Alameda County

Technical Report

East 14th Street / Mission Boulevard Master Plan

Prepared by

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In Association with

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Prepared for Alameda County Community Development Agency

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Preliminary Geotechnical Analysis – Harza Consulting Engineers

Preliminary Storm Drain System Analysis – Ruggeri – Jensen - Azar & Associates

Construction Staging and Phasing – Ruggeri – Jensen - Azar & Associates

Technical Report
East 14th Street / Mission Boulevard Master Plan

Existing Conditions - Opportunities & Constraints

General Description of Street Geometrics

The Master Plan is for the portion of East 14th Street/ Mission Boulevard between 150th Avenue to the north and Rufus Court to the south. This is an unincorporated area between the Cities of Hayward and San Leandro. However, within this project area between approximately Thrush Avenue and 150th Avenue, the entire street right-of-way has been incorporated by the City of San Leandro. However, those properties fronting the easterly side of the street in this area are part of the unincorporated Ashland community.

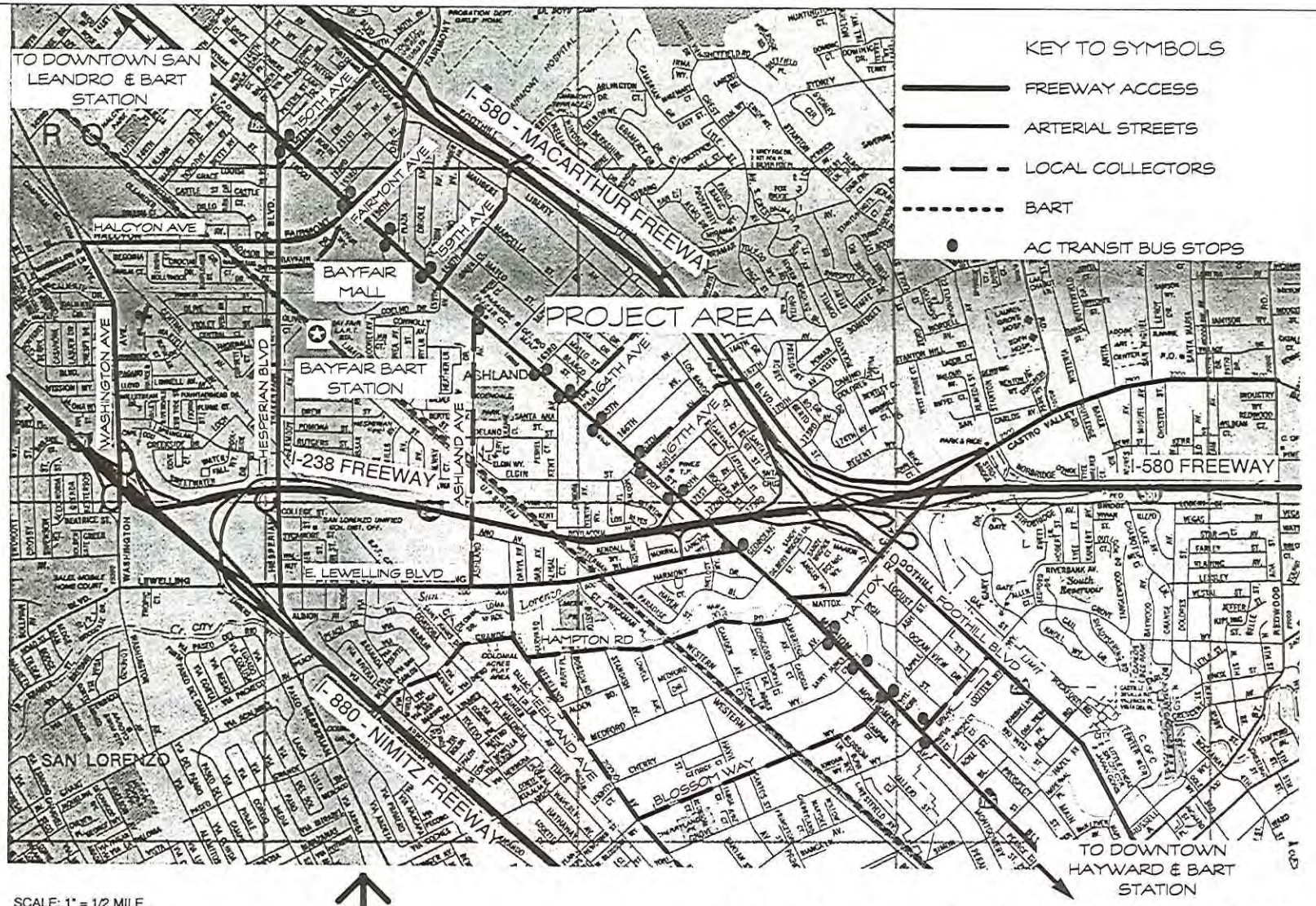
The street right-of-way for the entire length of East 14th Street/ Mission Boulevard is under CalTrans jurisdiction as a part of State Route 185. It is part of an approximately 35 mile long East Bay Highway corridor (including SR 123 and SR 185) through downtown Oakland between the cities of San Pablo and Fremont.

At the north end of the project area, East 14th Street is typically a 100' right-of-way with four travel lanes, left turn pockets, and on-street parking. The corridor typically has 8 to 10 foot sidewalks and includes a striped median. At the south end of the corridor, Mission Boulevard widens to a 110-foot right of way. In this area, the travel lanes and median are wider by a total of 10 feet.

There are a few areas where the right-of-way varies from the cross-sections described above. Within the city limits of Hayward, the right-of-way narrows and the four lanes are no longer separated by a median. In the vicinity of Bayfair Drive a free right turn lane provides for additional traffic capacity into the adjacent parking lots.

All Master Plan street concepts assume a design travel speed of 35 mile per hour. This speed limit for urbanized areas

A maximum speed limit of 35 mph permits greater flexibility in the street design.



CIRCULATION & DESTINATIONS

EAST 14TH STREET/ MISSION BOULEVARD

Amphion 2/25/99

permits greater flexibility for lane widths and sight distance considerations based on the Cal Trans Highway Design Standards.

Pedestrian Circulation Issues & Opportunities

Pedestrian circulation varies greatly along this auto-oriented corridor. The major pedestrian circulation volumes are related to transit service and to those commercial activities adjacent to transit stops and nearby schools. The existing corridor is not pedestrian friendly. The narrow sidewalks, wide asphalt streets, numerous paved parking areas and general lack of pedestrian amenities make it an unpleasant place to walk or shop. The Master Plan identifies opportunities to add pedestrian enhancements while also addressing other issues in the corridor. Curbed medians and widened sidewalk "bulb-outs" at intersections reduce the length of street crossing for pedestrians, as well as provide space for bus stops without restricting traffic flow. Street trees and other plantings enhance the appearance of the corridor, and make the overall space more "friendly" to a pedestrian. Unit pavers in sidewalk "bulb-outs" permit future access to the proposed underground utilities or vaults that does not result in a "patchy" concrete appearance due to repairs. Street furniture is selected that can withstand high use, but that will project a positive image for the merchant community and surrounding neighbors.

The Master Plan has the opportunity to add pedestrian enhancements while addressing other issues in the corridor

Traffic Circulation

Much of the major vehicular circulation for the surrounding communities relates to the regional freeway system (see map

- The MacArthur Freeway (I- 580) parallels East 14th Street/ Mission Boulevard approximately one-half mile to the northeast.
- I-238 physically connects I-580 and 1-880, separating the Ashland community from the Cherryland community. The 1-238 overcrossing also marks the point where East 14th Street continues south as Mission Boulevard.
- The Nimitz Freeway (I-880) parallels the corridor approximately one and one-half miles to the southwest.
- Direct freeway access to I-580 is provided from East 14th Street/ Mission Boulevard by 150th Street, Fairmont Drive, 159th Avenue, 162nd Avenue, 164th Avenue and Mattox Road.
- Direct access ramps to I-238 are provided from East 14th Street/ Mission Boulevard at 170th Avenue and

from E. Lewelling Boulevard one block west of Mission Boulevard.

- The major arterial streets include Hesperian Boulevard and E. Lewelling Boulevard. Major long-term widening improvements are planned for E. Lewelling Boulevard, but funding has not been secured to date. Projected traffic volumes do not justify the widening currently.

Local collector streets intersect the corridor, carrying traffic to the surrounding arterials and impacting adjacent neighborhood circulation.

- Hampton Road, on the west side of Mission Boulevard at the Mattox Road intersection, serves as a short cut from Foothill Boulevard to Meekland Avenue that connects to Hayward and I-880.
- A similar short-cut is provided by Grove Way (that connects Foothill Boulevard to Meekland Avenue).
- Blossom Way provides a connection between Mission Boulevard and Meekland Avenue, and further west to Hathaway Avenue and Santa Clara Street. Blossom Way and Grove Way both currently have major congestion problems (operating at Level of Service level D and F respectively) at their respective intersections with Mission Boulevard.
- Local traffic also uses the neighborhood streets of Marcella Street and Mateo Street as a shortcut to the I-580 freeway on-ramps. Streetscape improvements are currently being proposed on Marcella and Mateo Streets that are designed to reduce the impact of traffic on these neighborhoods.

Other important local streets include those roads that knit together the surrounding communities divided by BART, the Union Pacific railroad and freeways. Ashland Avenue is significant as one of the few streets that crosses under the I-238 Freeway, connecting the northeast and southeast sides of the Ashland community. Both 164th Avenue and 167th Avenue serve a similar function in that they cross under I-580. It is critical that the Master Plan design does not disrupt the traffic flows of these three local community connector streets.

Traffic Related Issues & Opportunities

Traffic related issues identified by the Master Plan are divided into five general areas:

1) control of left turns and U-turns (including left turn movements and stacking requirements),
2) traffic flow for peak hour traffic and "priority" bus service
3) on-street parking and loading zones;
4) driveways and access to private property, and

5) mitigation of volume related impacts created by "short-cut" traffic.

1. Left Turns & U-turns: In order to improve traffic progression along the corridor, the Master Plan recommends eliminating the many left hand turns that occur at unsignalized intersections. This will eliminate cross-traffic turns into the following eighteen local streets:

151st Ave.	166th Ave
152nd Ave	168th Ave
153rd Ave	171st Ave
155th Ave	172 Ave
156th Ave	Georgean St
Plaza Drive	Paradise Boulevard
Thrush St.	Gilbert St.
163rd Ave	St. James Court
Pajaro Court	Cherry Way

A new signal is recommended at Blossom Way. At the fifteen signalized intersections, left turn stacking lanes will be lengthened to provide adequate storage capacity, and U-turns will be allowed (unless there are traffic safety restrictions).

Improved traffic flow enhancements require eliminating left hand turns except at intersections with traffic signals.

U-turns will be accommodated similar to the turning conditions today. Most small and mid-sized passenger vehicles and light service vehicles (pick-up trucks) will be able to make the turning movements. Larger semi trucks still will not be able to make the maneuver.

It is important that restriction on left turns not further separate the east and west sides of the Ashland community. An overall review of the neighborhood circulation is needed prior to final median design as each segment of East 14th Street/ Mission Boulevard is improved.

2. Priority Bus Service: AC Transit operates a high volume of buses in the corridor. Currently there is no priority given to buses operating on the corridor. The opportunity exists to improve bus operations in the corridor. The section on Transit Area Improvement provides a detailed discussion that recommends improvements including widened sidewalks at intersections called "bulb-outs, and "far-side" bus stops throughout the corridor (where feasible). These enhancements

street enhancements reinforce the concept of "priority" bus service

reinforce the concept of "priority" bus service. Future traffic improvements such as traffic signal interconnection, "bus only" lanes during commute hours and leading green lights for bus priority could further enhance bus service on the East 14th/ Mission Boulevard corridor.

3. On-Street Parking & Loading Zones: Typically, on-street parking is available for the small commercial establishments along East 14th Street/ Mission Boulevard. Many of these establishments have additional off-street parking, accessible from driveways, nearby side streets and alleyways. Shopping centers along the corridor, (including regional Bayfair Mall, local service Creekside Center, and many small convenience stores) typically have private parking lots located in front of the retail stores, adjacent to the street right-of-way. East 14th Street/ Mission Boulevard also includes many automobile dealers (both new and used cars) with show lots adjacent to the street right-of-way.

There are two primary issues and opportunities related to parking and loading: patron parking/ store front visibility, and truck parking.

- Patron parking and visibility

The preferred option recognizes that patron parking and storefront visibility is crucial to the economic viability of many of the small businesses in the corridor. The enhanced street section locates large trees in positions that preserve the visibility of store signs. Widened sidewalk "bulb-outs" at intersections create protected parking "bays" that enhance on-street parking. These widened sidewalk areas also allow for the location of bus stops and waiting bus riders away from storefront windows and entrances.

Locate large trees in positions that preserve the visibility of store signs.

- Truck Parking

Private truck owners currently park truck-trailers overnight along East 14th Street/ Mission Boulevard. These rigs block adjacent storefronts and reduce the available on-street parking. Physical improvements to eliminate potential truck parking areas would also reduce on-street parking. Therefore, a political and enforcement approach should be used to address this issue. New ordinances should be developed to eliminate "on-street" truck parking except for deliveries and loading. Further, enforcement strategies and signage in the corridor need to be included in the development of the ordinance.

4. Driveways and access to private property: The corridor has many private driveways that cross the sidewalk providing

access to adjacent parking lots, private businesses and homes. These driveways are potential conflict points between automobiles/ trucks and pedestrians or buses. However, most of these driveways provide the only access to the adjacent property and cannot be eliminated. Where alternative access is available, the master plan recommends that driveways be eliminated in order to accommodate bus stop loading zones. In some locations, buses will have to block driveways temporarily during their passenger loading. Any future curb cuts or driveways should be limited in number and located away from curb returns to minimize their impact on bus loading and pedestrian circulation.

Buses will block driveways temporarily during passenger loading.

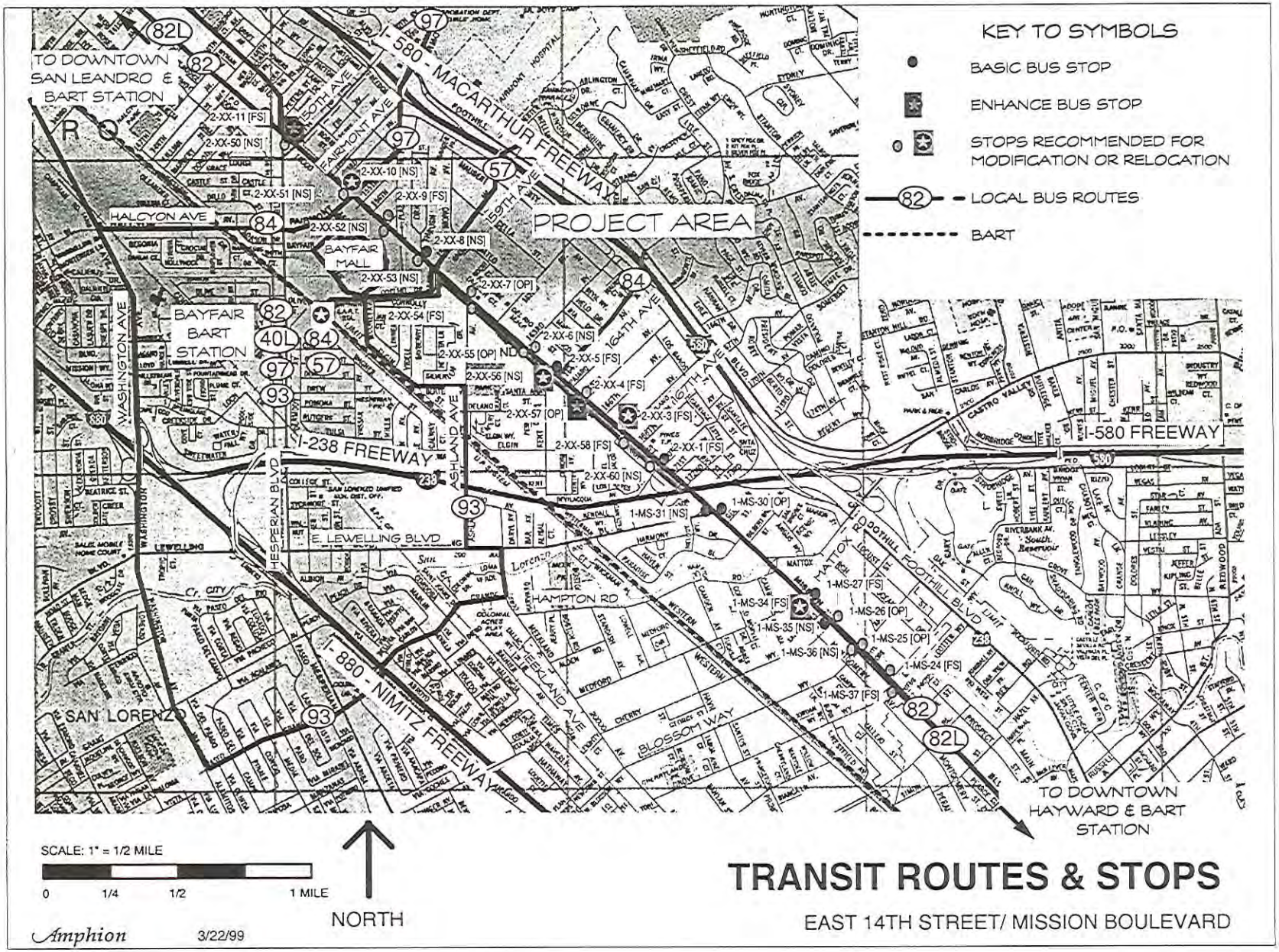
5. Traffic Improvements: There are several locations where the Master Plan includes improvements designed to reduce the impact of traffic on pedestrian movement. Traffic related improvements include:

- Ashland Avenue: The Master Plan explores two options for realigning the 45° angle of the intersection at East 14th Street to make it a more efficient and safer intersection. Both options require acquisition of adjacent property to create a 90° intersection.
- Bayfair Drive: The Master Plan proposes relocating the bus stop to a better operational location and creating a landscape/ entry area.
- Kent Avenue: the Master Plan proposes elimination of the "pork chop" traffic island and dead end street to create a public space for the adjacent neighborhood.

There are several intersections where traffic related design changes go beyond the scope of the Master Plan. The Mission Boulevard/ Hampton Road, Blossom Way and Grove Way intersections will need to be studied further during the final design.

Public Transit

East 14th Street/ Mission Boulevard is served by both AC Transit (Alameda Contra Costa County Transit) and BART (the Bay Area Rapid Transit/ fixed rail train) at the Bayfair BART Station. (See map) AC Transit Routes 82 and 82L (limited stops) connect the corridor to downtown Oakland and the Hayward BART station located to the south. It provides continuous 24 hour service with 12 minute headways during the peak hour. There are fifteen paired stops along the corridor that serve south and north bound buses. The stops are located



TRANSIT ROUTES & STOPS

EAST 14TH STREET/ MISSION BOULEVARD

as close to the intersections as possible to reduce the potential for "jaywalking." Additional bus service (routes numbers 57, 84 and 97) crosses East 14th St. with service to the Bayfair BART Station from surrounding neighborhoods.

AC Transit also has examined the future transit potential of the corridor. One of the several alternatives under continued consideration by AC Transit is the feasibility of light rail transit (LRT) along the corridor. The Master Plan considers several LRT options and the preferred cross-section accommodates future LRT. However, in the short-term LRT is not included and streetscape design improvements will be made to serve existing bus service. These improvements could include a "priority-bus" concept (limited stops/ high frequency) with priority travel lanes, fare cards, cueing devices etc. Proposed bus stop improvement options are also identified in the Transit Area Improvements section of this report.

Bike Routes

Alameda County Public Works Agency has developed a Bikeway Master Plan that is under review. Bicycle access along East 14th Street/ Mission Boulevard currently mixed with vehicular traffic with no special facilities, trails or signs. A striped bike lane (class II) is provided along Hesperian Boulevard. Future bike lanes and routes are proposed along East Lewelling, Hampton Road, Elgin Street, 167th Avenue, along San Lorenzo Creek and under the BART tracks along the Union Pacific Rail line. The Master Plan proposes accommodating bikes with a bicycle commuter oriented class III route (signed) along its entire length. However, due to the volumes of traffic, alternate alignments offer safer routes for children or recreational cyclists and striped bike lanes will not be included as a part of the East 14th Street Mission Boulevard Improvements.

Provide a Class III bike route (signed) oriented toward commuters.

Adjacent Land Uses

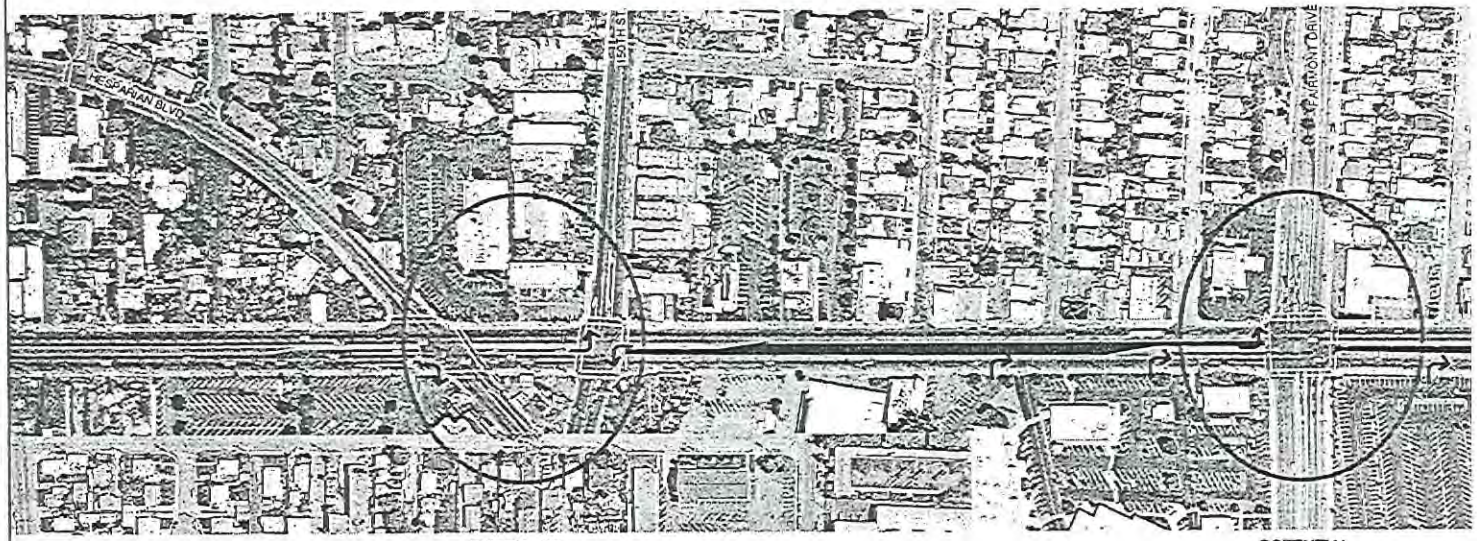
Many of the businesses along the East 14th Street/ Mission Boulevard corridor cater directly to automobile and truck traffic as is typical of highway corridors. These include auto and truck parts, auto service, used and new car dealerships, storage/ warehouse facilities, wholesale distribution, restaurants, food stands, and trailer courts. A number of retail services exist that support the surrounding residential community including groceries, pharmacies, hardware stores, appliance repair and sales, video rental, flower shops, barber and beauty services, and realty, insurance and tax preparation offices. Bayfair Mall, a regional shopping mall, is located at the north end of the corridor. Large apartment complexes are located throughout the Ashland neighborhoods. The neighborhood commercial Creekside shopping center is located at the south end of the Master Plan corridor.

The ACBD Specific Plan identifies three business district sub-areas along the corridor: Bayfair, Ashland Avenues and Cherryland Creekside.[1] These business districts differ sufficiently in terms of their physical character to offer opportunities for reinforcing those distinctions in streetscape design. A fourth identified business district, West Eden, is called out as having a distinct development character that is influenced by direct free access. However this market character does not significantly set it apart visually from the other districts.

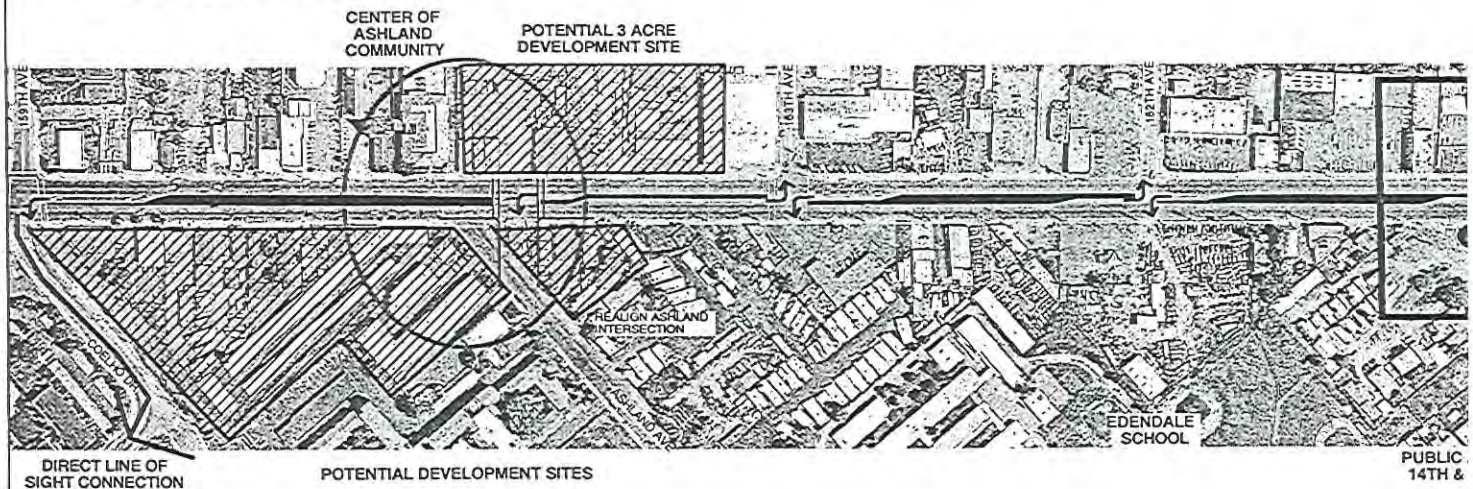
The Master Plan needs to recognize opportunities for physical improvements to support economic revitalization

The Bayfair District at the north end of the corridor includes those properties between 150th and 159th Avenues. The market force is Bayfair Mall. Land uses are almost exclusively commercial with both fast food and table service restaurants, a florist, realty offices, auto and motorbike parts and services, trucking business.. New development including a multi-plex cinema at Bayfair Mall, and transit access improvements between adjacent neighborhoods, commercial and residential arterials, BART and Bayfair mall are in the planning stage. Most business patrons arrive by automobiles; with easy freeway connections to the larger region. However, the opportunity exists to promote pedestrian movement from BART to Bayfair Mall and surrounding commercial areas if

[1] Excerpts from Section 3.0 Land Use Element. "Ashland Cherryland Business District Specific Plan." Adopted June 1, 1997. Alameda County Planning Department.

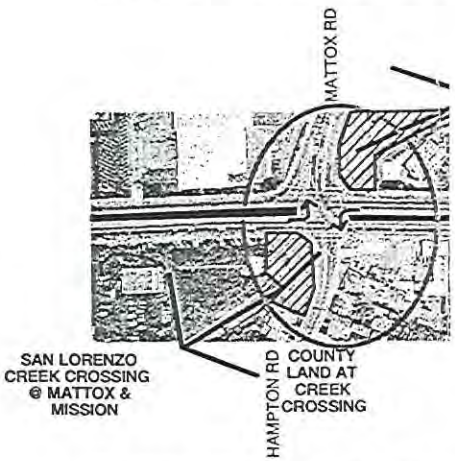


BAYFAIR DISTRICT



ASHLAND DISTRICT

I-238 FREEWAY OVERPA



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OPPORTUNITIES & CONSTRAINTS

EAST 14TH ST / MISSION BLVD

streetscape enhancements are made that create a more inviting pedestrian environment.

Opportunities for physical improvements to support economic revitalization in this area include:

- Protecting and enhancing on street parking.
- Improving the appearance of businesses and public areas.
- Continuing to emphasize automobile access and the regional marketing focus already established by Bayfair Mall.
- Encourage patrons to move throughout the district with pedestrian scale features, as well as improved direct and line-of-sight access to Bayfair BART Station along Coelho Drive.

