Block Development.

2. The platform will touch down in this remaining viable portion of the downtown. Further to the east we see deterioration and an influx of marginal and incompatible uses.

3. The city's overall strategy is to stop further erosion of the core area by establishing Lake Avenue as its eastern anchor. By establishing Lake Avenue as the edge of the Central Business District, the City can preserve and enhance the remaining healthy section between Fourth Avenue West and Lake Avenue. This revitalized and climate controlled nucleus in combination with the Arena-Auditorium Complex would become the springboard for future growth and development in a newly created core that would overcome the impediments as described in the Eckbo Study.

Guidelines for Joint Development on State Highway Transportation Ways, prepared by the Stanford Research Institute for the Federal Highway Administration in 1972, describes public use in the following manner:

> *Public use is a general term which escapes precise definition. It has been described as anything that benefits or contributes to the general well being of society or a substantial number of its members. In defining public use, courts have been deliberately vague, wisely recognizing that public use is a changing concept which must remain flexible to fit the needs of an evolving society... In determining whether or not a particular use is public the decision of the courts may be classified as endorsing either a narrow or broad view of public use. The narrow view of public use contemplates a "use of employment of the public." The broad concept treats public use as public advantage, and anything which contributes to the welfare of the entire public qualifies as a public use.*

With regard to public use, while one objective of the platform is to establish a physical and visual between the CBD and the Arena/Auditorium Complex, the overriding public purpose is to attract new development and private investment to downtown Duluth. The City has invested heavily over the last decade to provide citizens and visitors with public entertainment, recreational, and cultural facilities in the downtown area. During this same period however, there has been a disastrous erosion to the downtown tax base, with over a three million dollar decline in assessed value between 1972 and 1975. In seeking new downtown investment, the City's objective is to secure new sources of tax revenue which, in turn, can be temporarily "captured" (under the provisions of the State Municipal Development District Legislation) and earmarked to retire the cost of the massive public actions which will be required to revitalize the CBD.

On the matter of route location, environmental and historic preservation concerns have prompted the selection of a new alignment which, while preferable, does tend to segment the development of the downtown area. This constraint can be converted to an asset with the provision of the platform.

Federal regulations established in FHPM 7-4-3 (PPM 80-10) have been carefully reviewed to ensure that the platform is consistent with its provisions.

project limits & features

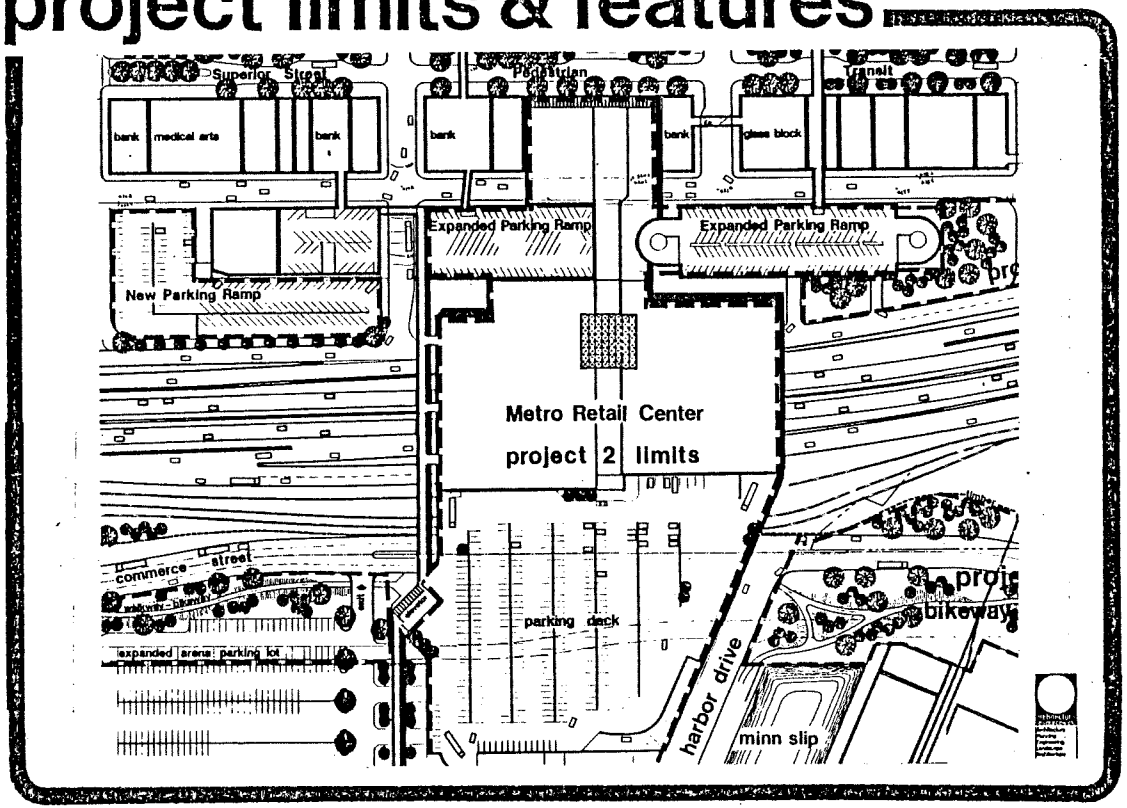


fig. 2-3
Metro Retail Center

Parking to support the revitalized CBD will also be provided in Project Two. Adequate, economical, convenient parking is a necessity of any healthy retail/commercial area. With the construction of I-35, more than 700 parking spaces will be eliminated along the corridor. (See Figure B.) To compensate for some of this loss of parking, new parking facilities will be needed in strategic locations. Location of these facilities, as well as access and exit points, have been coordinated to provide for maximum efficiency while minimizing traffic and congestion in the CBD. (See Appendix 1b.)

Fringe parking for workers employed in the CBD will reduce the volume of traffic entering the CBD. Access is provided to the Arena Concourse from the fringe parking areas. Once at the Concourse level, the worker can proceed to the platform or further north to the CBD.

To further facilitate alternate modes of travel, the touch down point of the platform on the Superior Street Transit Mall will encourage people traveling to the CBD to use the bus transit system.

VII. COST ESTIMATE

This estimate is for joint development features associated with the retail platform over the highway as shown by the accompanying drawing. As noted previously, some of the improvements such as the portion of the platform extending to Superior Street and a portion of the parking deck, are located outside of highway ROW. All improvements associated with the platform are included below. For clarity, the estimate has been divided into 10 components.

A. PLATFORM WITHIN RIGHT-OF-WAY..... $3,640,000
145,600 square feet; Construction:
precast concrete deck; reinforced
concrete girders, spandrels, columns,
shear walls, & pile caps, piles.

1. Platform area under retail
space.....$3,250,000
130,000 square feet

2. Platform area under public
concourse space.....$ 390,000
15,600 square feet

B. DEVELOPMENT OF PUBLIC CONCOURSE SPACE INSIDE
RIGHT-OF-WAY..... $1,029,100
24,600 total square feet.
15,600 sq. ft. on 1st level
9,000 sq. ft. on 2nd level.

1. Shell construction on
top of platform.....$ 615,000

2. Skylight.....$ 120,000
6,400 square feet

3. Escalators, two.....$ 250,000

4. Furnishings:.....$ 44,100
Inside ROW
plant materials, soil,
containers, etc.

C. PLATFORM OUTSIDE RIGHT-OF-WAY..... $1,755,900
40,600 square feet; Construction:
precast concrete deck; reinforced
concrete girders, spandrels, columns,
shear walls, & pile caps, piles.

1. Platform area under retail
space.....$ 650,000

2. Platform area under public
concourse space
14,600 square feet/
outside ROW.....$ 365,000

3. Land assembly.....$ 715,000
Includes: acquisition,
demolition, relocation

4. Furnishings.....$ 25,900

D. UTILITIES..... $ 75,000
Includes: water, sewer, electrical power

E. PARKING DECK..... $3,600,000
275,000 square feet; Includes shipping/
receiving area

a. Surface of Deck:

120,000 square feet
inside ROW.....$1,480,000
53,000 square feet
outside ROW.....$ 650,000

b. Intermediate Level:

50,000 square feet
inside ROW.....$ 630,000
53,000 square feet
outside ROW.....$ 650,000

c. Utilities.....$ 190,000
Includes lighting and
drainage

F. EXPANSION OF ARENA LOT..... $ 80,000
170,000 square feet

G. PARKING RAMP WEST..... $1,300,000
148,724 square feet/325 spaces

H. FIRST NATIONAL RAMP EXPANSION..... $ 264,000
28,000 square feet/66 additional spaces

I. TOWN PARK EXPANSION..... $ 406,000
37,000 square feet/116 additional spaces

J. DEVELOPMENT OF RETAIL SPACE..... $5,148,000
286,000 square feet/inside &
outside ROW;
Shell construction, only.

TOTAL $17,298,000

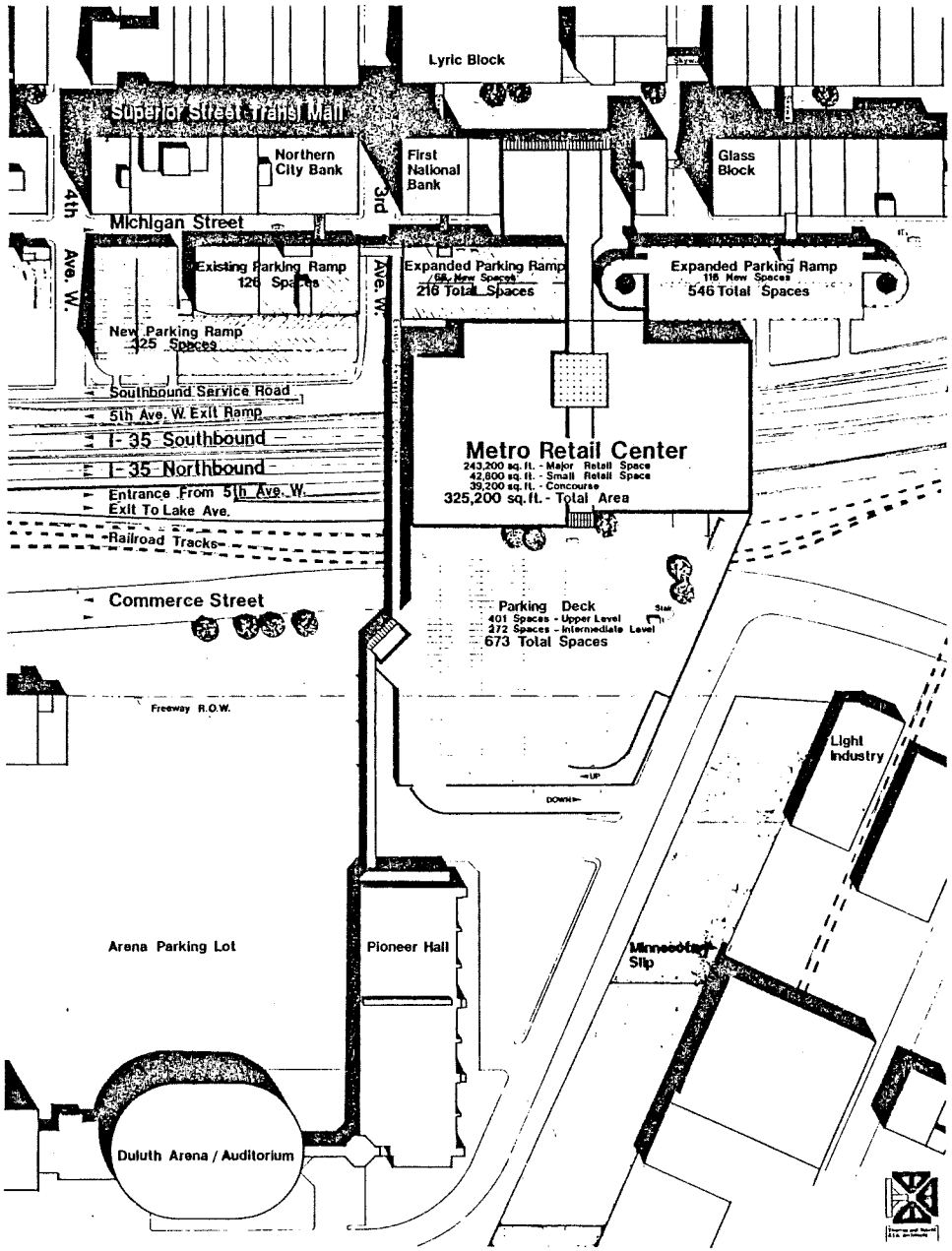


fig. 2-4

Site Plan: Metro Retail Center

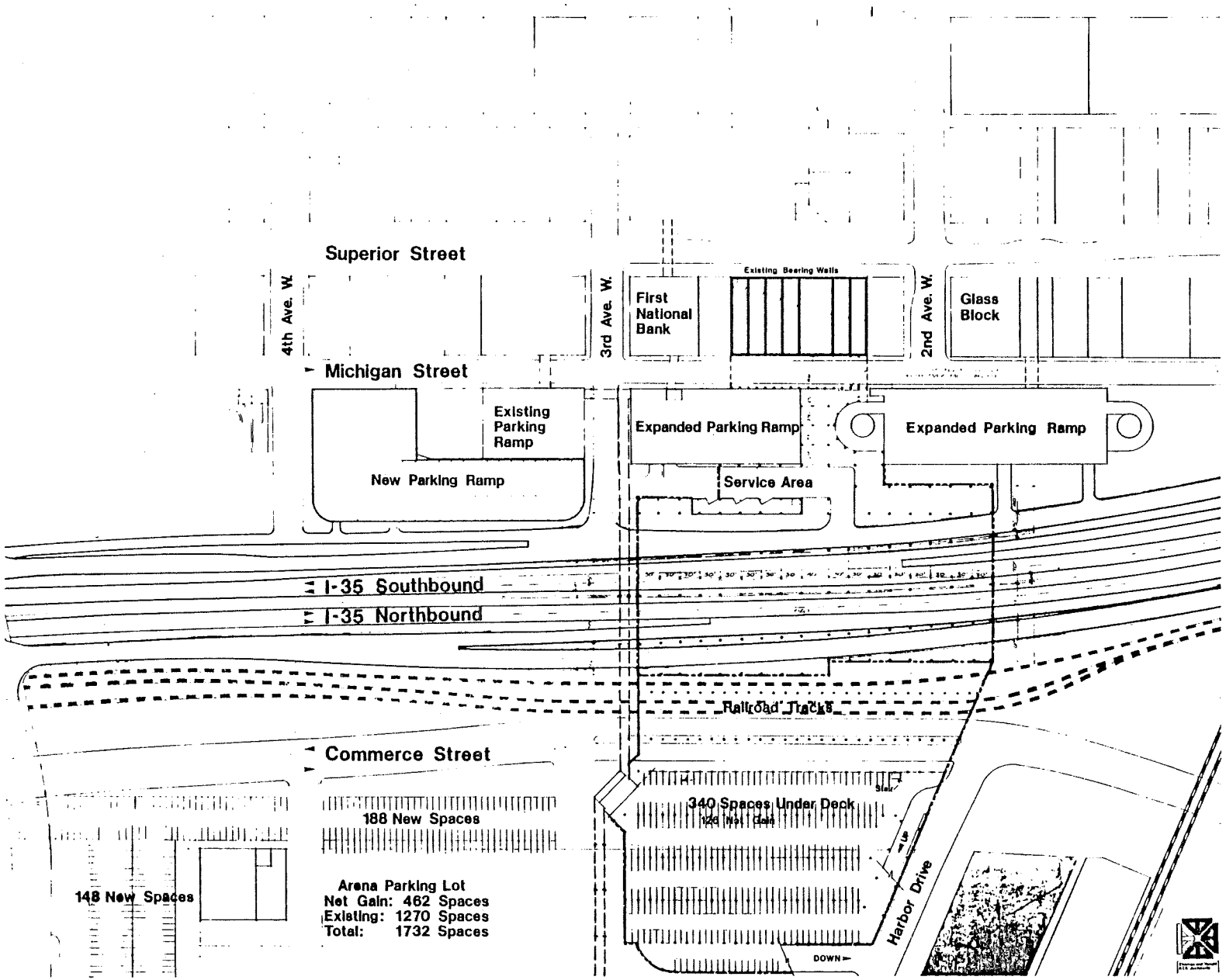


fig. 2-5

I-35 Level: Metro Retail Center

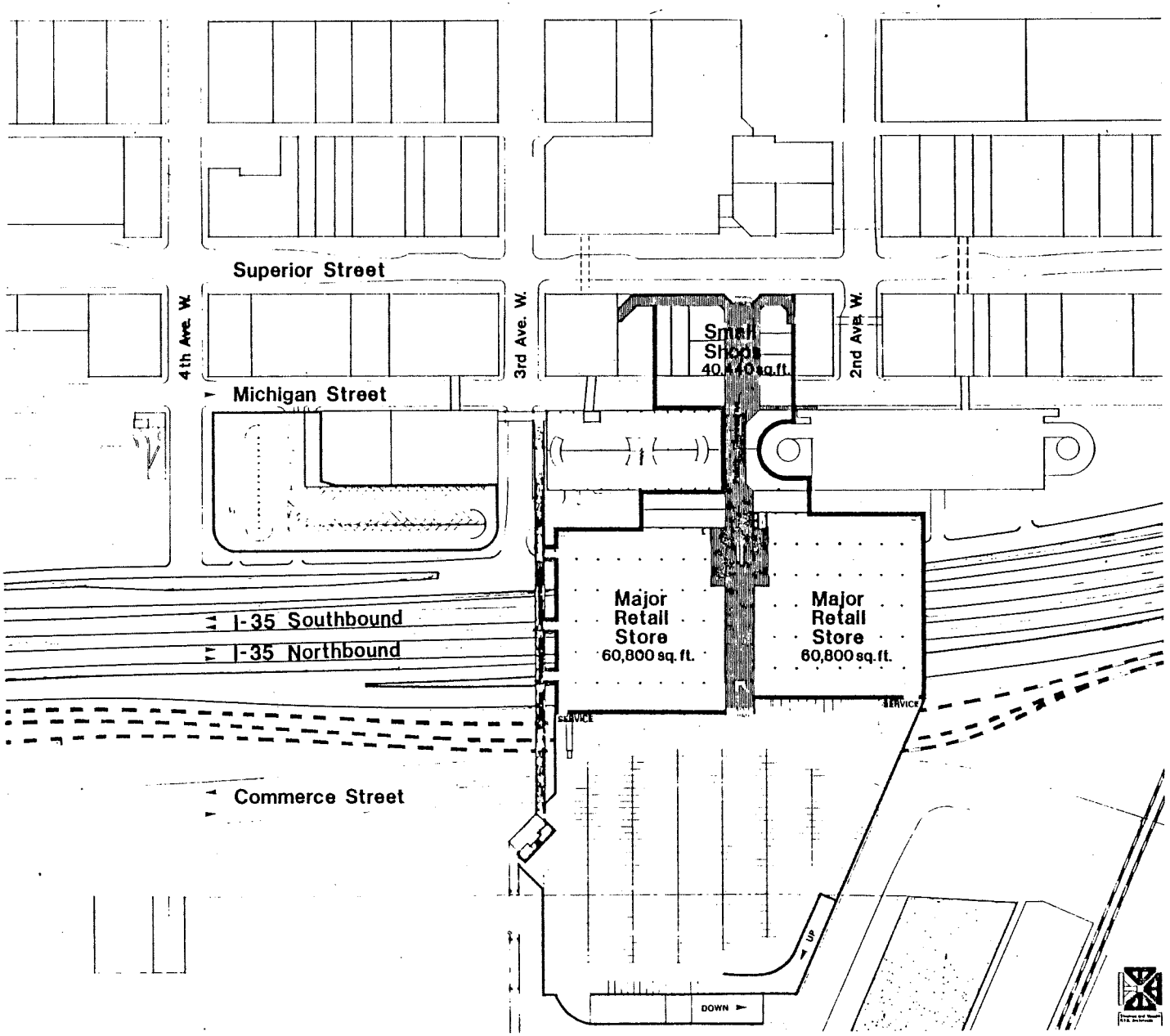


fig. 2-6

Superior Street Level: Metro Retail Center

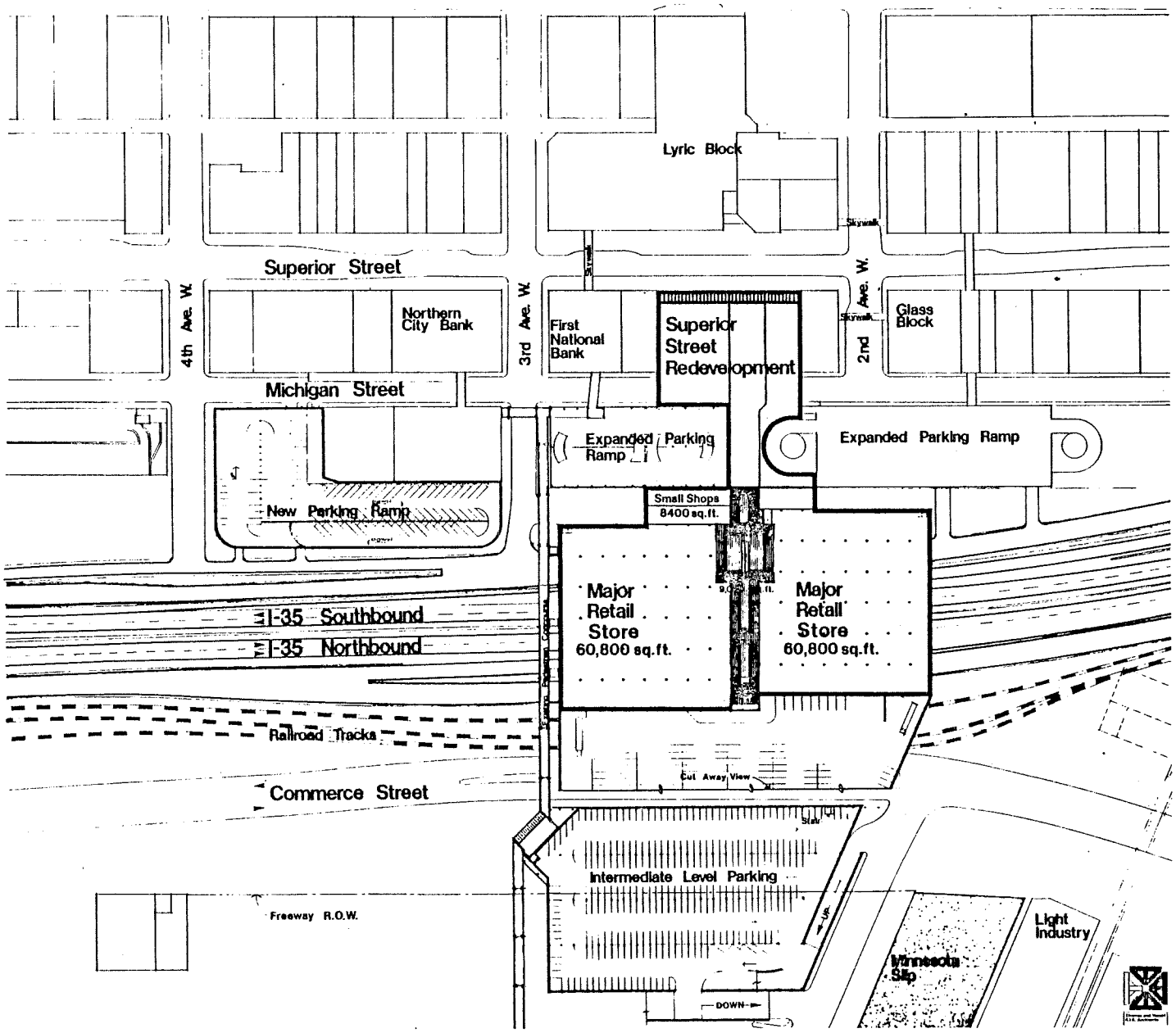


fig. 2-7

Second Level: Metro Retail Center

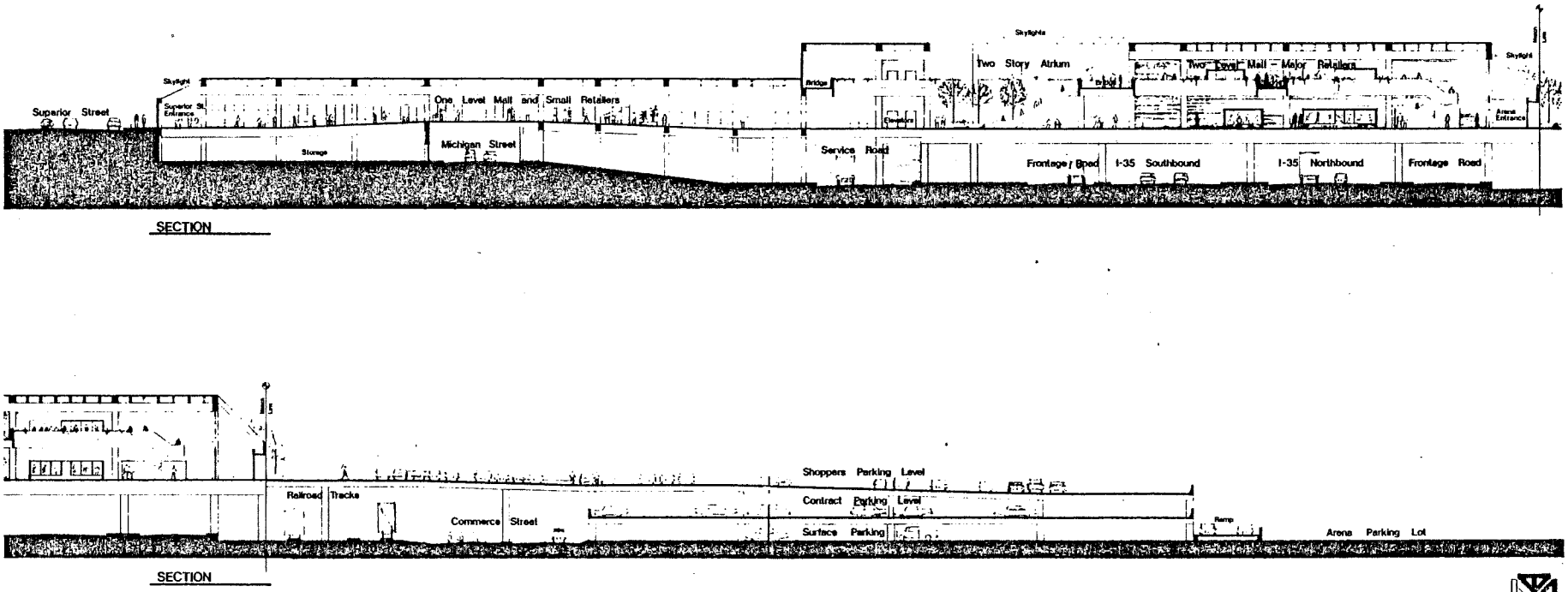


fig. 2-8

Section Through Public Concourse: Metro Retail Center

fig. 2-9

Interior Perspective: Metro Retail Center

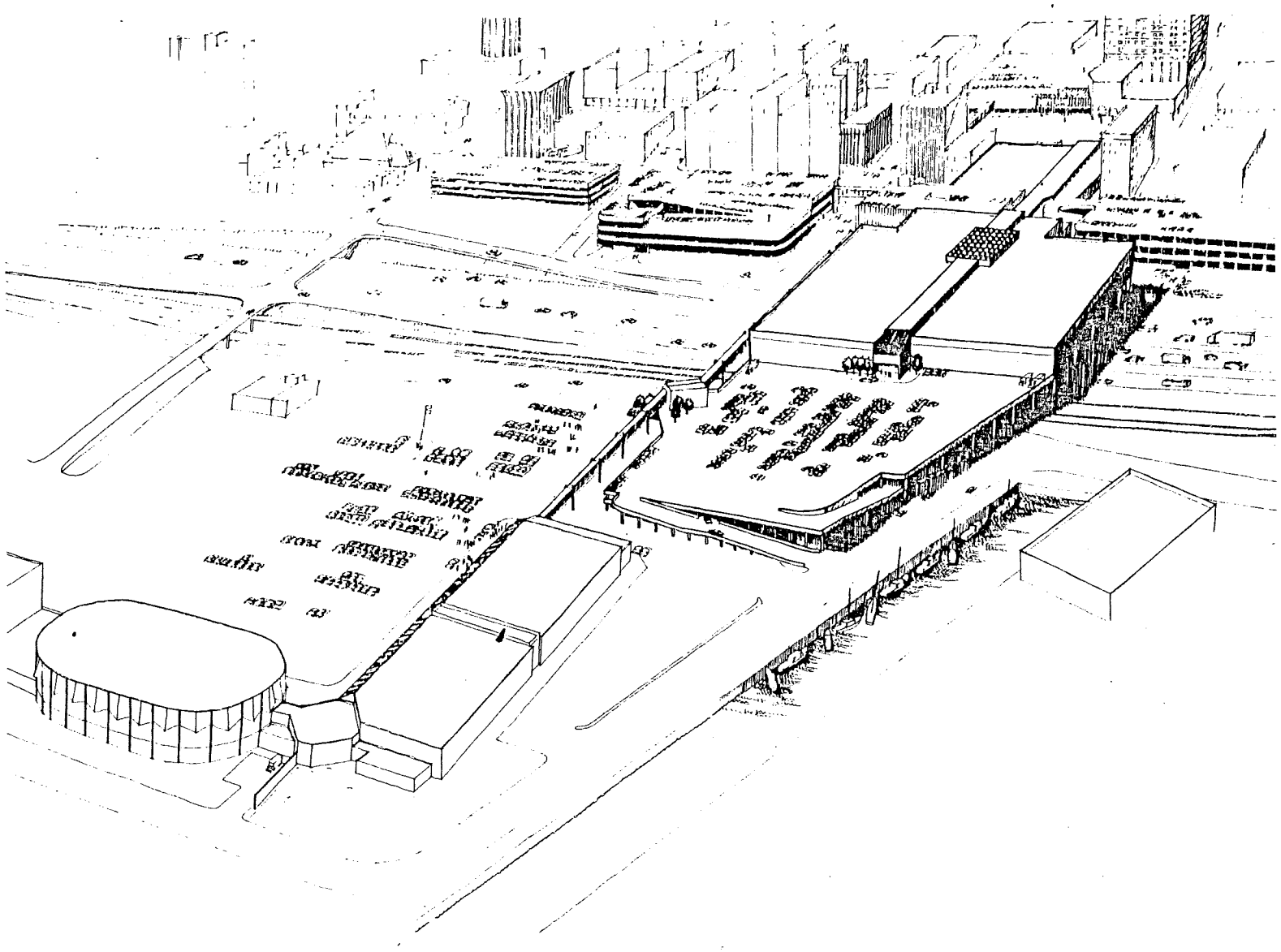


fig. 2-10

Aerial View: Metro Retail Center

project 3 - CBD Edge Treatment

project 3 - CBD Edge Treatment

I. Introduction

Project Three will provide landscape improvements between the roadway and the southerly edge of the central business district. Landscape and Roadside Development, FHPM 7-6-3 (PPM 90-3), directs that:

> *Federal-aid highway projects for new construction or for major reconstruction of highway sections shall be located and designed to insure:*
>
> *(1) that the overall facility has a pleasing appearance appropriate to its environment, and*
>
> *(2) that the overall facility is provided with reasonable and practicable landscape and roadside development.*

Landscape treatment developed in Project Three complies with federal guidelines and continues design standards established along the rest of the freeway extension.

II. Area Identification

Project Three includes two parcels of land located between the roadway and Michigan Street. (See Figure 3-2.) The first is a triangle bounded on the west by First Avenue West and extending easterly under the new Lake Avenue Bridge to First Avenue East. The other is an irregular-shaped parcel directly west of First Avenue West.

Several small commercial buildings presently occupy the project site, but construction of the roadway will require demolition of these structures. Adjacent land uses include the Minnesota Power and Light Company Office Building, the Lake Superior Plaza Development, several downtown parking ramps, and the municipal parking lots.

The roadway is at grade along this area. Project Three is at the same level as the roadway, but below the level of Michigan Street and the adjacent buildings. The Lake Avenue Bridge and southbound connecting ramp are approximately 30 feet above the Project Three area.

III. Area Impacts

1. Proximity of the roadway to the edge of the CBD may cause changes to the air quality and noise level in the CBD.

2. Freeway acquisition will provide excess right-of-way that may be developed as an urban open space and landscaped buffer zone.

3. Right-of-way acquisition will eliminate low cost, all-day worker parking. (See Figure B.)

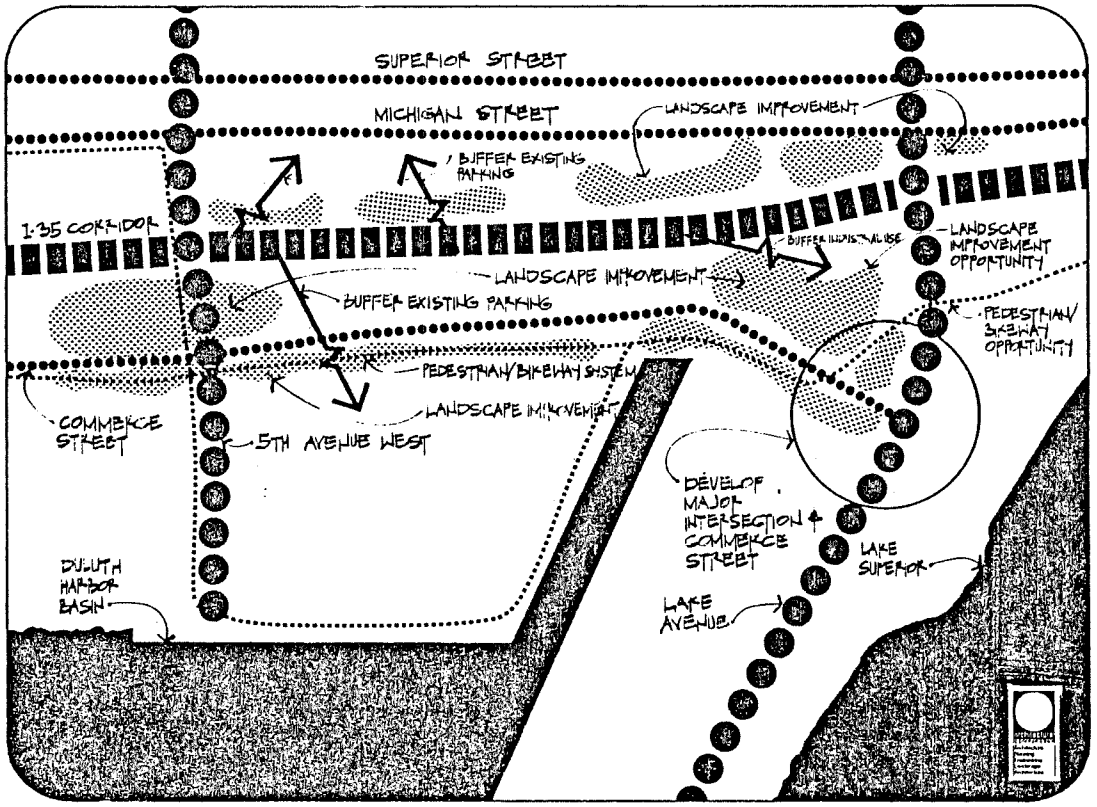


fig. 3-1
Objectives: CBD Edge Treatment

IV. Project Objectives

1. Minimize adverse effects of the roadway on surrounding uses.

2. Identify and visually improve the southerly edge of the CBD.

3. Provide for safe access between the CBD and the freeway frontage road.

4. Expand upon and preserve the continuity of design standards and landscape treatments established at Lake Superior Plaza, as well as throughout the corridor.

5. Establish park-like character along the roadway and provide improvements to create visual continuity and positive driver orientation.

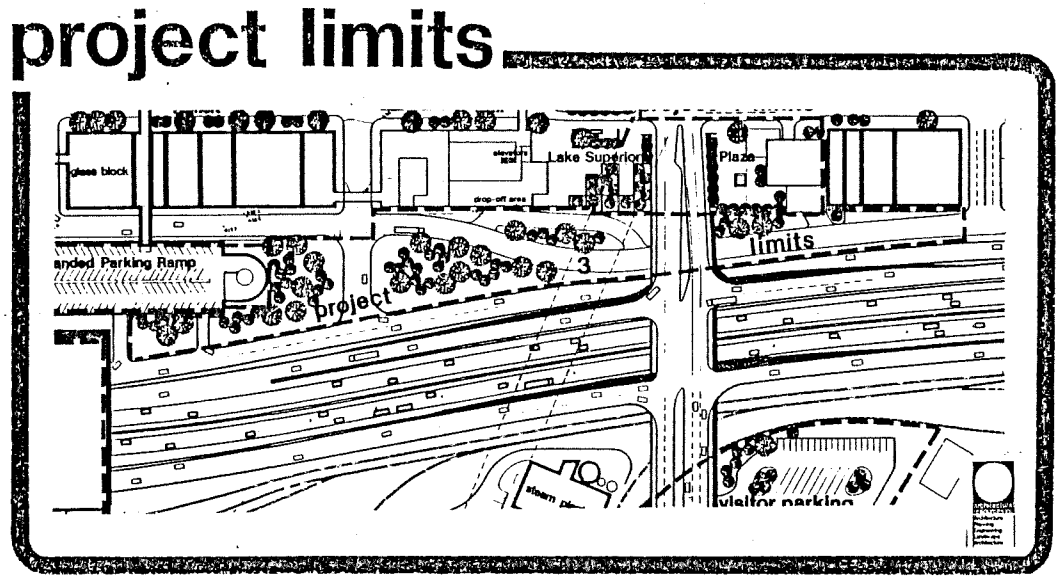


fig. 3-2
CBD Edge Treatment

V. Project Description

Project Three provides major landscape improvements between the roadway and the southerly edge of the CBD. The design incorporates earthmounding, planting of native species, turf, and planting on the perimeter of the area kept low to insure safe driver and pedestrian visibility. (See Figure 3-3.) Part of this site was originally proposed for replacement of some parking lost as a result of right-of-way acquisition, but further study indicated that the site was not large enough to accommodate safe parking movements.

