

FRANKFORT AVENUE STUDY

			
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PLAN RECOMMENDATIONS 2003



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The 2000-2010 Frankfort Avenue Streetscape, Parking Study & Railroad Right-of-Way Landscaping Project is part of a joint-effort of the Clifton Community Council and the Crescent Hill Community Council, funded by a grant from the offices of First Ward Alderwoman Tina Ward-Pugh and that of Fifth Ward Alderman Steve Magre.

The pages of this volume represent the conclusions of the Frankfort Avenue Streetscape Study, begun in January 2002, and completed in June 2002.

This project is possible due to the exhaustive efforts of:

- Pam Vetter, Pres, Clifton Community Council
- John Baker, Vice Pres, Clifton Community Council
- Michael Berger, Pres, Crescent Hill Comm. Council
- Barbara Sinai, Crescent Hill Comm. Council

Information, and Cooperation from the following groups and agencies was essential to the gathering of data, in-depth input, history, and development of concepts of this study:

- Clifton Community Council
- Crescent Hill Community Council
- Frankfort Avenue Business Association
- Butcherown Neighborhood Association
- Louisville/ Jefferson Co. Information Consortium (LOJIC)
- Louisville/ Jefferson Co. Metropolitan Sewer District (MSD)
- CSX Railroad
- Transit Authority of River City (TARC)
- Louisville Division of Police
- Louisville Waterfront Development Corporation
- Louisville Water Company
- Louisville Gas & Electric
- City of Louisville, Office of Planning & Development
- City of Louisville Public Works Department

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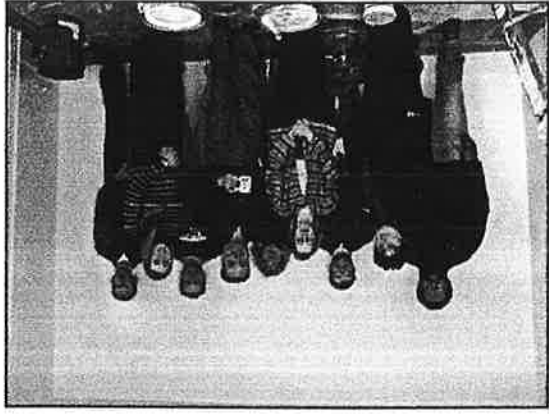
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INTENT

It is important to note that these diversities exist, not only along the full length of the street, but, typically, *within each and every block.*

It is this **Diversity** that we most strongly seek to preserve, while creating the structure for a sense of **Continuity** along the entire length of the corridor, through the establishment of an underlying order.

Of course, the most basic and major underlying goal of our study is to create a plan identifying the key elements needed for the beautification and heightened functionality of the streetscape, as it is now, and as it develops further.

Next, is then to provide an estimate of the probable costs associated with each of these key elements.

Another major focus for us in this study, is to identify ways to improve parking along the Frankfort Avenue Corridor, and alleviate existing parking problem issues in the higher density commercial areas. The corridor has been in a state of very rapid re-development for the past ten years.

Further, to identify any improvements or changes to street direction which might help traffic flow, and/or decrease any existing obstacles or problems with the co-habitation of businesses and residences adjacent to each other.

Finally, to assess the feasibility and benefits of all of the aforementioned plausible considerations and suggestions, establish priorities, delineate assumptions made, and make realistic time frame projections. From this we will conclude with recommendations on how the neighborhoods might most effectively implement these ideas.

The Frankfort Avenue Streetscape Study Project began out of the Clifton and Crescent Hill neighborhoods efforts and desire to improve the design functionality, and appearance of the Avenue. Prior to the start of our work, the Neighborhoods formed the following six work groups, who developed their own initial recommendations:

1. Pedestrian, Bike & Transportation
2. Street Furniture & Public Art
3. Historic Preservation
4. Street Trees and Landscaping
5. Frankfort Avenue Business Association
6. Parking Study and Creation of Alleys Work Group

Frankfort Avenue serves as a major artery to the Butchertown, Clifton, and Crescent Hill neighborhoods, tying the communities together, and providing circulation from St. Matthews to downtown, and is composed of many, and varied small locally-owned commercial businesses, primarily, as well as some residences.

The above represents but one level of the **Diversity** present along Frankfort Avenue, so commonly identified by residents as perhaps by far the neighborhood's greatest asset. This diversity manifests itself in the form of:

PEOPLES: In Socio-Economics, Age, Race, Origins, Education, Culture, Religion, Trades, Etc.

BUSINESSES: From the many & eclectic Specialty Shops, Human Service Providers, to Electrical and Industrial door Contractors and from the intensely unique variety of restaurants and taverns to Tire and Auto Service & Sales Centers, & Junk collectors, Etc.

ARCHITECTURE: From the continuous variations in size, height, number of floors, to construction materials- from brick to stucco to original wood siding to block to metal, and styles- from Shotgun to Queen-Anne, to warehouse, as well as a nice intermixing of density- from apartments to single family homes to commercial structures.

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STUDY PROCESS

Subsequent to development of in-office design schemes, we presented these schemes and our preliminary recommendations to the steering committee in a series of meetings, each followed by revisions in light of these design discussions. This committee is composed of representatives of the Clifton, Crescent Hill, and Butcherthorn Neighborhood Associations, and the Franfort Avenue Business Association (FABA)

We then investigated various issues further and processed all of the data gathered, to determine its implications on the Butcherthorn, Clifton, and Crescent Hill Communities, and Franfort Avenue Businesses. We also carried out discussions with various related agencies, including TARC (The Transit Authority of River City), the Public Works Department of the City of Louisville, CSX Railroad, Louisville Police, and The Waterfront Development Corp. about their plans affecting the Franfort Avenue corridor, and the concepts of our study.

The end result is represented in this volume. We have tried to overcome scale issues by focusing on one set of data and/or area at a time, in order to maintain a workable and portable sized document. Large scale 36" x 48" drawings illustrating most all of the recommendations contained herein, are available upon request from our office, or through the Clifton Community Council.

- 1) Buildings Material, Type of Use, Condition (Dilapidated/ Needs Maint.)
- 2) Property Unsanitary Uses, Major Trash or Junk/Debris Problem, Etc
- 3) Stagnant or Ponding Water Problem
- 4) Historical/ Arch. Element Needs Repair, Needs better visibility?
- 5) Traffic Flow Heavy, Problematic, One-Way Existing, Improvements?
- 6) Roadways Noted where Repairs needed
- 7) Curbs Needing Repair/Maintenance
- 8) Concrete/Paving - Miscellaneous Too Much/Unsanitary, Public/Private
- 9) Parking - Existing--On-Street, Off-Street, Paved/Gravel, No. of spaces (within 100 feet, either side) Visible? Accessible? Public/Private?
- 10) Potential Parking Off-Street Number of spaces, Visible, Accessible, Public/Private
- 11) Traffic Signals
- 12) Rail Road Right of Way Needs Litter Control, Maintenance, Major Work
- 13) Rail Road Signals
- 14) Rail Road Crossing Gates, Signal Only, Safety, Could be eliminated
- 15) Pedestrian Crossing Signals One is needed, Needs Replacement, Needs Maintenance, Not functioning now
- 16) Sidewalks New needed, Segment requires replacement, Change in elevation over 1" (challenge to the impaired), Sidewalk Obstructions possible
- 17) Shared -Use Path Feasibility ROW space available, Street side only, Not possible
- 18) Trees New tree desirable, Dead, Fruit-bearing or bad type, Needs Maintenance/care
- 19) Landscaping New needed, desirable, Needs replacement, Maintenance/Care
- 20) Utility Poles, Guy Wires, Units, Boxes, Service Areas, Etc. Noted if not in use, unsightly placement, potential for removal, excessive
- 21) Bollards
- 22) Trash cans Placement, Type, Needed
- 23) Mailboxes Placement, Type, Needed
- 24) Newspaper boxes Placement, Type, Needed
- 25) Ash urns Placement, Type, Needed
- 26) Bike rack Placement, Type, Needed
- 27) Bus shelters Placement, Type, Needed
- 28) Sign poles Placement, Type, Needed
- 29) Chain Link Fence Placement, Type, Needed
- 30) Fire Hydrants Placement, Type, Needed
- 31) Signage Placement, Type, Needed
- a. Street/Directional Freestanding Pole, Utility Pole Mounted, Traffic, Parking, Bus Stop Etc.
- b. Building signage Pole mounted, building mounted
- c. Billboards
- 32) Street Lighting
- 33) Boundaries are NOT Clear
- 34) Problem for Physically Impaired Ramps, Curb-Cut, Etc.
- 35) Problem for the Visually Impaired? Textured Surfaces needed?
- 36) General Litter Problems
- 37) Curbcut
- 38) Historic Fence
- 39) Move for Blind
- 40) Pay Telephone
- 41) Bus Shelter

After gathering initial graphic data and potential images to stimulate conversation, a public kickoff meeting was held on 17th of January 2002.

We followed this by holding eight separate Neighborhood group meetings, at locations convenient to the residents and business owners:

- Group 1: THE RIVER TO MELLWOOD AVE.
- Group 2: MELLWOOD AVE. to STATE ST.
- Group 3: STATE ST. to CLIFTON AVE.
- Group 4: CLIFTON AVE. to EWING AVE.
- Group 5: EWING AVE. to ST. JOE'S ORPHANAGE
- Group 6: ST. JOE'S ORPHG. to THE RESERVOIR
- Group 7: THE RESERVOIR to CHENOWETH LN.
- Group 8: FRANKFORT AVE. BUSINESS ASSOC. (FABA)

The basic topics at each of these meetings included: The residents & business owners 'Likes' and 'Dislikes' of the neighborhood were discussed, as well as their hopes, 'wishes', and more immediate suggestions for the neighborhood. Each of these sentiments were logged individually. We also discussed examples of possibilities for the Avenue from other areas and cities, types of street furniture, light fixtures, and other amenities available, the options for the placement of these on the sidewalk, the importance of the definition of boundaries, and basic concepts of "Crime Prevention Through Environmental Design" (CPTED) as is studied and taught by Dr. Timothy Crowe at the University of Louisville.

The valuable direct feedback we gained from each of the neighborhood groups became the foundation for our in-office design discussions and charrettes (These notes can be found on page 8 of this book)

The Second major task of our study consists of the Block by Block Documentation of the Existing Conditions along the Avenue. The items documented, along the 4.19 mile stretch included, in no particular order, the following:

NEIGHBORHOOD MEETINGS

MEETING DATES HELD:

- 17 Jan. 2002 -- Kickoff Meeting
- 29 Jan. 2002 -- Mellwood Avenue to State Street
- 07 Feb. 2002 -- State Street to Clifton Avenue
- 16 Feb. 2002 -- Clifton Avenue to Ewing Avenue
- 20 Feb. 2002 -- Ewing Avenue to St. Joe's Orphanage
- 26 Feb. 2002 -- St. Joe's Orphanage to The Reservoir
- 05 Mar. 2002 -- The Reservoir to Chenoweth Lane
- 25 Mar. 2002 -- Ohio River to Mellwood Avenue
- 05 Apr. 2002 -- Frankfort Avenue Business Assoc.

MOST FREQUENTLY VOICED 'LIKES':

1. Sense of Neighborhood/ 'Community'

- Centrality
- Safety
- Convenience
- Affordability
- Friendliness & Family
- Physical Connection
- Street Activity
- Architecture
- Churches, Libraries, Schools
- Parks
- Shops
- 'Walk-ability'
- 'Urban Neighborhood'

2. Diversity

- Peoples -- Ages, Races, Origins, Incomes
- Businesses - Eclectic Types, Sizes, Locally Owned
- Architecture
- Residences
- General Economics

3. TARC Bus System

4. Sidewalks

- Most are Continuous
- Walkable Destinations
- Bicycling for Children's, Trees
- Nature
- Shade
- Aesthetic Appeal

6. Limestone Walls & Curbs

7. History & Tradition

- Much of neighborhood over 100-130 years old

ADDITIONAL 'LIKES':

- Trains
- Bicycle Racks
- Audible Signals at Intersections
- Active Community Council
- Arlington/Bingham Parks
- Commercial Revitalization/ Residential Blend
- *Not Yet Overdeveloped*
- Sidewalks
- Historic Emphasis
- Civic Pride
- 'Bright Sites'
- Not many Franchises
- Central Location- Convenience to downtown, East, West
- Friendly Traffic
- Hidden Alleys, Gardens
- Events - i.e. Easter Parade, Old Tyme Christmas
- Water Co. Property Maintained
- Boys & Girls Club
- Breweries & Fischer's History
- Brick Sidewalks

MOST FREQUENTLY VOICED 'DISLIKES':

1. Litter & Control

- Businesses
- Alleys
- Sidewalks
- RR ROW

2. Placement of Street 'Obstacles'

- Inconsistent Design & Organization
- Boundaries NOT clear
- Includes - Signage Poles, Ash urns, Trash Cans, Paper Boxes, Utility poles, Bus Stops, Mailboxes

3. Tree Selection & Maintenance

- Fruit - Bearing
- Bradford Pears

4. Businesses' Maintenance of Property

- Inadequate
- Poorly Marked
- Over-Ticketing at Businesses

6. Sidewalks in Disrepair

7. Too Much Concrete/ Paving, Not Enough Landscaping

8. No Sidewalks / Path on North side along RR ROW

SUMMARY

ADDITIONAL DISLIKES:

- Graffiti / Vandalism
- Stagnant / Ponding Water- Health Hazard along RR
- Placement of Signage (low, obstructing path, etc.)
- Refuse placement on sidewalks for pick up
- No Post Office
- Lighting
- Speed limit not enforced
- Sidewalks not complete in some commercial areas
- (Genny's; Lee's Tires)
- Trucks obstructing sidewalks
- Too Much Paving
- No Green / color at Walgreens (Ewing Ave. side esp.)
- Lost shade trees
- Vehicle Congestion- Crescent Ct
- Breakable Ash Urns
- Unightly trash receptacles
- Unused LG&E utility 'slab' behind Moms' Music (Along Stiz Ave.)
- Decaying Historic Landmarks
- Stone Wall at Crescent Court in disrepair
- Handicapped curb cuts fill with rain water
- No Alley access for trash/etc. just West of Stiz Ave.
- Fence around The Reservoir
- Inconsistent / 'Overboard' ticketing at 2 hr. Parking
- Voting is too far for Butchertown residents
- Allied Ready-Mix Sand and Dust,
- Truck Traffic Uses Story Ave. instead of River Rd.
- Too many Car lots - Unightly
- Parking in City ROW, across sidewalk
- Chain Link fences at Harrods Creek Bridges

TOP WISHES:

- Continuous Sidewalks on *both* sides, all along Frankfort
- Handicapped Accessibility, Safer Crossings, Use of Textured Curb-Cuts & Crossings - Identify Threshold
- Trolley 'Loop,' More Bus Shelters & maintenance, Late-Night Busses, More Benches in Clifton, Light Rail
- 'Linear Park' along Railroad ROW, Landscape, Lots of Color - "From Gravel-Pit to Greenspace"
- Shared -Use Path/ Sidewalk North side
- Bike Lanes, More Bike Racks, Bike Path to River, connect to Riverwalk, tie to Chickasaw Park
- Consistent, logical Design Theme of objects: (Aesthetically designed)
 - Poles
 - Mailboxes
 - Trash Cans / Ash Urns
 - Bus shelters
 - Trees
 - Bike racks
- Post Office, at least more mailboxes & pick-up times
- Consolidate signage, consistent Heights, minimize poles
- Litter Control, possibly Vacuum Cleaning Streets
- Tree Maintenance - especially for Visually Impaired
- Landscaping -- Much More, Add Planters, Less blank facades
- Creative Neighborhood Boundary Markers
- Street Art , Garden Sculptures, Water Feature(s)
- Use / Develop former dump NE of Frankfort & I-71

ADDITIONAL WISHES:

- Speed control - All streets
- Create Walking Tour, possibly "Alley Tour"
- City-aided lower income residential improvement
- Incentives/ Slum properties
- Encourage facade restoration
- Sidewalk, Curb & Alley Maintenance
- Keep sidewalks clear
- Better coordination w/ City regarding sidewalk & Utility construction
- Graffiti removal enforcement
- Billboard Conformity
- Remove unused Utilities & lines
- Route Utilities underground
- Enlaved thresholds to identify Neighborhood/ Landmark buildings
- Redo street banners
- Murals w/Anti-Graffiti Painting (sidewalk; Walgreen East wall on Ewing)
- Café style sidewalks where wider
- More shade trees
- Reopen the Reservoir walking path
- No 'Gentrification'
- More Public Phones
- Maintain Zoning Limitations
- Avoid upzoning adjacent to residences
- Develop a Design Review Overlay (DRO)
- Become a Preservation District
- Blind alley signage
- Community Center
- Compatible use renovation of "Vogue" block (Lexington Rd./ Frankfort Ave./ Bauer Ave.)
- Police Sub-station
- Story Ave. to River Rd.- Add Lighting, Sidewalks & Bike Lanes
- Traffic Signal at River Rd.

EXISTING CONDITIONS

FROM THE OHIO RIVER TO MELLWOOD AVENUE

This is a very transitional area at this time. Many of the properties in the area from the River to the Interstate 71 Overpass, and extending just to the South of this, are vacant of use, and have been used for dumping in the past. Formerly the area between Old River Road (Relocated approx. 100 ft. to the South) and Fulton Street (and the Louisville Boat Harbor) was Thurston Park, but has since fallen into disrepair and is closed to the public. It is in this area that the Cities' Waterfront Review Overlay, administered by the Louisville Waterfront Development Corporation overlaps the Frankfort Avenue Corridor. Though the published Louisville Waterfront Master Plan does not lay out any development this far East, their office and the city do plan for its development in the near future. It is expected to remain primarily public.

The area currently has no sidewalks, and the street, curbs and properties are not maintained.

For this reason we suggest that it is key for the development of this area to be in accordance with the WRO *and* the recommendations of this Study. It will become the West destination point for Frankfort Avenue, and thus a gateway to the Riverfront, and downtown. It will also serve as the gateway from the Waterfront and River Road into Historic Frankfort Avenue. In its current state it undoubtedly does a poor job of either.

The remainder of this area currently contains the City of Louisville Tow Lot, a mix of industrial (Allied Ready Mix, Hadley Pottery, Etc.), zoned M3 & M2, well maintained historic Residential, and commercial (many in Historic houses), zoned R7, with CN, OR1 and C2 at Story Ave. A fine example of Historic Iron bridges still carries traffic across the Floyds Fork. The Northwest & Southwest corner of Frankfort Ave. is occupied by Automobile Sales and repair lots, which are very unsightly, zoned M2, and CM respectively. There is no distinction between road and parking, excessive pavement, and cars very often are parked in the City ROW.

FROM MELLWOOD AVENUE TO WEIKEL AVENUE

At Mellwood Avenue, just past the gas station (Southeast corner zoned C2) and the vacant yet well maintained, manufacturing warehouse (Northeast corner zoned M2), begins a stretch where many historic structures, more continuously remain intact along the Street.

This entire span shares a similar character, defined by a consistent variation of height, size, and style of the buildings, including one-story shotguns, camelbacks, brick and wood sided three level period houses, some with Southern style porches across the front, and some with turrets. Each block contains a vivid mix of commercial and residential, quite often in an alternating pattern, from Mellwood, East to Vernon Avenue (Zoned C1, C2, & R5B).

Frequently, the corner buildings are occupied by commercial on the street level, with apartments above, much as they might have been in the past. Sidewalks are continuous, but seldom disability-friendly, along this stretch. The South side at (narrow) Pope Street marks an isolated spot short on parking, for businesses and homes. The Printing House for the Blind, and the School for the Blind's Campus, create a park-like character, with mature trees, slightly rolling grassy hills, and outdoor seating areas, from State Street, two blocks to Haldeman Avenue, on the North side. A Dairy Mart convenience store occupies the former downtown streetcar station's historic site, at the Southeast corner of Haldeman Ave. (C1 zone), boundaries are unclear & landscaping is needed.

Commercial becomes much more dense as one moves East. Thus parking becomes a significant issue beginning about Coral. East of Vernon, nearly all spaces begin to be of commercial use. One of the largest (and zoned industrial) is Ready Electric on the South, filling a large site, within the triangle bounded by Frankfort and the CSX Railroad. Just North of the intersection of Frankfort and the tracks, lies Cunningham Overhead Doors complex, at Weikel. To the South is the latest addition, a service station building that has been converted into The Red Lounge, a partially open-air bar and restaurant.

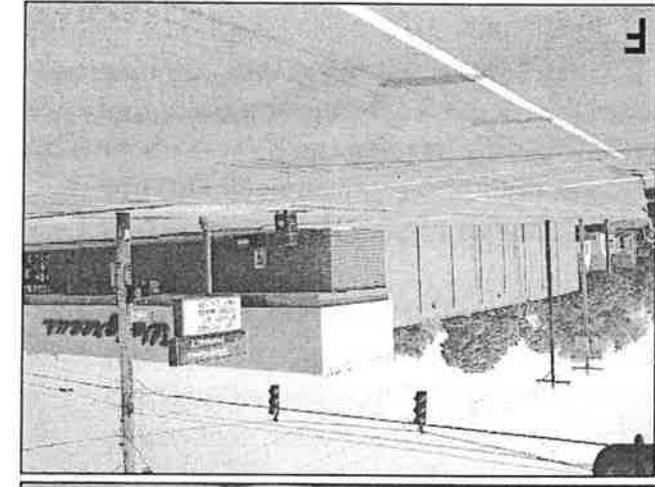
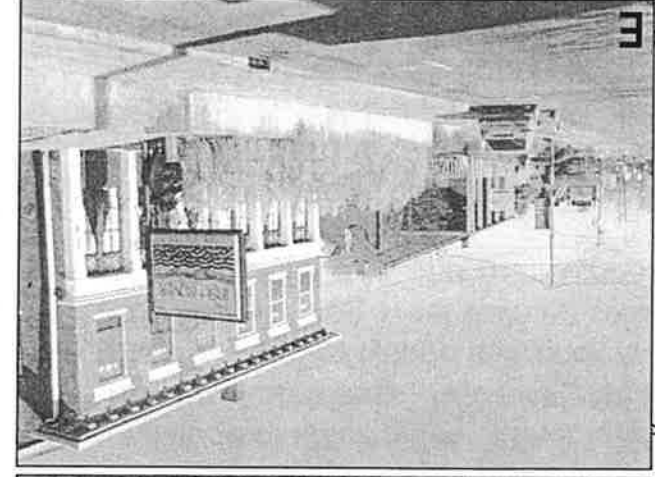
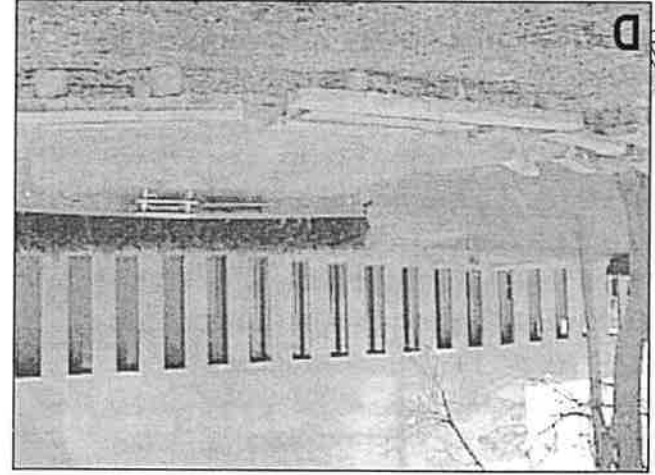
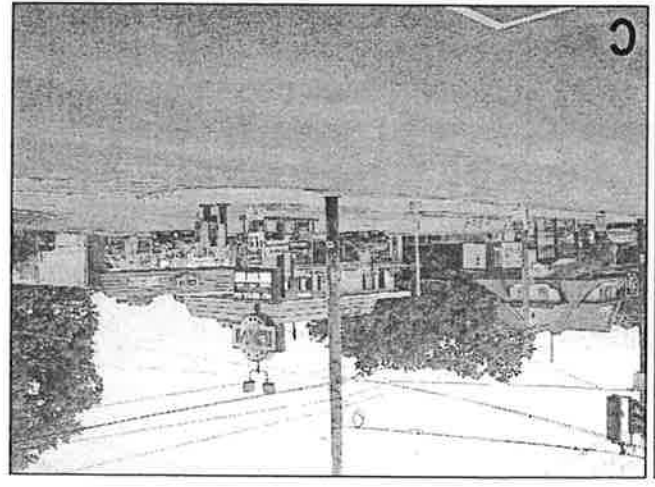
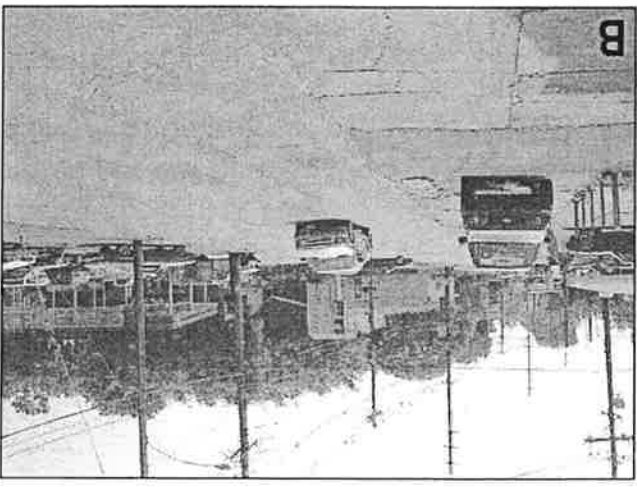
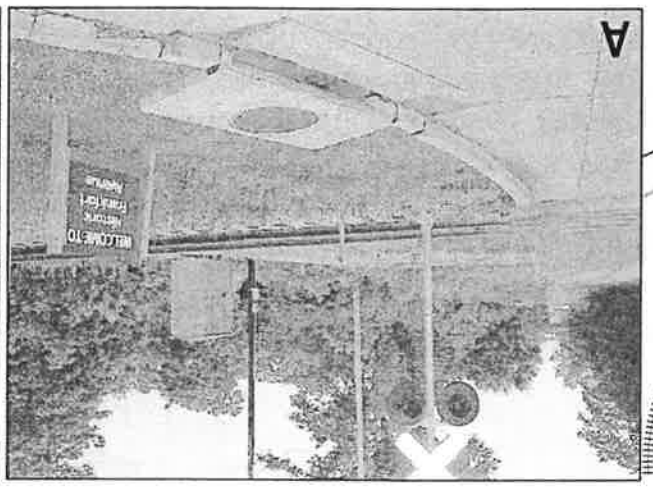
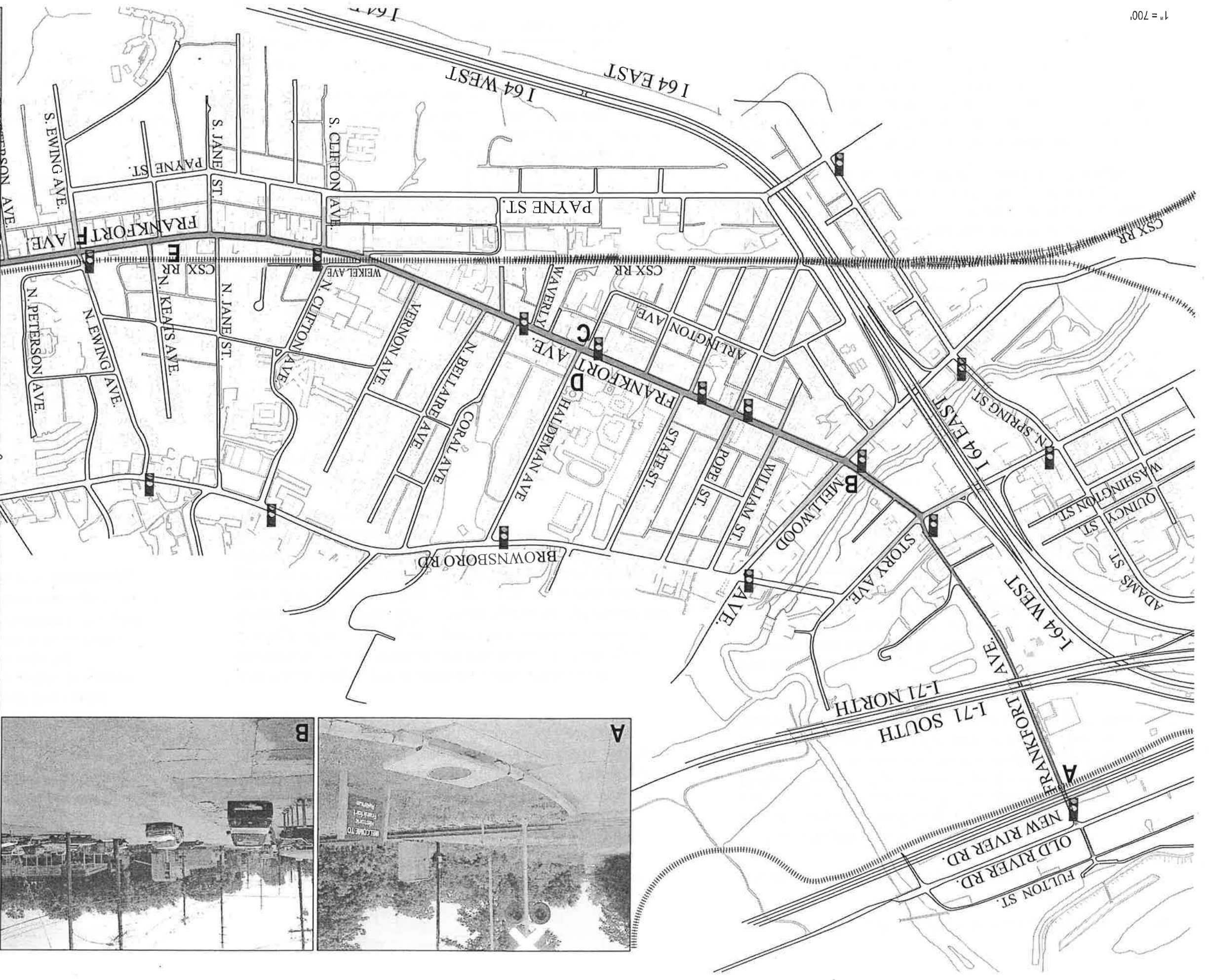
FROM WEIKEL AVENUE TO EWING AVENUE

In this area, an 'island' of business properties, is formed between the Railroad and Frankfort Avenue. As it has developed over the past years, this has almost become the "Food Court" of Frankfort Avenue, if you will. Both sides of the street are heavily filled with an eclectic set of restaurants, perhaps as varied as any area in the city. From an all Vegetarian restaurant, to a nearly genuine 'Irish Pub and Grub', to Jumbalaya, from upscale to bar. This area, by all means, does share the very mixed set of business uses of most of Frankfort Avenue. The non-restaurant businesses include: The Courier Journal newspaper distribution center, a Veterinarian, a pawn shop, an art gallery, non-profits including The Clifton Center (which actually sits on Payne St.), several car sales lots, auto mechanics, auto body, River City Tires Large shop, and auto reconditioning. A large property in the 'island,' is occupied by River City Tires shop and warehouse which, with Genny's Diner shares perhaps one of the longest curb cuts on Frankfort, creating a threatening environment to any pedestrian passerby, regardless of whether they are sighted or not. Any sidewalks have been paved over.

It falls logically to correspond, that this area is the busiest along the avenue, and has some of the most intense parking problems at peak business hours, primarily evenings. The blocks in this area are short, with streets between the businesses, tying to Payne Street on the South, with residences along them behind the alley. Each of these streets is overloaded for business parking, and this causes problems for the residential on-street parking. The worst is at S. Jane Street, as East End Auto is overloaded for their site in parking terms.

Marking the end of this stretch, also the limits of the Clifton Neighborhood, is the busy cross street, Ewing Avenue. Walgreen's Pharmacy and store sits on the Southwest corner, and has ample parking. Nearly 100% of the property is asphalt or concrete, including along the East side facing Ewing, which yields an extremely cold, bleak facade.

BUTCHERTOWN & CLIFTON NEIGHBORHOODS



CRESCENT HILL NEIGHBORHOOD

FROM THE RESERVOIR TO CHENOWETH LANE

At the Southwest of Crestmoor Ave, a strip of Commercial begins, Zoned C1, extending to the Southeast corner of Fairhawn Rd. This consists of a Furniture Gallery, Fruit Market, Cleaners, Bar, Liquor Store, Dentist, Misc shops, Dance, Ceramics, Rent-All, Many Miscellaneous Offices, Skate Shop, Gas Station/Convenience Shop, Service Station, Pizza, Interiors, Cafe/Catering, Food Mart, Salon, Party Supply, and a Florist.

The North side is residential from the Reservoir, through to Cannons Lane (Zoned R5), with a three building apartment complex between Crestmoor and Fenley Avenues (Zoned R6). The Northeast Corner at Cannons Lane is a playground (across the tracks from Frankfort), attractive, with trees, zoned C1. Pedestrian amenities are short, with no sidewalks on the North, and no crossing signal. Set back further, and East of this lies Seminary Village Apartments expansive site, with few trees, and Fourteen buildings, zoned R7.

The Masonic Homes Campus is next to the East, with 16 buildings, mostly Historic and restored, and an attractive campus. The Railroad ROW is a mixture of broken gravel and paving, unsightly and in need of maintenance.

On the Southside, between Iola Road, to just East of Oxford Place are a few Offices, and a Dentist, mixed with homes, all zoned OR3 and OR1. Behind this is entirely residential, in an R4 zoning, through to both sides of Cornell Place.

Bauer Ave. has been converted over to Commercial in an overflow from St. Matthews and Lexington Rd, zoned C2. Offices, a Heating & Cooling Co, and an Animal Hospital (plus Bellisouth's parking lot) start this zone, West of Bauer. Pedestrian boundaries are *not* clear at this corner. Tom Payette Jaguar Sales' pavement picks up on the Southeast side, then on the Northside as well. Road, sidewalk, curb-cuts, drives, and where to walk, are a blur throughout. East of this area sits the largely vacant complex, formerly containing Drug Store, Printing, and The Vogue theater. Only Bank of Louisville remains open on the Frankfort side. Chevron service station marks the corner, with Gerstle's bar and Davenport's Framing on the North before the tracks.

FROM ST. JOSEPH'S ORPHANAGE TO THE RESERVOIR

Dietrich's restaurant is a prominent business along this span, occupying the converted space of the Historic Crescent Theater, in the middle of the block of Kennedy Ave. and Crescent Court, with offices above. The attached buildings house a bookstore and a Bakery/Cafe. All Zoned C1. Two large Parking lots accessed from Kennedy Ave. are shared.

The South side is predominantly zoned R5A and is residential. The exceptions are the above, and where a Doctor's office building occupies the Southeast corner at Crescent Ave, zoned OR1. Abutting this are C1 zoned lots, continuing to the Stilz Ave. corner, where a coffee shop, consignment shops are sited, and on the corner is Mom's Music. Parking and drop-off space is virtually nonexistent for these commercial businesses, as is any alley access for service and garbage pick-up.

To the North, directly across from Dietrich's are apartments zoned R7. East of Crescent Ave. is the Crescent Office Ctr, zoned C1. A few apartments and condos zoned R6 and R7 are the only other exceptions to the R5 zoning on the North, up to the greenspace of The Reservoirs, zoned R1. The former jogging/walking path around the East reservoir has been fenced off, and made inaccessible to the public, due to security concerns, post 11 September 2001 terrorist attacks.

South of Frankfort, is all zoned R5, including the Louisville Water Company offices and the still active, Historic enclosed facilities, and the residences on Sacred Heart Lane, and Eastover Court. This is also true on the Northside for Claremont, Blackburn, and Crestmoor Avenues.

There is a Water Feature (Fountain) in the greenspace of the Water Co. on the Southside, but it is small, and almost obscured from the road. There are also still no sidewalks on the Northside, along the tread green of the RR ROW. Frankfort becomes four traffic lanes at Stilz Ave, vehicle speed and volume also generally is increased. Thus on-street parking ends, as also does most of the demand for it.