The Ashland Avenues Business District is located between 159th Avenue and 167th Avenue. This is the only portion of East 14th Street where there are through intersections that allow access to adjacent residential areas on both the east and west sides of the street. Vehicle access should be maintained through the intersections at 159th Ave, 164th Avenue/ Kent Avenue, and 167th Avenue/ Elgin Street. The intersection of 164th Avenue/ Kent Avenue has been realigned creating turn lanes that provide access to adjacent driveways and two isolated traffic islands. Traffic patterns also create the opportunity to create a gateway statement at 167th Avenue/ Elgin Street.

This district contains the largest number of vacant or underutilized properties within the plan area. Successful businesses include small and medium sized food markets, auto service and parts shops. Convenient access and low rents are likely the two primary factors for the current viability of businesses. Residential uses include multi family housing and several mobile home parks located behind street front commercial uses. Automobile service uses are scattered throughout the district.

Opportunities for physical improvements to support economic revitalization in this area include:

- Public plaza improvements at 164th/ Kent Avenue.
- Guidelines for improvements incorporating privately owned store facade treatments on the corner at 167th Avenue/ Elgin Avenue to provide a gateway to the area.
- Special corner area landscaping and improvements providing amenities to enhance AC Transit stops at or near 159th and 167th Avenues.
- Options for Ashland Avenue such as realignment of the intersection with East 14th Street, public plazas/ entry to future development sites or an extension

east to Mateo Street as a part of the redevelopment of Ashland Center.

The I-238 Freeway Overpass District is made up of the portions of East 14th Street/ Mission Boulevard that are directly accessible to the adjacent I-238 freeway. The major influence of the overpass is from 167th Avenue to Mattox Road. From a community standpoint, this area is either a part of the Ashland or the Cherryland neighborhood. The construction of the I-238 freeway and more recent widening to accommodate the BART extension to Pleasanton has resulted in the loss of several properties fronting East 14th Street/ Mission Boulevard and a new BART service yard south of the freeway. Future conceptual improvement plans include a new fly-over ramp connection to I-580 and additional east and west bound truck lanes with the abandonment of the existing access ramps and a partial diamond interchange with new slip ramp access from East 14th Street/ Mission Boulevard. These modifications would restrict direct freeway access to the area from several directions. Other options may also come forward before the interchange is funded and implemented.

Commercial uses not atypical of the corridor include used car dealers, gasoline stations, and a future mini-storage area. East of the commercial properties on Mission Boulevard is a small neighborhood of well-maintained, single-family and duplex houses on Georgean and Gilbert Streets. To the south and west are the Cherryland neighborhoods with a mix of single family houses and small apartments with an internal street network.

Opportunities for physical improvements to support economic revitalization in this area include:

- Development of public areas and streetscape improvements at the I-238/ Mission Boulevard over-crossing to create a gateway area visible to both freeway and local traffic.

The Cherryland Creekside Business District is the southern most portion of the corridor to the Hayward city limits. There is more visual cohesion in this area than in other districts. Creekside Center on the east side of Mission Boulevard near Mattox Road is a 1960's period neighborhood shopping center that defines the commercial character of the area. Landmark Villa, a 1970s senior citizens residential development is directly adjacent on the south side. Other large commercial uses include a motel, offices, auto parts and service shops. Many of the single family residential properties have been converted to small businesses such as restaurants, flower sales, jewelry stores, barber and beauty shops, coin-operated laundries, palm reading, and offices for real estate agents and tax-

preparation consultants. There are several vacant, boarded-up buildings and a few vacant lots.

Opportunities for physical improvements to support economic revitalization in this area include:

- Development of public areas at Mattox and Hampton to recognize the San Lorenzo Creek Crossing and the nationally designated historic Juan Bautista deAnza trail which will potentially making the creek and trail visible from Mission Boulevard.
- Identification of options for traffic calming improvements to cross streets for protection of adjacent neighborhoods at Hampton Way, Cherry Way and Grove Way.
- Identification of options to retain the existing historic bridge at Grove Way and accommodate traffic through the community.
- Develop treatment options for the street cross-section as it enters Hayward to serve as a gateway to the corridor.

Future Development in the Corridor

Improvements for future development on adjacent private lands must reinforce the Master Plan design principles. Many of the recently proposed projects are auto oriented, such as fast food, gas stations and convenience shopping. Many of these new developments follow a suburban retail model with isolated buildings are set to the back of the parcel, with parking and narrow strips of non-functional landscape providing a buffer from the street. While these represent viable economic investments that should be encouraged, they can negatively impact adjacent residential neighborhoods and pedestrians.

Future development on adjacent private lands needs to support the Master Plan design principles

It is critical that several guiding principles be considered in designing adjacent street frontage conditions.

- Integrate the new development into context of the larger neighborhood. On most development sites there are opportunities to provide community gateways, pedestrian by-passes to BART or other Transit stops, plazas or other open spaces that can support not only the individual development but also improve the overall image of the community.
- Locate buildings adjacent to the street front to support a continuous façade line of structures. Utilize on-street parking, with off-street parking

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- Locate buildings adjacent to the street front to support a continuous façade line of structures. Utilize on-street parking, with off-street parking

located behind, at the sides or within new development.

- Consolidate driveways and access points and locate them so as not to conflict with bus stops, pedestrian flows or corridor street tree plantings.
- Accommodate bus stops and waiting patrons in the overall new development site plan.
- Incorporate into required landscape buffers functional aspects that account for pedestrian movement and waiting bus patrons.
- Provide pedestrian amenities at the street frontage that are integrated into the entire development.

Master Plan Elements in Detail

Existing Trees

The existing corridor has few only a few areas with street trees. The City of San Leandro has planted London Plane Trees (Platanus acerifolia) on both sides of the street from Bayfair Drive north. The only other significant trees within the public right-of-way on the corridor are mature Magnolia trees (Magnolia grandiflora) along the Creekside Center frontage. These trees were planted in very small tree wells and consequently have been lifting the adjacent sidewalk. However they are significant trees and should be protected. A new walkway with larger tree wells should be installed in the area and root pruning done under the direction of an arborist.

New Plantings

The proposed planting spaces along E. 14th Street/ Mission Boulevard offers the opportunity to use a varied palette of plant materials while still creating a unified corridor. The final planting design should consider seasonal interest of blossom color, fragrance, leaf color as well as the design features of size, form, and texture. Horticultural requirements and general fitness are a critical factor that should overlay all the decisions made regarding plant materials. Final planting placement will be determined not only by existing underground utilities and other structures, but also by traffic safety considerations.

All final landscape plans within the public right-of-way are subject to CalTrans approval. The following overall planting concept and secondary supporting concept shall be followed:

1) The strong green consistent canopied boulevard shall be the primary visual image along the corridor. This image shall be strong and evident to pedestrians, transit riders and drivers moving along the corridor.

2) At intersections, along medians and at identified "special places" plantings should relate to the surrounding neighborhoods providing a more intricate level of detail and interest compatible to pedestrians and transit patrons.

Trees

Street Trees

The almost three miles of street trees will form a strong green canopied boulevard image. The following specific criteria will be used in the final selection and placement of street trees along the corridor:

- A final selection of no more than three species should be used along both sides of the Corridor.

- If more than one species is selected, they should not be mixed randomly, but rather used in definitive geographic districts to create strong identities.

- Street trees shall have a high branching pattern (for store front visibility and bus clearance). Trees should begin branching at a minimum of 10 feet when first installed and ultimately be pruned up to a minimum of 14 feet above street level.

- Trees shall be large scale (wide spreading for an appropriate sense of scale), with well behaved roots, generally tolerant of urban conditions such as pollution, drought and heat reflected from pavement, and disease resistant.

- The recommended tree is a London Plane Tree. This is a large scale, deciduous tree that meets the criteria listed above.

- Alternative selections include: Chinese hackberry, red maple, Raywood ash, or Zelkova.

- Street trees shall be planted in the outer sidewalk area covered with unit pavers on sand. This technique allows trees roots to extend laterally along the street with a healthier amount of root growing zone. A decomposed granite mulch (sand texture) will be used at the top of the planting pit to provide a stable walking surface. This will prevent trash from collecting in tree pits and eliminate the need for tree grates. Unit pavers can be removed as the tree grows in width.

- Street trees shall be spaced approximately 35' on center. This module will accommodate parking stalls without conflict and provide an appropriate spacing for continuous canopy along the street. Placement of trees should not block signage for adjacent businesses.

Median & Accent Trees at Intersection "Bulb-outs"

The central median and planting areas at the intersection 'bulb-outs" help create district identities, as well as add to the overall image of a green canopied boulevard. In addition to the considerations mentioned above for street trees, the following should be included in the final selection and placement of trees in the median and at intersection bulb-outs:

- In areas where the trees are set back a minimum of five feet from the curb, broader spreading specimens, with lower branch patterns can be used to define spaces and provide rich visual interest. Placement of trees should not block signage for adjacent businesses.

- Selecting a variety of trees for various segments of the median and special intersections can reinforce the identity of the surrounding community.

Skyline Trees

At selected areas associated with gateways (such as medians, intersection bulb-outs or adjacent landscape zones including the I-238 overpass area), trees should be selected that have distinctive forms that are visible from a distance on the "skyline." These trees should be visible from the freeway and neighboring areas to help mark the importance of East 14th Street and Mission Boulevard. Typical skyline trees include: palms, redwoods and poplars. Their placement should be in reinforced groupings of either pairs or rows.

Accent Tree

At intimate, people-oriented spaces set back from the street, the tree selection should include smaller scale trees with seasonal fragrance, flower or leaf color. These might include: flowering cherry, Japanese maples, redbuds, crape myrtles and other favorites that grow well in an urban environment.

Shrubs and Vines

Shrubs and vines will be used in limited areas such as the proposed public spaces at Kent Avenue, Elgin Avenue and the San Lorenzo Creek area. Shrubs and vines provide the opportunity to help define special places and provide a greater human scale level of detail to the long corridor. The potential palette could be very rich, and help reinforce the identity of the surrounding community. A short list of potential shrubs and vines has been developed as a starting point for final design selection (See Appendix).

Final location of shrubs or vines plants shall include:

- Increase planting palette to include a rich selection of shrubs with blossom, fragrance, leaf color or other seasonal interest in the areas closest to residences.
- Locate shrub masses so they do not conflict with traffic sight-lines or create blind areas where drivers cannot see children crossing the street.
- Select low growing shrubs, less than 3 feet, to help increase security and visibility by reducing potential hiding places.
- Utilize vines where there are small planting spaces adjacent to vertical structures, such as the freeway overpass structures or fences that limit the likelihood of tree or shrub survival.

- Incorporate trellis or other support structures planted with vines to create pedestrian gateways or special features.

Groundcovers and Low Shrubs

The majority of the landscaped median area will include some type of ground covering. Both live plant materials and inert materials should be utilized. Inert materials may include decomposed granite, mulch, or natural duff such as redwood or oak leaves. All planted medians should be contained by a minimum of 12" wide concrete maintenance band behind the curb to provide a safer working environment for maintenance personnel.

The final selection and location of ground covers and low shrubs shall include:

- Choose plants that are well suited to the area, vigorously spreading, drought tolerant and low maintenance. The use of species with seasonal color is recommended.

- Provide low growing species adjacent to intersections and other traffic areas to maintain sightlines.

- Avoid species with thorns or branching patterns that collect and hold blowing trash.

Irrigation and Other Planting Appurtenances

The landscape areas within the corridor will include state-of-the-art, automated irrigation systems. Plant material will be selected and grouped to have similar irrigation needs.
The system will be designed and installed to meet the highest industry standards for water distribution and water conservation. The guidelines focus on an irrigation system that uses spray heads and bubblers. Over the years, experience has found that due to vandalism and limited staffing, drip irrigation systems have not provided plants with the water needed for a healthy landscape. The system needs to be designed to the most current applicable codes and water conservation techniques, using vandal resistant equipment and irrigation heads suited to the plant areas to reduce overspray onto the adjacent pavements. The specific equipment should be confirmed with County public works prior to preparation of final construction documents.

Trees will be planted using two tree stakes to reduce vandalism. All planting areas will be mulched with a material such as fir bark to reduce weed growth and conserve water. Median islands less than four feet wide will be either paved with concrete or unit pavers. The final selection of material will be based on the treatment at the intersection with input from surrounding merchants and community members.

Street Lighting

The Alameda County Public Works Agency maintains jurisdiction over street lighting in and adjacent to the East 14th Street/ Mission Boulevard corridor as a part of County Service Area SL-1970-1. Current funding is through service charges levied by the County Service Area. The existing street lighting provides inadequate light levels in some locations. For Master Plan purposes the Illuminating Engineering Society (IES) standard of commercial streetlight levels are proposed with an average of 1.58 foot candles and a 3:1 uniformity ratio.

The Master Plan recommends lighting improvements with a introduction of fixtures with "white light." An enhanced traditional "cobra head" fixture would provide the primary street lighting. The proposed fixture is a traditional cobra head on a curved horizontal support arm, mounted on a smooth painted pole. Pedestrian scale accent lighting on separate poles will augment this overall level of light in special areas. A unified treatment of additional specialty lighting, such as for automobile sales lots, is also recommended. The final selection of pedestrian fixtures is recommended as part of the special projects, once funding for lighting enhancements is procured.

Sidewalk & Crosswalk Treatment

The existing concrete sidewalks along the length of the corridor vary from 6 to 10 feet in width. In most locations they are in serviceable, though aesthetically in plain condition. Near the Creekside Center, the adjacent Magnolia tree roots have lifted the sidewalk creating hazardous situations. There are also areas where no paved sidewalk exists or where the existing sidewalk does not provide pedestrian access that meets the requirements of the Americans with Disabilities Act (ADA).

The Master Plan recommends widening the sidewalks by three feet to create 13 foot wide walks through throughout the corridor. Where the recommended width of the sidewalk cannot be achieved, a 10-foot width is an acceptable minimum. The sidewalks will include standard concrete paving adjacent to the stores and unit pavers on sand in the extension areas of the new sidewalk. Concrete unit pavers will also be used in the "bulb-outs" at the intersections and at bus stops. The concrete unit pavers provide a firm walking surface that meets ADA requirements. They are installed so vandals cannot remove them. The advantages are that they provide a superior growth zone for street trees; allowing tree roots better access to air and water. The pavers also are easy to replace if any underground repair work is needed.

At intersections the sidewalk is expanded to a width of 19 feet for a minimum length of 65 feet. This "bulb-out" provides for an easier pedestrian crossing by narrowing the street width. In addition, accessible curb ramps are provided at each crosswalk to comply with the Americans with Disabilities Act (ADA). Crosswalks are striped on the asphalt street pavement to provide a safe pedestrian crossing. [A further enhancement at Special Project Areas with high pedestrian use could include enriched colored concrete paving in the intersection and crosswalk. See the **Special Project Areas** section of this Technical Report.]

The Master Plan recommendation of widening sidewalks has two major implications that need to be resolved on a case by case basis to respond to field conditions as the plan is implemented.

1. Street Drainage: The existing cross-section is sloped so the paved street and sidewalk toward catch basins located along the curb and gutter. As the sidewalk is extended, the drainage at the curb will need to be resolved. Several viable options exist depending on the existing condition of the street and adjacent grades:
   - ❖ Where the existing pavement condition already requires replacement: Option 1 is to rebuild the street section with relocated storm drain system at the new low point at the beginning of the "bulb-out". This is the most costly solution, but provides the best end result
   - ❖ Where overlay pavement is required due to the condition of the street: Option 2 is to increase the cross slope by grinding the asphalt of the street and relocating the storm drain catch-basin at the curb. This is less costly since it does not require a replacement of the pavement section.
   - ❖ Where the other solutions are not viable: Option 3 is to "back-slope" the extension of the sidewalk (slope the extension back toward the existing sidewalk). Slot drains and curb inlet drains would need to be installed to pick up storm drainage. This is the least desirable solution from a storm water management stand-point.
2. Bus lift operation/ Sidewalk cross slopes: The second major design implication that will need to be resolved on a case by case basis is maintenance of acceptable cross slopes to meet ADA guidelines and to ensure the proper operation of kneeling buses and buses with extending handicap lifts. The recommended maximum cross slope for the sidewalk is 2%. In some cases the existing stops do not meet the maximum cross slopes or ADA guidelines. The existing bus stops with the highest transit use (based on "boarding/ alighting" counts and community input) should be evaluated first for improvement. The cost of improvements to bring a

single stop up to ADA guidelines must be evaluated in light of repairs to nearby stops and the overall corridor transit service. In some cases it may be fiscally prudent to relocate a stop if the grades cannot be easily modified to meet ADA guidelines.

Site Furniture

Street furniture includes such elements as benches, trash receptacles, bollards, banners and signage that can create a strong sense of place, and communicate the caring attitude of the surrounding community. Residents and merchants should be encouraged to participate in the selection and maintenance of these amenities.

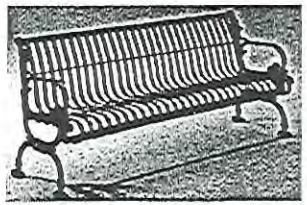
Throughout the corridor's length, special places have been identified as locations to receive an improvements including site amenities. These tend to be important community places such as gateways and places where people naturally gather. The final selection of these furnishings should relate to the surrounding areas and use. It also is important to develop a continuity of design image throughout the corridor.

To reach this balance between a consistent design theme and variation, a street furniture family has been developed. Within this family there is room for variation as identified below. Colors should be predominantly a rich palette of strong colors such as red, green, blue, white and black. Earth tone colors in the green and brown ranges are used for service elements, where the desire is to have them fade into the background. Materials for the street furniture must be durable, graffiti resistant and easily maintained. Vandal resistant features are incorporated with easy to clean surfaces and locking bolts.

- Benches: The strap metal bench with arms and contoured back is very vandal resistant. It is available with a durable, factory applied polyester powder finish that comes in a wide range of colors. The bench should be bolted to the pavement. If the selected bench is longer than 4'0", a central arm can discourage people from lying down.

- Trash Receptacle: Precast concrete allows for distinctive decorative patterns and colors that can be adapted to the districts or special places. A stainless steel lid can provide a finished top and reduce the garbage overflow.

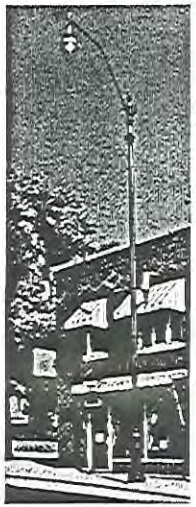
- Banners: Banners offer an ideal element that provides unified feature (same size and mounting) and yet recognize individual place. They should be incorporated with light poles in special areas where they can reinforce the surrounding neighborhood character. Banners will typically be focused in a central area with a minimum of twelve banners. Avoid over



Bench
Keystone Ridge Designs
Lamplighter Series

Trash Receptacle
Wausau Tile
Senora Series

Lighted Bollard
Spring City Electrical
Washington Tampa Style



Street Light
Lumec Thomas Lighting
Joliet Series

Pedestrian Light
Lumec Thomas Lighting
Joliet Series

Banner
Custom Design
Metal

Bus Shelter
Daytech

East 14th St./ Mission Boulevard Furniture Family

using these colorful street elements or they lose their uniqueness and result in visual chaos.

- Public Signage: Signage offers another ideal element that provides unified design theme by using same size and mounting style. They also can recognize individual areas by using unique typeface, colors or logos. A minimum of two types of public signs should be used in the corridor: signs for automobile drivers to provide information and orient them to the corridor; and more detailed pedestrian signs. Signs should provide both directional information (such as street names and store locations), and a community image (logo designs related to the surrounding neighborhoods).

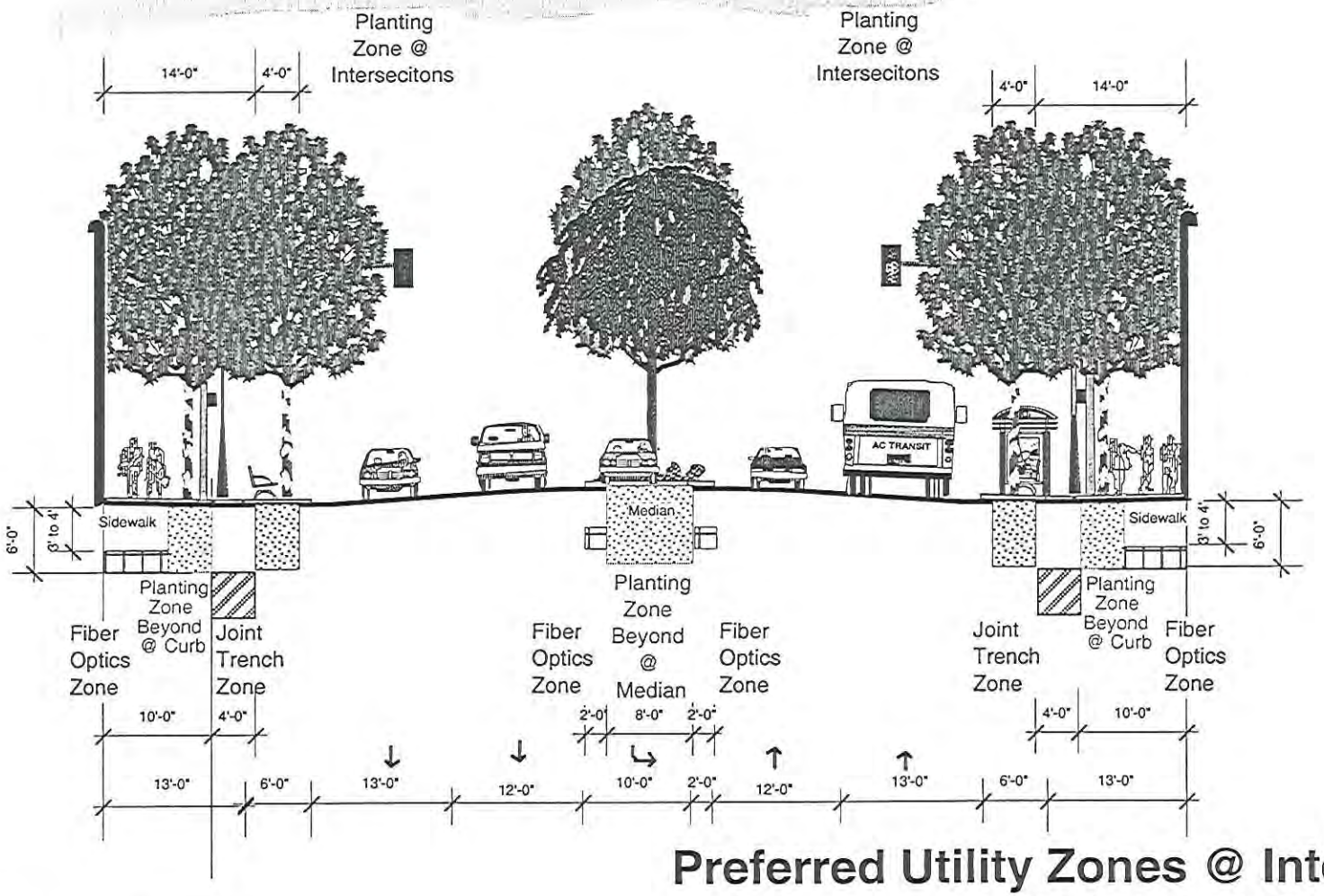
- Bollards: Metal bollards should be used to alert drivers to areas where general vehicles are restricted; but where pedestrians or emergency vehicles are provided access. Bollards may include removable/ lock features to permit emergency access as required by site conditions. Lighting can be incorporated into the top of the bollard behind vandal resistant lenses.

Utility Zones

Five utility companies provide the existing services on East 14th Street/ Mission Boulevard. Utility lines do not hold consistent positions throughout the corridor. Three primary zones of existing utilities include the center of the street, sidewalks on the east and west side, and parking lanes on the east and west sides. Utility crossings typically occur near cross streets, though mid-block storm drainage crossings can be found throughout the corridor. Overhead utility lines that carry electrical and communications services visually dominate the corridor. The "wet utilities" in the corridor include storm drainage, water and sanitary drains.

Recently, fiber optics communications have been proposed for the corridor installed by private contractors. Preferred zones have been identified for new communication infrastructure at the curb edges of the proposed median, and under the outer portions of the sidewalks on the east and west sides of the corridor.

- Pacific Gas and Electric (PG&E) provides both natural gas and electric power. Electric lines currently visually dominate the corridor with overhead wires supported by wooden poles. These poles also serve to support street lights and communication lines. As a part of the Master Plan, the County, in conjunction with the utility providers, has identified the corridor as a underground utility districts to underground electric and communication lines. Joint trenches located in the



Preferred Utility Zones @ Intersection

TYPICAL 100' SECTION

EAST 14TH STREET/ MISSION BOULEVARD

0 10 30

Amphion 5/11/99

parking lanes with access/ equipment vaults located in the sidewalk areas are proposed for all of these utilities.

- Flood protection and storm drains are provided by the Alameda County Flood Control, Water Conservation District and Caltrans. The present system is built to various design standards. While there is spot flooding at certain locations, the overall system was considered by the Specific Plan to meet current drainage design criteria of the agencies. See the Preliminary Storm Drainage System Analysis (under separate binding).

  Storm drains are typically located on both the east and west sides of the street near the present curb lines. Four box culverts cross under the street at various locations carrying creek flows. South of Plaza Drive, two box culverts are located side by side to carry the daylighted portion of Line A below East 14th Street. The third culvert is located north of Thrush Avenue (Line A-8). The fourth large box culvert (Line B) carries San Lorenzo Creek diagonally across the intersection of Mission Boulevard at Hampton Way and Mattox Road.

- Sanitary Sewer service is provided by the Oro Loma Sanitary District. Sanitary sewer lines are at a typical depth of 4 to 10 feet below grade. The lines are typically located at the back of the sidewalk. However, north of 165th Street, the line is also located in the median.

  The Livermore Amador Valley Water Management Agency (LAVWMA) is planning a new sewer pipeline from the Livermore/ Amador Valley to their Bayside treatment facility. The preliminary design proposes the pipeline will pass through the corridor on Mission Boulevard between Mattox and Lewelling Boulevard.

- East Bay Municipal Utility Department provides water service. Water lines are located on both sides of the street either at the back of sidewalk or adjacent to the curb. North of Mattox Road, and between Grove and Blossom Way, it is also located in the median at typical depth from 3 to 7 feet below grade.

- Fire Protection is provided by Alameda County Fire Department with the closest station located on 164th Avenue approximately one block east of East 14th Street. Some of the existing hydrants are too small for the main and have not been upgraded when larger mains have been installed. The nationally recommended standard spacing of fire hydrants of 300 to 400 feet in commercial areas is exceeded in some locations. Currently there are no identified funding sources for new hydrants or replacing existing hydrants

when water mains are replaced. General funding for the fire department is provided through the state Special District Augmentation Fund and County property taxes. Fire hydrants to be installed/ upgraded with Master Plan improvements.

The Master Plan recommendations provide for required fire truck *access* ***(to be reviewed by the ALCO FIRE and recommendations incorporated into the plan).***

- Pacific Bell, a part of Pacific Telesis, provides local telephone service. Telephone lines are located in several positions using the same overhead support system as the street lighting. These lines will be relocated to the "joint trench" with the other proposed undergrounded utilities.

- Other private communication service providers include TCI cable which provide cable service and new fiber optic communications providers. (Viacom, a former provider, was recently bought by TCI.)