VI. Project Justification

Landscape improvements in the excess right-of-way will provide a buffer between the roadway and the CBD. Management of Airspace, FHPM 7-4-3, states that,

> *If found to be consistent with highway designs, any portion of right-of-way may be used for green strips, small parks, play areas, parking or other highway related public use, or for any other public or quasi-public use which would assist in integrating the highway into the local environment and enhancing other publicly supported programs.*

A landscaped buffer area will provide a positive view for roadway users and preserve the visual continuity of the roadway. In addition, it will serve as an urban open space along the congested areas on Michigan Street and soften the impact of the roadway from the CBD.

The low, flat character of the land on this site will provide an opportunity to dispose of excess materials cut for roadway construction. The Minnesota Department of Transportation estimates that a disposal site must be found for approximately 250,000 cubic yards of cut material. Approximately 20,000 cubic yards can be utilized for landscape improvements in Project Three.

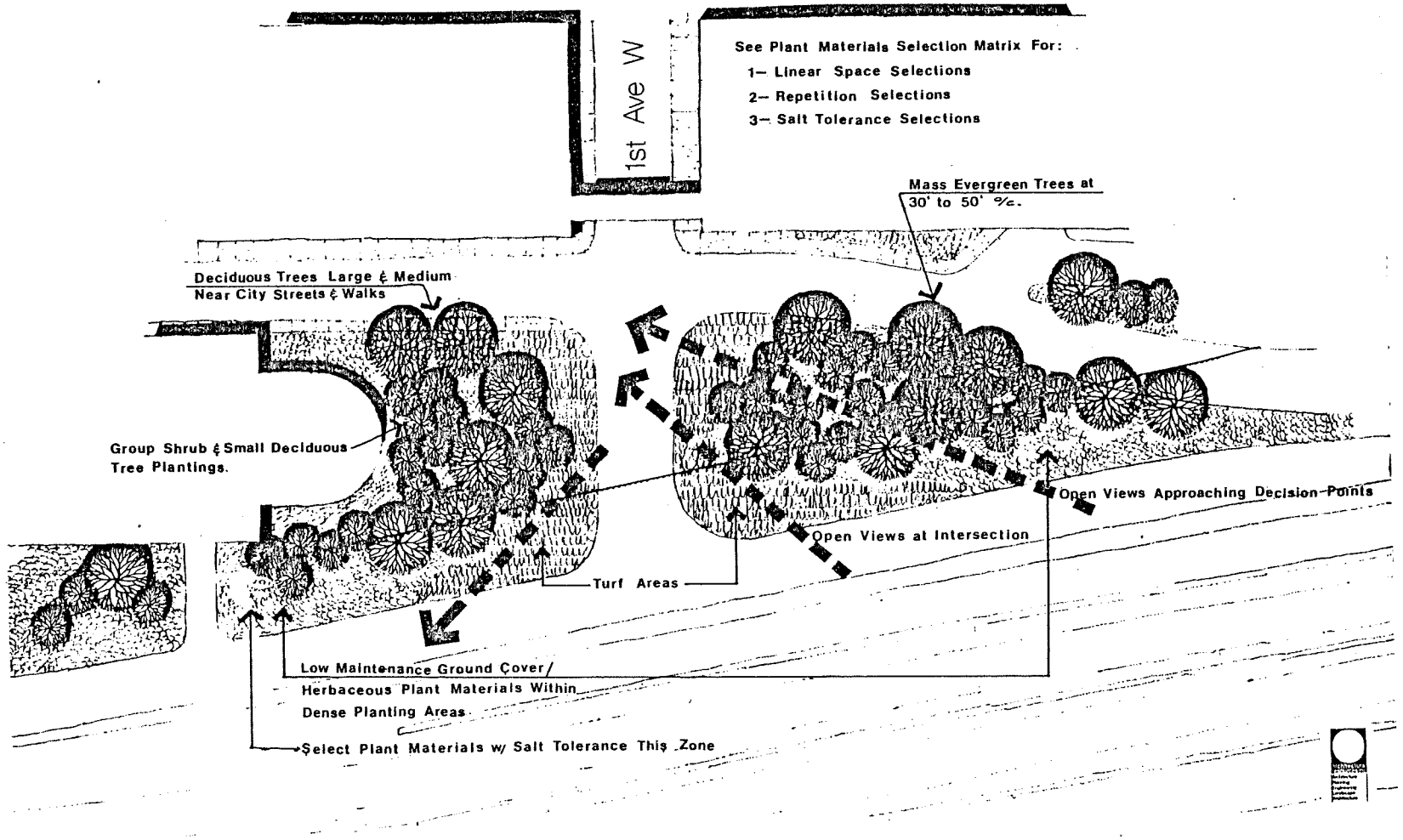


fig. 3-3

CBD Edge Treatment

project 4 - Lake Superior Plaza Extension

project 4 - Lake Superior Plaza Extension

I. Introduction

Project Four will provide fringe parking for CBD workers and shoppers, and minimize the impact of I-35 and the Lake Avenue bridge by visually improving the area. These improvements will help meet the goals and objectives established by the City concerning open space, establishment of an edge for the CBD, and parking. (See Appendix 2.) This fringe area has been designed to create a positive image to individuals entering the CBD.

II. Area Identification

There will be reference to two Lake Superior Plaza projects in this analysis. (See Figure 4-1.)

1. Currently under development is the Lake Superior Plaza Project encompassing a new office building at Lake Avenue and Superior Street, adjacent parking facilities, and a plaza which extends from the new office building to the westerly edge of existing Lake Avenue.

2. Lake Superior Plaza Extension is the area that is proposed as Project Four. Project Area Four is located at the intersection of Superior Street and the newly aligned Lake Avenue Bridge. It includes the area between Michigan and Superior Streets under and adjacent to new Lake Avenue. To the west it will extend as far as the original Lake Superior Plaza and to the east it will extend for 185 feet from the eastern edge of newly aligned Lake Avenue. This area includes the access road that will service the Lake Superior Plaza office building.

III. Area Impacts

1. Right-of-way acquisition will eliminate over 500 low cost, all-day worker parking spaces in the vicinity of Lake Avenue (See Figure B.).

2. Realignment of Lake Avenue will displace existing retail and office uses.

3. Additional traffic entering downtown at Lake Avenue will increase congestion, noise, air pollution and level of lighting.

4. Location of the Lake Avenue Bridge will create an adverse impact on the existing Lake Superior Plaza development by blocking views of Lake Superior.

5. Right-of-way acquisition will eliminate functionally obsolescent buildings along the edge of the CBD.

6. Realignment of South Lake Avenue will utilize unused capacity of First Avenue East and will consolidate further industrial uses to the south and west.

IV. Project Objectives

1. Provide fringe parking facilities that will serve workers in the CBD and nearby areas.

2. Discourage CBD-oriented traffic from driving through the area by directing it to parking before it enters the CBD.

3. Promote use of the transit system downtown by establishing Lake Superior Plaza as a terminus for the Superior Street Transit Mall.

4. Establish Lake Avenue as the eastern edge of the CBD to define the shape of the CBD and minimize the effect of the increased Lake Avenue traffic.

5. Develop an urban open space at the edge of the CBD to visually tie the area with Lake Superior and soften the impact of adjacent buildings and streets.

6. Establish continuity of visual elements between the freeway and the Superior Street Transit Mall.

V. Project Description

The Lake Superior Plaza Extension will provide 220 parking spaces in a split-level parking scheme consisting of four levels. (see Figure 4-4.) There is one level at the Michigan Street elevation, with a level above and two levels below the Michigan Street elevation. These parking levels will connect with parking in the existing Lake Superior Plaza Development. The parking levels will be covered by landscaped decks, one extending from the west side of new Lake Avenue to the existing Lake Superior Plaza (West Extension) and the other from the east side of new Lake Avenue for approximately 185 feet to the east (East Extension). (See Figure 4-1.)

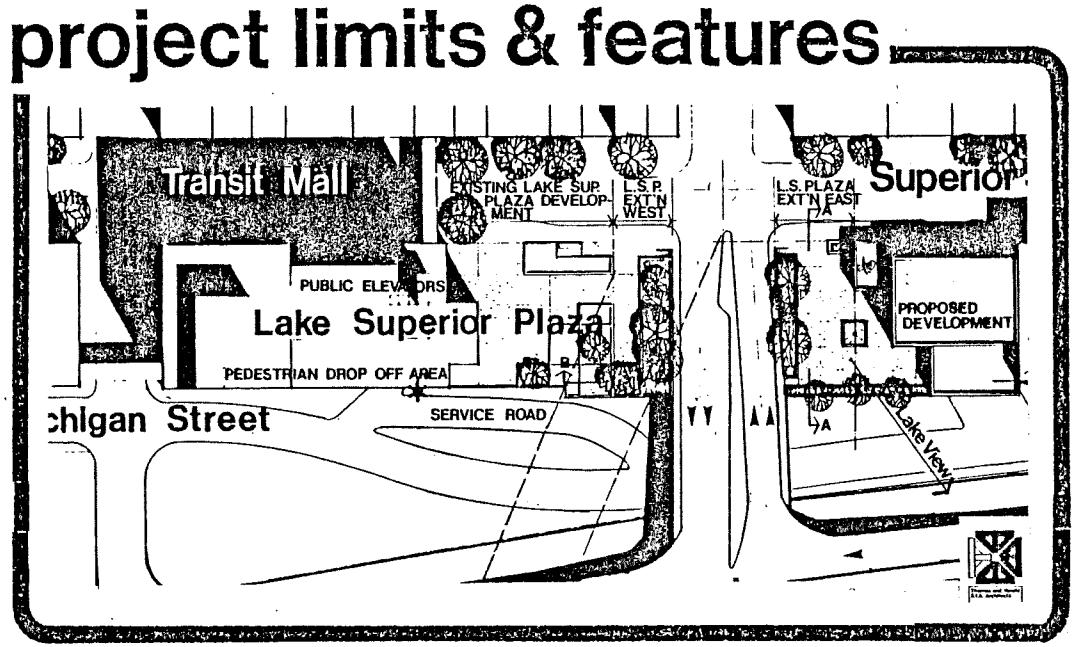


fig. 4-1
Lake Superior Plaza Extension

The West Extension will be a continuation of the original Lake Superior Plaza. Building materials, planters, and plantings will be consistent with the existing design. Although the plaza is located at the Superior Street level, its actual elevation is about four feet higher than Superior Street. By raising the deck to this elevation, the traffic on Lake Avenue will be depressed below eye level. Access to the Plaza from Superior Street is available from either a short flight of stairs or a ramp that is easily accessible for handicapped persons. Access to the Plaza is available from a passenger drop-off area at the frontage road elevation, which has direct access to the elevator located in the existing Lake Superior Plaza Development.

The East Extension will be constructed of materials similar to those used in the existing Lake Superior Plaza and the West Extension. The East Extension will be located at the Superior Street level with pedestrian access from Superior Street. Planting will be used to screen the Plaza from Lake Avenue traffic and to provide continuity with plantings used west of Lake Avenue.

Connecting the two plazas are stairways located in the corner of each extension at Lake Avenue and Superior Street. These stairways provide access to the parking below, as well as an alternative to crossing Lake Avenue at grade.

A bicycle rack will be provided in the northeastern corner of the East Plaza Extension. This area has direct access from Superior Street and the rest of the Plaza. Additional bicycle racks could be accommodated on the parking levels.

Plantings will function as visual screening. They will define outdoor spaces, channel views, and add color and texture to the Plaza. Evergreens will be used to maintain color during the winter and to help establish continuity of visual elements between the freeway and the Superior Street Transit Mall. Great care has been taken to select plants that are suitable for northeastern Minnesota. Many adverse growing conditions may be encountered in this urban, above-ground site, including air pollution, wind

exposure, reflection of heat from the pavement, moisture loss through planter walls, space restriction of the root systems, and frost damage to roots.

Retail space oriented to the use of the Plaza will be developed at the far eastern edge of the East Extension of the Plaza, in an area of approximately 7,000 square feet. This area has been designed to carefully blend with Plaza activities.

VI. Project Justification

The Lake Superior Plaza Extension is consistent with the scope and intent of Fringe and Corridor Parking Facilities Projects, FHPM 6-8-2-3 (PPM 21-20). This parking meets the City's stated objectives of promoting downtown business while discouraging vehicular traffic from entering the CBD. (See Appendix 2.)

With the construction of I-35, parking facilities for workers in the CBD will be at a premium. The daily worker population downtown exceeds 13,500 and is growing. I-35 will eliminate over 500 parking spaces in the vicinity of Lake Avenue that are used mostly by workers residing north and east of the CBD. Lake Superior Plaza provides an excellent location at the fringe of the CBD to offset this loss by providing 220 spaces. (See Appendix 1b.)

Fringe parking in this location will have a positive impact on the economy of the CBD. By providing worker parking at the fringe of the CBD, spaces within the CBD are freed for shoppers. Fringe parking will intercept much of the CBD-oriented traffic, reducing congestion and providing a more pleasant shopping experience.

Lake Avenue establishes the edge of the CBD as defined in FHPM 6-8-2-3:

> *A CBD of a city...generally is the area where land occupancy is nearly 100 percent, where land use is principally business, and the area to which transit lines converge. It is the area where large stores and office buildings are usually found. It often includes some theaters and hotels. It may have a few apartments, but few or no single-unit residences and little manufacturing.*

The area west of Lake Superior Plaza Extension is the City's highest intensity area of retail/commercial uses, including the new Lyric Block Development. The area east of the Lake Superior Plaza Extension contains buildings with marginal uses and varying degrees of structural deterioration. This area has long been recognized as a blighting influence on the CBD.

The construction of Lake Avenue as a major roadway creates a natural physical barrier that contains the shape of the CBD and firmly establishes the eastern edge. Provision of a multi-level parking facility and plaza will further emphasize this easterly edge and separate the deteriorating commercial area east of Lake Avenue from the CBD. This edge will also mark the beginning of new uses to the east, with the Plaza becoming the easterly entrance to the entertainment district.

The parking facilities in the Lake Superior Plaza Extension have been designed to coordinate with both the transit and the skywalk systems. FHPM 6-8-2-3 states:

> *A fringe or transportation corridor parking facility shall be located and designed only in conjunction with existing or planned public transportation facilities.*

Lake Superior Plaza will be established as a terminus for the Superior Street Transit Mall. This terminus will promote the use of the transit system on Superior Street.

Lake Superior Plaza Extension will have direct access into the skywalk system. This skywalk system is already funded and will link together six contiguous high-density blocks in the CBD. In addition, a passenger drop-off area will be provided at the frontage road level with easy access to the skywalk and transit systems.

A major finding of the Duluth Downtown Development Program (See Appendix 2) was that there is a lack

of people-oriented parks and open spaces in the CBD for those who live, work, and shop there. The Lake Superior Plaza Extension will create needed open space adjacent to the CBD. Joint Development of Highway Corridors and Multiple Use of Roadway Properties, FHPM 7-7-8 (PPM 90-5), lists this type of project as an allowable item to make the highway conform to its environment.

a) The construction of mini-parks, including minimum facilities such as walks or other paved areas, beaches, sandboxes and the like, where this type of facility can be provided on right-of-way parcel remnants or other portions of right-of-way acquired for highway purposes but which may not be needed for operational purposes.

The Lake Superior Plaza Extension has been designed as a stopping place for shoppers and an oasis for CBD workers. Intense public use is anticipated for this plaza because it provides the closest area to the CBD where open space will be provided with an overlook of Lake Superior. Landscape improvements have been designed to blend in with the existing Lake Superior Plaza, uniting the area and creating a positive image for the entrance to the CBD.

VII. COST ESTIMATE

This estimate is for joint development features located near the intersection of Lake Avenue and Superior Street (See Figure 4-1). As noted previously, a portion of the parking, 96 spaces, and a portion of the plaza are located adjacent to highway ROW. For clarity, the estimate has been divided into two major components, i.e., (a) Those improvements within the ROW; and (b) those improvements outside the ROW.

A. DEVELOPMENT WITHIN RIGHT OF WAY..... $ 950,000

PARKING STRUCTURE:
49,350 square feet/124 spaces....$ 620,000
Reinforced concrete columns, beams, floors (post tension), concrete slab on grade.

PLAZA DECK.....$ 240,000
Reinforced concrete (post tension)
16,000 square feet

FURNISHINGS.....$ 90,000
Includes: plant materials, soil, heat cables, irrigation system, fixed planters, waterproofing, lighting, etc.

B. DEVELOPMENT OUTSIDE RIGHT OF WAY..... $ 670,000

PARKING STRUCTURE:
38,220 square feet/96 spaces.....$ 480,000
Reinforced concrete columns, beams, floors (post tension), concrete slab on grade.

PLAZA DECK.....$ 48,000
3200 square feet
Reinforced concrete
(post tension)

FURNISHINGS.....$ 15,000
Includes: plant materials, soil, heat cables, irrigation system, fixed planters, waterproofing, lighting, etc.

LAND ASSEMBLY.....127,000
Includes: acquisition, relocation and demolition.

TOTAL $1,620,000

RETAIL DEVELOPMENT
(Shell only, to be financed by lease)
$338,000

GRAND TOTAL $1,958,000

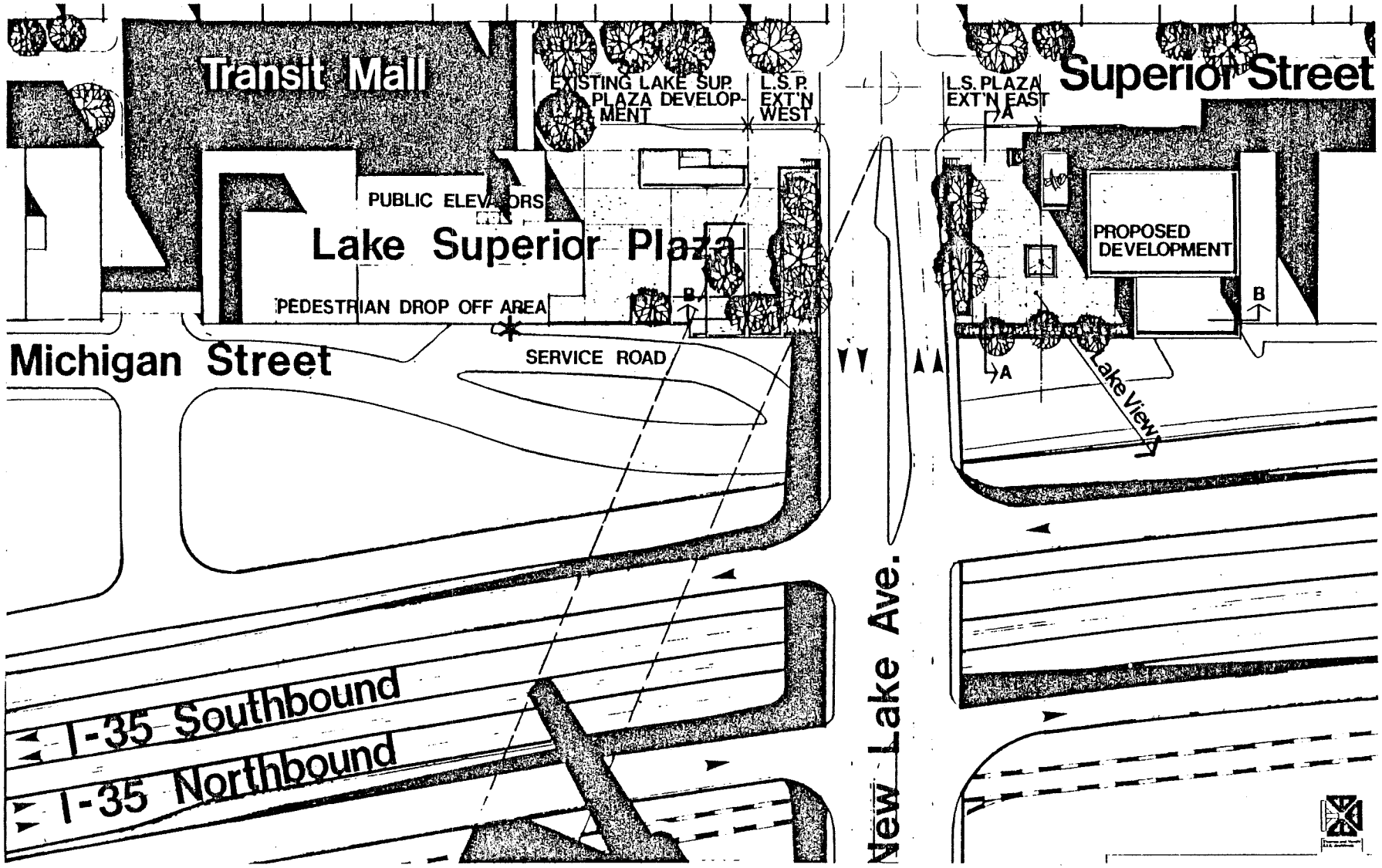


fig. 4-2

Site Plan: Lake Superior Plaza Extension

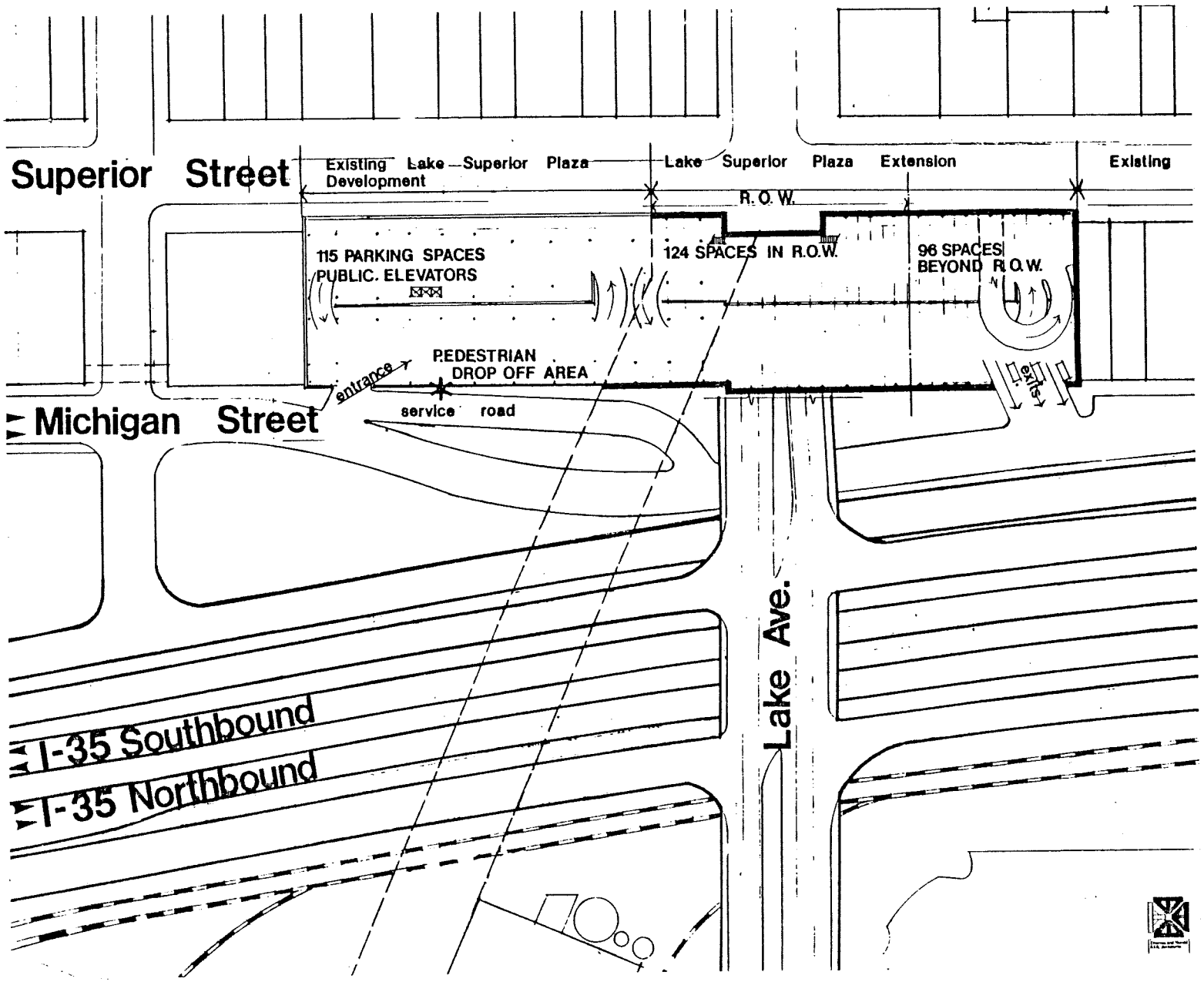
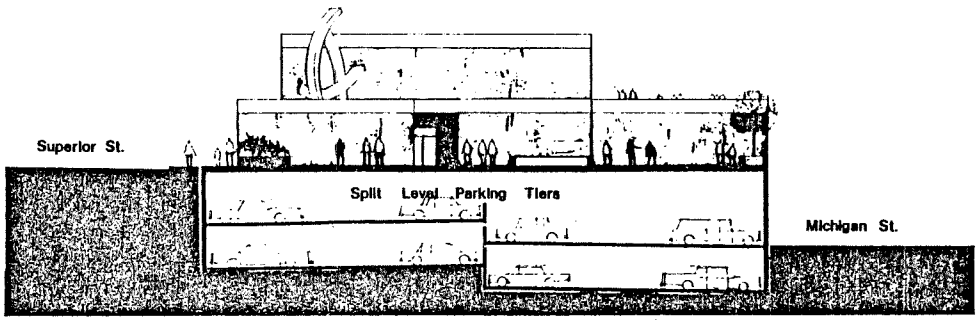
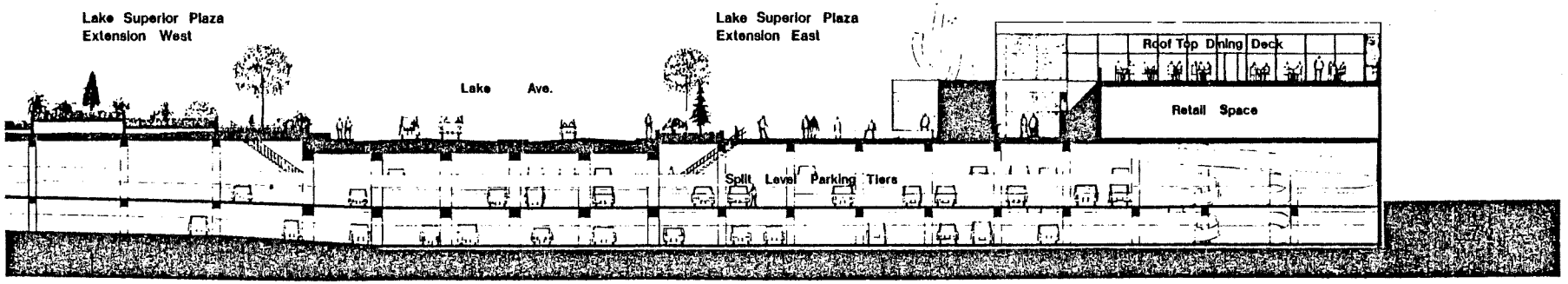


fig. 4-3

Parking Level: Lake Superior Plaza Extension



SECTION A-A



SECTION B-B

fig. 4-4

Section Through Plaza: Lake Superior Plaza Extension

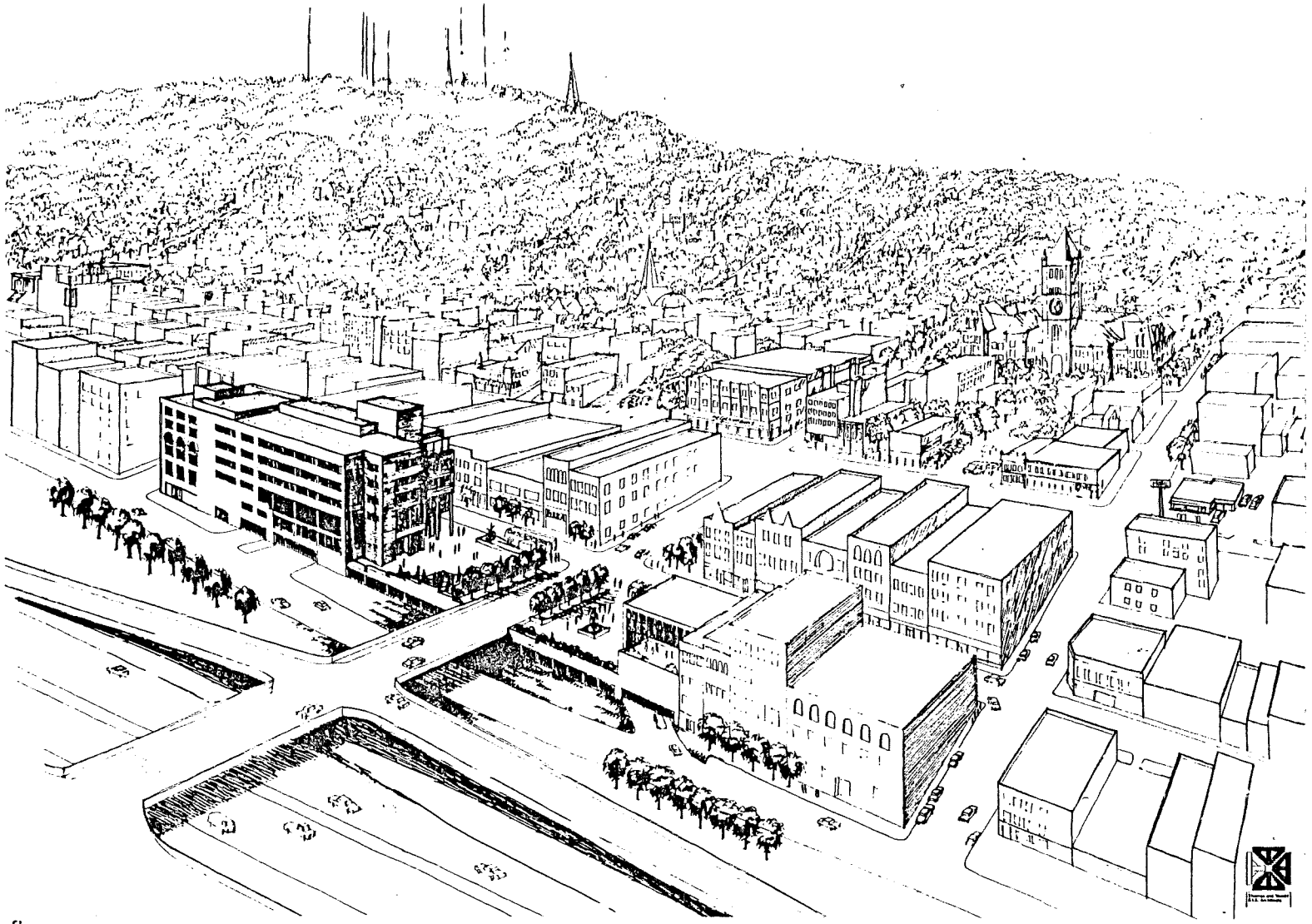


fig. **4-5**

Aerial View: Lake Superior Plaza Extension

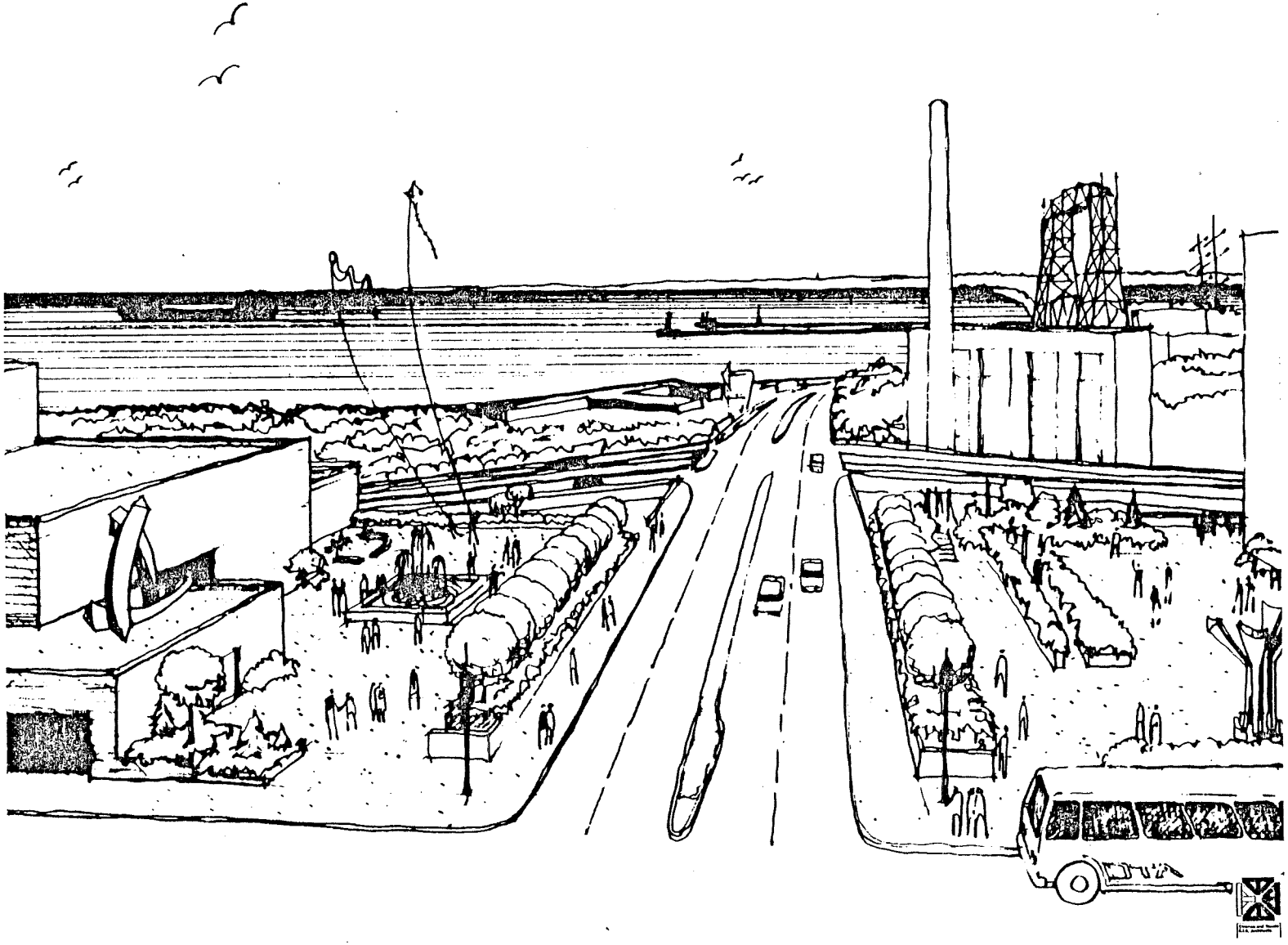


fig. 4-6

Aerial View: Lake Superior Plaza Extension

project 5 - Lakeshore Approach Area

project 5 - Lakeshore Approach Area

I. Introduction

Project Five provides for realignment of Commerce Street and routing of traffic to serve the adjacent land uses. A 100 space parking lot will be constructed east of Lake Avenue to serve visitors to Lake Place. An east-west pedestrian/bicycle trail will be extended through this area, linking with trails adjacent to the Arena and through Lake Place. Major landscape improvements will be developed throughout the project area.

II. Area Identification

Project Five includes the area between the freeway and Commerce Street, extending from the Arena marina slip to vacated First Avenue East. (See Figure 5-2.) The area includes the existing railroad marshalling yards, the Duluth Steam Plant, several small businesses, and more than 500 parking spaces. Except for the steam plant and two rail lines, these uses will all be eliminated for construction of the freeway and the new Lake Avenue Bridge.

The roadway is at grade in this area, approximately the same level as the Project Five area. Lake Avenue extends in a bridge section from Superior Street to Commerce Street, rising to a height of 30 feet over the freeway.

III. Area Impacts

1. The freeway extension will alter existing land use and vehicular/pedestrian circulation patterns between the Central Business District, the lakefront, the Arena-Auditorium, and Park Point.

2. Acquisition of freeway right-of-way will eliminate over 500 low cost, all-day worker parking spaces in the vicinity of Lake Avenue. (See Figure B.)

3. Construction of a new bridge at Lake Avenue necessitates the realignment of Commerce Street and other street improvements south of the freeway.

4. Freeway acquisition will provide excess right-of-way that may be jointly developed for community use, including major landscaping, parking, and extension of the bicycle/pedestrian trail system.

IV. Project Objectives

1. Improve vehicular, transit and pedestrian access between the Central Business District, the Arena-Auditorium, Canal Park, and the lakefront.