FROM EWING AVE. TO ST. JOSEPH'S ORPHANAGE

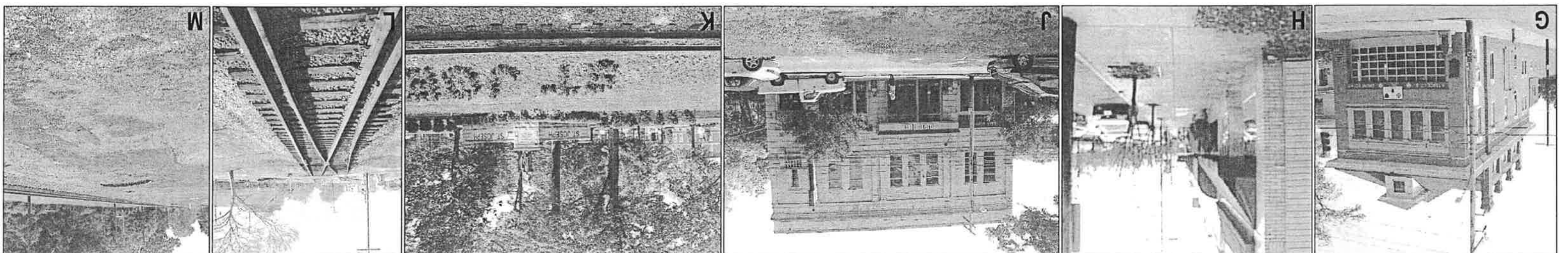
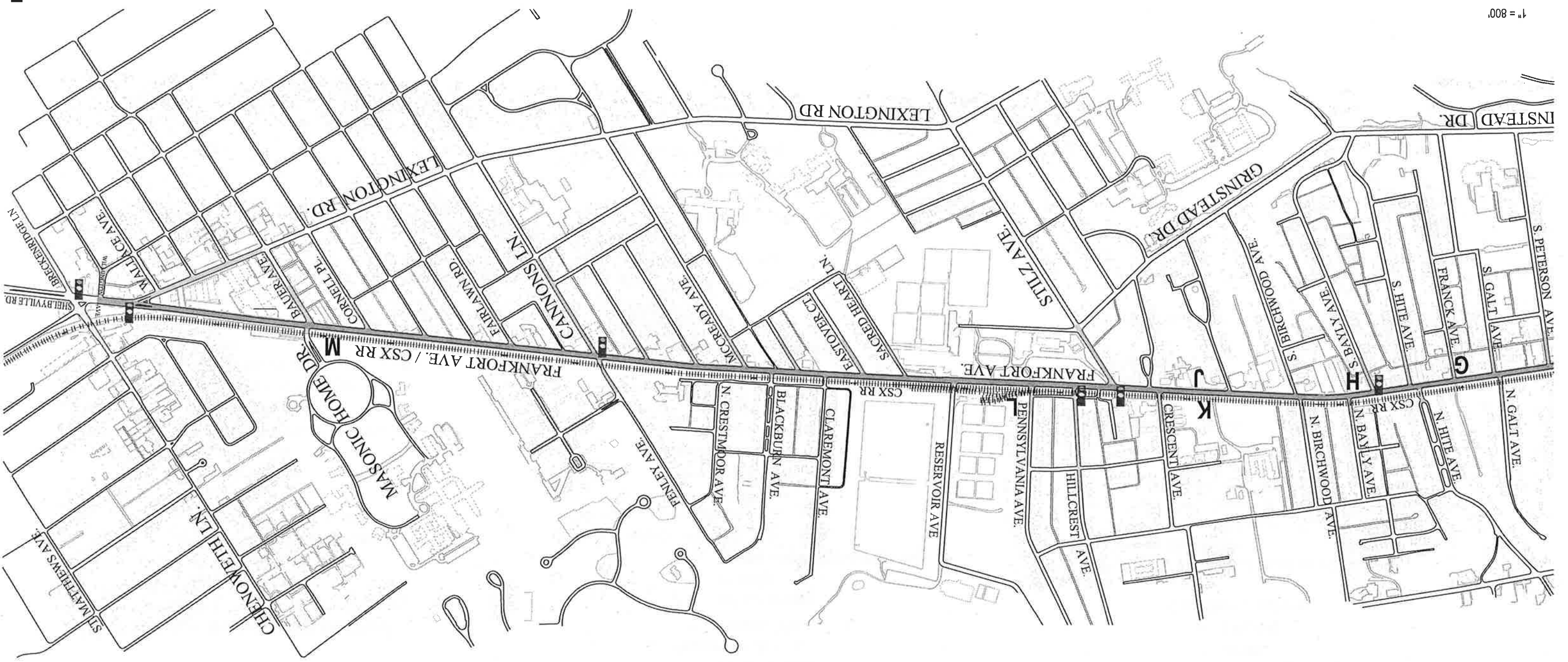
From this point East, Frankfort Avenue is a one-sided development corridor, with the CSX Railroad Right of Way (RR ROW), generally 66'-0" wide, running parallel on the North. This quite probably has saved the Avenue from overdevelopment.

Despite this difference, the Land Use and Architecture is similarly diverse along the South side of this stretch generally, simply with higher incomes, property values, and, sometimes, product prices. This area had renovations and rehabilitations come to it more in the range of the past twenty years, as compared to the past ten or so in Clifton. Zoning on the South bounces from C1 & C2 to R6, OR3 (two lots), then R5A at S. Birchwood Ave.

This stretch begins with a former oil change shop, now vacant, and an operational Laundromat, on the Southeast corner of Ewing Ave. Several small buildings contain a multitude of office types. Other land uses include: Realtor, Apartments, Antiques, single family residences, the Historic Fire House at Franck Ave, Hardware Store, Bar, Salons, Dog Treat Bakery, consignments, Coffee Shop, Restaurants, and Home shops. Parking is limited.

Prominent historic buildings are, at S. Birchwood Ave, on the Southwest the Crescent Hill Library, and Crescent Hill Baptist, which share parking. St. Joseph's Orphanage campus begins across from here on the North, with well maintained Historic structures, set back on the property. Sidewalks along the North side of the street are very discontinuous. Very few blocks have any sidewalks. On this side, at St. Joseph's, there are only overgrown and shifted remnants of a former sidewalk.

Beyond the Railroad in this whole area, the North side is entirely residential, beginning with dense apartments (Zoned R7) just East of Ewing Avenue, then mostly single family residential and some multi-family (primarily R5 zoning, with R5A, R6, & R7).



DRIVING FORCES

STATIONARY INFRASTRUCTURE

- Buildings & Street Facades
 - Historic & New
 - Ornate & Industrial
- Road System
 - Limestone Curbs
 - Brick Alleys
- Paving & Concrete: Service, Etc.
 - Sidewalks & Site Walls
- Railroad & Support Utilities
- 'Obstacles' in disarray Along the Street
 - Utilities
 - Overhead Wires
 - Poles & Guy Wires
 - Boxes at Pedestrian Level
 - Concrete Pads & Chain Link Fences
 - Bus Shelters
 - Fire Hydrants
 - Signage
 - Traffic Directional, & Parking
 - Bus System
 - Business Identification
 - Sale, Movable, A-frame, & Placard
 - Mailboxes
 - Bike Racks
 - Newspaper Boxes
 - Trash Cans
 - Ash Urns

ACTIVE INFRASTRUCTURE

- TARC Bus System
 - Traffic
- Vehicular Activity
 - Speeding Problems
 - Large Trucks in Neighborhoods
 - Unclear Paths and Turning Lanes
- Bicycle Activity
 - Unclear Path
 - Safety Issues
- Pedestrian Activity
 - Unclear Path
 - Safety Issues
 - Visibility
 - Tactile and Audible Warnings
- Existing Land Use
 - Businesses
 - Type
 - Scale & Volume
 - Parking Issues
 - Problem Areas
 - Peak Restaurant Hours
 - Concern for Capacity for Development
- THE NATURAL ENVIRONMENT
- Topography
 - Views & Vistas
 - Water Drainage
- Trees
 - Fruit Bearing/ High Maintenance
 - Lack of Maintenance
 - Interference with Utilities
- Patches of Landscaping

THE HUMAN ENVIRONMENT

- Diverse Set of Ages, Incomes and Trades
- Large Visually Impaired Community
- Elderly Population
- Known Functional Desires
 - Improved Parking
 - Clear Boundaries
 - Reduce & Discourage Crime
 - Theft & Robbery
 - Graffiti
 - Littering
- Consistent Lighting
- Known Visual and Aesthetic Desires
 - Continuity
 - Sense of Order
 - Less Concrete & Paving
 - More Landscaping
- Federal Railroad "Quiet Zone" Implications
(See page 49 for more information)
- Light Rail Tram Transit System Potential

OUTSIDE FORCES

The previous page is a documented summary of the direct-comments of neighbors at meetings, formatted by subjects most commently commented, or strongly agreed upon.

The following is a synthesis of discussions on safety & parking, based largely on resident feedback at the meetings, drawn from perceptions at those meetings of our office staff, first-hand experience, and preliminary walking of the street.

SAFETY CONCERNS:

Frankfort and Haldeman (DairyMart): 'Curb Erosion' Loitering, Boundaries NOT Clear; Poor lighting State St. to Pope St.: Darker on North side of Frankfort Mellwood Ave, from I-64 to Brownsboro: Dark, Blank facades, The underpass is a homeless shelter. Story to River: Dirty, Dark, Used for Dumping. Alleys - poor lighting, unmaintained Pope Street, at night Big Drop at railroad crossing- Frankfort and Weikel Northeast corner at Coral Ave. - Pedestrian unfriendly Railroad Tracks Sidewalk- no designated areas "I don't know where I belong" At Frankfort, North Clifton Ave. & Weikel Ave. 'Blind' turning onto Frankfort from side streets Ewing Ave. to Franck Avenue - Lighting South Pope Street - Lighting Crossing Frankfort in General Weisser Ave. to Cannons Lane - No Curbs-- Sidewalks feel unsafe No curbs along Avenue- Fenley Ave. to Chenoweth Lane No walking area along Gerstle's Uneven Ground Along Railroad Billboards block paths and views Overgrown, Crumbling sidewalk along St. Joe's Property Frankfort & Story - High Speed, Accidents Frankfort Ave and River Rd.- Needs both Traffic Signal & Pedestrian Signals

PARKING:

- (Need increased parking in Commercial areas)
- Maintain free parking
- Adequate distribution of adjoining Commercial and Residential parking spaces
- Coordinate plan with Churches, commercial areas for further "Shared Use" parking use during non-peak hours.
- Parking problem hours: 6 pm - 11 pm, Thursday - Saturday
- Upgrade/Repair Alleys to yield improved Parking at Alley-side

Parking Problem Areas:

North side Mellwood Ave. to William Street *South side Pope Street to State Street* Pope Street (residential, narrow) N. Bellaire, *seven blocks*, through to Ewing Ave. Crabbs Lane, two blocks, to Crestmoor on Fri/ Sat. Nights (Patrick's, Frankfort Avenue Beer Depot, & Utopia) *Crescent Ct. to Stilz Ave.*

Potential Parking Relief Areas:

Old Franklin School and Printing House for the Blind. Utilize Clifton Baptist Church parking lot more often with permission from trustees. Old Louisville Paving Sacred Heart Property Clifton Community Center's North Lot New Main St. perpendicular parking Low visibility Existing Public Lot between Ewing Ave. and S. Peterson Ave. - Women's League of Voters

BASICS OF CPTED (Crime Prevention Through Environmental Design)

Territoriality: People protect territory that they feel is their own and have a certain respect for the territory of others. Fences, pavement treatments, art, signs, good maintenance, and landscaping are some physical ways to express ownership. Identifying intruders is much easier in a well- defined space.

Natural Surveillance:

Criminals don't want to be seen. Placing physical features, activities, and people in ways that maximize the ability to see what's going on discourages crime. Barriers, such as bushes, sheds, or shadows, make it difficult to observe activity. Landscaping and lighting can be planned to promote natural surveillance from inside a home or building and from the outside by neighbors or people passing by. Maximizing the natural surveillance capability of such "gatekeepers" as parking lot attendants and hotel desk clerks is also important.

Activity Support:

Encouraging legitimate activity in public spaces helps discourage crime. A basketball court in a public park or community center will provide recreation for youth, while making strangers more obvious and increasing active natural surveillance and the feeling of ownership. Any activity that gets people out and working together - a clean-up day, a block party, a Neighborhood Watch group, a civic meeting - helps prevent crime.

Access control:

Properly located entrances, exits, fencing, landscaping, and lighting can direct both foot and automobile traffic in ways that discourage crime. Access control can be as simple as a neighbor on the front porch or a front office. Other strategies include closing streets to through traffic or introducing neighborhood based parking stickers. CPTED guidelines and other information is available through the National Crime Prevention Council. Please visit their website: www.ncpc.org

Primary Intent:

- Reinforce and protect Frankfort Avenue's "traditional" neighborhood character, function and identity.

- Document the existing conditions.
- Document the current and potential problems and options for future development; so that development can be managed to protect the valuable elements of the extraordinary neighborhood character of Frankfort Avenue and the surrounds.

- Improve the streetscape by creating a safer, more accessible Avenue. Improve lighting, delineate boundaries, remove barriers and claim public pedestrian space

- Simplify the streetscape.

- Make the avenue more functional. Clearly organize functions and elements to create a coherent understandable order. Remove extraneous and arbitrary elements.

- Beautify the Avenue so it is more enjoyable.
- Create clear connections within the neighborhood and beyond to the larger community.

- Reduce the quantity of curb cuts, consolidate curb cuts on the Avenue or relocate to alley side if possible

- Develop a multi-use path on the North side of Frankfort Avenue to complement pedestrian movement and flow on the South side.

Protection and Enhancement of Traditional Neighborhood character, function and identity.

NEIGHBORHOOD PERCEPTIONS

During our information gathering meetings with the Butchertown, Clifton, and Crescent Hill neighbors along Frankfort Avenue, we confirmed the qualitative valuable elements of the neighborhood to be protected and enhanced. The valuable elements to protect and reinforce are the following:

Architecture and building

- Scale and Massing
- Materials
- Patterns

Landscaping

- Large Trees
- Perennials

Green spaces, public institutional, and private

Land Use

- Residential
- Commercial, storefront style smaller commercial enterprises within walking distance
- Open Green space

Accessibility of various modes of transportation especially for walking and recreation

Accessibility for physically challenged persons

Inclusivity and Diversity

- Age
- Economics
- Racial Ethnic
- Handicapped Accessible

Cost Estimate:

The Cost Estimate on the following page is an attempt to quantify in dollars the proposed plan recommendations as set forth in this document.

The Estimate is subdivided into the following categories:

- Butchertown
- Clifton
- Crescent Hill
- Clifton Quiet Zone
- Crescent Hill Quiet Zone

Costs associated with various neighborhood issues (street crossings, lighting, ADA issues, curbs, etc.) are fully detailed in the appendix.

	Subtotal from detail worksheets	Cost	
Construction Costs			
Butchertown Streetscape	\$ 1,064,405		
Clifton Street Scap	\$ 1,522,896		
Crescent Hill Streetscape	\$ 2,642,285	\$ 5,229,586	
Clifton Quiet Zone	\$ 1,102,500		
Crescent Hill Quiet Zone	\$ 3,552,500	\$ 4,653,000	
DIRECT CONSTRUCTION COST			\$ 9,885,386

Professional Services:

Construction Costs	\$ 5,229,586.48		
Est. Professional Fees,		5%	
Construction Documents for competitive bidding		\$ 261,479.32	
Survey Right of Way with topographic survey	\$73,000		
Reimbursable expenses	\$ 39,222		
Division Sub Total			\$375,701

TOTAL PROJECT COST WITHOUT CONTINGENCY		\$	10,260,288
BREAK DOWN			
Quiet Zone	\$ 4,655,000		
ADA Improvements not including lighting	\$ 3,110,840		
Subtotal	\$ 7,765,840		
Other Cost		\$	2,494,448
Miles to feet	4.10		21,648
Cost per lineal foot		\$	115.23
Exterior Shoebox style down light fixtures	240	\$	600,000
Miles to feet	4.1	\$	21,648
Cost per lineal foot lighting		\$	27.72
Other costs		\$	1,894,448
Miles to feet	4.1	\$	21,648
Other Costs per lineal foot		\$	87.51
COST PER BLOCK LENGTH	300	\$ 115.23	\$ 34,568
	600	\$ 115.23	\$ 69,137

NOTE CROSSING QUANTITY AND COST FOR FEDERAL GRANTS

ADA street crossings			
Butchertown, street crossings	8		
Butchertown, shared ADA street crossing	2	1	
Clifton, ADA street crossings	33		
Clifton shared ADA street crossings	4	2	
Crescent Hill, ADA street crossings	36		
Crescent Hill, shared ADA street crossings	4	2	
Subtotal, street crossings		77	
shared crossings		5	
TOTAL			82

Demolish non-ada cross walk (one corner 100 sf each)	1 ea	\$	2,750.00	\$	2,750	
ADA, tactile ped crossing, 2 sloped sidewalk, drain, curb, 16 reflectors across street, striped crossing	1 ea	\$	7,500.00	\$	7,500	
ADA Crossing signal	1 ea	\$	4,500.00	\$	4,500	
Decorative crossing pavers in right of way with reflective bumps 4 way intersection, 960 sf	440 sf	\$	9.25	\$	4,070	
Striping crossing	240 sf	\$	3.00	\$	720	
Cost Each				\$	19,540	
Subtotal Cost			82		\$ 19,540	\$ 1,602,280

ADA curb cuts			
Butchertown	17		
Clifton	53		
Crescent Hill	39		
			109

Demolish non-ada cross walk (one corner 100 sf each)	1 ea	\$	1,550.00	\$	1,550	
ADA, tactile ped crossing, 2 sloped sidewalk, drain, curb, 16 reflectors across street, striped crossing	1 ea	\$	7,500.00	\$	7,500	
ADA Crossing signal	0 ea	\$	4,500.00	\$	-	
Decorative crossing pavers in right of way with reflective bumps 4 way intersection, 960 sf	440 sf	\$	9.25	\$	4,070	
Striping crossing	240 sf	\$	3.00	\$	720	
Cost Each				\$	13,840	
Subtotal Cost					\$ 109	\$ 1,508,560
Subtotal ADA road crossings and curb cuts						\$ 3,110,840

CSX Crossing includes ADA ped crossing at each closure or gate						
Frankfort Avenue and New Main	2 ea	\$	245,000	\$	490,000	
North Jane (reduced cost if closed)	1 ea	\$	245,000	\$	245,000	
North Keats (reduced COST if closed)	1 ea	\$	245,000	\$	245,000	
North Ewing	0.5 ea	\$	245,000	\$	122,500	
Clifton Quiet Zone costs, pending Federal rule implementation	4.5					\$ 1,102,500
ADA Compliance						\$ 4,213,340

CSX Quiet Zone with ADA pedestrian crossing						
Ewing	0.50 ea	\$	245,000	\$	122,500	
North Galt	1 ea	\$	245,000	\$	245,000	
Frank Alley (if not closed)	1 ea	\$	245,000	\$	245,000	
North Hite	1 ea	\$	245,000	\$	245,000	
Bayly	1 ea	\$	245,000	\$	245,000	
Birchwood	1 ea	\$	245,000	\$	245,000	
Crescent Ave (if not closed)	1 ea	\$	245,000	\$	245,000	
Forrest Ave	1 ea	\$	245,000	\$	245,000	
Hilcrest	1 ea	\$	245,000	\$	245,000	
Pensylvania (if not closed)	1 ea	\$	245,000	\$	245,000	
Reservoir (if not closed)	1 ea	\$	245,000	\$	245,000	
Claremont Avenue (if not closed)	1 ea	\$	245,000	\$	245,000	
Blackburn Avenue (if not closed)	1 ea	\$	245,000	\$	245,000	
Feneley Avenue	1 ea	\$	245,000	\$	245,000	
Masonic Home Drive	1 ea	\$	245,000	\$	245,000	
Crescent Hill Quiet Zone costs, pending Federal Rule Implementation	14.5					3,562,500
Quiet Zone Subtotal pending Federal Rule Implementation						4,655,000

COST SUMMARY

DESIGN BLOCK

DESIGN BLOCK CRITERIA

The Design Block model consists of a CAD drawing containing three-dimensional information closely replicating existing conditions of this particular section of Frankfort Avenue. This Design Block model allows modifications to the streetscape to be explored efficiently, letting neighborhoods quickly see the results of their proposals.

The portion of Frankfort Avenue between Ewing Avenue and Peterson Avenue was chosen for the design block due to the possibility of a proposed Light Rail Stop being situated in or near this area.

The design block attempts to deal with several issues:

- Existing street fabric (housing / businesses / treescape).
- Curb cuts / ramps / textured surfaces for ADA accessibility.
- Paving / Directional Pedestrian guides across intersections.
- Clear intersection delineation.
- Consistent lighting along the avenue.
- Possible location and design of a Light Rail Station (official published Light Rail designs do not currently show an east-west connection).

Items not addressed specifically in this design block model (though they are to be found elsewhere in this document and could be added to a later design block) include:

- Exact parking layout (increase or reduction).
- Closing of roads / drives / curb cuts.
- Bicycle path / lane / right of way and bicycle parking areas (other than those near proposed bus shelters).
- Free-standing mail boxes, newspaper stands, signage.
- Tree relocation / addition / type.

The items not addressed fall into the category of neighborhood specific design decisions. Individual residents and businesses should work together to revise the specific block(s) they front upon such that they maintain their unique character while still relating to the overall proposal for Frankfort Avenue.

The real "utility" of the design block concept is in further meeting(s) with specific neighborhood(s) during which specific elements (planters / kiosks / lighting / seating / parking / etc...) are located or relocated or deleted to meet the goals of that neighborhood.

A schematic design for a Bus Stop Shelter has been developed and is further discussed elsewhere in this document. Most free-standing street items (bicycle racks, trash receptacles, ash bins, public telephones, newspaper stands, etc.) could be located in the "zone" created by the new Bus Stop Shelter. Specific free-standing street items may be located at off-traffic locations along the avenue on an as-needed basis.

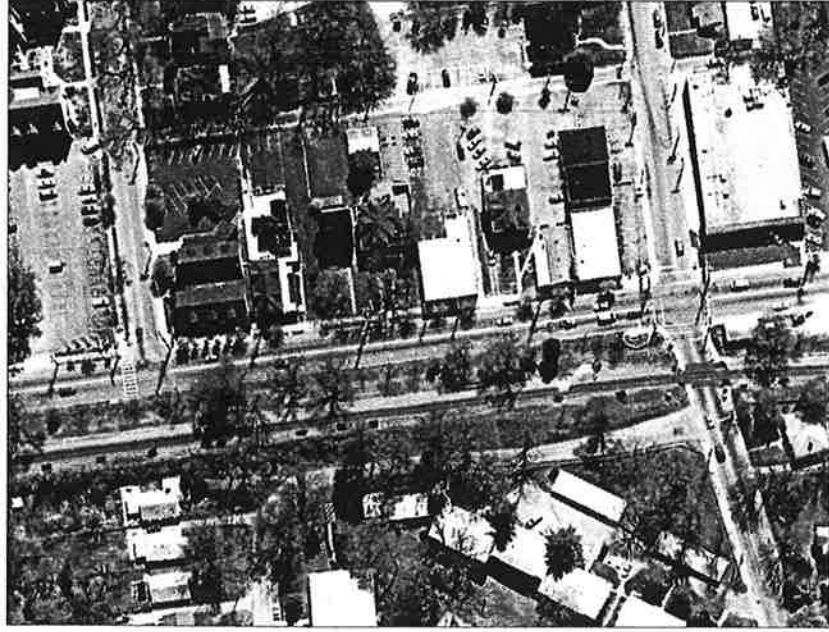
Remove (consolidate) bus stops and bus stop signage and post new signs only at the new (consolidated) shelters. This should increase parking along Frankfort Avenue by approximately eight (8) cars per reduced stop. If every other stop was removed, leaving one stop per six-hundred feet (on average), parking would be increased by approximately one-hundred sixty spaces over the length of the avenue. Additionally, remove "No Parking" signage and stripe (paint) the paving and curb to indicate the no-parking zone without the visual clutter of the signage. Textured pavers, similar to the pedestrian crosswalks, could also be used.

Insert textured pavers (stamped and stained poured-in-place concrete) to delineate pedestrian crosswalks. This texture would help visually impaired travelers stay within the crosswalk area. It would also act as a "speed" bump to vehicular traffic.

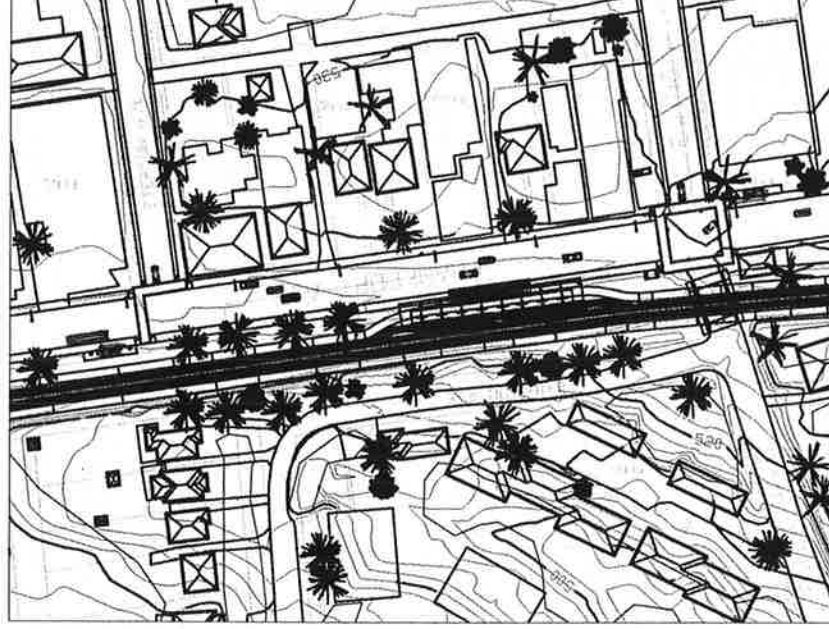
A schematic design for a LightRail Stop was developed based upon models found in the *T2 Transportation Tomorrow* study commissioned by the Transit Authority of River City (TARC). It should be noted that certain liberties were taken with the rail design criteria in order to fit the LightRail Station and second rail line within the CSX rail right-of-way. While this particular design is unlikely to resemble the final design for a LightRail Stop (or even be in the same area), the inclusion of a LightRail Stop along the Frankfort Avenue transportation corridor would significantly impact transportation and parking in the area.

New exterior lighting should be installed along Frankfort Avenue. The new fixtures should be a historic / transitional style fixture with a "shoe-box-style" reflector and metal halide lamps. The purpose of this type of fixture is to provide continuous low-level night lighting by illuminating existing surfaces, hiding direct view of the lamps, and reducing night lighting pollution.

New sidewalk(s) are proposed along the north (railroad) side of Frankfort Avenue. The addition of the new walks should help reduce pedestrian traffic on the south side of Frankfort Avenue.



Design Block Site Photograph
(not to scale)

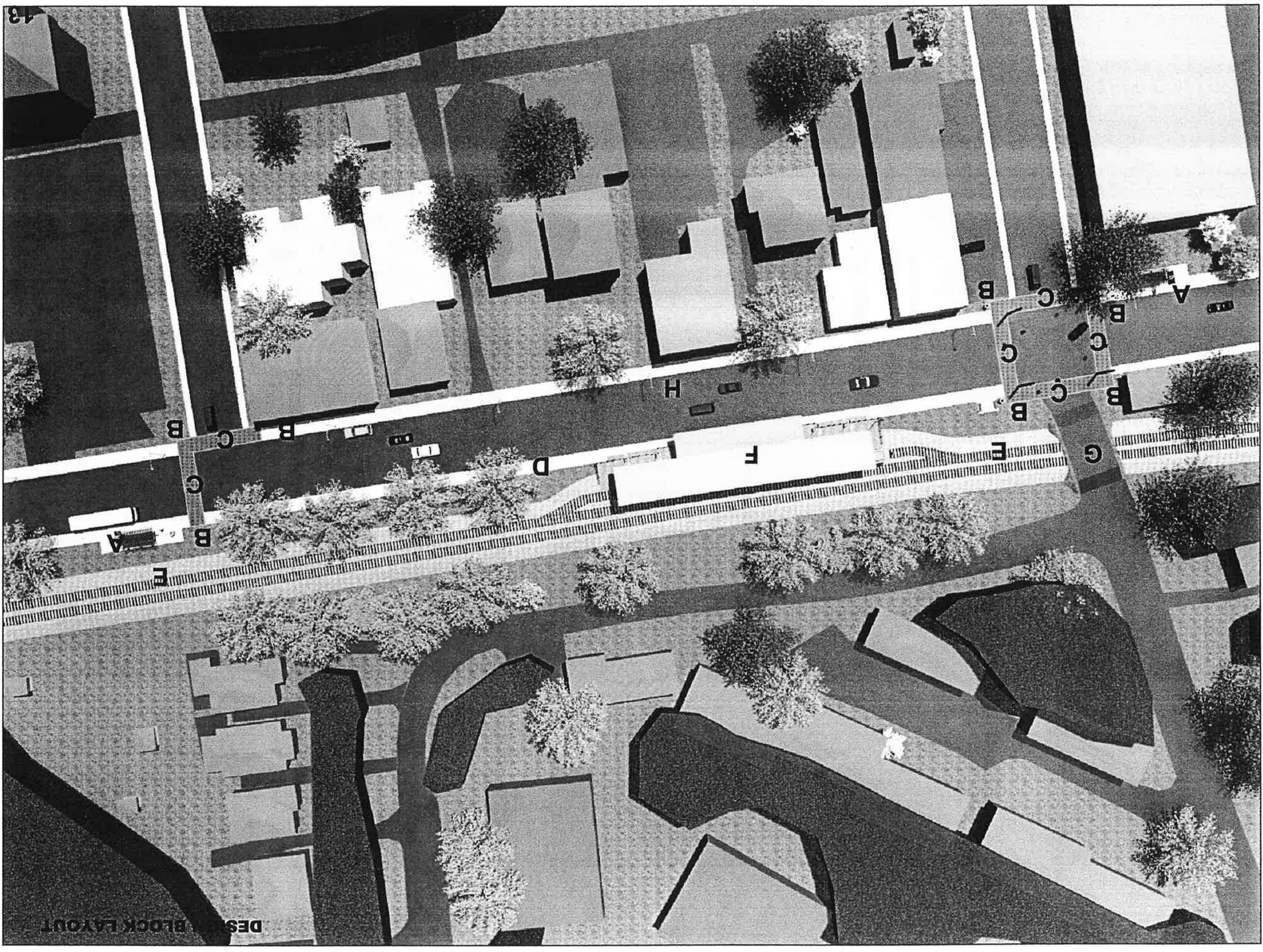


Design Block Site Model
(not to scale)

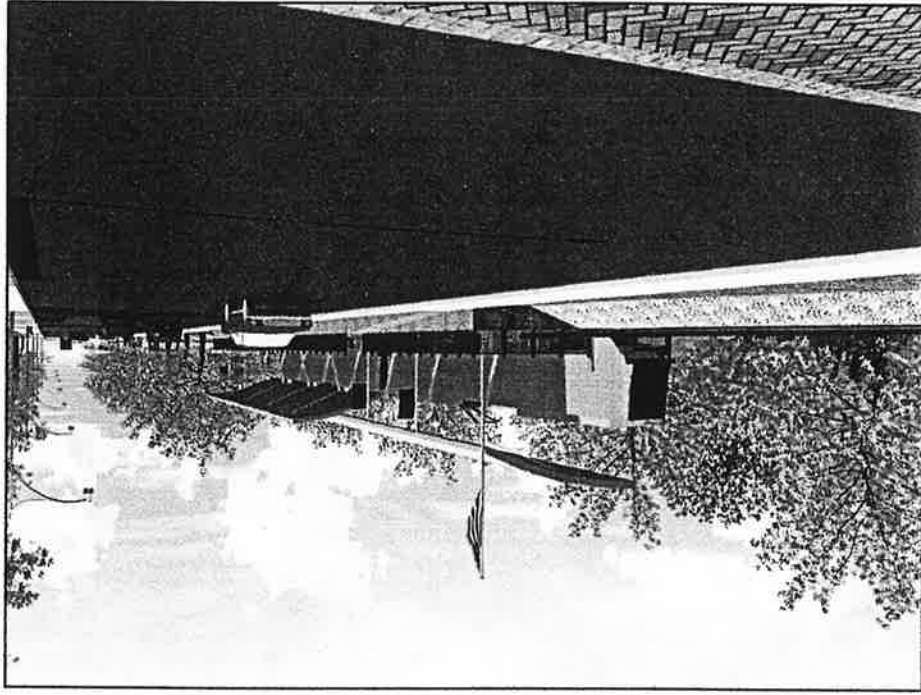
The Design Block Model is meant to be a work in progress. While an overall "global" design approach insuring a common theme over the entirety of Frankfort Avenue is necessary (and this document addresses the overall design), neighborhood development should involve the people living and working in it.