Transit Area Improvements

Bus Stop Locations

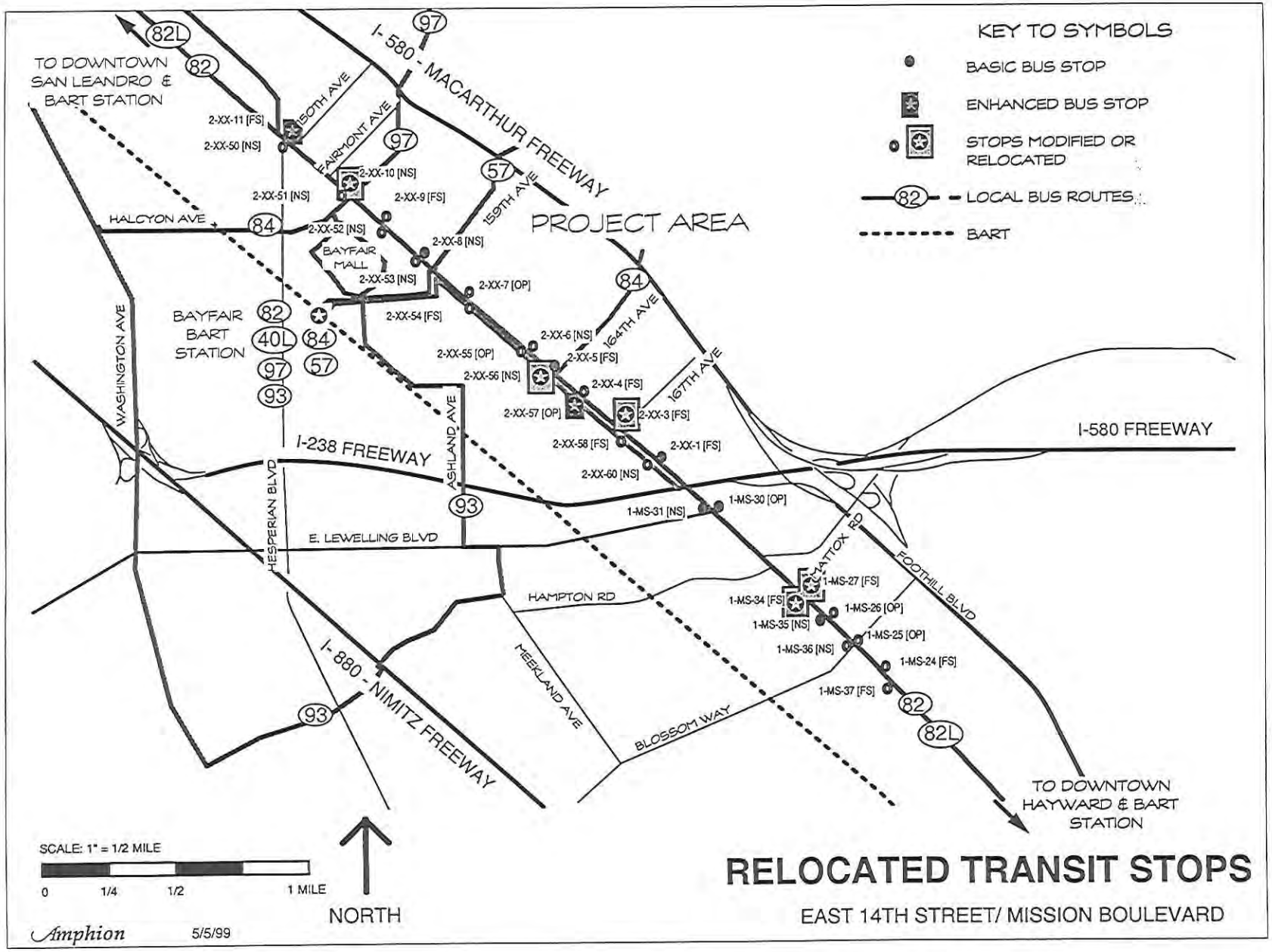
AC Transit bus stops are presently located near intersections with fifteen paired stops serving south and north bound buses. The existing stops are located as close to the intersection as possible to reduce the potential for "jaywalking." Operationally, it is best if stops are in the "far side" position, so that the bus stops after crossing the intersection. Currently, buses pull through the intersection into the "parking lane" adjacent to the sidewalk for loading and unloading. Due to conflicts with driveways and other vehicle circulation, some of the stops are located in the operationally less desirable "near side" position that requires a bus to stop prior to crossing through the intersection. When other vehicles are illegally parked in the red curb bus stop zone, the buses are forced to stop in the travel lane. Due to the existing narrow sidewalk widths, amenities at existing bus stops are minimal, including a bench and a flag sign indicating the stop. At the narrowest sidewalks, these minimal stops do not provide for the combination of safe patron waiting, pedestrian movement and access to adjacent shops.

The Master Plan addresses the three major safety and operational issues that impact transit operation on the corridor. These include:

- "far side" stop locations where feasible
- bus loading from outside travel lane
- wider sidewalks at bus stops to accommodate safe patron waiting and boarding

The preferred Master Plan option locates bus stops in the "far side" position adjacent to the expanded "bulb-out" sidewalk. The bulb-out is expanded to a minimum length of sixty-five feet to accommodate articulated buses. Buses will stop in the travel lane for loading and unloading.

Due to traffic patterns, physical space and driveways that access adjacent private property, it is not always possible to locate the bus stop in the preferred "far side" position. Stops are then located in the best position from a patron safety and operational standpoint.



RELOCATED TRANSIT STOPS

EAST 14TH STREET/ MISSION BOULEVARD

The Master Plan establishes intersection treatments including widened sidewalks called "bulb-outs" and "far-side" bus stops throughout the corridor (where feasible). These enhancements reinforce the concept of "priority" bus service, as well as providing a shorter crossing distance for pedestrians, and the opportunity to enhance the overall visual quality and patron amenities in the corridor. Future traffic improvements such as traffic signal interconnection and leading green lights for bus priority could further enhance bus service on the East 14th/ Mission Boulevard corridor.

Bus stop Amenities

A hierarchy of bus stop amenities is proposed by the Master Plan. The hierarchy is established by the number of patrons boarding and the number of transfers from other lines that occur at a particular stop. Transferring bus riders are likely to experience a longer wait at a bus stop than a patron coming from their home. Where AC Transit indicates high patron counts, the bus stop should receive an enhanced level of amenities. It is important that the transit riders, surrounding merchants and neighborhoods support the level of improvements at each location. Gaining this level on consensus will require site specific negotiations that also need to include a broader vision of transit service of the corridor.

Prior to the full implementation of the master plan, any stops in the corridor that are relocated should be brought to the minimum level of an interim stop. The majority of the bus stops, where there are few boardings and transfers, will be brought to a basic level of amenities. High access stops would be "enhanced" and relocated to the proposed intersection sidewalk "bulb-outs." As the transit improvements are funded for implementation, the final stop type will be determined based on current Transit rider counts (and projections). The following text and diagrams define the proposed levels of bus stops:

- An interim stop shall include a flag sign, bench, trash receptacle and street tree plantings in a paved sidewalk area that is a minimum of 10 feet wide.

- A basic stop shall include a flag sign, benches, trash receptacles and street tree plantings. These should occur on an expanded sidewalk that is a minimum of 13 feet wide. The sidewalk can include enriched paving. A bus shelter is possible if stop boardings/ transfers are high.

- Enhanced stops shall include all of the amenities from the basic stop, as well as a shelter with seating and an information kiosk. Enhanced stops should only be developed where the paved sidewalk is a minimum of 19 feet.

KEY TO BUS STOP AMENITIES SYMBOLS

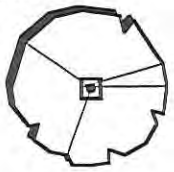
FLAG SIGN

INFORMATION KIOSK

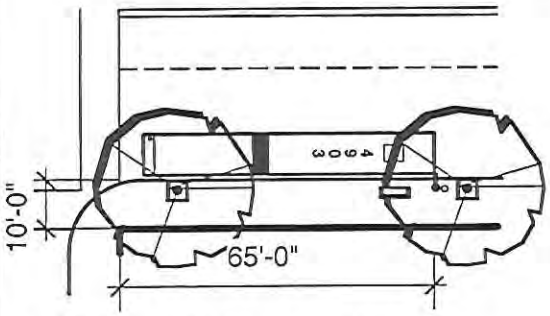
SHELTER W/ SEATING

TRASH

BENCH



STREET TREES

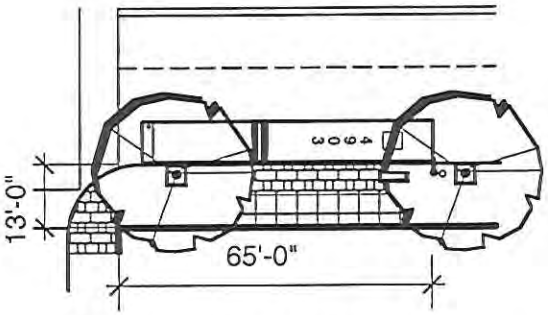


MINIMAL BUS STOP

FAR SIDE BUS STOP. BUS STOPS IN PARKING LANE.

RED CURB TO PREVENT PARKING.

AMENITIES INCLUDE FLAG SIGN, BENCH TRASH RECEPTACLES AND STREET TREE PLANTINGS.



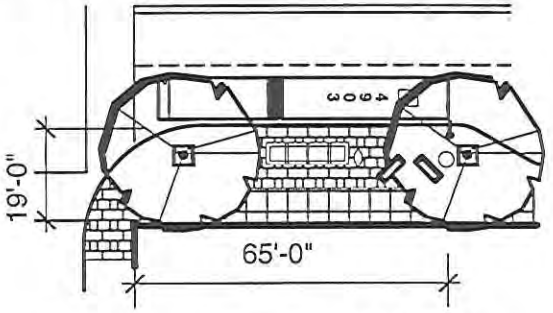
BASIC BUS STOP

FAR SIDE BUS STOP. BUS STOPS IN PARKING LANE.

RED CURB TO PREVENT PARKING.

EXPANDED SIDEWALK WITH ENRICHED PAVING.

AMENITIES INCLUDE FLAG SIGN, BENCH, TRASH RECEPTACLES AND STREET TREE PLANTINGS. (SHELTER IS POSSIBLE IF STOP BOARDINGS ARE HIGH.)



ENHANCED BUS STOP

FAR SIDE BUS STOP. BUS STOPS IN TRAVEL LANE. POSSIBLE EXCLUSIVE BUS LANE DURING PEAK TIMES & SIGNAL PRIORITY FOR BUS.

RED CURB TO PREVENT PARKING.

EXPANDED SIDEWALK AREA WITH ENRICHED PAVING.

AMENITIES INCLUDE FLAG SIGN, INFORMATION KIOSK, BENCH, TRASH RECEPTACLES AND STREET TREE PLANTINGS. SHELTER WHERE BOARDINGS ARE HIGH.

Bus Stop Layouts
TYPICAL 100' PLAN VIEW

EAST 14TH STREET/ MISSION BOULEVARD

0 20 80

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Furniture and Transit Shelters

In order to create a unified corridor furniture amenities at the bus stops will relate to the family of furniture previously described.

While transit shelters provide a desirable patron amenity, they represent a major investment in both dollars and maintenance commitment. At the present time County has the opportunity to continue to work with AC Transit and the County/ City agencies within their service area of Alameda and Contra Costa Counties to explore the possibility of "advertising shelters." The group is at the preliminary stages of a developing a formal Request for Proposal (RFP) to distribute to interested parties. The advantages of an advertising shelter is that a third party sells advertising space to support the costs of the shelter, installation and on-going maintenance. The disadvantages include the presence of advertisements, and required coordination with the third party for location and maintenance. It is likely that the final agreements with the third party provider of the bus shelters will provide the County with some control over the type of advertising on the shelters.

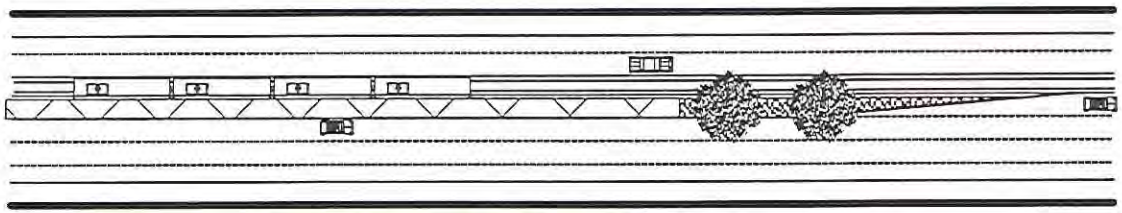
In spite of the potential disadvantages, the alternative approach of funding shelters from the existing County funds does not appear viable. Since funding for the purchase and long term maintenance of shelters is not currently available, the Master Plan recommends working with AC Transit to determine if advertising shelters are acceptable. If the negotiations do not proceed in a manner that gives the County acceptable shelter locations, veto control over the type of advertising, and guarantee of maintenance if problems arise with the shelter the County should withdraw from the AC Transit program and search for funding from other sources.

Potential Future Light Rail

The improvements recommended in the Master Plan accommodate a future light rail transit system along East 14th Street and Mission Boulevard. Several alternative layouts are included that can be accommodated in the corridor. It appears that the narrow right-of-ways in both Hayward and San Leandro limit the length of East 14th Street/ Mission Boulevard that could be utilized for light rail service without major changes to automobile traffic flow. In the short-term, it is more likely that improvements will focus on the existing bus service. Improvements such as buses with limited stops or improved signal timing with bus priority can easily be accommodated given the recommend Master Plan enhancements.

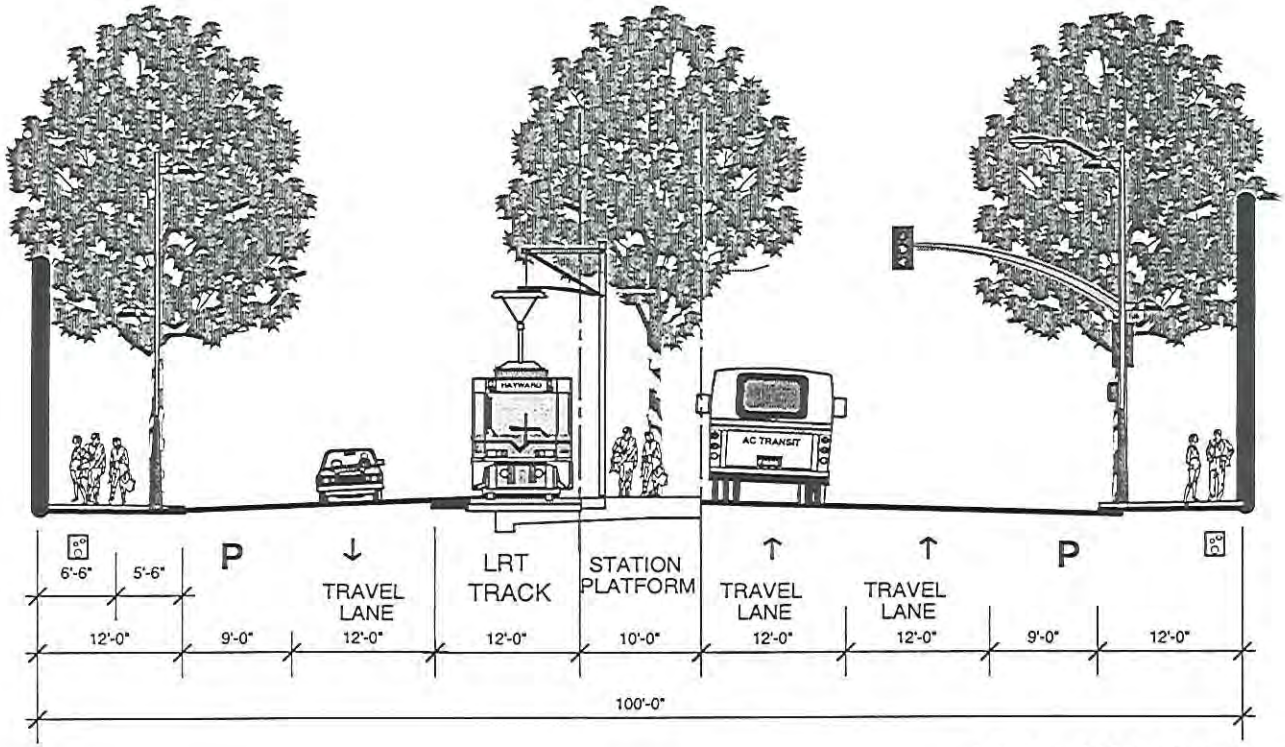
Several different track configurations have been evaluated for compatibility with streetscape improvements (see Appendix).

STATION
PLATFORM



SIDEWALK
PARKING
1 TRAVEL LANE
SINGLE LRT TRACK
TURN POCKET
2 TRAVEL LANES
PARKING
SIDEWALK

LRT TRACKING PLAN



LRT SINGLE TRACK
TYPICAL 100' SECTION

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1/16" = 1'-0"

0 10 30

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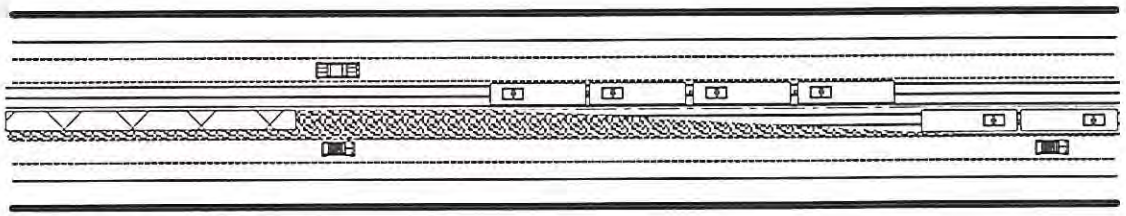
The scheme with the least impact on existing and proposed traffic patterns is a single track system that uses the median for a platform area, as shown in the previous section. This would eliminate one of the lanes of traffic, as well as left-turn pockets in one direction. Passing lanes would be required, or the system could be double tracked between stations as shown in the second section. These alternatives can be implemented in the future with the proposed improvements to the street cross section.

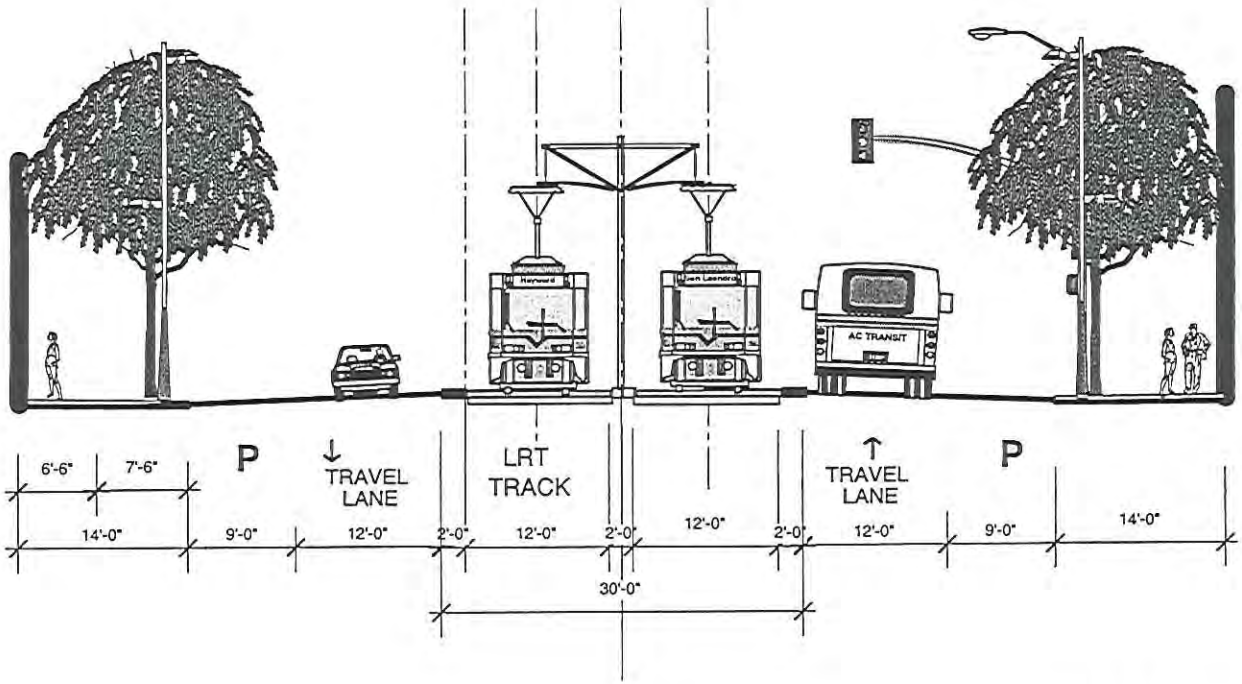
SINGLE
TRACK @
STATION
PLATFORM



SIDEWALK
PARKING
TRAVEL LANE
DOUBLE LIGHT RAIL TRACKS

TRAVEL LANE
PARKING
SIDEWALK

LRT TRACKING PLAN



LRT DOUBLE TRACKING
TYPICAL 100' SECTION

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1/16" = 1'-0"

0 10 30

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NOTE TO REVIEWERS:
A separate technical paper may be prepared

Implementation of Streetscape Improvements

Approval Process and Preparation of Construction Documents

The next step in the implementation, after approval of the Master Plan, will be the development of the documents required by each of the participating agencies for approval. These documents will include preparation of the construction documents (preliminary and final engineering) for the first segment of the corridor that will be built. Specialized technical documents will also be required by approving agencies and include the following:

Cal Trans: East 14th Street/ Mission Boulevard is under CalTrans jurisdiction as a part of State Highway SR185 and must meet their standards for the street travel ways. A Project study report or PEER report will need to be prepared for approval by Cal Trans.

PG&E: Pacific Gas and Electric (as the administrating agency for use of "PUC Rule 20A" monies for undergrounding utilities) will design and construct the new below-ground facilities.

Other Agencies: Other agencies that provide utility services such as East Bay Municipal Water District, Oro Loma Sanitary District, and Pacific Telesis, will also participate in the coordination of undergrounding the utilities in the corridor.

Technical Advisory Committee: The Technical Advisory Committee has provided valuable assistance throughout the Master Planning Process. They will continue to play an oversight review role throughout the implementation process.

Funding

Implementation of the project relies primarily on redevelopment funding and "PUC Rule 20A" monies for undergrounding utilities in the corridor. However, other funds may also be procured through the sources shown in the following table. Private fund raising, community gifts and joint projects with private development are also potential fund sources.

Funding Opportunities

	Local		State			Federal										
	ACTA	PG&E				FTA										
	Measure B	Rule 20 A	SHOPP	EEMP	GTS	5309 - Bus	STP	CMAQ	TEA 21	Transit Enhance ments	TLC	TCSP	HESP	EE&MP	GTS	TDA 3
approximate annual funding in Bay Area	$82 mi		$50 mil	$3 mil	$130 mil	varies	$57 mil	$40 mil	$8 mil	$2 mil	$5 mil	varies	vaires	$3 mil	$130 mil	$6 mil
Master Plan Enhancement Element																
Street Improvements																
Curb & Gutter																
Street paving			✓													
Median & left turn closure												✓				
Pedestrian Improvements																
Sidewalk Paving - Standard Concrete		✓											✓			
Enriched Sidewalk Paving - Unit Pavers		✓							✓	✓	✓					
Accessibility improvements (curb ramps, cross grades)										✓	✓					
Crosswalks										✓	✓					
Intersection paving (art work)									✓	✓	✓					
Street Lighting																
Street Lights													✓			
Pedestrian Scale Lights																
Utilities																
Underground overhead wires		✓														
Storm drain relocations (?)																
Landscape Enhancements																
Street Tree Planting & Irrigation									✓	✓						
Median Planting & Irrigation									✓	✓						
Transit Improvements																
Patron Amenities (shelters, benches etc.)							✓			✓	✓					
Priority bus lane							✓	✓			✓	✓				
Street Furniture																
Benches									✓							
Trash receptacles									✓							
Bollards									✓							
Bike Racks									✓							
Banners									✓							
Signage (District Id & Directional)									✓	✓						

Key to Abbreviations

Funding Source/ Legislation	Abbreviation	Who can claim the money?
Congestion Mitigation & Air Quality Imprvmt Program	CMAQ	Public agenices
Enviornmental Enhancement & Mitigation Program	EEMP	Counties
Federal Transit Act	FTA	Public agenices
Gas Tax Subventions	GTS	Counties
Hazard Elimination Safety Program	HESP	Cal Trans
Alameda Cty Measure B 1/2¢ sales tax	Measure B	Counties, AC Transit, Cal Trans

Funding Source/ Legislation	Abbrev.	Who can claim the money?	
Pacific Gas & Electric	PG&E	AC Transit	
State Highway Operations and Protection Program	SHOPP	Counties	
Surface Tranportation Program	STP	Public agenices	
Transportation Community & System Preservation Pilot Program	TCSP	Public agenices	
Transportation Development Act Article 3	TDA 3	Public agenices	
Transportaion Enhancement Activities	TEA	Public agenices	
Transportation for Livable Communities	TLC	Local Governments	

Project Phasing

The streetscape enhancements in the corridor will be constructed as a sequence of projects over a period of years. The Master Plan develops the unified vision and helps determine how the improvements can be layered according to cost and budget restrictions. Of primary importance is the agreed upon locations of utilities easements and design standards for implementation that do not preclude streetscape elements that may not be built until several years later. Order of magnitude cost figures, phasing approach and the overall utility underground sub-district have been developed for planning purposes.

Priority 1

The first priority improvements focus on improvements that have the biggest impact on the overall appearance of the street, or those that can be incorporated at a minimal cost due to other work that is occurring. These include the following Master Plan elements:

- Curb & gutter at the median, intersection bulb-outs and along the street
- Sidewalk paving (concrete paving and unit pavers)
- Undergrounding of utilities
- Street trees and median planting with irrigation
- Street lights

Priority 2

The next priority of work will be tied to the availability of specific funds. There may be locations that these elements proceed priority 1 work. The elements that fall in this category include:

- Bus stop furniture elements
- Frontage improvements to private property

Future Work

The Master Plan also includes a category of projects identified as Special Project Areas. These represent opportunities that extend beyond the public street right-of-way. No funds are currently available for these improvements. They are included in the Master Plan so that a framework exists to be able to build upon any potential implementation mechanisms that might arise in the future due to adjacent private development, grants or unknown funding sources.

Special Project Areas

Special Project Guidelines

The adopted Specific Plan includes a number of special streetscape projects that further enhance the East 14th/ Mission Boulevard Corridor by "creating high quality public places that function as centers or nodes of activity."[2] The Master Plan expands upon the types of public area improvement projects identified in the Streetscape Program of the Specific Plan. The Master Plan establishes an overall program statement of design objective and design process. The conceptual diagrams are shown to establish overall design criteria and standards, but are not a final design solution for any of the identified projects. The overall goal is to support commercial revitalization and neighborhood conservation. Each of the special project areas identified below have different approaches to supporting the overall goal for the corridor.

Implementation of the special project areas will not only need identification of funding sources but also a comprehensive design process that includes selection of a design team of urban designers, engineers, landscape architects, artists and other professionals with expertise in streetscape, lighting, signage, public art, and the urban environment. Each special project area must be developed with greater community input; incorporating community established policies and priorities. Opportunities should be explored for joint ventures with other agencies and private landowners, such as in BART Connection/ Bay Fair Mall area. Joint ventures and other funding sources often have very specific requirements to meeting funding requirements. The following Special Project Areas identification is not meant to preclude those opportunities. However, each area needs to respond not only to it specific special conditions, but also to it role in the overall corridor.

District Themes

The Master Plan uses the four business districts identified in the Specific Area plan. Overall identity and design themes are established for each of the areas based on their role in the corridor and the adjacent neighborhood areas. Each district has a specific identity that helps visitors find their way and know when they move from one area to another. The identity markers can vary from an emphasis on features readily visible by autos moving at a maximum of 35 miles per hour, to details related to pedestrian scale enrichments such as paving and benches that are only appreciated by people walking from store to store.

Bayfair District: Bayfair is located at the northern end of the corridor from the San Leandro border to approximately Coelho Drive. The focus in this district is on the regional retail nature of the area. Auto scale oriented improvements should

[2] ACBD Specific Plan. Adopted 1995. Page 5-1

predominate . There should be a greater predominance of vertical elements, such as tall trees, banners, gateways, that are visible from several blocks away. This district marks a major entry to the County area from nearby freeways.

The design identity of projects in this area need to include the major stakeholders including the City of San Leandro Redevelopment Agency, Bay Fair Mall and other merchants.

Ashland District: The Ashland neighborhoods are generally located north of the 238 Freeway on both sides of the East 14th Street. Ashland Avenue serves as a major connector through the neighborhood. The design focus of this district should be on surrounding residential community and neighborhood services retail. Pedestrian scale improvements should be incorporated at specific nodes within the district, such as at Kent and Elgin Avenues. Smaller scale elements appreciated by pedestrians should also incorporate art and other features relating to the history of community and should develop a unique community identity (for instance an Ash leaf logo). The street improvements should also in incorporate pedestrian/ residential connections to BART and other services.

The design identity of projects in this area need to include the major stakeholders of the merchants and nearby residents.