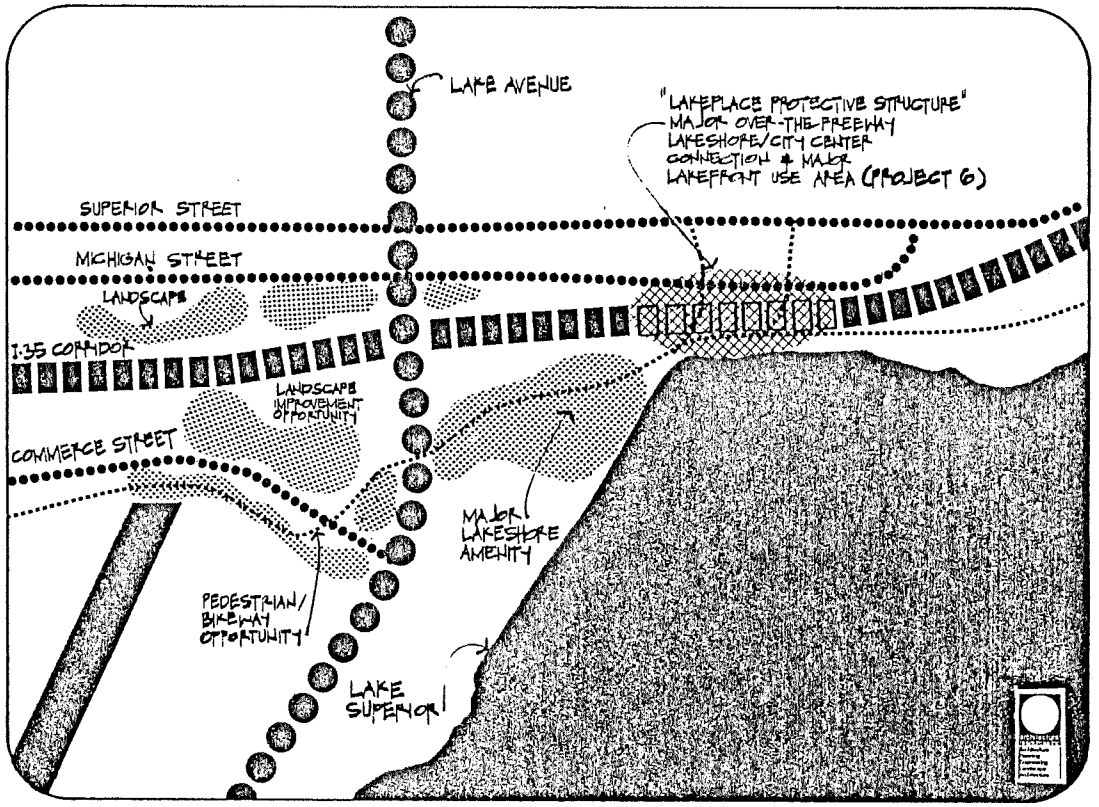


fig. 5-1

Objectives: Lakeshore Approach Area

2. Encourage appropriate redevelopment activities where incompatible land uses exist along the freeway corridor.

3. Improve the visual quality of the entrance to downtown at Lake Avenue and the entrance to the Arena-Auditorium, Metro Retail Center, and Canal Park.

4. Provide parking to serve Lake Place.

5. Maintain access to industrial uses along south Lake Avenue.

V. Project Description

Project Five incorporates major landscaping to visually improve the area between the Arena and Lake Place, parking to serve Lake Place, and a circulation system providing vehicular and pedestrian access to adjacent uses.

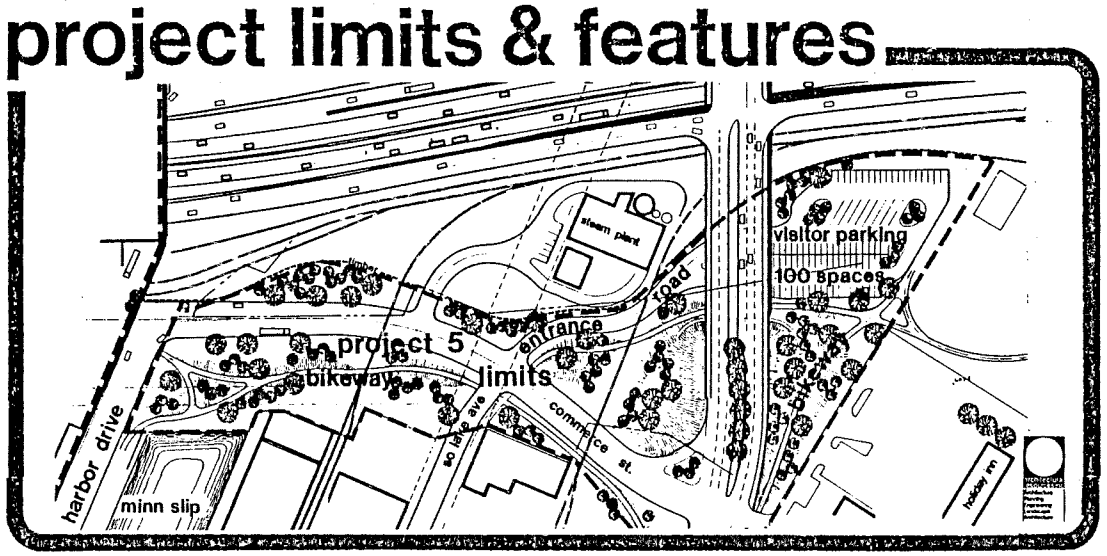


fig. 5-2
Lakeshore Approach Area

Commerce Street will be realigned and extended to provide convenient and safe access for industrial uses on South Lake Avenue, the Duluth Steam Plant, Holiday Inn, and Lake Place. An access drive will be constructed to serve the steam plant, and will extend under new Lake Avenue to serve the parking area at Lake Place. Approximately 100 parking spaces will be provided for Lake Place to accommodate the anticipated user demand. (See Appendix 3.)

The pedestrian/bikeway connection will be extended from the west along the south side of Commerce Street. It will cross under Lake Avenue and continue in an easterly direction to meet Lake Place.

Major landscape elements, including the use of timber walls, earthmounding, and planting, will provide screening for the freeway, industrial uses, and parking areas. Exterior graphics will be designed to visually integrate the steam plant with other improvements in this area. Interpretive signing will be developed to identify cultural and natural features in this area as part of the Tour du Lhut signing system.

VI. Project Justification

The new circulation system in this area is necessitated by the realignment of the Lake Avenue Bridge to approximately 350 feet east of its present location. Commerce Street will be constructed from existing Lake Avenue to new Lake Avenue as a part of normal highway construction to provide access for the Arena and industrial uses south of the existing Lake Avenue Bridge. The access drive off Commerce Street will serve the steam plant, whose access is eliminated by the realignment of Lake Avenue, and the new lakeshore park.

Federal Policy (Bikeways and Pedestrian Walkways in Conjunction with Federal and Federal-Aid Highways, FHPM 6-1-1-1) encourages the provision of bicycle and pedestrian facilities on Federal-Aid highway projects. The pedestrian/bicycle trail will be constructed through Project Five along I-35 on a strip of excess right-of-way purchased several years ago by FHWA. The design meets all require-

ments specified in FHPM 6-1-1-1. (See Appendix 4.) This trail is an incidental feature of the freeway construction, and is the only location where a safe pedestrian/bicycle connection can be established through this highly developed area.

Parking is needed in this area to serve the users of the new adjacent lakeshore park. (See Appendix 3.) 100 parking spaces will be jointly developed on excess right-of-way in Project Five. The design meets all requirements specified in Management of Airspace, FHPM 7-4-3, pertaining to proper layout, surfacing, access, and integration into the surrounding environment.

Major landscape improvements are necessary in Project Five to provide a pleasant atmosphere for users of the pedestrian/bicycle facility, to visually improve the entrance to the lakeshore park and the Arena, and to screen the industrial uses and parking from the view of drivers on the freeway.

VII. COST ESTIMATE

This estimate is for joint development features located under and adjacent to the realigned Lake Avenue Bridge (See Figure 5-2). It assumes that fill material (22,000 C.Y.) will be provided and compacted as a part of highway construction. All other improvements proposed in this area are included below.

EARTHWORK includes excavation and topsoil	$ 25,400
SURFACING includes base, surfacing and curb and gutter	67,500
PLANTING includes sod, seed, groundcover, deciduous and evergreen trees, shrubs, perennials, and vines	60,600
STORM DRAINAGE	8,500
TOTAL	$162,000

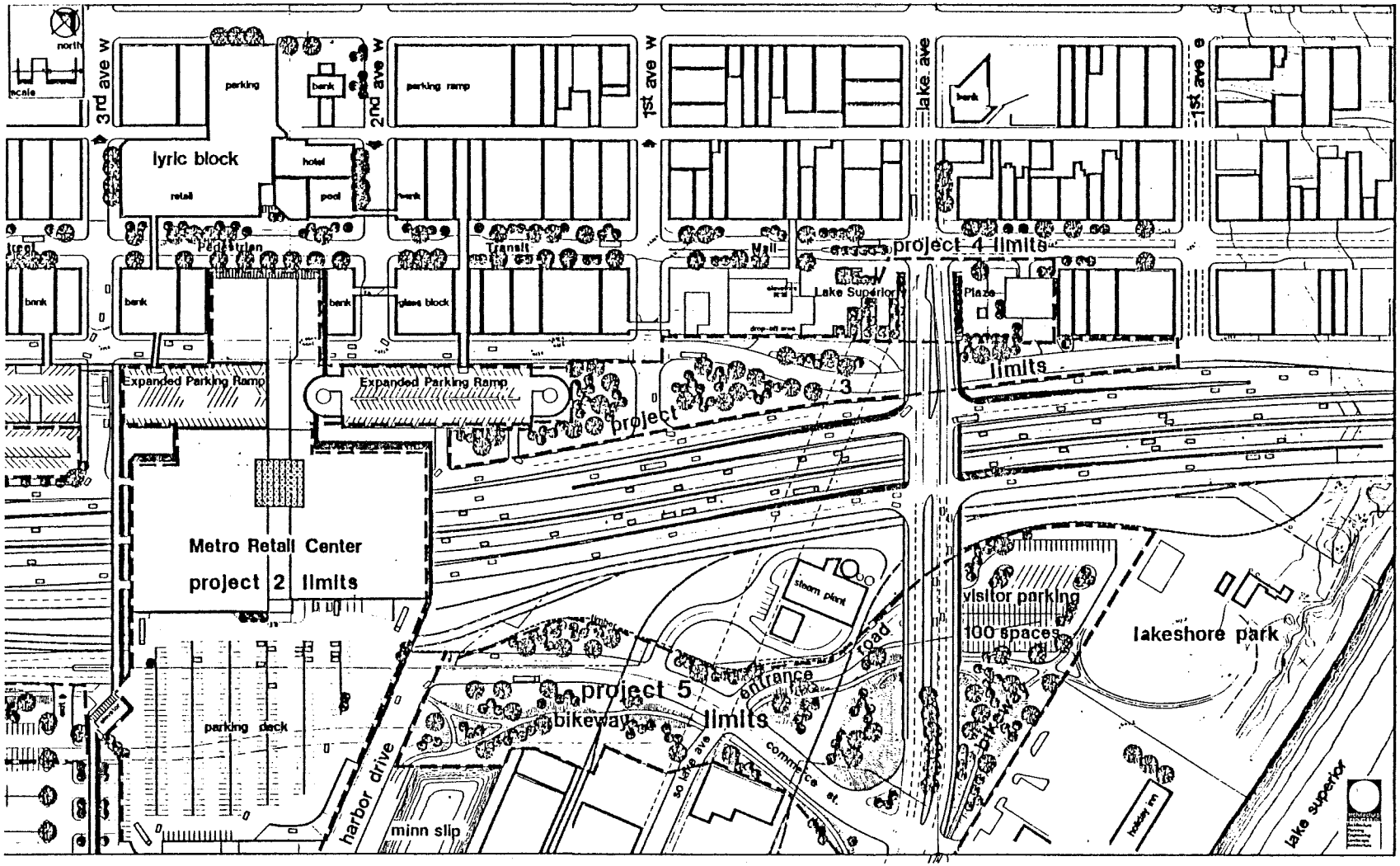
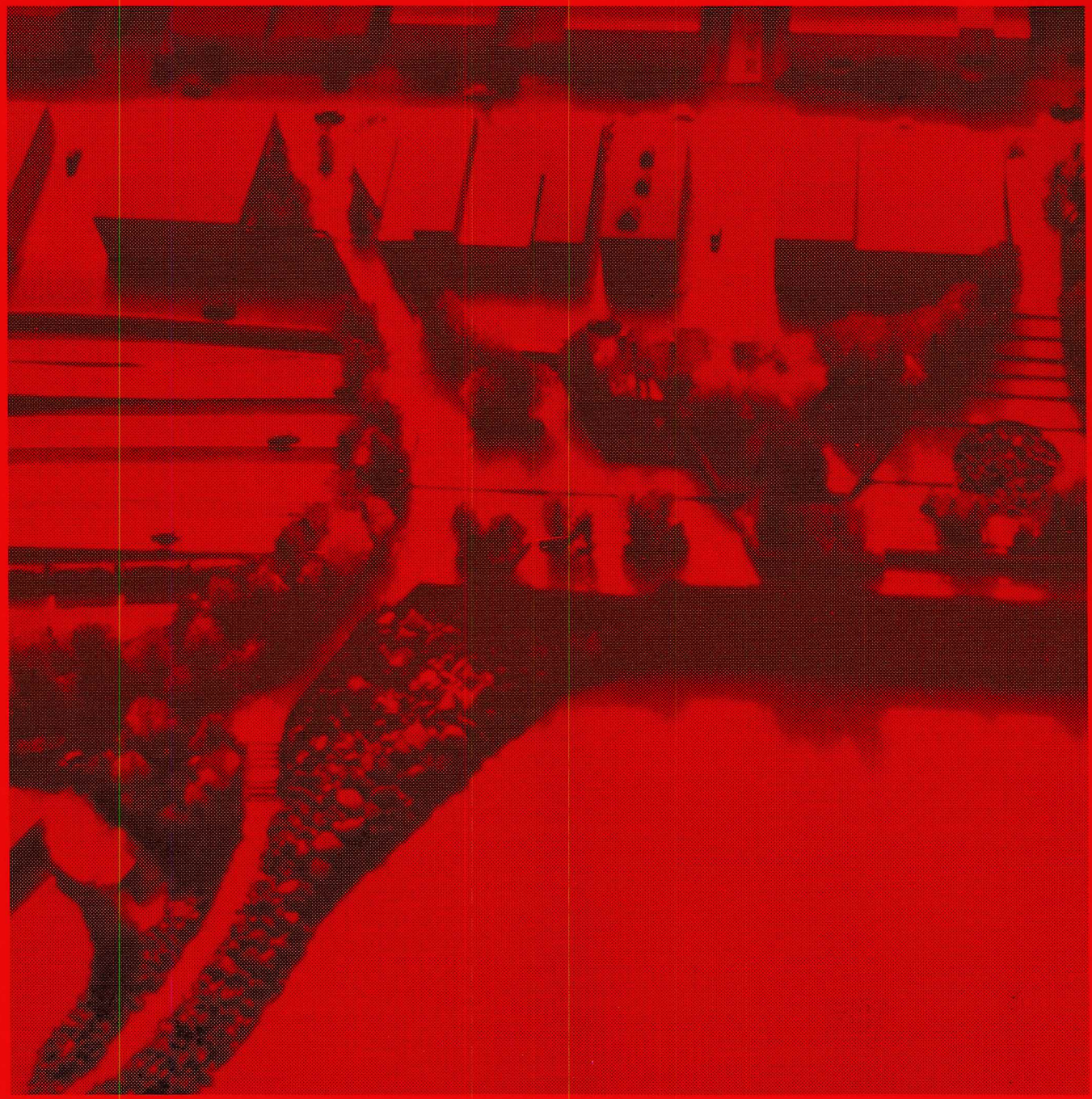


fig. 5-3

Lakeshore Approach Area

project 6 - Lake Place Protection Area



project 6 - Lake Place Protection Area

I. Introduction

The proximity of the freeway to Lake Superior represents one of the most critical effects of the entire I-35 corridor within the City of Duluth. Alignment of the freeway along the downtown and lakefront areas has made it necessary to utilize special design components in constructing the freeway to protect the environmental resources, link major land use areas, and preserve access to the lakefront.

The Lake Place Protection Area incorporates two major elements. First, a wall will be constructed between the roadway/railway and the lake, with a cover over the roadway/railway to provide protection from Lake Superior over-spray and debris. Second, and most important, the deck of the protective structure will be developed as a multi-use activities area in conjunction with the development of a lakeshore park system. The multiple-use concept of Lake Place will enable transportation, recreation, open space, and environment to work in harmony with the goals of each other. It will provide a unique oasis for travelers and residents, while protecting visually and environmentally the most valuable natural resource of the region, Lake Superior.

In this vicinity, I-35 skirts Lake Superior at the most westerly point of the entire Great Lakes system. Lake Place will not only protect this vital corner of Lake Superior, but will also provide a major visitor attraction and gathering area. It will provide a unique opportunity for the State and the FHWA to demonstrate their desire and ability to protect the natural environment while providing a necessary transportation facility.

II. Area Identification

Lake Place is located adjacent to Duluth's lakefront within an area extending along the lakeshore from the Holiday Inn on South First Avenue East to approximately Fourth Avenue East.

Existing development within the Project Six area consists primarily of a few scattered businesses located along the south side of Michigan Street, and one entertainment-oriented business located on South First Avenue East. The Duluth-Two Harbors main line railroad tracks parallel the lakefront, with additional rail spurs serving businesses presently located within the freeway right-of-way. A proportionately large area of Project Six is underdeveloped lakeshore open space.

As the roadway approaches the Lakeshore Protection Area it will be at the existing ground elevation

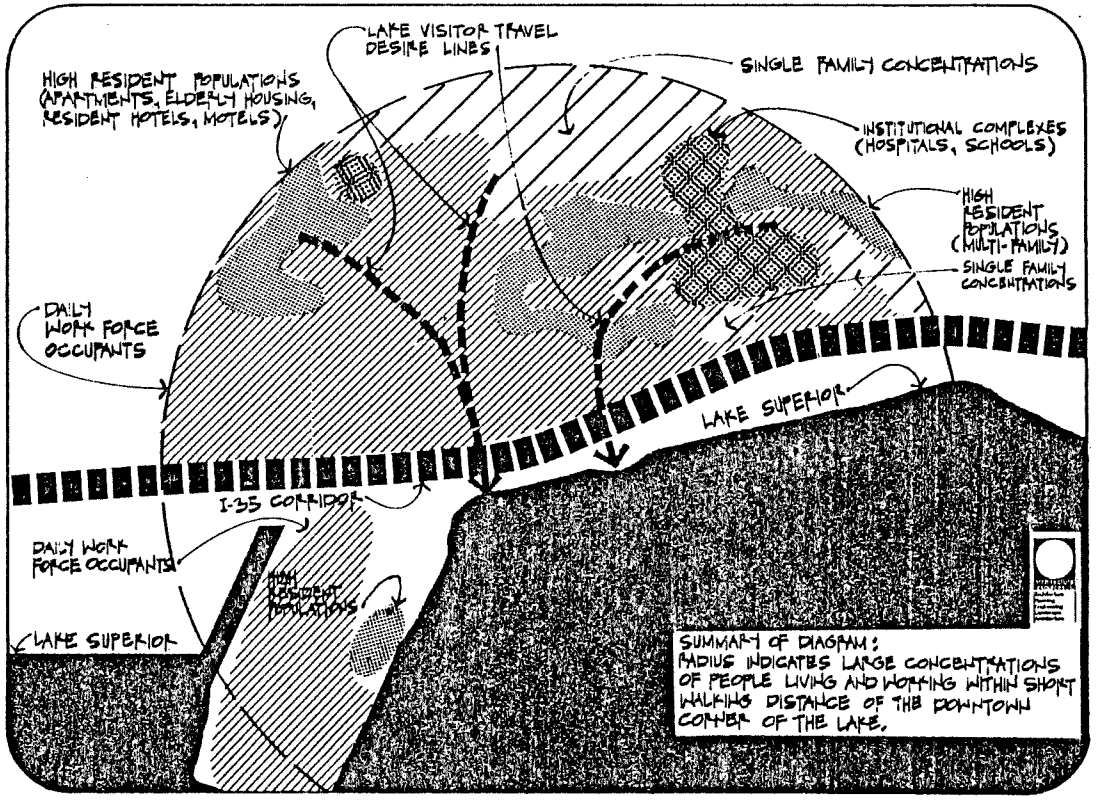


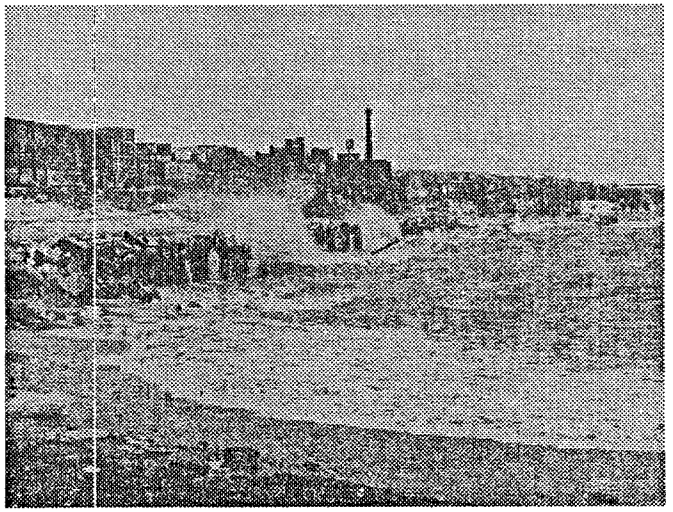
fig. 6-1

Immediate Impact Zones: Lake Place Protection Area

until turning inland and cutting into the hillside at about Fourth Avenue East. This alignment parallels the lakeshore and downtown, with all available land in the area being required for roadway construction. The protective wall will be constructed between the railway/roadway and the lake, with the cover extending over the roadway at a height of 26 feet above the roadway. The design of the protective structure will place its horizontal plane at approximately the same elevation as Superior Street.

III. Area Impacts

1. The alignment of the freeway and the placement of the protective wall along the lakeshore will create a visual and physical barrier between commercial/residential areas and the lakeshore.



project limits & features

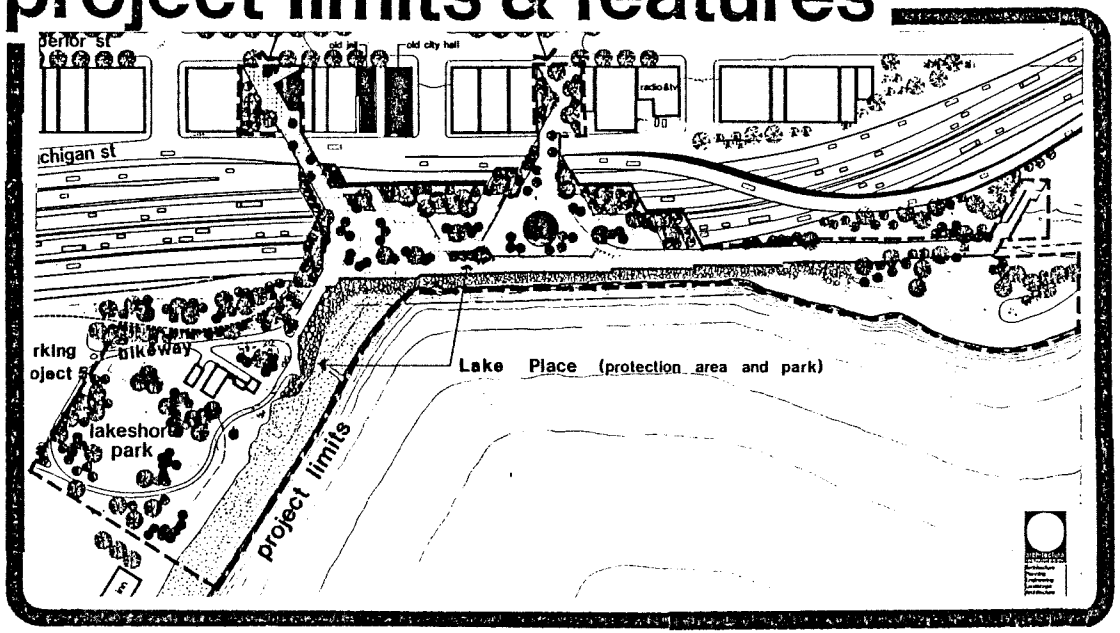


fig. 6-2
Lake Place Protection Area

2. The alignment of the freeway will eliminate any significant future potential for lakeshore open space in this vicinity.

3. Severe weather conditions from Lake Superior will have an adverse impact on the roadway and railway.

4. Proximity of the roadway to downtown, the Historic District, and the lakeshore will create changes in terms of noise and lighting levels and air quality.

5. Right-of-way acquisition will eliminate low cost, all day worker parking. (See Figure B.)

IV. Project Objectives

1. Provide roadway protection from severe weather conditions, including water, ice, debris, and wind-driven moisture, where the roadway is in its closest proximity to Lake Superior.

2. Protect and preserve the public lakeshore area and corner of Lake Superior, which is presently accessible by pedestrians along this entire area.

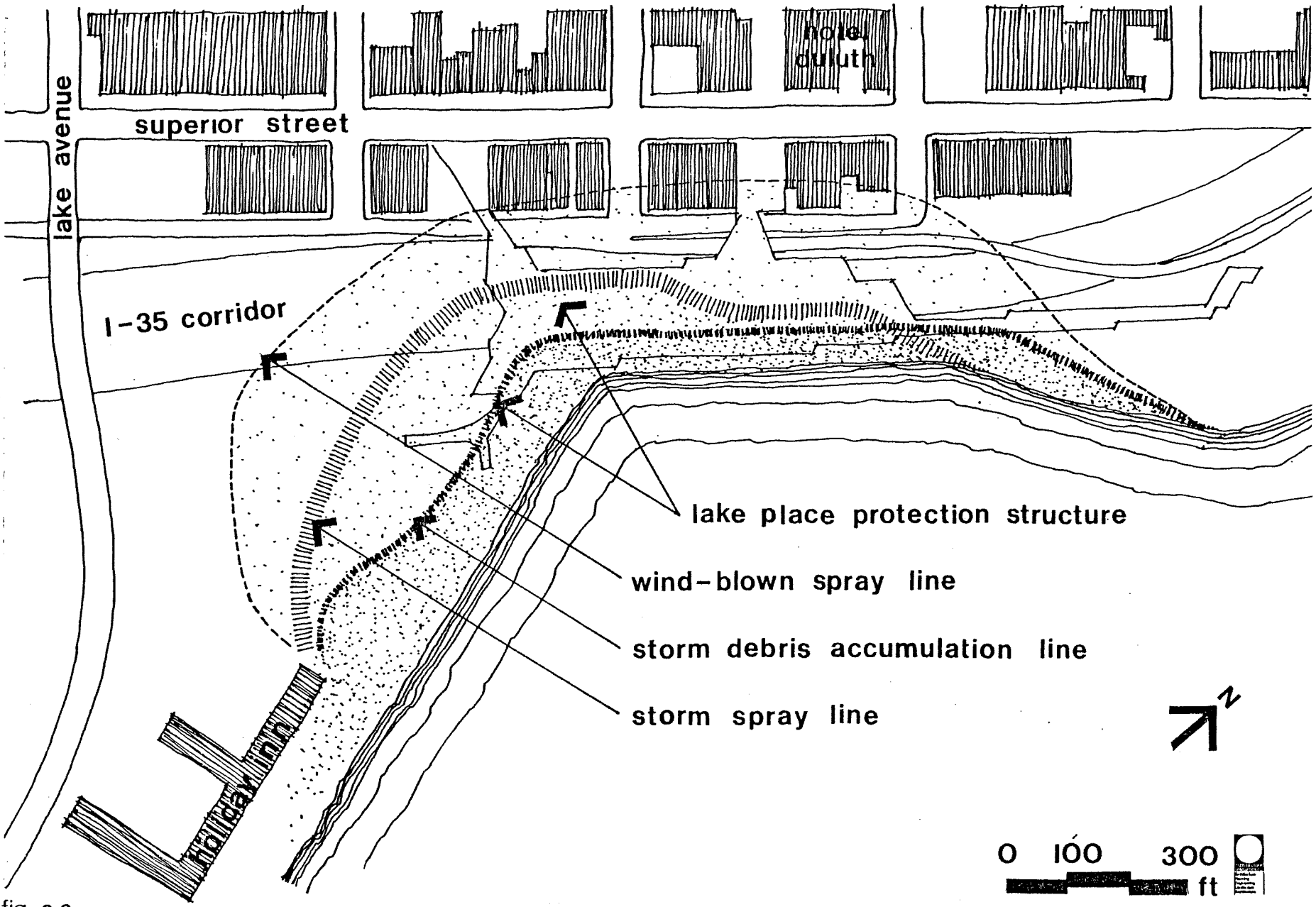


fig. 6-3

Lakefront Storm Condition: Lake Place Protection Area

3. Provide a lakeshore open space structure that will reduce the impacts of the freeway and the protective wall, establish a downtown lakefront park, and provide viewing and activity areas for residents and visitors.

4. Initiate and encourage public redevelopment along the Lake Superior shoreline to achieve a lakefront open space system, eventually linking Canal Park with Leif Ericson Park and Superior Street.

5. Encourage redevelopment and improvement of buildings along Superior Street, Michigan Street, and South First Avenue East.

6. Redevelop and improve the area east of the CBD into an entertainment-oriented district.

7. Upgrade the existing sewage lift station to make it compatible with Lake Place developments.

V. Project Description

The design for the Lake Place Protection Area incorporates several components. The first, and primary component involves the construction of a wall and a platform over the railway/roadway to minimize the adverse impacts of Lake Superior on the roadway. The second major component utilizes this protective structure to provide a visual and physical link with adjoining amenities. Development of a lakeshore park, in conjunction with the protective structure improvements, will provide for a continuation of the lakefront open space system and provide necessary physical connections with nearby amenities.

The physical dimensions and general design of the protective structure have been dictated by the need to protect both the lake and the roadway, and to preserve adjacent amenities with a visually acceptable solution. (See Appendix 5.) A vertical wall and a cover over the railway and roadway will be constructed, utilizing a textured-reinforced concrete wall and deck surfaces. Platform elevations are set at 34 feet above lake level and reflect minimum railroad clearance requirements. Platform support structures will consist of abutment walls dividing the north and south bound traffic lanes and separating the railway from the roadway. The protective covering will be extended an additional 600 feet over the railroad from the easterly edge of the platform, connecting the Historic District and lakeshore with the lakeshore park and bicycle path to the west.

The platform covers an area of approximately 3.4 acres. The deck consists of upper and lower level pedestrian circulation and assembly areas, which comprise the major multiple use activity spaces. Two walkways will extend from the platform surface to the southerly edge of the existing building lines on Michigan Street, and connecting to Superior Street.

The design concepts formulated with the platform and its connections insure that the freeway will not become a permanent visual and physical barrier to the lakeshore. Space will be provided on the deck for pedestrian/bicycle circulation, planting and open space, multiple use areas, historic interpretation areas, and public services.

Large planted areas will be provided at varying levels on the platform to accomplish screening and buffering of the freeway, collect wind-driven moisture, give definition and form to various use spaces, and to provide a major visual identification for this project area. These planted areas will be formed by low plant containment walls utilizing concrete and timber. Textured concrete will be introduced to add color and surface interest. Soil material will consist of a mixture of lightweight soil components compatible with each planting environment. Deciduous and evergreen trees and shrubs of various sizes will be chosen from native varieties with characteristics of high tolerance, low maintenance, and compatibility with the transportation corridor.

Multiple-use space will be provided for special events and participant/spectator activities. Incorporated into the project design will be informational kiosks, children's play sculpture, and bicycle storage racks. Permanent benches and low

level pedestrian lighting will be placed throughout the area. A major art form interpreting the historic development of Lake Superior and Duluth will be designed utilizing a water feature lined with Lake Superior beach rock. Freestanding concrete, timber, and plexiglass elements will be used to interpret historical themes.

Public services, including communications, fire protection, public information, drinking fountains, and restroom facilities, will be provided in the Lake Place development. Future public service additions at the Superior Street entrances will provide management/maintenance functions from a public information office. The project circulation system will provide connections for downtown shoppers and workers, nearby residents, and tourists. These connections will provide pedestrian/bicycle access to the lakeshore park system, downtown, and the Historic District.

Rampways will be designed as an integral part of the circulation system to provide access throughout the deck areas for handicapped persons and bicyclists. The rampways and deck areas connect with the overall bikeway system planned along the entire corridor. Ramp widths will vary from 12 feet to 30 feet in width, and will be textured to prevent slipping. Safety railings and walls will be provided where required for safety.

Adjacent lakeshore area improvements will be provided, requiring removal of one existing business and exterior remodeling of the sewage pumping station. Plant materials will be of the same types as those selected for the deck of the protective structure. Timber walls, earth berming, and planting will be provided to visually screen the freeway from the open space areas. Open beach areas and inner turf areas comprise the major land areas and may be used for passive or active recreation.

VI Project Justification

A protective wall will be constructed in Project Six to minimize the effects on the roadway of severe weather from Lake Superior, including water, ice, debris, and wind-driven moisture. Although this wall is critical for protection of the roadway, by itself it would create severe adverse environmental and physical impacts between downtown and the most westerly corner of the entire Great Lakes system. At the corner of Lake Superior where the freeway will run adjacent to the lakeshore, it is imperative that a protection device be constructed that will not only protect the freeway from natural forces, but also preserve the visual and physical access between downtown and Lake Superior. Such a device should not detract from the natural beauty of the lakeshore, but should follow FHWA guidelines in FHPM 7-7-8 (PPM 90-5) which emphasize the responsibility to:

> *make a positive contribution toward enhancement of the environment through which they pass and assist communities in attainment of their stated goals and objectives.*

A platform extending out from the protective wall with connections to Superior Street will complete the protection requirements of the wall, and is the only acceptable means of minimizing the adverse environmental impacts of the freeway and the wall on Lake Superior and the surrounding areas.

FHPM 7-7-8 (PPM 90-5) encourages the utilization of freeway airspaces:

> *Federal-Aid funds may participate in the highway-related costs of construction of platforms in the airspace above a highway when: (a) the use of such space is an integral part of the total corridor joint development and can be generally supported on the basis of the intensity of the land use in the corridor, (b) the public use or tax benefits to the locality, or the advantages to the highway program of the selected route location over alternative locations; and (c) the proposed facility complies with the rules established in PPM 80-10 to protect the highway and its users.*

Project Six is consistent with the scope and intent of FHPM 7-7-8 (PPM 90-5) and complies with the rules established in FHPM 7-4-3 (PPM 80-10) to protect the highway and its users.

As the roadway parallels downtown and the corner of Lake Superior, all available land in the area is requested for roadway construction. Freeway construction in the Lake Place Protection Area will require seven acres of prime lakeshore property. Provision of the Lake Place structure will return three acres of that unique shoreland to recreational/cultural uses and will provide an impetus for future lakefront improvements and redevelopment of the area east of the CBD.

The proximity of the most westerly corner of Lake Superior to a highly urbanized area is a situation that is unique to Duluth, and does not exist in any other place. Federal guidelines advise that highways should conform to the particular needs of each locality. FHPM 7-7-8 (PPM 90-5) states:

> *a. Section 109, Title 23, United States Code, requires that the Secretary of Transportation "shall not approve plans and specifications for proposed projects on any Federal-aid system if they fail to provide for a facility ... that will be designed and constructed in accordance with standards best suited to accomplish the foregoing objectives and to conform to the particular needs of each locality."*

Because of the unique situation in Duluth, the FHWA must go beyond what is normally provided to minimize the impact of the freeway on the environment. Space will be provided at Lake Place for various social, cultural, and recreational activities. Lake Place provides the opportunity to achieve important City objectives relating to the development of public open space. (See Appendix 2.) Although Duluth has an abundance of open space per capita, it is not always located in the right places. Lake Place provides the opportunity to place "open space" at Lake Superior - the single most important natural resource of the City - at the same time as minimizing the impact of the freeway on the area.

Two pedestrian/bicycle connections from Lake Place to Superior Street will provide access from downtown, adjoining neighborhoods, and other links in the Duluth Bikeway Plan. The westerly connection has been designed to serve visitors from downtown and the entertainment-oriented district proposed east of downtown. The easterly connection will serve residents of the Central Hillside which is composed mostly of high density multi-family dwellings and a large proportion of elderly persons. (See Figure 6-4.)

An important objective of the Duluth Downtown Development Program (See Appendix 2.) is to redevelop the area east of Lake Avenue as an entertainment district. Acquisition for the Superior Street connections will provide an impetus for revitalization of the area by removing deteriorated buildings and linking the entertainment district to waterfront open space.

The Lake Place Protection Area will protect the freeway from the natural forces of Lake Superior and will protect the surrounding environment from the adverse impacts of the freeway. In addition, it will provide an opportunity for the City of Duluth to accomplish the important objectives of revitalizing the area east of the CBD and providing a lakefront multiple-use area with connections to the lakeshore park system and Superior Street.

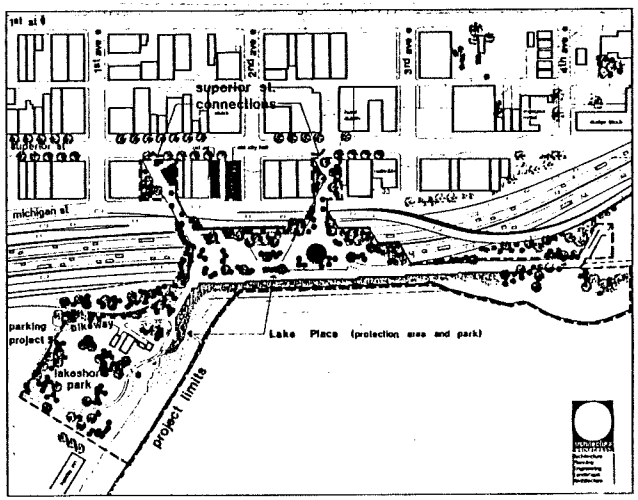


fig. 6-4
Lake Place Protection Area

VII. COST ESTIMATE

This estimate is for joint development features located along the lakeshore. (See Figure 6-2.) As noted previously, the Lakeshore Park improvements and extensions to Superior Street are located outside of the highway ROW. The estimate assumes that fill material will be provided and compacted as a part of highway construction. For clarity, the estimate has been divided into three major components.