LEGEND

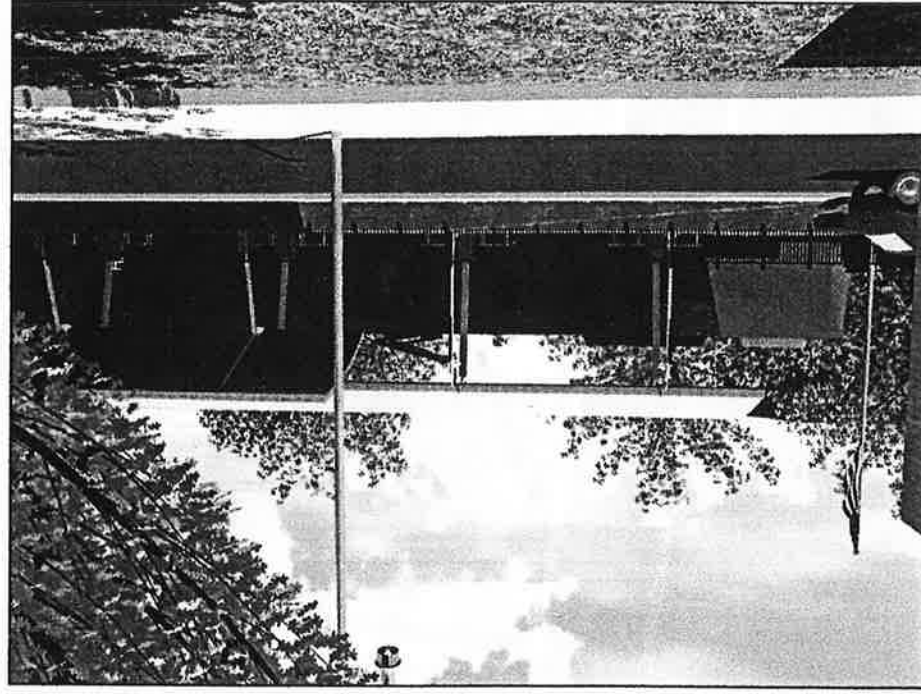
- A. New bus shelter
- B. New ADA compliant curb cut
- C. New inlaid paver pattern with textured perimeter indicating crossing location
- D. New sidewalk this side of road
- E. Additional Track for LightRail
- F. New LightRail Station Platform
- G. Existing Rail Crossing
- H. Constant (additional) lighting along entire length of street



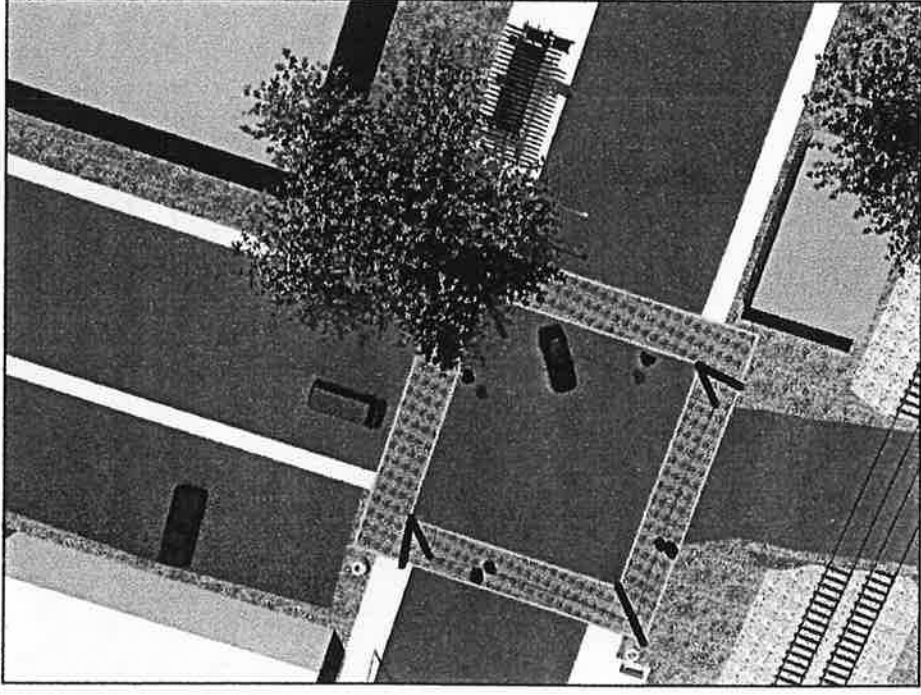
DESIGN BLOCK IMAGES



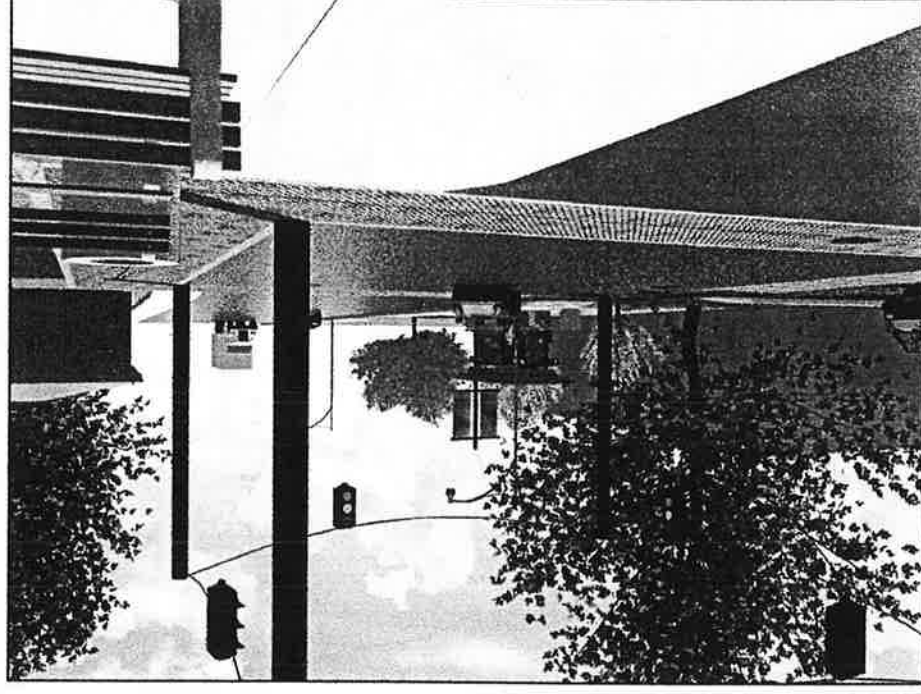
Looking East along Frankfort Avenue
(proposed LightRail station)



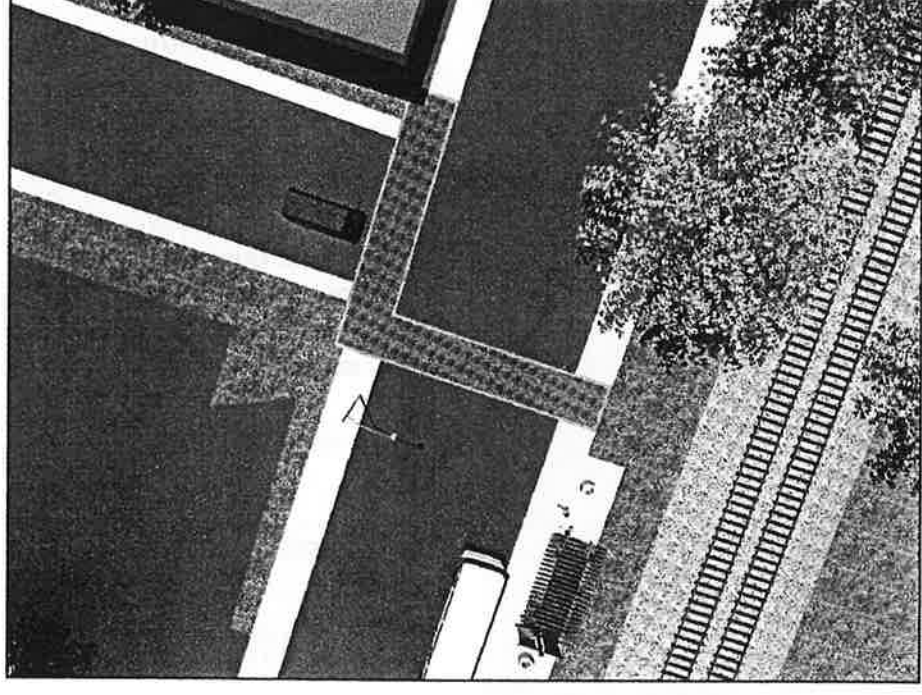
LightRail Station
(north across Frankfort)



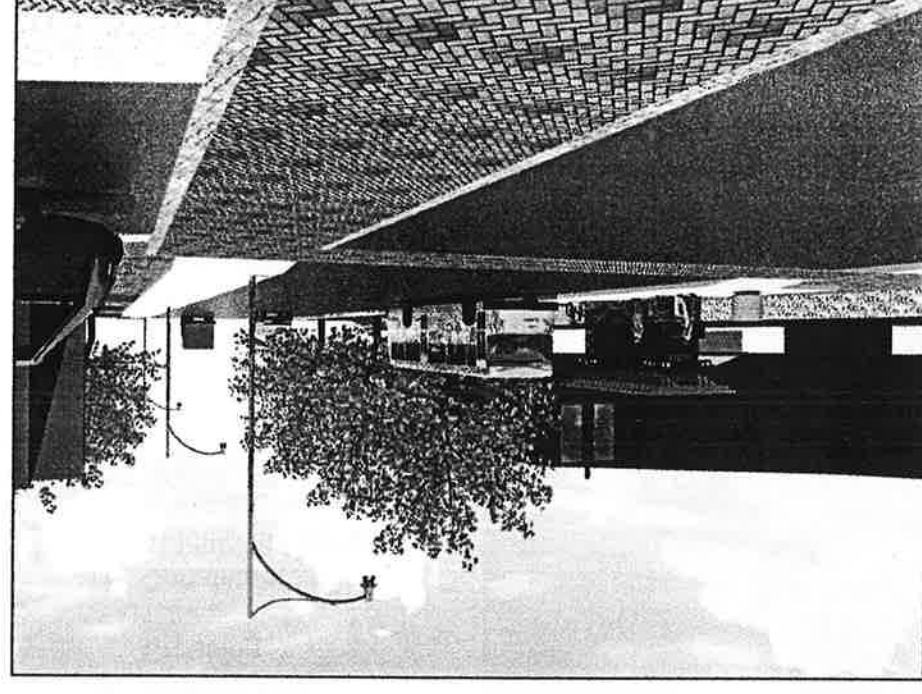
Intersection Modifications
(Frankfort Avenue and Ewing Avenue)



Looking West along Frankfort Avenue
(Bus Shelter at Frankfort and Ewing)



Intersection Modifications
(Frankfort Avenue and Peterson Avenue)



Looking East along Frankfort Avenue
(Bus Shelter at Frankfort and Peterson)

Physically & Visually Impaired Pedestrians

We have identified two major problems for the travel of those persons with physical disabilities:

The first of these, a major obstacle to those in wheelchairs, with canes or with walkers, is broken, uneven, and/or shifted concrete. We have documented many locations where there was an existing change in elevation greater than 1" in the sidewalk pedestrian right-of-way. Repairwork of concrete or paving at these spots has been accounted for in Appendix A.

The second obstacle is narrowed or obstructed paths. An "Accessible Route" of 3'-0" minimum clear width is required to comply with the Americans with Disabilities Act (A.D.A.). Sidewalk obstructions can be vehicles, large business trash receptacles, A-frame signage, cafe tables and chairs; there are a few locations where it is the permanent utility or signage poles that make the clear travel path narrower than 3'-0".

One of the country's largest concentrated communities of the legally blind is located in the Clifton Community, many living on streets near the School for the Blind (Northwest at State St.). Several intersections are equipped with audible pedestrian crossing signals. Not all of the signals are so equipped, especially as you move further East along the Avenue. Many blind residents travel much further than this, in both directions. Additionally, the equipment at some of the lights is aging, and no longer functions or, in a few cases, the operating button is difficult to push.

A.D.A. Compliant Crossing Ramps

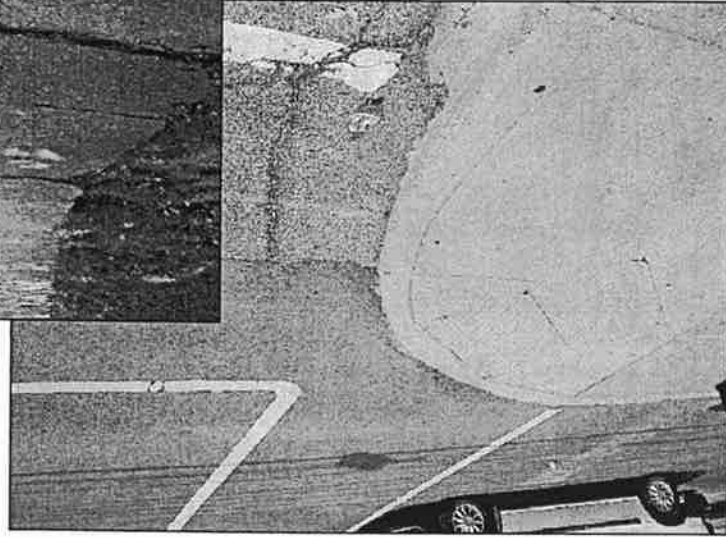
Typical handicap ramped curb-cut ramps are in-place at many locations, but few are A.D.A. compliant, and they are not at all corners and locations where access might be needed. We recommend consistent installation of curb ramps at intersections. Only a portion of the existing ramps have tactile warnings for the visually impaired.

The two essential needs of any pedestrian at an intersection are:

1. Indication of when it is safe to cross, and
2. Indication of the exact direction in which to proceed

Newer types of tactile warning pads can have a central cross-groove, aiding in directing one which way to cross. Many of the existing curb cuts, are located diagonally at the corner. This type tends to lead one out into the center of the intersection.

At the bottom right is a photo showing one of the existing crosswalks which, though not the ideal design, does properly lead the pedestrian in the direction to cross the street.

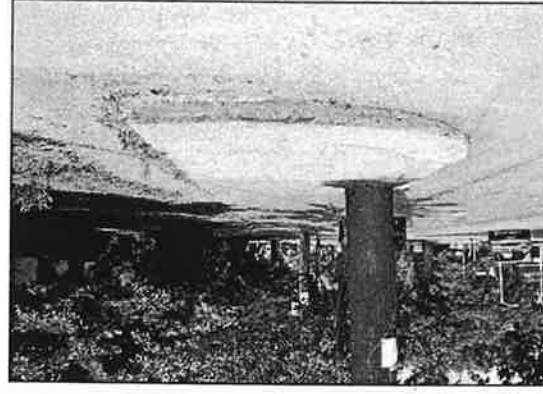


FRANKFORT & EWING AVENUES, SOUTHWEST CORNER



FRANKFORT & CRESCENT COURT, SOUTHWEST SIDE

On the next page is an illustration of a design for a typical curb-cut intended to resolve several issues. This design has an A.D.A. compliant ramp prior to the corner in both directions, and tactile warnings, orienting one to each street crossing desired. Also incorporated, is a street crosswalk, designated by pavers of a differing texture (though relatively smooth for wheelchairs and canes, or simply raised-surface paint-striping), and plastic reflectors which aid night or rain visibility, and are detectable by the visually impaired, as well. This relatively simple design helps to clarify boundaries to both pedestrian and driver.



DRIVE-SOUTH SIDE, KENNEDY AVE. TO CRESCENT CT

Many of the existing ramped curb-cuts along Frankfort, now have created major ponding water problems.

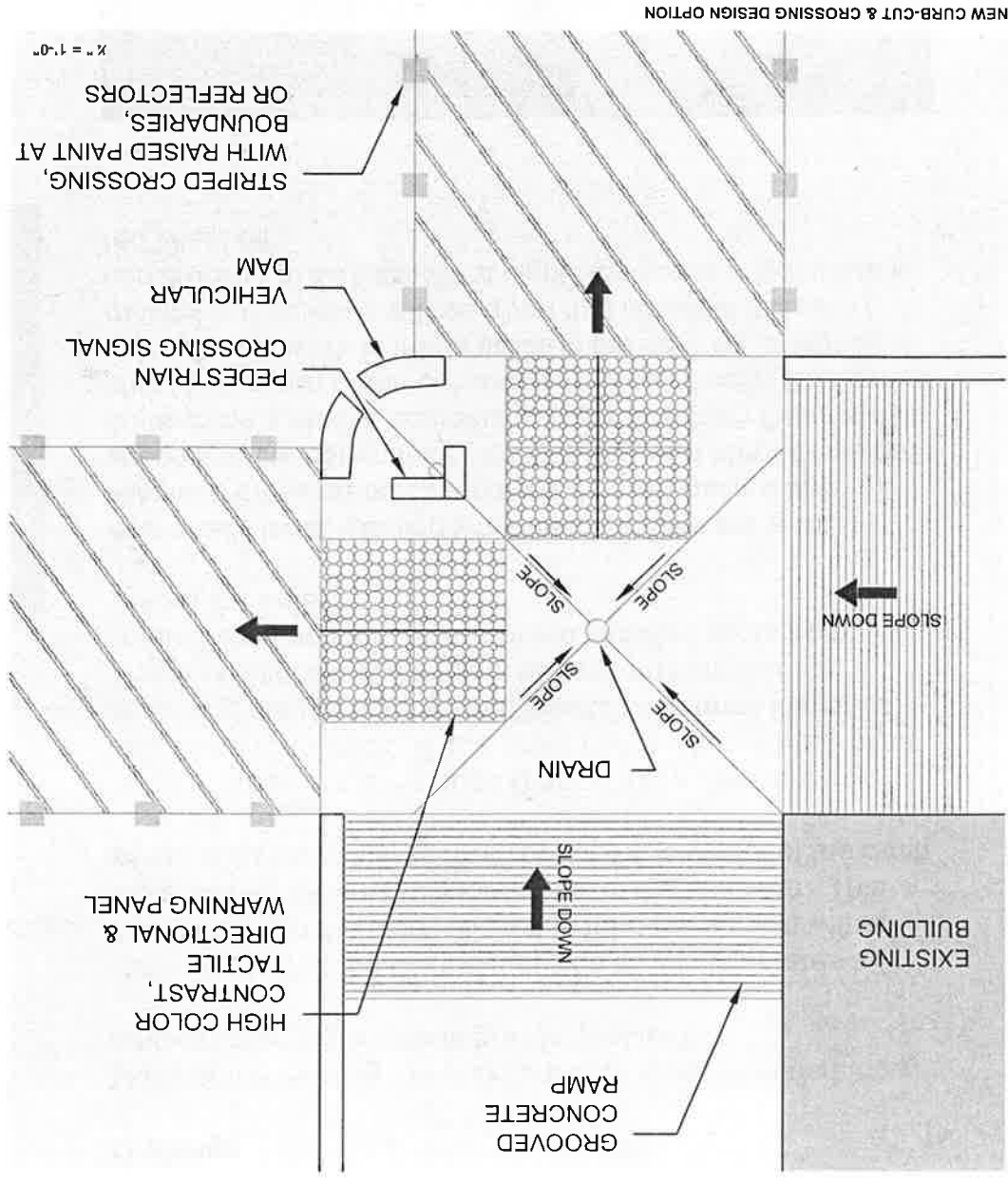
Drainage

Please note that the Curb-cut design shown integrates a central drain in the sidewalk, set in from the corner, with a slight slope (1/4" to 1'-0") towards it, in the concrete. This would allow rainwater to drain out of the low-spot of the ramp. Several areas in the Railroad Right of Way, adjacent to residential properties, where water ponds after rainfall, often remaining stagnant for several weeks have been identified. This was, justifiably, a subject of frequent complaint at community meetings. Areas noted included spots from Weikel to Fenley.

At the very least, grading work needs to take place to eliminate these areas as a potential health hazard and eyecore in the community. If Light Rail, or a shared-use path do become a reality, addressing water flow from these areas should be a part of the construction. Realistically, CSX grade improvement work in these areas in the next six to eighteen months is the best solution, given that potential actual construction of an East-West Light Rail transit is likely five to ten years off.



FRANKFORT & KEATS AVENUES, NORTHWEST CORNER



Pedestrian Crossing Signals

It is difficult, even for a sighted person, to determine which button to push to cross which street, at times. Further, some of the buttons are not actually very easy to push. Ease of Operation is critical

The technologies in crossing signals available now are much improved. Please see Appendices F and G for details on potential accessible crossing signal systems.

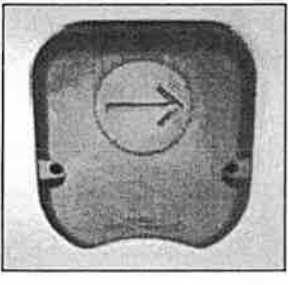


SOUTHWEST CORNER OF STILZ AVENUE

One uses a simple, large plastic easy-to-push button, with a raised arrow on it, indicating the street to cross, with braille labels as well. Another unit uses the entire front-panel as a button, eliminating additional parts subject to vandalism. Directional buttons that vibrate when it's time to cross, are also an available option, aiding blind or deaf persons.

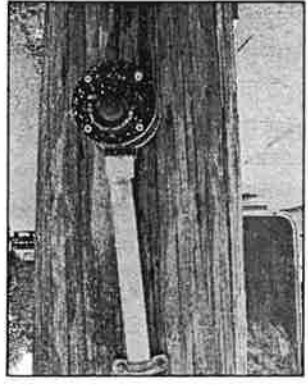


POLARA NAVIGATOR APS' SERIES



PRISMA TEKNIK 'TS-900' SERIES

SOUTHWEST CORNER OF STATE ST.



We recommend coordination with the Public Works Department, to begin immediate implementation of a plan to upgrade the existing signals (in stages), and addition of this type of signals where no audible signals are present. Federal and state funds are available to provide such improvements, which aid those with physical, sight, or hearing impairments.

Conclusion:

Due to the nature of the communities, it would be a great statement to upgrade Frankfort Avenue's full length to be A.D.A. compliant and fully accessible to the visually and physically impaired. Consistent Audible signals, and curb-cuts, alone, would greatly facilitate the mobility of all citizens along all of Frankfort!

Defining Boundaries

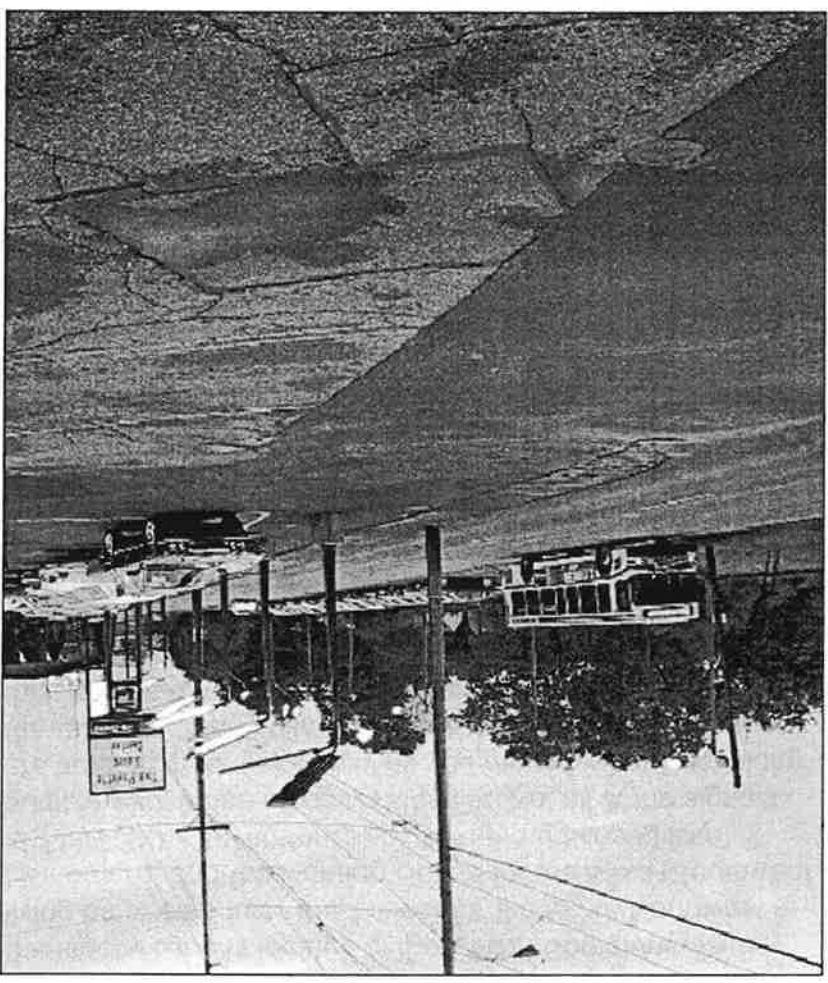
To make the street both *more inviting*, and *safier*, for the letting pedestrians and drivers know "Where do I walk" or "Where do I drive." The CPTED guidelines also identify this as a proven method of reducing the potential for crime.

"Erosion of the curb" is a major threat to pedestrian safety and comfort along Frankfort. Sidewalks and curbs have been crushed (or the layers of asphalt have risen above them). Property owners subsequently paved over the sidewalks. If vehicle boundaries are not limited, walkers don't feel safe.

The best three examples of this are:

Mellwood & Frankfort Avenues - Car lots and Gas Station
 Between Clifton Ave. & Jane St. - Tire Shop and Diner
 Bauer & Frankfort Aves. - Auto Lot, and Insurance Office

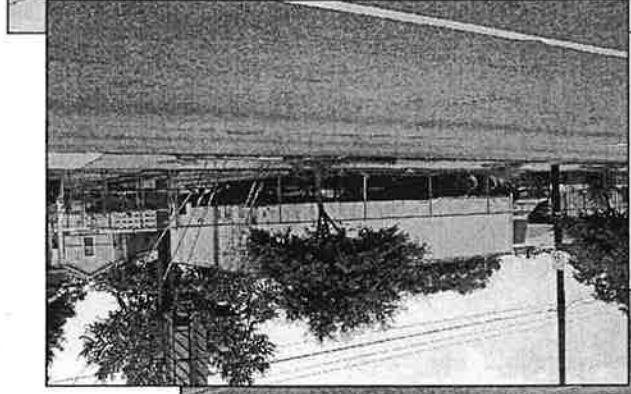
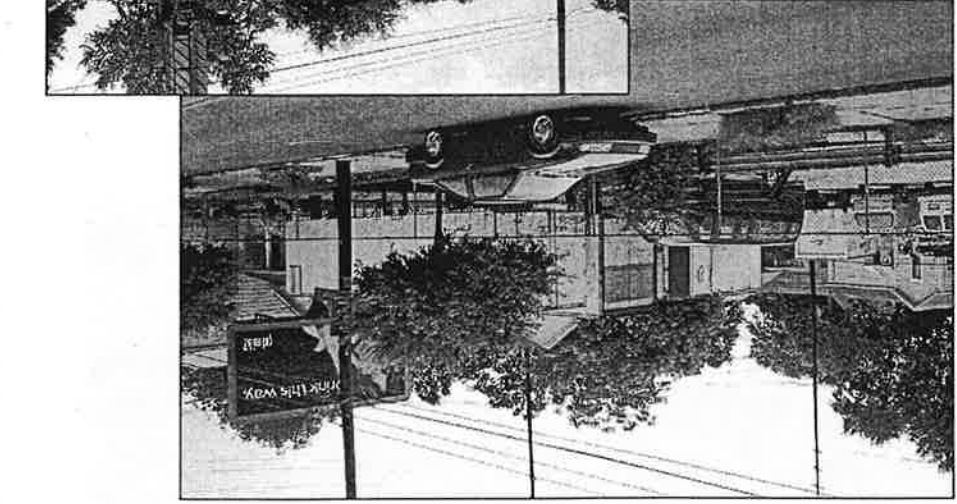
Where Limestone curbs exist, they shall be preserved. The neighborhood shall explore plausibility of deeper-cutting "scarification" of the asphalt prior to re-paving with they city.



BAUER & FRANKFORT AVENUES - "EROSION OF THE CURB"

MAINTENANCE AND REPAIRS

Improved maintenance of what is existing, will make Frankfort Avenue much more safe, and also prettier to look at. For private property, requests or complaints from the neighborhood council, and the City through 'City Call' are the best means to addressing this. On Public property, plans and conversations can be set up with the City Agencies by the Councils to discuss the problem areas identified in this study, and any others. MSD matching funds are available for improved drainage at streets.



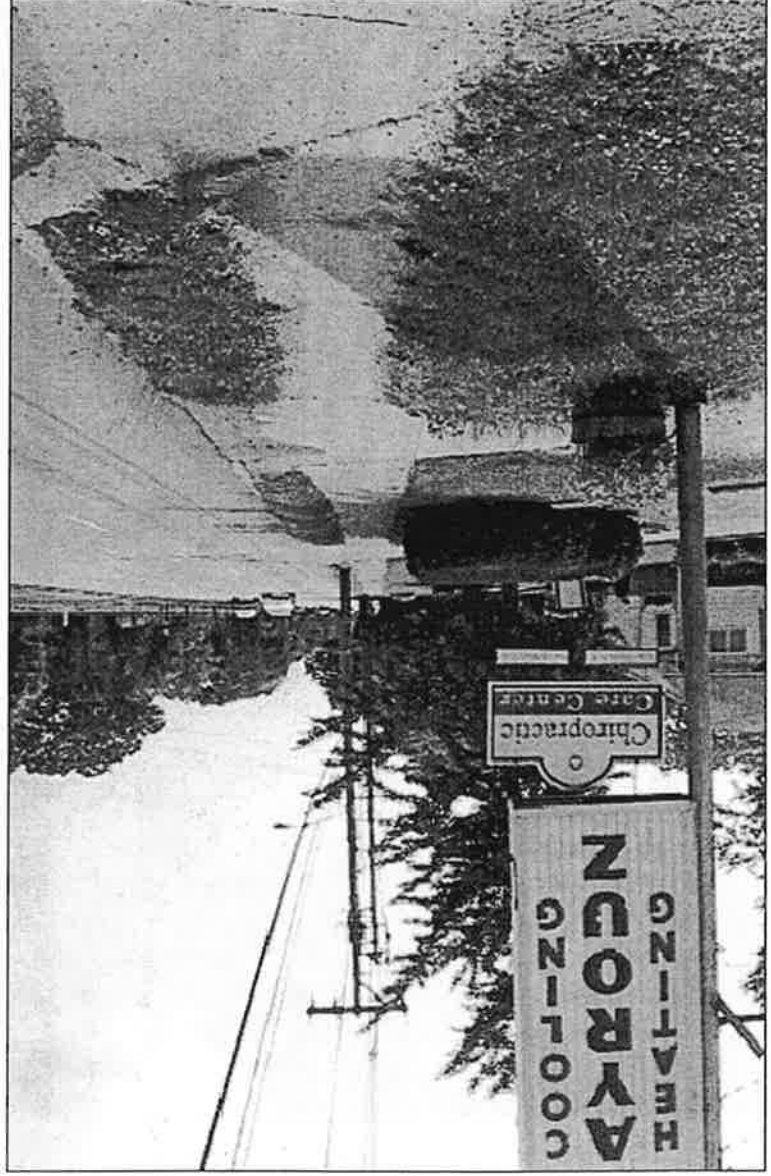
Sidewalks

Replacement of broken and/or shifted segments of the sidewalks on a consistent basis would help prevent some problems. The central, busiest stretch is currently better maintained, while West of Haldeman, and East of Peterson are in greater dis-repair.

The 'crushing' of curbs and sidewalks by tractor-trailers and other large trucks at busy intersections needs particular attention. Implementation of means of protecting the pedestrian right-of-way are crucial, whether it be steel columns, concrete bollards, or decorative boulders, etc.

In locations such as Mellwood & Bauer Avenues, it would be prudent to re-work the curb to account for truck turning radius;

CORNELL TO BAUER AVENUES, SOUTH SIDE - OVERGROWN SIDEWALK



Trees & Landscaping

Regular trimming of the trees, especially prior to the start of winter, would make the travel of a blind pedestrian down the street much more pleasant. Regular mowing and trimming along the city sidewalks should be adhered to and enforced.

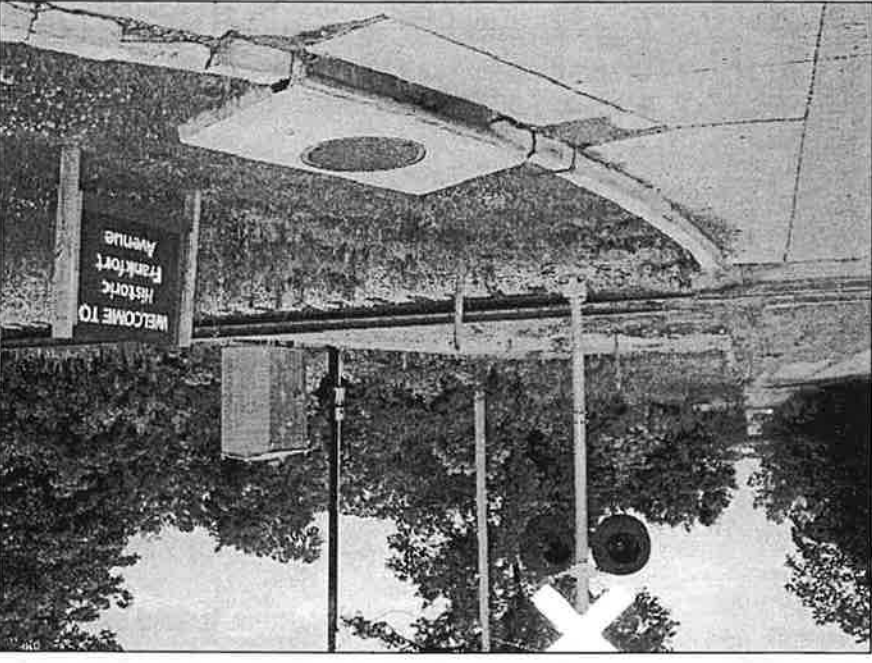
Trees are among the most frequently mentioned 'likes' of residents in our study. However most frequent among 'dislikes', also, were trees. The fruit-bearing trees, in-place along certain stretches, are the biggest complaint, as they stain the sidewalks, make the path more treacherous, and damage cars. Bradford Pears, and the untrimmed trees "slapping" one in the face follow close suit in 'Dislikes'.

Litter

Litter is the most common issue neighbors comment on in discussions, and an ongoing problem in all communities.

The worst areas I documented are segments of the Railroad ROW, especially from Weikel Ave. to Fenley Ave, and adjacent to all of the bars and restaurants.

Aside from Organized litter pick-up programs by church and other youth groups, the best suggestion for this issue was the street litter 'Vacuum' much-like is employed of Fourth Street. Possibly, partial funding could be provided by the businesses to keep these areas under control.



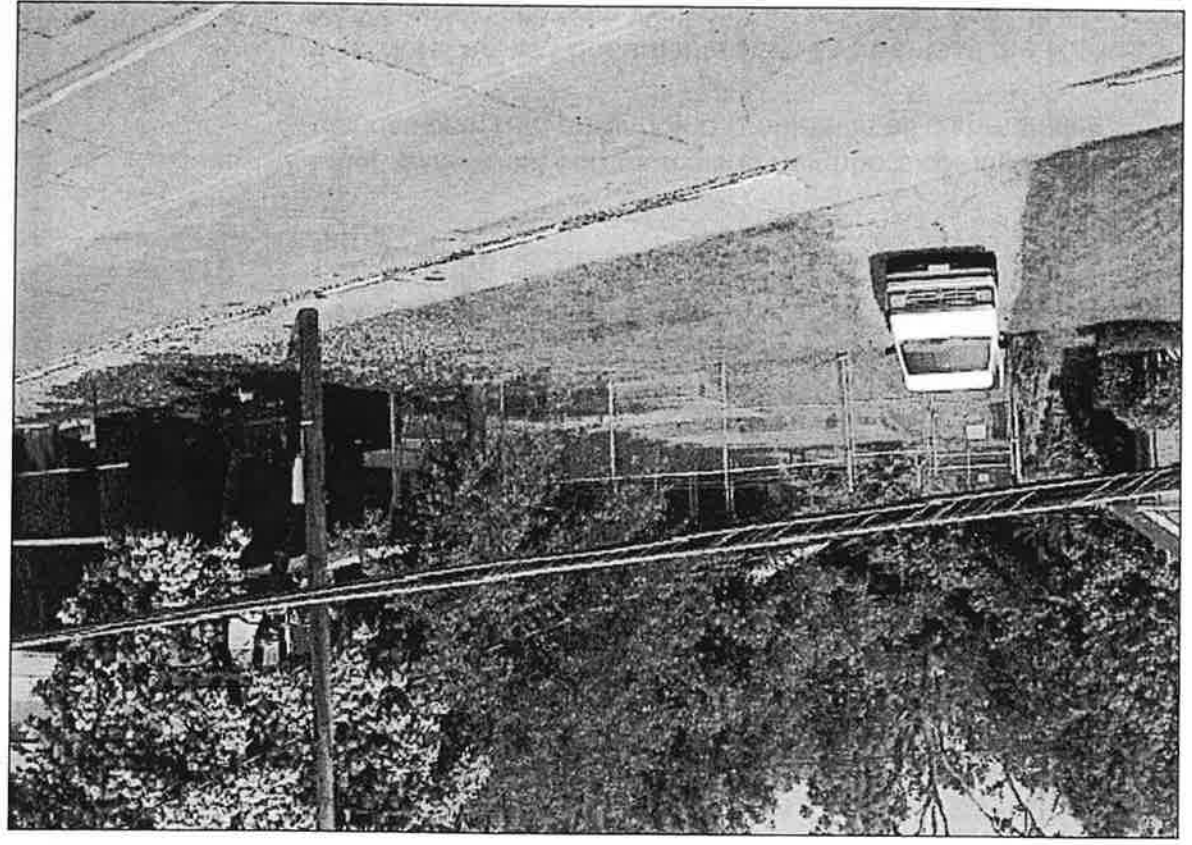
FRANKFORT AVENUE AT RIVER ROAD

Many utility poles and other items, that appear excessive, or an eyesore have been identified. LG & E and the telephone company can provide feedback on this information. While some utility items may not practically be easily eliminated, others are clearly removable.

The unsightly, fenced, abandoned LG & E utility pads, shown above, at the SW corner of Stiliz Ave. (behind Mom's Music) is a good candidate for removal. The creation of an alley might be feasible, plus eight to twelve *additional parking* spaces. Further, refuse and recycling truck access from the rear, would eliminate obstructions of the narrow street sidewalk on pick-up days. Per Randy Magallon, LG & E Real Estate, this portion is no longer in-use. A small gas regulator station building remains, behind.

The bench & landscaping at top right, in Crescent Hill, illustrate the value of street improvements. A consistent order of street objects & shelters along the full length will further improve the community.