Freeway Area: The area around Interstate 238 focuses on regional freeway and auto services. This area should be primarily automobile oriented improvements. Amenities such as gateways that are visible from I-238 overhead, treatment of the freeway structure (murals) and special landscape areas visible from East 14th Street and Mission Boulevard should be developed. However, the area also serves as a transition between the Ashland & Cherryland communities. Recognition of these neighborhoods, and conservation of the remaining integrity of their residential character needs to be balanced with the overall automotive theme.

Projects in this area need to include the major stakeholders of Cal Trans, BART, the merchants and nearby residents.

Cherryland District: The Cherryland District focuses on surrounding residential community and neighborhood services retail. Pedestrian scale improvements are incorporated at specific nodes, such as at Mattox and Grove Way. Smaller scale elements appreciated by pedestrians should also incorporate art and other features relating to the history of community and develop a unique community identity (for instance an Cherry blossom, orchards, deAnza Trail crossing or other logo).

Projects in this area need to include the major stakeholders of the City of Hayward the merchants and nearby residents.

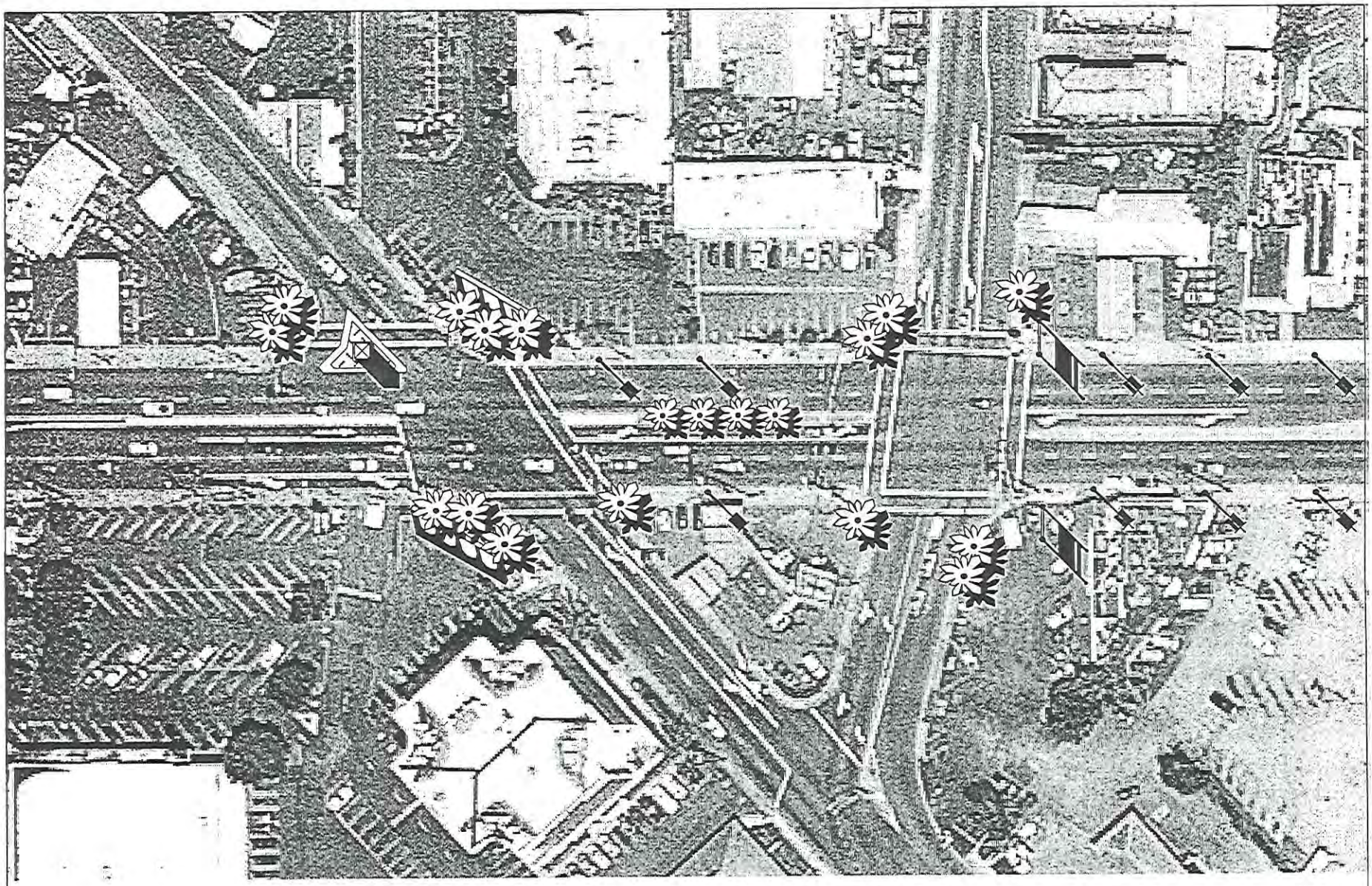
Project Areas[3]

Hesperian & 150th Avenue Gateways: This area serves as the introduction into County Portion of area (northern edge), as well as a gateway into San Leandro. Any improvements to this area need to support Bayfair Business District special area plans as well as San Leandro Redevelopment Agency plans. The enhancements should be at the scale of the automobile with an emphasis on vertical features such as architectural elements, banner poles and focal tower. Gateway signage at 150th could introduce logos and elements unique to the Bayfair Business District. A unique banner should be also be introduced area to unify the Bayfair Business District. San Leandro is currently planning a transit center in the triangle bound by Hesperian Boulevard, 150th Avenue and East 14th Street. The major traffic in the area is moving north and south between San Leandro and County.

Fairmont Drive: Fairmont Park provides an appealing green edge that was created approximately 10 years ago as a "gateway" to the area. At this intersection, Fairmont Drive has greater presence than E. 14th due to traffic volumes and width of the right of way. This area should focus on the use of vertical elements with kinetic nature, such as flags. Improvements should incorporate transit enhancements at far side stops. It is important that the improvements not overlook the small business on east side of East 14th Street and that additional pedestrian amenities are provided to connect these merchants with the rest of the shopping district. The improvements should build upon the existing streetscape elements such as the Bayfair Mall signage and street tree plantings. A unique banner should be used throughout this area to unify the Bayfair Business District.

Connection to BART: The County in conjunction, San Leandro and BART developed and submitted a grant request to the Metropolitan Transportation Commissions' (MTC) Transportation for Livable Communities Program (TLCP) for improvements between East 14th and the Bay Fair BART Station. While this initial submittal was not approved for funding, grant funds should continue to be pursued in the future. The Ashland Community Transit Access Improvement Project on 159th Avenue and Coelho Drive include enhancements such as: entry sign features at E. 14th, pedestrian scale street lights, neighborhood entry pier/ directional signage, tree planting, sidewalk island and crosswalk, enhancements at flood control channel. Improvements in this area need to recognize that 159th Avenue/ Coelho Drive is a bus route serving both BART and Bayfair Mall. While the request grant

[3] The conceptual diagrams that follow are shown to establish overall design criteria and standards, but are not a final design solution for any of the identified projects.



SCALE: 1" = 100'

0 50 100 150

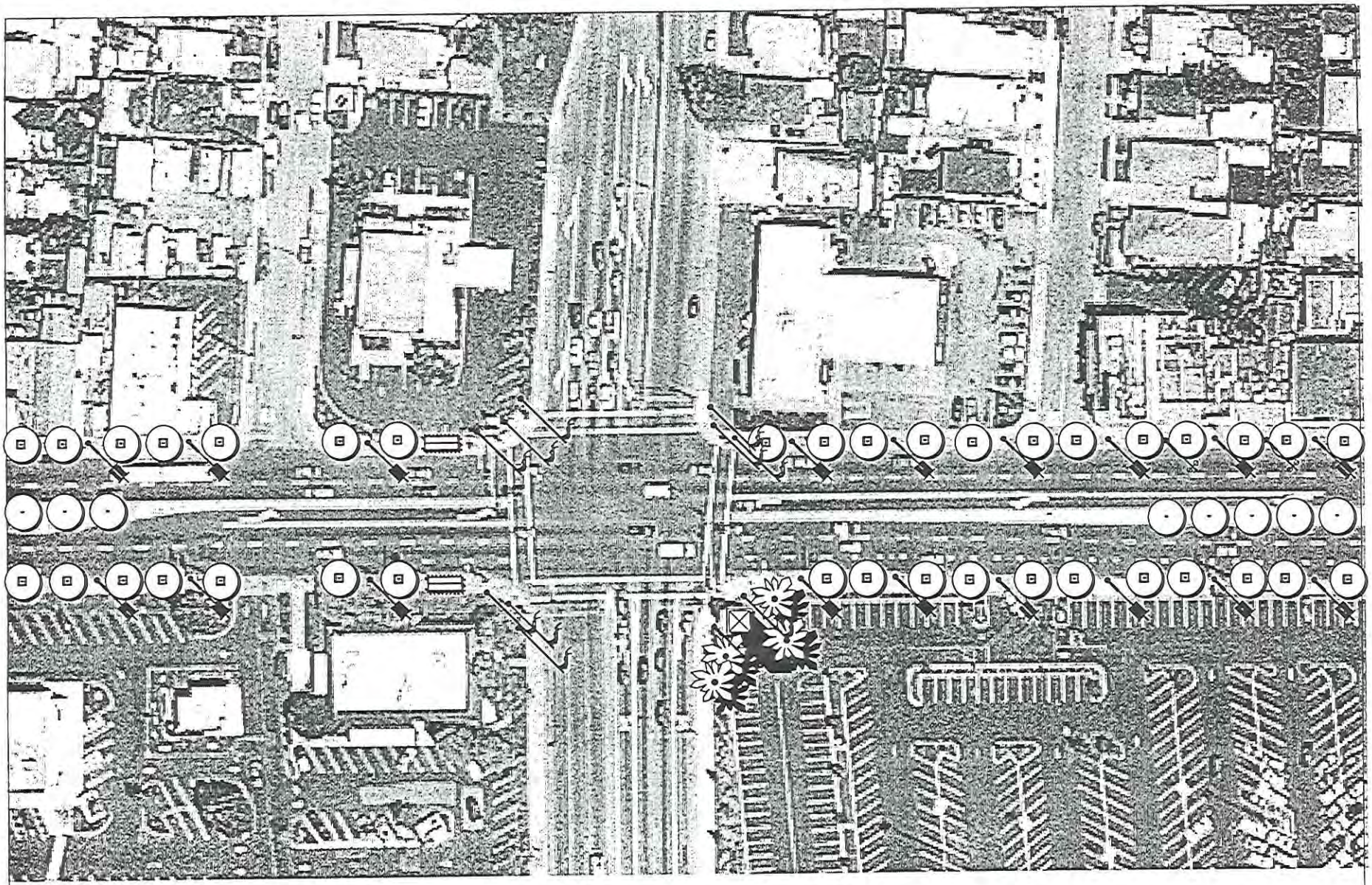
Amphion 2/22/99

NORTH

SPECIAL AREA

HESPERIAN & 150TH AVE GATEWAY

EAST 14TH STREET/ MISSION BOULEVARD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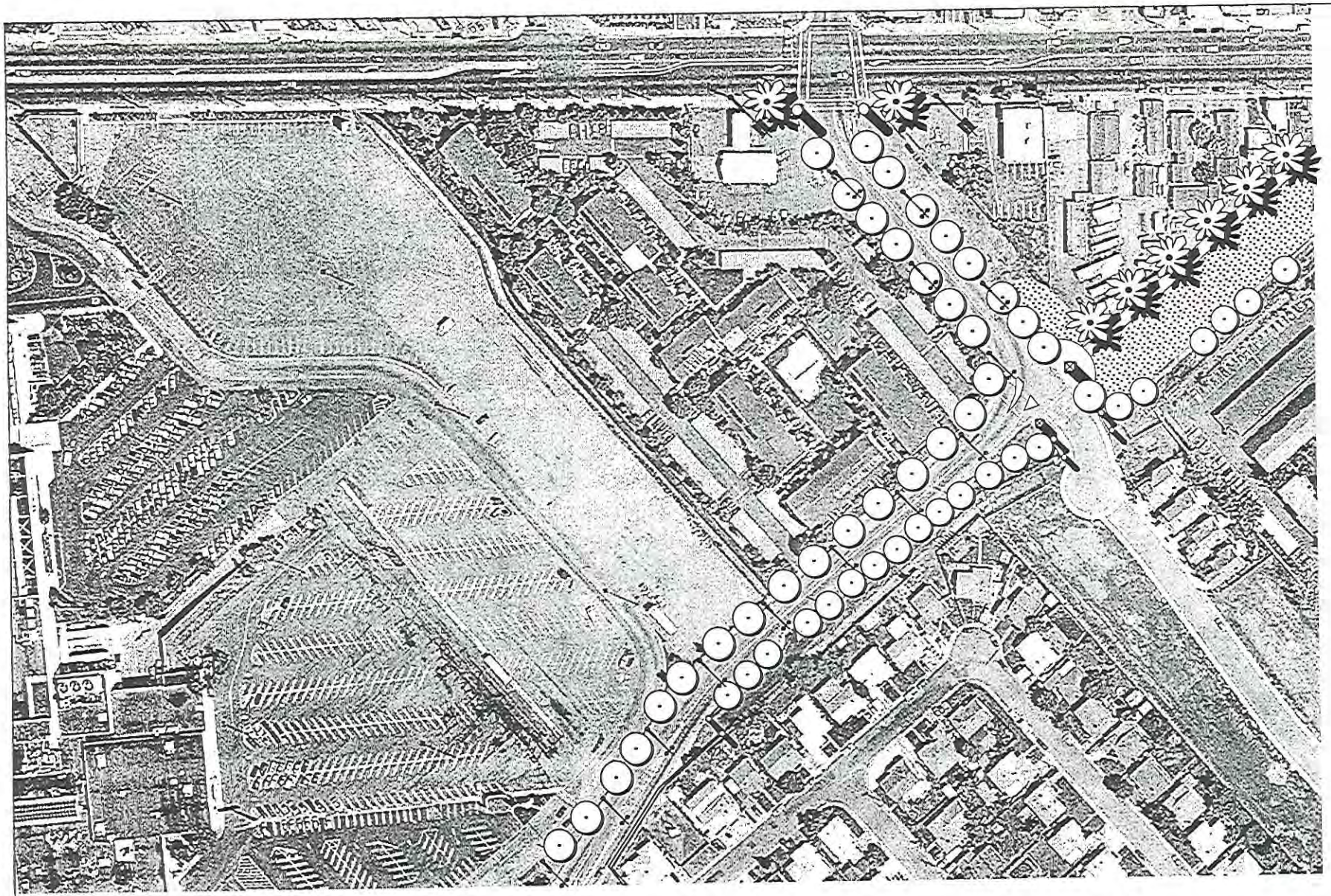
Amphion
2/22/99
NORTH
SPECIAL AREA
FAIRMONT GATEWAY
EAST 14TH STREET/ MISSION BOULEVARD



SCALE: 1" = 200'

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Amphion 2/22/99

NORTH

SPECIAL AREA

CONNECTION TO BART

EAST 14TH STREET/ MISSION BOULEVARD

was not funding in 1999, the proposal should be repackaged in future funding cycles.

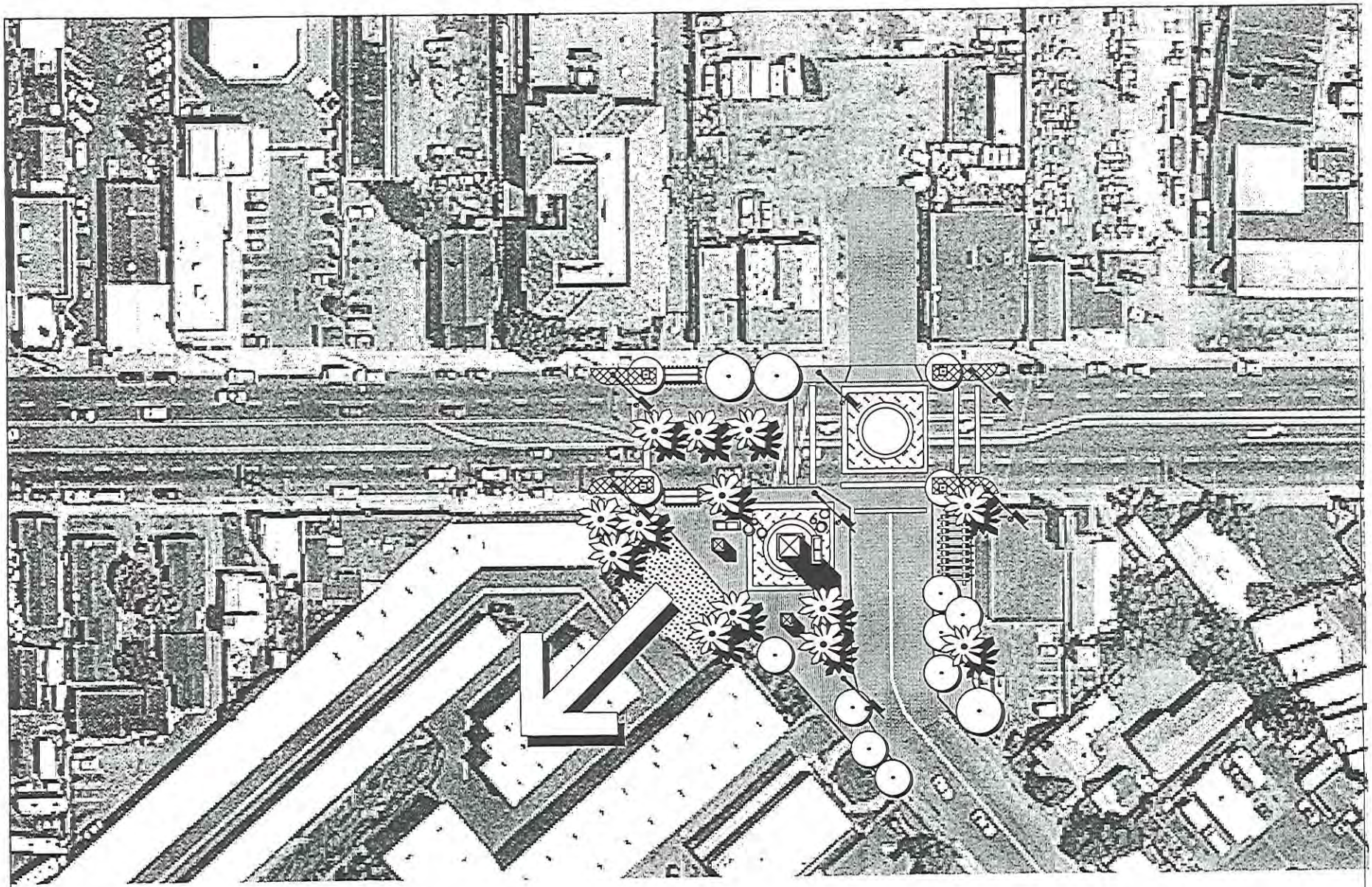
There may also be a future potential to extend pedestrian improvements to connect with E. 14th Street through a future development site bound by 159th Ave/ Coehlo Drive, East 14th Street and Ashland Avenue. Such a pedestrian connection could reinforce a community gateway at Ashland.

Ashland Community Gateway : The intersection of East 14th Street and Ashland Avenue is important to the local community importance since Ashland Avenue is the only local road that goes under 238. This special area should be developed into the center of community with a pedestrian orientation. The existing 45° angle and small island formed by Ashland Avenue and East 14th Avenue emphasizes the automobile. Realignment of the intersection to create a pedestrian oriented intersection with a 90° connection will also improve safety and sight-lines for the drive. The suggested plan also shows the possibility to create a through intersection into the parcel on the east side of East 14th Street. The existing "T" intersection could also be maintained.

The realignment also creates the potential for a major civic plaza with adjacent new development. The final design of the plaza should relate to the adjacent new development. However, it is likely to be an urban space primarily of enriched paving, with community oriented enhancements such as directional signing, art work, a water fountain, information kiosk, or gazebo.

Additional pedestrian scale banners and lighting in this area should reinforce the character that is carried throughout the Ashland community.

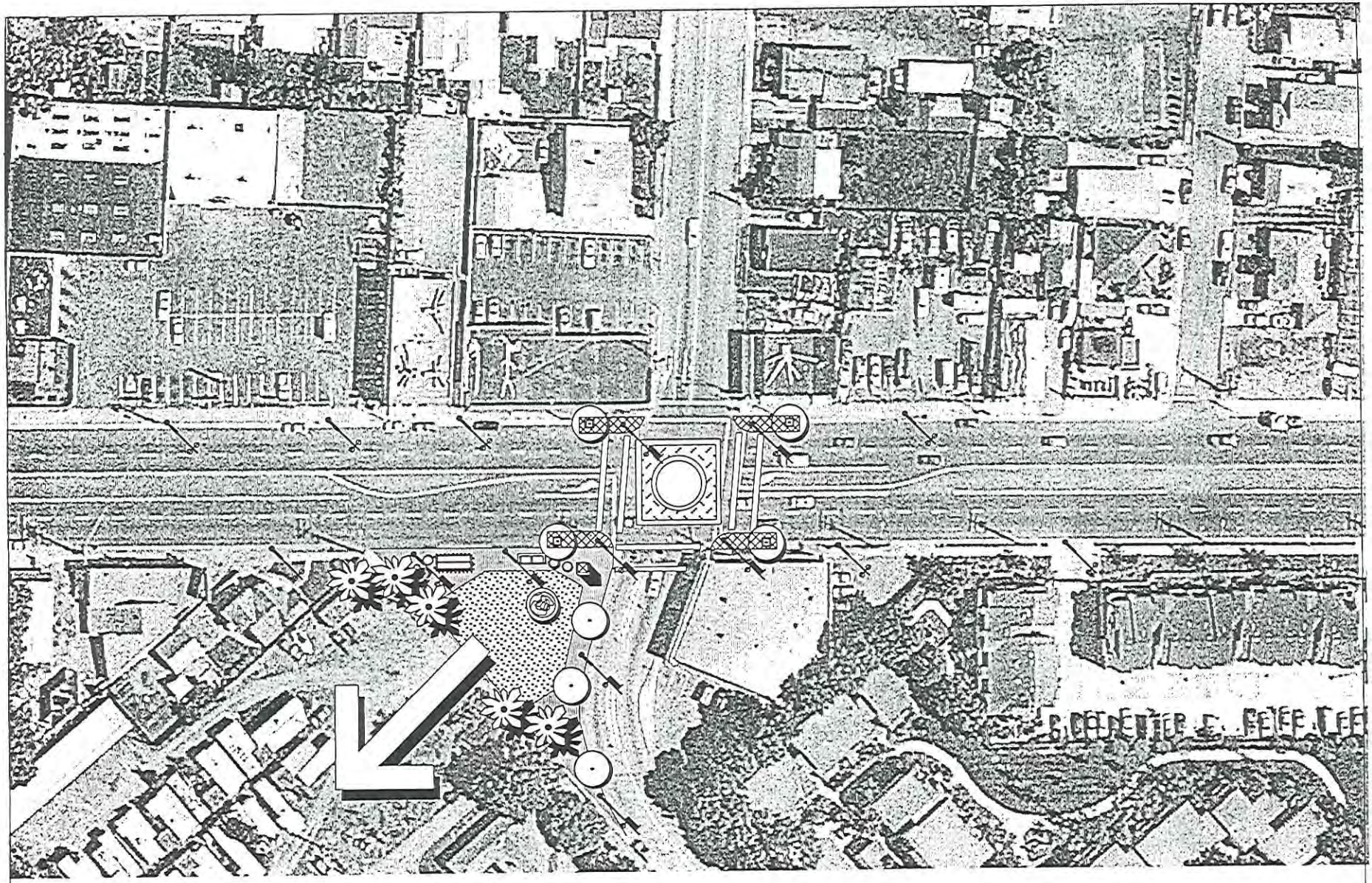
Intersection of E. 14th, Street with 164th Avenue/ Kent Avenue: By closing the left turn lane, reorienting Kent Avenue and removing the "pork chop" island in the street right-of-way a small public park or plaza could be created. This space should become a community and pedestrian oriented place with connections to Edendale Park and School located a half block to the west. The final plaza design should include elements to enliven the area such as public art, seating, space for special events or small farmer's market place, kiosk with neighborhood events, and water fountain. Pedestrian lighting and banners should continue the Ashland neighborhood theme established throughout the corridor. The plaza must also be integrated with proposed adjacent transit improvements.



SPECIAL AREA

ASHLAND COMMUNITY GATEWAY

EAST 14TH STREET/ MISSION BOULEVARD



SCALE: 1" = 100'

0 50 100 150

Amphion 2/22/99

NORTH

SPECIAL AREA

164TH AVE & KENT AVENUE GATEWAY

EAST 14TH STREET/ MISSION BOULEVARD

Intersection of East 14th Street, 167th Avenue & Elgin Avenue: This intersection provides the opportunity for another small community space for the Ashland neighborhood. The intersection is important since 167th Avenue connects to residents above the freeway and Elgin Avenue connects to Bayfair BART Station. Because of the limited space available within the street right-of-way, this area requires that the County work with private landowners for corner treatment or architectural façade enhancements during future upgrades/ land Intersection of E. 14th Street with 164th Avenue/ Kent Avenue use changes. Design features could include distinctive sign poles, gateway elements or unique plantings. It is important to integrate improvements with proposed adjacent transit enhancements.

1-238 Freeway Overpass: The focus of this special project will be on regional freeway visitors. The area should incorporate entry statements into both Ashland and Cherryland so regional visitors can identify the neighborhoods. Most of the improvements should be auto oriented. They can include special lighting (such as neon or other artistic lighting of the overpass), public art (murals on freeway overpass walls), architectural treatments, and median plantings. Trees and regional signage/ markers visible from both East 14th/ Mission Boulevard and overhead on I-238. Banners, directional signage should help orient new visitors to the area. While the focus of the area is on the automobile passengers, the improvements should also have components that address those people crossing under the structure, as well as appeal to the transit riders waiting at nearby bus stops and the adjacent neighborhoods.

Mattox/ Hampton: Mattox Road and Hampton Drive is a major arterial intersection with perhaps the most complex program of the special project areas. The volumes of traffic and pedestrian hostile environment call for an auto orientation. The surrounding auto show rooms support that design theme. However, it is also a historically rich area. San Lorenzo Creek and the Nationally designated Juan Bautista deAnza trail cross diagonally through the intersection. The design solution needs to incorporate and enhance creek presence through planting, potential removal of concrete lid to make creek visible if possible. The area also needs to include new directional signage, an architectural element/ tower and enhanced lighting. On the northwest corner is also the opportunity to show case some of the adjacent car dealer's vehicles to support East 14th Street/ Mission Boulevard as a economically viable "auto row." In 1998, the City of Oakland and private auto dealers completed a similar improvement to Broadway between I-580 and Grand Avenue. Some of the successful concepts could be used as a source of inspiration for this area of Mission Boulevard.