A.	LAKE PLACE STRUCTURE	$7,949,440
	CONCRETE STRUCTURE includes basic structure, Michigan Street connecting structure, East protective wall, and connection and crib wall	6,866,575
	PLANT CONTAINMENT WALLS includes concrete and timber	146,525
	EARTHWORK includes topsoil, filter, aggregate drain course, and drain tile	293,300
	PLANT MATERIALS includes sod groundcover, shrubs, deciduous and evergreen trees, perennials, vines, mulch materials, staking, and containers	166,800
	SURFACING includes deck paving, stairs/ramps, and miscellaneous drainage structures and connections	254,740
	SYSTEMS includes irrigation and ramp/stair heating	31,300
	LIGHTING includes concealed, pedestrian and accent lighting	42,500
	FURNISHINGS includes waste receptacles, signs, kiosks, sculptures, bike racks, viewing telescopes, drinking foundations, mosaic feature, electrical connections, handicap features and identification items.	147,700
B.	SUPERIOR STREET CONNECTIONS	691,400
	LAND ASSEMBLY AND IMPROVEMENTS Parcel 56-4--acquisition, relocation and demolition	160,100
	CONCRETE STRUCTURE (MICHIGAN TO SUPERIOR) 19,800 s.f.	386,100
	BASE SLAB (MICHIGAN TO SUPERIOR)	13,200
	EARTHWORK includes topsoil, filter, base, and drain tile	60,000
	PLANT MATERIALS includes groundcover, shrubs, trees, miscellaneous planting, and containers	36,000
	SURFACING deck paving	22,000
	SYSTEMS includes irrigation and drainage systems	$ 6,600
	LIGHTING includes concealed, pedestrian, and accent	7,400
C.	LAKESHORE PARK	426,500
	LAND ASSEMBLY includes land acquisition, relocation, demolition, and site restoration	217,100
	EARTHWORK includes excavation and topsoil	18,300
	PLANT MATERIALS includes sod, seed, groundcover, shrubs, deciduous and evergreen trees, perennials, and vines	65,000
	SURFACING includes walks/trails and feature areas	14,500

SYSTEMS..... includes drainage and potable water extensions	3,200
LIGHTING..... includes pedestrian and area lights	14,500
SITE FURNISHINGS..... includes benches, waste receptacles, signs, kiosks, sculpture, play areas, bike racks, drinking fountains, picnic tables, and barbecue grills	27,700
STRUCTURES..... includes toilet facility addition, maintenance addition and multi-use shelter	66,200
TOTAL	$9,067,340

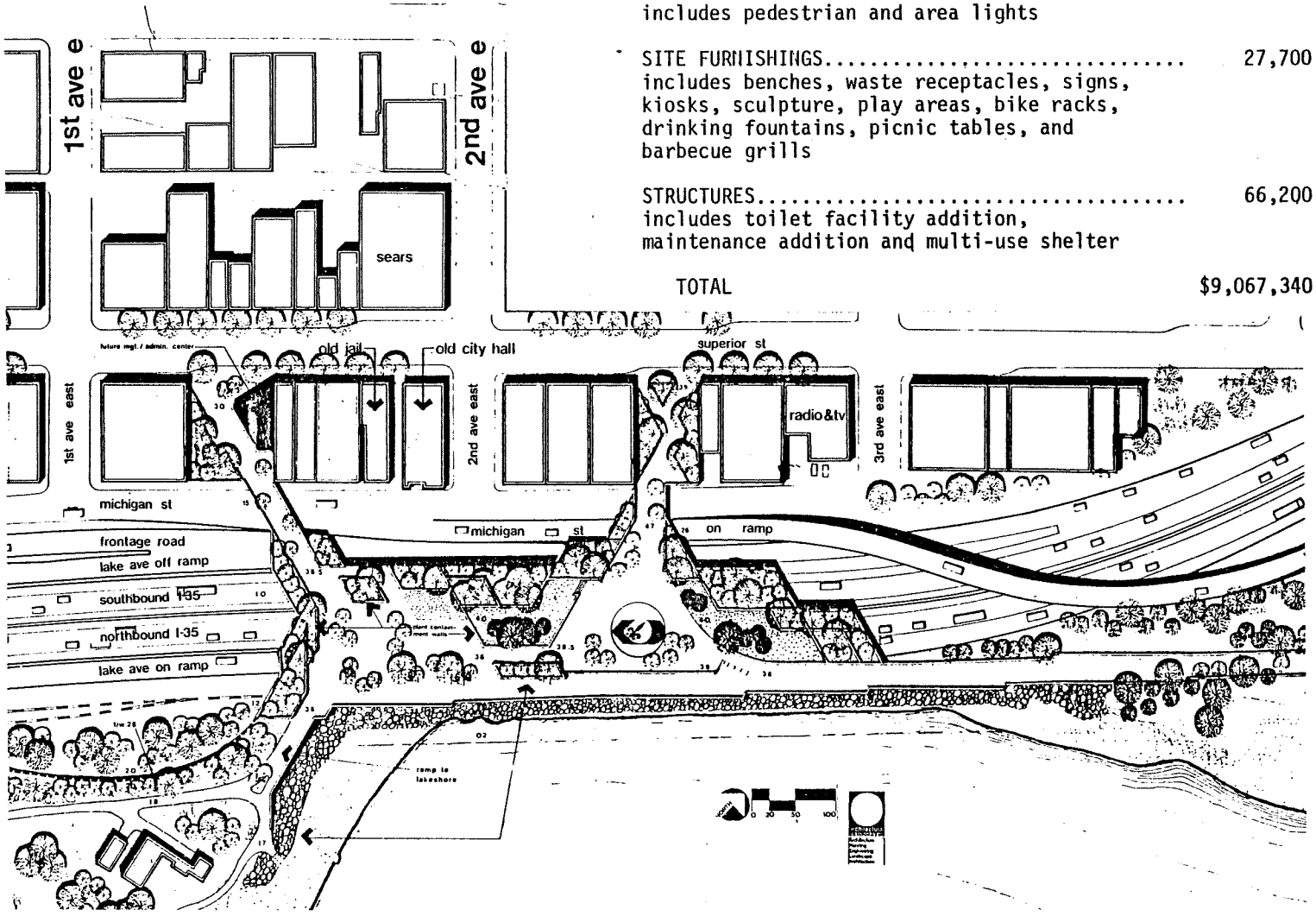


fig. 6-5
Lake Place Protection Area

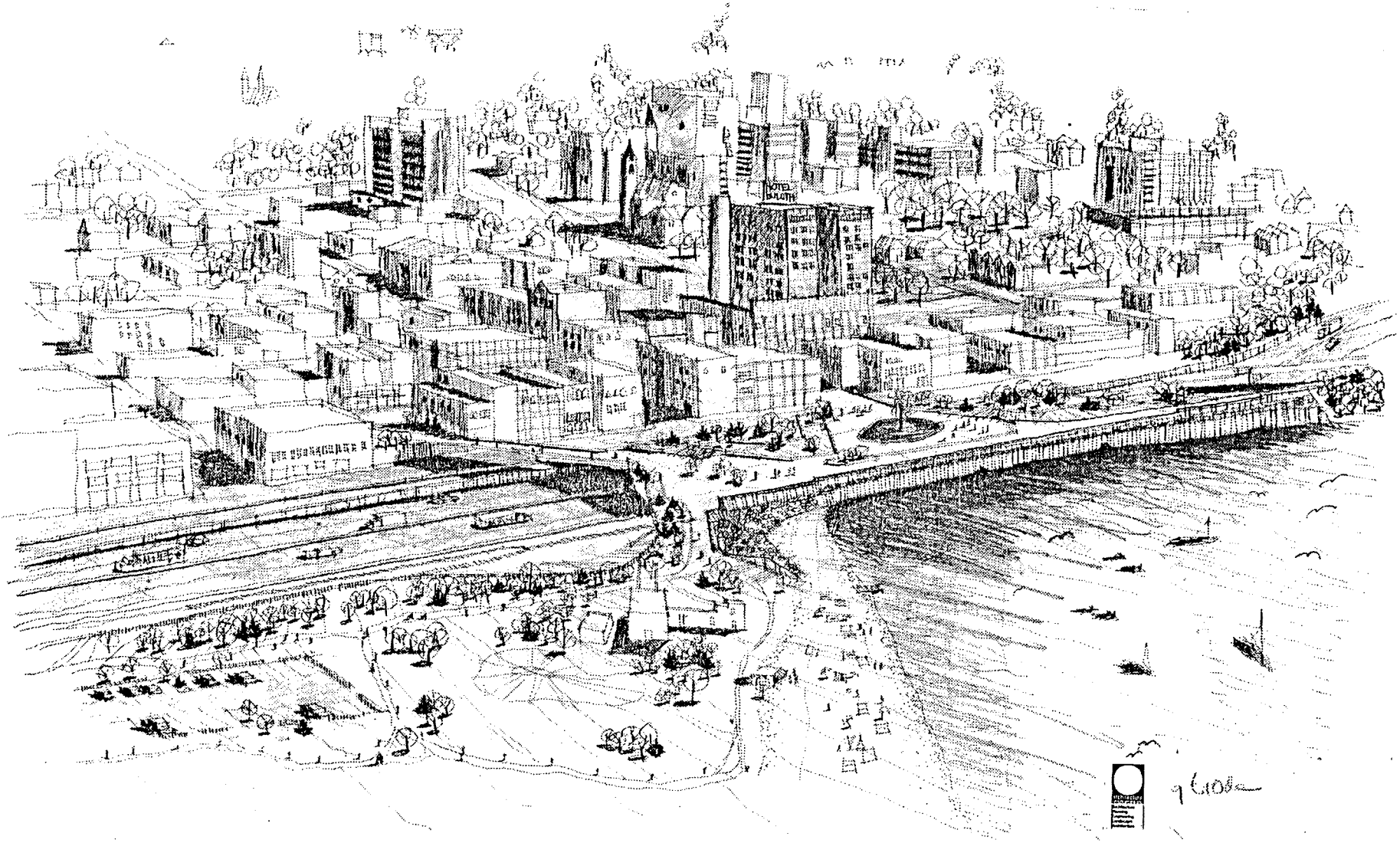


fig. 6-6
Aerial View: Lake Place Protection Area

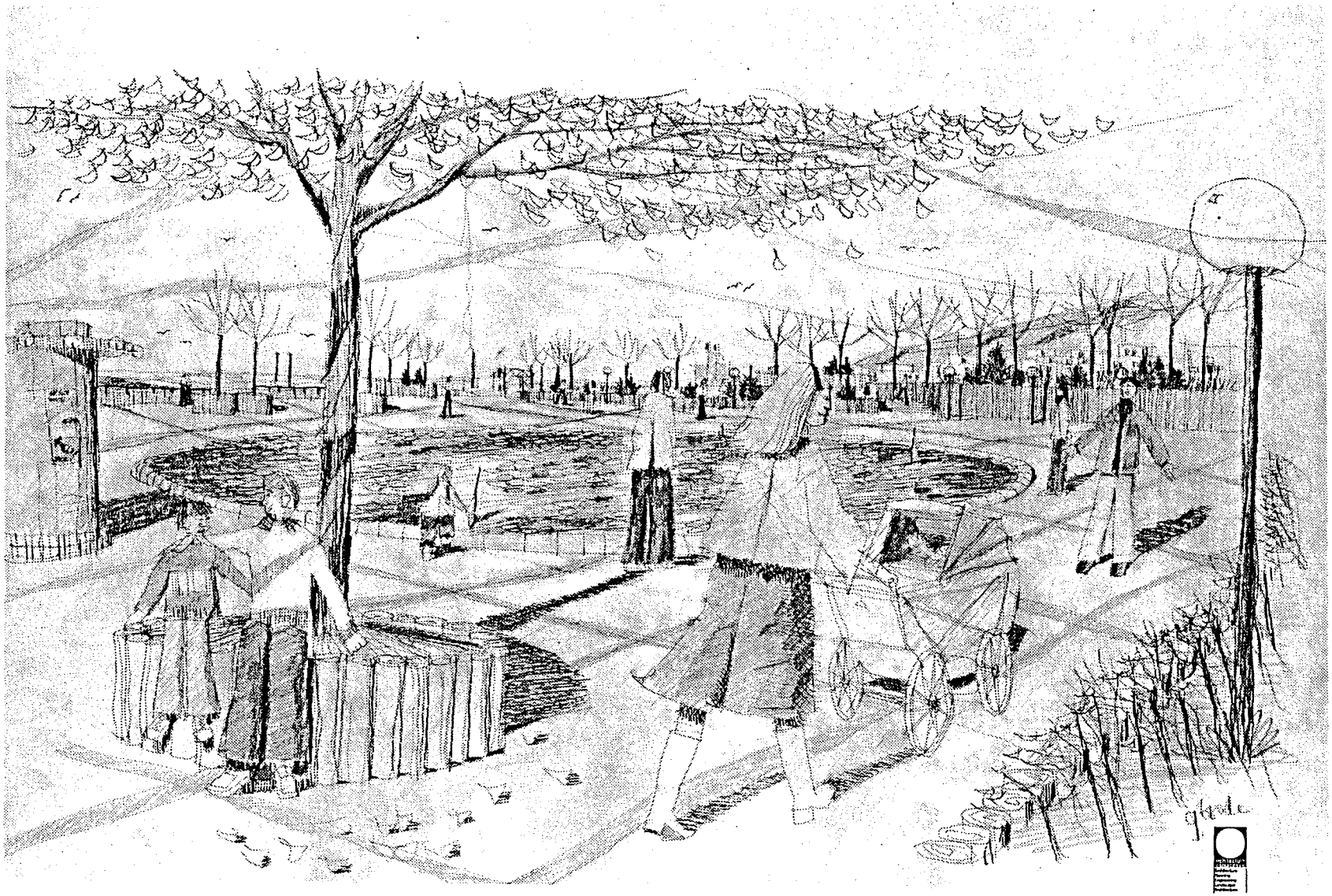


fig. 6-7

Perspective: Lake Place Protection Area

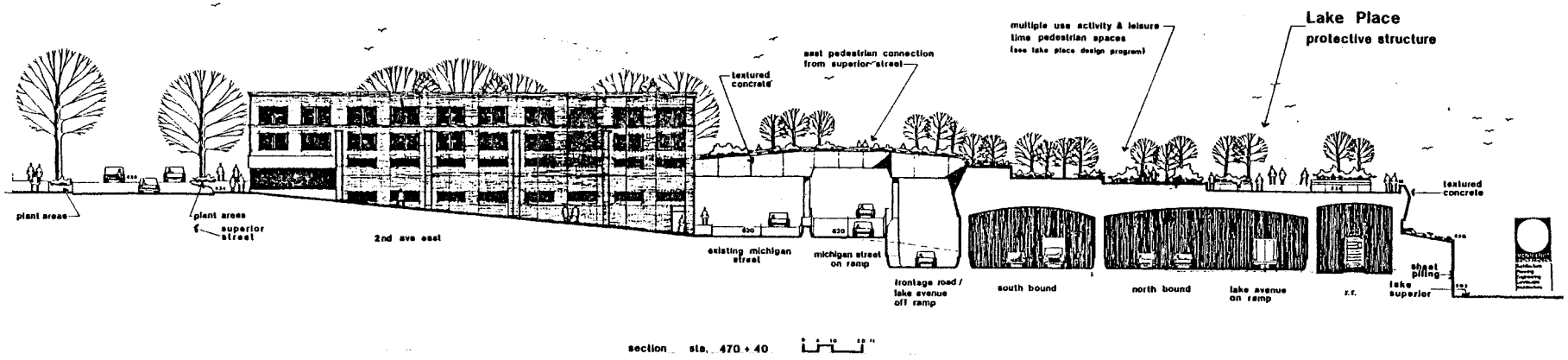


fig. 6-8

Section Through East Multiple Purpose Bridge: Lake Place Protection Area

project 7 - Historic District

project 7 - Historic District

I. Introduction

Two multiple-purpose bridges will be constructed over the freeway in Project Seven to maintain the continuity of Superior Street through the City's identified Historic District and provide pedestrian/bicycle connections through the area. Landscape improvements will be provided to minimize the effects of the freeway and assist in redevelopment of the area.

II. Area Identification

The Historic District has been identified as the area extending from Fourth Avenue East to Ninth Avenue East, between the waterfront and the alley above Superior Street. This area includes one building that is on the National Register and four buildings that are eligible for registration with the National Trust for Historic Preservation. (See Figure 7-4.) Recognizing the importance of preserving the character of the entire area as well as individual buildings, the City of Duluth will apply to the National Trust for identification of this area as a designated historic district.

Existing land uses in this area include a variety of automotive and small commercial businesses. Most of the automotive businesses will be acquired and relocated for freeway construction. The Kitchi Gammi Club (listed on the National Register) and the Hartley Building, both designed by Bertram Goodhue, a prominent New York City architect, are located at the east end of the project area. DM&IR's main line track extends along the waterfront adjacent to the Historic District.

As the freeway approaches the Historic District from a westerly direction, the roadway is south of and parallel to Michigan Street. At approximately Third Avenue East, the freeway turns inland and passes under Superior Street at about Fifth Avenue East, just west of the Pickwick Restaurant. The freeway alignment then runs north of and parallel to Superior Street in a depressed section until it passes under Superior Street on the east end of the Historic District near the Hartley Building. From this point, the freeway rises as it meets the existing London Road.

III. Area Impacts

1. The roadway creates a physical barrier between downtown, adjacent neighborhoods, and the Historic District.

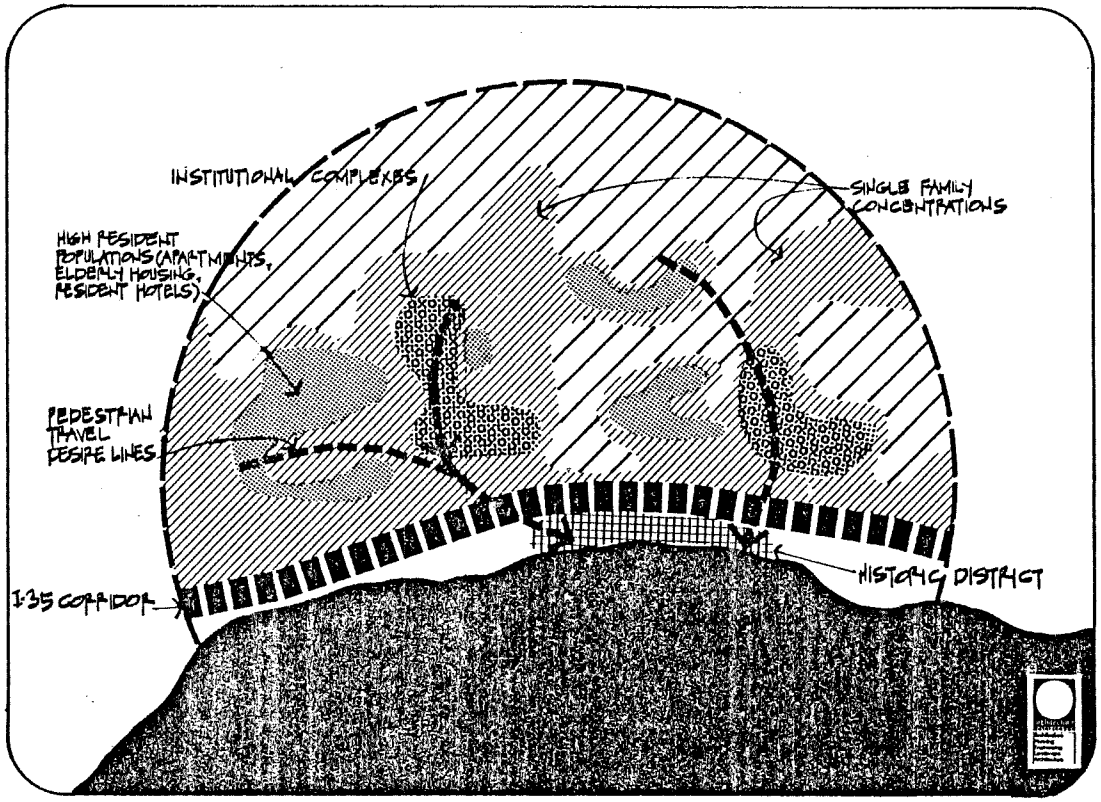


fig. 7-1

One Half Mile Radius Population Concentration: Historic District

2. Proximity of the roadway to the Historic District may cause changes to the character of the area in terms of air quality and noise and lighting level.

3. The alignment of the freeway will require acquisition and removal of Branch's Hall, an historic building which is considered eligible for registration by the National Trust for Historic Preservation.

4. Right-of-way acquisition will eliminate low cost, all day worker parking. (See Figure B.)

5. Extension of the freeway will provide an opportunity to consolidate existing and proposed land uses in the Historic District, and to visually identify the area.

6. The depressed alignment of the roadway through the area minimizes the impact on the adjacent uses and provides continuation of pedestrian/vehicular circulation patterns.

7. The roadway alignment will eliminate two existing vehicular access routes to Superior Street.

IV. Project Objectives

1. Encourage the preservation of historic buildings and provide site improvements to complement the unique character and lakefront location of the Historic District.

2. Provide improved vehicular/pedestrian access and off-street parking to enhance development opportunities and redevelopment potential of the historic buildings located within the area.

3. Provide parking necessary to serve existing and proposed land uses and to offset parking lost as a result of the freeway extension.

4. Provide a visual entrance to enhance the area and to help the community realize the significance and potential of the Historic District.

5. Provide vehicular/pedestrian access, utilities, and parking areas to maximize the continuity of the neighborhood for area residents.

V. Project Description

Project Seven provides two multiple-purpose bridge structures over the freeway for pedestrian/vehicular access to the Historic District, landscape improvements, and parking. Program elements have been developed that will enhance the character of the Historic District while providing for the circulation requirements of vehicles and pedestrians.

Local vehicular traffic will be routed on Superior Street, which will be relocated to the north in the Historic District connecting with the bridges over the freeway. Vehicular access to the north will be provided with connections between Superior Street and Fifth and Eighth Avenues East.

76 parking spaces will be provided in Project Seven, scattered in several locations. Parking has been designed to offset the loss resulting from freeway construction and to serve new development. Access points and parking lots have been carefully designed to serve adjacent uses.

Sidewalks and bicycle trails will be developed through the Historic District connecting with Lake Place on the west, Leif Ericson Park on the east, and residential areas to the north. These trails are an integral part of the Duluth Bikeway Plan. (See Appendix 4.)

Landscape improvements will be used extensively to reduce the impact of the freeway in this area and to improve the quality of the Historic District. Planted areas located at the edge of the multiple purpose bridges will be formed by low containment walls utilizing concrete and timbers. Special lighting will be used throughout the area to provide a unique character for the Historic District. Interpretive signing will be developed to identify special historic features as part of the Tour du Lhut signing program. At critical points on both multiple purpose bridges, the use of earthmounding

and planting will screen and buffer the freeway. Individual parcels of right-of-way will be planted to improve the view for the driver on the roadway as well as from Superior Street.

VI. Project Justification

The multiple purpose bridges in Project Seven will reduce the barrier effects of the freeway, preserve local circulation patterns, and enhance the character of the Historic District.

Superior Street must be realigned to maintain vehicular access from land uses in the Historic District to the freeway, the CBD, and adjacent neighborhoods. The design solution calling for the extended bridges is partially due to the expensive superstructure system that would be required for the alternate skewed bridge system. The extended bridge system will eliminate the severe skew and result in a relatively economical two-span continuous superstructure deck system. This system will span from the edge abutment wall to the center bearing wall between lanes. Edge abutment costs are reduced with extended bridges since the edge retaining structures are already required due to deep cuts for the roadway design. The two-span system transfers load, reduces size, and helps reduce costs of retaining structures.

The skewed system would hinder sight distances along the entrance ramps because of skewed bearing walls. There are no sight restrictions with clear spans from abutment retaining walls to the center bearing wall. By extending the bridges and going to a shallow two-span continuous superstructure, there is no potential for vertical clearance restrictions. The skewed system would necessitate a deeper superstructure throughout due to long skewed spans. The two-span system calls for relatively shallow superstructure resulting from shorter spans.

The extended bridge on the east side of the Historic District will allow a utility corridor to remain and service adjacent uses. The skewed bridge system would require major modification of existing utility corridors because of superstructure depth and placement.

The design of the multiple purpose bridges and realigned Superior Street provides a unique opportunity to unify the Historic District. As the area is presently situated, there are major city streets fronting on the buildings, separating one from the other. The construction of the freeway in this vicinity will further separate the historic structures visually as well as physically. Construction of the multiple purpose bridges will tie the area into a cohesive unit, allowing safe access through-

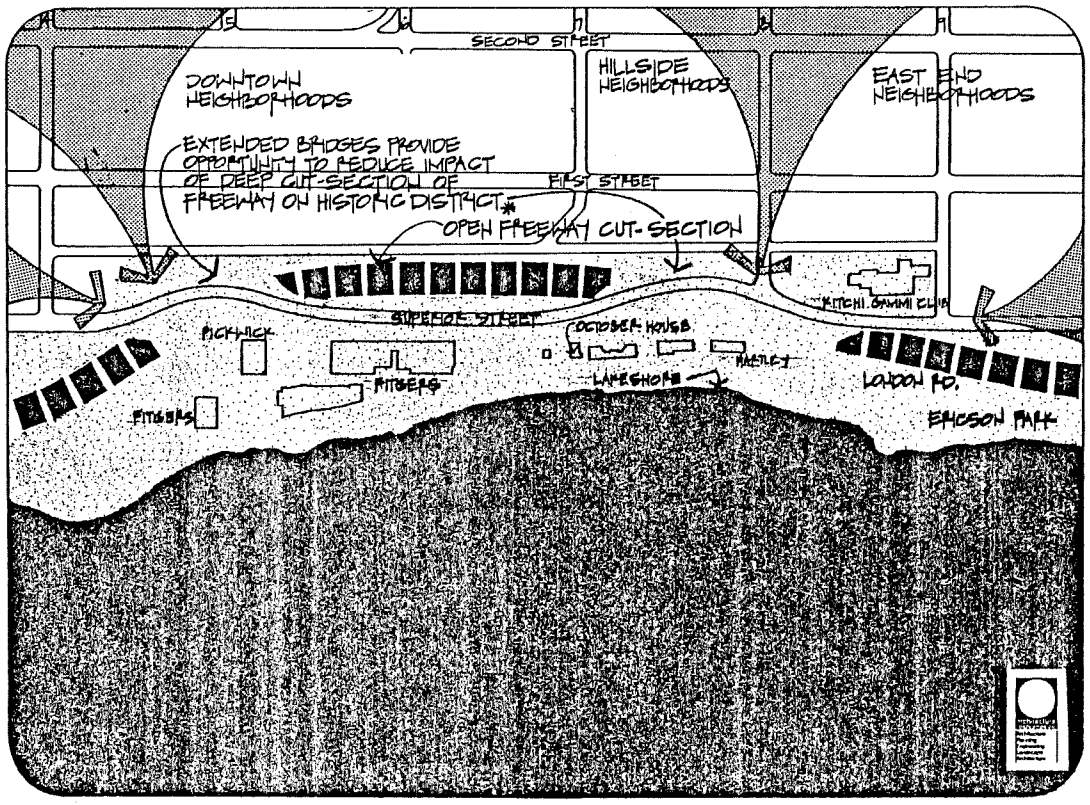


fig. 7-2
Historic District

out the District and provision of other improvements to visually identify the area and minimize the effects of the roadway below. Joint Development of Highway Corridors and Multipe Use of Roadway Properties, FHPM 7-7-8 (PPM 90-5), allows extended bridge structures to make the highway conform to its environment:

> *d) Increased span length for structures or modifications or variation of structures or highway cross section where such would promote and encourage desirable public and/or private uses of land areas beneath, over, and adjacent to the highway.*

Landscape improvements in the Historic District will minimize the effects of the freeway, enhance the quality of the Historic District, and blend the character of the area with the adjacent waterfront.

The parking spaces have been provided to offset the loss resulting from freeway construction and to serve new development in the Historic District.

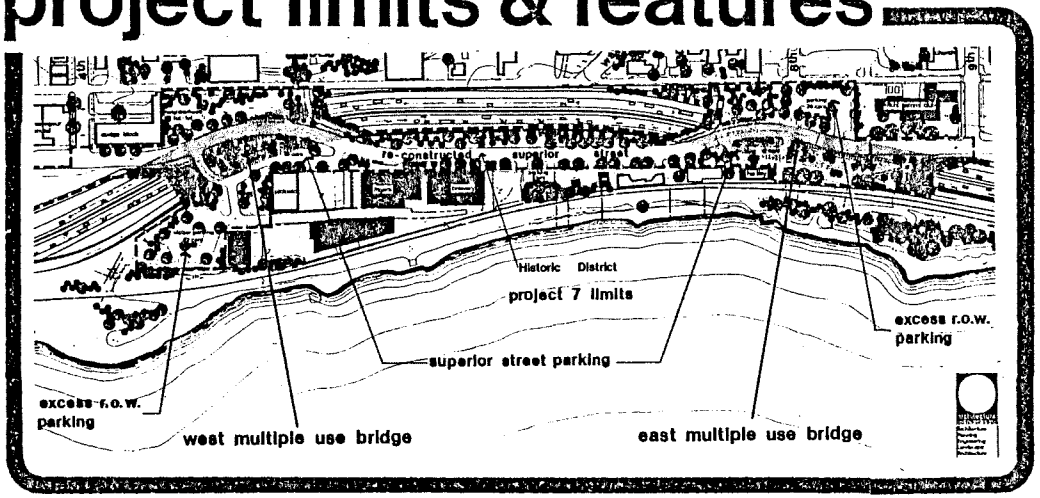


fig. 7-3
Historic District

Pedestrian and bicycle trails through this area will connect the historic structures with adjacent public, commerical, and residential land uses. In addition, they will complete an important link in the Duluth Bikeway Program, connecting the CBD, the lakeshore, and Leif Ericson Park. (See Appendix 4.)

The Project Seven improvements are consistent with guidelines established in Management of Airspace, FHPM 7-4-3:

> *If found to be consistent with highway designs, any portion of right-of-way may be used for green strips, play areas, parking or other highway related public use, or for any other public or quasi-public use which would assist in integrating the highway into the local environment and enhancing other publicly supported programs.*

VII. COST ESTIMATE

This estimate is for joint development features located on excess highway ROW and City street ROW. (See Figure 7-3.) As noted previously some of the improvements, such as the surface parking, extend from highway ROW to City ROW. The estimate assumes that fill material will be provided whenever needed and compacted as a part of highway construction. All other improvements proposed in this area are included below. For clarity, the estimate has been divided into five major components.

A. WEST MULTI-USE BRIDGE..... $3,000,720

BRIDGE STRUCTURE (59,500 s.f.)	$2,677,500	
PLANT CONTAINMENT WALLS..... includes concrete and timber	48,550	
EARTHWORK..... includes topsoil, filter material aggregate drain course, and drain tile	141,150	
PLANT MATERIALS..... includes turf, ground cover, shrubs, deciduous and evergreen trees, perennials, vines, mulch, and staking	51,100	
SURFACING..... includes base, asphalt surfacing, curb and gutter, sidewalks and storm drainage	59,760	
SYSTEMS..... includes irrigation	7,840	
LIGHTING..... includes pedestrian and area lighting	9,500	
SITE FURNISHINGS..... includes waste receptacles, signs, kiosks, play areas, bike racks, and benches	5,320	

B. EAST MULTI-USE BRIDGE..... $3,052.420

BRIDGE STRUCTURE	$2,801,250	
PLANT CONTAINMENT WALLS.....	33,000	
EARTHWORK.....	73,630	
PLANT MATERIALS.....	47,990	
SURFACING.....	70,370	
SYSTEMS.....	$ 6,560	
LIGHTING.....	16,000	
SITE FURNISHINGS.....	3,620	

C. SUPERIOR STREET RECONSTRUCTION..... $ 205,530

DEMOLITION..... includes demolition of existing street, curb and gutter, aprons, and walks	16,750	
EARTHWORK..... includes site preparation and topsoil	6,040	
PLANTING..... includes turf, ground cover, shrubs, deciduous and evergreen trees, perennials, vines, mulch, and staking	30,550	
SURFACING..... includes excavation, base surface, curb and gutter, signs, walks, and storm drainage	92,650	
LIGHTING..... includes pedestrian, area, and accent lights	34,000	
SITE FURNISHINGS..... includes waste receptacles, signs, kiosks, sculpture, bike racks, drinking fountains, handicap features, picnic tables, and benches	25,540	

D. SUPERIOR STREET PARKING..... $ 60,360

EARTHWORK..... includes topsoil	1,680	
PLANTING..... includes turf, ground cover, shrubs, deciduous and evergreen trees, perennials, vines, mulch, and staking	11,680	

	SURFACING..... includes base, asphalt surfacing, curb and gutters, signs, and storm drainage	47,000	
E.	EXCESS ROW PARKING.....		$ 86,220
	EARTHWORK..... includes topsoil	4,480	
	PLANTING..... includes turf, ground cover, shrubs, deciduous and evergreen trees, mulch, and staking	17,820	
	SURFACING..... includes base, asphalt surfacing, curb and gutter, signs, and storm drainage	46,600	
	LIGHTING..... includes pedestrian and area lighting	13,000	
	SITE FURNISHINGS..... includes waste receptacles, signs, sculpture, and kiosks	4,320	
	TOTAL		$6,405,250