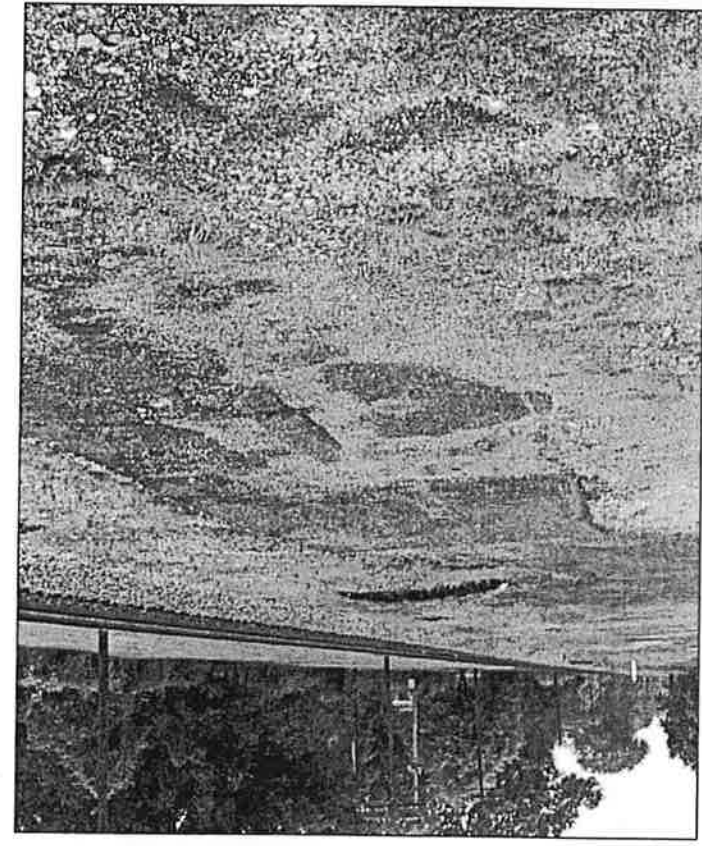
Improvements & Utility Clean-Up



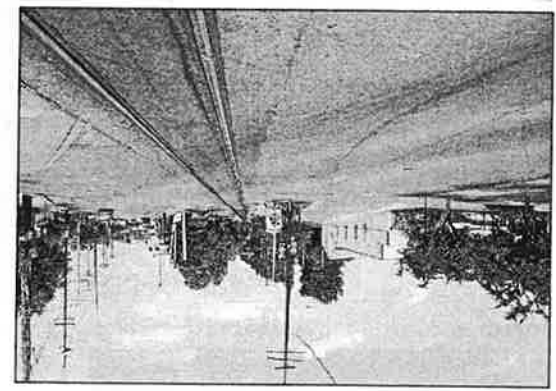
STILIZ AVENUE AT FRANKFORT AVENUE - ABANDONED LG & E PADS; DETERIORATING STREET CURB



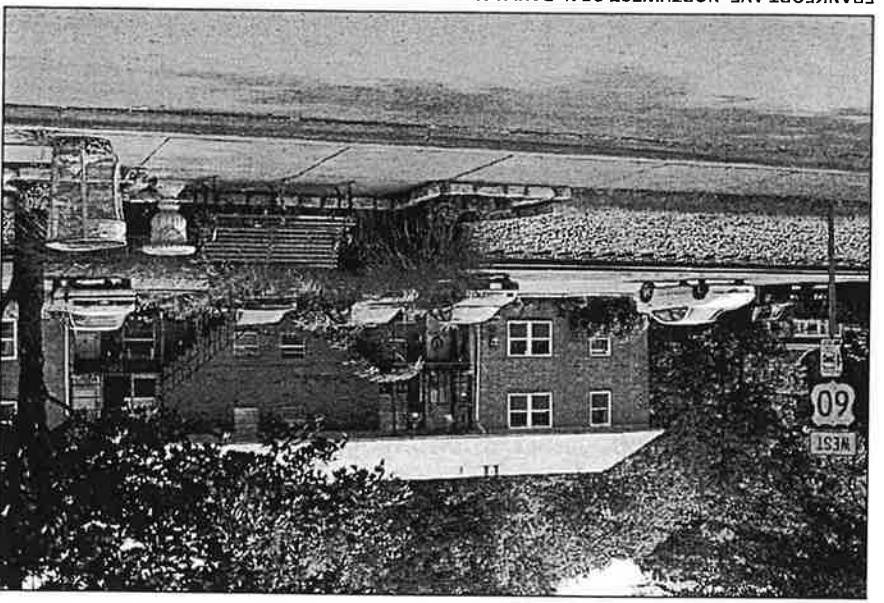
NORTH SIDE OF FRANKFORT AVE, BETWEEN BIRCHWOOD AVE, & CRESCENT CT. (ST. JOE'S) - ABANDONED LIMESTONE SIDEWALK



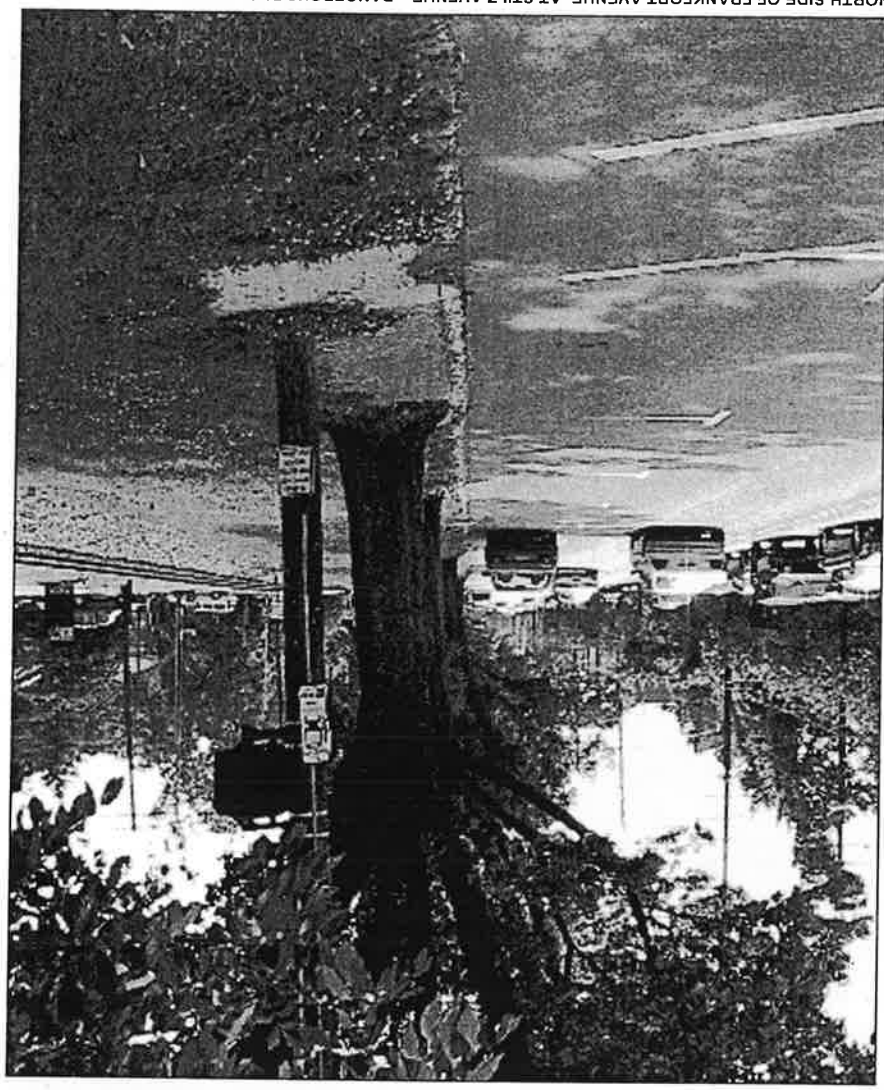
CSX RR R.O.W, NORTH SIDE OF FRANKFORT AVENUE, NEAR BAUER AVENUE - BROKEN PAVING & GRAVEL



FRANKFORT & WEIKEL AVENUES, LOOKING NORTHEAST



FRANKFORT AVE, NORTHWEST OF N. BAYLY AVENUE - BUS STOP, BENCH & LANDSCAPING



NORTH SIDE OF FRANKFORT AVENUE, AT STILIZ AVENUE - DANGEROUS BUS STOP & CROSSING

In each neighborhood meeting the issue of litter was discussed. Many concluded that in the areas that were well landscaped and kept up, people tended *not* to litter. On the other hand if the area was not taken care of, litter was a big problem. With that in mind, our findings are:

From the Ohio River to Mellwood Avenue

This area has had little landscaping developed at this time. There are four reasons for this: First, the properties from the River and extending to Interstate 71 are vacant at this time. Secondly, most have been used for dumping. Thirdly, Thurston Park was not maintained and has been closed to the public. And fourth, there has been no attempt to develop this area by the City or the Louisville *Waterfront* Development Corporation. However, they do plan for its development in the future.

As a western destination, a park shall ideally return to the old Thurston Park location, including landscaping and play areas. On either side of Frankfort Avenue, between New River Road and I-71 would be a good area for an active park. The current "Welcome to Historic Frankfort Avenue" sign needs to be replaced and densely landscaped with flower beds and small bushes, a "Gateway to Frankfort Ave." To continue the theme down Frankfort, we recommend planting of trees on the North side of the street, and placement of large planters on the south side, in absence of trees. Trash needs to be removed, sidewalks constructed, lights installed and the proposed layout of typical street objects used, to bring a sense of orderliness to the area.

From Washington Street to Mellwood Avenue, on the North side of the street, missing & dead trees should be replaced. As trees die, or become mangled on the South side, they can be replaced with planters. Mellwood Avenue at Frankfort is a pivotal intersection with 13,000 cars passing through a day. Here the existing abandoned landscape bed on the Northeast corner should get a major face lift, adding neighborhood threshold signage. On the other three corners, green space needs to be reclaimed by adding trees, flower beds, low shrubs and planters. Thus enforcing the rights of ways, giving a sense of boundaries and welcoming the pedestrian.

From Mellwood Avenue to Ewing Avenue

Once past Mellwood, things become more constant, landscape-wise. For the most part trees line the street on both sides, with power lines on the south side, and typical street amenities are available, though scattered.

The North side between William & Pope Streets needs tree in-fill, and boundaries cleaned up. Added trees will bring rhythm to the streetscape. As along all of the street, on the South side, as trees die or get damaged due to trimming at power lines, they can be replaced by planters with lower colorful landscaping. Across from the Printing House & School for the Blind Campus, a park is planned as part of the Franklin School property. This should include a resting spot, low landscape beds, & trees.

Between Coral Avenue and Weikel Avenue on the North side, existing trees are fruit-bearing. These can be replaced with selected new trees (non fruit-bearing), either as money becomes available, or if they die.

A unique condition, symbolic of Clifton, exists at Weikel and New Main with the CSX railroad crossing Frankfort Avenue. In this area some landscaping already exists, but needs further maintenance. This is one of three major locations along Frankfort that we identified as major focal point opportunities for intensive landscaping, or expansion of what exists. Boundaries should be greatly cleaned up to give a safer and more pedestrian friendly "feel". A gazebo or water feature is proposed in this area along with new flower beds and low shrubs.

Ewing Avenue marks the end of the Clifton and start of the Crescent Hill neighborhoods. It is also the busiest cross street in this area. Walgreen's building sits on the Southwest corner, and has ample parking. Nearly 100% of the property is asphalt or concrete including the East side, along Ewing Avenue. This yields an extremely cold, bleak facade to both Ewing and Frankfort Avenues.

Wide support has been given for suggestion of curb-extending, curved landscape islands within the parking lane. An un-obtrusive place for bus shelters & objects is provided, and the width of street to cross is reduced greatly. We recommend these, atleast on the two outbound-side corners of intersections.

From Ewing Avenue to Chenoweth Lane

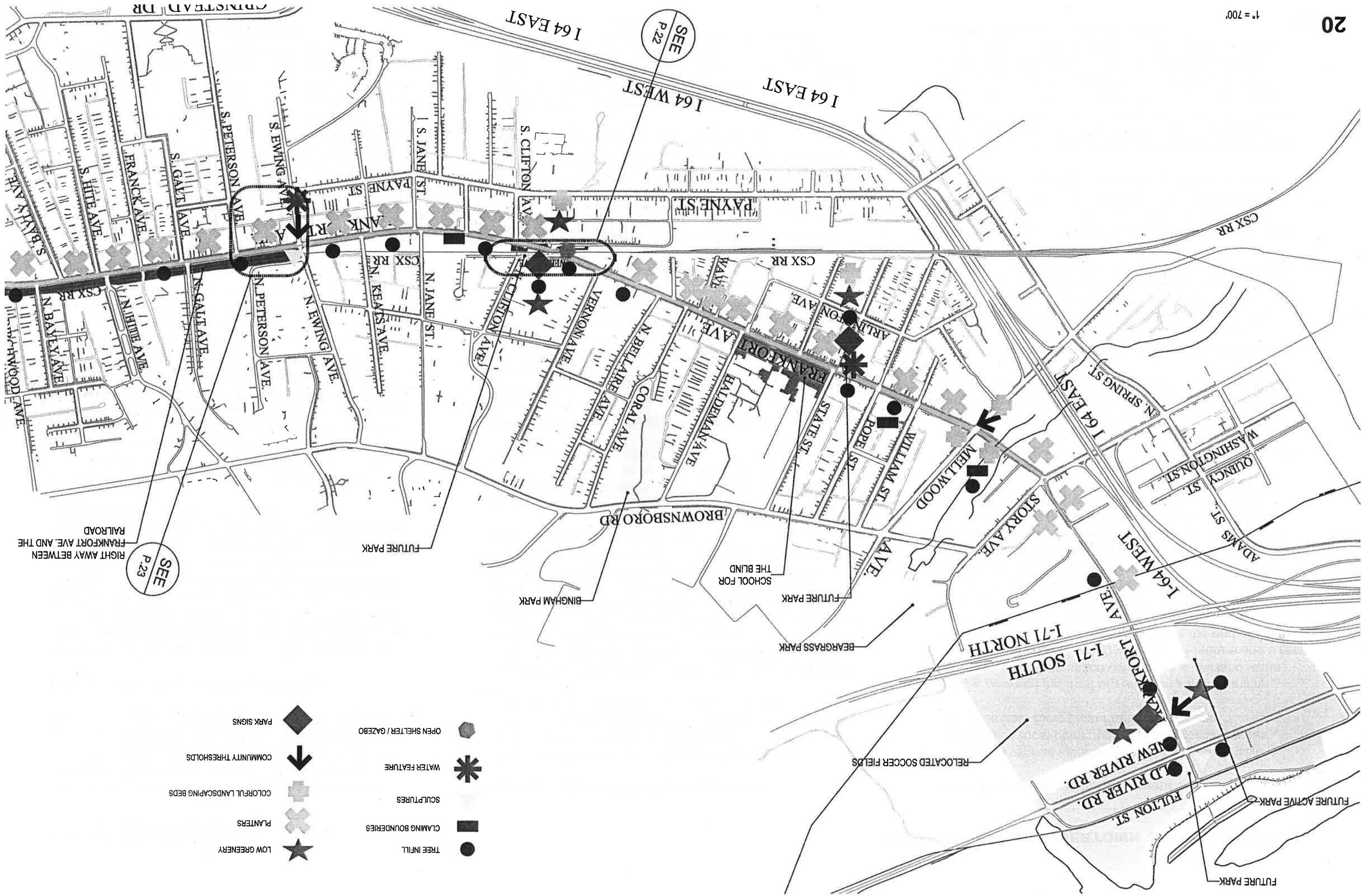
This is the second location identified as an intensive landscaping focal-point opportunity, reclaiming green space on both Ewing and Frankfort Avenues.

Firstly, between the front of Walgreen's and Frankfort Avenue - this green space could have a few landscape beds and low shrubs, along with a water feature and a few trees. A neighborhood sign could mark the end of Clifton and the begining of Crescent Hill, located on either street side, with low landscaping. Secondly, space can be reclaimed between Walgreen's and Ewing Ave. with grass and low shrubbery. Much visual improvement would be made, with negligible loss of private parking. Lastly, East of Ewing towards the corner, between the street and the vacant Valvoline Instant Oil Change building would be a good area for a tree, landscaping and a patch of grass.

The stretch begins at this intersection which has businesses on the South side, and the tracks on the North. The CSX Railroad Right of Way (RR ROW), running parallel on the North side is an excellent spot for implementation of a simplistic linear landscape pattern. Many residents were 'crying' for 'color' in this strip.

Very few blocks have sidewalks on the North side, making it very discontinuous. The proposal in this area is to develop a continuous sidewalk (or a shared-use path) from Ewing through Chenoweth Lane, to in-fill trees, strategic landscaping spots, giving a further park-like feel. Neighborhood threshold signs could be located near Ingle and Wilmington Avenues, with landscaping and low shrubs. On the South side, again, as trees die or money becomes available, they can be replaced with planters. Neighbors must draft a realistic plan for the retail property owners or a group to provide upkeep of these planters.

Stilz Avenue is the third proposed area to receive a major landscaping 'face-lift'. The existing Water Co. fountain, just East of this is nearly invisible, and lacks maintenance. This is perhaps the best location for a significant, visible, water feature and a sculpture piece, flowerbeds, trees, and shrubs. This triangle area, incorporating parking, could make a nice park-like setting and gathering space on the south side of Frankfort Avenue.



- TREE INFILL
- CLEANING BOUNDARIES
- ★ LOW GREENERY
- ✕ PLANTERS
- ⊕ COLORFUL LANDSCAPING BEDS
- ➔ COMMUNITY THRESHOLDS
- ◆ PARK SIGNS
- TREE INFILL
- CLEANING BOUNDARIES
- ★ LOW GREENERY
- ✕ PLANTERS
- ⊕ COLORFUL LANDSCAPING BEDS
- ➔ COMMUNITY THRESHOLDS
- ◆ PARK SIGNS
- ⊛ WATER FEATURE
- ⊙ OPEN SHELTER / GAZEBO
- TREE INFILL
- CLEANING BOUNDARIES
- ★ LOW GREENERY
- ✕ PLANTERS
- ⊕ COLORFUL LANDSCAPING BEDS
- ➔ COMMUNITY THRESHOLDS
- ◆ PARK SIGNS

SEE P.23
RIGHT AWAY BETWEEN FRANKFORT AVE. AND THE RAILROAD

SEE P.22

CHRISTEAD DR

I 64 EAST

I 64 WEST

I 64 EAST

CSX RR

I-71 SOUTH

I-71 NORTH

I-64 WEST

I 64 EAST

BROWNSBORO RD

NEW RIVER RD.

FULTON ST.

FUTURE PARK

RELOCATED SOCCER FIELDS

BEARGRASS PARK

SCHOOL FOR THE BLIND

BINGHAM PARK

FUTURE PARK

ADAMS ST.
QUINCY ST.
WASHINGTON ST.

STORY AVE.
MILLWOOD

WILLIAM ST.
ROBE ST.

STATE ST.

ARTIFON AVE.

WAVE AVE.

HALDEMAN AVE.

CORAL AVE.

N. BELLAIRE AVE.

VERNON AVE.

N. JANE ST.

N. KEATS AVE.

E. GINGER AVE.

N. PETERSON AVE.

N. GALT AVE.

N. HIDE AVE.

N. BAYLY AVE.

WILLOW AVE.

S. CLIFTON AVE.

S. JANE ST.

PAYNE ST.

FRANK ST.

S. EWING AVE.

S. PETERSON AVE.

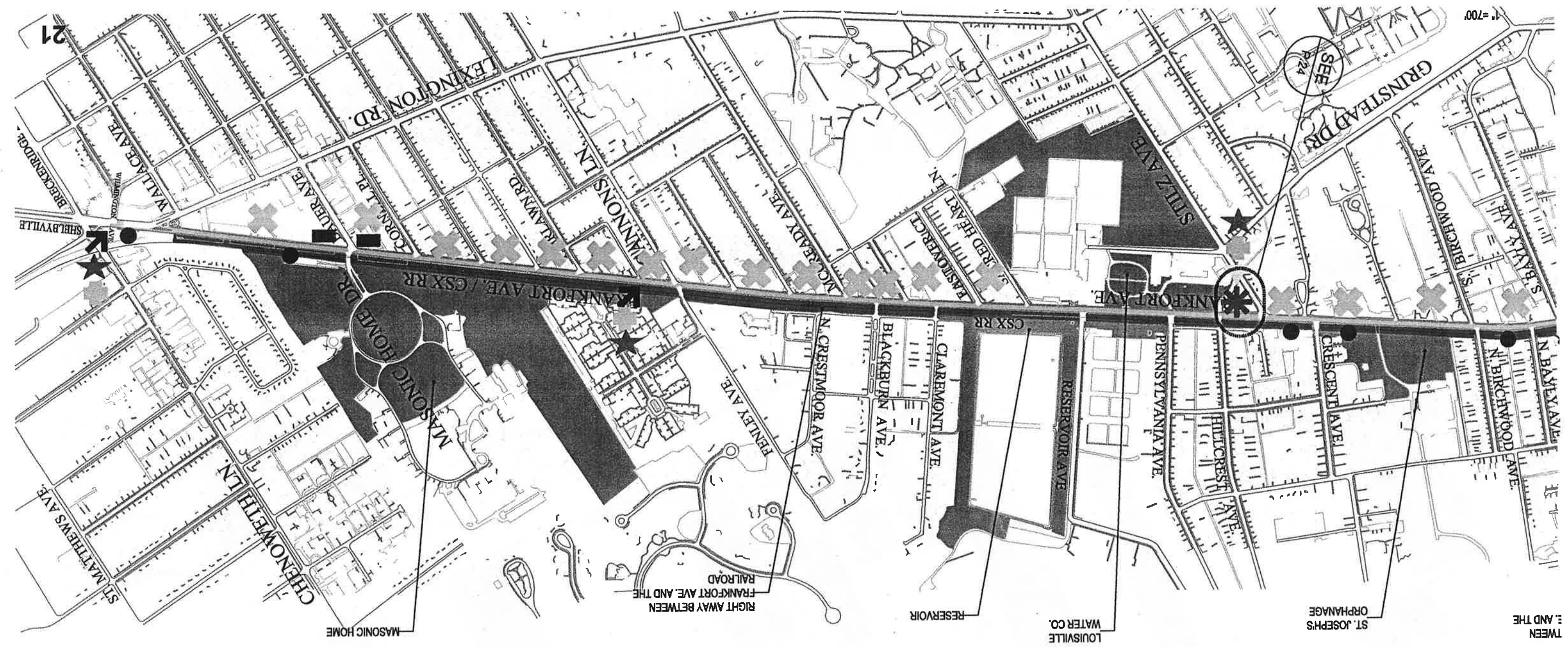
S. GALT AVE.

FRANK AVE.

S. HITE AVE.

S. BAYLY AVE.

- TREE INFILL
- CLAMING BOUNDARIES
- ▲ SCULPTURES
- ✱ WATER FEATURE
- ◉ OPEN SHELTER / GAZEBO
- ★ LOW GREENERY
- ✕ PLANTERS
- ⊕ COLORFUL LANDSCAPING BEDS
- ↓ COMMUNITY THRESHOLDS
- ◆ PARK SIGNS



1" = 700'

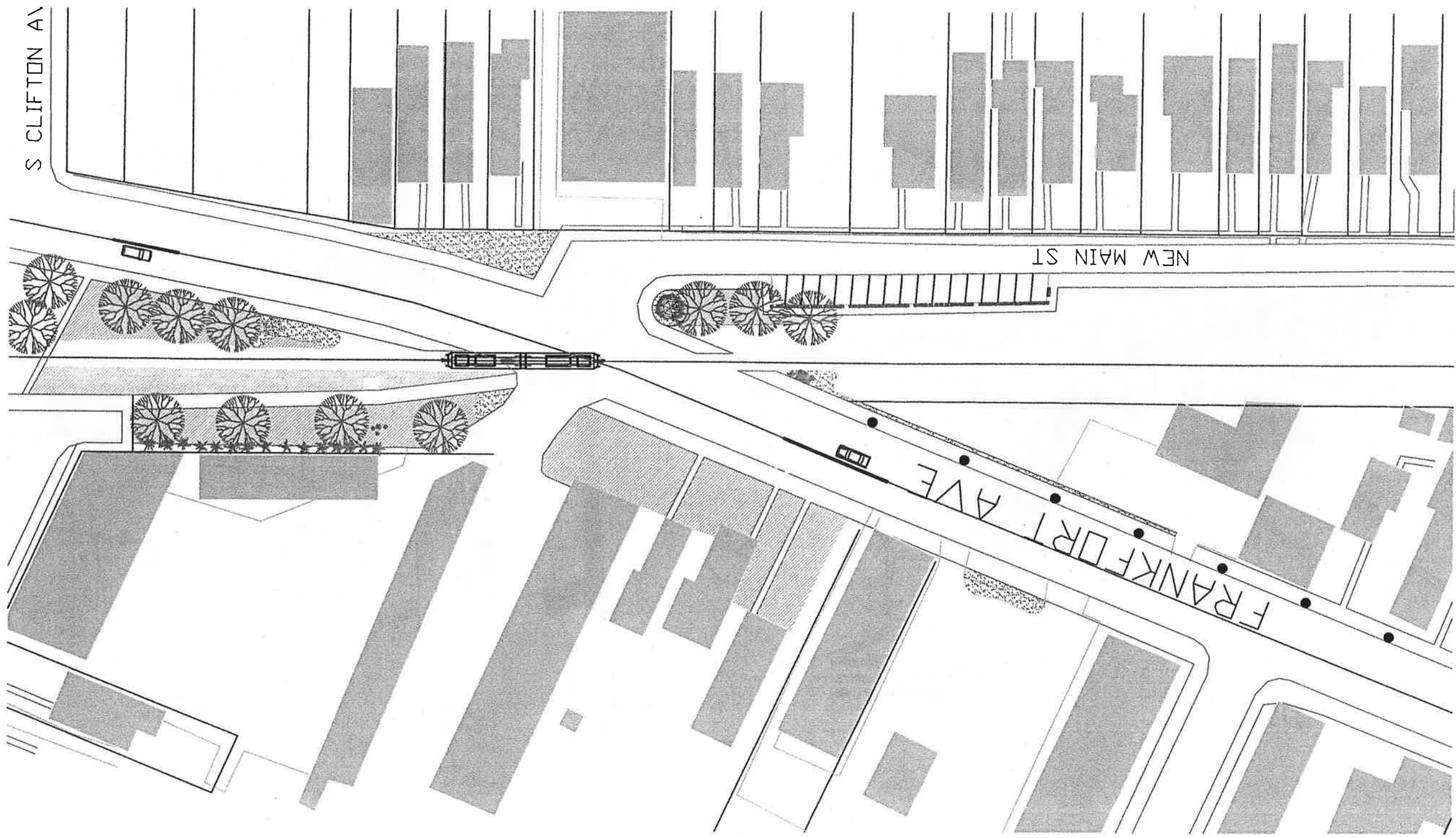
TWEEN
AND THE
ST. JOSEPHS
ORPHANAGE

LOUISVILLE
WATER CO.
RESERVOIR

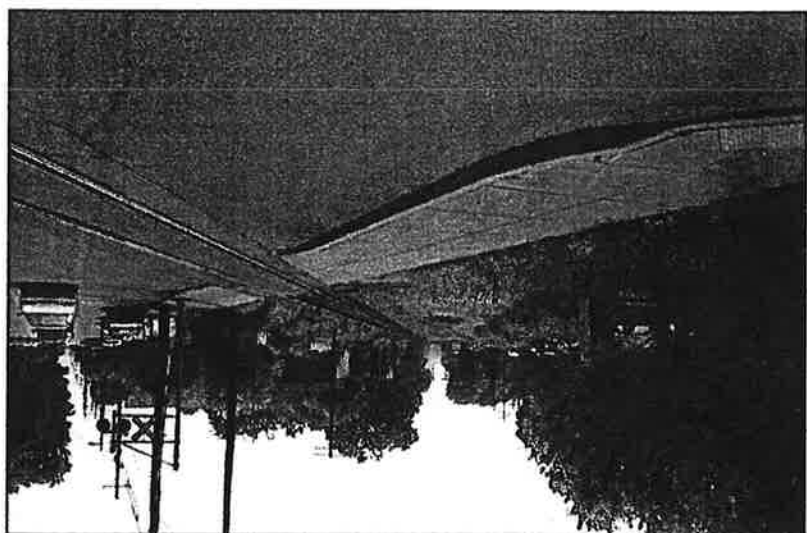
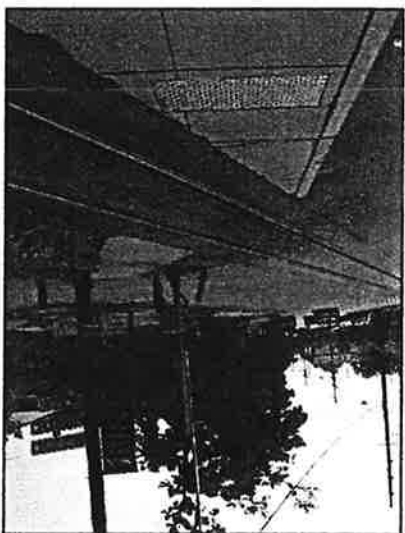
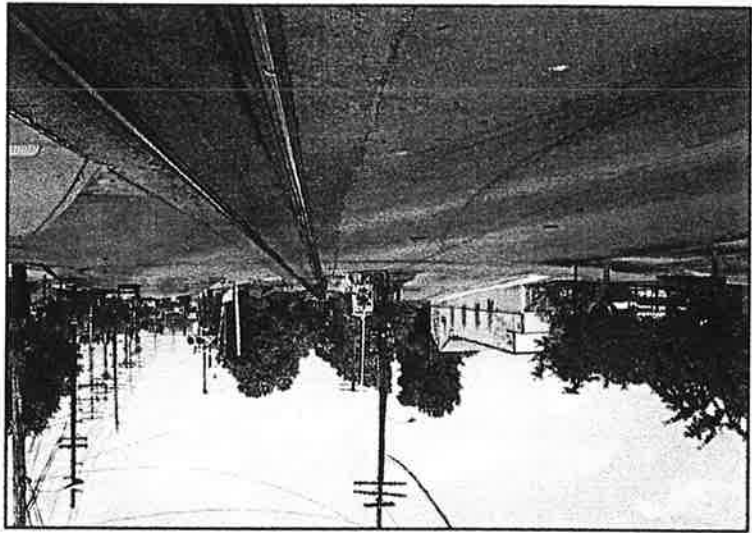
RIGHT AWAY BETWEEN
FRANKFORT AVE AND THE
RAILROAD

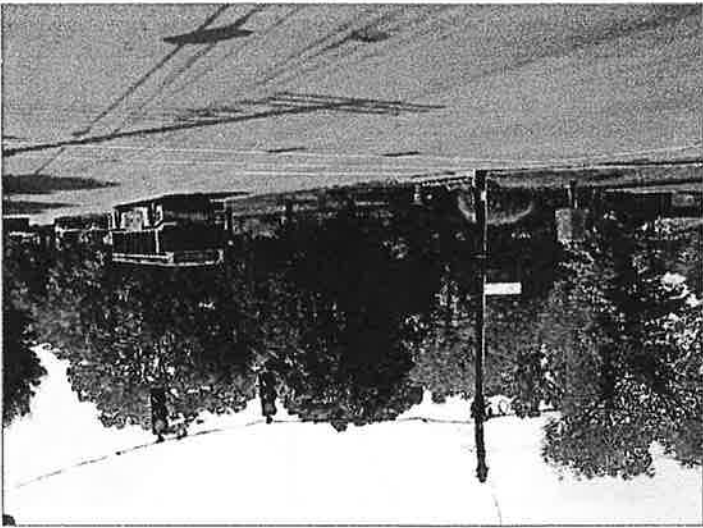
MASONIC HOME

SEE
P. 24



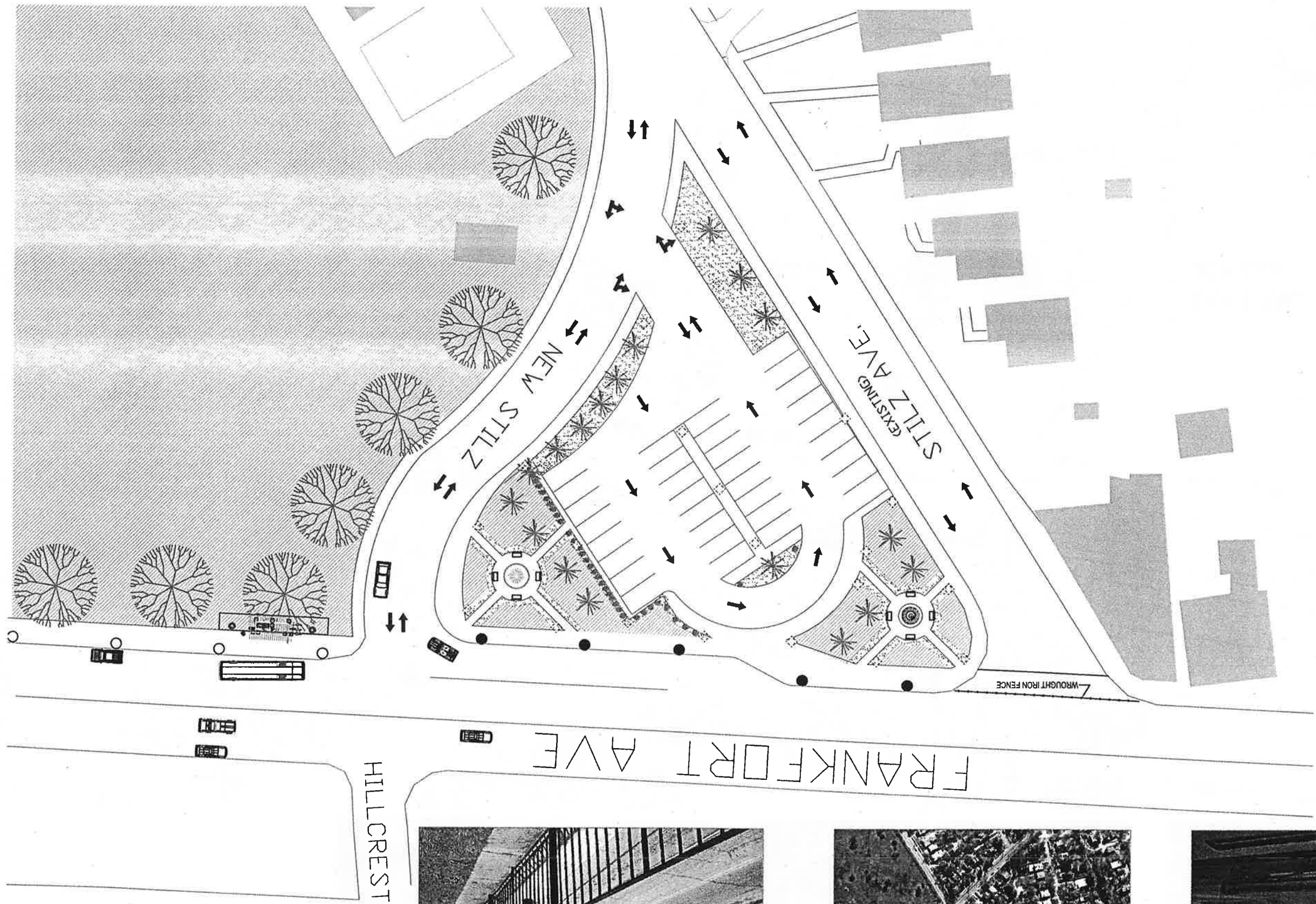
WEIKEL AVENUE, NEW MAIN STREET, & RAILROAD INTERSECTION



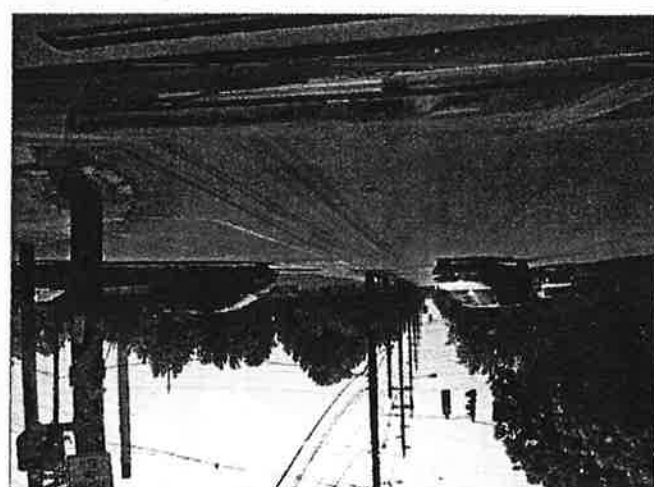
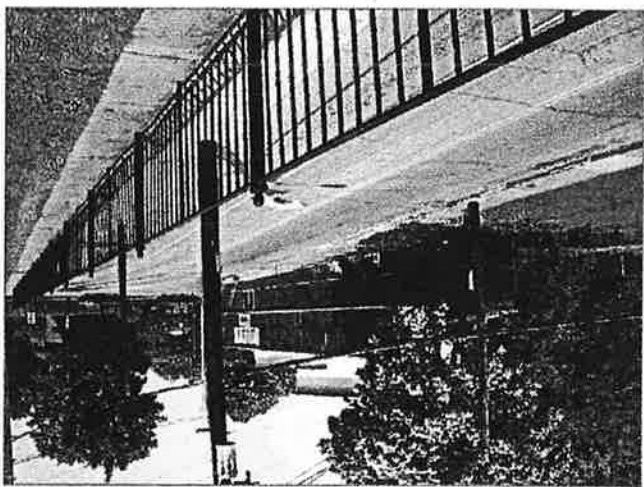


EWING AVENUE TO PETERSON AVENUE

- PLANTERS
- ▨ GRASS
- ▭ LANDSCAPING
- ☉ WATER FEATURE
- ☼ TREES
- ☼ SCULPTURE

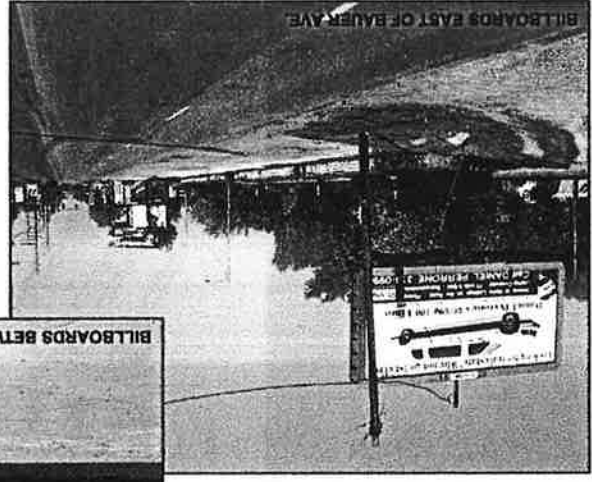


HILLCREST AVENUE & STILZ INTERSECTION



BILLBOARDS

Except in a few states, the amortization method of requiring non-conforming billboards to be removed does not constitute a "taking" requiring the payment of cash compensation. Even so, the outdoor advertising industry has been successful in a number of states in securing legislation that reduces, and in some cases severely curtails or eliminates, the ability of local governments to use amortization or other land-use restrictions to remove non-conforming billboards. Ironically, the Highway Beautification Act has provided the outdoor advertising industry with its most effective shield from local amortization ordinances."