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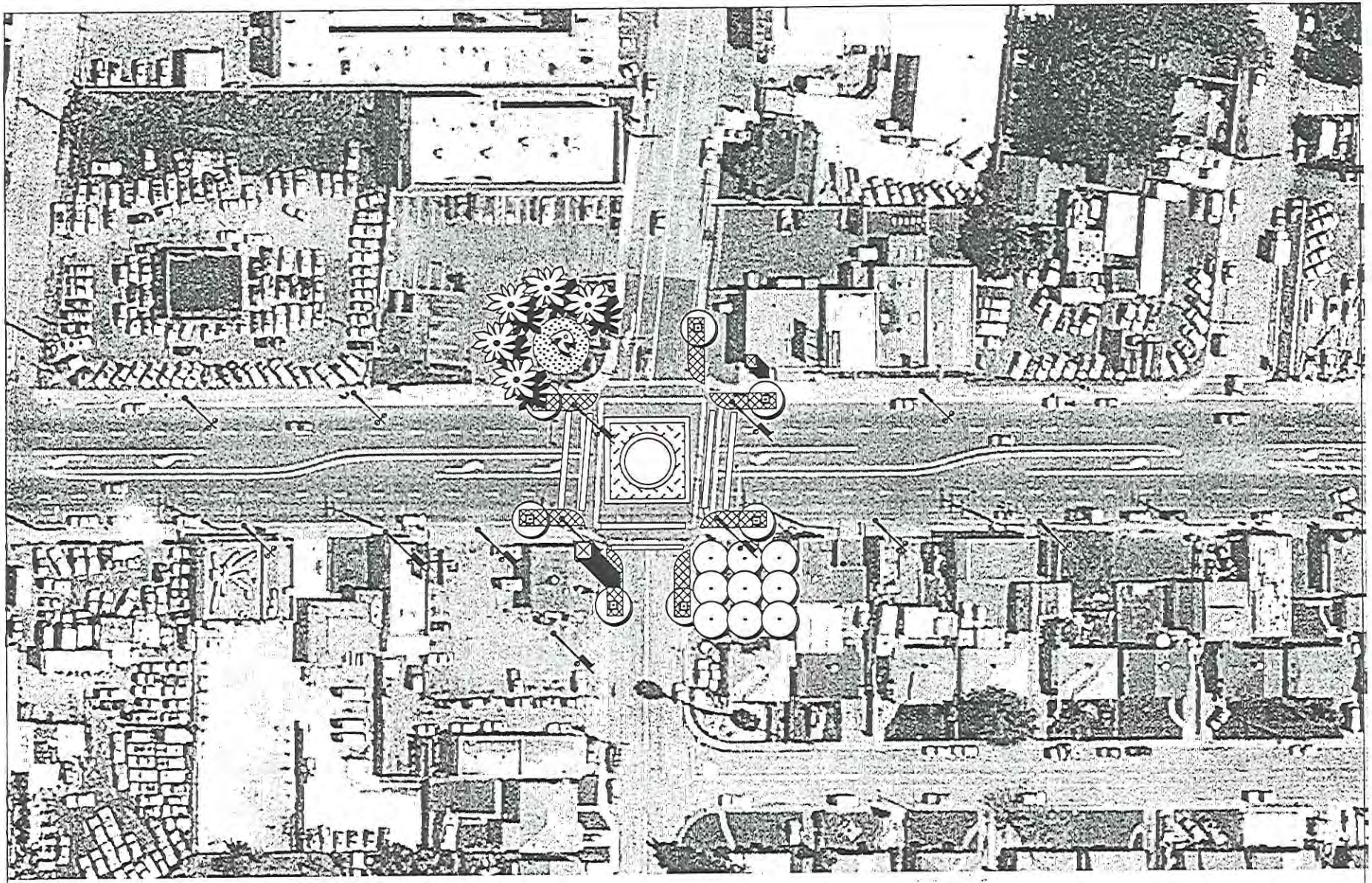
SCALE: 1" = 100'
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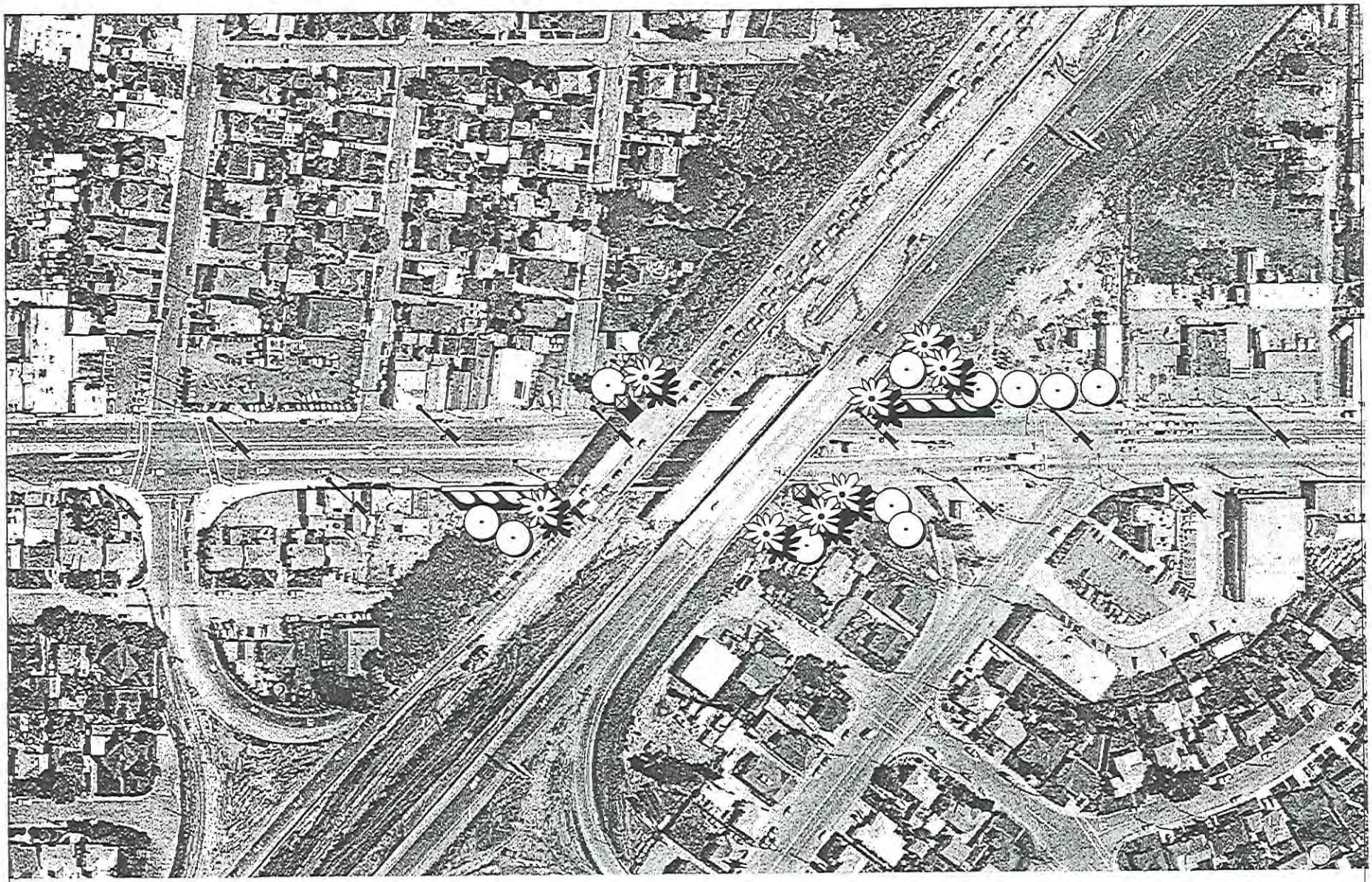
Amphion 2/22/99
NORTH
SPECIAL AREA
167TH AVE & ELGIN GATEWAY
EAST 14TH STREET/ MISSION BOULEVARD



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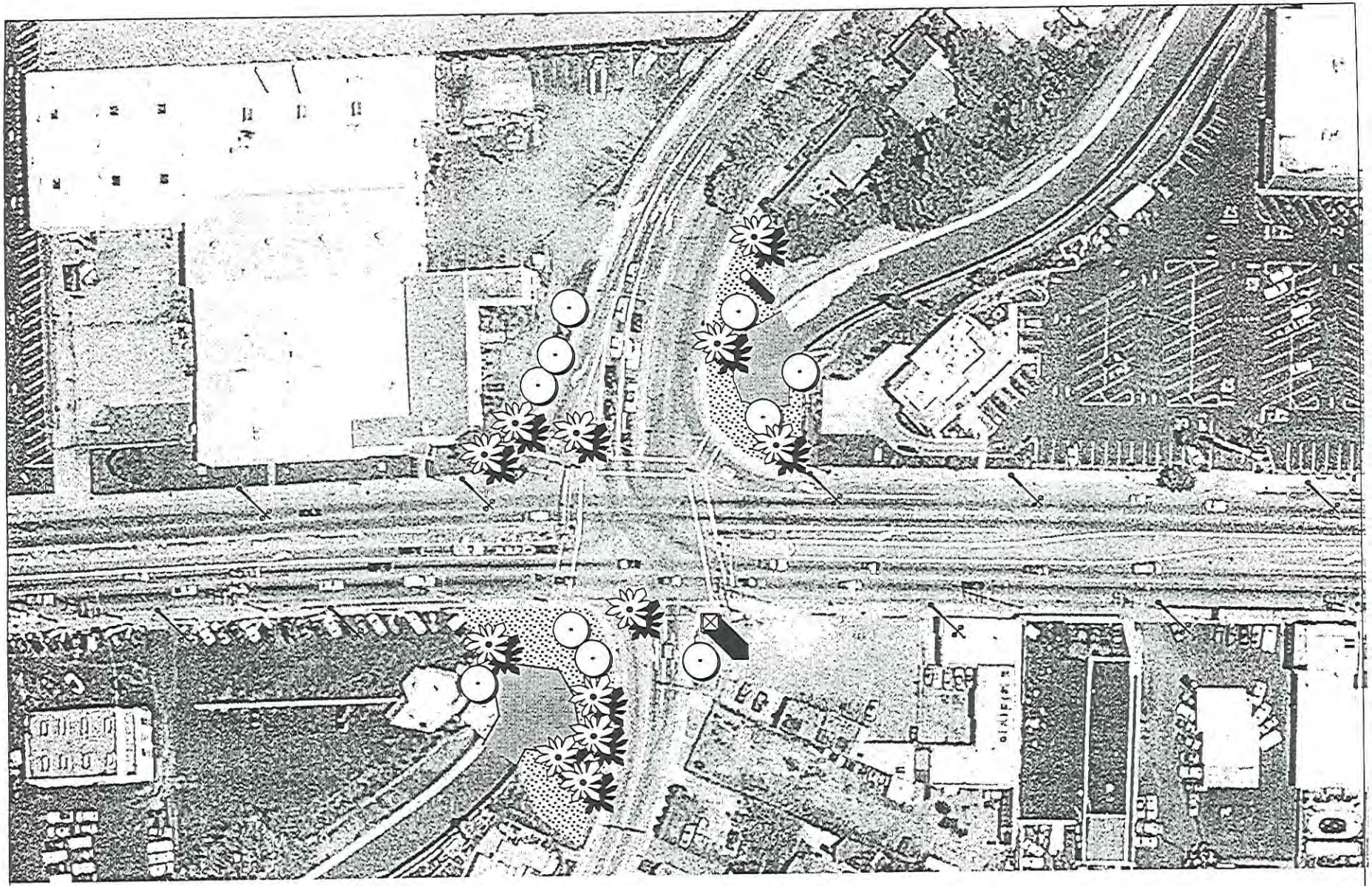
NORTH

SPECIAL AREA

I-238 OVERPASS AREA

EAST 14TH STREET/ MISSION BOULEVARD



SCALE: 1" = 100'

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NORTH

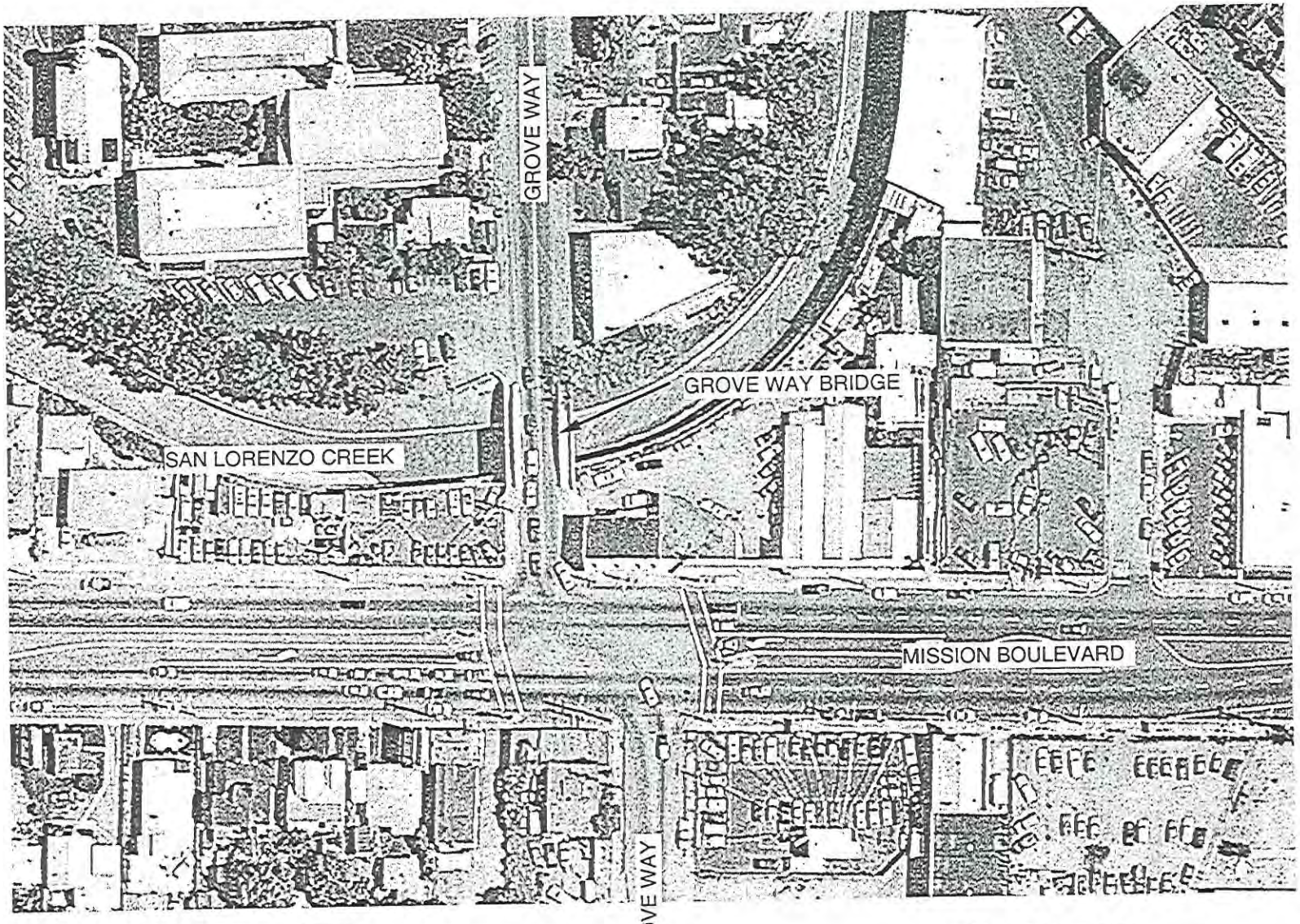
SPECIAL AREA

MATTOX/ HAMPTON & SAN LORENZO CREEK

EAST 14TH STREET/ MISSION BOULEVARD

Grove Way Bridge

The "Historic" Grove Way Bridge and San Leandro Creek are unique historic and natural resources that should be emphasized in design improvements to this Special Project Area. Grove Way serves as a major local connector from Foothill to Meekland Avenue. The intersection of Grove Way and Mission Boulevard negatively impacted by traffic (operating at a level of service F). During the Master Planning process a number of alternatives were identified to recognize the unique resources and mitigate the traffic impacts at this intersection. The design for this area will need to involve the County Public Works Agency and Community Development Agency to identify the issues and potential solutions. Designs should incorporate proposed transit improvements, maintain the existing bridge, enhance the visibility of the bridge and creek, as well as reduce the impact of traffic on surrounding neighborhoods.



SCALE: 1" = 100'

0 50 100 150

NORTH

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SPECIAL AREA

GROVE WAY BRIDGE AREA

EAST 14TH STREET/ MISSION BOULEVARD

Other Options Studied During the Master Plan

Street Cross Sections

- Option 1 Section
  Option 1 Typical Intersection and Mid-block Plans
- Option 2 Section
  Option 2 Typical Intersection and Mid-block Plans

Transit Improvement

- Option 1 Basic Bus Stop
- Option 2 12' – 15' Sidewalks Enhanced Bus Stop
- Option 3 Bus Stop with Intersection Bus Bay
- Option 4 Enhanced Bus stop - Joint development with adjacent private land

LRT

- LRT Central Load Platform
- LRT Tracks at Sidewalks

Recommended Plant Materials

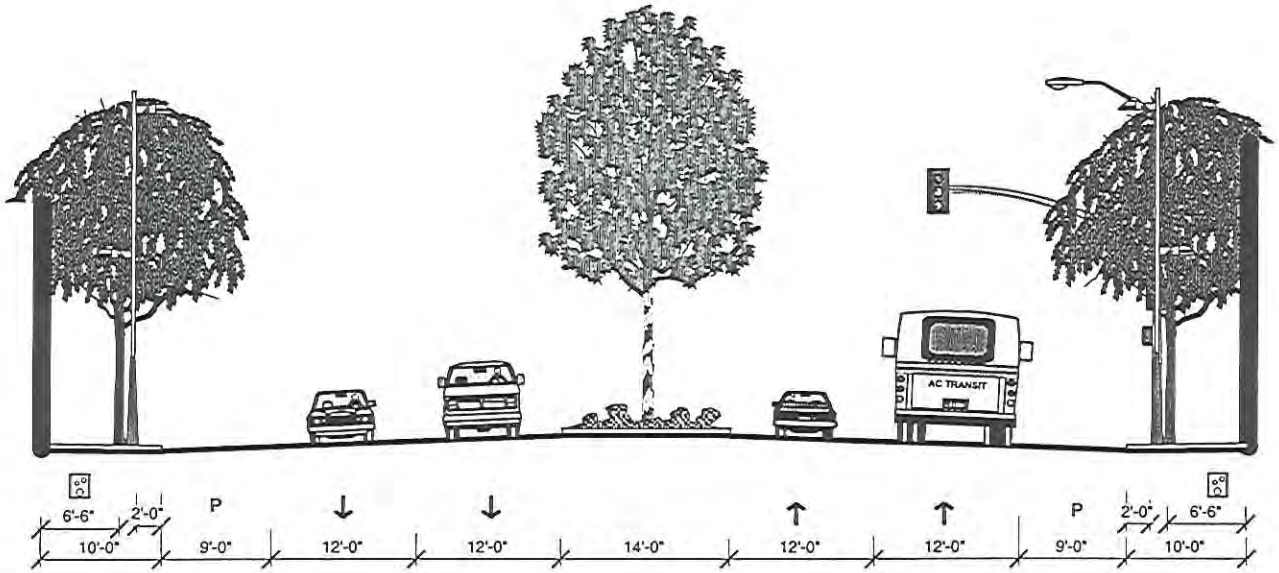
Appendix

Appendix 1
Street Cross Sections

During the development of the plan two other options were explored. These are included at the appendix at the end of the report.

Option 1 maintains the existing curb line with the design emphasis on moving vehicles. A generous fourteen foot median divides four twelve foot wide travel lanes and nine foot parking lanes. This option only allows for a narrow tree planting zone at the sidewalks and requires a joint utility trench to be located adjacent to the building fronts. At intersections, bulb-outs provide wider sidewalk areas (nineteen foot) for pedestrian and transit enhancements.

Option 2 maintains most of the existing curb line places, but adds tree planting in the parking lane between pairs of parking spaces. A generous fourteen foot median divides four twelve foot wide travel lanes and nine foot parking lanes. This option provides a wider tree planting zone at the sidewalks and permits a joint utility trench to be located at the edge of the existing curb. At intersections, bulb-outs provide wider sidewalk areas (nineteen foot) for pedestrian and transit enhancement.



SCALE: 1/16" = 1'-0"

0 10 30

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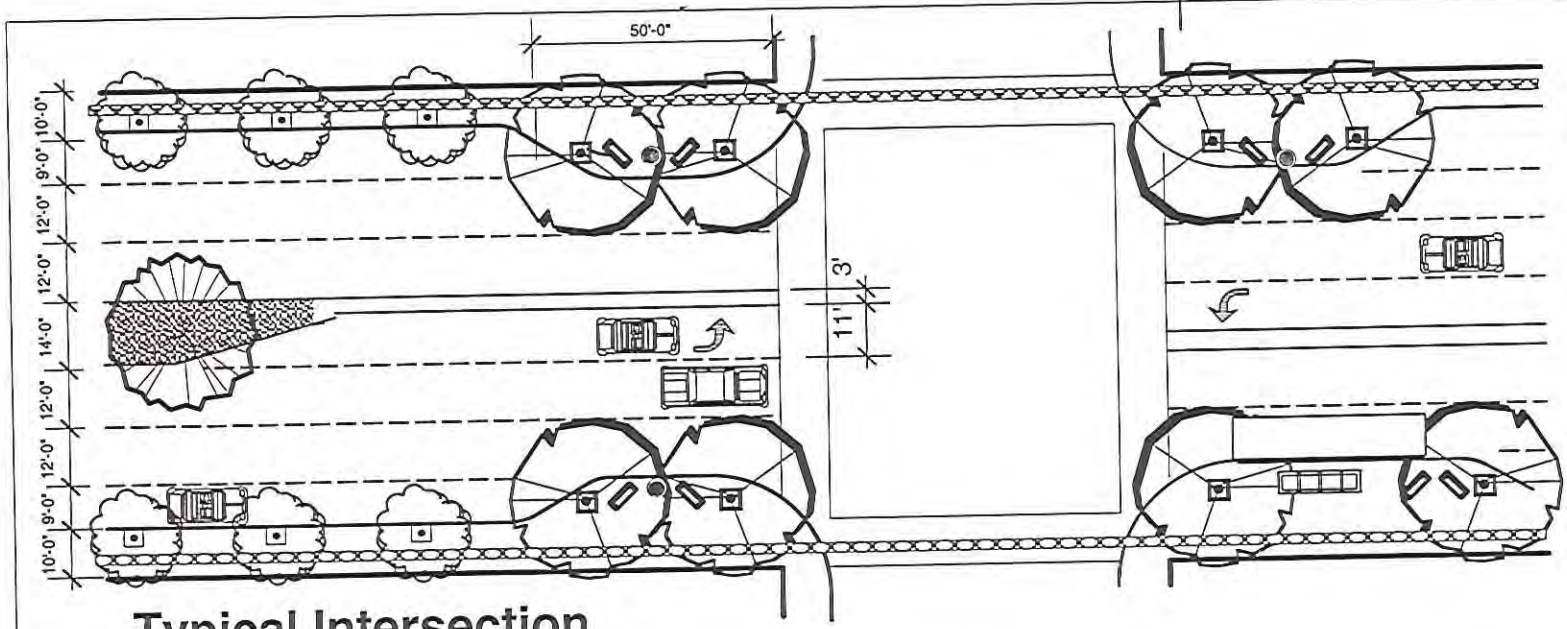
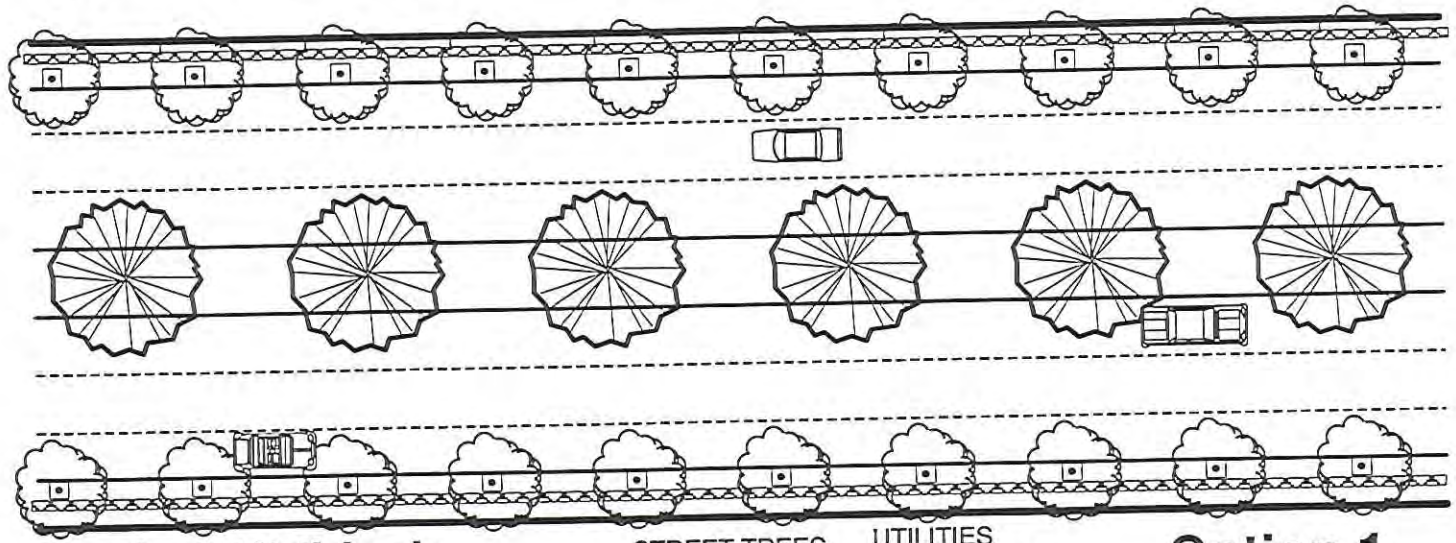
Option 1
TYPICAL 100' SECTION
EAST 14TH STREET/ MISSION BOULEVARD



Typical Intersection



Typical Midblock

STREET TREES 30' OC

UTILITIES TRENCH BACK OF TREES

Option 1
TYPICAL 100' PLAN VIEW

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1" = 40'-0"

0 20 80

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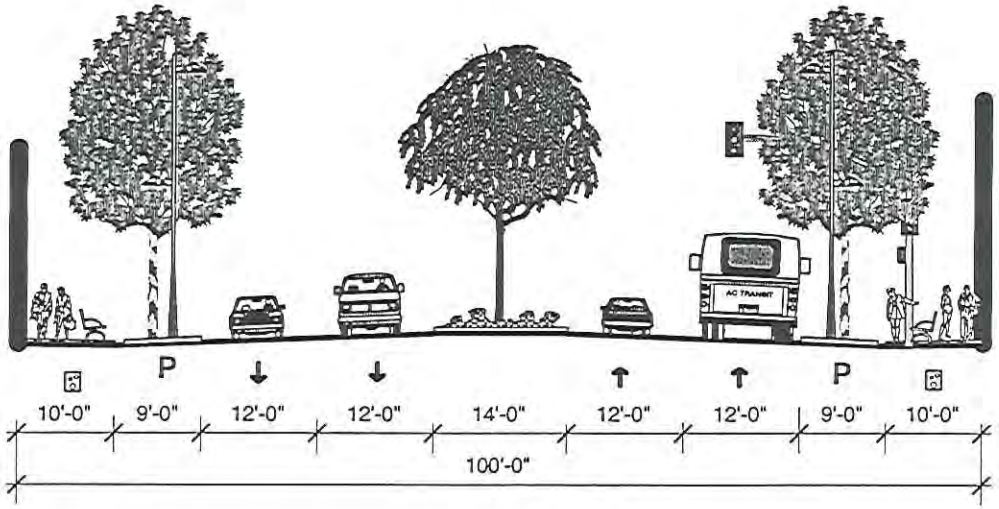


Option 2

TYPICAL 100' SECTION

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1/16" = 1'-0"

0 10 30

Amphion 2/25/99

KEY TO BUS STOP AMENITIES SYMBOLS

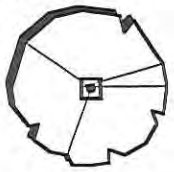
FLAG SIGN

INFORMATION KIOSK

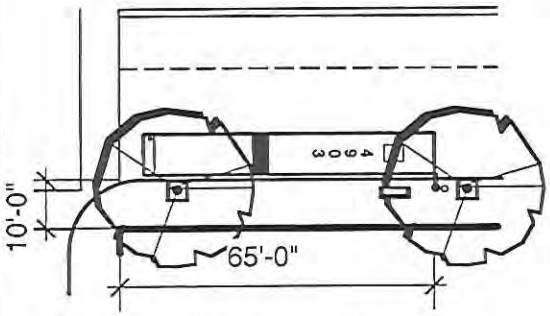
SHELTER W/ SEATING

TRASH

BENCH



STREET TREES

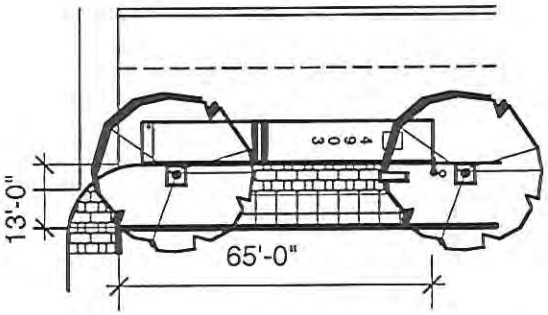


MINIMAL BUS STOP

FAR SIDE BUS STOP. BUS STOPS IN PARKING LANE.

RED CURB TO PREVENT PARKING.

AMENITIES INCLUDE FLAG SIGN, BENCH TRASH RECEPTACLES AND STREET TREE PLANTINGS.