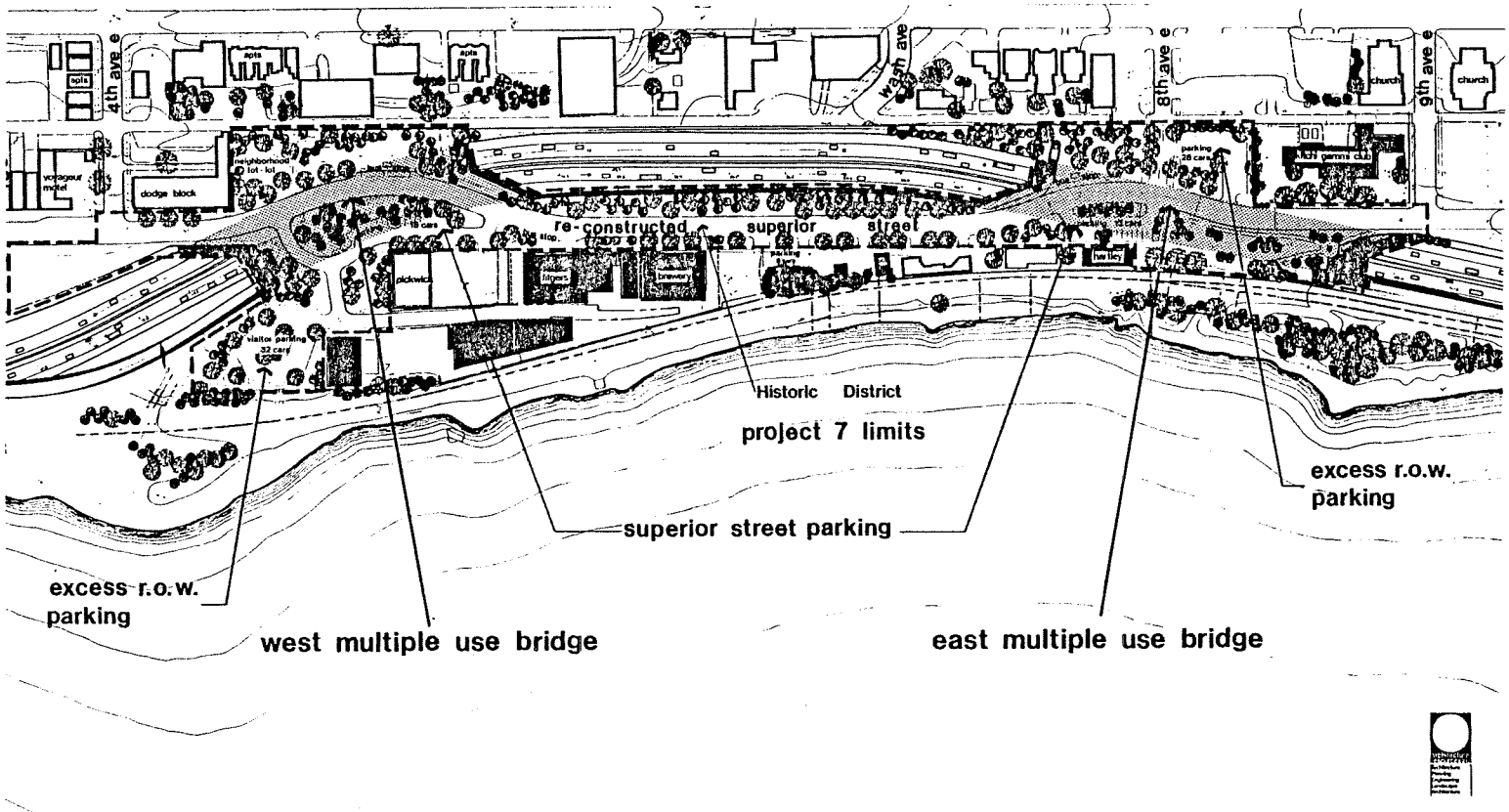


fig. 7-4
Historic District

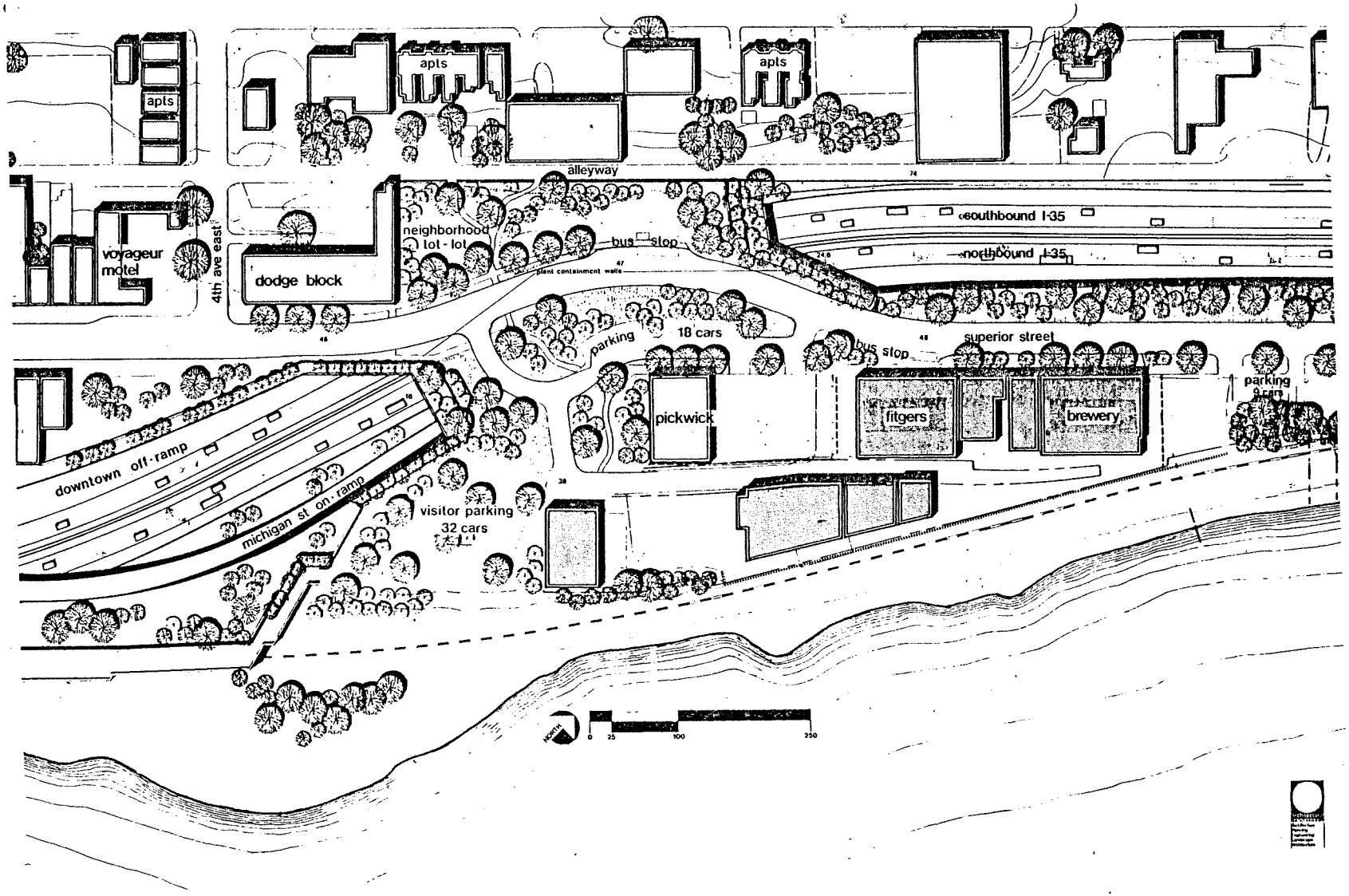


fig. 7-5

West Multiple Purpose Bridge: Historic District

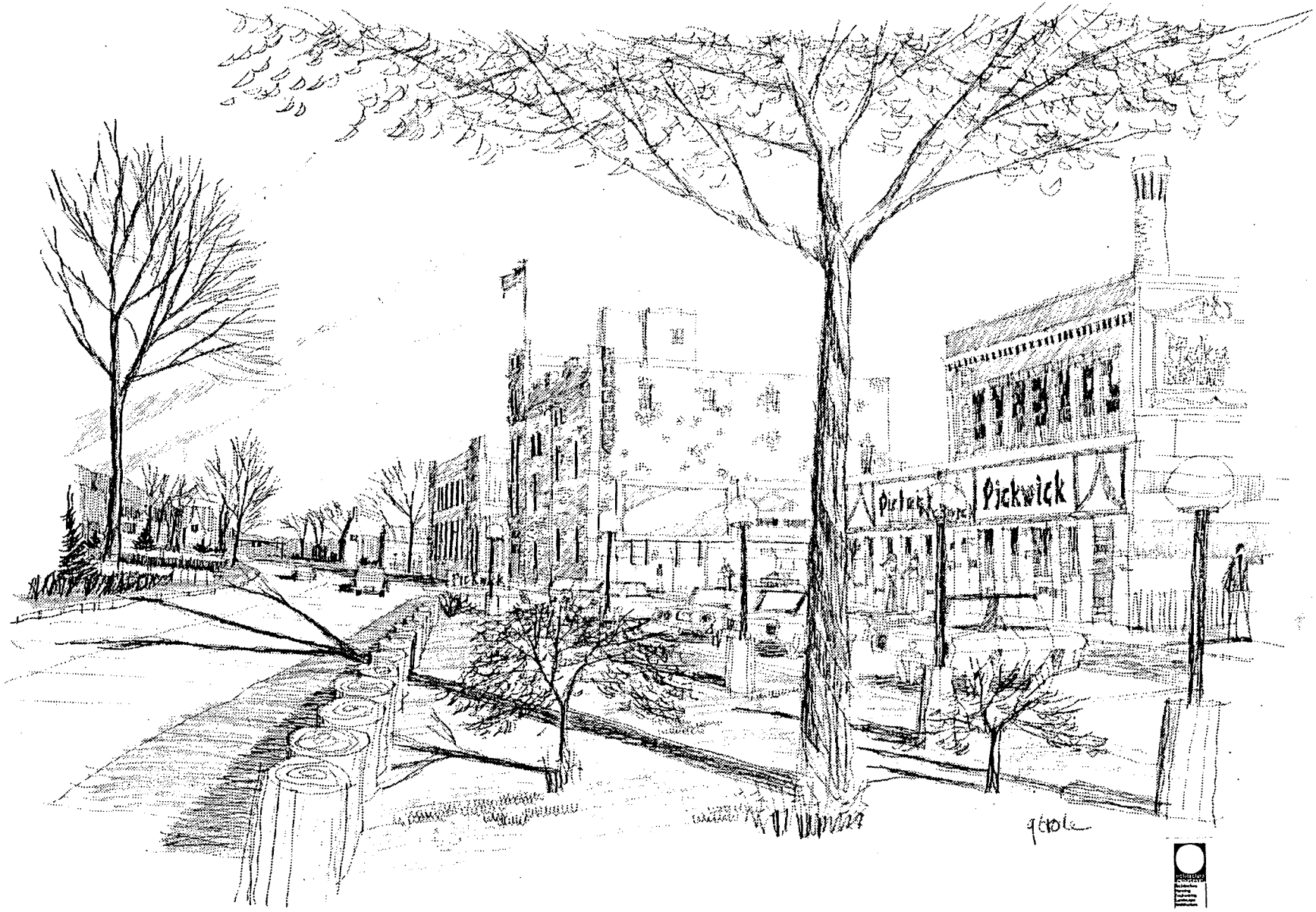


fig. 7-6

Perspective of West Multiple Purpose Bridge: Historic District

fig. 7-7

Perspective of East Multiple Purpose Bridge: Historic District

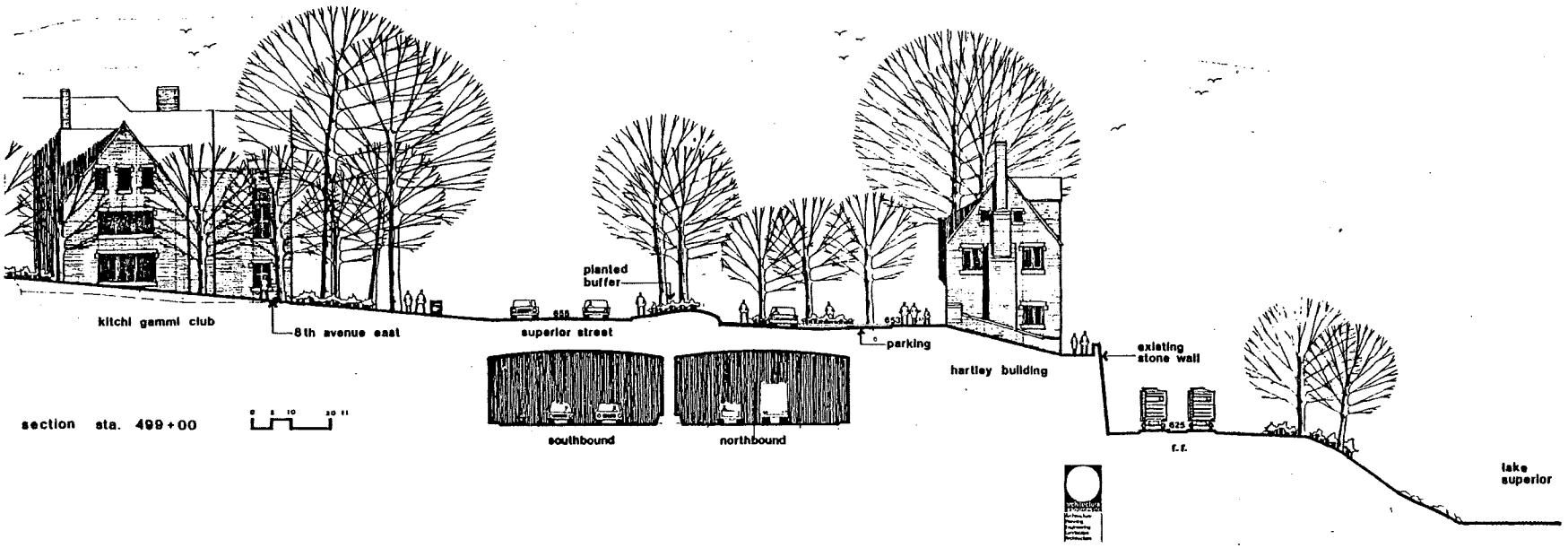


fig. 7-8

Section Through East Multiple Purpose Bridge: Historic District

project 8 & 9 - East Downtown Entrance & Park Zone

project 8 & 9 - East Downtown Entrance & Park Zone

I. Introduction

Projects Eight and Nine have been combined to provide a uniform description of the easterly entrance to the roadway. The original intent was to have an Easterly Downtown Entrance Project (Project 8) and a Pedestrian Entrance to Leif Ericson Park Project (Project 9). Rather than duplicate many of the similar objectives and descriptions, both projects have been combined in this analysis.

The combined projects will provide major landscape treatment along the roadway edge and parking for Leif Ericson Park. The projects have been designed to preserve pedestrian access into Leif Ericson Park from adjacent parking and from residential neighborhoods to the north.

II. Area Identification

Projects Eight and Nine include a triangular area bounded by Superior Street, Tenth Avenue East and London Road. At the present time, this area includes two separate blocks of property. The first of these is a City-owned parcel bounded by Superior Street, Ninth Avenue East and London Road. The second block is much larger, and is bounded by Superior Street, Tenth Avenue East, London Road, and Ninth Avenue East. The small triangle is presently developed as a landscaped right-of-way and includes a prominent bronze statue of Jay Cooke surrounded by trees, shrubs, and flowers. The larger block includes several commercial businesses fronting on Superior Street including a service station, an interior decorator, an art gallery, and a laundromat.

Adjacent land uses include Leif Ericson Park, two prominent historical structures, and a large undeveloped block of property. In broad land use description, the area of Projects Eight and Nine includes primarily residential and park property with a limited amount of commercial service-oriented businesses.

The roadway will be located between the lakeshore and Project Eight, eliminating the existing at-grade pedestrian access between these areas. The roadway will be located at the existing grade at the east end of Project Eight (approximately Tenth Avenue East). As the roadway extends westerly, it gradually drops into a cut section. The pedestrian bridge (Project Nine) will be at the same grade as Project Eight and the sidewalk on the south side of the roadway. (See Figure 8-9-2.) This alignment will enable people to look toward the lakeshore without sensing the presence of the roadway below.

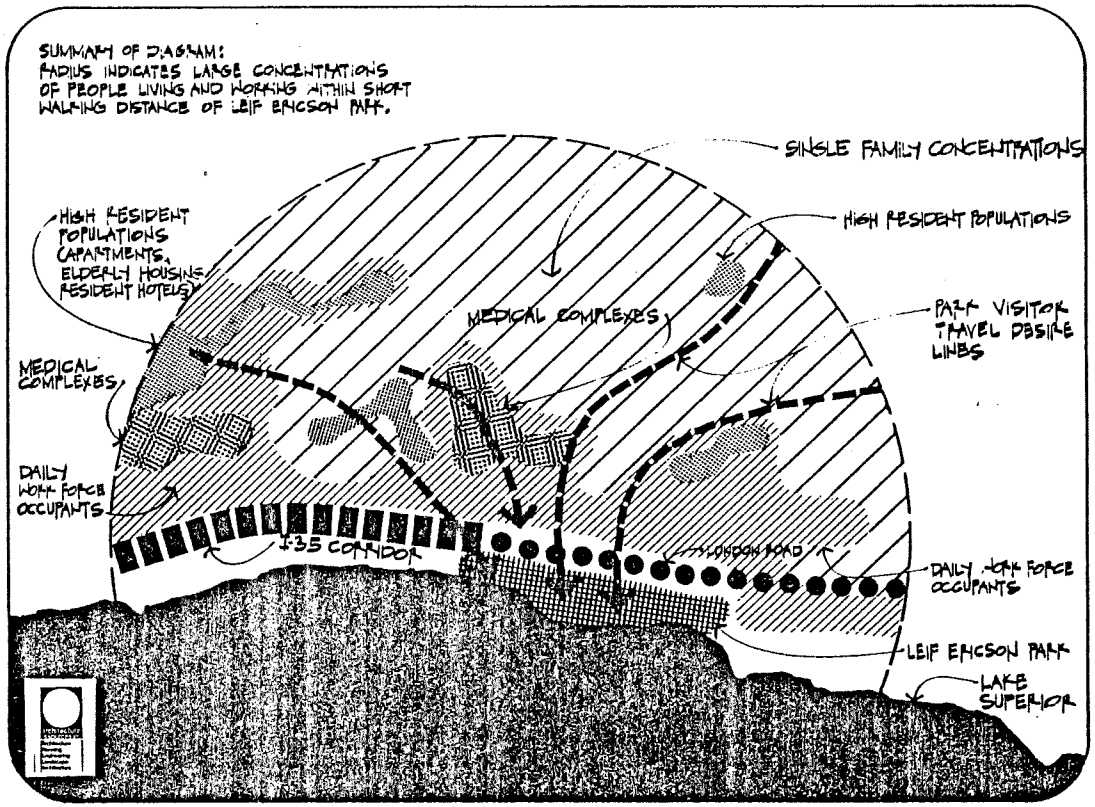


fig. 8-9-1

Immediate Impact Zones: East Downtown Entrance & Park Zone

III. Area Impacts

1. Extension of the roadway will eliminate on-street parking and reduce pedestrian access serving Leif Ericson Park.

2. The landscaped right-of-way where the statue of Jay Cooke presently stands will be eliminated by acquisition for the roadway.

3. The roadway will separate surrounding neighborhoods from Leif Ericson Park.

4. Proximity of the roadway to residential neighborhoods, adjacent commercial uses, and Leif Ericson Park will create changes in terms of air quality and noise and lighting levels.

5. Extension of the roadway will increase traffic on London Road.

IV. Project Objectives

1. Minimize the environmental and social impacts of the freeway on surrounding land uses.

2. Preserve the visual connection between Leif Ericson Park and adjacent neighborhoods.

3. Relocate the statue of Jay Cooke in a park-like environment similar to its present setting.

4. Replace on-street parking that will be eliminated by construction of the freeway.

5. Establish a safe pedestrian link from adjacent neighborhoods and parking to Leif Ericson Park.

6. Establish a park-like character along the roadway and provide other improvements to create visual continuity and positive driver orientation.

V. Project Description

Projects Eight and Nine will help to minimize the impacts of the roadway on adjacent land uses and provide landscape treatment at the eastern entrance to the freeway. The statue of Jay Cooke will be relocated to the Historic District just west of Project Eight. (See Project Seven Description.)

Project Eight will be developed as open space and a drop-off point for Leif Ericson Park. A parking area for 14 vehicles will be designed with access to Superior Street. The remainder of Project Area Eight will be planted to blend with the Historic District and to strengthen the quality of the view towards Leif Ericson Park. Sidewalks and bicycle trails will be constructed to connect with the surrounding pedestrian access points and the bikeway system.

Project Nine involves the construction of a pedestrian overpass connecting Project Area Eight with Leif Ericson Park. The overpass will allow direct access into the park by visitors and residents of adjacent neighborhoods. The parking area in Project Eight will insure the success of the overpass and establish this point as the main access to Leif Ericson Park.

The location of the overpass landing point in Project Eight is extremely important because of the clearance needs of the roadway and the railway. At this location, the ramp can be constructed at approximately the same elevation as the Project Eight area to insure that the overpass will not obstruct views of the park. From the landing in Project Eight, the main structure of the overpass will span the roadway surface and touch down on the existing sidewalk running along the south side of London Road. From this point, a second span will rise over the railroad and touch down on the south side of the tracks within railway right-of-way. (See Figure 8-9-2.) The two spans will not use park property, however, they will link the park with safe access from Project Eight and adjacent neighborhoods.

project limits & features

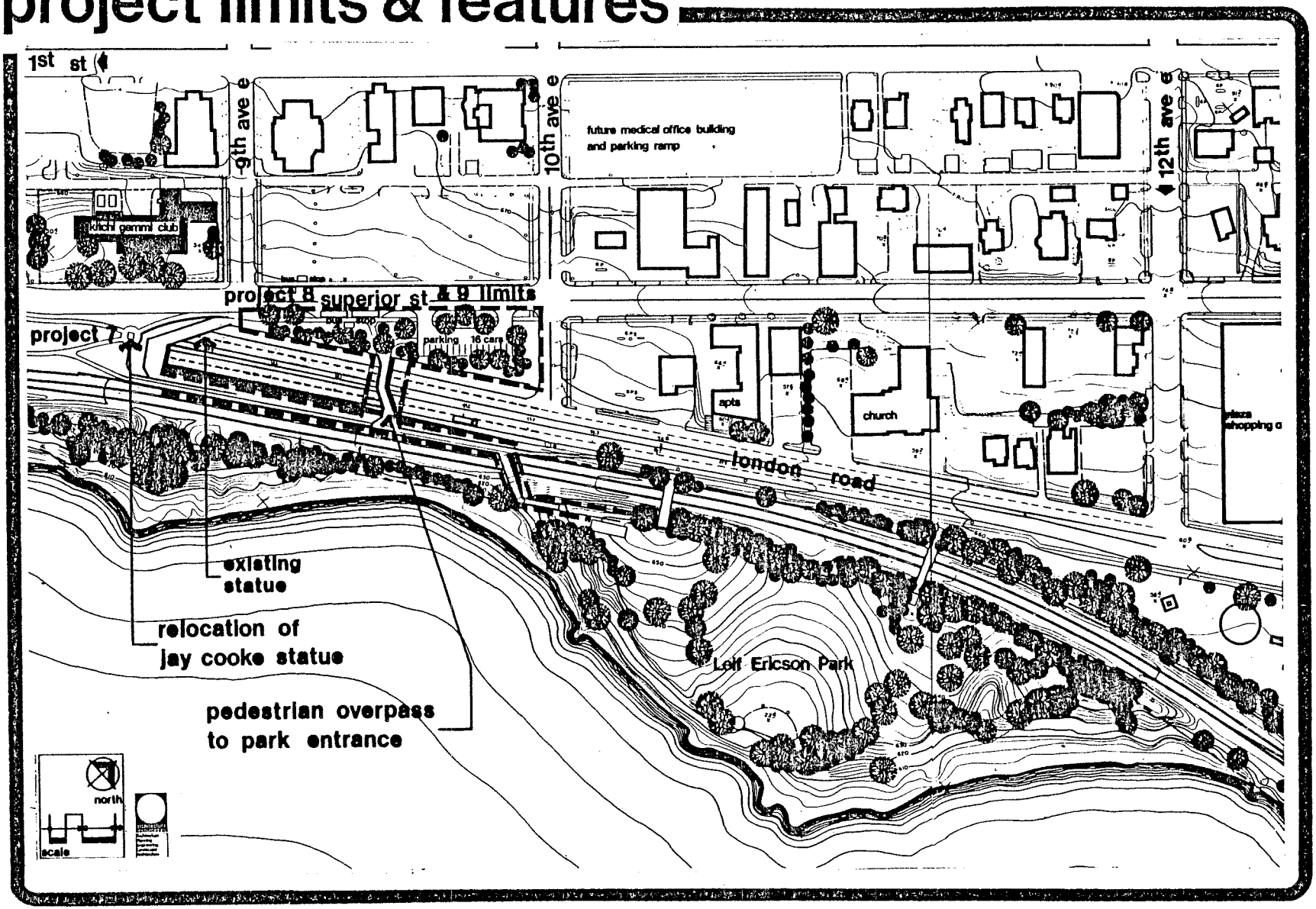


fig. 8-9-2
East Downtown Entrance & Park Zone

The design of the overpass will allow pedestrians and bicyclists to enter and stay either on the sidewalk or in the park area. From the landing in the park area, visitors will be able to view the entire lakeshore to the Aerial Lift Bridge, other joint development projects along the lakeshore, and the historic picturesque rock retaining wall along the railroad tracks.

Low-level pedestrian scale lighting will be provided along the pedestrian overpass. Colors and textures that are harmonious with the surrounding environment will be employed in the design of the overpass.

VI. Project Justification

Projects Eight and Nine are essential for continued use and enjoyment of Leif Ericson Park and the waterfront after construction of the freeway to Tenth Avenue East. These projects will minimize the impacts of the roadway by providing parking, landscape improvements, and a pedestrian/bicycle connection on highway right-of-way.

Approximately 30 parking spaces will be eliminated on London Road adjacent to Leif Ericson Park. Parking in Project Eight will replace some of these spaces in a safe off-street location. This parking is consistent with federal policy outlined in Management of Airspace, FHPM 7-4-3 (PPM 80-10).

Landscape improvements in Project Eight will establish an entry setting at the eastern end of the freeway and provide positive views for drivers on the roadway. These improvements will buffer the surrounding area from the roadway and complement adjacent land uses. Open space will improve the quality of the view from adjacent neighborhoods toward Leif Ericson Park and the waterfront. Landscape and Roadside Development, FHPM 7-6-3 (PPM 90-3), directs that:

> *Federal-aid highway projects for new construction or for major reconstruction of highway sections shall be located and designed to insure:*
>
> *(1) that the overall facility has a pleasing appearance appropriate to its environment, and*
>
> *(2) that the overall facility is provided with reasonable and practicable landscape and roadside development.*

Landscape improvements in Project Eight are consistent with federal policy described in FHPM 7-6-3.

The pedestrian overpass in Project Nine is necessary to preserve access across the roadway for pedestrians and bicyclists using Leif Ericson Park. These persons are presently able to cross London Road at grade, but this access will be eliminated by the extension of the roadway. Leif Ericson Park is one of only a few public lakefront access points in the City. Public access to this park must remain as convenient as possible because it is widely used by neighborhood residents, visitors from other parts of the City, and tourists. Joint Development of Highway Corridors and Multiple Use of Roadway Properties, FHPM 7-7-8 (PPM 90-5), asserts that:

> *Work needed to make the highway conform to its environment in a reasonable manner is a part of the basic highway cost.*

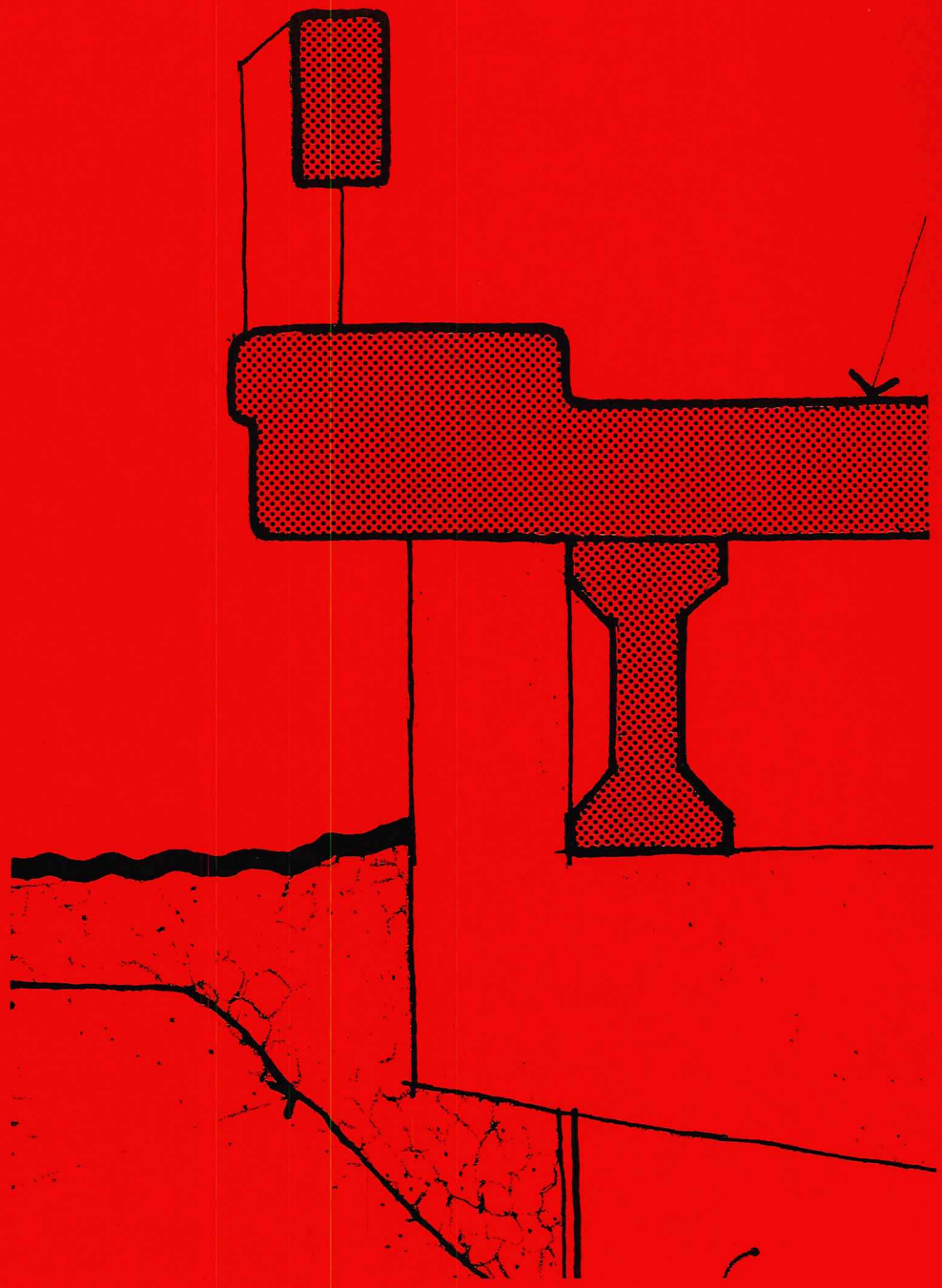
The pedestrian overpass will replace surface access to the park that would otherwise be eliminated for bicyclists, pedestrians and people using the parking area in Project Eight.

VII. COST ESTIMATE

This estimate is for joint development on excess ROW at the easterly end of the freeway extension. (See Figure 8-9-1.) It assumes that fill material (5000 c.y.) will be provided and compacted as a part of highway construction. All other site improvements proposed in this area are included below.

EARTHWORK includes topsoil	$ 1,850
SURFACING includes base, asphalt surfacing, curb and gutter, sidewalks, signs, and storm drainage	18,220
PLANTING includes turf, ground cover, shrubs, deciduous and evergreen trees, perennials, vines, mulch materials, and staking	19,010
LIGHTING includes pedestrian, area, and accent lights	9,000
SITE FURNISHINGS includes waste receptacles, kiosks, bike racks, and benches	1,920
TOTAL	$50,000

project 10 - I-35 Corridor Improvements



project 10 - I-35 Corridor Improvements

INTRODUCTION

In the preceding analysis, the joint development features have been carefully described in terms of their need, potential impact, and proposed design. Each project was carefully evaluated to insure consistency with City goals and objectives, as well as safe and efficient location in relation to the roadway. While it was determined that the projects will add immensely to the overall quality of the roadway, the descriptions and analysis did not address the overall highway design components which are needed to augment and strengthen corridor development.

Project Ten will provide the corridor design components necessary for the successful extension of I-35. These elements are necessary features of the highway, and are in accordance with the directives outlined in the Federal Highway Policy Manual. These design elements will complement the joint development features by tying the projects together.

TIMBER WALL

A critical design element of the highway corridor is the protective barrier required along the right-of-way. It is usually installed as a safety device to discourage pedestrians and animals from approaching the entrance and exit ramps, through lanes, and interchanges. The material used for protective fencing is usually metal chain link approximately five feet in height. While this material works well in nearly all rural and industrial locations, its use in urban developed areas does not accomplish multiple urban area objectives. It does not separate highway views from park areas, or reduce noise. In addition, chain link fencing does not adequately fit with the overall design concept of the freeway and the joint development projects.

In order to improve upon the usual freeway fencing, a natural timber wall is proposed for use in most areas through the corridor. The timber wall will be used to separate freeway and railway uses from public areas in all locations where it has been deemed feasible. In certain key locations metal fencing will be required, but its occurrence can be kept to a minimum.

The timber wall will consist of pressure treated, wooden timbers placed vertically side by side using direct burial placement methods. This will permit five to fifteen feet of natural timber to be exposed along the freeway edge. On both sides earth placement against the wall will be used to vary the exposed wall height. In addition, the wall should be battered away from the highway to prevent visual "channeling" effects on drivers.

Approximately 5800 feet of timber walls will be required along the roadway. Use of these walls will help to achieve continuity of materials and design with the joint development features, while accomplishing basic safety objectives. The cost of providing timber walls will be about $70.00 per lineal foot.

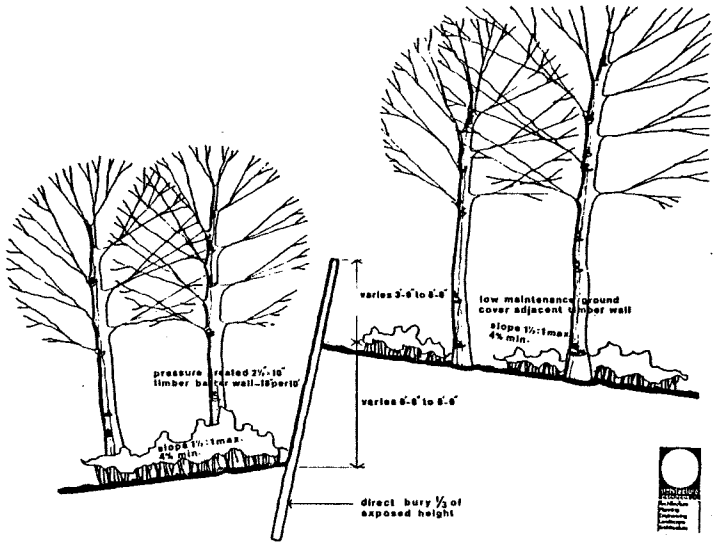


fig. 10-1
Timber Wall Detail: Corridor Improvements

BIKEWAY SYSTEM

The City of Duluth has adopted a Bikeway Plan which designates bike paths throughout the City. A number of these paths have been developed, however, a safe convenient link between east and west through the downtown area does not exist primarily because of the City's topography and street and highway alignments.

A related goal of the extension of I-35 is to establish a bikeway system along the roadway in the excess right-of-way. This system would tie in with other established bike paths in the West and East Ends of the City as well as on Park Point.

The bikeway/walkway will consist of approximately 1.5 miles of new bituminous pathways located along highway right-of-way from the Mesaba Avenue interchange on the west to Leif Ericson Park on the east. Connections with the cultural center, Civic Center, Arena Auditorium, Superior Street, Park Point, and London Road will be provided for bicyclists and pedestrians. Safe access across all streets and railroad tracks will be a major design feature.

The bikeway system will be approximately eight feet in width, allowing users to meet and pass without danger. This width will also allow pedestrians to walk on the bikeway.

Every effort has been made in the design to isolate the bikeway from the roadway. Use of extensive planting, earth mounding, and timber walls (identified earlier) will reduce the effect of close proximity to the roadway. Low level lighting will allow for a bikeway that may be used safely during the day or after dark. At key locations, benches, bike racks, and signs are proposed for visitor use and orientation. The cost of providing the bike path will be about $10.00 per lineal foot.

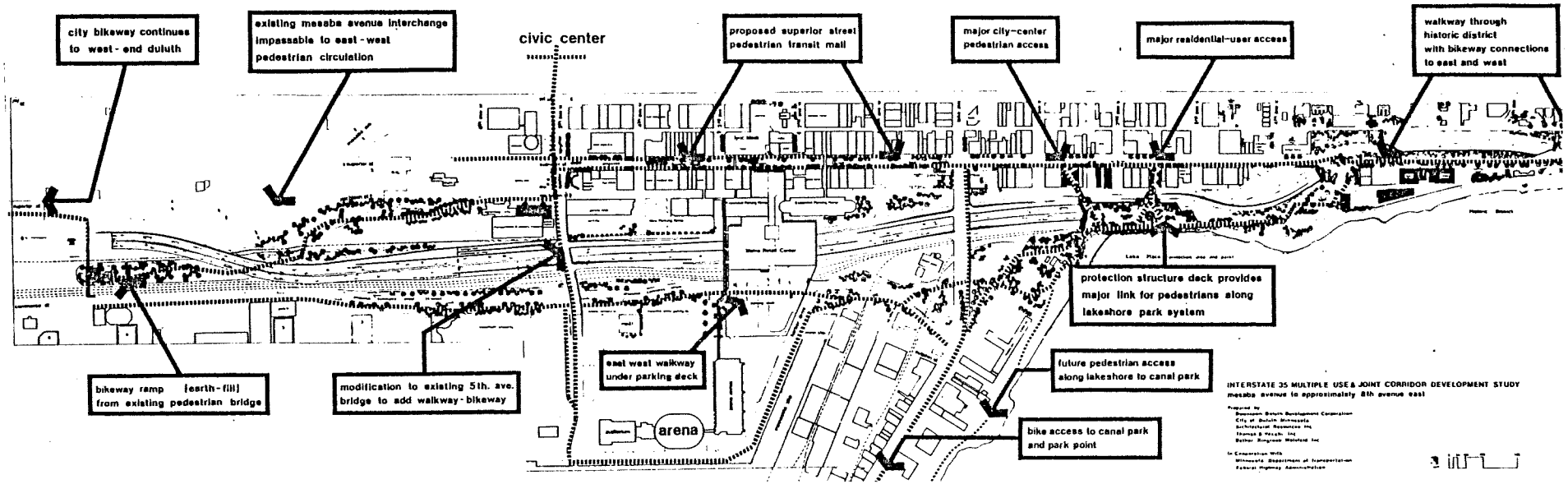


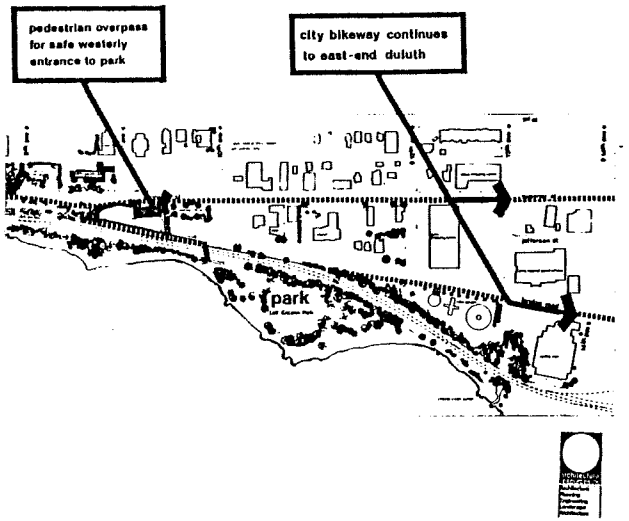
fig. 10-2

Pedestrian/Bikeway System: Corridor Improvements

LIGHTING CONCEPTS

The provision of safe, efficient lighting on the I-35 extension has been a key design element in the overall study. Due to the differing lighting needs on various segments of the extension, many alternatives were considered. The following discussion highlights the acceptable methods of illuminating not only the roadway, but also the joint development projects and the critical crossings over the highway.

As the roadway extends along the edge of the downtown area, design changes are needed to reduce vehicle speed and to create an urban parkway atmosphere while still maintaining freeway standards. The height, spacing, and overall scale of the lighting standards will be reduced to be consistent with reduced speeds and parkway character objectives. A lighting system utilizing cor-ten poles with matching hardware and components will ensure compatibility with other design components.



Between Mesaba Avenue and Eighth Avenue East there are seven critical crossings over the highway. Of these seven, three are local street crossovers and five are structural covers of greater size. A key design element in lighting concepts was to de-emphasize these crossings from the roadway view. As the driver travels along the highway, a number of decisions must be made rather rapidly. In order to reduce this decision making process and to avoid confusion, the lighting on these crossovers should be as subtle as possible to the freeway driver.

Underneath the seven overpasses and multi-use bridge areas, the use of downcast ceiling or wall lighting is recommended. These would be placed either along the center of the ceiling or along the top of the wall sections. The use of high pressure sodium is stressed for continuity throughout the downtown area.

The depressed section of the freeway through the Historic District, although not covered, will also require a special lighting system due to the steep side walls and adjacent uses. Downcast high pressure sidewall lighting is recommended in this area, similar to that used in the bridge and tunnel areas.

By using sidewall lighting, there should be no light spillage into the Historic District. Another positive factor of this lighting system is that it will be recessed and concealed high along the wall section thereby reducing maintenance costs and eliminating the additional vertical pole element.

A uniform lighting design will be used on Superior Street through the Historic District. Rather than using the normal light fixtures and poles, a historic "period" pole and fixture will be incorporated into the design. The poles will be lower, more frequent and use high pressure sodium lamps to create a warm, natural appearance. Adjacent parking lots will be lighted with the same pole mounted fixture. Low level accent lighting will be used on sidewalk and bikeway pathways with the same historic "period" fixture on a smaller scale.