"AMORTIZATION"



The Neighborhoods of Butchertown, Clifton, and Crescent Hill are densely residential, historic neighborhoods. Frankfort Avenue is the main interior artery connecting these communities, as well as St. Matthews.

Large Billboards, in a handful of locations, over the years, some prior to current regulations have been built along Frankfort Avenue. They are clearly seen as an eyesore along the Avenue by the residents at our meetings. Among many historic structures, and along a pedestrian scale street, they are simply inappropriate in scale, use and placement.

The Community Councils of the Butchertown, Clifton, and Crescent Hill neighborhoods strongly support a ban on new billboards, and propose an *existing* Billboard advertisement phasing-out policy. This would ban any new commercial billboard-type signage along Frankfort Avenue and side streets, and further stipulate that ALL *existing* billboards may remain in-place, for the length of the current leases entered into prior to this proposal. At the termination of each current lease agreement, the respective billboards would have to be removed along the streetscape.

Following is an excerpt from a report document by Charles F. Floyd, A.I.C.P., Professor Emeritus in the Terry College of Business, The University of Georgia; Copyright 2000. The report cites many court cases, including one in Louisville, KY:

"In a related case, when the Barton Wilson Company was required to remove a number of signs in Louisville, Kentucky, they sued, charging, violations of free speech and takings. The court upheld the ordinance on both counts. Regarding the takings claim, the court noted that approximately 80 percent of Wilson's business was outside Louisville. Wilson could market the remainder of his inventory in these areas.

Even if he could not, a 20 percent decrease in the value of his inventory does not necessarily constitute a taking. The Court should view the owner's property as a whole, not in parcels." [Barton Wilson v. City of Louisville, 957 F. Supp. 948 (U.S. Dist. Western Ky. 1997)]

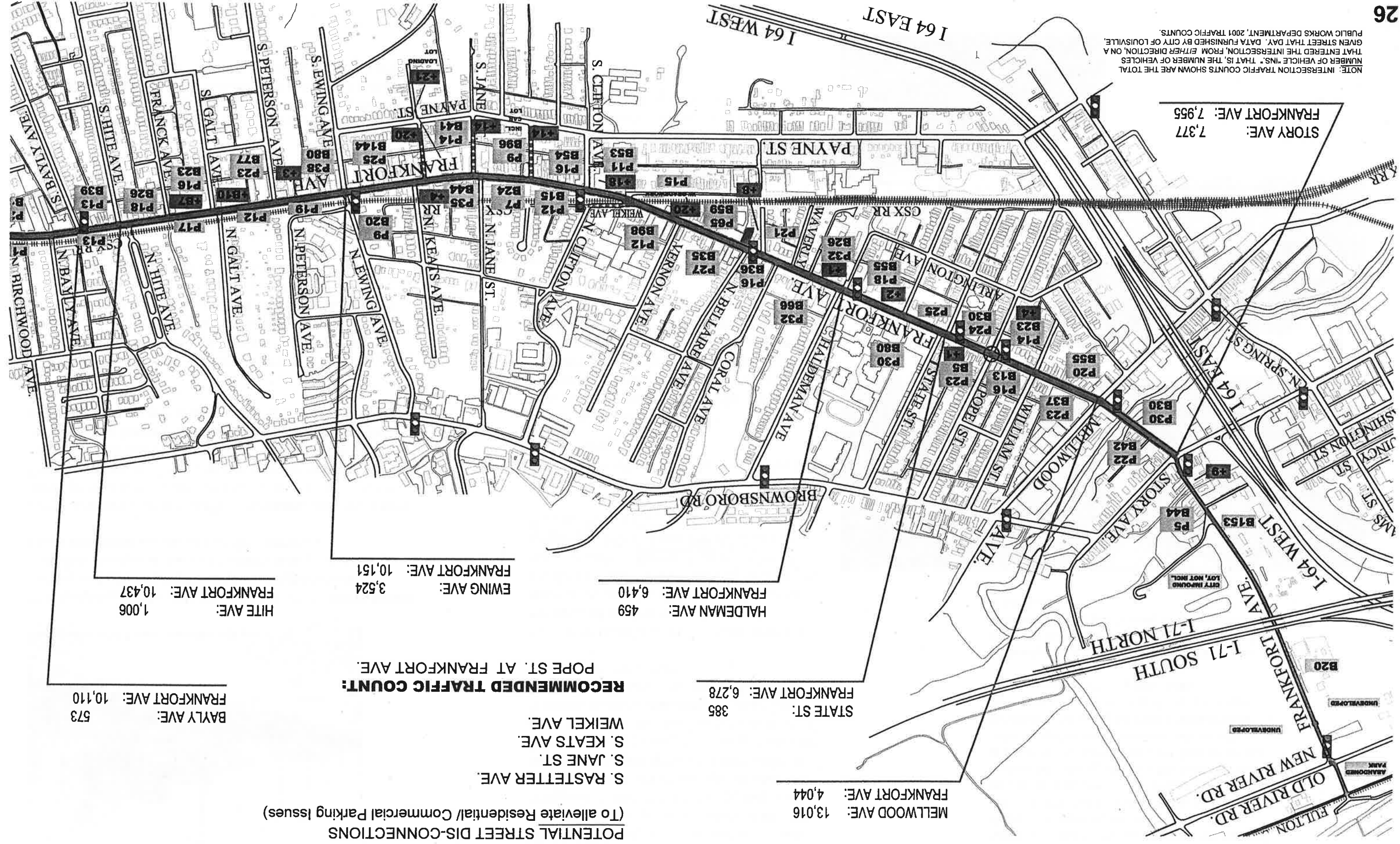
The Court went further, however, noting that even if it could be shown there was a total loss of value:

It is questionable whether the ordinance would constitute a taking. The Supreme Court has stated that it is unlikely that an owner of personal property who has a reasonable expectation that its property will be regulated, or regulated further as is the case here, would have a taking claim.

His Summary:

"Reducing billboard clutter in a community is a difficult task, and one that is bitterly opposed by the outdoor advertising industry. One way to do so, and perhaps the most effective way, is to ban the construction of new billboards, thus reducing the number of billboards as some are removed for development or other reasons.

NOTE: INTERSECTION TRAFFIC COUNTS SHOWN ARE THE TOTAL NUMBER OF VEHICLE "INS." THAT IS, THE NUMBER OF VEHICLES THAT ENTERED THE INTERSECTION, FROM EITHER DIRECTION, ON A GIVEN STREET THAT DAY. DATA FURNISHED BY CITY OF LOUISVILLE PUBLIC WORKS DEPARTMENT, 2001 TRAFFIC COUNTS.



STORY AVE: 7,377
FRANKFORT AVE: 7,955

COMMERCIAL/RESIDENTIAL BOUNDARY
POTENTIAL STREET DIS-CONNECTIONS
(To alleviate Residential/ Commercial Parking Issues)

MELWOOD AVE: 13,016
FRANKFORT AVE: 4,044

STATE ST: 385
FRANKFORT AVE: 6,278

S. RASTETTER AVE.
S. JANE ST.
S. KEATS AVE.
WEIKEL AVE.

RECOMMENDED TRAFFIC COUNT:
POPE ST. AT FRANKFORT AVE.

HALDEMAN AVE: 459
FRANKFORT AVE: 6,410

EWING AVE: 3,524
FRANKFORT AVE: 10,151








HITE AVE: 1,006
FRANKFORT AVE: 10,437

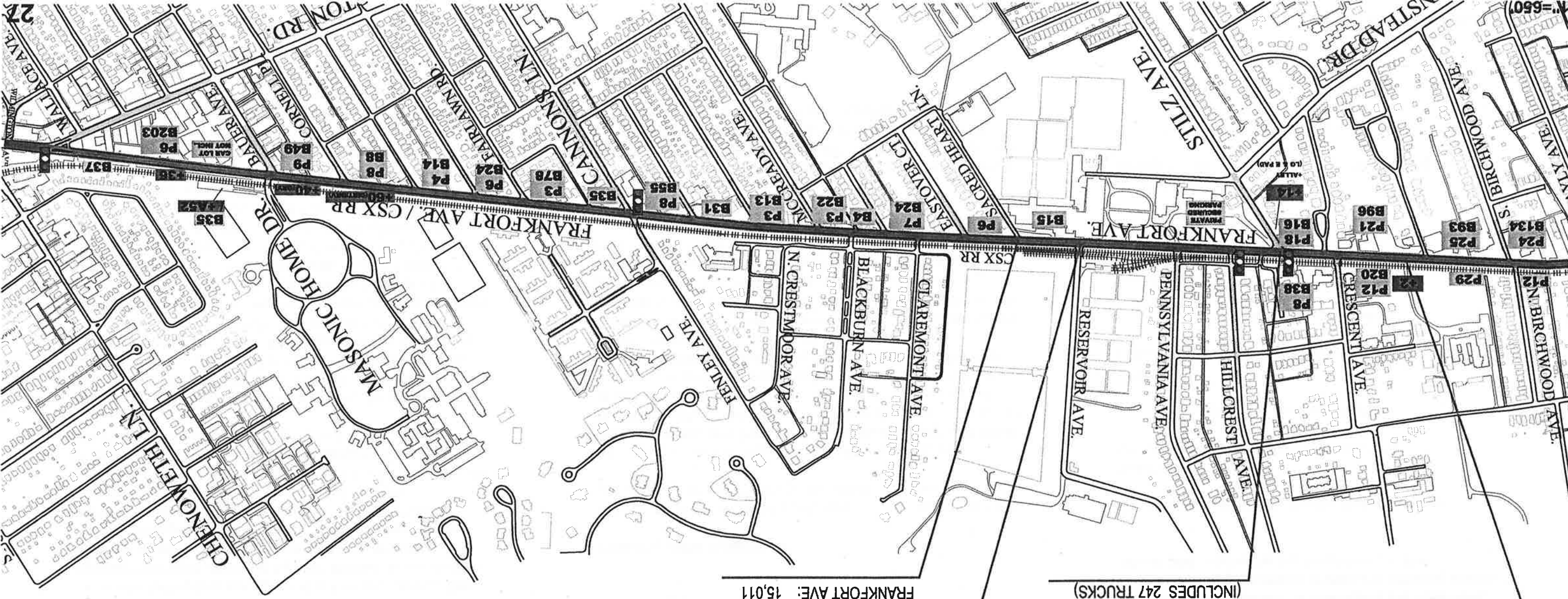
BAYLY AVE: 573
FRANKFORT AVE: 10,110

PARKING & TRAFFIC

STREETS & TRAFFIC

LEGEND

-  TRAFFIC SIGNAL
-  POTENTIAL STREET DIS-CONNECTION (SEPARATION OF BUSINESS/ RESIDENTIAL PARKING)
-  PUBLIC PARKING COUNT (BY BLOCK)
-  PRIVATE PARKING COUNT (BY BLOCK)
-  POTENTIAL PARKING POSSIBLE (ESTIMATED)
-  PUBLIC WORKS - INTERSECTION
-  TRAFFIC COUNT DATA



POTENTIAL ONE-WAY STREETS

(TO ALLEVIATE TRAFFIC & PARKING ISSUES)

N. BELLAIRE AVE. -- ONE WAY SOUTHWEST
VERNON AVE. -- ONE WAY NORTHEAST

GENERAL NOTES:

1. EXISTING STREET INTERSECTIONS TOTAL 48
2. MOST EXTREME PARKING ISSUES ARE FROM CORAL AVE. TO STILZ AVE.

EXISTING PARKING SUMMARY:

BUTCHERTOWN: 57 Public + 289 Private = 346 Total

CLIFTON: 551 Public + 1,109 Private = 1,660 Total

CRESCENT HILL: 342 Public + 905 Private = 1,247 Total

ST. MATTHEWS: 36 Public + 384 Private = 420 Total

3,673 Fkt. Total

ST. JOSEPH: 432

FRANKFORT AVE: 11,941

(INCLUDES 197 PED. CROSSINGS)

STILZ AVE: 3,741

FRANKFORT AVE: 13,751

(INCLUDES 247 TRUCKS)

RESERVOIR AVE: 714

FRANKFORT AVE: 12,844

SACRED HEART LN: 205

FRANKFORT AVE: 15,011

Initial Data Collection & Methodology

During the first quarter of 2002, Veritas conducted a Parking Needs Assessment Study of the Frankfort Avenue Streetscape by both visually observing residential and business use of the avenue and measuring the square footage of buildings along the avenue. A parking assessment spreadsheet was then begun using the data collected and applying some rough business knowledge of the area to determine approximate use trends of the various street sections. Data was tallied and summarized from these spreadsheets to give overall pie chart summaries and parking need totals included within this report.

Buildings facing the avenue and a few adjacent to the avenue that were deemed by staff to have a substantial parking impact were measured to arrive at a total square footage for the avenue. The first step was to estimate 1 story footprint measurements of each building using a combined method of manual engineering scale measurements of LJOIC satellite data printouts and AutoCAD software calculated measurements of the same printouts.

Veritas staff walked the avenue to visually observe the approximate number of stories in use within each building and the nature of the use. Addresses, if they could be easily seen from the avenue, were also noted and buildings were identified by the current or last known business name whenever possible. The footprint measurements were then multiplied by number of stories to acquire an estimated total square footage in use within each building. Basic *Planning and Zoning* on-site parking requirements were then approximately calculated as applicable to the building's use and inserted in the spreadsheet. No allowances for variances or waivers were made to the suggested required parking data, only the basic requirements.

The LJOIC data used broke the avenue into a document of 37 drawing pages. Each building within the drawings

was given an internal number which is listed on the spreadsheet print out (pp. 31 – 35). These numbered buildings were grouped into four groups from the Ohio River eastwardly:

- Group IV River Rd/Butchertown Zone
- Group III Mellwood to Ewing Avenue Zone
- Group II Ewing Avenue to Neighborhood Line Zone
- Group I St. Matthews Line to White Castle Zone

Pie chart summaries representing these zone summaries illustrate Building Usage on Frankfort Avenue as a Percentage of Total Available Square Footage. From these Square Footage Summary Reports, some trends and assumptions regarding parking needs along the avenue may be made.

Pending Data Collection

More data in more detail could easily be collected to flesh out the data in this report given additional time.

Of obvious need is to gather specifically the street addresses missing from the spreadsheet report that could not be visually documented based on drive-by observation or which were difficult to determine due to the multi-plex nature of a variety of the buildings. Each business could be interviewed and analyzed more closely to arrive at a more precise actual parking requirement. Phone numbers of the existing businesses and residences could also be collected so that interviews could be conducted to gather numbers of employees, customers, clients and residents of each building during both an a.m. and p.m. time periods. This could be meshed with Census 2000 reports for a more comprehensive demographic need and business parking and marketing assessment.

The churches along the avenue should also be assessed to determine number of pews and number of parishioners. Of additional help will be to include an assessment of business parking trends for each building use based

on national data included in the ITE Trip Generation Handbook (6th addition). This can be purchased by the neighborhood group and the additional data added to the parking needs assessment report at a later date. All of the data collected is the beginning of a detailed database (easily exportable to a variety of software formats) that could be helpful for future data, business and marketing assessment needs within the neighborhood. As buildings are changed or as businesses are added to the neighborhood or as the scope of the neighborhood assessment is broadened beyond the bounds of the Frankfort Avenue Streetscape, the database can be augmented by the Community Council(s) to provide a more comprehensive system of managing the economic data of the neighborhood, assessing growing parking needs and marketing the business corridor.

Summarized Parking Needs Assumptions

Butchertown Group IV River Rd/Butchertown Zone	221.4 parking spaces needed
Ciffon Group III Mellwood to Ewing Avenue Zone	2032.78 parking spaces needed
Crescent Hill Group II Ewing Avenue to Neighborhood Line Zone	1794.83 parking spaces needed
St. Matthews Group I St. Matthews Line to White Castle Zone	602.72 parking spaces needed
Frankfort Avenue Total	4651.73

Land Use and Parking Data Summary

Category Detail of Business
Usage illustrated:

Demolished Buildings / Vacant Lots
totalled less than 1 % but
does not include vacant buildings

Govt or Utility
Louisville Water Company, 2
Firehouses, and a few utility
buildings

Multi-family Housing
"housing" including and larger than
tri-plexes

Industrial
Warehouse, manufacturing,
construction oriented. Includes
Ready Electric, Allied Cement &
Printing House for the Blind

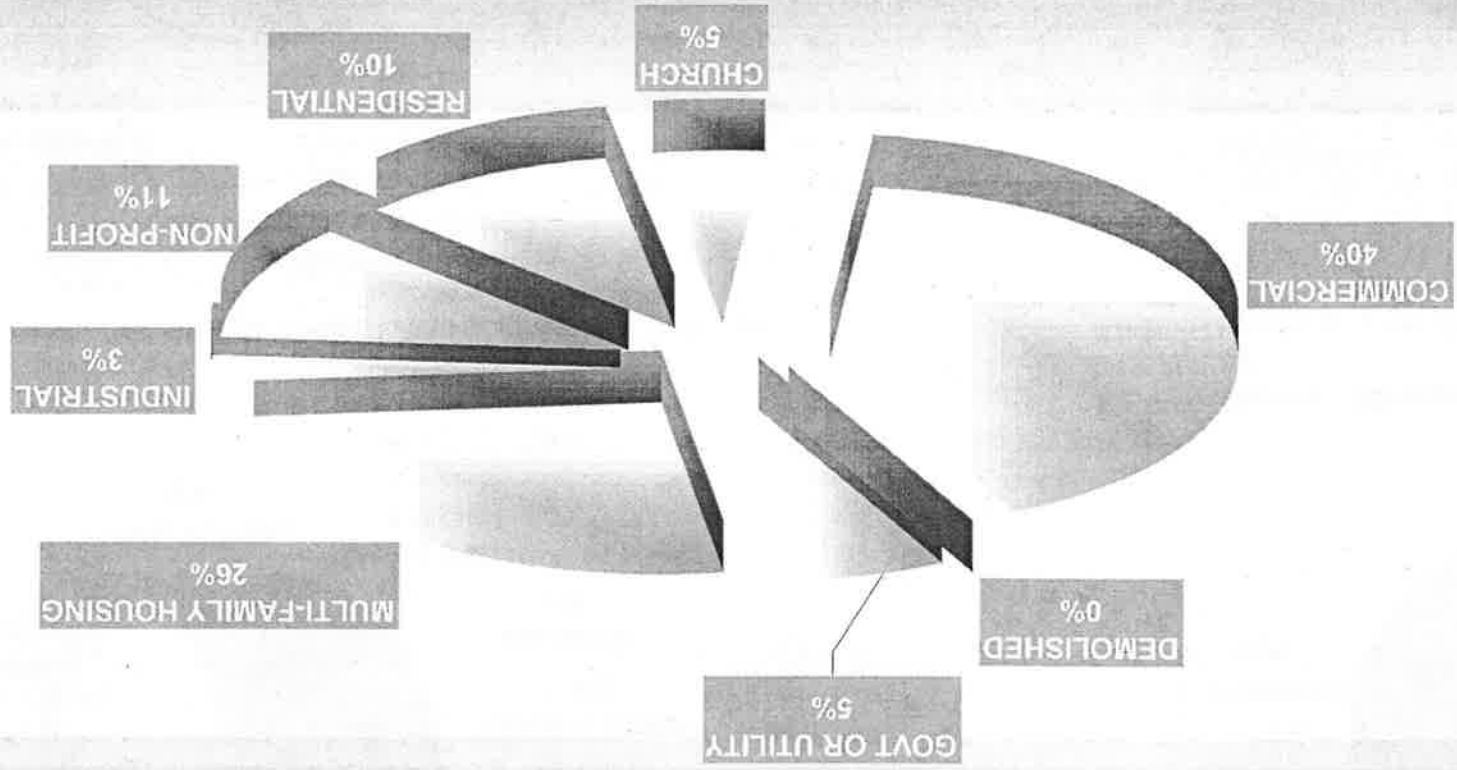
Non-Profit
Combined with church square
footage in neighborhood breakout.
Includes Franklin School as a
whole, KY School for the Blind,
Artswatch, KY Youth Advocates,
etc.

Residential
Single Family & Duplexes

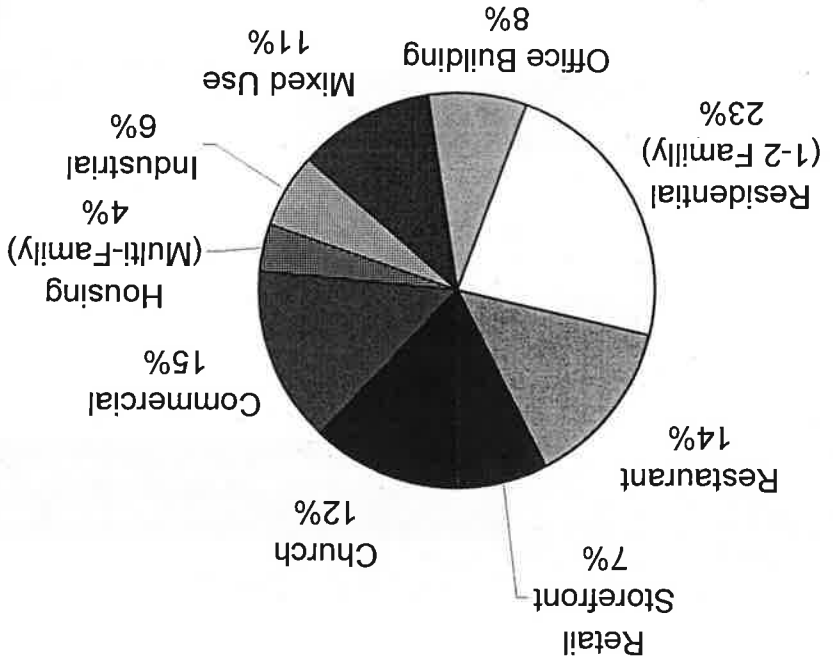
Church
8 churches along the avenue.
Square footage is combined with
"Non Profits" in neighborhood
breakout pie graphs.

Commercial
Business, Retail Storefront, Office

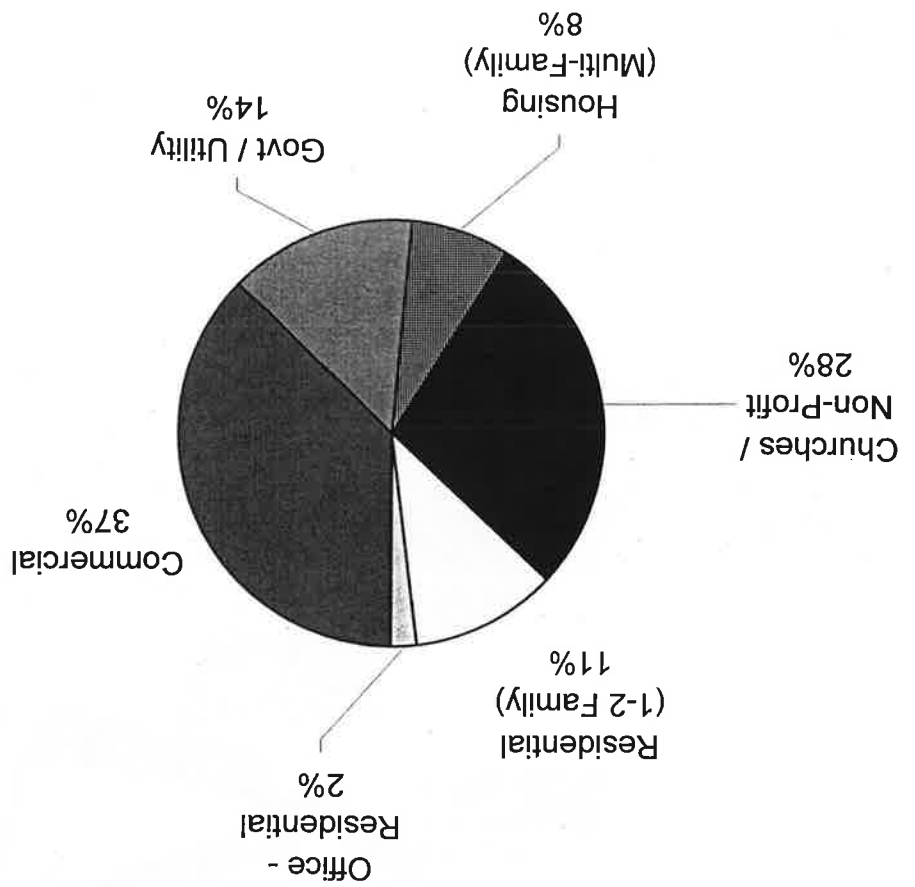
**Frankfort Avenue Streetscape
Building Usage as Percentage of Total Available Square Footage**



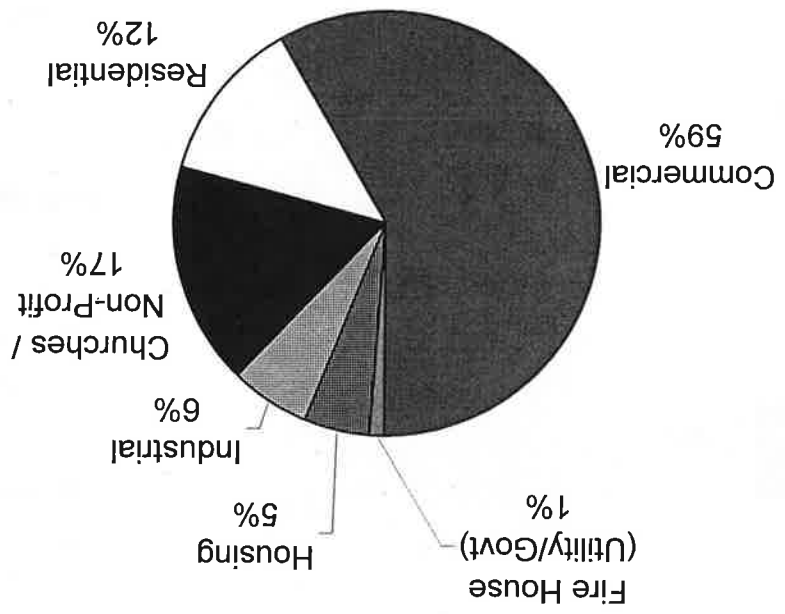
Butchertown (Group IV)
 81,200 SF
 Building Usage On Frankfort Avenue as Percentage of Total Available Square Footage



Crescent Hill (Group II)
 920,344 SF
 Building Usage on Frankfort Avenue as Percentage of Total Available Square Footage

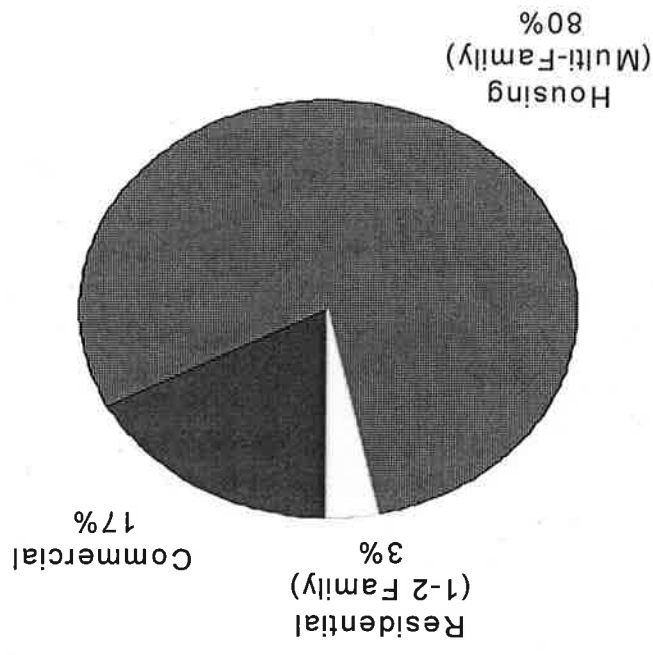


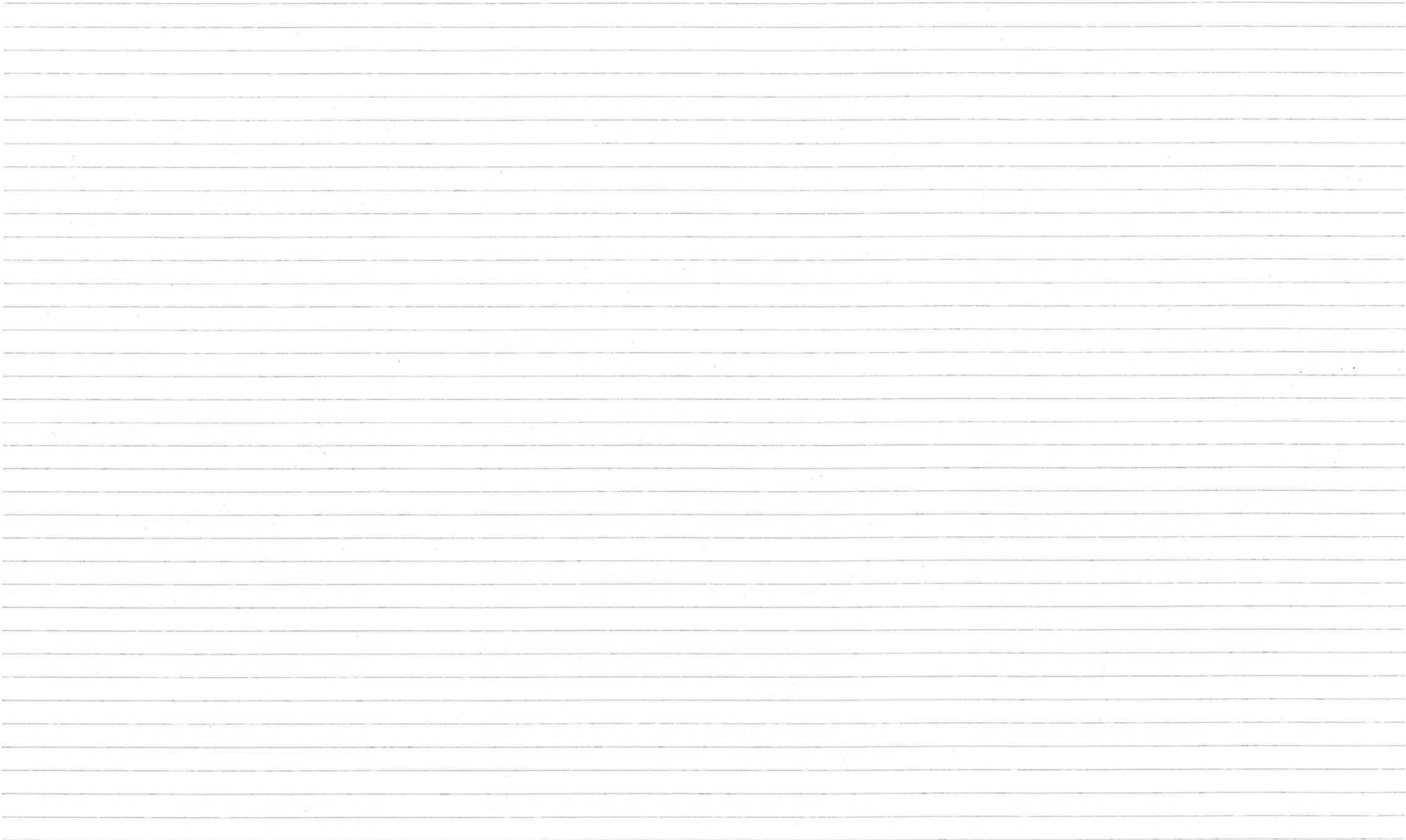
Clifton (Group III)
 1,145,276 SF
 Building Usage On Frankfort Avenue as Percentage of Total Available Square Footage



St. Matthews (Group I)
 813,264 SF

Building Usage on Frankfort Avenue as Percentage of Total Available Square Footage





Development Strategy and Land Use

As Frankfort Avenue is a "traditional" neighborhood corridor, any change in the streetscape must reinforce land use at scales and intensities consistent with neighborhood needs. Although the tendency of developers, the zoning commission, and those wanting to be a part of the neighborhood is to encourage development, encourage development and encourage development, great care must be used to select appropriate neighbors both for residential and commercial uses.

The concept of mixed use and shared parking is only as good as the development intentions and execution. There are many case studies of both successful and unsuccessful mixed use communities. Certainly, mixed use developments may enhance a community, there is however a point of critical mass. This is the point where places and spaces are used 24 hours a day. It is critical to understand the concept of "critical mass" before it actually occurs because it is difficult to remove or take something back once it is given or lost.

Currently, the Avenue does have a clear awake and resting character. Efficient use of the urban fabric is important, however when development changes the scale, intensity of use and the density of the neighborhood, the essential character will in fact change the neighborhood. Whether this change is positive or negative is dependent of the care with which a change is made and designed.