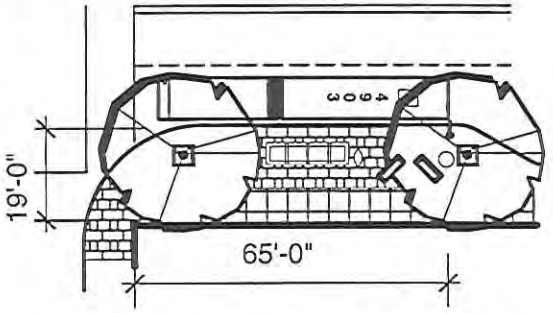
BASIC BUS STOP

FAR SIDE BUS STOP. BUS STOPS IN PARKING LANE.

RED CURB TO PREVENT PARKING.

EXPANDED SIDEWALK WITH ENRICHED PAVING.

AMENITIES INCLUDE FLAG SIGN, BENCH, TRASH RECEPTACLES AND STREET TREE PLANTINGS. (SHELTER IS POSSIBLE IF STOP BOARDINGS ARE HIGH.)



ENHANCED BUS STOP

FAR SIDE BUS STOP. BUS STOPS IN TRAVEL LANE. POSSIBLE EXCLUSIVE BUS LANE DURING PEAK TIMES & SIGNAL PRIORITY FOR BUS.

RED CURB TO PREVENT PARKING.

EXPANDED SIDEWALK AREA WITH ENRICHED PAVING.

AMENITIES INCLUDE FLAG SIGN, INFORMATION KIOSK, BENCH, TRASH RECEPTACLES AND STREET TREE PLANTINGS. SHELTER WHERE BOARDINGS ARE HIGH.

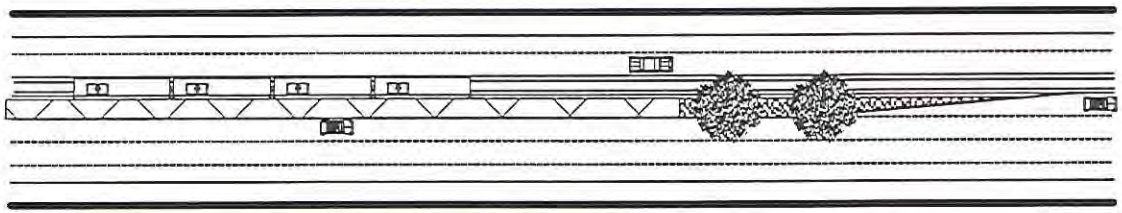
Bus Stop Layouts
TYPICAL 100' PLAN VIEW

EAST 14TH STREET/ MISSION BOULEVARD

0 20 80

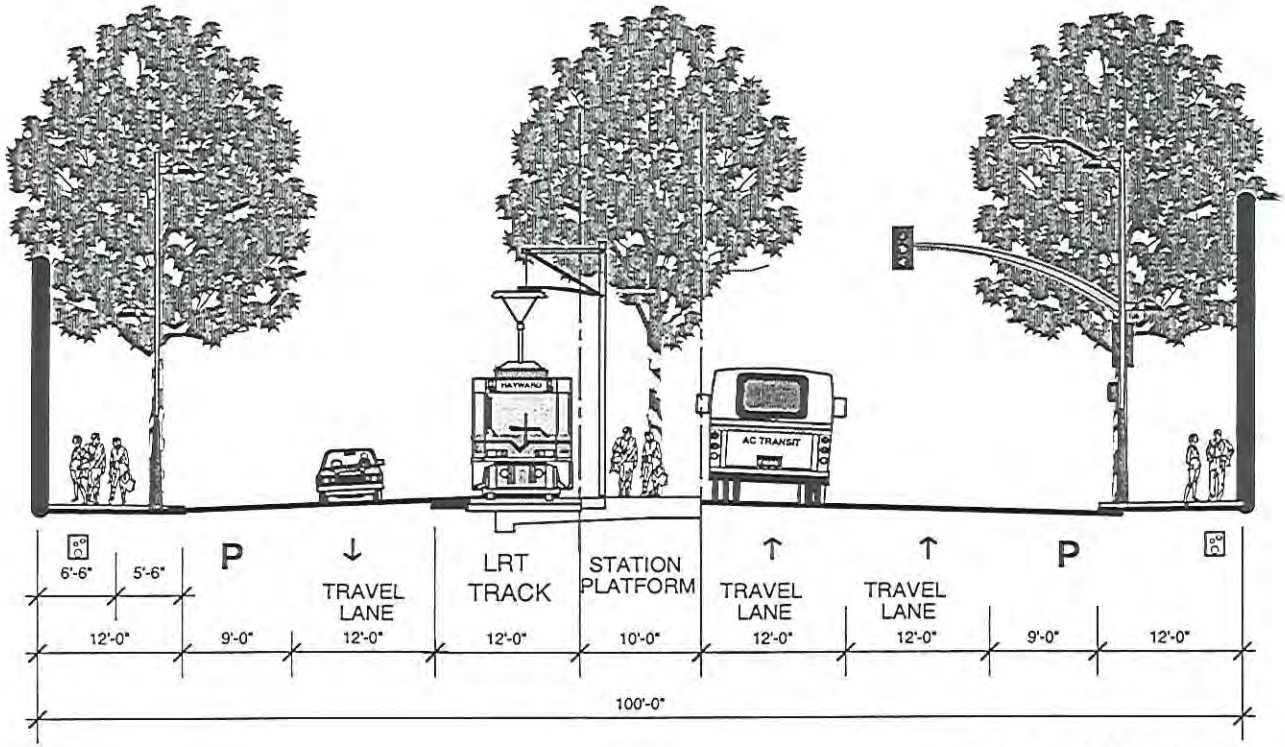
Amphion 5/21/99

STATION
PLATFORM



SIDEWALK
PARKING
1 TRAVEL LANE
SINGLE LRT TRACK
TURN POCKET
2 TRAVEL LANES
PARKING
SIDEWALK

LRT TRACKING PLAN



LRT SINGLE TRACK
TYPICAL 100' SECTION

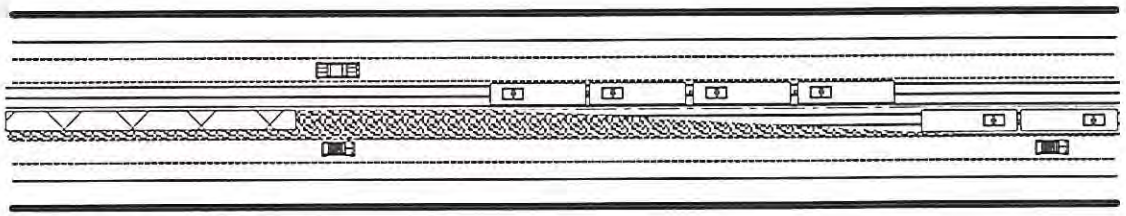
EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1/16" = 1'-0"

0 10 30

Amphion 5/5/99

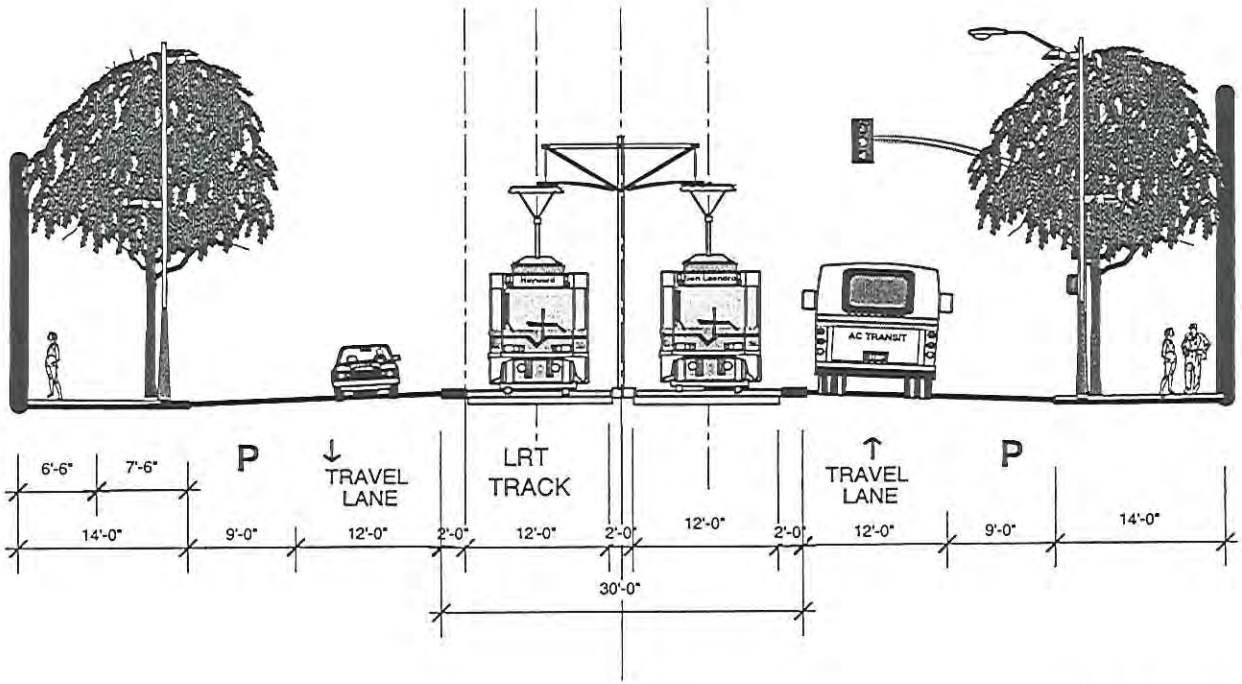
SINGLE
TRACK @
STATION
PLATFORM



SIDEWALK
PARKING
TRAVEL LANE
DOUBLE LIGHT RAIL TRACKS

TRAVEL LANE
PARKING
SIDEWALK

LRT TRACKING PLAN



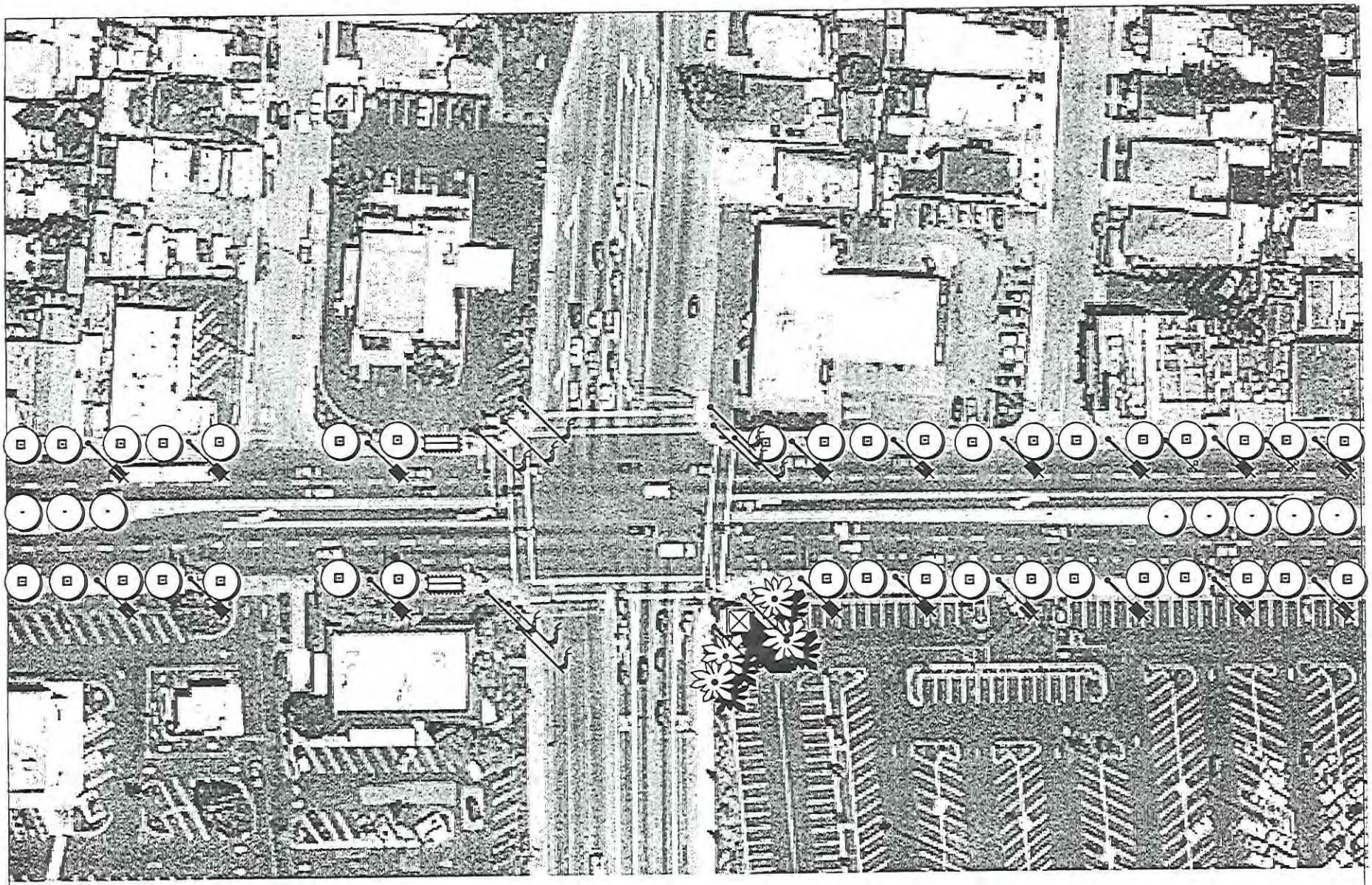
LRT DOUBLE TRACKING
TYPICAL 100' SECTION

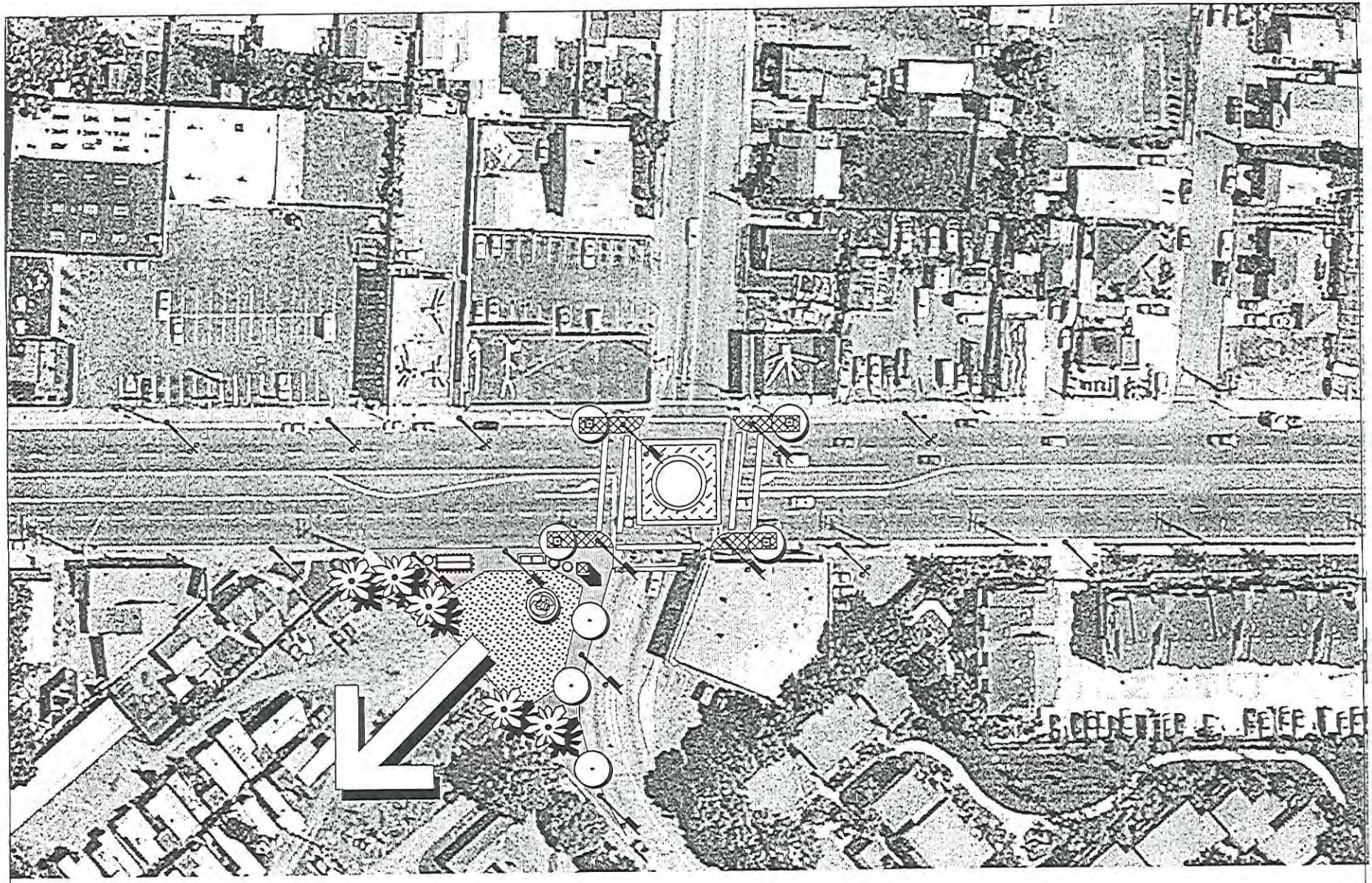
EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1/16" = 1'-0"

0 10 30

Amphion 5/5/99


SCALE: 1" = 100'
0 50 100 150
Amphion
2/22/99
NORTH
SPECIAL AREA
FAIRMONT GATEWAY
EAST 14TH STREET/ MISSION BOULEVARD



SCALE: 1" = 100'

0 50 100 150

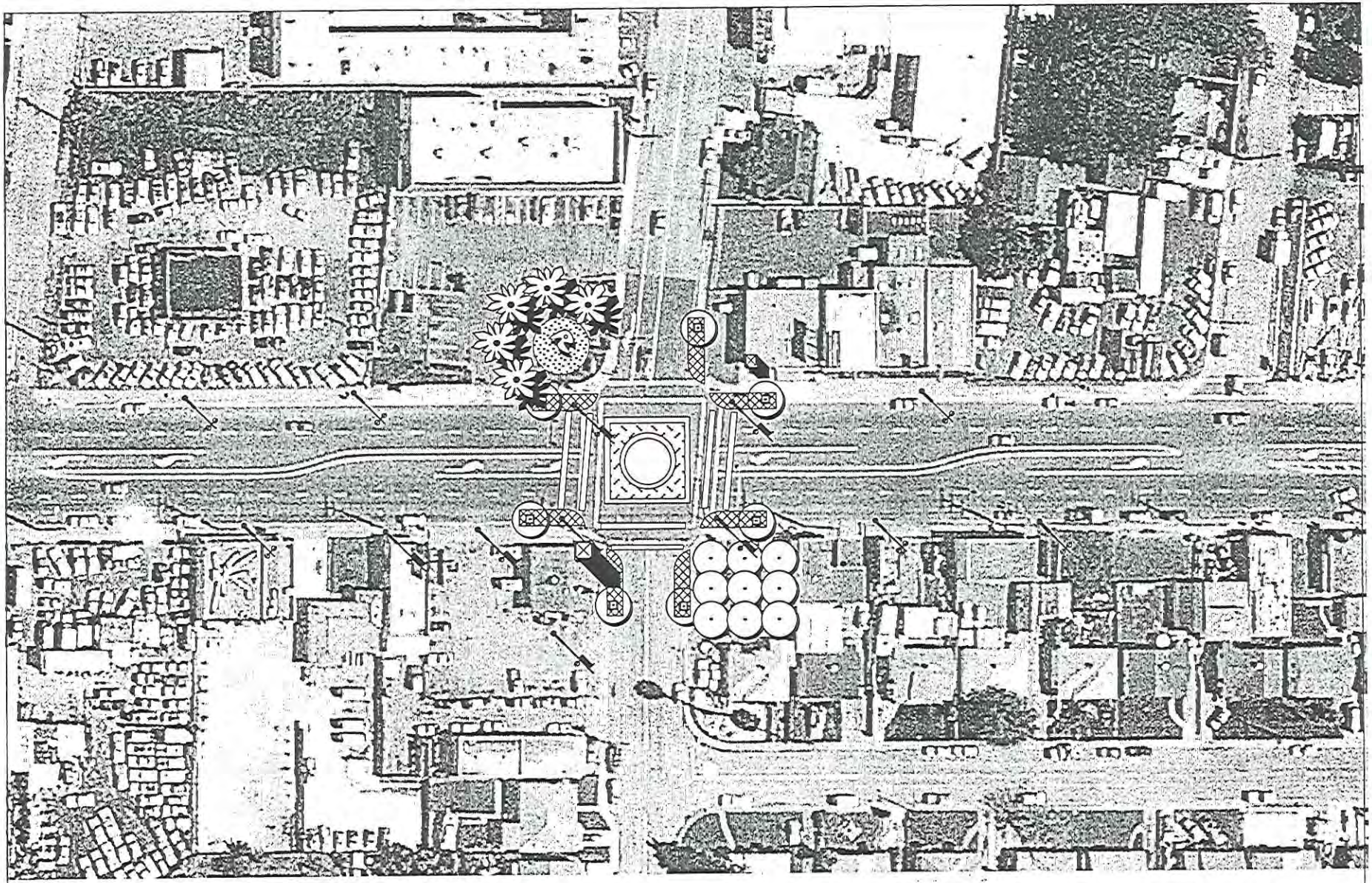
Amphion 2/22/99

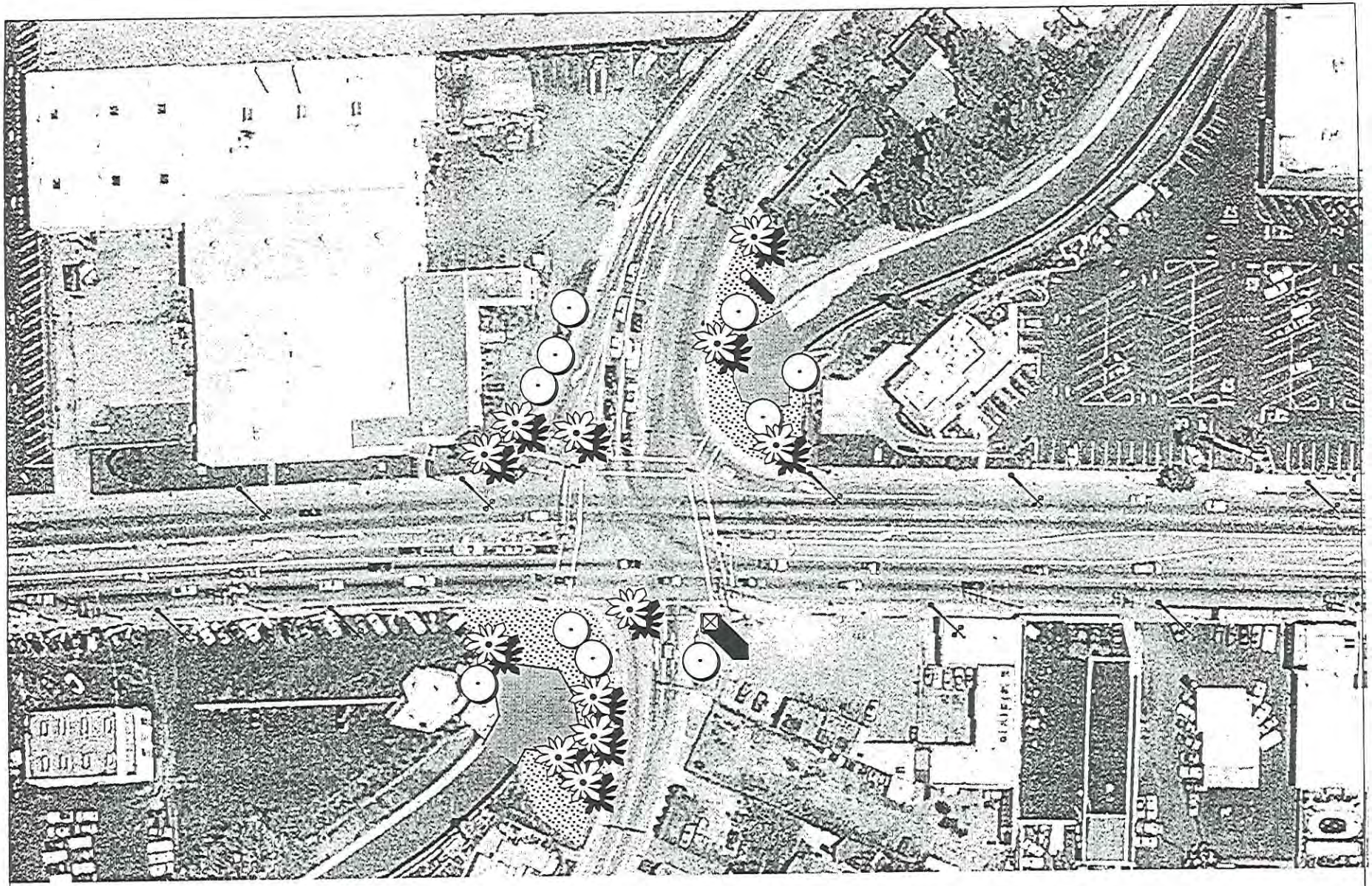
NORTH

SPECIAL AREA

164TH AVE & KENT AVENUE GATEWAY

EAST 14TH STREET/ MISSION BOULEVARD


SCALE: 1" = 100'
0 50 100 150
Amphion 2/22/99
NORTH
SPECIAL AREA
167TH AVE & ELGIN GATEWAY
EAST 14TH STREET/ MISSION BOULEVARD



SCALE: 1" = 100'

0 50 100 150

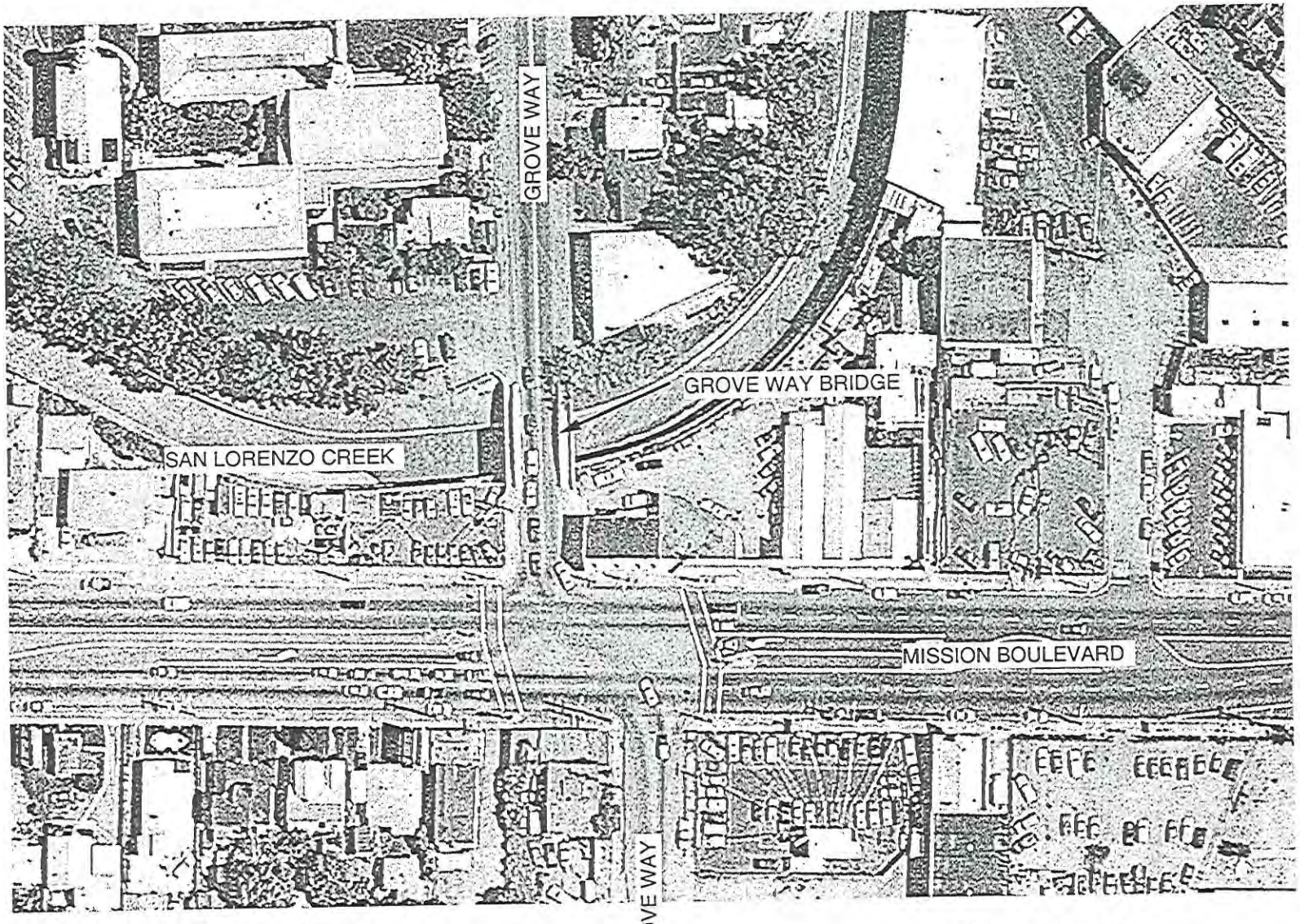
Amphion 2/22/99

NORTH

SPECIAL AREA

MATTOX/ HAMPTON & SAN LORENZO CREEK

EAST 14TH STREET/ MISSION BOULEVARD



SCALE: 1" = 100'