A major lighting treatment must be provided for the numerous pedestrian and bikeway areas along the corridor. Low level "period" poles and fixtures are suggested. The use of historic "period" fixtures and poles will be used elsewhere in connection with historic structures.

As with other corridor elements, lighting has been considered from an overall standpoint. Whenever possible, attempts have been made to impress on the driver that he is in an urban parkway situation.

SIGNING

Preliminary discussions with the Minnesota Department of Transportation have resulted in the identification of most sign locations in the corridor. At this time there are only a few required signs which can be placed in conjunction with existing overpasses and structures crossing the mainlines. This means a number of additional vertical members to support necessary signage will be necessary.

In order to achieve overall continuity, the vertical and horizontal sign supports and graphics should be constructed of cor-ten steel or a similar material.

The type of sign face, style, and color will be the responsibility of the Minnesota Department of Transportation. However, the size of the sign face could be reduced from the normal freeway standard. The size of the signs needed at a speed of sixty miles per hour is larger than those required with a speed of forty miles per hour. Sign size, height and spacing can therefore be reduced, producing a more appropriate scale for signing.

Sign lighting has not been considered due to FHWA minimum standards. Signs must be adequately lit and it is anticipated that compatible lighting methods will be provided that enhance the surroundings while producing a safe level of illumination.

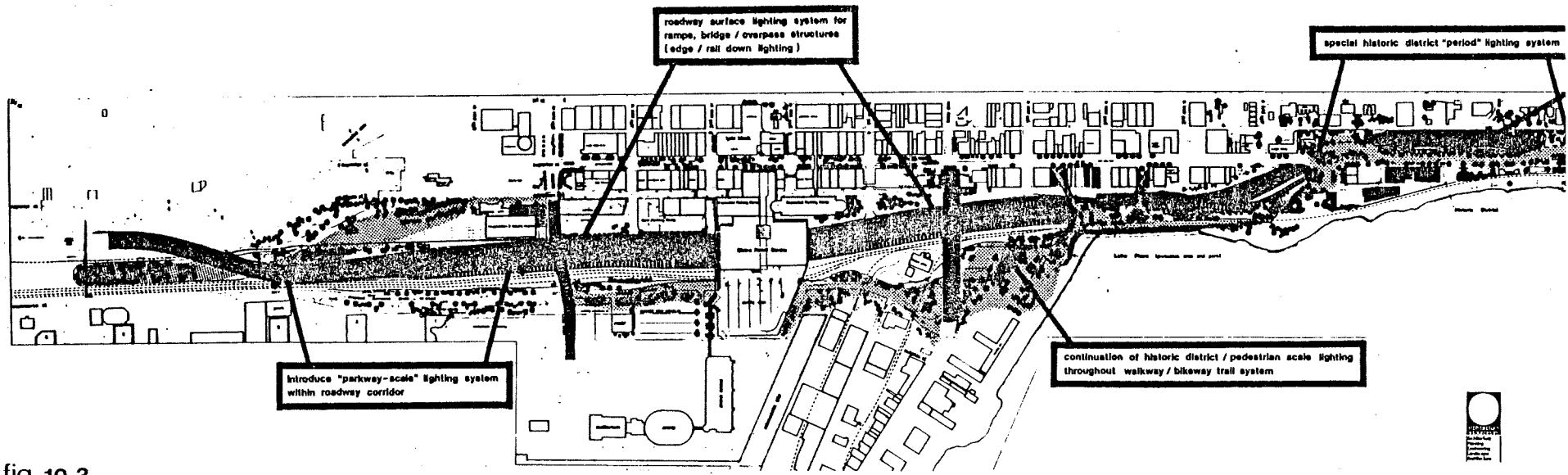
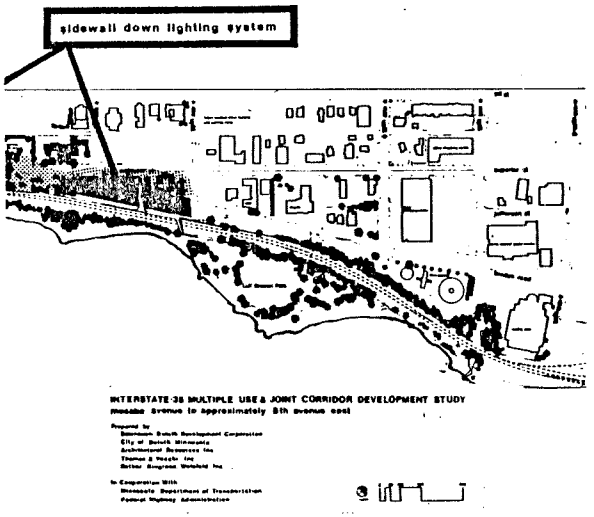


fig. 10-3
Lighting System Objectives: Corridor Improvements

RAMPS AND WALLS

In order to protect adjacent open space and pedestrian uses, the eight ramps (four at Fifth Avenue; four at Lake Avenue) have been designed to reduce views into the freeway area from critical points. To achieve this, rather than use the ordinary ramp supported on piers, the eight ramps will have some of the spans between piers closed with sections of stone walls similar to other stone treatments along the corridor.

The main objective of this design feature is to reduce noise levels on adjacent uses such as the cultural center and Transportation Museum. It will also separate highway uses from the adjacent bikeways, pedestrian walkways, and open space uses. It will eliminate the need for curtain walls which have not totally solved the noise or aesthetic problems in other freeway settings. The ability to open key sections to driver views will minimize the tunnel effect for the driver.



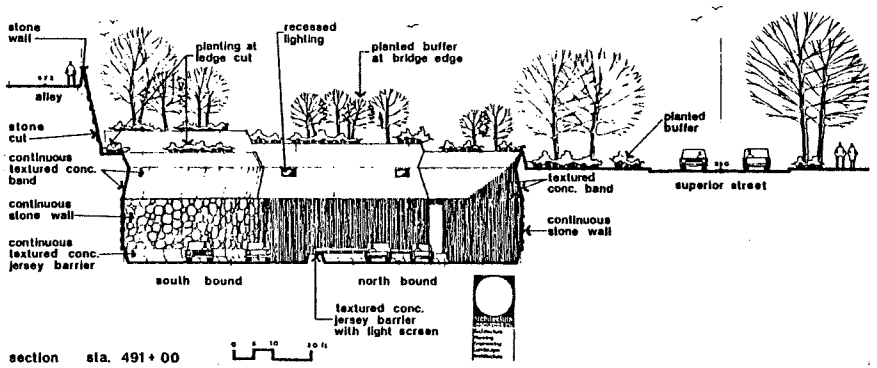


fig. 10-4

Retaining Walls: Corridor Improvements

A number of wall sections have been designed especially within the Historic District. These are necessary due to the cuts required in bringing the facility around this important area. In most instances, the wall sections will be constructed in a three part system. A low band of concrete will be used along the perimeter of all wall sections. This will reduce initial cost and maintenance. Above this concrete band, natural stone will be used. The stonework will complement the Historic District and provide continuity through the corridor. When traveling in this cut section, certain amounts of natural rock face will be exposed due to excavation. This sheer rock will be left intact and not covered or obscured from view. In those areas without natural sheer bedrock, natural stone blocks will help carry the theme. Above the natural bedrock or stonework, concrete will be applied to contain the lighting fixtures. Here, color and texture in natural tones will help reduce the visual appearance of conrete.

Other areas that require walls or retaining structures should be treated similarly. Retaining walls and low pedestrian fences will be rock in most instances to carry out the theme of the natural rock used in the existing railroad retaining walls. The rock walls have been capped with horizontal wood

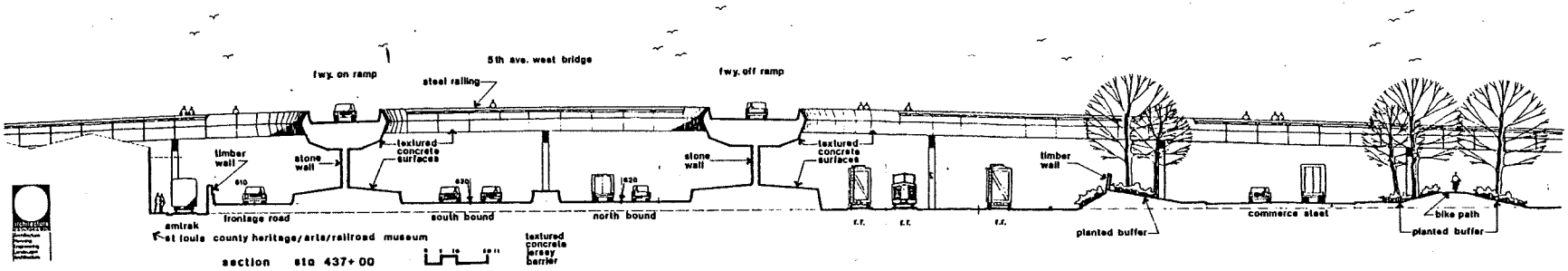


fig. 10-5

Ramps & Support Structure: Corridor Improvements

timbers. This treatment has been used in the design of the Joint Development Projects.

ROADWAY EDGES

Throughout the corridor, there are numerous segments of roadway that must be elevated on structural supports approximately three to four feet above existing grades, especially between Fifth Avenue West and Second Avenue East. In order to accomplish visual and maintenance objectives, and to utilize available corridor earthfill materials, fill material will be placed below and along the roadway.

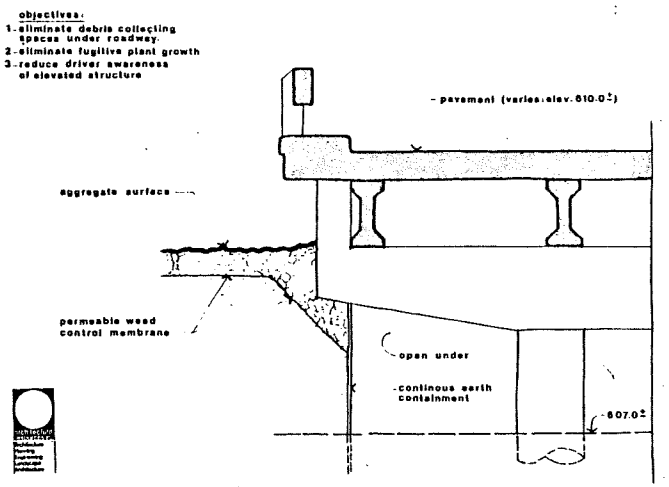


fig. 10-6

Roadway Edge Detail: Corridor Improvements

As this condition occurs, continuous earth containment will be added at the edge of the pavement running to grade below. Against the containment, earthfill will be added and aggregate placed over the surface.

This treatment will make maintenance of the edge much less costly due to elimination of open spaces beneath the structure. It will eliminate or greatly reduce the growth of undesirable plant materials and eliminate unsightly accumulations of debris.

The cost of providing this treatment should be minimal. Needed fill material will be available as a result of highway construction.

GLARE SCREENS

With regard to the proposed design for glare screens between the east and west bound lanes, there are minimal design changes proposed from the accepted MnDOT and FHWA standards. At the present time, light screens are being installed between lanes in urban situations to cut down headlight glare of oncoming motorists. The screens have been installed on median barriers. They are attached to the barrier with uprights. Although they solve the problem of glare, they do not add to the overall ap-

pearance of the roadway.

Similar glare screens are proposed for the I-35 expansion. Rather than use uprights on the "Jersey" barrier, a modified framing member is proposed. The "Jersey" barrier will feature a cor-ten frame added to the top which will hold and support the light screen on all sides. There will be no problem with the screen deflecting or swaying due to extensive winds experienced in the corridor.

Another benefit of the cor-ten framing unit is the overall design continuity of the cor-ten system throughout the entire roadway. With cor-ten poles, railings, and framing members, the continual design and material concept will help unify the urban roadway.

ADJACENT LAND USE AND ZONING

After all roadway and joint use construction is completed, there will be a number of parcels outside the right-of-way that will be positively or negatively affected. It is the purpose of this brief analysis to discuss future land use patterns of these adjacent properties.

In analyzing the adjacent freeway property from west to east, the first critical area is the large undeveloped parcel west of the Arena complex. At the present time, a portion of the parcel is leased to an industrial use. After the completion of Commerce Street and the freeway, this parcel will become a location suitable for a number of uses. During recent years, housing and waterfront uses have been considered. Eventual development of this magnitude must be protected from adverse highway influence.

The Lake Avenue interchange is the next critical land segment which may see general redevelopment in the future. The entire land area from the future intersection of Commerce Street and Lake Avenue to the Aerial Lift Bridge and bounded by the Arena

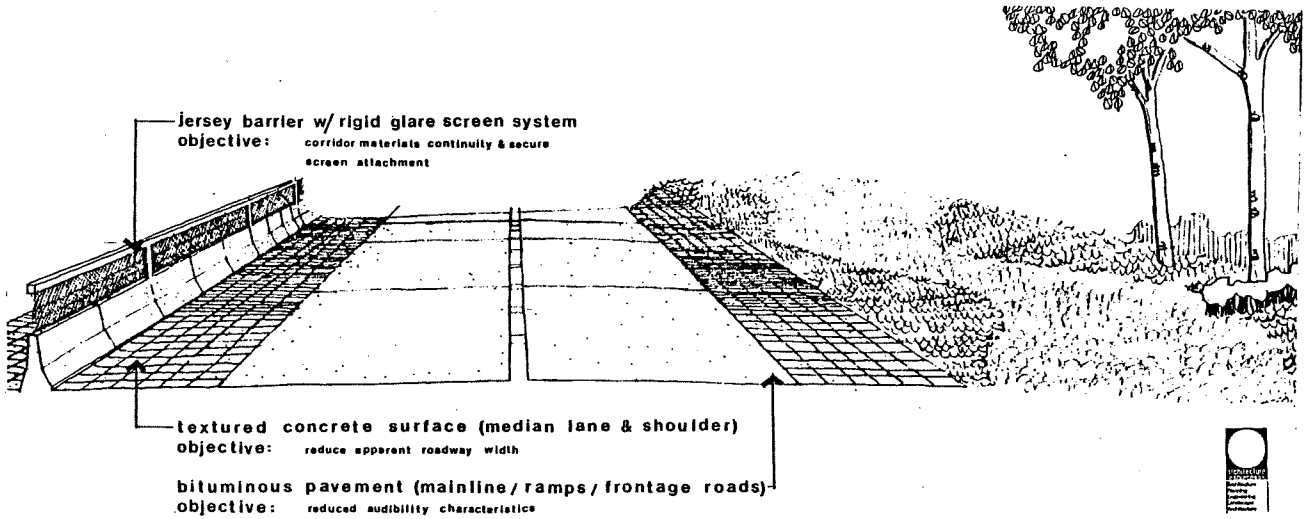


fig. 10-7
Glare Screen: Corridor Improvements

Auditorium and Lake Superior must be carefully analyzed. Existing uses now include a number of industrial properties mixed with tourist/visitor attractions and businesses. While there are no present problems, future development will convert the Lake Superior shoreline to one of increased public use. The potential for additional public uses and visitor attractions should also be considered. The freeway connections coupled with Lake Place and the city-wide pathways will enable thousands of people to enter this land area connecting the downtown with Park Point. Land use in the immediate vicinity of new Lake Avenue/Commerce Street intersection must be controlled so public and private redevelopment is compatible at this important juncture. Future land use decisions must reflect the public commitment to visitor attractions such as Lake Superior Plaza, Lake Place, and Canal Park/ Marine Museum.

An important area for future land use change and reinforcement lies between Lake Avenue and Fourth Avenue East. This four block area will be impacted positively by joint development projects including the Lake Superior Plaza Extension and Lake Place. It has been proposed that this area become an entertainment district stressing visitor uses and accommodations such as theatres, hotels, specialty shops, and restaurants.

Adjacent to the Historic District, land use must complement the I-35 corridor and the Historic District. As the Historic District grows in importance and recognition, adjacent development pressure will increase. Every effort should be made to continue existing residential development to the north of this district and to encourage multiple family structures.

The placement of signs in this general area is a key consideration for the City. Pedestrian and driver views could be adversely affected by the size and placement of signs related to the freeway. Existing and proposed signs should reflect the qualities of materials, texture, and color proposed

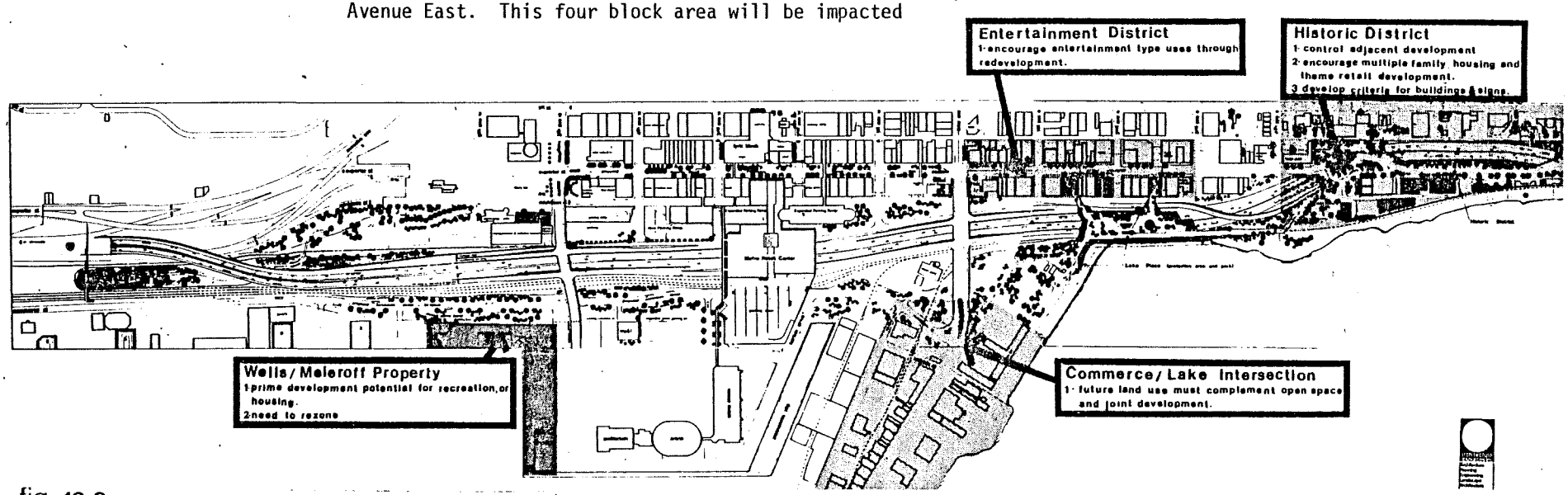


fig. 10-8
Land-Use/Zoning: Corridor Improvements

for the District. Signs should not be placed on building sides, roof tops, or on overhanging surfaces. The size of signs must be carefully considered. They should complement the structures and district rather than distract and obstruct views.

An important land area which must be carefully planned and developed is the property adjacent to Leif Ericson Park. This area is now developed with multi-family residential, medical uses, and several commercial uses along Superior Street. With the upgrading of this area as a terminus of I-35 and entrance to Leif Ericson Park, future planning should be oriented to appropriate use of existing vacant land. Additional medical facilities are planned and will use a portion of this undeveloped property.

PLANT MATERIALS SELECTION MATRIX

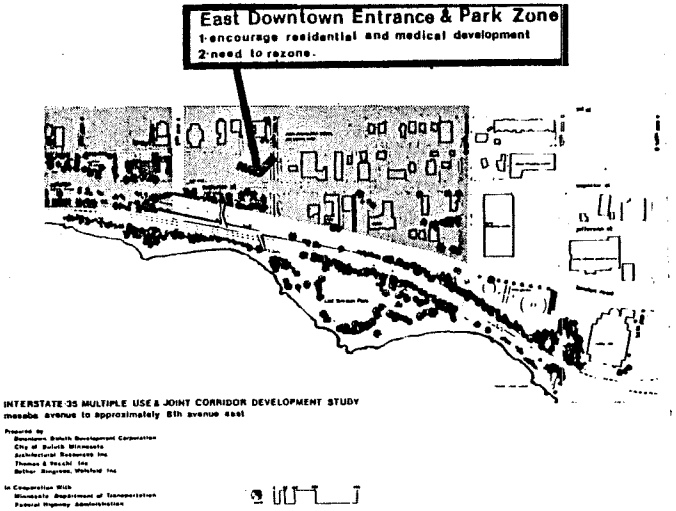
Plant Material Selections	Small Deciduous Trees: Amur Maple (Tree form); Flowering Crabapple; Columnar Ft. Crabapple; Mountain Ash; American Plum; Juneberry	Medium Deciduous Trees: Paper Birch*; Hornbeam; Imperial Pin Oak; Mayday Tree; Mountain Ash	Large Deciduous Trees: Sugar Maple; Columnar Sugar Maple; American Linden; Red Oak*; Siberian Elm	Evergreen Trees: American White Cedar*; Techny Arborvitae*; Colorado Green Spruce; Colorado Blue Spruce; Black Hills Spruce; Norway Pine*; Scotch Pine; Jack Pine	Evergreen Shrubs: Mugo Pine; Creeping Juniper; Wilton Carpet Juniper; Mancy Juniper	Deciduous Shrubs: Amur Maple (Shrub Form); Dogwood; Sumac; Viburnum; Cotoneaster; Lilac; Siberian Peashrub; Ninebark; Honeysuckle	Groundcover: Bloodflower; Bokmanum; Northern Bush Honeysuckle; Strawberry; Wintercreeper; Siberian Peas; Sedum	Vines, Turf, and Perennials: Virginia Creeper; Englemann Ivy; Boston Ivy; Lupine; Daylily; Moss Phlox; Arabis; Candytuft; Alyssum	Mixtures #1 (Crownvetch predom.); Mixtures #2 (Bluegrass predom.); Special Salt Tolerant Mixtures; Wildflower Seed Mixtures
PLANTING AREA									
ROADSIDE PLANTING AREAS									
Planting Spaces Elevated Above Mainline	X X	X X	X X	X X	X X	X X	X X	X X	X X
Planting Spaces Depressed Below Mainline	X	X X	X X	X X	X X	X X	X X	X X	X X
Roadside Within Interchange Vicinity	X X	X X	X X	X X	X X	X X	X X	X X	X X
Roadside Within Salt Spray Zone	X	X X	X X	X X	X X	X X	X X	X X	X X
Potential Roadway Wind/Snow Drifting Areas	X X	X X	X X	X X	X X	X X	X X	X X	X X
Potential Roadway Shading Problem Areas	X X	X X	X X	X X	X X	X X	X X	X X	X X
BRIDGE STRUCTURE/DECK PLANTING AREAS									
Roadside Structure Edges	X	X X	X X	X X	X X	X X	X X	X X	X X
General Pedestrian Use Areas	X X	X X	X X	X X	X X	X X	X X	X X	X X
Exposed Lake-Side Areas	X	X X	X X	X X	X X	X X	X X	X X	X X
EXCESS RIGHT-OF-WAY AREAS (Removed From Immediate Roadside)									
Walkway/Bikeway	X X	X X	X X	X X	X	X X	X X	X X	X X
Linear Spaces Between Corridor & City Streets	X	X X	X X	X X	X X	X X	X X	X X	X X
Joint Development Parking Area Improvements	X X	X X	X X	X X	X X	X X	X X	X X	X X
SPECIAL LANDSCAPE IMPROVEMENT									
Severe Slope Conditions	X	X X	X X	X X	X X	X X	X X	X X	X X
Tolerance To Moist Conditions	X	X X	X X	X X	X X	X X	X X	X X	X X
High Emission Concentration Areas	X	X X	X X	X X	X X	X X	X X	X X	X X
Accent Planting Spaces	X X	X X	X X	X X	X	X X	X X	X X	X X
Repetition Plant Selections (existing materials)	X X	X X	X X	X X	X X	X X	X X	X X	X X

Source: Architectural Resources, Inc. March, 1977

* Use limited to optimum native soil conditions for selection.

fig. 10-9

Planting Area Matrix: Corridor Improvements



In the preceding paragraphs, a number of key areas adjacent to I-35 have been given a cursory, yet objective analysis as to future land use and zoning. An important objective of the I-35 plan and joint development projects is to insure that sound land use principles are applied in the adjacent land areas. The City Planning Department, Planning Commission, and the City Council have the primary responsibility to insure that the highway is properly integrated into the fabric of the city.

joint development project costs

joint development project costs

Table Two indicates the total cost of all joint development projects being considered in conjunction with the extension of I-35. These costs include development within and adjacent to the highway ROW, but do not include ordinary highway development costs, such as ROW acquisition or roadway development. Acquisition, relocation and demolition associated with joint development beyond the highway ROW have been included to reflect the total cost of implementing the projects as designed.

table 2

Project Costs

PROJECT #	JOINT DEVELOPMENT FEATURES	ESTIMATED COSTS
1	Surface parking and landscape improvements	$ 100,000
2	Retail platform, adjacent parking, and retail facilities	17,298,000
3	No joint development	
4	Ramp parking and plaza development.	1,958,000
5	Surface parking and landscape improvements	162,000
6	Protective area and Lakeshore Park	9,067,340
7	Multi-purpose bridges, surface parking, and landscape improvements	6,405,250
8 & 9	Surface parking and landscape improvements	50,000
10	No joint development . . .	
		$35,040,590

financing plan

financing plan

I. Purpose

In addition to determining the social and economic impact of the highway facility and establishing City development goals within the Corridor, joint development planning also requires the creation of a financial plan and schedule of actions. The financial plan will determine how these projects can be implemented. The schedule of actions will establish when various public and private entities must act in order to achieve joint development.

Implementation of the multiple-use projects will require public and private participation. This section will set forth the level of participation necessary on the part of various entities to insure that the extension of I-35 will achieve import community objectives for Duluth.

II. Approach

FHPM 7-7-8 (PPM 90-5) indicates that:

. . . *corridor planning and highway design activities should be regarded as a single effort with the goal of having the total joint development plan make maximum contribution to the well being of the people in the corridor. The highway should, as part of the corridor plan, be so located and designed as to allow full benefits to be derived from the combined activities of all entities involved in the plan.* (Underlining added for emphasis)

With this in mind, I-35 joint corridor planning has been undertaken in a comprehensive manner to fully coordinate all past and proposed development in the zone affected by the highway facility.

As noted previously, only seven of the ten projects studied involve joint development. Of these seven projects, five involve development beyond the proposed highway ROW in order to achieve total integration of the highway facility. The map included with this report illustrates the integration of these projects with surrounding development.

Ordinarily, the FHWA has required that a significant amount of local participation be provided in joint development projects to demonstrate the degree of interest the municipality has in seeing such development implemented. Participation has generally involved sharing the capital costs of improvements provided on excess highway ROW and agreeing to assume the maintenance and operation of facilities such as parking lots, mini park, etc. It should be noted, however, that FHPM 7-7-8 (PPM 90-5) does not specifically require local financial participation. Rather, this requirement appears to be a condition established by the various FHWA offices when reviewing and agreeing to participate in joint development projects.

The funding of projects which extend beyond the highway ROW requires that a much broader interpretation be placed on the definition of local financial participation. In such cases the local provision of improvements outside of the ROW should constitute local participation in a joint development project where those actions are needed to complement improvements being provided within the ROW by FHWA and the State.

The justification for this approach to financing of joint development projects in Duluth is based on:

1. The significant amount of public and private investment provided in the I-35 corridor since 1964, and,

2. The recent experience of FHWA in other parts of the country, where, (a) a pattern of Federal participation indicates greater emphasis is being placed on the importance of joint development as a local development tool, and (b) improvements have been provided in the highway ROW for the benefit of the locality, without local participation.

Each of these points is documented in this section.

III. I-35 Corridor Development

Since the completion of I-35 thru Duluth's West End, many public and private development decisions

have been made within the zone affected by the freeway extension to approximately 8th Avenue East. Many projects have proceeded based on the assumption that the extension of I-35 would provide an alternative thru-route around the downtown area and better access to the Central Business District, Government Center, Arena-Auditorium Complex and the Harbor. Other projects have and are being planned with this extension in mind.

The zone affected by the extension of I-35 includes a large area stretching from Mesaba Avenue to approximately Tenth Avenue East and from Third Street to the Harbor and lakeshore. It includes the downtown area, convention facilities, major hotels, offices, housing and some industrial uses. Approximately 1/3 of the city's jobs and its tax base land are associated with structures in this area.

The following map illustrates the location of public and private improvements made within this area since I-35 was terminated at Mesaba; it also shows planned improvements. Table Three lists these projects which include new buildings, building renovations, and street improvements. In total, $93 million has been invested in the upgrading of this corridor since 1964. Almost $50 million of this has occurred since 1971--all predicated on the extension and proper integration of I-35. In addition, another $22 million of investment is anticipated within the next 5 years.

table 3

Public & Private I-35 Corridor Development (Existing or Underway)

1	1964	South First Avenue E. Reconstruction*	300,000
2	1965	St. Croix Redevelopment	109,000
3	1965-70	St. Croix Commercial-Industrial Development	4,000,000
4	1965	Fifth Avenue West Mall*	420,000
5	1966	Arena-Auditorium*	6,700,000
6	1966	Gateway Renewal*	3,474,000
7	1967	KDAL	1,500,000
8	1967	Modern Constructors	450,000
9	1969	YWCA Expansion	1,000,000
10	1969	Town Park	1,000,000
11	1970	Radisson Hotel	4,500,000
12	1971	First Nat'l Bank Drive-In	500,000
13	1971	Gateway Towers	1,500,000
14	1972	Jeno's	550,000
15	1973	NW Bell Telephone Expansion	15,000,000
16	1973	Marine Museum*	500,000
17	1973	Tri-Towers	5,500,000
18	1973	Missabe Building Renovation	500,000
19	1973	Meierhoff Bldg. Renovation	500,000
20	1974	Ordean Building	1,900,000
21	1974	Anchor Inn Renovation	75,000
22	1974	Duluth Herald-News Tribune	750,000
23	1975	NW Bank of Commerce Drive-In	400,000
24	1975	October House I & II Restoration	90,000
25	1975	Downtown Rehabilitation	267,000
26	1975	Hotel Duluth Renovation	600,000
27	1975	Duluth Clinic/Ramp	8,100,000
28	1975	Old Central High School*	1,500,000
29	1975	Depot*	913,000
	1975	Transportation Museum	443,745
	1976	Performing Arts Center	1,758,000
30	1976	Amtrack Station*	107,000
31	1976	Pioneer Hall*	4,475,000
32	1976	Chinese Lantern II	100,000
33	1976	Cascade Hotel Remodeling	120,000
34	1976	Skywalk*	2,935,000
35	1977	Lyric Block:	
		Assembly and Public facilities*	2,990,648
		Normandy Hotel & Retail Development	8,850,000
36	1977	Radisson Hotel Addition	1,000,000
37	1977	NW Passage* (Arena-Auditorium Concourse)	1,500,000
38	1977	Lake Superior Plaza:	
		Assembly and Public facilities*	1,700,000
		Private development	4,500,000
			$93,077,393

*public

table 4

Public & Private I-35 Corridor Development (Proposed Projects)

39	1977	Library*	6,000,000
40	1977	Downtown Parking-Stage 1*	1,825,000
41	1978	Condo Housing and Public Marina	6,000,000
42	1978	St. Luke's Hospital Office-Parking	3,150,000
43	1978	Expanded Skywalk*	3,700,000
44	1980	First Avenue East to Aerial Bridge Connector*	272,090
45	1980	Commerce St.-Lake to Fifth Avenue West*	198,000
46	1981	Transit Mall*	1,200,000
			$22,345,090

*public

As indicated, a significant amount of public and private investment is associated with I-35. Much of this development has been publicly provided or assisted, such as the renovation of the Depot and the development of the convention facilities, the Normandy Hotel and Lake Superior Plaza.

More than $26,890,393 has been committed by the City to provide these improvements and encourage revitalization adjacent to the highway facility. In the larger sense, joint development within the corridor has been taking place for quite some time in anticipation of the highway extension.

IV. Precedents for FHWA and State Highway Department Participation

Considerable research has been undertaken to determine the extent to which joint development has been accomplished in other cities and states and especially to determine if projects similar to Projects Two and Six, the Metro Retail Center and the Lake Place Protection Area, respectively, have been developed. Various reports have been reviewed and many of these are listed in the reference section of this report. Several will be cited to support the City's request for Federal and State participation on these and other projects.

Although a considerable amount of written material is available on the subject of joint development, very few projects have proceeded to development; and only a few of these are large scale. The State of Minnesota and in particular the Office of the Environmental Services of the MnDOT, has been responsible for the planning and implementation of numerous small scale projects to provide mini-parks and off street parking. Similar things have been done or are being planned in other states, but the

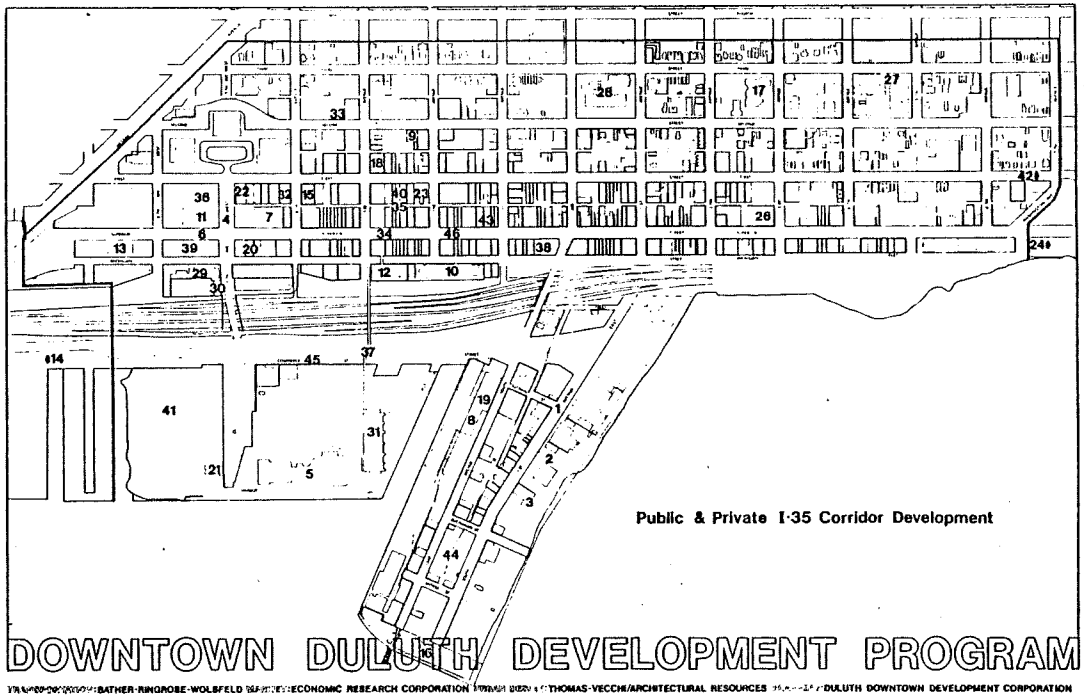


fig. D

Public & Private I-35 Corridor Development

development of air rights platforms over the highway facility to accommodate various public and/or private uses has occurred in only a handful of instances.

Air rights development has been recommended or encouraged in conjunction with highway development in many cities, but the reason most often cited for the project not proceeding is cost. This type of development is very expensive and has rarely been justified based on the value of adjacent property which could be developed, or even redeveloped, for less money.

Of the major projects constructed, few have involved a significant amount of federal funds. In most cases, a platform or other development, above or below the highway facility has been provided with local, state or private funds. However four recent projects are noteworthy. In each case, these show increasing federal involvement in joint development projects similar to those reviewed in this report. These projects are summarized below:

1. Quad Avenue Project, Baltimore, Maryland

The City was successful during the concept stage in getting FHWA to elevate the highway to accommodate private industrial development underneath the roadways on highway property. The FHWA and the State of Maryland shared the additional costs on a 90-10 basis even though it was not necessary to elevate the highway for traffic related purposes. The land area below the highway was sold to a private developer at a nominal cost.

The following should be noted:

(a) The design of the highway was changed to accommodate joint development at no cost to the City.

(b) Highway land was sold to a private developer for a nominal amount.

2. Civic Center Parking Project, Omaha, Nebraska

The FHWA and the State of Nebraska shared costs on a 90-10 basis to pave, light, landscape, and provide pedestrian benches on a ten block strip of highway-owned land under a downtown freeway. These improvements were provided without local participation.

The City leases the area for a nominal amount and in turn subleases a portion of the area devoted to parking to a private operator who charges market rates. The revenue produced exceeds the amount needed for operation and maintenance.

The following should be noted:

(a) All costs for improving this land which is used by the City were borne by FHWA and the State of Nebraska on a 90-10 basis.

(b) The City obtains revenue in excess of that needed to offset operation and maintenance.

3. Northwest #1 Project, Washington, D.C.

As a part of the City's urban renewal effort, a platform is being constructed over I-95 on a 90-10 basis to provide a site for construction of 300 subsidized housing units, a one acre park, a church, and two unsubsidized, market rate, housing projects. Parking to serve this prospective development is located below the platform level.

The site will be sold to a private developer for a nominal amount.

The following should be noted:

(a) The platform was provided with FHWA participation.

(b) Various kinds of development including market rate housing are proposed by a private developer.

(c) The site will be sold for a nominal amount.

4. Freeway Park, Seattle, Washington

Freeway Park is a unique four and one-half acre park

spanning I-5 at Seneca and Sixth Avenue on the edge of Seattle's CBD. This park provides needed open space and off-street parking to serve the downtown area and acts as a pedestrian connection between areas served by the freeway. Interstate funds participated in the structure portion over the freeway, landscaping treatment within the highway right-of-way, and a sidewalk canopy. Interstate funding also participated in the structural supports for the park elements, drainage, underdeck lighting, planter boxes in the median area, waterproof membrane system, and related grading. A combination of Federal, State and local (public and private) funds were used to provide park features on the platform.