Frankfort Avenue is a unique neighborhood. Over the years the commercial development has been limited because of the one-sided development opposite the railroad, small scale nature of the neighborhood, diverse ownership, low traffic counts, diverse economics, and the awareness of the value of the "traditional neighborhood". In short, there are very few neighborhoods that work as well as those along Frankfort Avenue. The previous developers and residents along the Avenue did not ignore the obvious, they understood what works and embraced... bigger is not always better, new and improved is not always better, you cannot be all things to everyone. Other areas need to meet their own unique needs.

Density of the existing neighborhood and development.

The Louisville and Jefferson County Development Code is an exceptional guideline for development; it is also a work in progress. The code attempts to provide structure so that communities may be protected from unsympathetic development. The Development Code is really only a beginning point for development. Concepts of development, esthetics, density, openness, et cetera as suggested in the regulations need to be understood and embraced by the individuals of the neighborhoods and especially by the neighborhood association members. With understanding, successful neighborhood development can be achieved. Also, an awareness of existing zoning development standards and awareness of the reality of the difference between zoning regulations and the actual openness of the existing neighborhood fabric is critical to the successful management of future development in the neighborhoods.

What we call a "Traditional Neighborhood" now, were originally developments on the perimeter of the city. Urban dwellers were moving to "rural" settings with larger homes and larger lots. The Clifton and Crescent Hill neighborhoods were once the ideal home in the country. As suburbs continue to develop, new neighborhoods are created that are unique however they are not the "traditional neighborhood" on Frankfort Avenue. In the suburbs, most access to commercial functions requires use of the car. One of the fundamental elements of Frankfort Avenue is the pedestrian scale and accessibility. Many opportunities are available to the pedestrian.

Fortunately, Crescent Hill, Clifton and Butchertown have over the years only marginally developed the residential properties with structures, paving, sidewalks etc. In fact, the percentage of development of impervious materials does not exceed 10% to 15% of the property area. Current planning and zoning regulations do not limit floor area ratios for residential development. Zoning trends only provide minimum lot sizes and establish yard areas. These limitations are certainly improvements to previous regulations however, as land becomes more valuable, larger lots (e.g. lots above the minimum lot size), can, have, and will be subdivided and developed ultimately reducing open space, increasing building and people densities, and changing the character and value of the property and neighborhood.

Development of existing or new structures shall enhance the neighborhood.

Future development and use must meet the needs of the community. Existing structures and historic places along the Avenue should be renovated. Developments or renovations must meet the minimum standards of the local development codes and the particular issues of scale, texture, materials, building forms and building patterns, use patterns, window patterns, urban fabric etc. The neighborhoods and their associations must work together and must suggest and manage renovation and improvements along the avenue and encourage appropriate development along the avenue. Prohibit commercial adaptive reuse of any residential property not directly on Frankfort Avenue. Prohibit subdivision of existing large residential single-family residences into multi-family residences.

Prohibit any demolition of buildings along the avenue for parking lots. Encourage development of second floor uses in buildings above parking lots. Encourage neighborhood uses and development of properties to provide shared parking for phased peak parking. Future development and uses must be located and designed based on the available parking in the areas on a block-by-block basis. Who knows more about real parking conditions and problems better than the neighborhood? Parking space requirements and calculations must be based not only on the Planning and Zoning Guidelines which are generic, but also on Traffic Engineering Design Manuals (TEDM) with specific uses and appropriate empirical documentation.

An example: If a 1,000 sf bagel shop were to be located on Frankfort Avenue, the local development code only requires 10 parking spaces. The traffic engineers have compiled data based on 378 studies of bagel shops and they confirm the reality: A 1,000 sf bagel shop requires 29.4 parking spaces.

There are some areas along Frankfort Avenue that already have a parking space shortage. Development to date has been somewhat delayed and haphazard and it has been accomplished without the Traffic Engineering Manual. The current parking problem will certainly predictably grow much worse without the use of the traffic engineering manual data. As the river front develops eastward of I-71 and I-64, the local zoning regulations only require a traffic study if there are more than 200 occurrences (vehicles in and out). In reality, severe problems have and will continue to arise with much less than 200 occurrences. Parking space calculations must be determined based on the specific location, specific adjacent uses, specific peak use and require the addition of considerations of visitor parking as well. Shared or phased parking may also be a consideration.

Parking and Bus Service Strategies

During documentation of the existing conditions along Frankfort Avenue, we identified places where enough parking is not provided. Some parking shortages are occasional and some are permanent. The permanent shortage locations are as follows:

- Butchertown:
 - Story Avenue Between Brownsboro and Frankfort Avenue.
 - Clifton:
 - North Bellaire (permanent)
 - North Vernon (permanent)
 - Frankfort Avenue between Bellaire and Vernon.
 - Frankfort Avenue and Jane both sides.
 - Property in front of Genny's Diner
 - Crescent Hill:
 - Frankfort Avenue and Stilz
 - Frankfort Avenue and Hite
 - Frankfort Avenue and Bayly

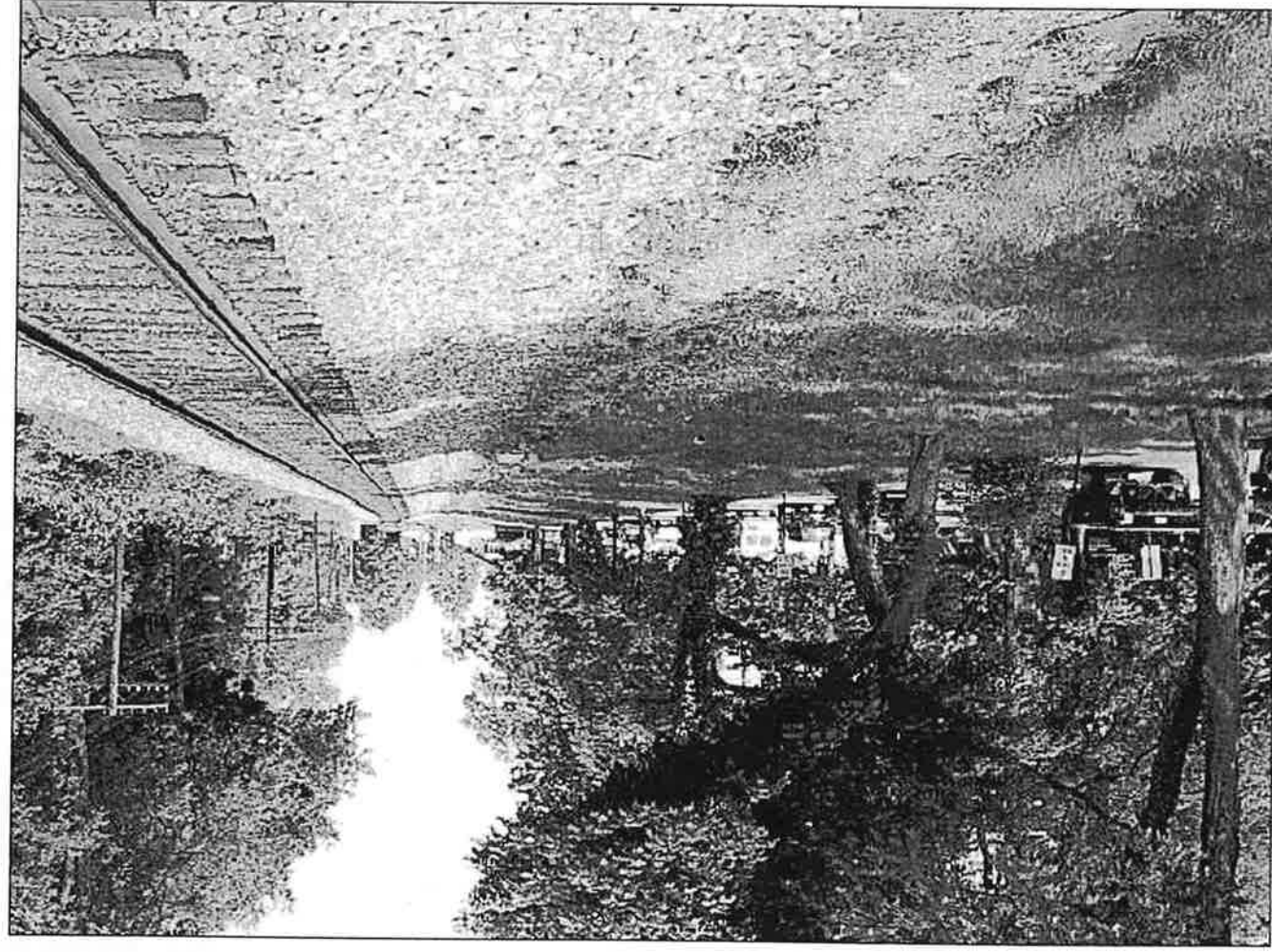
We have identified and suggest consideration of the following ways to obtain additional parking spaces on Frankfort Avenue, they are as follows:

1. Re-stripe existing length of Frankfort Avenue with consistent parking space lengths.
2. Reduce size and quantity of curb cuts and claim the available parking spaces.
3. Standardize curb cut width to 35' maximum. Consolidate curb cuts on the Avenue or relocate to alley side if possible. Claim possible parking spaces on Frankfort Avenue where properties have curb cuts over 35' in width. At locations where curb cuts are over 35' in width, reduce them to 25'/35' and limit property curb cuts to a maximum of one per use on the right of way.
4. Define boundaries and claim the right of way for public use. Reclaim public sidewalk areas and public parking spaces along the avenue where asphalt parking areas and street are perceived as one huge vast asphalt surface. Reduce the quantity of bus stops. We confirm some stops only provide 80' on each side of the stop. As there are different agendas between TARC and City Works we suggest reducing stops and improving remaining bus stops. We propose new covered bus stops. Precise locations of stops to be closed need to be coordinated with neighbors on a block-by-block basis. For each bus stop that is eliminated, an additional eight to ten spaces become available on the street. There are 64 bus stops on Frankfort Avenue, 4 stops in Butchertown, 25 stops in Clifton, 17 stops in Crescent Hill Between Ewing and Stilz, and 14 in Crescent Hill East of Stilz. If every other stop was eliminated, of the 42 in the parking shortage areas of Clifton and West Crescent Hill, the Avenue could potentially gain parking totaling:
 - 21 x 8 = 168 spaces
5. As in larger cities only locate bus stops on far side of perpendicular street intersections so required 100' ingress and egress space before and after each stop can overlap the space of the perpendicular street.
6. Develop shared parking agreements for uses that have different peak hours.
7. On existing streets with existing parking shortages for example:
 - A. The 800 lineal feet of the 40' wide ROW of Vernon and Bellaire between Emerald and Frankfort Avenue can provide 40, twenty foot long parking spaces per side of the street, or 80 spaces. Consider as an option, changing sidewalks 5' out (into front yards) on each side, widen the street to accommodate 45 degree parking on each side and the same 800 length street can provide 64 spaces per side, or a total of 128 spaces, an increase of 128 less 80 = 48 additional spaces, or an increase of 60 % more parking spaces in the right of way. This would require neighborhood approval and funding; however, based on the comments we heard at the public information gathering meetings, it is clear the neighborhood would easily approve such a plan.
8. Close selected streets to thru traffic and develop these areas with adjacent property owners into additional parking areas for the public and their use. In closing, some streets to thru traffic, many residential neighbors problems and complaints will be solved.
9. Develop/purchase property for additional parking spaces. Our plan is to delineate potential parking spaces to be acquired or developed. In Crescent Hill this should occur only in areas on the Frankfort side of the alley. In problem areas, require new developments to provide some public parking on their development for either commercial or residential use at no cost.
10. In larger cities only locate bus stops on far side of perpendicular street intersections so required 100' ingress and egress space before and after each stop can overlap the space of the perpendicular street.

Any location in Clifton between New Main St. and Ewing Ave. would require modification of the commercial strip on the north side of Frankfort Avenue. The property between the North side of Frankfort Avenue and the South side of the railroad property is widest at Genny's Diner.

Further West, such as in the 'Triangle East of S. Bellaire Ave. (Ready Electric Property) would require a structure to cross over the freight rail track (as this is North of the Track). A limited, but notable amount of space is available on the South side of the tracks, in & along New Main Street itself.

Although there is approximately 30' between the existing rail and the backs of each Business Avenues, the width Clifton and Ewing Avenues, the width is greater beginning East of Ewing. The RR R.O.W. width peaks at The Louisville Water Co. Reservoirs, where the track splits for access to the maintenance building.



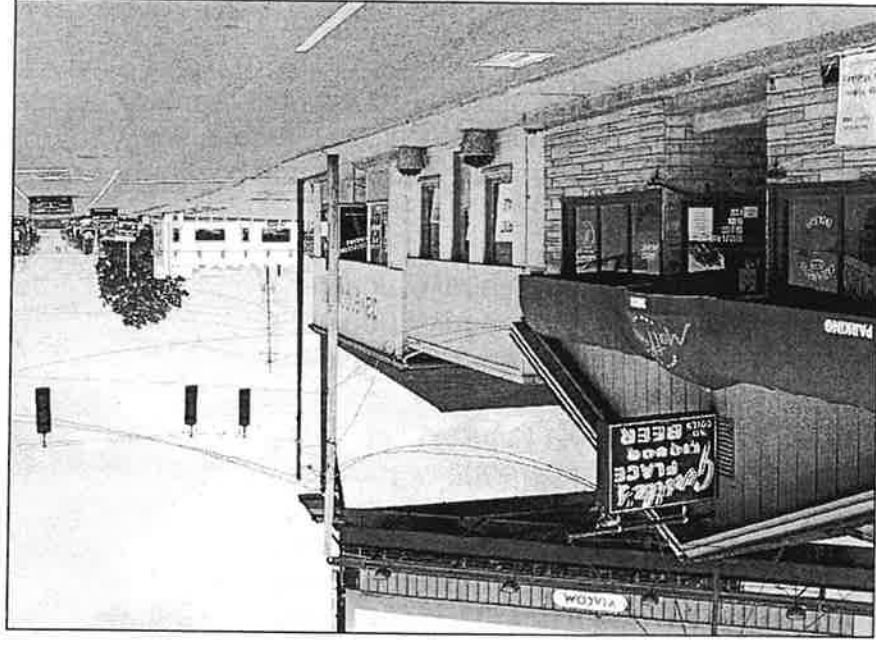
Rail Stations / Stop Locations

The possible locations for light rail stops are somewhat limited, due to the width of the Railroad Right of Way and CSX Val Maps, review of the field documents and station and review of the CSX Val Maps, there is sufficient width to construct a single rail, and at certain locations, a passing rail to accommodate a Rail Station for the neighborhood. Largely just low 'scrub' growth would need clearing.

(1) The North side of Frankfort, between Ewing and North Galt, where six trees would be removed to accommodate the additional rail and light rail station specifications. Ewing could be closed and the rail area widened to provide more area, if necessary

(2) East of Bauer Ave. and West of Chenoweth Ln. including the former White Castle location, or East of Lexington, utilizing parking at former "Woolworth's".

(3) Property along Westport Road in St. Matthews.



TRANSPORTATION

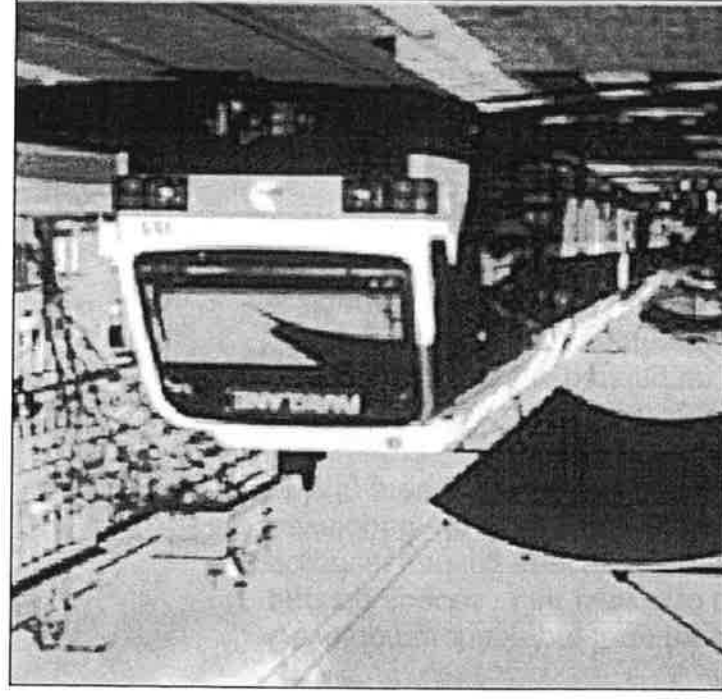
Light Rail or Monorail Transit in Louisville

One of the long range goals for the City of Louisville is the develop of passenger "Light" rail transportation. This would be the first mark of a return of a viable form of mass-transit to Louisville in decades.

Primarily the City and TARC have been studying a North-South line. Indeed, the first light rail to be constructed will be this route, connecting downtown to the medical campus, Exposition Centers, Stadiums, University, Airport, and other points South.

The study has been expanded to include an East-West line, connecting downtown to Clifton, Crescent Hill, St. Matthews, Pewee Valley, Crestwood and other points east. This quite probably would be built to share the Railroad R.O.W., including that where it parallels Frankfort Avenue.

The existence of this R.O.W. makes the East-West route potentially a more readily-completable project. TARC informs us that CSX is currently studying this possibility, but preliminary responses indicate the desire of CSX for TARC and the city to build an additional rail on the CSX R.O.W. for the passenger rail, rather than sharing the existing rail. Potentially, then, this would not be 'Light' rail, but rather 'Heavy' rail, suitable for Commercial freight traffic.

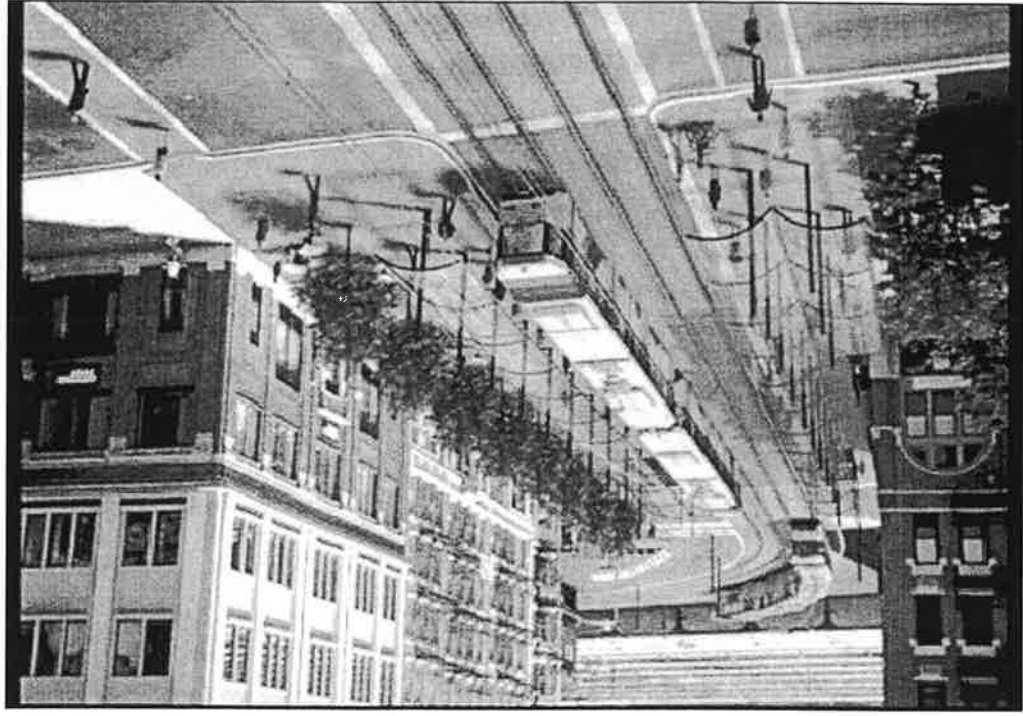


Based on our field documents and review of the CSX Val Maps, there is sufficient width to construct a single rail, and at certain locations, a passing rail to accommodate a Rail Station for the neighborhood. Largely just low 'scrub' growth would need clearing.

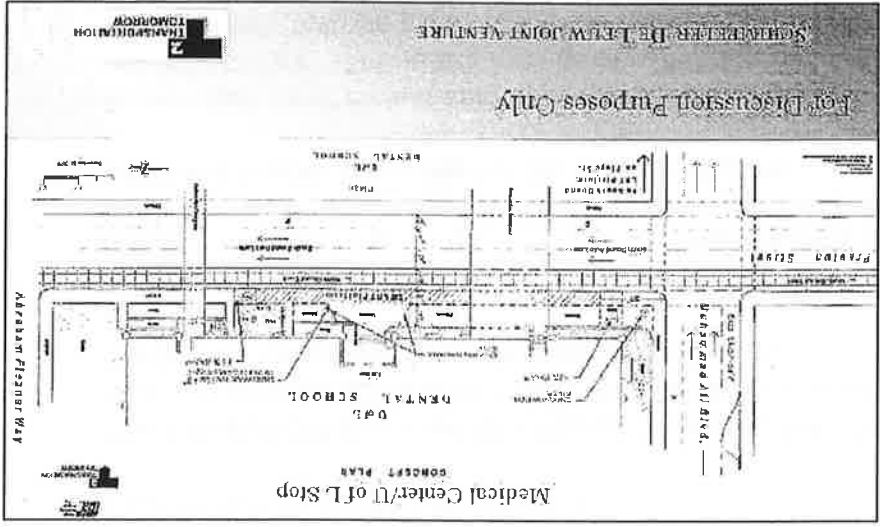
Installation of light rail transportation in the community has many positives, such as reducing air pollution in the larger community, *reduction* of through traffic on streets, provision of alternative means of transportation, reducing required parking spaces downtown etc.

The Light Rail Transit Association and TARC have a great deal of research and planning yet to be performed with affected agencies, CSX, and the neighborhoods prior to rail construction. As groups begin to meet to consider options some of the potential negatives the neighborhoods might consider as well are:

1. Persons within the neighborhood may have another mode of transportation to points along the 'light' rail.
2. Operational schedule of 'light' rail is not determined, but primarily the rail will provide service to and from downtown during peak work hours.
3. Light rail service means additional traffic on the tracks and this will increase frequency of vehicles and pedestrians stopped at crossing gates.
4. We understand that, with the installation of the second track, the 'light' rail, additional freight cars will be expected as the new rail serves both freight and passenger trains, further impacting congestion. Alt. routes, i.e. Galt to Reservoir Pk. may ease this.
5. Through-traffic may not be reduced.
6. Pollution along the rail will probably increase.



LARGE STATION PLATFORM IN NEWARK, NJ; PHOTO COURTESY OF TARC



SCHEMATIC CONCEPT PLAN FOR A NORTH-SOUTH RAIL STOP IN THE ROAD RIGHT OF WAY AT THE MEDICAL SCHOOL, BY SCHIMPELER & DE LUW OF LOUISVILLE; IMAGE COURTESY OF TARC

Shown at bottom left is an urban two-line large light rail stop, in Newark, NJ. Above is a very early schematic design done for TARC and the city as part of the potential North-South rail study. An image of a Light Rail track / lane *within* an urban street, doubling as a cyclists lane, is at top right. Light Rail line's lanes, in some cases, are used by turning auto traffic. From Stiltz Ave. to the East, the space between the existing street curb and the track continues to be wide, shown at middle right. Lastly, at bottom right is an image of an archived CSX "Val Map" showing the Railroad Right of Way.

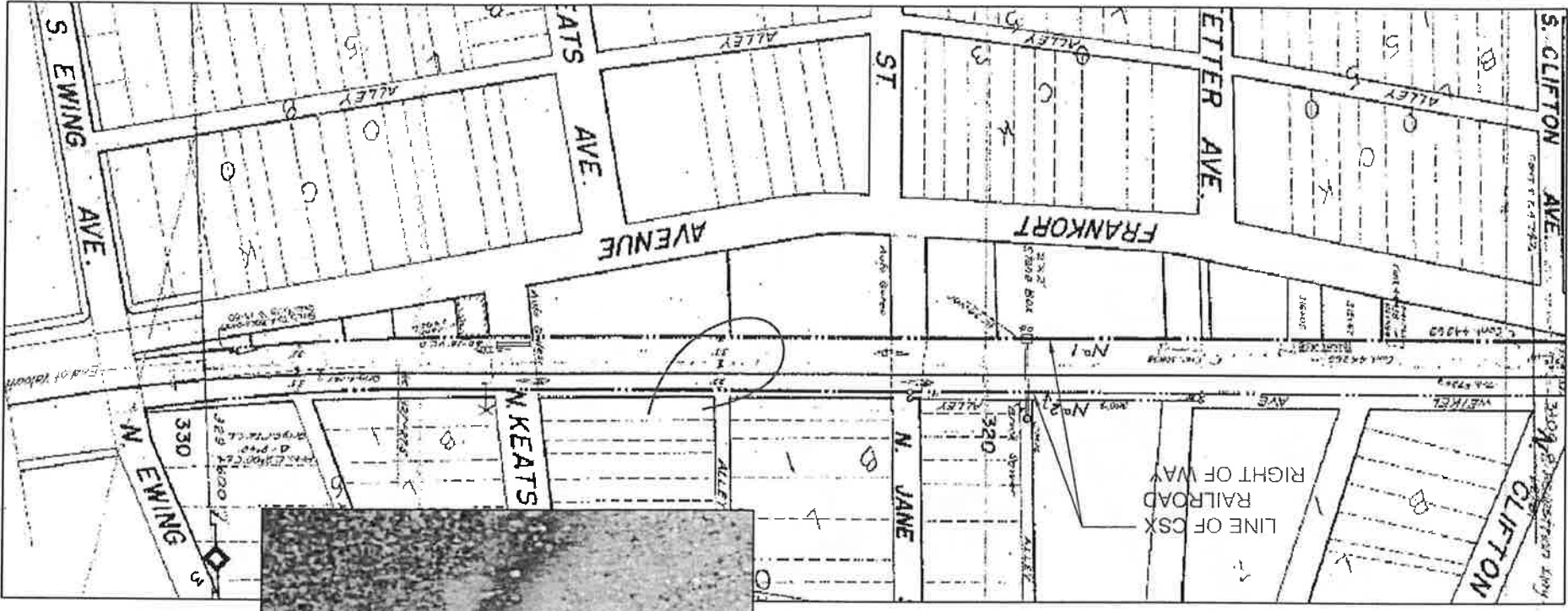
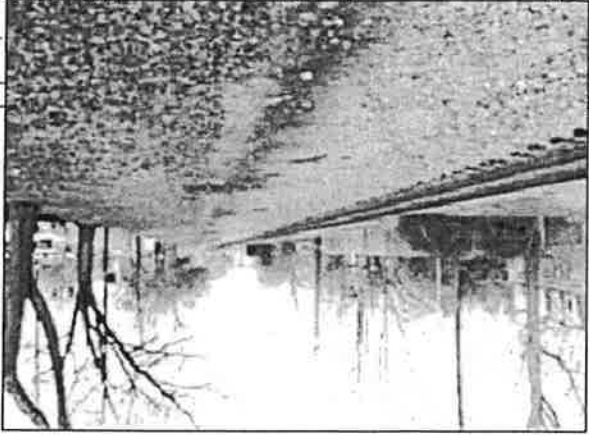
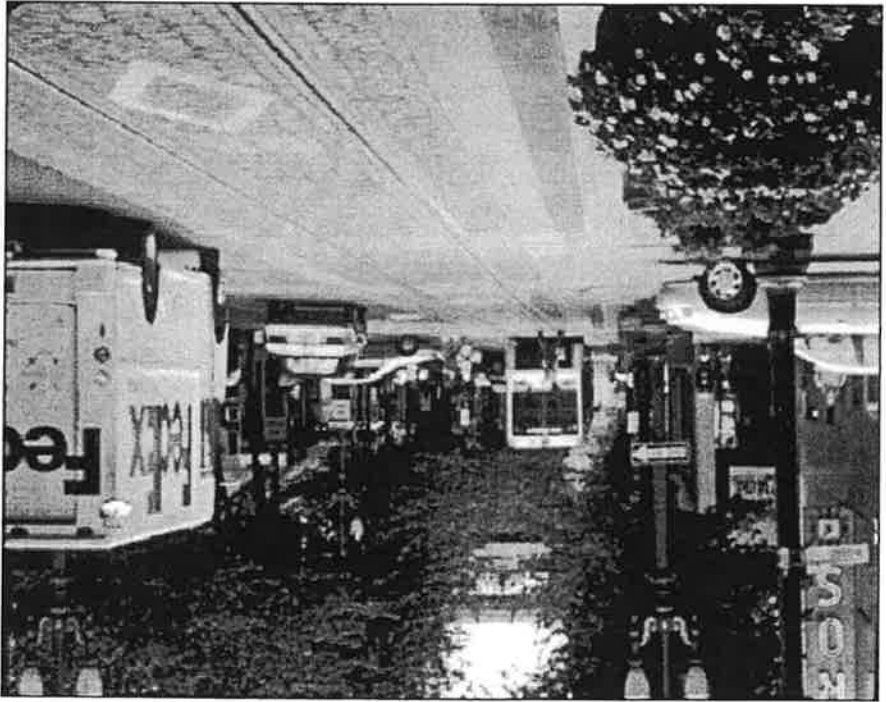


IMAGE OF CSX RAILROAD RIGHT OF WAY "VAL MAP" - CLIFTON AVENUE TO EWING AVENUE

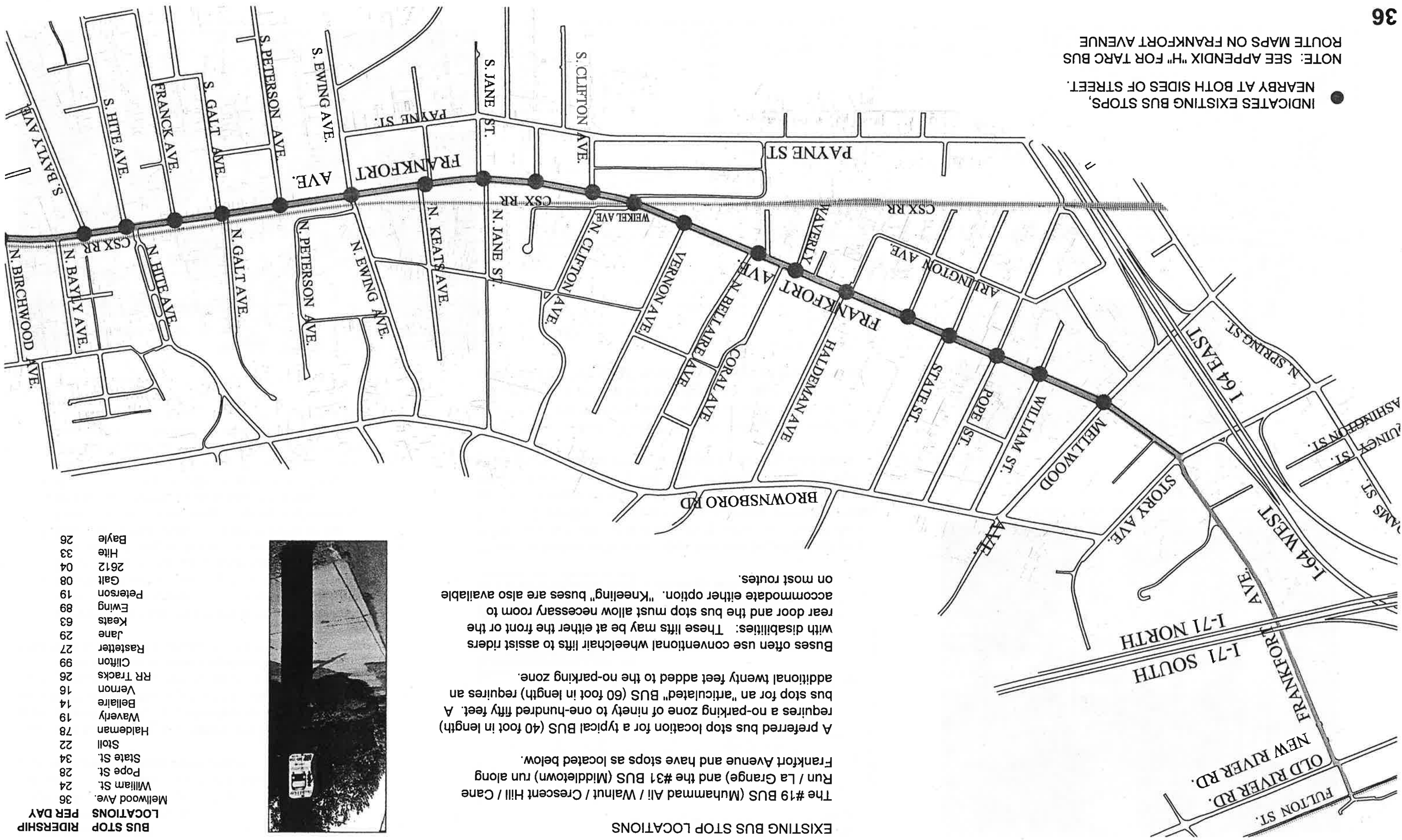


NORTH OF FRANKFORT AVENUE AT STILZ AVENUE, LOOKING EAST

LIGHT RAIL TRAM-PATH SHARED AS BIKE LANE ON URBAN STREET; PHOTO COURTESY OF TARC



NOTE: SEE APPENDIX "H" FOR TARC BUS ROUTE MAPS ON FRANKFORT AVENUE
 INDICATES EXISTING BUS STOPS,
 NEARBY AT BOTH SIDES OF STREET.



EXISTING BUS STOP LOCATIONS

The #19 BUS (Muhammad Ali / Walnut / Crescent Hill / Cane Run / La Grange) and the #31 BUS (Middletown) run along Frankfort Avenue and have stops as located below.

A preferred bus stop location for a typical BUS (40 foot in length) requires a no-parking zone of ninety to one-hundred fifty feet. A bus stop for an "articulated" BUS (60 foot in length) requires an additional twenty feet added to the no-parking zone.

Buses often use conventional wheelchair lifts to assist riders with disabilities: These lifts may be at either the front or the rear door and the bus stop must allow necessary room to accommodate either option. "Kneeling" buses are also available on most routes.



BUS STOP	LOCATIONS PER DAY
Mellwood Ave.	36
William St.	24
Pope St.	28
State St.	34
Stoll	22
Haldeman	78
Waverly	19
Bellaire	14
Vernon	16
RR Tracks	26
Clifton	99
Rastetter	27
Jane	29
Keats	63
Ewing	89
Peterson	19
Galt	08
2612	04
Hite	33
Bayle	26

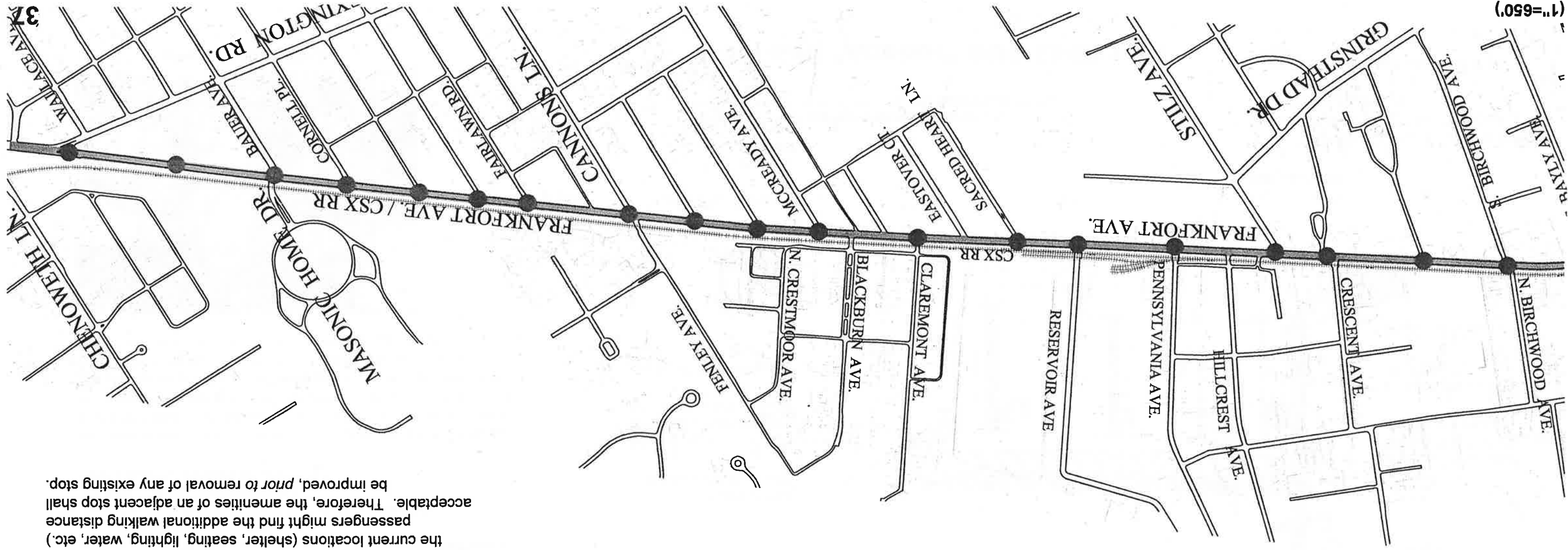
POTENTIAL CONSOLIDATION

Closing BUS STOP locations based on listed ridership numbers may be misleading. While certain stations show relatively few riders, it is possible that those boarding public transportation at these locations require assistance due to age or disability. A further study should be conducted to ascertain exact ridership requirements at any location where closure, relocation or consolidation is to be considered.