0 50 100 150

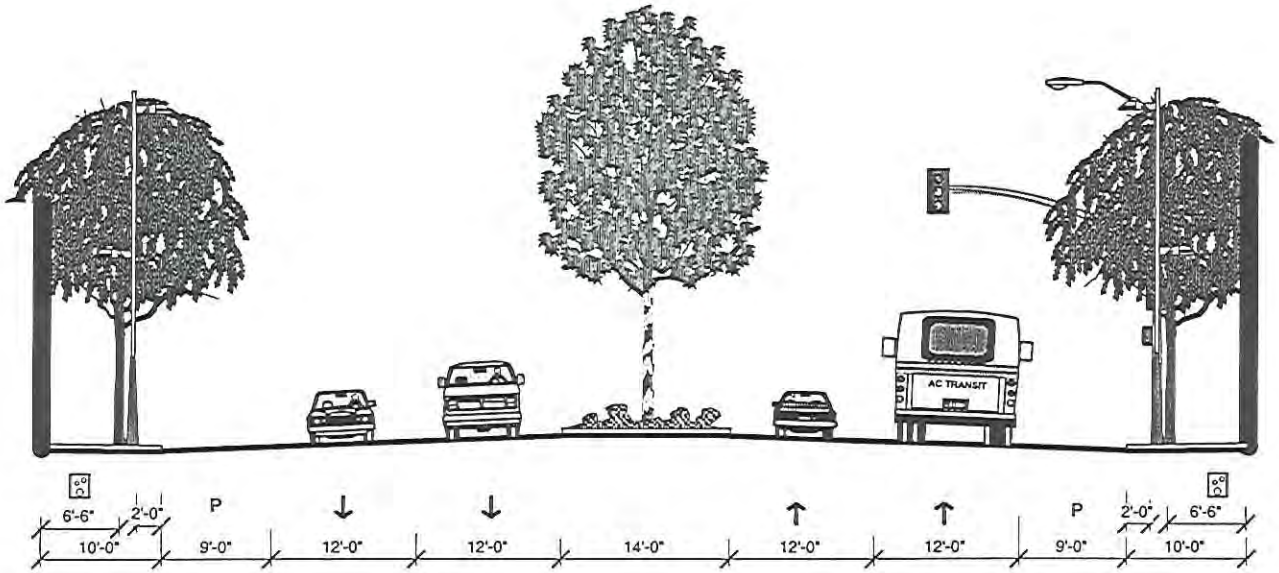
NORTH

Amphion 2/22/99

SPECIAL AREA

GROVE WAY BRIDGE AREA

EAST 14TH STREET/ MISSION BOULEVARD

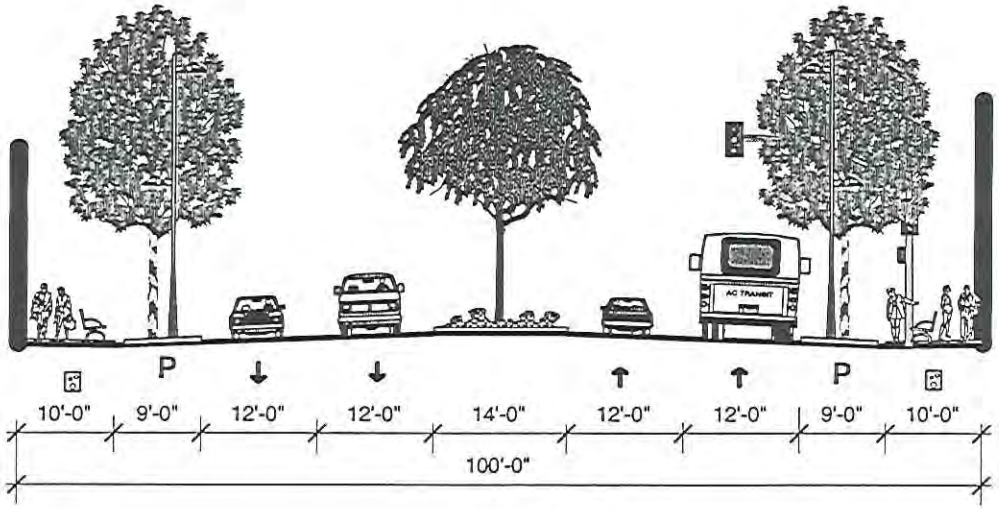


SCALE: 1/16" = 1'-0"

0 10 30

Amphion 2/25/99

Option 1
TYPICAL 100' SECTION
EAST 14TH STREET/ MISSION BOULEVARD



Option 2

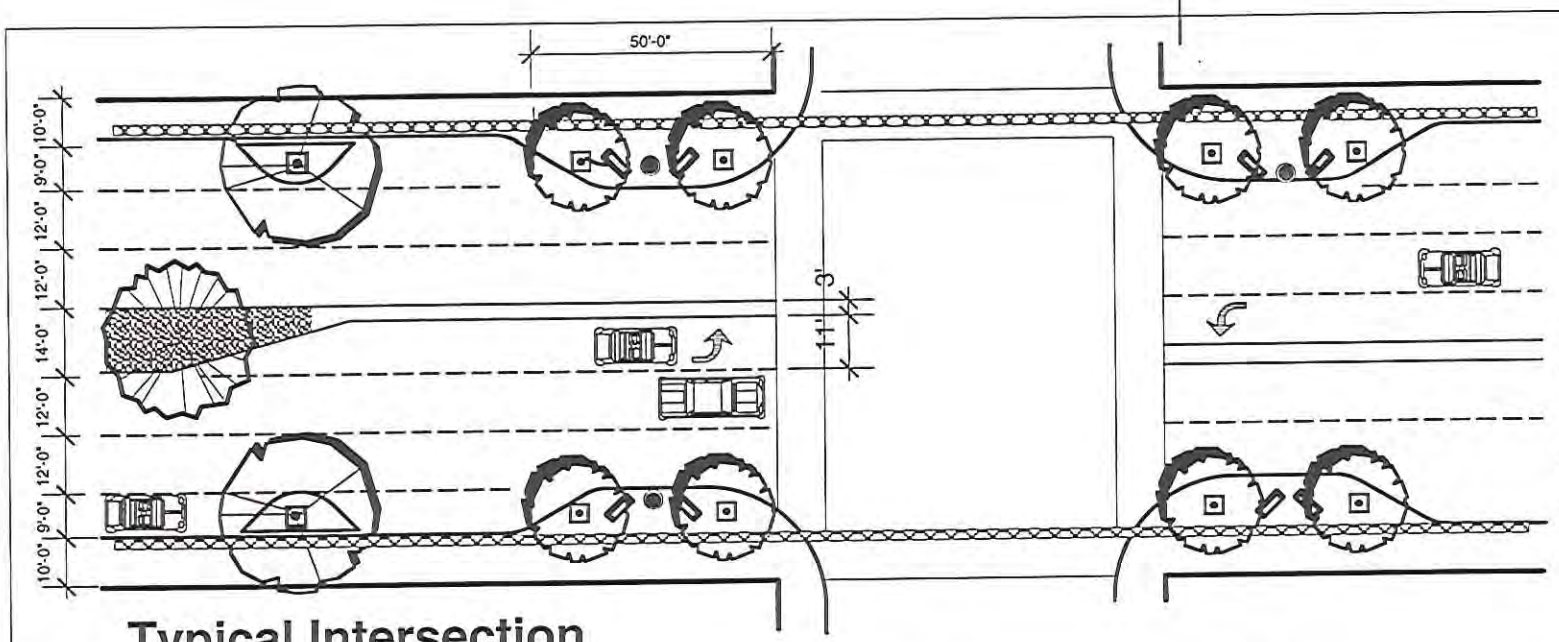
TYPICAL 100' SECTION

EAST 14TH STREET/ MISSION BOULEVARD

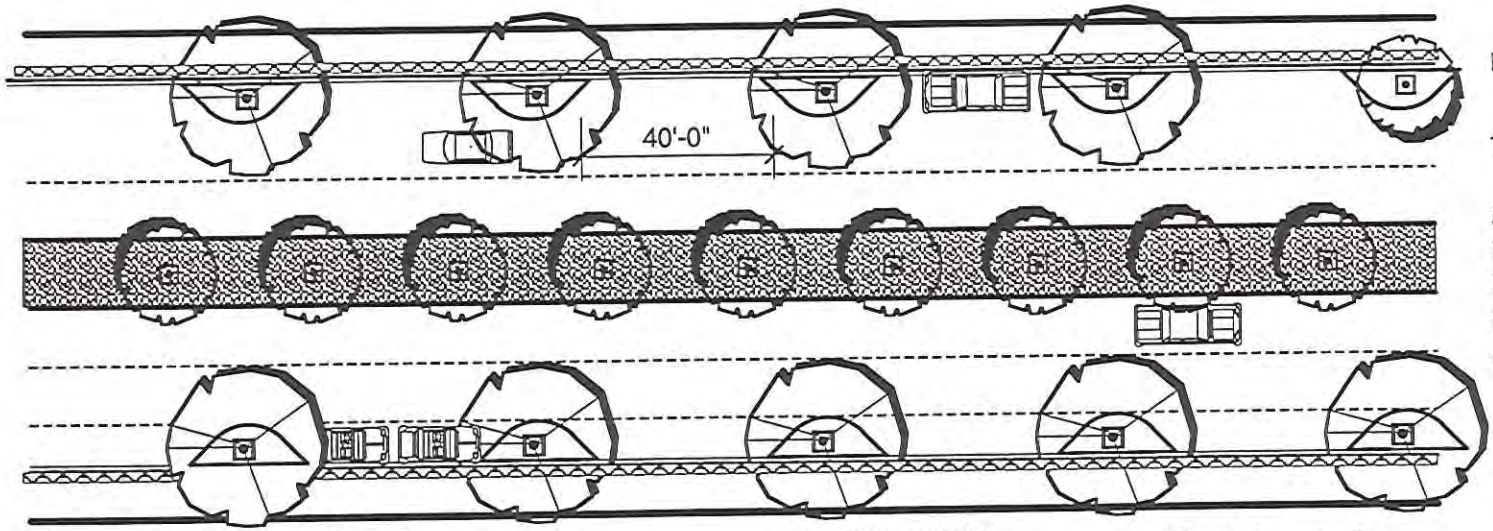
SCALE: 1/16" = 1'-0"

0 10 30

Amphion 2/25/99



Typical Intersection



Typical Midblock

UTILITY TRENCH BEHIND CURB

STREET TREES 60' OC IN ISLANDS PARKING LANE

SCALE: 1" = 40'-0"

0 20 80

Amphion 3/5/99

Option 2

TYPICAL 100' PLAN VIEW

EAST 14TH STREET/ MISSION BOULEVARD

Appendix 2 - Transit Improvements

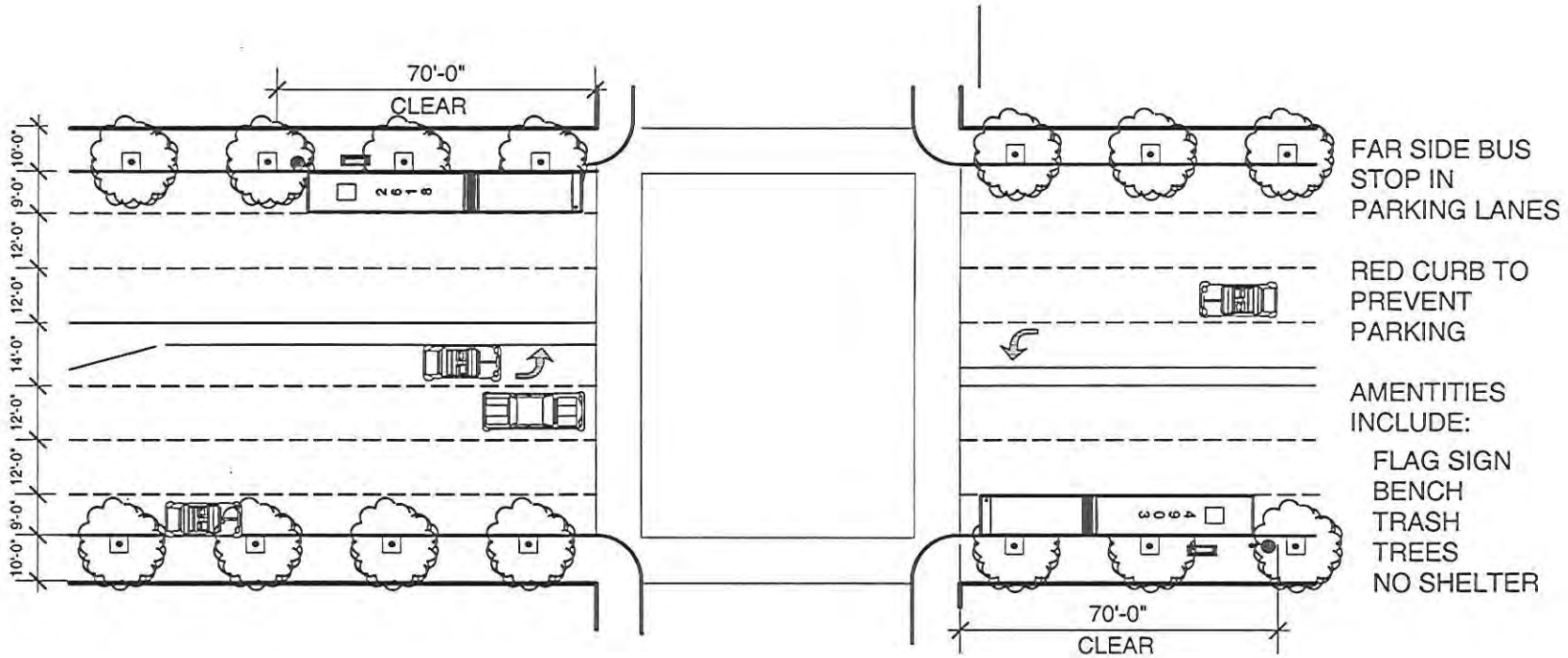
A number of drawings were developed during the master planning process that describe a bus stop hierarchy, but indicate alternative curb alignments where the bus stop can not be relocated to a "far side" stop or the recommended intersection "bulb-out" is not viable.

Basic Stop: Where sidewalks are 10 feet, Option 1 shows a Basic Stop layout. A far side bus stop is shown with the buses pulling into the parking lane; red curbs prevent auto parking. The basic stop includes a flag sign, bench, trash receptacle and street trees. No shelter or information kiosk are provided. The disadvantage of stopping in the parking lane is that the red curb zone will need to be enforced by the California Highway Patrol or bus drivers will be forced to unload passengers in an unsafe manner from the travel lane.

Enhanced Stop on 12' – 15' Sidewalk: Where the sidewalks can only be widened between twelve and fifteen feet, Option 2 shows an Enhanced Stop layout. A far side bus stop is shown with the buses pulling into the parking lane; red curbs make auto parking illegal. The basic stop includes a flag sign, bench, trash receptacle and trees. A shelter, information kiosk and pedestrian scale lights are provided on the widened sidewalk.

Modified Enhanced Stop: Where the number of passenger boarding and waiting indicate the need for patron enhancements; yet the side walks can not be widened, Option 3 provides an alternative. A far side bus bay is shown with a sidewalk "bulb-out" area at the far end of the bus loading zone. Red curb and enforcement would be required to prevent auto parking. At the head of the stop a widened sidewalk area accommodates bus stop amenities including a shelter, information kiosk, pedestrian scale lights, flag sign, bench, trash receptacle and trees. This option provides a dedicated lane area for buses to stop, but operationally makes it difficult for buses to re-enter the traffic flow. The disadvantage of this stop layout is similar to the previously described layout that if the red curb zone is not enforced bus drivers will be forced to unload passengers in an unsafe manner from the travel lane.

Joint Development with Adjacent Private Land: Where the opportunity arises that the adjacent land owner agrees to jointly develop bus stop amenities, Option 4 provides a superior solution. A far side bus stops locates enhancements at the back of the sidewalk in areas the bus stop adjoins a private parking lot and a joint development agreement permits location of a amenity zone. A far side bus stop is shown with the buses pulling into the parking lanes; red curbs prevent auto parking. A widened sidewalk area accommodates bus stop amenities including a shelter, information kiosk, pedestrian scale lights, flag sign, bench, trash receptacle and trees.



Option 1
Basic Bus Stop

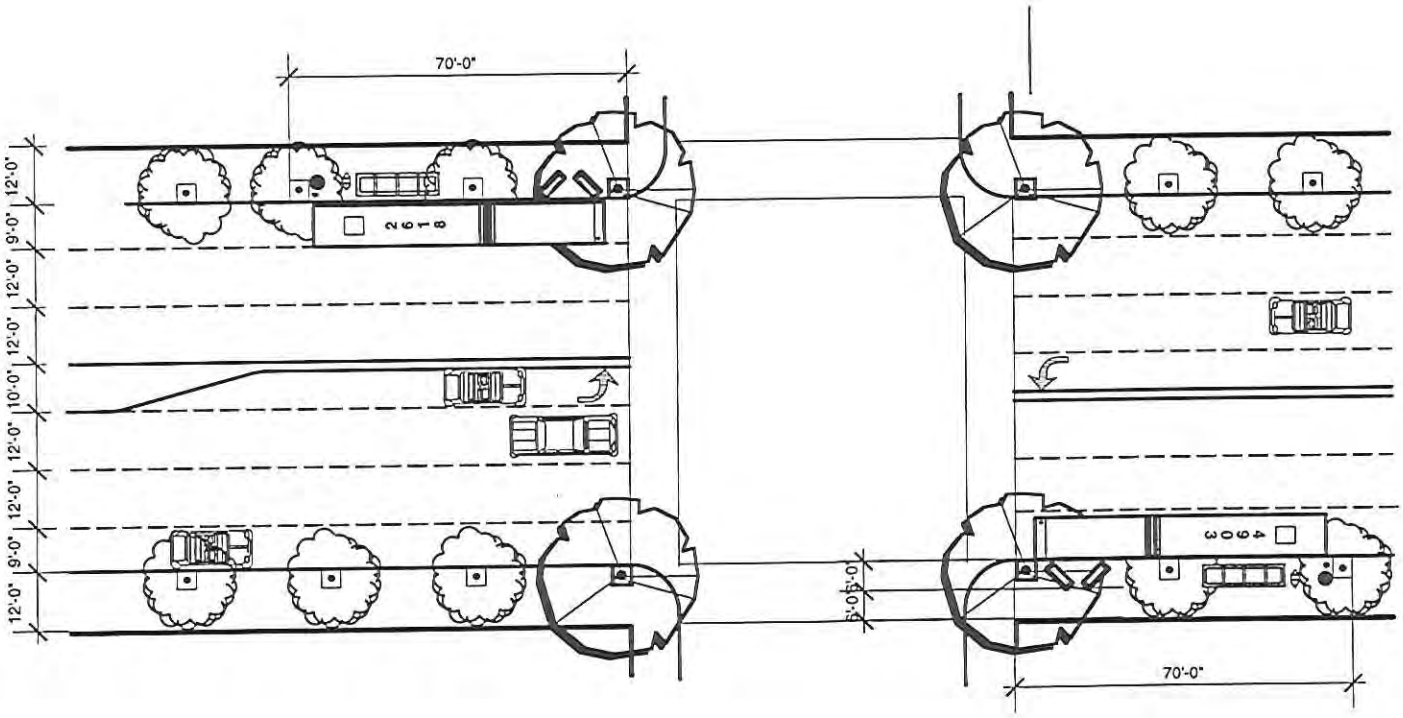
TYPICAL 100' PLAN VIEW

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1" = 40'-0"

0 20 80

Amphion 3/11/99



FAR SIDE BUS STOP IN PARKING LANES

RED CURB TO PREVENT PARKING

AMENTITIES INCLUDE:

- FLAG SIGN
- INFORMATION KIOSK
- SHELTER
- BENCHES
- TRASH
- TREES
- PEDESTRIAN SCALE LIGHTS

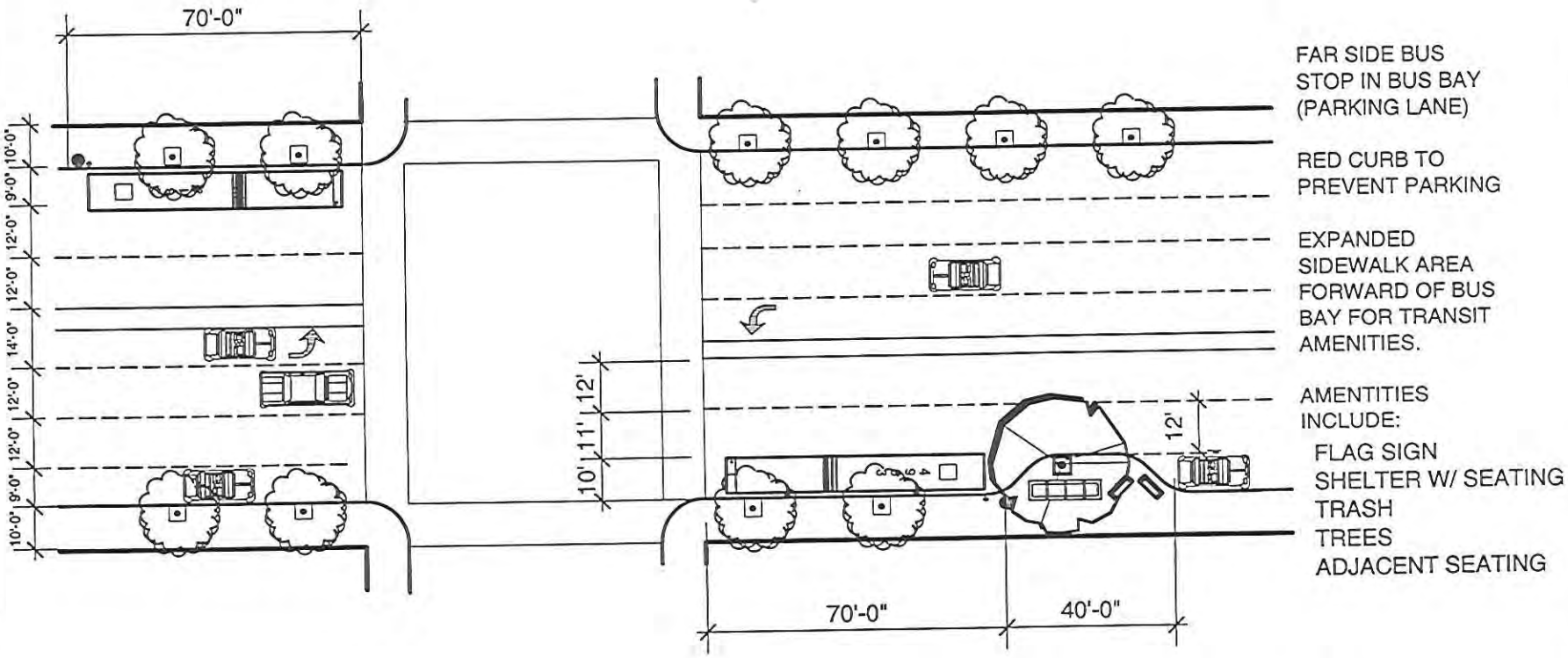
Option 2
12' - 15' Sidewalks
Enhanced Bus Stop
TYPICAL 100' PLAN VIEW

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1" = 40'-0"

0 20 80

Amphion 3/11/99



Option 3 - Bus Stop with Intersection Bus Bay

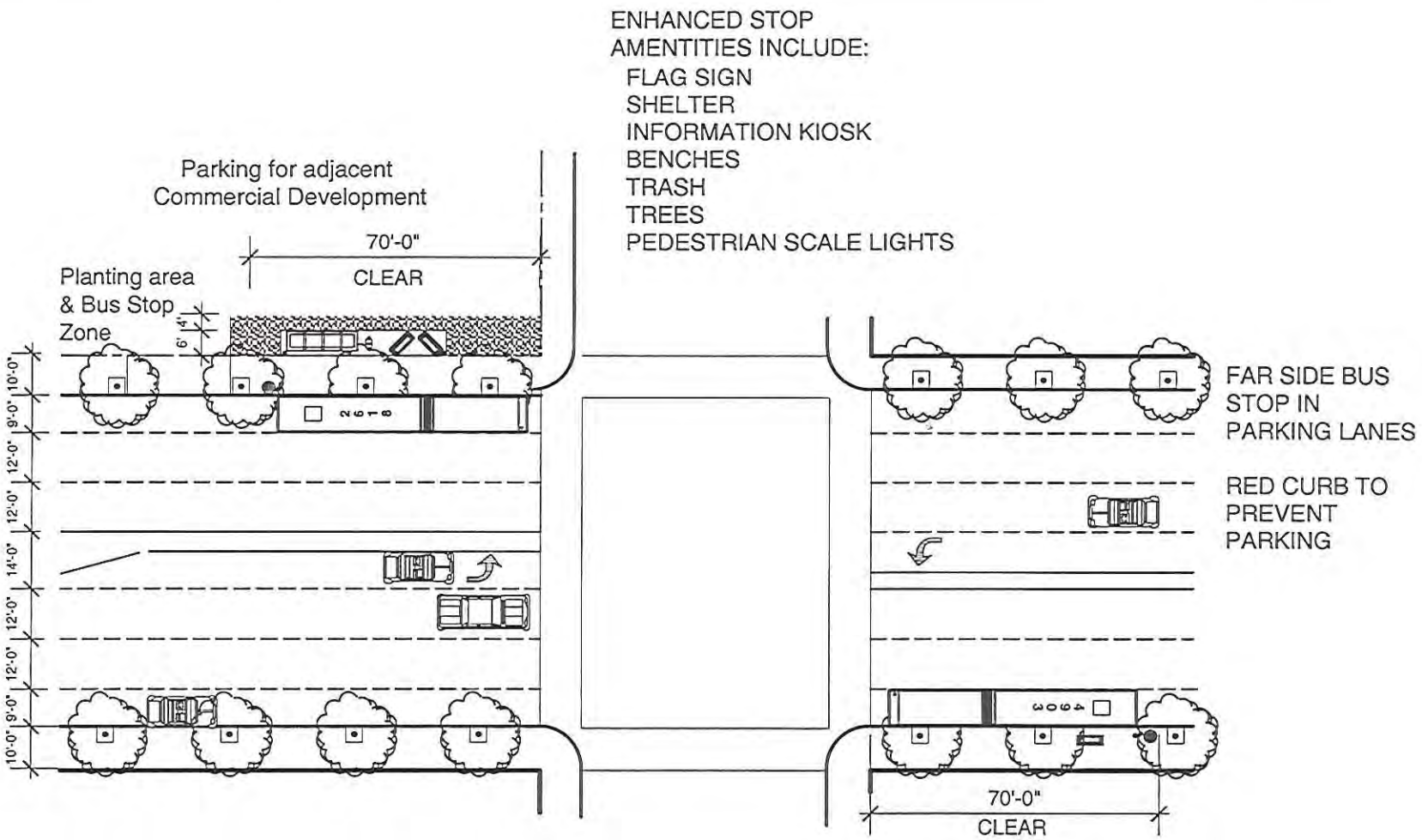
TYPICAL 100' PLAN VIEW

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1" = 40'-0"

0 20 80

Amphion 3/5/99



Option 4 Enhanced Bus Stop Joint Development with Adjacent Private Land

TYPICAL 100' PLAN VIEW

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1" = 40'-0"