The following should be noted:

(a) Federal-Aid funds were used in the development of the platform and park treatment.

(b) Other federal money from such sources as Community Development Block Grants and the HUD Open Space Program were utilized in conjunction with Federal-Aid money to provide the park.

These projects clearly show that:

1. Local participation in a joint development project on excess ROW is not always necessary, or required. There have been exceptions as in the Omaha example.

2. The design of a freeway has been changed to accommodate joint development. This has been done at significantly greater cost and still shared on a 90-10 basis as in the Baltimore example.

3. A platform has been constructed over a freeway to accommodate "public purpose" development as in the Washington, D.C. example.

V. Proposed Participation

Implementation of the seven joint development projects will require the financial participation of the Federal and State Governments, the City of Duluth, private developers and the Burlington Northern Railroad. Each must bear a portion of the responsibility for achieving joint development.

Federal participation in the implementation of joint development projects is allowable as a Federal-Aid highway project cost. FHPM 7-7-8 (PPM 90-5) states:

> *(1) It is considered appropriate to use Federal highway funds in the financing of the following types of work in the achievement of such objectives subject to the conditions which are subsequently discussed herein on the premise that work needed to make the highway conform to its environment in a reasonable manner is a part of the basic highway cost.* (Underlining added for emphasis)

The City of Duluth recognizes its responsibility and, as noted previously, has committed many millions of dollars to provide improvements within the corridor. Many of these improvements are important parts of the joint development process relating directly and indirectly to the projects considered in this study.

Private developers and the Burlington Northern Railroad are also important and necessary entities in the implementation process. Private renewal and remodeling will be required to bring the concepts of an entertainment and historic district to life. The City can provide encouragement but it is the private sector which must support the development plan for the corridor.

The Burlington Northern Railroad owns land adjacent to the highway ROW. Some of this land, especially that located at the westerly end of the corridor and that to the east of Project Six, must either be improved by the railroad or made available to others who will provide needed improvements. At the westerly end, land is needed to provide a bicycle/pedestrian path connection to the existing I-35 pedestrian overpass. East of Project Six, unimproved land along the lakeshore must be upgraded in appearance to provide continuity.

The level of participation necessary by all of these separate entities to achieve joint development is outlined on a project basis as follows.

PROJECT 1, WESTERLY DOWNTOWN ENTRANCE

A. Joint Development Features

57 space off-street parking facility and landscape improvements

B. Proposed Participation

1. City of Duluth . . . . . $ 60,000*
   a. Surfacing. . . . . $ 60,000

2. FHWA/Mn DOT (90-10). 40,000
   a. Earthwork 4,200
   b. Planting 26,800
   c. Lighting 9,000

3. MnDOT
   Continuing responsibility for maintaining all improvements

4. TOTAL $100,000

* Various funding sources will be utilized as noted elsewhere in this section.

The City of Duluth's participation in this project will be the provision of surfacing for the parking facility. Landscape improvements in conjunction with the parking and elsewhere in Project 1 should be provided by FHWA/MnDOT as these areas would have to be improved as a highway cost with or without the joint development project. The level of landscape improvements proposed is consistent with major landscaping projects being planned by MnDOT's office of Environmental Services.

Within this project area a bikeway is proposed on a combination of excess highway ROW and land owned by the Burlington Northern Railroad. It is anticipated that land needed for this facility will be made available by FHWA/MnDOT and the Burlington-Northern and that all improvements will be shared by FHWA/Mn DOT on a 90-10 basis as this improvement is in fact an extension of the roadway to accommodate another mode of transportation.

PROJECT 2, METRO RETAIL PLATFORM

A. Joint Development Features

Retail Platform over highway facility with extension to Superior Street and 1642 parking spaces (ramp and surface)

B. Proposed Participation

1. City of Duluth $2,505,900*
   a. Land Assembly. . . . .$ 715,000
   b. Platform-Outside ROW . 1,015,000
      1. Area under retail space 26,000 sq. ft. 650,000
      2. Area under public concourse space 14,600 sq. ft. . . . 365,000
   c. Development of Public Space-Outside ROW . . . 25,900
   d. Town Park Expansion . . 406,000
   e. First Nat'l Expansion . 264,000
   f. Expansion of Arena Lot . .80,000

2. FHWA/MnDOT (90-10) 9,644,100
   a. Platform-Inside ROW . 3,640,000
      1. Area under retail space 130,000 sq. ft.. . 3,250,000
      2. Area under public concourse space 15,600 sq.ft.. 390,000
   b. Development of Public Spaces (including . . 1,029,100 furnishings)
   c. Utilities. 75,000
   d. Parking Ramp-W 1,300,000
   e. Parking Deck 3,600,000

3. Private Development. . . . . 5,148,000 (Inside and Outside ROW)

* Various funding sources will be utilized as noted elsewhere in this section.

The level of participation requested of the FHWA and MnDOT has been determined by federal guidelines outlined in FHPM 7-7-8 (PPM 90-5), which states:

> *Federal-aid funds may participate in the highway-related costs of construction of platforms in the airspace above a highway when: (a) the use of such space is an integral part of the total corridor joint development and can be generally supported on the basis of the intensity of the land use in the corridor, (b) the public use or tax benefits to the locality, or the advantages to the highway program of the selected route location over alternative locations; and (c) the proposed facility complies with the rules established in PPM 80-10 to protect the highway and its users. The use of Federal-aid highway funds may be justified when further participation in the costs of providing a platform is required to allow action by another entity in implementation of the corridor plan, and it is the Federal Highway Administrator's finding (a) that the proposed joint development project is necessary to conform the highway to the particular needs of the locality; or (b) that a joint development project is the most reasonable means of minimizing the impact of the highway upon the environment.* (Underlining added for emphasis.)

Project Two is integral to the accomplishment of the City's goals and objectives established in the Duluth Downtown Development Program (See Appendix 2), and is completely consistent with the scope and intent of FHPM 7-7-8 (PPM 90-5).

Making every attempt to realize these community goals and objectives, the City of Duluth has established its intent by cooperating in the development of a number of projects. These projects, as enumerated earlier, involve over 93 million dollars in public and private funds in the I-35 Corridor.

The most recent examples of such developments are: the Lyric Block, Lake Superior Plaza, the Arena-Auditorium Concourse, and a skywalk system linking together the six highest intensity blocks of the downtown. (See Figure 2-2). These projects act directly to satisfy the City's prime objective which is to consolidate CBD retail space. The Metro Retail Platform is a vital link in accomplishing this objective.

The City's participation in the joint development of Project Area Two will be to implement the Superior Street Transit Mall upon completion of the I-35 freeway and to provide those improvements outside of the ROW as listed in the participation plan.

Participation is requested of FHWA and MnDOT in providing (a) the platform within the ROW (b) public concourse space and furnishings, and (c) parking facilities needed to serve the development and replace that being lost as a result of the freeway extension.

Although the purpose of the platform is to permit needed retail development, the City of Duluth believes that such development meets the definition of "public use" as stated in the Guidelines for Joint Development on State Highway Transportation Ways. These guidelines, prepared for the Federal Highway Administration by the Stanford Research Institute and distributed by the U.S. Department of Commerce, states that:

> *The broad concept treats public use as public advantage, and anything which contributes to the welfare of the entire public qualifies as a public use.*

More specifically as it relates to the platform, recent court opinions have found:

> *...redevelopment to be a "public use" in spite of the fact that redevelopment involves a direct benefit to private developers while the benefits to the public are indirect.*

The guideline also states:

> *...it would appear reasonable to assume that joint development projects contemplating participation of private cosponsors can more often than not be held a public use.*

PROJECT 4, LAKE SUPERIOR PLAZA EXTENSION

A. Joint Development Features

Extension of Lake Superior Plaza and Ramp Parking for 220 cars.

B. Proposed Participation

1. City of Duluth (outside ROW). . $ 670,000*
   a. Land Assembly . . . . .$ 126,000
   b. Parking Structure . . . 480,000 (Multi-Level)
   c. Plaza and Furnishings . . 64,000

2. FHWA/MnDOT (90-10) (within ROW) . . 950,000
   a. Parking Structure . . . . 620,000 (Multi-Level)
   b. Plaza and Furnishings . . 330,000

3. Private Retail Development, ... 338,000 outer shell

4. TOTAL . . . . . $ 1,958,000

* Various funding sources will be utilized as noted elsewhere in this section.

Recognizing that the City and private developers are willing to provide needed parking and plaza improvements adjacent to the Lake Avenue ROW, it is requested that FHWA/MnDOT provide multi-level parking and plaza development within the ROW area to complement these local development efforts. In total, the local public and private investment in this immediate area will exceed $8.4 million including the Pedestrian Transit Mall.

Both parking and plaza improvements are needed to provide visual continuity at the Superior Street level, enhance a major entry to the CBD, and to provide replacement parking for downtown workers.

Participation by the FHWA and MnDOT is consistent with the scope and intent of Fringe and Corridor Parking Facilities Projects, FHPM 6-8-2-3 (PPM 21-20), and Joint Development of Highway Corridors and Multiple Use of Roadway Properties FHPM 7-7-8 (PPM 90-5). FHPM 6-8-2-3 (PPM 21-20) states:

> a) *A fringe parking facility must be located on land adjacent to or within the right-of-way of a route on the Federal-aid highway system.*
>
> b) *A fringe or transportation corridor parking facility must be within an urbanized area and outside a CBD.*
>
> c) *A fringe parking facility shall be located and designed only in conjunction with existing or planned public transportation facilities.*
>
> d) *The location and design of a fringe parking facility shall be based on a continuing comprehensive transportation planning process...*

Fringe parking in Project Four is inside I-35 right-of-way and outside the CBD. It establishes the easterly terminus of the Superior Street Transit Mall and is consistent with the transportation planning process in downtown Duluth.

FHPM 7-7-8 (PPM 90-5) is applicable to the plaza development above the multi-level parking facility. It states that:

> *...work needed to make the highway conform to its environment in a reasonable manner is a part of the basic highway cost.*

More specifically, an allowable cost is:

> a) *The construction of mini-parks, including minimum facilities such as walks or other paved areas, benches, sandboxes, and the like, where this type of facility can be provided on right-of-way parcel remnants or other portions of right-of-way acquired for highway purposes but which may not be needed for operational purposes.* (Underlining added for emphasis.)

FHWA/MnDOT provision of these improvements is

necessary considering the long-term parking being lost and the necessity to provide improvements in the excess ROW on either side of the new Lake Avenue bridge where unsightly voids would otherwise occur.

PROJECT 5, LAKESHORE APPROACH AREA

A. Joint Development Features

100 space off-street parking facility, access drive and landscape improvements

B. Proposed Participation

1. City of Duluth . . . . . $ 67,500*
   a. Surfacing. . . . $ 67,500

2. FHWA/MnDOT (90-10) 94,500
   a. Earthwork 25,400
   b. Planting 60,600
   c. Storm Drainage . . 8,500

3. MnDOT

   Continuing responsibility for maintaining all improvements

4. TOTAL $162,000

* Various funding sources will be utilized as noted elsewhere in this section.

In addition to providing surfacing for the access drive and parking area, the City will rebuild Commerce Street between existing Lake Avenue and 5th Avenue West, to handle additional traffic anticipated as a part of the Metro Retail Center proposal.

FHWA and MnDOT will build Commerce Street from existing Lake Avenue to new Lake Avenue as a normal part of roadway construction.

It is proposed that FHWA/MnDOT provide landscape improvements in this area on excess ROW since the area adjacent to the highway would have to be improved with or without the joint development features. This Federal-State participation should include the provision of a bikeway in this area which is a part of the Duluth Bikeway plan.

PROJECT 6, LAKE PLACE PROTECTION AREA

A. Joint Development Features

Cover over highway with extensions to Superior Street and Lake Shore and Lakeshore Park

B. Proposed Participation

1. City of Duluth . . . . . .$ 574,200*
   a. Furnishings on Lake Place cover$147,700
   b. Lakeshore Park 426,500
   c. Continuing responsibility for maintaining all improvements on cover and in park.

2. FHWA/MnDOT (90-10) 8,493,140
   a. Lake Place Structure 7,801,740
      (1) Structure $6,866,575
      (2) Walls 146,525
      (3) Earthwork . . 293,300
      (4) Planting . . 166,800
      (5) Surfacing . . 254,740
      (6) Systems . . . 31,300
      (7) Lighting. . . 42,500

   b. Superior Street Connections. . .691,400
      (1) Land Assembly 160,100
      (2) Structure . . 386,100
      (3) Base Slab . . 13,200
      (4) Earthwork . . 60,000
      (5) Planting . . 36,000
      (6) Surfacing . . 22,000
      (7) Systems 6,600
      (8) Lighting . . . 7,400

3. TOTAL. $9,067,340

* Various funding sources will be utilized as noted elsewhere in this section.

City participation in Project Six will include the movable furnishings on the platform area such as, benches, movable planters, special displays, tables and art objects. In addition the City will provide

the Lakeshore Park including all land assembly and development costs. The City also proposes long range involvement in the establishment of an entertainment district along Superior Street between First and Fourth Avenue East. This will include public redevelopment, utility upgrading, and land assembly.

The level of participation requested of the FHWA and MnDOT has been determined by federal guidelines outlined in FHPM 7-7-8 (PPM 90-5), which state:

> *Federal-aid funds may participate in the highway-related costs of construction of platforms in the airspace above a highway when: (a) the use of such space is an integral part of the total corridor joint development and can be generally supported on the basis of the intensity of the land use in the corridor, (b) the public use or tax benefits to the locality, or the advantages to the highway program of the selected route location over alternative locations; and (c) the proposed facility complies with the rules established in PPM 80-10 to protect the highway and its users. The use of Federal-aid highway funds may be justified when further participation in the costs of providing a platform is required to allow action by another entity in implementation of the corridor plan, and it is the Federal Highway Administrator's finding (a) that the proposed joint development project is necessary to conform the highway to the particular needs of the locality; or (b) that a joint development project is the most reasonable means of minimizing the impact of the highway upon the environment.* (Underlining added for emphasis.)

The Lake Place structure is consistent with the scope and intent of FHPM 7-7-8 (PPM 90-5) and complies with the rules established in FHPM 7-4-3 (PPM 80-10). Lake Place is necessary to continue the open space program along the shore of Lake Superior and to protect the roadway from severe weather.

Connections to Lake Place, which consist of two to Superior Street, one to the Historic District and one to the Lakeshore Park, must be provided by FHWA/MnDOT. These are necessary extensions of the structure to permit unrestricted bicycle and pedestrian movement between these areas.

PROJECT 7, HISTORIC DISTRICT

A. Joint Development Features

Multi-use bridges at the east and west ends of the Historic District, 76 surface parking spaces, and landscape improvements.

B. Proposed Participation

1. City of Duluth . . . . . $ 197,050*
   a. Superior Street . . . . . $ 90,090
      (1) Planting. . . $30,550
      (2) Lighting. . . 34,000
      (3) Furnishings . .25,540
   b. Superior Street Parking 60,360
      (1) Earthwork . . . 1,680
      (2) Planting . . .11,680
      (3) Surfacing . . .47,000
   c. Excess ROW Parking 46,600
      (1) Surfacing . . .46,600
2. FHWA/MnDOT (90-10) 6,208,200
   a. West Multi-use Bridge . . . . 3,000,720 including basic structure, walls, earthwork, planting, surfacing, systems, lighting, and furnishings
   b. East Multi-use Bridge . . . . 3,052,420 including basic structure, walls, earthwork, planting, surfacing, systems lighting, and furnishings

c. Superior Street 115,440
   (1) Demolition . . 16,750
   (2) Earthwork . . .6,040
   (3) Surfacing. . . 92,650

d. Excess ROW Parking 39,620
   (1) Earthwork. . . .4,480
   (2) Planting . . . 17,820
   (3) Lighting . . . 13,000
   (4) Furnishings . 4,320

3. MnDOT
   Continuing responsibility for maintaining all improvements on highway ROW.

4. TOTAL $6,405,250

* Various funding sources will be utilized as noted elsewhere in this section.

City participation in Project Seven will include surfacing of the parking areas, including the base, curb, and gutter. Street furnishings, including all sidewalks, planting, earth mounding, lighting, and other necessary improvements, will be supplied by the City on the new portion of Superior Street which is not on the extended bridges.

FHWA and MnDOT participation in this project will be the provision of the multiple use bridges, reconstruction of Superior Street between the new bridges, and landscaping and other sitework on highway right-of-way.

Superior Street must be rebuilt due to the extensive sitework required for I-35 through this area, including utility replacement and street realignment. The multiple use bridge structures will reduce the impact of the roadway through the Historic District. Joint Development of Highway Corridors and Multiple Use of Roadway Properties, FHPM 7-7-8 (PPM 90-5) allows extended bridge structures to make the highway conform to its environment:

> *d) Increased span length for structures or modifications or variation of structures or highway cross section where such would promote and encourage desireable public and/or private uses of land areas beneath, over, and adjacent to the highway.*

Landscaping and other sitework would be necessary within highway ROW with or without the joint development features. The bikeway system should be provided by FHWA/MnDOT through this area as an incidental feature of highway construction.

PROJECTS 8 & 9, EAST DOWNTOWN ENTRANCE & PARK ZONE

A. Joint Development Features

14 space off-street parking facility, bus pull-off, and landscape improvements.

B. Proposed Participation

1. City of Duluth $20,140*
   a. Surfacing. . . . .$ 18,220
   b. Site Furnishings . . 1,920

2. FHWA/MnDOT (90-10) 29,860
   a. Earthwork. 1,850
   b. Planting 19,010
   c. Lighting 9,000

3. MnDOT
   Continuing responsibility for maintaining all improvements

4. TOTAL. $50,000

* Various funding sources will be utilized as noted elsewhere in this section.

City participation for Projects Eight and Nine includes the construction of visitor parking on excess ROW to serve Leif Ericson Park. As indicated in previous material, this lot will provide replacement parking for that lost along London Road. The City participation will include the base, curb and gutter, and bituminous surface for this lot. City participation will also include a bus shelter and drop off area and necessary furnishings on the site.

Site improvements within Project Eight will include earthwork, planting, lighting, and the relocation

of the Jay Cooke statue to the east multi-use bridge. Since these improvements are adjacent to the highway facility within the ROW, they should be provided by the FHWA and MnDOT.

The other major item in this project area is the pedestrian overpass to Leif Ericson Park. This pedestrian overpass is necessary for access to the park as grade access will be eliminated due to the blending of the highway facility and London Road at this point. The FHWA and MnDOT must provide this overpass to restore access to the park as a part of normal highway construction.

As indicated in previous projects, the bikeway system within this project is an extension of the overall system thru the corridor and should be provided by the FHWA and MnDOT.

VI. Sources of Local Participation

There are numerous sources of revenue available to the City to assist in meeting the level of local participation required by FHWA in the implementation of the joint development projects and other proposed improvements. Several programs are identified below which can be used to provide a portion of the money required. No effort has been made at this point to reserve monies as actual construction is still several years away, but preliminary indications from these agencies are that many of the projects and improvements would qualify for funding.

* * * * *

AGENCY: US Department of Transportation, Urban Mass Transit Administration
ASSISTANCE: Mass transit related projects
EXAMPLE: Pedestrian-transit mall on Superior St., between 4th Avenue W. and Lake Avenue
FUNDING: 80% Federal and 20% local for transit related improvements. The local share could be further reduced by Minn Dept. of Transportation (MnDOT) assistance.

* * * * *

AGENCY: US Department of Housing and Urban Development (HUD)
ASSISTANCE: Community Development Block Grants
EXAMPLE: CD money can be used to assemble land and provide park improvements such as the Lakeshore Park.
FUNDING: Duluth received about 3 million for this program year.

* * * * *

AGENCY: Minnesota State Planning Agency
ASSISTANCE: Land and Water Conservation (LAWCON) projects of a regional nature oriented to tourists.
EXAMPLE: Water related parks and open spaces such as Lakeshore Park and the Lake Place Protection Area.

FUNDING: 75% Federal and State (with additional assistance provided by Minnesota Department of Natural Resources) and 25% local.

* * * * *

AGENCY: Upper Great Lakes Regional Commission (UGLRC)
ASSISTANCE: Acts as secondary funding source on economic development type projects.
EXAMPLE: Assistance for tourist oriented projects such as the Lakeshore Park, Lake Place Protection Area, and the Metro Retail Center.
FUNDING: Assist with up to 80% when other Federal funds are available.

* * * * *

AGENCY: Economic Development Administration (EDA)
ASSISTANCE: Title I, (Public Works) economic development projects which are job producing.
EXAMPLE: Off street parking to support the retail platform could be eligible for funding.
FUNDING: Up to 80% Federal.

With the aid of these programs the local participation associated with joint development or other improvements can be provided at minimal cost to

Duluth citizens. Other programs which could be used to provide improvements or achieve goals outlined in this report include:

a) US, Department of Interior, Historic Trust
b) Minnesota Historic Preservation Office
c) National Endowment for the Arts
d) Minnesota Department of Transportation

Some of these sources are currently providing funds being used to implement graphics and bicycle trail improvements throughout the city.

Summary

The necessity for extending I-35 around the downtown area is well documented in various reports. That the extension is constructed in a manner which minimizes adverse impacts of the highway and assists the City in achieving important community objectives, has been the subject of this study which reviews seven joint development projects. These projects vary in scope and all are essential if total integration is to be achieved.

Several involve off-street parking and major landscape improvements on excess highway ROW. Others involve spanning the highway to provide important visual and physical connections or, as in the case of Project Two, to accommodate a major retail facility planned adjacent to the Central Business District.

The City and private developers have taken many actions predicated on the highway extension. More than $93 million has been invested in the highway corridor of which over $22 million has been publicly provided. The City is willing to do much more, recognizing the importance of joint development. Another $10 million of public development, including street extensions and a pedestrian-transit mall, have been identified in this report to insure proper integration of the highway. Beyond these significant local efforts, however, a major commitment must be made by others. A high level of Federal-State participation is essential if these projects are to be implemented.

Recently completed joint development projects in other parts of the country demonstrate a changing attitude as regards FHWA participation. It is felt that such participation is justified in completing this leg of the interstate system in Duluth, Minn.

table 5

Joint Development Costs

Project	FHWA/MnDOT	Local
1	$ 40,000	$ 60,000
2	9,644,100	7,653,900
4	950,000	1,008,000
5	94,500	67,500
6	8,493,140	574,200
7	6,208,200	197,050
8 & 9	29,860	20,140
	$25,459,800	$9,580,790

TOTAL $35,040,590

As the accompanying table indicates, the amount of FHWA/MnDot participation needed is about $25.8 million. While this amount may seem large in relation to the amount being spent to extend the highway, it must be remembered that in this 1.8 miles numerous factors must be given serious consideration including:

a) The continued economic stability of the downtown area.
b) The elimination of about 700 parking spaces used mainly by workers.
c) The juxtaposition of the highway, Lake Superior and Leif Ericson Park.
d) The opportunity to establish an historic district.
e) The City's willingness to provide maximum participation to achieve joint development.

A careful weighing of these factors supports the conclusion of this report; i.e., that maximum local, Federal and State participation is needed to provide joint development features in conjunction with the highway extension.

schedule of implementation actions

schedule of implementation actions

The successful implementation of these joint development projects requires the cooperation and coordination of all participants. At this early date, when a firm time schedule for the extension of I-35 has not been established, it is not possible to set dates for the implementation of projects closely associated with the highway.

However, the necessity, complexity and location of each project provides a means for determining when each should be provided consistent with the timetable for highway construction. As a definite schedule for highway construction is developed, a joint development timetable can be established based on the following schedule to provide sufficient lead time for necessary planning on the part of those involved. Of particular concern now is whether the improvements should proceed, occur simultaneously, or proceed during the final stages of highway construction (post). Table-6 provides this information.

The first priority of I-35 development will be the construction of a new Lake Avenue Bridge. This will be closely followed by the construction of the roadways between Mesaba and Lake Avenue. With these priorities in mind, Projects 4 and 2, the Lake Superior Plaza Extension and the Metro Retail Center should be planned and constructed simultaneously with the highway.

table 6

Implementation Schedule

PROJECT #	JOINT DEVELOPMENT FEATURES	RELATION TO HIGHWAY TIMING
1	Surface parking and landscape improvements	post *
2	(a) Retail Platform	simultaneously
	(b) Adjacent parking & retail facilities	simultaneously
3	No joint development	--------
4	Ramp parking & plaza development	simultaneously
5	Surface parking & landscape improvements	post *
6	(a) Protection area	simultaneously
	(b) Lakeshore Park	post *
7	Multi-purpose bridges, surface parking & landscape improvements	simultaneously
8 & 9	Surface parking and landscape improvements	post *
10	No joint development	--------

* In each case fill material must be placed during highway construction for maximum efficiency.

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appendix

BRW
PLANNING/TRANSPORTATION/ENGINEERING/ARCHITECTURE

TECHNICAL MEMORANDUM #4

I-35 MULTIPLE USE AND JOINT CORRIDOR STUDY

DULUTH, MINNESOTA

TRAFFIC ANALYSIS OF I-35 TRANSITION TO LONDON ROAD

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December, 1976

INTRODUCTION

The termination of I-35 at 8th Avenue East requires that freeway traffic operations be modified to conform to the significantly different characteristics of traffic flow on London Road. This is particularly true of traffic leaving the freeway and entering London Road. Traffic leaving London Road and entering the freeway is not so critical because the safety characteristics of the roadway system are improving rather than worsening.

PROPOSED CONDITIONS

The proposed treatment of the transition area between I-35 and London Road is schematically depicted in Figure 1. Eastbound I-35 traffic encounters the first at-grade intersection at 12th Avenue East which is a signalized intersection. Westbound traffic on London Road leaves the 12th Avenue East signal and encounters a limited movement access point at 10th Avenue East. No traffic movement would be allowed between 10th Avenue East and eastbound traffic to London Road.

Traffic operations in this area occur within the influence of the following factors:

* Speed change - 45 mph I-35, 40 mph London Road.
* Horizontal curvature
* Vertical curvature
* Changing roadway width
* Changing vision conditions - from covered roadway to open sky and vice versa
* Changing land use - closer proximity to buildings and adjacent activity

ANALYSIS OF TRAFFIC ISSUES

The three primary traffic issues relate to the following factors:

* Location of access points
* Length of transition area
* Provision of adequate driver warning

Within the transition area (8th Avenue East to 12th Avenue East) the number of access points should be minimized in order to allow the driver adequate time to adjust to the change in driving environment. This is especially true for eastbound traffic which must transition from freeway traffic operations to interrupted traffic operations.

The length of the transition area should be sufficient to allow the driver adequate time to react to the changing conditions and then to carry out any necessary maneuvers. Again eastbound traffic flow requires the greatest unobstructed transition length.

Driver warning devices may include signing, flashing beacons, or pavement treatments. Any such devices are used to alert and inform the driver of the change in driving environment.

RECOMMENDATIONS

The recommended treatment of the transition area includes the following three elements which are also schematically presented in Figure 2.

* Access to 10th Avenue East from London Road should be retained in order to provide access to and/from the Hillside neighborhood and to provide emergency vehicle access to the hospital facilities in the area from the east. The southbound to westbound movement onto I-35 may be retained if necessary. However, safety characteristics would be improved if this movement can be handled elsewhere.
* The length of the transition area for eastbound I-35 traffic provides approximately

15 seconds of reaction and maneuver time. This should be adequate for most driving conditions.

* Warning devices for eastbound traffic should, as a minimum, include appropriate signing and pavement markings. In addition, other measures should be considered for greater emphasis if problems should result.

FIGURE 1
I-35 TRANSITION AREA

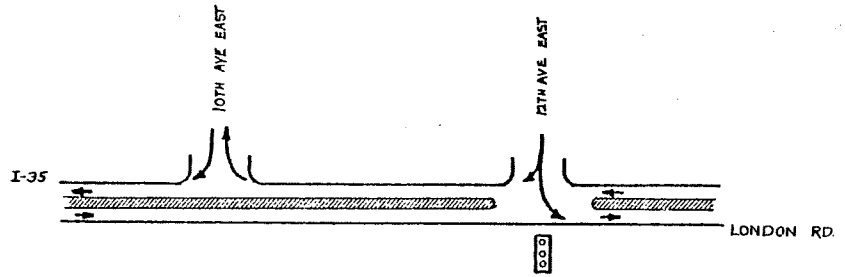
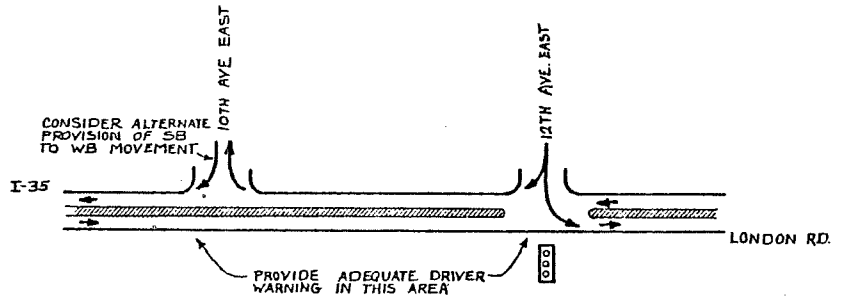


FIGURE 2
RECOMMENDED TREATMENT OF TRANSITION AREA



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PLANNING/TRANSPORTATION/ENGINEERING/ARCHITECTURE

TECHNICAL MEMORANDUM NO. 6

I-35 MULTIPLE USE AND JOINT CORRIDOR STUDY

DULUTH, MINNESOTA

DOWNTOWN PARKING: ANALYSIS AND STRATEGIES

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and

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February, 1977

BACKGROUND

In December of 1975, Bather-Ringrose-Wolsfeld, Inc. completed an analysis of the transportation system in the downtown area; since then the Duluth Downtown Development Corporation has completed additional parking studies. The following findings and conclusions of these studies are outlined below.

a. Parking spaces at the arena (1270) are generally underutilized.

b. Most CBD parking is concentrated in ramps along Michigan Street between 1st and 5th Avenues West.

c. Shoppers prefer to park on-street because of cost and convenience.

d. Several CBD ramps are underutilized even at peak times. Shoppers Auto Park and Town Park had peak usages of 67% and 61%, respectively, when surveyed recently. Even so, shoppers perceive a lack of parking.

e. 447 of the 1,031 spaces in four major CBD ramps are used for long term parking on a contract basis. These ramps have opted for a large percentage of contract parking to maintain high usage levels.

f. A survey of downtown workers using three major CBD ramps and the municipal facilities in the vicinity of Lake Avenue indicated a large percentage live to the north and east of the CBD.

g. The Town Park Ramp and the new Normandy Hotel development were designed to accommodate additional parking spaces. Town Park can be increased by one floor, or 116 spaces, expanding the capacity of this ramp to 557 spaces. Two additional floors, or 200 spaces, can be added to the hotel development.

h. Certain parts of the downtown area, particularly along the northerly edge of the CBD, have a shortage of short term parking facilities.

From this, the following general recommendations were developed.

a. The arena lot should be used to provide long term parking for downtown workers. The lot will be connected to downtown by the pedestrian concourse now under construction. Shuttle bus service could be provided to serve the Civic Center and the CBD areas. This will eliminate many CBD bound trips from the City street system and free-up parking spaces for short term use.

b. A public parking authority should be established to include most of the CBD ramps used for short term parking. Some of the positive actions of an authority are a more equitable rate structure between on and off street spaces and the development of new facilities where needed.

c. Off-street parking facilities should be provided to meet the needs of existing and proposed retail and office uses in the CBD.

d. The CBD skywalk system should be extended to additional blocks to tie parking and retail facilities together.

The BRW study concluded that with long-term parking at the arena-auditorium and usage of these vacated spaces by short-term users, the parking deficiencies of the downtown office/retail area would be solved. This work was completed prior to the possibility of the Metro Retail Center.

PARKING REQUIREMENTS FOR DEVELOPMENT UNDERWAY OR PLANNED

Outlined below are the developments that are currently underway or planned. As discussed below, the development that impacts the parking situation the greatest is the Metro Retail Center.

a. The 242 unit Normandy Hotel and retail center will be operational in the fall of 1977. This development will eliminate 57 existing parking spaces, will include 66,000 square feet of commercial space, and will provide guest parking for the hotel on a 1:1 basis. Parking to serve

the retail space will be provided by existing ramps nearby.

b. The Lake Superior Plaza Office Development to be completed in the spring of 1978 will include 52,000 square feet of office and retail space and parking for 107 cars. Approximately 72 of these spaces will be available to meet the short-term needs of shoppers visiting retail facilities in the immediate area.

c. A Pedestrian-Transit Mall is planned to be implemented on Superior Street between the 4th Avenue West and Lake Avenue once I-35 has been extended around the downtown area. This improvement will eliminate about 50 short term on-street parking spaces.

d. Metro Retail Center will include about 243,200 square feet of retail space and based on major retailer requirements, will require about 1340 parking spaces based on a parking requirement of 5.5 spaces for 1,000 square feet of retail area. (The 5.5 spaces/1,000 square feet of retail area is the stated requirement of possible developers; this standard is generally used for suburban shopping centers.)

e. Associated with the Metro Retail Center will be 43,800 square feet of specialty retail. Based on a ratio of 3.5 spaces per 1,000 square feet an additional 150 spaces are required.

f. Extension of I-35 around the downtown area to approximately 8th Avenue East will eliminate about 700 parking spaces, both on and off street within this corridor. About 500 of these spaces are located in the vicinity of Lake Avenue and are used by downtown workers who reside mainly to the north and east of the CBD.

Table 1 summarizes the need for additional parking spaces due either to new development or due to activities which will remove parking spaces.

TABLE 1

ACTIONS THAT WILL REQUIRE ADDITIONAL SPACES OR RESULT IN A LOSS OF SPACES

Element	No. of Spaces Lost or Needed	Type of Parking
Pedestrian/Transit Mall	50	Short term
Lake Superior Plaza Office Complex (1 Space/300 G.F.A.* Need 173 and 35 Provided)	138	Long term
Lake Superior Plaza Retail (72 Spaces Needed, 72 Spaces Provided)	----	----
Normandy Hotel Construction	57	Short term
Lyric Block Retail (3.5 Spaces/1000 G.F.A. for 66,000 G.F.A.)	230	Short term
Metro Retail Construction	156	Long term
Metro Retail (5.5 Spaces/1000 G.F.A. for 243,200 G.F.A.)	1340	Short term
Specialty Retail (3.5 Spaces/1000 G.F.A. for 42,800 G.F.A.)	150	Short term
Total Short Term	1827	
Total Long Term	794	
Total	2621	

* The square feet of gross floor area.

PARKING STRATEGIES

The strategies to satisfy the need for approximately 2600 additional spaces is twofold:

To construct additional short-term parking within 400 feet of the retail space and to construct additional long-term (employee) spaces on the fringe of the downtown.

To achieve a higher utilization of the existing parking spaces.

Each of these strategies are outlined below.

Candidate Additional Parking Facilities

Outlined on Table 2 are candidate short-term and long-term parking facilities.

Existing Candidate Facilities for Full Utilization

Review of the supply/demand inventory completed by BRW and review of additional parking data collected by the DDDC leads to the conclusion that within the office/retail area approximately 200 spaces are available. These spaces exist in four ramps and are based on a 90% utilization assumption.

In addition, with the completion of the pedestrian concourse between the downtown and the arena-auditorium, between 300-500 spaces at the arena-auditorium are within a short walk of the concourse.

Resolution of Demand/Supply

The demand for additional parking spaces is as follows:

Short-Term Demand	1827
Long-Term Demand	794
Total	2621

TABLE 2

CANDIDATE SHORT TERM AND LONG TERM PARKING FACILITIES

Element	No. of Spaces	Type of Parking
Addition to First National Ramp	66	Short term
Addition to Town Park Ramp	116	Short term
New Metro Retail Parking Deck-Top	393	Short term
New Metro Retail Parking Deck-Intermediate and Surface Area	612	Long term
Lake Superior Plaza Extension	220	Long term
Lyric Block Addition	200	Short term
New Ramp at 1st Street and 1st Avenue	200	Short term
New Parking Ramp-West	325	Short term
New Parking Ramp-West Removes Existing Parking	(77)	Long term
Total Short term	1300	
Total Long term	755	
Total	2055	

The candidate additional facilities and full utilization of current facilities provides the following supply.

Short-Term Supply	1500
Long-Term Supply	1155
Total	2655

This difference between the short-term demand (1827) and the short-term supply (1500) can be resolved by:

a. Switching 327 of the long-term spaces in the Metro Retail Ramp to short-term

b. Utilizing surface spaces at the arena adjacent to the Pedestrian Concourse

c. Freeing-up additional short-term CBD spaces by attracting long term parkers to peripheral locations.

Thus, the conclusion of the analysis is that if all expected development occurs and the candidate parking facilities are implemented, the parking demand can be satisfied.

DOWNTOWN PLANNING AND DEVELOPMENT PROGRAM

DULUTH
DOWNTOWN
DEVELOPMENT
CORPORATION

In the early part of 1975, a joint downtown planning effort between the City's Department of Planning and Development and the Duluth Downtown Development Corporation got underway. Staff of the City and the Corporation were aided by consultants in taking a comprehensive look at the area's transportation system, economic base and building conditions in order to develop a program of revitalization.

Bather, Ringrose and Wolsfeld, Inc. (BRW) were hired to evaluate the traffic, transit, pedestrian and parking elements of the transportation system and to provide recommendations for correcting existing and future problems caused by new development. BRW has completed their work which includes findings, problem analysis, alternative strategies and a recommended transportation plan.

The Economic Research Corporation (ERC) was retained to provide guidance on the market potential for new development. To do this, the firm studied local and regional characteristics affecting downtown, including the regional market which the City serves, current and projected regional development, competing centers, and retail and office tenant attitudes. State and national trends expected to affect development in Duluth were also considered.