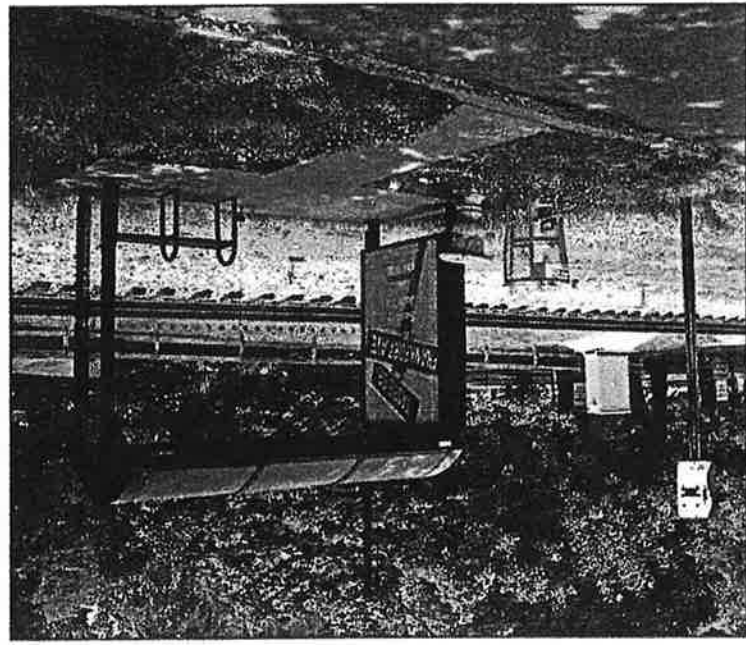
With the above in mind, it is worth noting that the Federal Transit Administration defines "easy access" to public transportation as no more than a **one-half** mile walk to a transport route (bus stop).

Current stops are to be found approximately three-hundred feet apart and require between ninety and one-hundred fifty feet of non-parking space for passenger access. It might be possible to consolidate every other stop (so that stops are approximately six-hundred feet apart) to help alleviate the existing parking shortage along Frankfort Avenue.

If the consolidated stops offered amenities currently lacking in the current locations (shelter, seating, lighting, water, etc.) passengers might find the additional walking distance acceptable. Therefore, the amenities of an adjacent stop shall be improved, *prior to removal of any existing stop.*



(1"=650')



TYPICAL BUS SHELTER (ONE OF THREE ON FRANKFORT AVENUE)

BUS STOP LOCATIONS

RIDERSHIP	LOCATION
23	Birchwood
25	Kennedy
20	Crescent
09	Stiltz
09	Pennsylvania
08	Reservoir
05	Sacred Heart
02	Eastover
15	Claremont
08	McCready
08	Crestmoor
06	Weisser
23	Cannons
12	Fairlawn
05	Iola
11	Oxford
12	Cornell
10	Bauer
16	"Fotomat"
18	Lexington

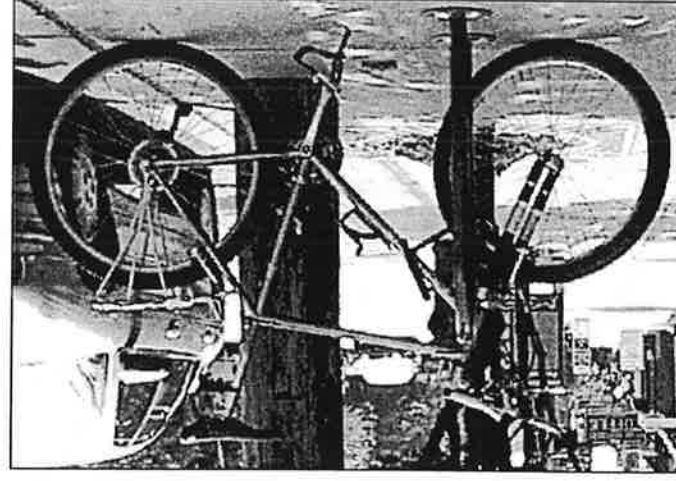
SHELTERS

Frankfort Avenue has many conflicting issues and desires, among them; adequate public transportation service (bus / Circulator / light rail), traffic speed control (too fast *and* too slow), traffic volume during morning and evening rush hour(s), lack of adequate parking near shops, desire for increased pedestrian usability, and a need for ADA compliance along pedestrian walkways.

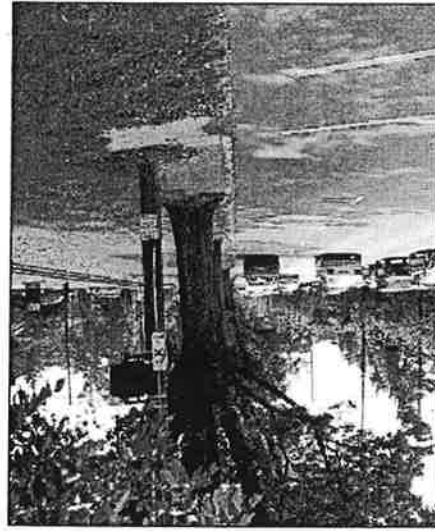
One simple way to increase parking would be to consolidate bus stop locations by constructing "shelters" at specific locations. These shelters would match the following criteria:

Sense of Neighborhood and Community.
 Style of shelter to match adjacent building character while maintaining consistency image along Frankfort Avenue.
 Shelter to be located no closer than sixty inches (five feet) from the roadway, thus maintaining a continuous pedestrian travel area.
 Shelter to enclose on at least three sides for weather protection. Shelter may accommodate emergency phone system.
 Adequate ventilation shall be provided (not a conditioned space). Shaded area(s) shall be provided.
 Storage / locking area for bicycles shall be provided.
 Drinking water may be provided.
 Trash receptacles shall be provided.

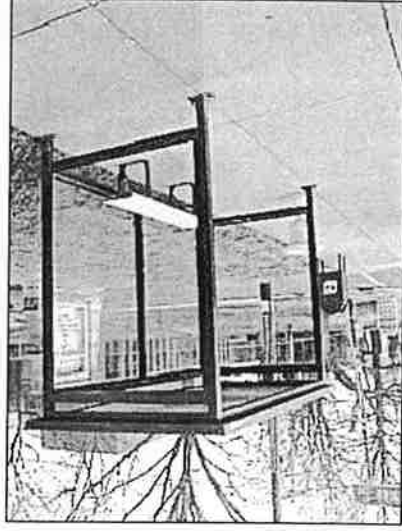
We recommend a studied consolidation of stops: a few locations might be dismantled completely while others would be enhanced to accommodate the proposed Circulator Line as well. It is true that closing certain stops will be an inconvenience to some riders, but new bus shelters with even some of the above-listed amenities would be a vast improvement over a post-mounted sign.



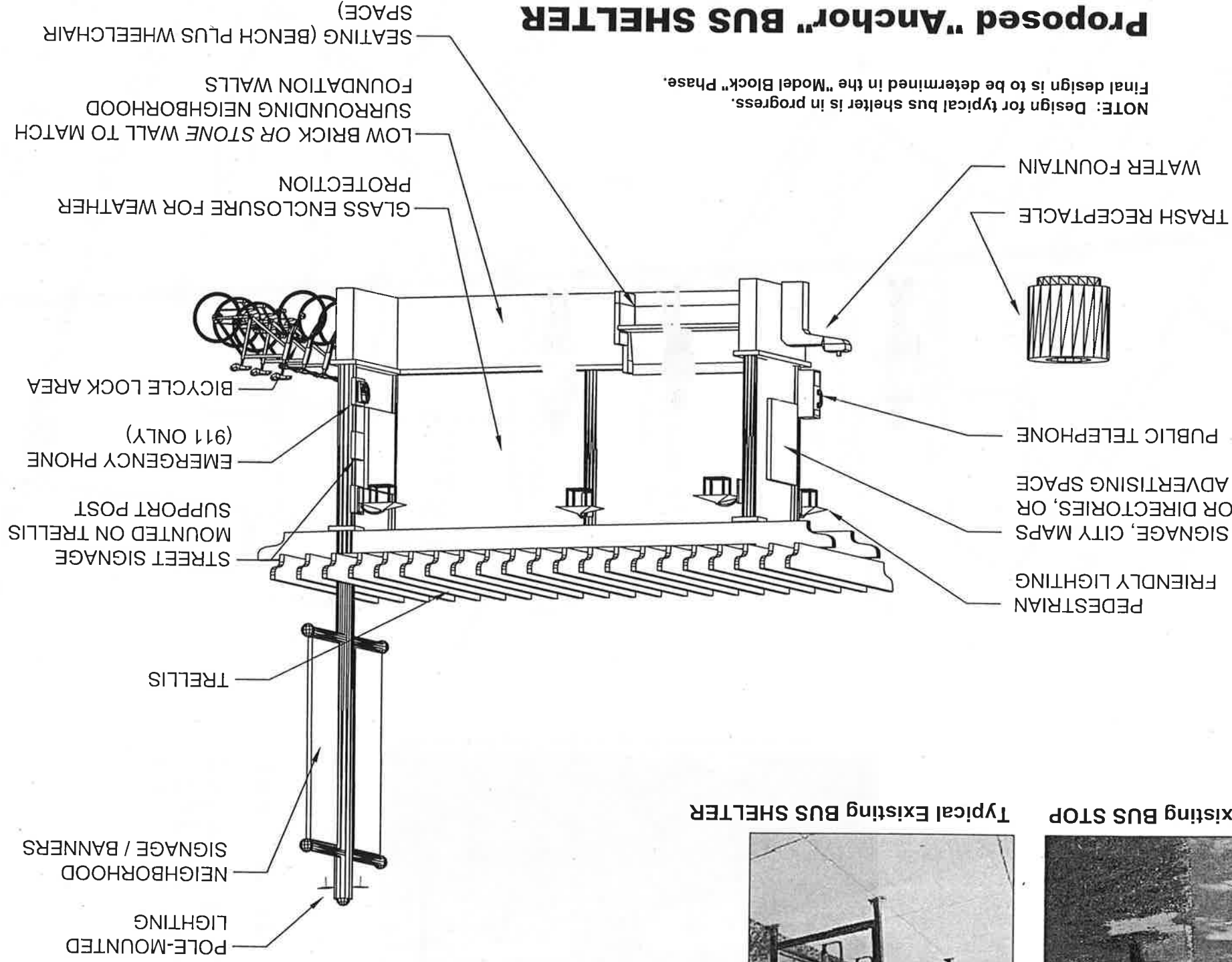
Typical Existing BICYCLE RACK



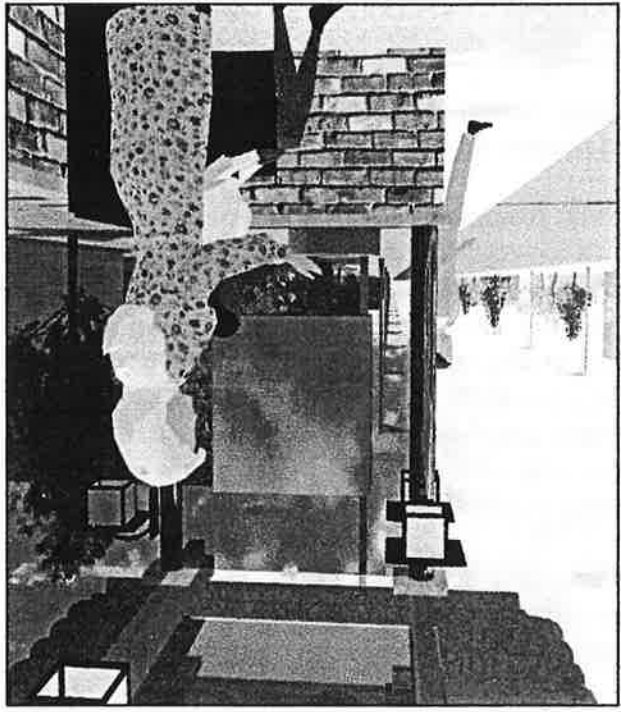
Typical Existing BUS STOP



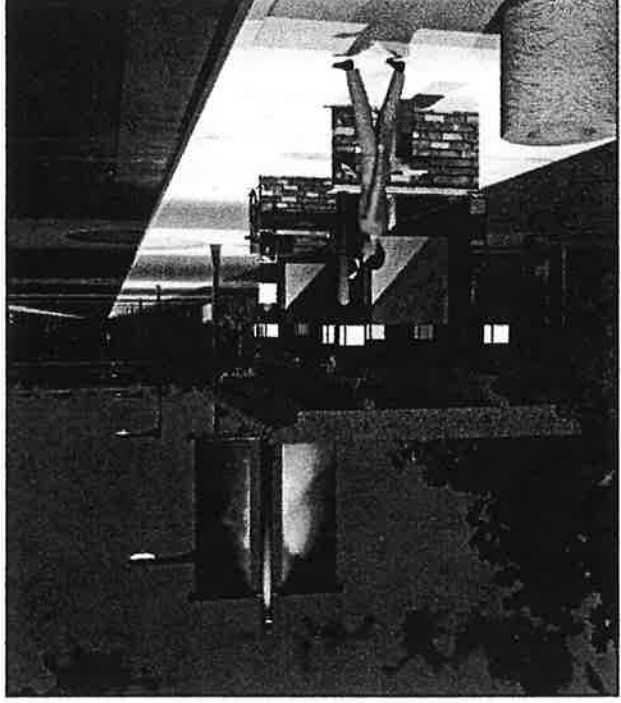
Typical Existing BUS SHELTER



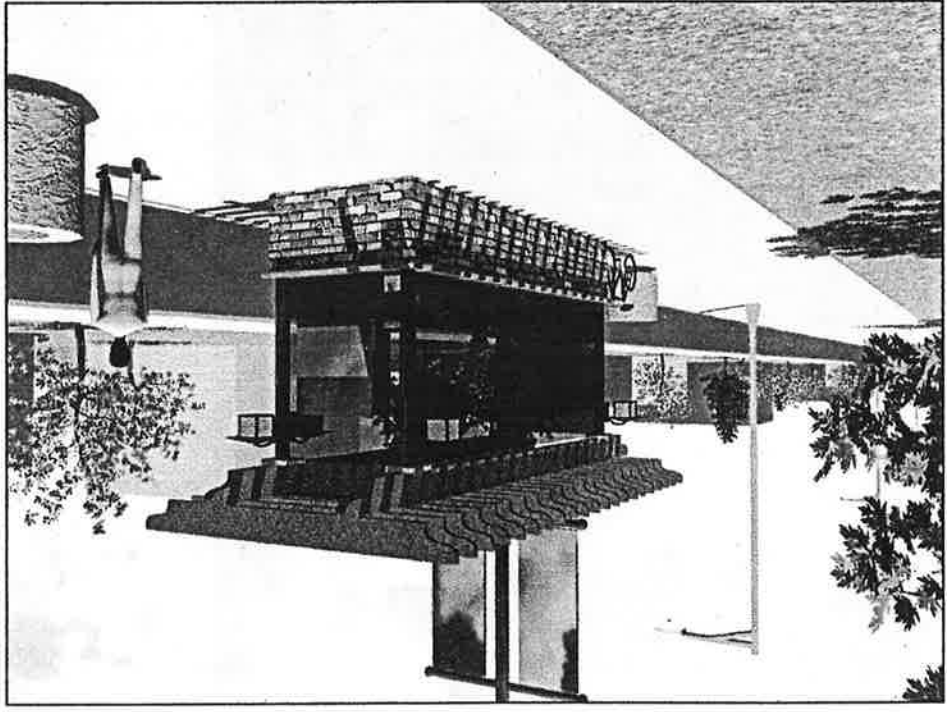
"Anchor" Shelter Concept



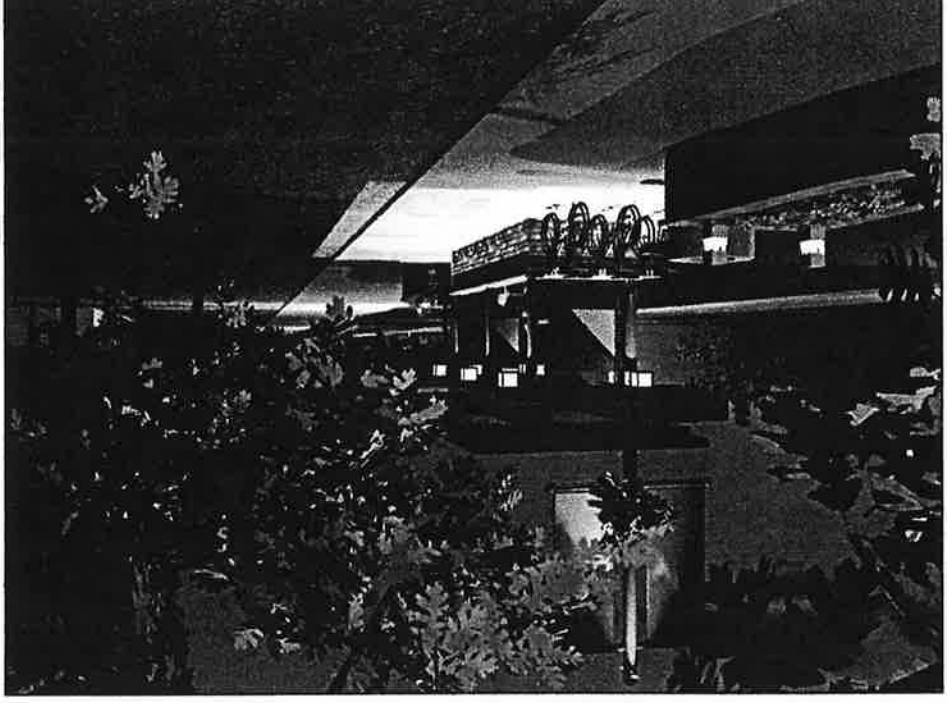
Shelter (waiting for the bus)



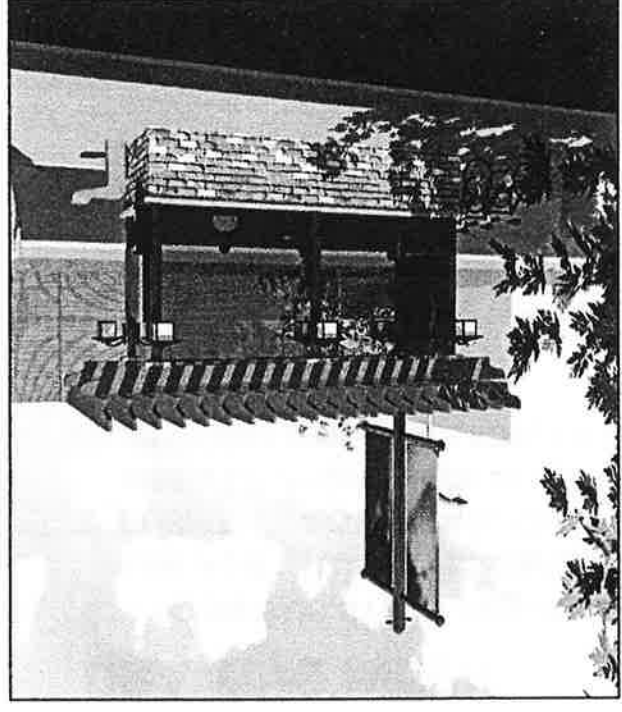
Shelter (empty street)



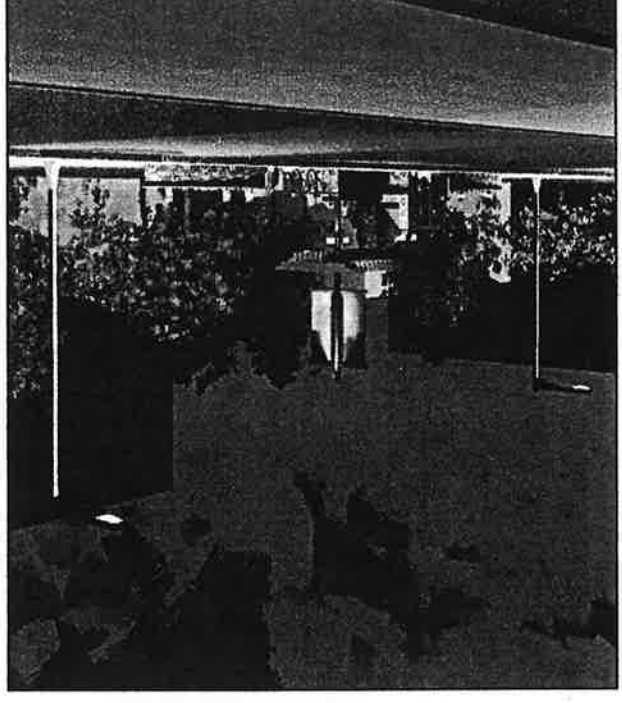
Shelter (walking)



Shelter (optional planters)



Shelter (late afternoon)



Shelter (stormy night)

NOTE: Design for typical bus shelter is in progress. Final design is to be determined in the "Model Block" Phase.

DRAWING INDEX

EXISTING BUS STOP LOCATIONS ●
BUS #15 - MARKET (BROWNSBORO, VETERANS HOSPITAL - NOT IN THIS STUDY)
BUS #19 - MUHAMMAD ALI (WALNUT, CRESCENT HILL, CANE RUN, LA GRANGE)
BUS #31 - MIDDLETOWN

NEW CIRCULATOR LINE --- One way "figure-8" loop for various local travels:

DAY - Circulator every thirty (30) minutes (6:00 AM until 4:00 PM)

EVENING - Circulator every fifteen (15) minutes (4:00 PM until 10:00 PM)

NIGHT - Circulator every fifteen (15) minutes (10:00pm until 2:00am Friday and Saturday nights)

CONNECTOR - Circulator to Bardstown Road every thirty (30) minutes (evenings 4:00pm until 10:00pm / until 2:00am Friday and Saturday nights).

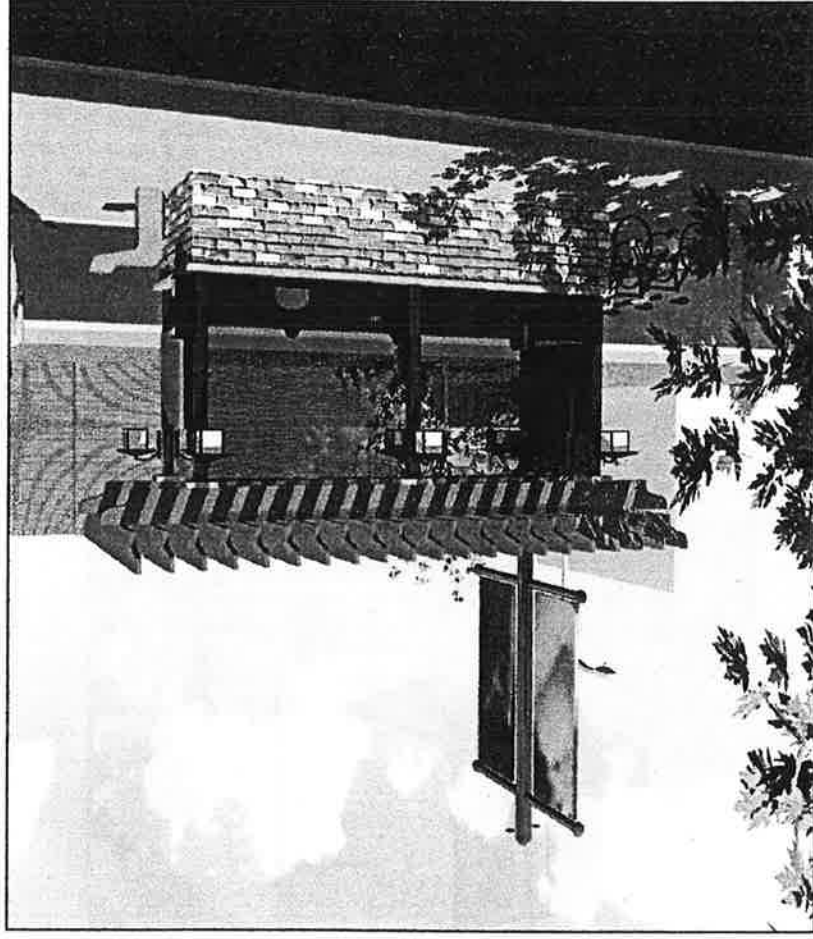
NEW CIRCULATOR LOOP STATIONS ■

NEW LIGHT RAIL STATION *

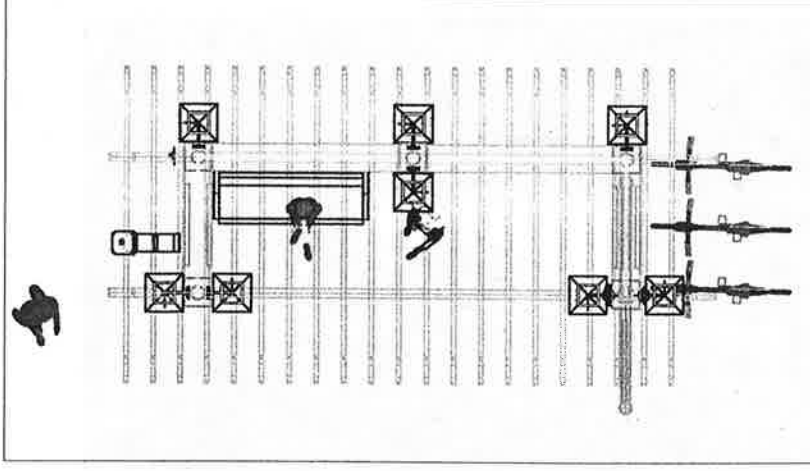
Proposed location(s) for stop(s) along existing rail line are either the old White Castle property or at Ewing Avenue between Frankfort Avenue and the CSX Railroad easement.

POTENTIAL "PARK 'N TARC" LOCATION □

Not intended to indicate actual size or location



TYPICAL CIRCULATOR SHELTER STATION



TYPICAL CIRCULATOR SHELTER STATION (not to scale)

CIRCULATOR LINE

We are proposing various neighborhood Circulator lines with different routes and travel times depending on particular days and times. This Circulator would either be free or very low cost (pocket change? a quarter? any donation?).

The DAY line would connect various housing areas with shops and community centers as indicated on the adjacent page. A series of Circulators would route around the loop with about half an hour time between Circulators. Being shorter than a regular bus, the Circulator would require far less parking to be devoted to bus stop lanes. We estimate that a Circulator (exact model to be determined) would require less than fifty feet for drop-off, as opposed to ninety to one-hundred fifty feet for a standard bus.

Parking would be allowed in the normal bus stop lanes except during peak hours (6:00 am - 9:00 am and 4:00 p.m. - 6:00 p.m.).

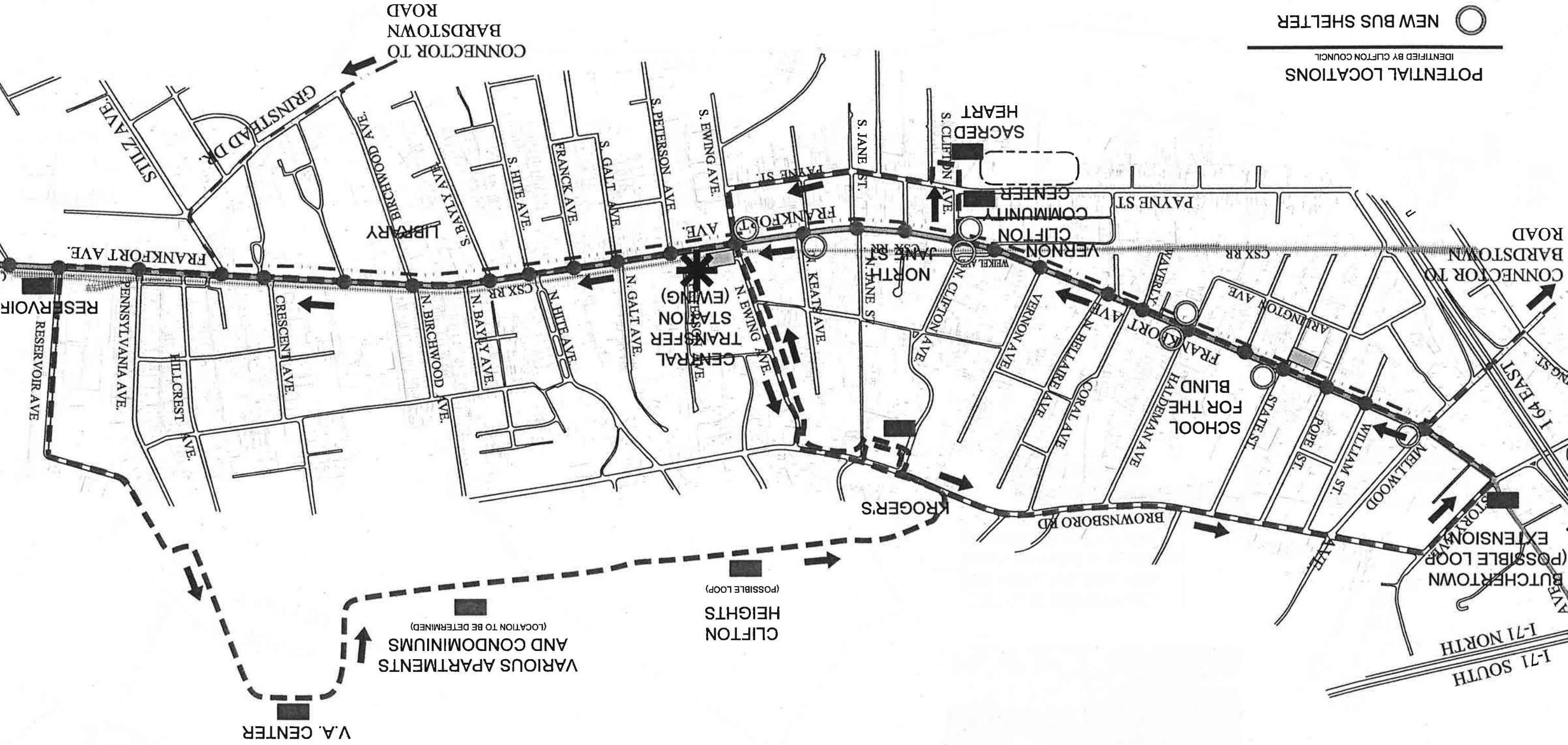
The EVENING line would follow almost the same path (dropping the section through Krogers) and increase Circulator frequency to every fifteen minutes, and run from 6:00 p.m. until 10:00 p.m.. As this Circulator line corresponds to dining hours, it might be preferable to allow drop-off of passengers at any location, while only accepting ridership at a designated shelter.

The NIGHT line would operate only on Friday and Saturday evenings. It would follow the same path as the evening line and would run from 10:00 p.m. until 2:00 am. This line would likely pick-up and drop-off at designated parking lots as well as many of the neighborhood establishments.

The CONNECTOR line would operate on Friday and Saturday evenings, would link Frankfort Avenue to Bardstown Road, and would operate from 6:00 p.m. until 2:00 am with Circulators every thirty minutes. This connector line would link one or two spots on Bardstown Road to a few centrally located stops along Frankfort Avenue. As both the night line and the connector line would likely deal with rowdy passengers, we would recommend additional staff / security personnel.

Exact Circulator line stops to be coordinated, and re-use existing bus stop locations as much as possible. Clifton and Crescent Hill Neighborhood councils strongly support the "Circulator" concept.