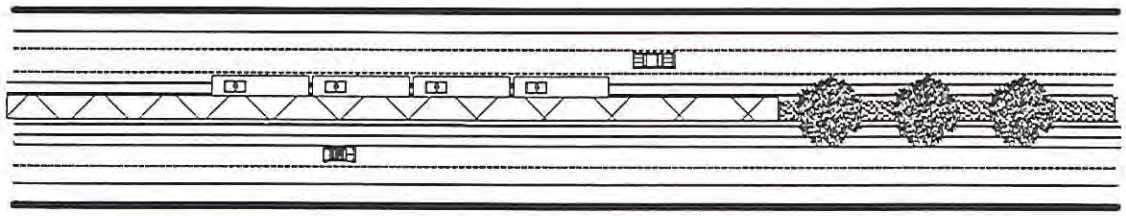
0 20 80

Amphion 3/11/99

Optional LRT Cross Sections

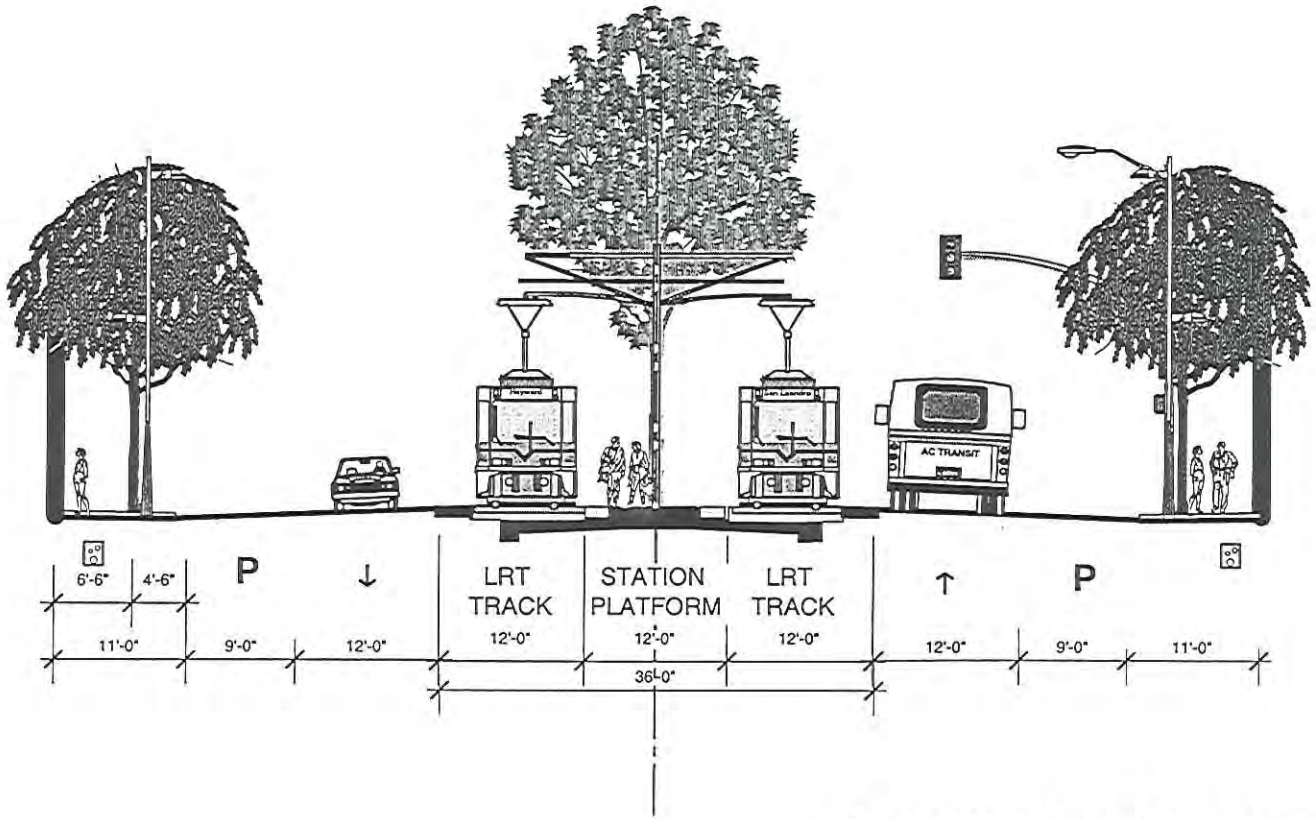
Other options that were explored during the development of the Master Plan include:

- Double tracked system with central load platform. This type of system would require the median and two travel lanes for a 36'-0" LRT dedicated area. It results in an efficient LRT system, but requires major modifications to traffic flow with the loss of travel lanes and turning lanes.
- LRT tracks at the parking lanes using the sidewalk areas for loading platforms. This system would preserve the existing traffic movements, but eliminates on-street parking. It also increases the cost of the system by requiring double sets of the support catenary and loading areas.



SIDEWALK
PARKING
TRAVEL LANES
LIGHT RAIL STATION/ MEDIAN
TRAVEL LANE
PARKING
SIDEWALK

LRT TRACKING PLAN



LRT CENTRAL LOAD PLATFORM

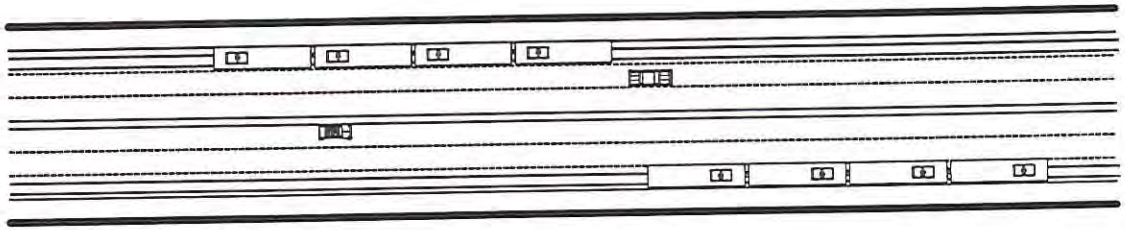
TYPICAL 100' SECTION

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1/16" = 1'-0"

0 10 30

Amphion 2/25/99

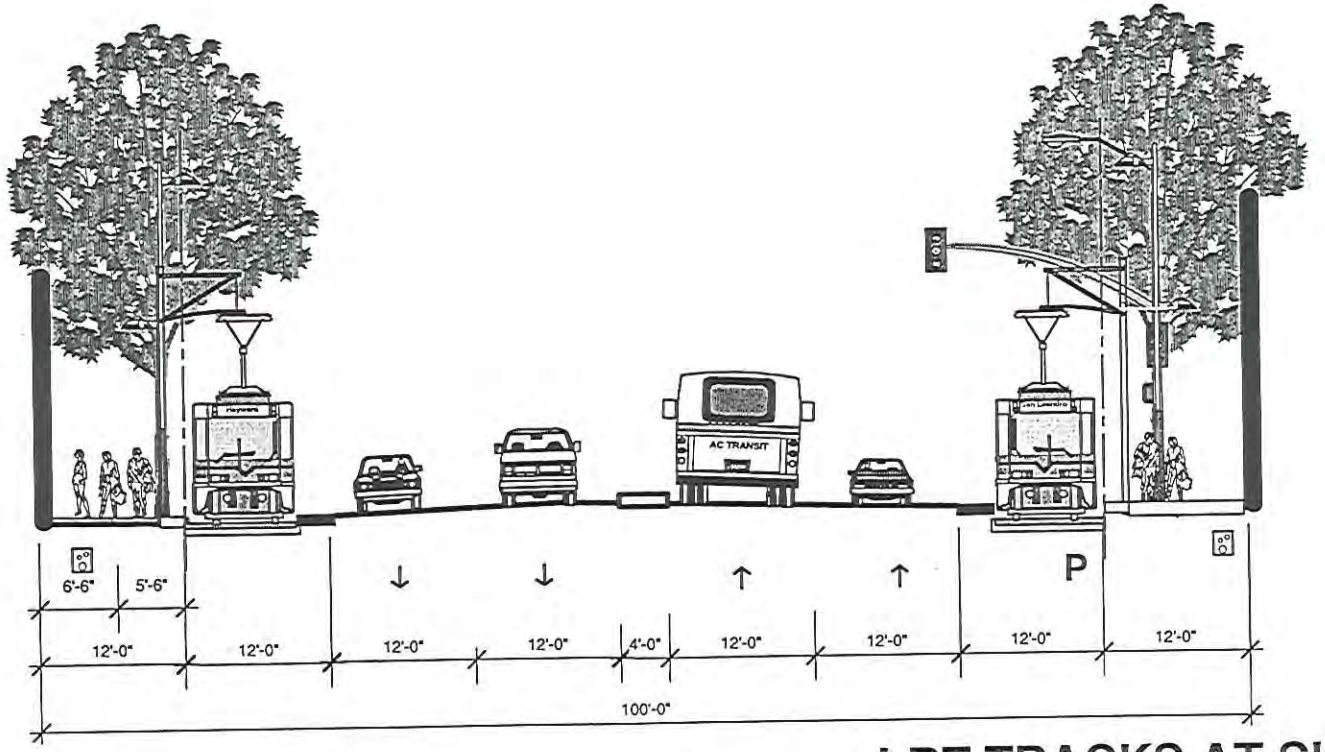


SIDEWALK
LIGHT RAIL TRACKS
2 TRAVEL LANES

MEDIAN

2 TRAVEL LANE S
LIGHT RAIL TRACKS
SIDEWALK

LRT TRACKING PLAN



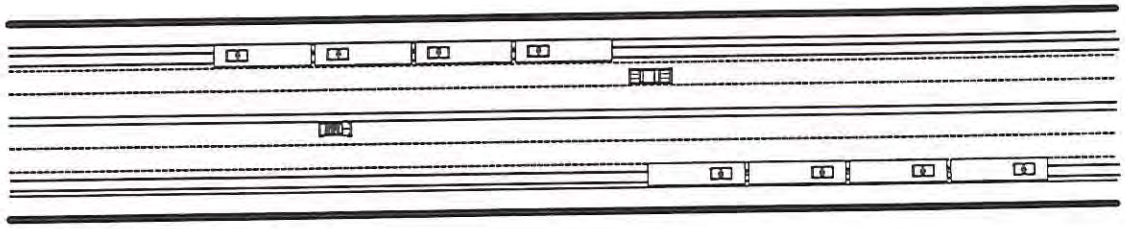
LRT TRACKS AT SIDEWALK
TYPICAL 100' SECTION

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1/16" = 1'-0"

0 10 30

Amphion 2/25/99

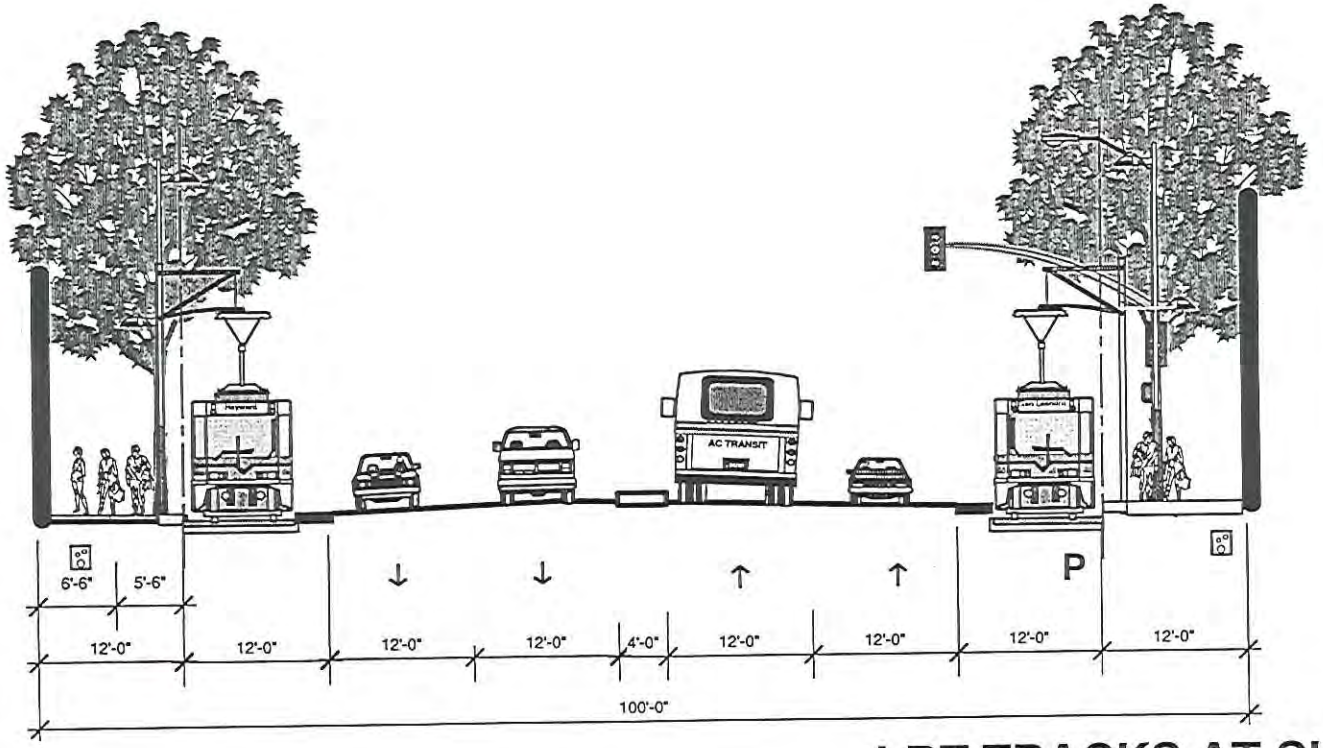


SIDEWALK
LIGHT RAIL TRACKS
2 TRAVEL LANES

MEDIAN

2 TRAVEL LANE S
LIGHT RAIL TRACKS
SIDEWALK

LRT TRACKING PLAN



LRT TRACKS AT SIDEWALK
TYPICAL 100' SECTION

EAST 14TH STREET/ MISSION BOULEVARD

SCALE: 1/16" = 1'-0"

0 10 30

Amphion 2/25/99

Recommended Plant Materials

The following recommended plant list was developed from the Water-conserving Plants & Landscapes for the Bay Area published by East Bay Municipal Utility District. Other plants not on the list may be utilized

It is recommended that a Landscape Architect or Horticulturalist inspect plants at nursery source to ensure health and desirable characteristics.

			Characteristics								
	Botanical Name	*Common Name*	*Street Tree*	*Median/ Special Area*	*Showy Fruit/ Flower or Leaf Color*	*Leaf drop/ Litter*	*Drought Resistant*	*Freeze Tolerant*	*Evergreen/ Deciduous*	*Growth Rate*	*Mature Size height by width*
	Street Trees										
	Acer rubrum	Red Maple	✓				✗	✓	*Deciduous*	*slow*	*40' by 40'*
	Aesculus carnea 'Briottii"	Red Horsechesnut	✓					✓	*Deciduous*	*slow*	*40' by 30'*
	Aesculus hippocastanum 'Baumannii'	Common Horsechesnut	✓		✓			✓	*Deciduous*	*slow*	*60' by 40'*
	Celtis sinensis	Chinese Hackberry	✓	✓					*Deciduous*	*fast*	*40' by 40'*
	Fraxinus holotricha 'Moraine'	Moraine Ash	✓		✓			✓	*Deciduous*	*fast*	*40' by 30'*
	Fraxinus oxycarpa 'Raywood'	Raywood Ash	✓		✓			✓	*Deciduous*	*fast*	*35' by 25'*
	Fraxinus uhdei	Shamel Ash	✓	*not in turf*			✓	✗	*Deciduous*	*very fast*	*80' by 50'*
	Platanus acerifolia cultivar	London Plane Tree	✓				✓	✓	*Deciduous*	*fast*	*50' by 35'*
	Zelkova serrata	Sawleaf Zelkova		✓	✓			✗	*Evergreen*	*slow- mod*	*40' by 30'*
	Median & Intersection Accent Trees										
	Betula jacquemontii	Jaquemont Birch		✓			✗	✓	*Deciduous*	*moderate*	*40' by 30'*
	Betula nigra	River Birch		✓				✓	*Deciduous*	*fast*	*40' by 35'*
	Carpinus betulus "Fastigata'	European Hornbeam	✓	✓				✓	*Deciduous*	*moderate*	*35 by 25'*
	Casuarina stricta	Beefwood		✓					*Evergreen*	*moderate*	*25' by 15'*
	Cercis occidentalis	Western Redbud		✓	✓			✓	*Deciduous*	*moderate*	*20 by 15'*
	Jacaranda mismosifolia	Jacaranda		✓	✓	✓		✗	*Deciduous*	*moderate*	*30' by 20'*
	Koelreuteria bipinnata	Chinese Flame Tree	✓		✓	✓	✓	✓	*Deciduous*	*moderte*	*30' by 25'*
	Lagerstroemia indica	Crape Myrtle		✓	✓			✓	*Deciduous*	*fast*	*15' by 15'*

			Characteristics									
	Botanical Name	Common Name	Street Tree	Median/ Special Area	Showy Fruit/ Flower or Leaf Color	Leaf drop/ Litter	Drought Resistant	Freeze Tolerant	Evergreen/ Deciduous	Growth Rate	Mature Size height by width
	Laurus nobilis 'Saratoga'	Laurel		✓				✓	Evergreen	slow	20' by15'
	Magnolia grandiflora cultivars	Southern Magnolia		✓				✘	Evergreen	moderate	40' by 20'
	Olea europea 'Swan Hill'	Fruitless Olive		✓			✓	✘	Evergreen	slowly	25' by 25
	Phoenix canariensis	Canary Island Palm		✓			✓	✘	Evergreen	slow	60' by 50'
	Pinus canariensis	Canary Island Pine		✓			✓	✘	Evergreen	mod-fast	70' by 30'
	Pinus pinea	Stone Pine		✓			✓	✓	Evergreen	moderate	60' by 50'
	Populus nigra 'Italiaca'	Lombardy Poplar		✓				✓	Deciduous	fast	60' by 30'
	Prunus blireiana	Doublepink Cherry Plum		✓	✓			✓	Deciduous	moderate	35' by 20'
	Prunus cerasifera 'Thundercloud'	Thundercloud Plum	✓	✓	✓			✓	Deciduous	fast	25' by 30'
	Prunus serrulata 'Kwanzan'	Doublepink flowering Cherry	✓	✓	✓			✓	Deciduous	moderae	30' to 20'
	Prunus yedoensis 'Akebono"	Akebono Cherry	✓	✓	✓			✓	Deciduous	fast	40' by 30'
	Pyrus calleryana 'Aristocrat'	Aristocrat Pear	✓		✓		✓	✓	Deciduous	moderate	40' by 40'
	Quercus rubra	Red Oak	✓	✓				✓	Deciduous	moderate	80' by 50'
	Quercus suber	Cork Oak	✓	✓			✓		Deciduous	moderate	80' by 80'
	Quercus agrifolia	Coast Live Oak		✓			✓	✓	Evergreen	moderate	40' by 70'
	Quercus coccinea	Scarlet Oak		✓	✓			✓	Evergreen	moderate	60' by 40'
	Robinia amigua 'decaisneana' or 'idahoensis'	Idaho Pink Locust	✓	✓			✓	✓	Deciduous	very fast	40' by 30'
	Tristania conferta	Brisbane Box		✓	✓			✘	Evergreen	fast	40' by 30'
	Sapium sebiferum	Chinese Tallow Tree					✓	✘	Deciduous	moderate	35' by 30'
	Sequoia sempervirens cultivars	Coast Redwood		✓					Evergreen	fast	80' by 40'
	Sophora japonica	Japanese Pagoda		✓				✓	Deciduous	moderate	30' by 30'
	Tilia cordata	Littleleaf Linden		✓				✓	Deciduous	moderate	40' by 20'
	Tristania laurina 'elegant'	Water Gum		✓	✓			✘	Evergreen	slow- mod	40' by 30'
	Washingtonia robusta	Mexican Fan Palm		✓	✓			✘	Evergreen	slow- mod	40' by 30'

	Botanical Name	Common Name	Characteristics								
			Street Tree	Median/ Special Area	Showy Fruit/ Flower or Leaf Color	Leaf drop/ Litter	Drought Resistant	Freeze Tolerant	Evergreen/ Deciduous	Growth Rate	Mature Size height by width
	Special Area Trees										
	Acer palmatum	Japanese Maple		✓			✗	✓	Deciduous	slow	20' by 20'
	Agonis flexuosa	Peppermint Tree		✓				✗	Evergreen	moderate	30' by 30'
	Arbutus 'Marina'	Marina Madrone		✓		✓			Evergreen	slow	25' by 25'
	Arbutus unedo	Strawberry Tree		✓		✓			Evergreen	slow	30' by 30'
	Crataegus phaenopyrum	Washington Thorn		✓	✓	✓		✓	Deciduous	moderate	20' by 20'
	Crataegus lavallei	Carriere Hawthorn	✓		✓	✓		✓	Deciduous	moderate	30' by 20'
	Cupressus sempervirens 'Stricta'	Columnar Italian Cypress	✓					✓	Evergreen	moderate	60' by 15'
	Eriobotry deflexa	Bronze Loquat	✓	✓	✓			✓	Evergreen	fast	18' by 25'
	Geijera parviflora	Australian Willow	✓				✓	✗	Evergreen	slow-mod	25' by 35'
	Ginko biloba cultivars	Maidenhair Tree	✓		✓		✓	✓	Deciduous	very slow	40' by 30'
	Gleditsia triacanthos inermis cultivars	Thornless Honey Locust	✓					✓	Deciduous	fast	45' by 35'
	Koelreuteria paniculata	Golden Flame Tree	✓		✓	✓	✓	✓	Deciduous	moderate	30' by 15'
	Liquidambar styraciflua 'Festival' or 'Palo Alto'	Sweet Gum	✓	✓	✓			✓	Deciduous	moderate	40' by 25'
	Liriodendron tulipifera	Tulip Poplar	✓	✓	✓		✓	✓	Deciduous	fast	60' by 40'
	Malus arnoldiana	Arnold Crabapple		✓	✓	✓		✓	Deciduous	fast	20' by 30'
	Malus 'Bechtel Klehm'	Crabapple		✓	✓	✓		✓	Deciduous	moderate	20 ' by 20'
	Pittosporum undulatum	Victoria Box		✓		✓		✗	Evergreen	moderate	40' by 30'
	Pistacia chinensis cultivars	Chinese Pistache	✓				✓		Deciduous	moderate	50' by 40'
	Podocarpus gracilior	Fern Pine	✓					✗	Evergreen	mod-fast	40' by 40'
	Rhus lancea	African Sumac		✓			✓		Evergreen	fast	25' by
	Shrubs										
	Berberis thunbergii"Crimson Pygmy'	Purple leaf barberry			✓		✓	✓	Evergreen	moderate	2' by 3'
	Carpenteria californica	Bush anemone			✓		✓	✗	Evergreen	slow	3' tall
	Ceanothus species (low)	Wild Lilac			✓		✓	✗	Evergreen	moderate	3' by 6'+

	Botanical Name	Common Name	Characteristics						Evergreen/ Deciduous	Growth Rate	Mature Size height by width
			Street Tree	Median/ Special Area	Showy Fruit/ Flower or Leaf Color	Leaf drop/ Litter	Drought Resistant	Freeze Tolerant			
	Cistus species	Rockrose			✓		✓	✗	Evergreen	moderate	3' by 3'
	Chaenomeles cultivars	Flowering Quince			✓		✓	✓	Deciduous	moderate	3' by 4'
	Cotinus coggygria	Smoke Bush			✓		✓	✓	Deciduous	moderate	15' by 15'
	Dendromecon harfordii	Island Bush Poppy			✓		✓		Evergreen	moderate	6' by 4'
	Dietes bicolor	African Iris			✓		✓		Evergreen	moderate	2' by 2'
	Dietes vegetata	Fortnight Lily			✓		✓		Evergreen	moderate	3' by 3'
	Feijoa sellowiana	Pineapple Guava			✓		✓		Evergreen	moderate	10' by 6'
	Fremontedendron hybrids	Flannel Bush			✓		✓		Evergreen	very fast	15' by 10'
	Heteromeles arbutifolia	Toyon			✓		✓		Evergreen	moderate	10' by 8'
	Kerria japonica				✓		✓	✓	Deciduous	moderate	8' by 5'
	var.)	Red Hot Poker			✓		✓	✓	Evergreen	moderate	2' by 2'
	Lavandula dentata	French Lavender			✓		✓		Evergrreen	moderate	3' by 3'
	Myrica californica	Packfic Wax Myrtle					✓		Evergreen	moderate	8' by 5'
	Phorium tenax	New Zealand Flax			✓		✓		Evergreen	fast	6' by 5'
	Rhamnus californica 'Eve Case'	Coffeeberry			✓		✓		Evergreen	moderate	4' by 5'
	Solly heterophylla	Australian Bluebell			✓		✓		Evergreen	moderate	2' by 3'
	Teucrium fruticans	Bush Germander			✓		✓		Evergreen	moderate	4' by 4'
	Westringia rosmariniformis	Rosemary Bush Westringia			✓			✗	Evergreen	moderate	3' by 6'
	Groundcovers & Low Shrubs										
	Agapanthus africanus ' Peter Pan"	Drawf agapanthus			✓		✓		Evergreen	moderate	2' by 6'
	Arctostaphylos 'Emerald Carpet'	Manzanita					✓		Evergreen	moderate	2' by 6'
	Arctostaphylos uva-ursi 'Point Reyes'	Manzanita					✓		Evergreen	fast	2' by 15'
	Baccharis piluaris 'Twin Peaks'	Dwarf Coyote Bush					✓		Evergreen	very fast	2' by 6'

			Characteristics									
	Botanical Name	*Common Name*	*Street Tree*	*Median/ Special Area*	*Showy Fruit/ Flower or Leaf Color*	*Leaf drop/ Litter*	*Drought Resistant*	*Freeze Tolerant*	*Evergreen/ Deciduous*	*Growth Rate*	*Mature Size height by width*
	Ceanothus species				✓		✓		*Evergreen*	*moderate*	*2' by 6'*
	Cistus salviifolius	Rockrose			✓		✓		*Evergreen*	*fast*	*2' by 6'*
	Cistus skanbergii	Rockrose			✓		✓		*Evergreen*	*fast*	*3' by 6'*
	Convulvulus cneorum	Bush Morning Glory			✓		✓		*Evergreen*	*fast*	*2' by 3'*
	Correa polchella	Australian Fuchsia			✓		✓		*Evergreen*	*moderate*	*3' by 6'*
	Dietes bicolor	African Iris			✓		✓		*Evergreen*	*moderate*	*2' by 2'*
	Dietes vegetata	Fortnight Lily			✓		✓		*Evergreen*	*moderate*	*3' by 3'*
	Erigeron karvinskianus	Fleabane			✓		✓		*Deciduous*	*fast*	*1' by 3'*
	Helianthemum nummularium Sunrose				✓		✓		*Evergreen*	*moderate*	*1' by 3'*
	Hemmerocalis Spp.	Evergreen Daylilies			✓		✓		*Evergreen*	*moderate*	*1' by 3'*
	Raphiolepsis ballerina	Drawf raphiolepsis			✓		✓		*Evergreen*	*moderate*	*2' by 6'*
	Santolina chamaecyparissus	Green Lavender Cotton			✓		✓		*Evergreen*	*moderate*	*2' by 4'*
	Santolina virens	Green Lavender Cotton			✓		✓		*Evergreen*	*fast*	*2' by 4'*
	Solly heterophylla	Australian Bluebell			✓		✓		*Evergreen*	*moderate*	*2' by 3'*
	Teucrium chamaedrys	Germander			✓		✓		*Evergreen*	*moderate*	*1 by 3'*
Vines											
	Cissus hypoglauca	Cissus			✓				*Evergreen*	*fast*	
	Clytostoma callistegioides	Lavender Trumpet vine		✓	✓		✓		*Evergreen*	*moderate*	
	Ficus pumila	Creeping fig					✓		*Evergreen*	*fast*	
	Gelsemium sempervirens	Carolina jessamine		✓	✓		✓		*Evergreen*	*moderate*	
	Lonicera hildebrandia	Burmese Honeysuckle			✓		✓		*Evergreen*	*fast*	
	Macfadyena unguis-cati	Yellow Trumpet Vine		✓	✓		✓		*Evergreen*	*very fast*	
	Rosa banksiae	Lady Banks Rose			✓		✓		*Deciduous*	*fast*	
	Wisteria sinensis	Chinese Wisteria			✓		✓		*Deciduous*	*moderate*	