Urban design and a significant amount of the physical evaluation work was assigned to a local consortium of architects consisting of Thomas-Vecchi, Inc. and Architectural Resources, Inc. Beyond an evaluation of building conditions, the designers looked at physical development alternatives suggested by staff and other consultants. Once a preliminary concept plan was developed, studies of a "skywalk" system, a pedestrian-transit mall, major retailer facilities, off-street short-term parking, an open space system and downtown housing were undertaken.

Discussions with downtown merchants and property owners have taken place on specific matters which are considered to be of a high priority as a result of this work. These include a pedestrian-transit mall demonstration project which has been proposed; a combination of "skywalk" (second level climate controlled pedestrian system including bridges over streets) and interior street level-pedestrian system linking major downtown uses and the Arena; major expansion of a key downtown office use; continuation of I-35 around the downtown area; and the development of an educational program concerning the availability of downtown parking.

This report summarizes the planning and development work accomplished to date, including findings, conclusions, goals, objectives, preliminary recommendations and a development concept. Certain studies are still in process and once completed in the early part of 1976 a report will be published containing development strategies and establishing guidelines to insure that development of the downtown area takes place in accordance with the development concept.

MAJOR FINDINGS AND CONCLUSIONS

1. The Duluth trade area includes 450,000 people who live in Northeastern Minnesota, Northwestern Wisconsin and the Upper Peninsula of Michigan. 380,000 people live within a 75 mile area.

2. Retail sales in the downtown area were weak before the opening of the Miller Mall. Since 1972, overall retail sales have continued to decline although numerous merchants enjoyed an increase in sales during 1975 over prior years.

3. A very high percentage of downtown merchants are satisfied with their present location.

4. Downtown has about 500,000 square feet of retail space devoted to shoppers goods. Of this, 170,000 square feet is in department store space (Glass Block and Wahl's). By comparison, the Miller Hill Mall, including the adjacent area, contains about 800,000 square feet of retail space of which 600,000 square feet is in department stores (Penney's, Wards, K-Mart, Target and Glass Block).

5. Downtown has many specialty shops, but lacks sufficient department store space to attract customers who will support such shops.

6. The Mall is larger than downtown in terms of

retail area, department store space, and retail sales. But it does not offer a significant amount of higher priced and fashion merchandise.

7. Customer and pedestrian surveys reveal that most people have a positive attitude about downtown, but many expressed serious concern about congestion, a lack of adequate and convenient parking, conflicts with vehicles at intersections, snow removal and narrow sidewalks.

8. Surveys also indicated that:

   * 3/4 of the trips into the downtown area are via automobile; the average auto occupancy is about 1.49 persons/car (this is down from previous surveys).

   * Inbound traffic peaks between 7 AM and 8 AM and maintains a high level throughout the day indicating the significance of downtown as a shopping area.

   * Transit usage is much greater during the peak hours than during the mid-day hours indicating the majority of transit trips are to and from work.

   * 20% to 40% of the total traffic on east-west streets is through downtown trips (20%-30% for Superior Street).

   * A substantial number of trucks passing through the downtown area use Superior Street producing safety, noise, and reduced traffic capacity problems on the primary retail street.

   * The traffic volume on Superior Street (over 17,000 vehicles/day) is at least 50% greater than on other streets passing through the downtown area.

   * Including the parking at the Arena, there are more than 5900 parking spaces available to the downtown area. Of these, 1757 are in parking ramps (Town Park, Shoppers Auto Park Ramp, 1st National Bank, etc.), 1418 are on-street (729 metered), 1474 are in surface lots and 1270 are available at the Arena.

   * 1563 spaces are concentrated in ramps and surface lots along Michigan Street between 1st and 5th Avenues West.

   * The Arena parking lot, with 1270 spaces, represents a vast supply of potential parking spaces which are not well used.

   * Additional short-term parking is needed around City Hall and near the Medical Arts Building, based on peak daily needs.

   * Generally, most parking ramps have excess capacity. Several encourage long-term parking on a monthly basis because of the lack of hourly, or short-term, demand.

   * Peak parking accumulation occurs during the period from 10 AM to 3 PM.

   * Parking ramps along Michigan Street have a serious competitive disadvantage. Parking on Superior Street is more convenient and less expensive for short-term parkers and the municipal lots south of the ramps are practically as convenient and far less expensive.

   * 555 buses use Superior Street which is the focal point for the regional transit system.

   * Predominant transit stops are on Superior Street between 4th Avenue West and Lake Avenue; about 6000 passengers get on and off buses at these stops.

   * On-street parking and traffic congestion seriously hinder bus operations along Superior Street.

   * Transit amenities are needed to increase the attractiveness of transit as a mode of travel.

   * Increased transit service between the City of Superior and Duluth is needed.

* Because transit service is centered in the downtown area, special development advantages occur here.

9. Downtown contains about 550,000 square feet of general office space of which approximately 140,000 square feet or 25% is currently available for lease. Of this vacant space, more than 50% is in three buildings, two of which are located on the periphery of the core. The vacancy factor for offices located in the core area is about 12.2%.

10. Over 73% of this 550,000 square feet of general office space is located in 10 buildings constructed prior to 1910.

11. A survey involving 136 office users revealed traffic congestion and a lack of parking facilities are the most significant concerns. 50% of the respondents indicated they would need additional space in the future.

12. The anticipated economic growth of the region should contribute to increased employment in those industries and occupations which utilize office space. This will result in an increased demand for office space as has occurred in other cities of similar size which, like Duluth, are business and service centers.

13. Assuming that the Duluth economy grows, there will be an annual demand for 10,000 to 20,000 square feet of general purpose office space in Duluth over the next five to ten years.

14. Approximately 70% of the City's housing stock was built prior to 1939.

15. The City's vacancy rate in newer apartments is only 3.7%; the absorbtion rate for several high rent buildings in the City indicates a demand for units including an amenity package.

16. Over 3400 housing units in 224 buildings are located in the downtown area. Most buildings contain less than five units. All recent housing construction has been publicly subsidized and oriented to low and moderate income elderly tenants.

17. There is a demand for downtown housing in the $200 - $400/month rental range which is convenient and includes amenities. Up to 400 units could be absorbed at the rate of 40 - 90 units per year.

18. For the first four months of 1975 the hotel/motel occupancy figures showed a 14% increase over the same period of 1974.

19. Due to the increasing tourist and convention business, there is a need for 175 - 250 more downtown hotel/motel rooms.

20. Significant building deterioration has taken place east of Lake Avenue and on Minnesota Point. Many buildings south and east of "Old" Central High School and south of Sutphin Street are badly deteriorated.

21. The City, and particularily the downtown area, has a unique hillside setting overlooking St. Louis Bay and Lake Superior. These water bodies are visable from many points in the downtown area, especially by looking south on the avenues.

22. There are many highly detailed older buildings in the downtown area. Most have historical significance; two are on the National Register.

23. There is a lack of people-oriented parks and open spaces downtown for those who live, work and shop in this area; vegetation to soften the impact of buildings and streets is generally lacking.

24. The waterfront has generally been ignored over the years. Many examples of misuse or under-utilization exist.

25. The downtown area is too long for comfortable shopping on foot.

26. Vacant storefronts, unused upper stories, and a lack of building maintenance and updating are examples of the physical and economic

decline taking place. Private investment and public action to correct this situation has generally been lacking.

GOALS AND OBJECTIVES

Based on discussions involving citizen committees, consultants, City staff, and the Downtown Development Corporation staff, the following set of goals and objectives has been developed to serve as a guide for the future development of downtown.

1. The shape of the CBD must be consolidated and defined.

2. Land uses in the CBD should be arranged to strengthen the retail core, promote mutual support among activities and to stimulate investment downtown.

3. Public and private improvements should be of the highest quality to provide the downtown with a new image.

4. Downtown pedestrian movement should be made safer and more comfortable year-round.

5. The CBD area should be served by adequate and convenient parking.

6. Plazas and open spaces for walking, sitting and bicycling should be provided.

7. Better access to downtown and an alternative route for through downtown movement must be provided to relieve traffic congestion.

8. The maximum utilization of transit by workers and shoppers should be encouraged.

MAJOR RECOMMENDATIONS

1. Interstate 35 should be extended around the downtown area at the earliest possible date.

2. The amount of department store space should be increased to attract customers who will support specialty shops. Every effort should be made to keep Sears in a downtown location.

3. Additional major retail development should be located to take advantage of existing off-street parking facilities and the planned "skywalk" system.

4. The use of Superior Street in the heart of the retail-office core between 4th Avenue West and Lake Avenue should be limited to pedestrians, transit, emergency and possibly service vehicles. Implementation of a permanent mall should be conditioned on the success of a demonstration project and would have to be accompanied by the following modifications to the transportation system:

   a. Switch U.S. Highway 61 designation from Superior Street to 2nd and 3rd Streets.

   b. Add peak hour weekday parking restrictions on 2nd Street from 3 PM to 6 PM and on 3rd Street from 7 AM to 9 AM between Mesaba and 7th Avenue East. Extension of these parking restrictions to 14th Avenue East may be necessary.

   c. Provide alternative parking locations to on-street spaces to be eliminated if warranted by a survey of users along 2nd and 3rd Streets.

   d. Implement park/shop program to off-set loss of convenient, low cost on-street parking spaces on Superior Street (55 spaces).

   e. Consider making First Street two-way to reduce potential circulation difficulties. Such a change would have to be accompanied by the creation of additional loading zones particularily between 1st and 2nd Avenues West.

5. A climate controlled pedestrian system connecting the Arena and the Lyric Block at the second level should be implemented. This system should be extended over Superior Street and 2nd Avenue in order to tie in with parking and major

retail facilities located to the east of the Lyric Block. Every effort should be made to encourage the private development of the interior street level connections between adjacent buildings as a condition of extending the concourse beyond the Arena-Lyric Block segment.

6. An educational program should be established to acquaint citizens with the location and availability of off-street parking facilities. Additional short-term parking should be provided in the vicinity of City Hall to eliminate a current deficit and along First Street to meet the needs of the proposed Lyric Block Development.

7. Although there is a 25% vacancy factor in downtown general purpose office space, every effort should be made to attract future office development to the downtown area where transit and other services are readily available, especially if the alternative is a location requiring an extension of services or the provision of additional services.

8. New housing oriented to moderate to middle income families and individuals should be constructed downtown on sites within walking distance of the retail-office core and should include amenities such as an indoor swimming pool and garage parking.

9. Continued improvements and/or schedule modifications should be made to the transit system to encourage greater use by downtown workers and shoppers. Bus shelters for waiting passengers, an information center to provide scheduling information and assistance, and a shop/ride program should be implemented.

10. Long-term parking in the retail-office core should be discouraged. Contract parking in certain ramps, and privately owned off-street lots along First Street should be made available to short-term users. The municipal lots south of Michigan should be converted to short-term use for shoppers and users of facilities such as the Cultural Center and proposed Library. Long term parking for downtown workers should be located at the Arena lot.

11. Increasing tourist and convention business along with anticipated economic growth requires that additional hotel/motel units be provided. The Lyric Block hotel development consisting of about 250 rooms and related facilities should meet this need.

DEVELOPMENT CONCEPT

The findings, goals and objectives and major recommendations form the basis for the Development concept which is outlined below and illustrated on the accompanying map.

MAJOR FEATURES

* An intensive, unified retail-office core located west of Lake Avenue.

* Provision for adequate and convenient short-term parking to serve various uses within the area.

* Creation of a major retailer complex in the air-rights over I-35 along the pedestrian concourse.

* Development of the Lyric Block with hotel/retail facilities.

* Implementation of an open space system consisting of plazas, parks and a waterfront walkway-bicycle path.

* Creation of a commercial/recreational water-oriented facility immediately west of the Arena.

* Establishment of entertainment and theme retail distinct separate and distince from the CBD.

* Removal of non-downtown oriented activities such as new and/or used vehicle facilities.

* Elimination of badly deteriorated buildings.

* Designation of sites suitable for the development

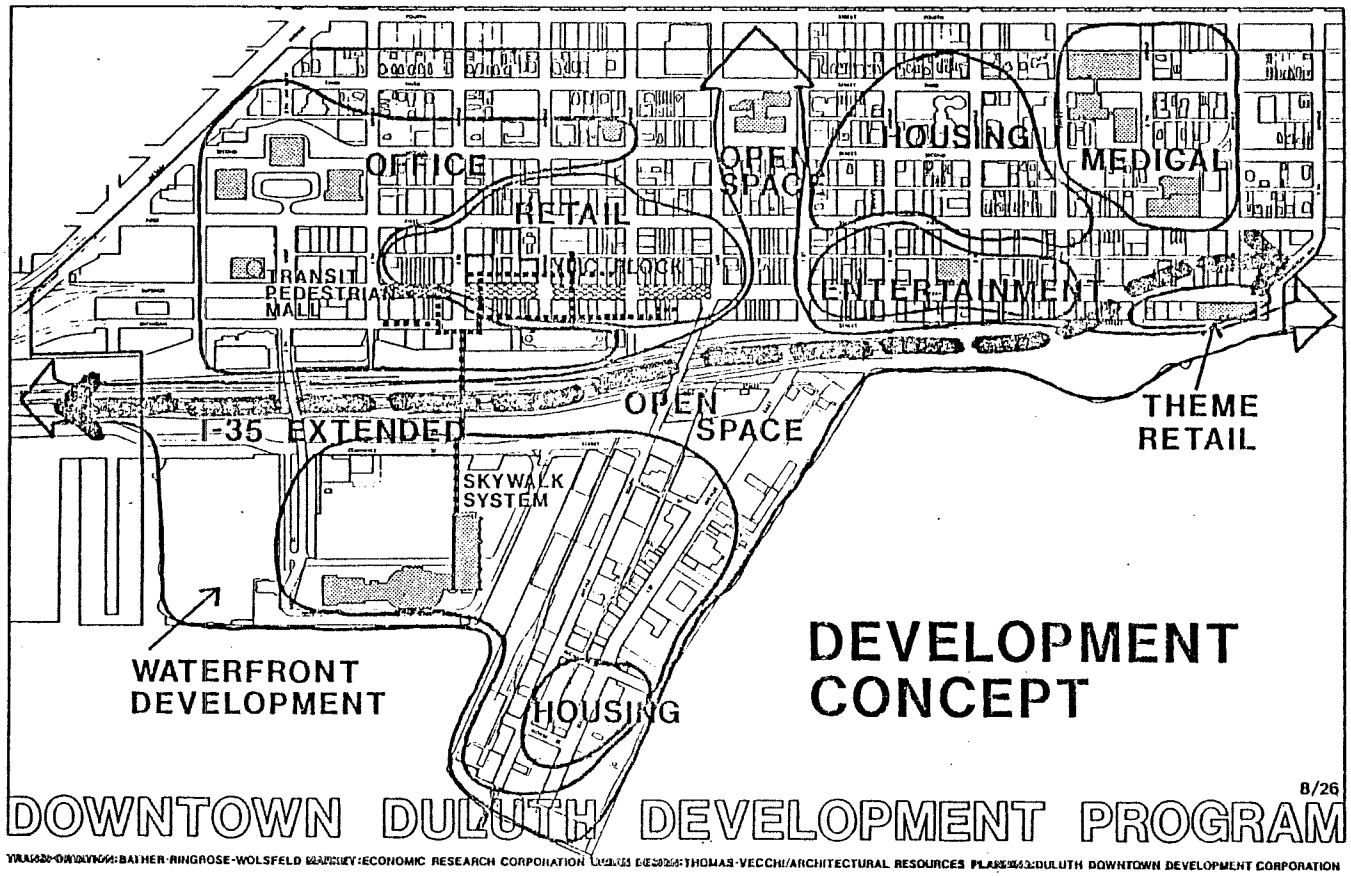
of new moderate to middle-income housing.

* Preservation of buildings having historical value and/or local significance.

* Implementation of a transit-pedestrian mall on Superior Street between 4th Avenue West and Lake Avenue.

* Development of a "skywalk" system to connect major downtown facilities with the Arena.

* Establishment of an inside, street level pedestrian circulation system which ties into the "skywalk" system and the transit-pedestrian mall.



DULUTH BIKEWAYS

Department of Planning & Development
City of Duluth

It is in the interests of the City to encourage bicycling because of the positive impacts on land use, decrease in consumption of non-renewable resources, cost of public transportation, promotion of healthful exercise, and developing awareness of one's surroundings that occurs through substitution of the bicycle for the motor vehicle. The Duluth Bikeway Plan is a means of advancing meaningful bicycle usage in Duluth.

The goals of the Duluth Bikeway Plan as adopted by the City Council and Planning Commission are as follows:

1. To increase bicycle rider safety.
2. To utilize the bicycle as a commuter vehicle.
3. To enhance the recreational bicycling experience.

The objectives for implementing these goals are as follows:

1. Provide for the education of drivers, pedestrians, and bicyclists of all ages.
2. Increase the enforcement of laws relating to bicycles and their relationship with pedestrians and other traffic.
3. Identify and rectify obstructions that prevent continuity for the bicycle ride within the existing street pattern (i.e., Mesaba crossing at Superior Street).
4. Provide routes throughout the City that would:
   (a) Link major traffic generators (schools, hospitals, shopping and employment centers, etc.).
   (b) Be pleasant to ride with reasonable grades and a positive visual experience.
   (c) Not be in conflict with major vehicular arterials.
   (d) Be compatible with bicycle route efforts of the City of Superior and the States of Wisconsin and Minnesota.
   (e) Utilize both existing streets and physically separated routes such as utility easements, abandoned rail rights of way, and public lands wherever a separated path would be desirable and feasible.
   (f) Be conducive to multiple use to include hikers and in the off season, sled dog racing, skiing, snowshoeing, and snowmobiles.
5. Insure that bicycle traffic will be provided for in future public actions, such as:
   (a) Sweeping and maintenance of streets from curb to curb.
   (b) Painting, striping, and storm sewer grate covers.
   (c) Bridge viaduct, or any street construction so that these new routes become multiple mode transportation corridors rather than a single purpose truck and automobile carrier.
6. Establish support facilities such as racks, parking shelters, rest stops, showers, and toilets where appropriate.
7. Establish a new license procedure with the basic purpose of permanently registering bicycles as part of a statewide registration system as a theft deterrent and recovery aid. This registration need be done only once or whenever ownership is transferred, and costs for this registration should not exceed the costs of administering the program.
8. Promote local bicycle routes such as the North Shore Drive, Upper St. Louis River front, and Skyline Drive and their connection with the statewide system as a statewide attraction.

9. Provide public subsidy for bicycle-related costs as is being provided for in other forms of transportation (i.e., transit expenditures, Amtrack, airlines, and municipal parking lots).

We go about accomplishing the above by setting priorities established by the Mayor's Bicycle Coordinating Committee. The BCC was appointed in May, 1976, by the Mayor. Its objective is to set priorities on a year-by-year basis. The approach used by the BCC consists of:

1. Tying Duluth into the statewide bicycle corridor network and, most recently, the State Bike Plan.

2. Tying into metropolitan plans which include the Duluth-Superior urbanized areas.

3. Identify obstacles to bicycle travel and make recommendations as to priority in solving them.

Why should bikes and bicyclists be given special consideration in the Duluth area?

With a population of 100,000, Duluth is estimated to have 50,000 bicyclists. Moreover, the sales volume for 1974 was more than 11,000 new bicycles. Of these 11,000, more than half were ten-speeds, a majority bought by persons over 18 years of age. It is apparent that more adults are bicycling; the bicycle is no longer viewed merely as a toy, as it was ten years ago. At that time, 75 percent of bikes were bought for children, and only 25 percent for adults. Today, people of all ages are riding all over the City and countryside. The present renewed enthusiasm has reached the point where Minneapolis, with the Minnesota American Youth Hostel Council, annually sponsors the "Minnesota Ironman", where prizes are awarded for youngest and oldest riders participating in this "Century" (100 miles) ride. Over 1,000 people registered for the 1975 ride.

The Downtown Duluth area is a vital link in the Bikeway Plan because it is the center of activity for most bicyclists. According to two surveys conducted in 1975, Downtown was the most used shopping trip. Superior Street and the Downtown area in general were identified by over 300 bicyclists. It should be noted that over 100 bicyclists belong to the two racing clubs in town. Each racer's annual mileage surpasses 10,000. There is also a touring club in Duluth with over 25 members of all ages. Last year a major road race was held in Duluth and attracted several U.S. Olympic team members, as well as a Belgian Olympic racer. The finish line stretched across Downtown Superior Street. The event will be held again this year. The State Bicycle Road Championships will probably be held in Duluth, in addition to the Stars and Stripes Road Race previously mentioned. Duluth is getting to be known by bicyclists as the hotbed of bicycling in Minnesota!

The City of Duluth has made a commitment to bicycling as a three-year $500,000 capital improvement plan has been established. If the improvements occur on Federal Aid Urban routes, the City matching share would be approximately 30 percent. The present City bikeway plan consists of 79 miles of commuter routes, 58 miles of recreational trails, and 28 miles of touring bicycle routes. The estimated cost is over $600,000. This cost will be defrayed through State and Federal grants. The figure includes $15,000 for storage facilities and other support facilities.

There are several obstacles in the CBD, including Mesaba Avenue, the narrow Superior Street corridor, and the heavily-used First and Second Street one-way pairs. In addition to these problems, a great shortage of bicycle storage facilities exists. Consequently, the downtown area isn't conducive to regular bicylce usage by the majority of cyclists.

Degree of Commitment to Bikeways

It is popular at present to be in favor of bicycle paths, but relatively few people are willing to make a substantial commitment beyond that. Therefore, it is necessary for an active group to spur such development. Local bicycle clubs have been actively involved in numerous meetings concern-

ing bicycle ordinance revisions, safety and education, and selection of routes. Many people are hesitant to make a strong commitment in the sense of spending large amounts of money because they believe that this current "boom" is just a fad. One might think this is true, but some interesting facts show up through research:

1. The majority of bicycles being sold are to adults.

2. The majority of bicycles sold are ten-speeds.

3. National and local bicycle organizations are increasing in numbers.

4. People are realizing that bicycles can be faster than other forms of transportation for short distances.

5. Reduced traffic congestion in urban centers where greater numbers of bicycles are used indicates the need for bikeways in an urban transportation plan.

6. The Federal Highway Act of 1974 provides for inclusion of bikeway planning.

7. Bicycles have outsold automobiles since 1972.

8. National figures show an estimated 100 million bicyclists, as of July 1974.

9. The U.S. Environmental Protection Agency has been involved in promoting bikeways as a partial solution in reducing air emissions. The EPA is embarking on a campaign to make the public aware of the benefits of bicycling.

From the above data one can conclude that bicycles are increasing to the degree where facilities are needed now and in the future if the City of Duluth is to provide an acceptable level of safety for its bicyclists. Bikeway treatments should be included in the City's Capital Improvement Program as segments of the comprehensive bikeway plan are connected. The various community organizations involved in the planning process supported the concept of providing bicycle facilities.

A European study showed that bikeways reduced bicycle accidents significantly. A French survey has found 45 percent fewer accidents on bikeways, and in Copenhagen 60 percent fewer accidents were reported after bikeways were established on streets where heavy bicycle usage was present. With Duluth's estimated 50,000 bicycle population, the City should embark on a serious bikeway development plan and mass media educational program. This form of transportation and recreation lends itself to Duluth's varied topography.

There has been a proposal to make a transit/bike/pedestrian mall on a portion of Superior Street from 5th Avenue West to Lake Avenue. It should be emphasized that this proposal would greatly enhance the use of the downtown network and would provide a continuous bikeway through the downtown area. The mall concept is greatly encouraged by Duluth bicyclists. Several connections to the mall from the proposed I-35 bikeway have been made. These connecting links are essential in that they provide a safe and viable means of access to the downtown, without which the mall's potential use will not be realized.

DEMAND ANALYSIS LAKE PLACE

INTRODUCTION

In addition to the shoreline protection aspect, a prime consideration in the establishment of Lake Place is to create a lakeshore visitor attraction for the thousands of people who spend vacation time in the city and regional area each year. In addition to visitor traffic, Lake Place will attract residents, the downtown work force, downtown shoppers, and the remaining city wide population who frequently visit the lakeshore and adjacent attractions.

The purpose of this memorandum is to reflect the rationale used in determining the user visit potential of Lake Place and to present user data from other comparable visitor attractions. In addition to this data, downtown population base counts, visitors, convention trade and leisure time activities will be presented as a future justification for Lake Place demand.

EXISTING VISITOR ATTRACTIONS

The City of Duluth attracts, each year, approximately 775,000 tourists who actually pass through the city and visit area attractions. The projected increase in tourist traffic will rise to nearly 850,000[1] by 1977 and by 1979, the totals will reach nearly 1 million. While these people may not stay overnight, they are interested in visiting area attractions as the table below illustrates. It must also be pointed out that the totals below only identify actual tourist occasions counted at the area attractions.

Visitor Count-Area Attractions	1976
Thompson Hill Info. Center	114,000
Arena Auditorium Info. Center (3 months only)	53,000
Corps of Engineers Marine Museum Canal Park	550,000
Arena Auditorium Complex	600,000
Split Rock Lighthouse State Park	163,000
Gooseberry State Park	529,000

[1] Based on records obtained from Duluth Chamber of Commerce, 1976.

Due to the attractions scheduled for development in the platform, Lake Place will attract visitor totals similar to the related facilities enumerated in Table 1 above. Thompson Hill and the Arena Auditorium offer information for the visitor as well as a visitor rest stop. Lake Place will provide a similar opportunity in the downtown area. Lake Place will also attract visitors similar to those stopping at the Marine Museum and the two state parks on the North Shore. The impetus at these three attractions is centered around historical interpretation and scenic vistas. Lake Place will provide these same attractions with the design components included in the program.

USER ANALYSIS

In order to place the total Duluth visitor count in the proper perspective, a short breakdown of visitor groups is necessary. This will identify a certain percentage of visitors as those who are actively seeking area attractions and who would be in the downtown-waterfront area during the year.

The hotel-motel trade during 1976 consisted of 263,000 room rentals.[2] Based on conservative average of 1.5 people per room, this represents nearly 400,000 visitors utilizing hotel-motel rooms in the city with approximately 75 percent of the rented rooms located in the CBD area, a final figure of 300,000 overnight visitors is achieved. These are people who have a certain amount of time to spend viewing attractions. Lake Place will attract a large percentage of these visitors primarily from the projected programs and scenic vistas.

The tourist convention trade last year attracted nearly 70,000[3] delegates who utilized the city for an average of 2 - 4 days per visit. These delegates and their families are situated primarily in the downtown area and are eager to view attractions and the scenic lakeshore. While they represent one of the major groups viewing attractions like Canal Park, the harbor-front, and Leif Ericson

[2] Duluth Chamber of Commerce 1976

[3] Ibid

Park, they also have leisure time to view attractions and attend programs during the evening hours. Their interests lie in experiencing as much of the city as possible in a short time span. An attraction like Lake Place along the shoreline would not be overlooked by these visitors.

The city population living and working in the CBD area each day represents approximately 26,000[4] people. Approximately one half of these people work in the CBD are and the other half reside within a six block radius of the CBD. These 26,000 people are seeking attractions in the lakeshore area whether it be a place to spend a noon hour, to rest and relax, to view the lake attractions, or to even walk along the shore in evening hours. Attractions such as Canal Park, the Arena complex, and Leif Ericson Park provide similar opportunities, however, the centralized location of Lake Place will function as a pivotal position for attracting and directing individuals to and from the CBD.

In addition to these visitors, there are an additional 15,000[5] visits to the CBD each day by individuals seeking a multitude of services available. Persons having excess time during their downtown visit would then attend downtown attractions, special events and view lake attractions if a convenient space were made available.

A prime consideration for the development of Lake Place is the establishment of a bikeway connection between adjacent open space attractions, neighborhoods, and as a through city corridor. In fulfilling this goal, it should be noted that there are over 500,000 bicycle trips[6] through the CBD each year. With the Lake Place connection, a critical east-west link will be established for these uses.

[4] Architecutral Resources, Inc.

[5] Duluth Downtown Development Corporation

[6] Based on figures obtained from Duluth City Planning Dept. Studies

ESTIMATED VISITOR DEMAND

Based on the data presented in this section, an estimation of use potential for a visitor attraction on the lakeshore has been formulated below. The demand analysis for Lake Place has been estimated in a two stage breakdown. Table II represents monthly averages of visits per year during normal operation. Table III shows weekly variables and user estimation. There has been no attempt to differentiate between visitor and resident percentages, and the figures given combine all uses.

Table II — Monthly Demand Breakdown

Month	Monthly Totals
January	2,000
February	2,000
March	3,000
April	13,500
May	24,000
June	36,000
July	45,000
August	54,000
September	48,000
October	43,000
November	18,500
December	3,000
Total Yearly Demand	292,000

Table II above represents the total yearly demand based on user counts of similar facilities and adjacent attractions within the city. It should not be construed as representing maximum visitor potential, as special winter events during the year will attract additional visitor demand which cannot be estimated. This is due to programs on the facility including special fairs, trade shows, lake attractions, and festivals. Events during the year such as the Art Festival (10,000 - 15,000 visitors in one weekend) and the Folk Festival (8,000 - 10,000 people on one weekend) will be programmed for Lake Place to augment the regular attractions of the platform area. These events could easily attract 50,000 to 75,000 additional visitors per year depending on their frequency.

Table III indicates that daily averages during the week will average greatly. Weekends will draw the best attendance as there are many more local people with free time and tourism indicators show there are more tourists and visitors in Duluth on weekends than at any other time of the week. One factor to remember is that weather differences and special attractions may alter these estimates greatly.

Table III	Peak Weekly Attendance *
Sunday	4,300
Monday	1,500
Tuesday	700
Wednesday	800
Thursday	1,200
Friday	1,600
Saturday	3,400
Total Visitors	13,500

* Average weekly attendance during peak month of August.

In summary, the Lake Place Joint Development Project will attract a large percentage of the Duluth bound visitor-tourist traffic each year as well as downtown workers and residents. As a major link with the shoreline, business district, and lakeshore, the platform and lakeshore will create vistas, special events, interpretive information and pedestrian/bikeway connections.

LAKE PLACE PROTECTION AREA & LAKE PLACE PARK
DESIGN PROGRAM

CONTENTS

SUMMARY OF PROGRAM SPACE	Sq. Ft.	Acres
Surfaced Pedestrian Use Areas	29,710	0.68
Edge Protection Planting Areas	40,750	0.93
Turf Areas	14,800	0.34
Surfaced Pedestrian Connections	63,000	1.45
Lake Place Protection Area Totals	148,260	3.40
Lakefront Use Zone (Lake Place Park)	130,680	3.00
Total Lake Place Protection Area & Lake Place Park	278,940	6.40

The following outline consists of proposed space utilization for people to enjoy and use the Duluth Lakefront Environment as a multiple-use benefit of the proposed roadway/shoreline protective structure.

This projected utilization pattern will translate also into a planning/building program for the design and implementation of Lake Place.

A. Multiple-Use Spaces

Program Description

Short-term Display Uses

a. Art show/display

b. Crafts show/display

c. Trade show/display

d. Industry product display (timber, mining, recreational, etc.)

e. New product display (sailboats, automobiles, misc. recreational equipment)

Long-term Display Uses

a. Historic/ethnic interpretation

b. Urban art (sculpture, mosaic, murals)

c. City/regional attraction interpretation

Organized Sales

a. Arts and crafts sales events

b. Farmers market sales events

c. Special sale events (book fair, trading events, etc.)

d. Auctions

e. Fund-raising events (smelt fry, etc.)

Special Events

a. Public demonstration events (water safety, first aid, etc.)

b. Bookmobile

c. Mobile health clinic

d. Special occasion festivals

e. Holiday ceremonies/events

f. Informational/educational lectures/ talks

Program Requirements

a. Handicap provisions

b. Planting improvements

c. Area lighting

d. Graphics/information

e. Vehicular accessability and maneuvering flexibility

f. Special occasion shelter/display/ event provisions

g. Large-scale paving areas

h. Bike rack space

i. Water availability

B. Activity Spaces

Program Description

Participant/Spectator Activities

a. Public ice skating (natural ice)

b. Ice skating lessons/exhibitions

c. Band concerts

d. Outdoor theatre uses

e. Educational lectures (historical interest, etc.)

Program Requirements

a. Handicap provisions

b. Planting improvements

c. Area lighting

d. Graphics

e. Large-scale special paving areas

f. Water availability

Program Description

Passive Activities

Hobby Interest Uses

a. Rock hound

b. Photographer

c. Artist

d. Beach comber

Leisure Time Uses

a. Walking

b. Biking

c. Viewing

d. Shopper interest/information

e. Waiting/meeting space

f. Urban open space casual uses

g. Childrens play area

Program Requirements

a. Handicap provisions

b. Planting improvements

c. Area lighting

d. Graphics

e. Walking pathways

f. Bikeway pathways

g. Public drinking fountain

h. Flexible seating opportunities

i. Bike rack space

C. Urban Gardens

Program Description

a. Major landscape planting space

b. Major open space "turf" areas

c. Viewing/strolling/leisure time space

d. Major city center "contrasting relief" space

Note: Major importance of above amenities occur for the urban resident (resident hotels, apartments, elderly housing resident)

Program Requirements

a. Wide volume and range of plant materials types

b. Materials with seasonal changing conditions/color/interest

c. Native plant materials with seasonal variation and interest

d. Hardy/low maintenance plant materials

e. Large "screen" planting areas defining major urban garden space

f. Large open turf (lawn) areas

g. Flexible seating opportunities

h. Walking/pathway system

i. Safety and "effect" lighting

j. Refuse provisions

k. Irrigation/maintenance provisions

l. Permanent plant materials identification system

m. Handicap provisions

n. General safety provisions

o. Graphics

p. Public drinking fountains

D. Major Viewing Space

Program Description

Major Viewing Attractions

a. Sail boats/racing

b. Shipping activities

c. Fishing craft

d. Excursion and special event watercraft

e. General lake view amenities (changing seasons, weather conditions and time of day/scenery)

Program Requirements

a. Permanent seating space and flexible seating opportunities

b. Strolling/walking/standing space (special slip-free surfaces)

c. General safety provisions

d. Handicap provisions

e. Refuse provisions

f. Safety lighting

g. Overflow viewing space

h. Alternative sheltered area viewing (overlap with other program space)

i. Planting improvements

E. Lake Place Park (Lakefront)

Program Description

Picnic Space

Program Requirements

a. Individual/group picnic sites (tables, grills, refuse)

b. Lighting

c. Shelter (picnic use, meeting, waiting, multi-use facility)

d. Site lighting

e. Childrens play space and equipment

f. Public drinking fountains and water availability

g. Restroom facilities

Program Description

Lakeshore Open Space *

* Potential additional space utilizing Burlington Northern excess right-of-way at east end of Lake Place Structure.

Program Requirements

a. Undeveloped, natural area (requires provisions for maintenance/safety needs)

b. Requires shoreline protection/erosion control

c. Requires flexibility of boundary to accommodate changing conditions

Program Description

Lakefront Multi-Use "Free Space"

Program Requirements

a. Open turf areas (informal games/ recreation)

b. Pathway system

c. Graphics

d. Water availability

e. Walkway/bikeway connections to Canal Park, Park Point, Arena Auditorium and Westerly

Program Description

Visitor Parking Space

Program Requirements

a. Graphics/identification/direction

b. Multiple-use accomodations (auto/bus/ camper)

c. Handicap parking spaces

d. Planting improvements

e. Bike rack space

F. Entrance Connections

Program Description

Superior Street Connections

a. Pedestrian/bike access/entrance from city center to Lake Place, lakeshore, Park Point, Canal Park and Arena complex

b. Physical and visual (viewing) connection to city center

c. Provide visual identity and awareness of interesting street scene and street connections to Lake Place and destinations

d. Control/contact space (see H. Administration/Management)

e. Display public information

f. Introduce lakeshore image for Urban Duluth area, providing visitor orientation.

Program Requirements

a. Safe walkway/bikeway/handicap access physical conditions over freeway facility, railroad and Michigan Street (special slip-free surfaces)

b. Handicap provisions

c. Planting improvements

d. Entrance area lighting

e. Graphics/directory information

f. Street furnishings (seating, refuse, etc.)

g. Bike rack space

Program Description

Lakeshore/Lakefront Connections

a. Pedestrian and bike access from Lakeshore, Lakefront Use Zone to city center

b. Physical pedestrian and bike connections between downtown core area lakefront amenities and community-wide attractions (Park Point and Canal Park to Leif Ericson Park, historic district, Arena complex, city center, etc.)

c. Linear interpretative spaces

d. Viewing spaces

Program Requirements

a. Safe walkway, bikeway, handicap rampway physical connections from lakeshore/lakefront zone onto Lake Place road protection facility (special slip-free surfaces)

b. Landing areas with viewing/standing opportunities

c. Safety lighting

d. Graphics/directory information

e. Historic interpretation and features (mural, linear interest features)

f. Safe, flexible seating opportunities (landings)

G. Major Public Information Space

Program Description

a. Outdoor public information

b. Short-and long-term display uses

(coordinate with Multiple-Use Spaces)

c. Major entrance space (entrance to Lake Superior and city center)

Program Requirements

a. Public address system

b. Public service announcement facilities

c. Event/activity/attraction announcement facilities

d. Flexible seating opportunities

e. Handicap provisions

f. Planting improvements

g. Area and special lighting

h. Graphics/information

i. Special area identification (area imagability/identity opportunities)

H. Administration/Management (Future by City of Duluth)

Program Description

Public Control/Contact Facility

(Immediate or future staffed office area for administration/management and programming)

a. Management office

b. Indoor public information

c. Indoor public conveniences

d. Rental programs

e. Maintenance facilities

Program Requirements

a. Rest room facilities

b. Emergency first aid facilities

c. Public telephone

d. Maintenance equipment/storage needs

e. Special events materials/equipment

f. Mechanical/electrical controls (irrigation, lighting, etc.)

g. Area lighting requirements

h. Graphics

i. Handicap provisions

j. Planting improvements

k. Bike rental facilities/bike rack space

l. Children stroller rental facilities

m. Water availability