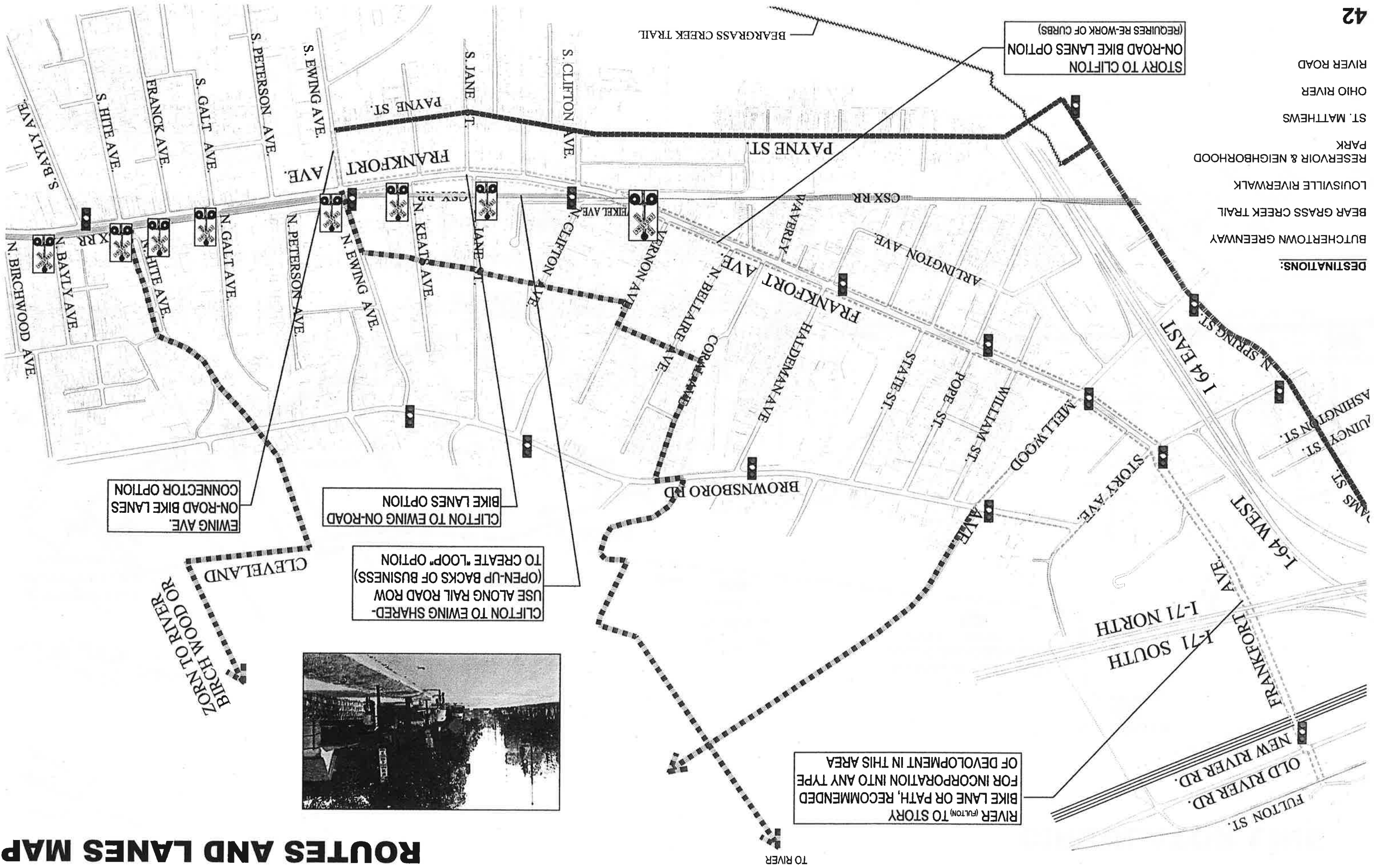
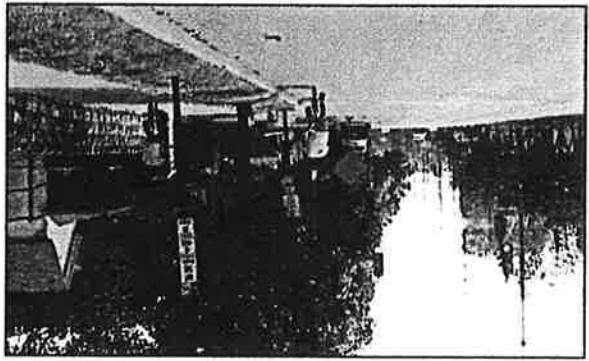
CIRCULATOR LINE



POTENTIAL LOCATIONS IDENTIFIED BY CLIFTON COUNCIL

- NEW BUS SHELTER (represented by a circle)
- NEW "ANCHOR" BUS SHELTER (represented by a square)

ROUTES AND LANES MAP



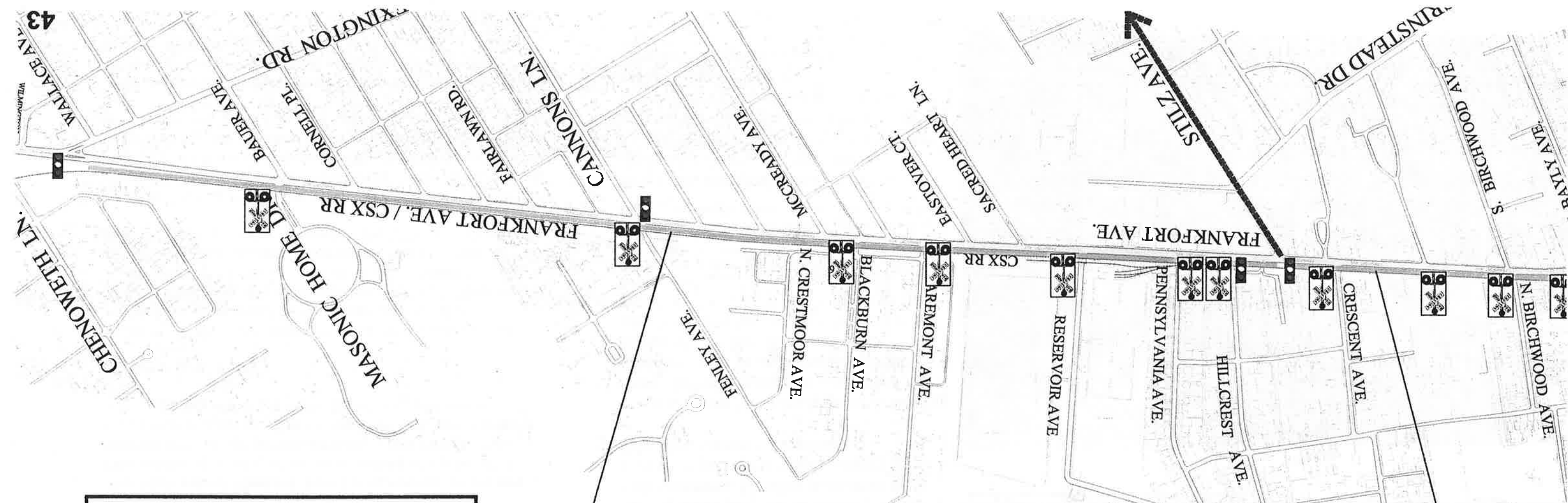
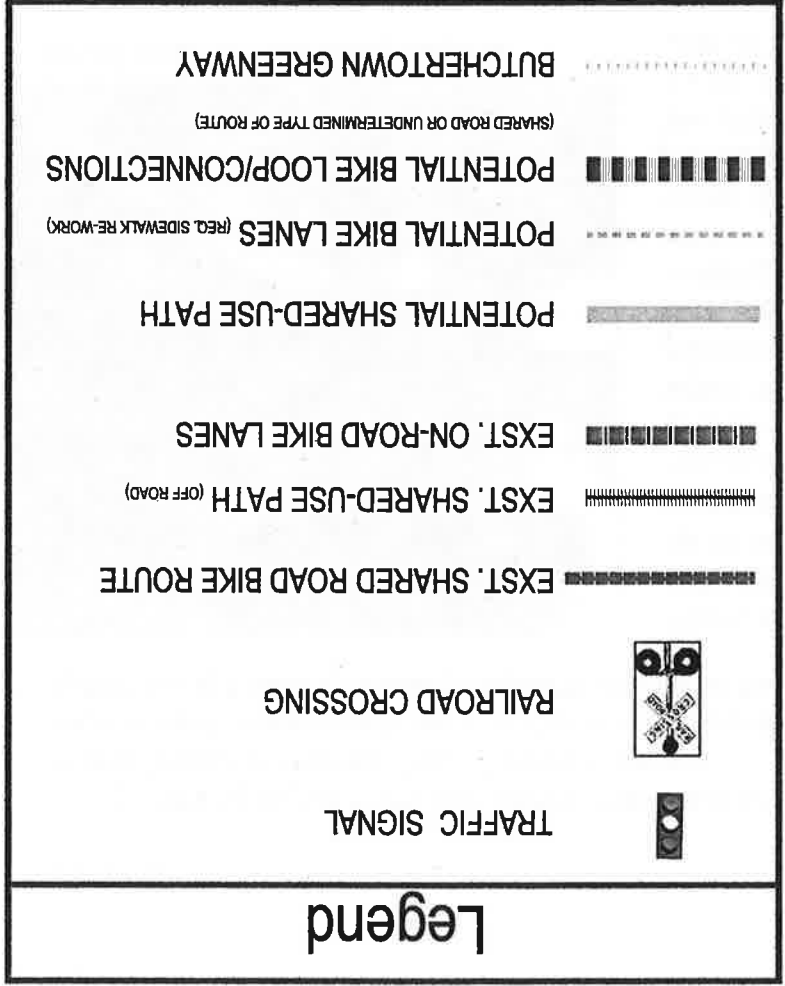
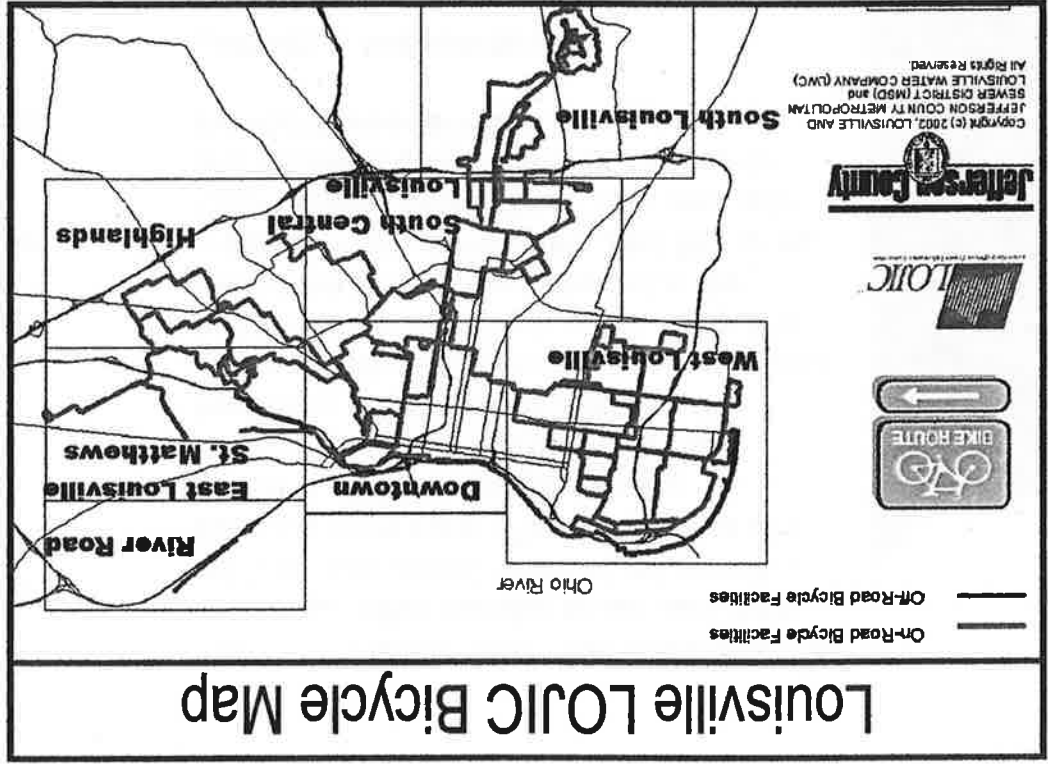
NOTES:

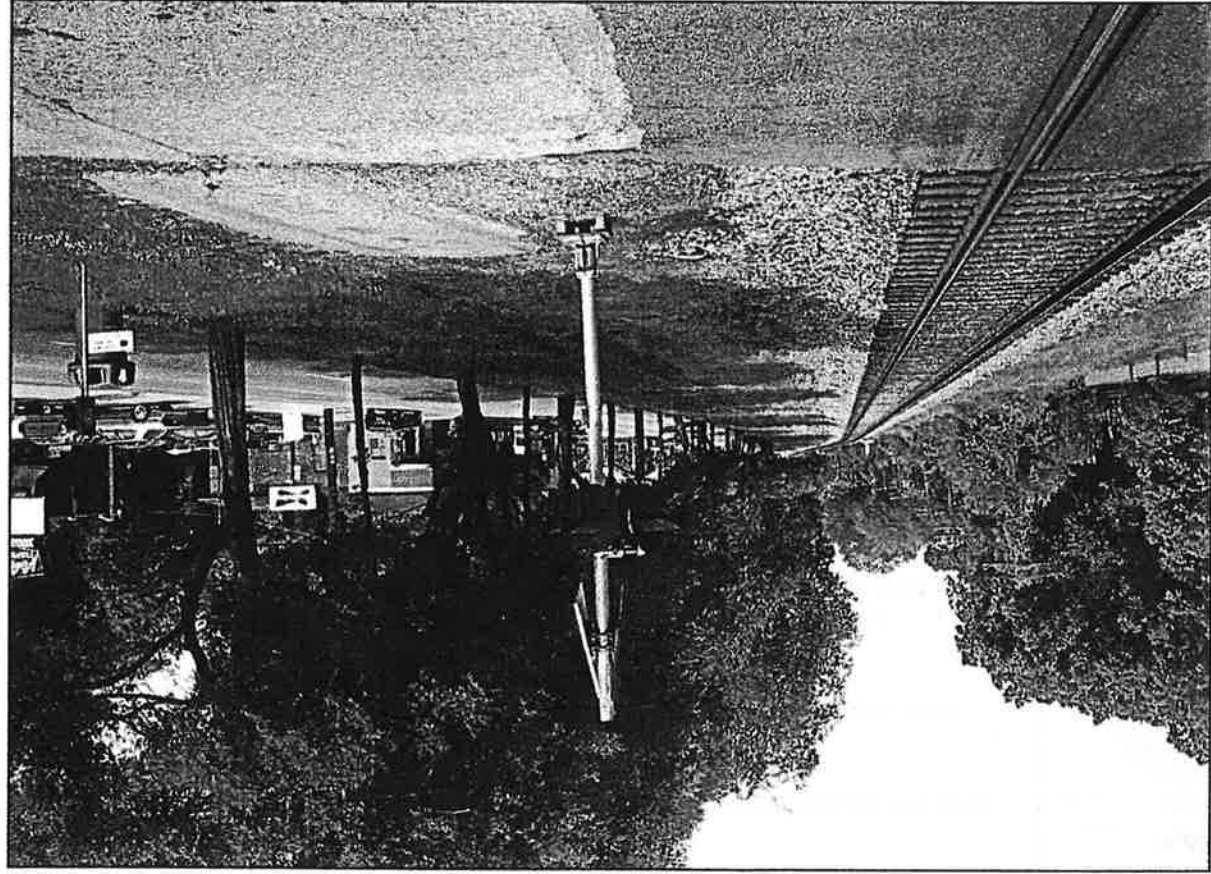
1. EXISTING LOUISVILLE BICYCLE CLUB ROUTES CONNECT TO FRANKFORT AT EWING AND STILTZ.
2. THERE ARE NO PROVISIONS FOR BIKE SAFETY, SHARED ROAD, OR BIKE LANES ALONG FRANKFORT AVENUE.
3. SPRING STREET HAS BIKE LANES TYING PAYNE ST. AND BEARGRASS CREEK TRAIL TO ADAMS ST. AND DOWNTOWN RIVER WALK.
4. ACCOMODATING BIKE LANES IN EXISTING ROADWAY REQUIRES REMOVING PARKING ON ONE SIDE OR RE-WORKING SIDEWALKS AND CURBS.
5. IF LIGHT RAIL BECOMES A REALITY IN THE RR ROW, A BIKE PATH MIGHT FEASIBLY SHARE THIS ZONE.

EWING TO STILZ
BIKE OR SHARED-USE
OFF-ROAD PATH OPTION

TO RIVER

STILZ TO CHENOWETH BIKE
OR SHARED-USE
OFF-ROAD PATH OPTION





FRANKFORT AND CLAREMONT AVENUES, LOOKING TO THE EAST

The survey documents Trail characteristics including: miles parallel to rail, land type, rail type, rail speed, width of rail corridor, distance from track to trail, existence of a barrier & type, crossings, funding, ownership, any opposition, trail uses, insurance & funding, any rail carrier indemnification, any accidents, claims, and maintenance logistics & costs. Very few prohibitive issues are indicated in the creation of any of the trails, and little or no long-standing problems. There was only one accident claim listed, which was for the reimbursement cost of livestock.

Liability & Indemnification

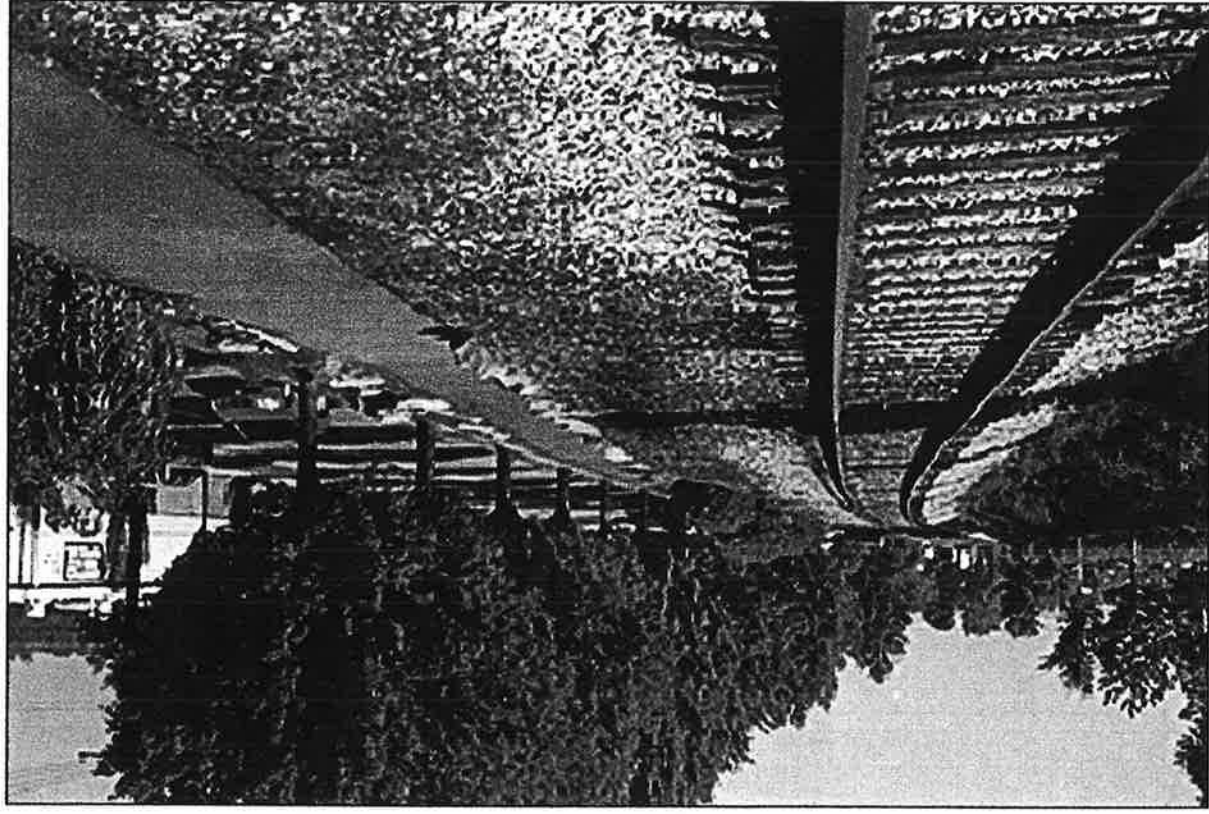
Often, raising of the discussion of the placement of Liability appears to scare-off proponents of a trail path along a railway.

For fifty-three (53), out of the sixty-one (61) trails surveyed, Liability is covered by insurance policies of a City, County or State government of jurisdiction.

Some railways (sixteen) have been slightly more obstinate in regards to potential liabilities, in so far as to require the trail to indemnify the rail carrier of liability responsibilities for injuries related to trail activities.

"In the event of a derailment, the issue would be whether or not the derailment was caused by the railroad's negligence; if so, the railroad likely would be held responsible for injury to any persons lawfully using a trail alongside the railroad right-of-way. However, the railroad's liability would be no different from its liability to persons injured on any other adjacent public highway, sidewalk, or crossing."

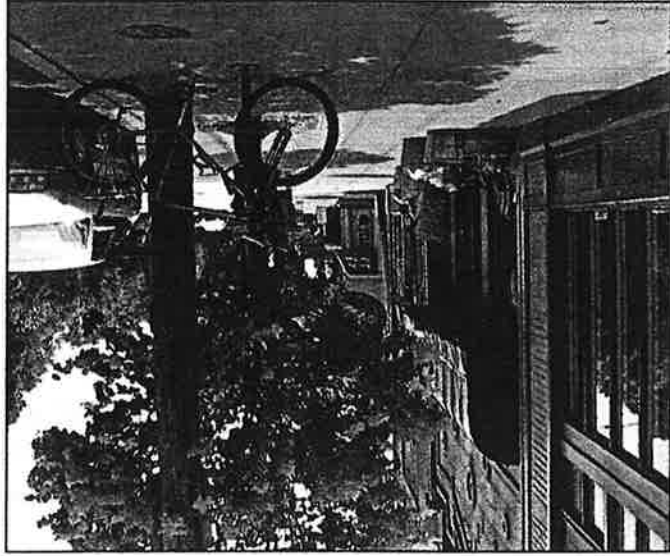
This quote and other survey data from: "Rails-with-Trails: Lessons Learned - DRAFT Final Report Apr. 1, 2002," Rails to Trails Conservancy. For further information on many rails with trails across the U.S, this website is: www.trailsandgreenways.org.



ARBORETUM TRAIL, IN OAKMONT, PA

Cycling

The preceding pages show the existing bike routes as posted by the Louisville Bicycle Club (Visit their website: www.louisvillebicycleclub.org), and how accommodations for cyclist along Frankfort could potentially tie-in with these.



North Side of Frankfort Avenue

There are currently no bike lanes or off road paths along the Avenue. Creation of a bike lane within the road, & re-working the existing street curbs in Clifton could only be accomplished with the elimination of parking on one side of the street.

The North side of Frankfort, from Ewing Avenue, all the way to Chenoweth Lane, at a minimum, is in need of a sidewalk for walkers and through-pedestrian traffic. This walk could be made wide enough to allow bicycle traffic, with some grading work, probably within the city's right-of-way, at the street.

"Shared-Use" Path

Given the width of this linear tree-lined, park-like rail corridor, the ideal solution would be the implementation of a "Shared-Use" path, atleast from Ewing Ave. to St. Matthews. This path could be 7'-0" +/- in width to accommodate two-way traffic, of joggers, walkers, rollerbladers, and bicyclists, etc. This construction would occur within the CSX right-of-way.

The existence of some potential for Light Rail in the next four years does not eliminate the "Shared/ Multi-Use" path" concept. In-fact, a single line of low-speed light rail trams could in-fact be integrated with such a path, as long as a few safety precautions are studied and taken.

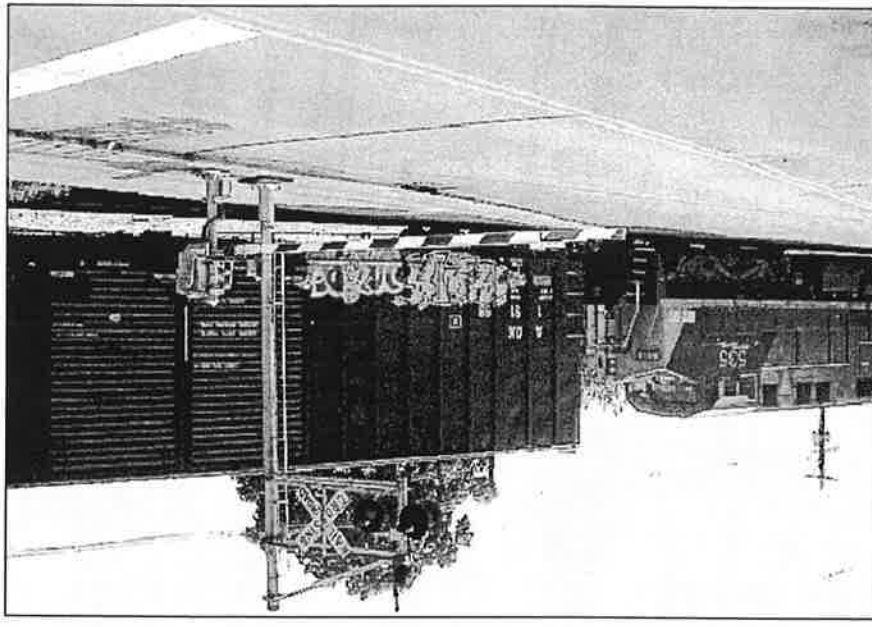
A Survey exists that profiles just sixty-one (61) of the numerous **Rails with Trails**, in rural and urban locations across the country (trails along active rails).

It is our understanding that a proposed Federal government rule for railway operations has been federally approved. We had technically been in a waiting/preparation period, but this period has ended.

This rule requires all Trains to sound an audible warning consisting of four 'toots' when approaching each crossing (a blast of the horn, not bells). This must consist of two longs, one short, and one long, at each of the twenty crossings in the neighborhood. The sound must measure 75 decibels at ¼ mile distance. This means the initial sound pressure level is to be between 105 and 110 decibels, at the source train. These warnings, for CSX throughout the whole country, are controlled by computers in Jacksonville, Florida. The length of each toot is based on the speed of each train. However, typically a long toot is 20 to 25 seconds.

The purpose of the new rule is to make crossings safer, by eliminating local discretion. There have been alternative standards created, which can be implemented in place of the audible warnings.

This alternative is called a "Quiet Zone". The only Quiet Zone in the country is located in Louisville, more specifically, in Germantown. The recommended design standards were developed and implemented by CSX railroad in cooperation with the Federal Railroad Administration and local Alderman, Mr. Steve Magre.



CSX TRAIN CROSSING AT THE FRANKFORT AVENUE, WEIKEL AVENUE, CLIFTON AVENUE, AND NEW MAIN STREET INTERSECTION

In short, a "Quiet Zone" must be a minimum length of ½ mile, all crossings within the Quiet zones must comply with Federal standards. According to the Federal Requirements, each crossing in such a Zone must have the following:

1. Four Quadrant Gates & signals at each rail crossing. One gate, at each side of the crossing, shall extend across all lanes of traffic.
2. Median or channelization devices: 30" high 100' long concrete intermediate medians between lanes, one each side of the crossing. Elimination of parallel vehicular movement along tracks at crossings.
3. Closing of streets and pairing of one-way streets
4. Temporary nighttime closure of streets or crossings.
5. Use of 'photo-enforcement' technology.

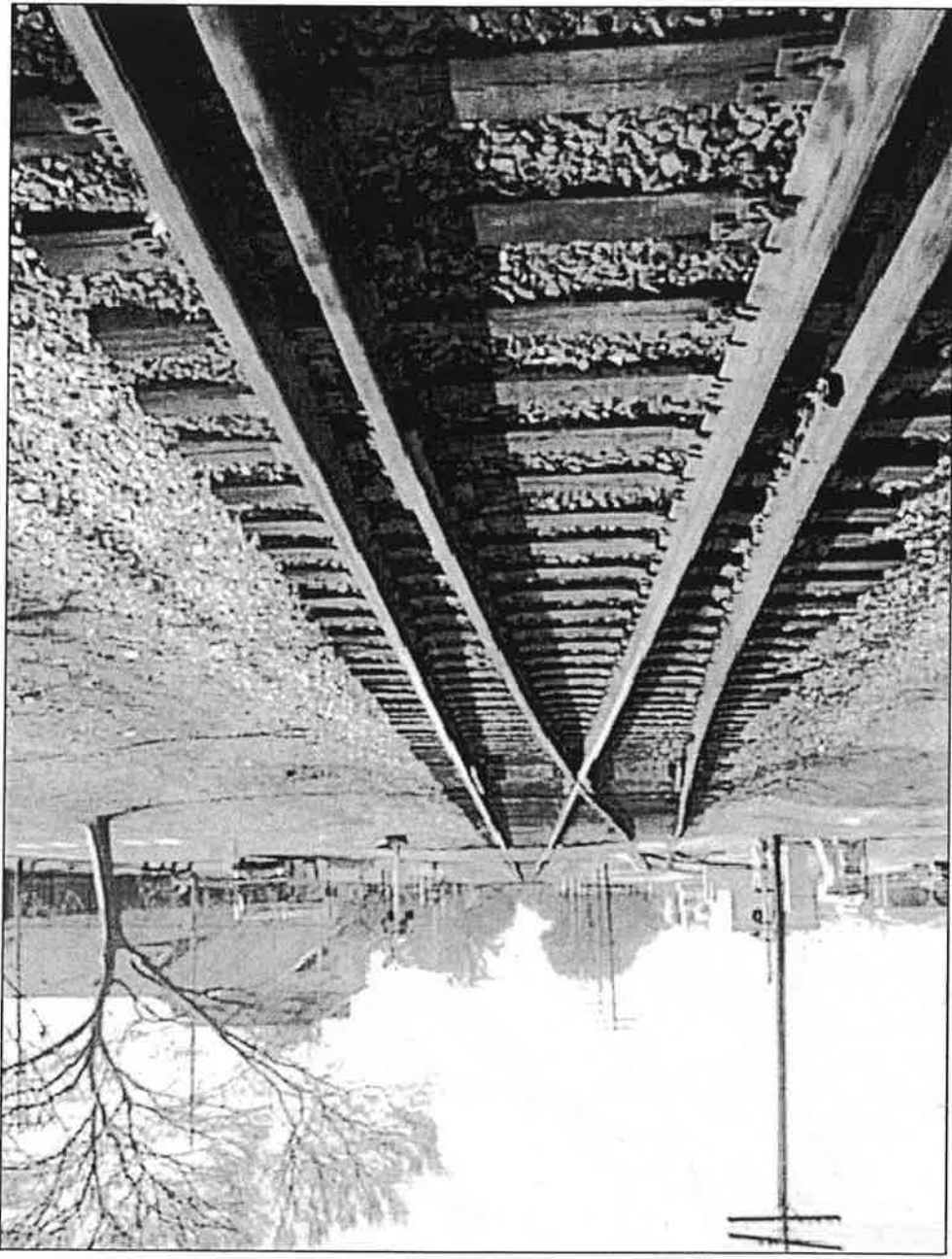
The improvements for the 20 crossings in the proposed Frankfort Avenue Quiet Zone can best be based on the Germantown project, the only Quiet Zone project completed to date. This indicates the cost of improvements to be about \$1,100,000 in the Clifton segment of the track and about \$3,600,000 in the Crescent Hill portion.

Probable sources of funding are Federal, State and Local governments. Should funding become problematic for Quiet zone devices at all crossings, selected crossings could be closed to save money. The Federal Railroad Association (FRA) would be in favor of closing as many crossings as possible. Please see the map that follows this for an outline of crossings and streets recommended for consideration of potential closure.

Closing of streets at these crossings may very well have positive effects for neighborhood residents on the given street. Through traffic can be eliminated, and unused crossing areas can be developed as landscape areas in residential areas and potentially, additional parking areas in commercial locations, where parking shortages are an existing problem.

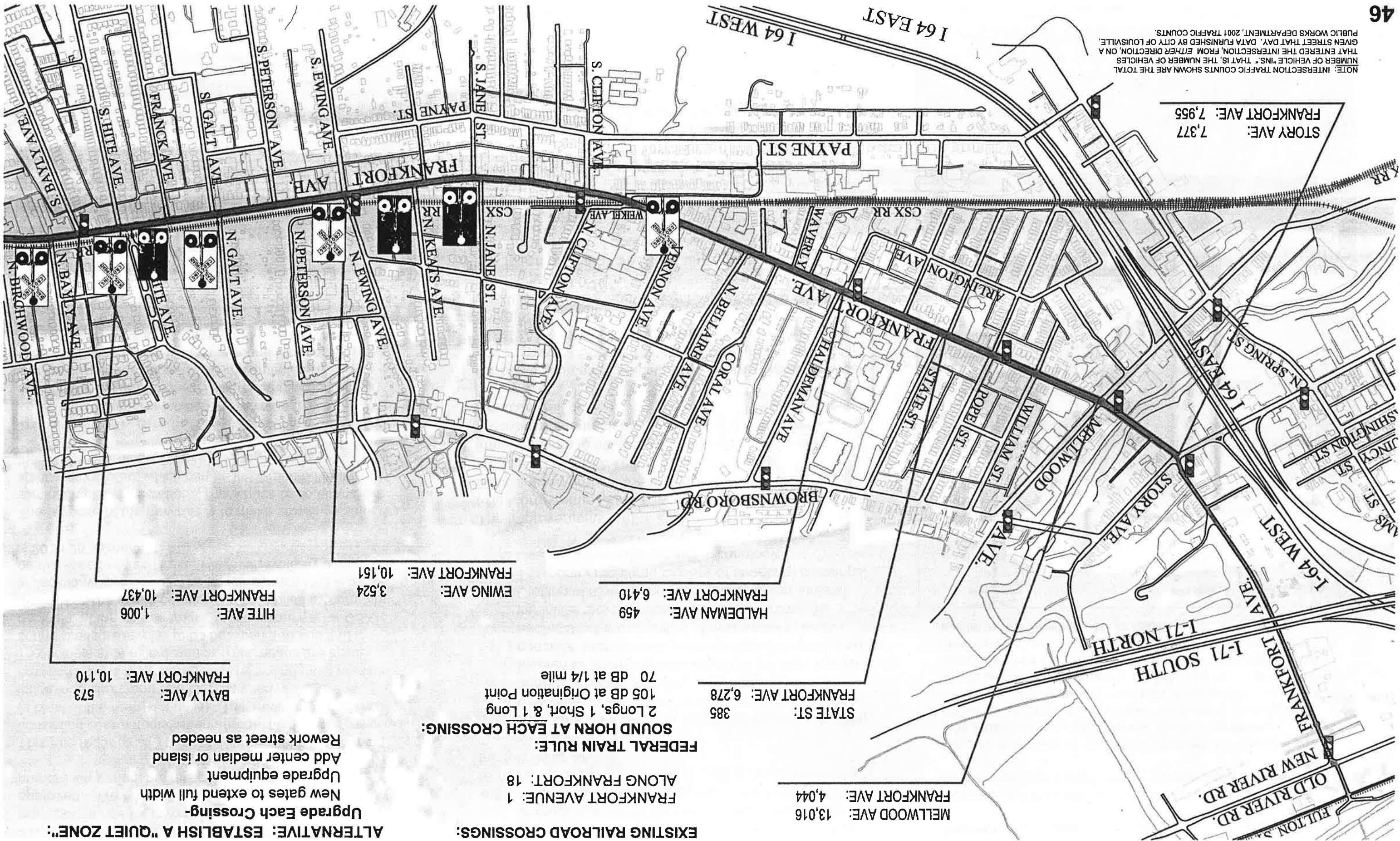
Pedestrian Crossings of the Railroad

Regardless of the Federal Train Horn rule, and "Quiet zone" issues, crossings along Frankfort avenue warrant attention. Our plan recommends that all rail crossings be improved so that pedestrians can easily cross. Each of the twenty crossings along the Avenue have two possible pedestrian crossings. That is, one at each side of the perpendicular street. A *minimum* immediate goal shall be for each crossing to have at least one crossing which is fully accessible to persons who have physical impairments. These signals are available with Braille street identification.



THE CSX RAILROAD AT FRANKFORT AVENUE, AT HILLCREST AVENUE, LOOKING EAST TO PENNSYLVANIA AVENUE, LOUISVILLE WATER COMPANY & RESERVOIR BEYOND

NOTE: INTERSECTION TRAFFIC COUNTS SHOWN ARE THE TOTAL NUMBER OF VEHICLE "INS." THAT IS, THE NUMBER OF VEHICLES THAT ENTERED THE INTERSECTION, FROM EITHER DIRECTION, ON A GIVEN STREET THAT DAY. DATA FURNISHED BY CITY OF LOUISVILLE, PUBLIC WORKS DEPARTMENT, 2001 TRAFFIC COUNTS.



STORY AVE: 7,377
FRANKFORT AVE: 7,955

EXISTING RAILROAD CROSSINGS:
FRANKFORT AVENUE: 1
ALONG FRANKFORT: 18

FEDERAL TRAIN RULE:
SOUND HORN AT EACH CROSSING:
2 Longs, 1 Short, & 1 Long
105 dB at Origination Point
70 dB at 1/4 mile

ALTERNATIVE: ESTABLISH A "QUIET ZONE":
Upgrade Each Crossing-
New gates to extend full width
Upgrade equipment
Add center median or island
Rework street as needed

FRANKFORT AVE: 13,016
MELLWOOD AVE: 4,044

STATE ST: 385
FRANKFORT AVE: 6,278

HALDEMAN AVE: 459
FRANKFORT AVE: 6,410

EWING AVE: 3,524
FRANKFORT AVE: 10,151

HITE AVE: 1,006
FRANKFORT AVE: 10,437

BAYLY AVE: 573
FRANKFORT AVE: 10,110

RAILROAD CROSSINGS

CROSSINGS IN "QUIET ZONE"

LEGEND

	RAILROAD CROSSING (PROBABLE TO REMAIN)
	RAILROAD CROSSING TO CONSIDER FOR POTENTIAL CLOSURE
	PUBLIC WORKS - INTERSECTION TRAFFIC COUNT DATA

RR CROSSINGS FOR CONSIDERATIONS OF POTENTIAL CLOSURE:

1. N. JANE ST.
2. N. KEATS AVE.
3. ALLEY (GALT / HITE)
4. PENNSYLVANIA AVE.
5. CLAREMONT AVE.
6. BLACKBURN AVE.

THIS ELIMINATES UP TO SIX (6) PAIRS OF GATES TO BE UPGRADED,
CLOSING WEIKEL AVE. WOULD ELIMINATE 1 ADDITIONAL GATE,
FOR A POSSIBLE SAVINGS OF APPROXIMATELY \$ 1,300,000.

"QUIET ZONE" REQUIREMENTS

\$ 245,000 +/- PER CROSSING

(Assuming maintenance of ALL existing crossings)

CLIFTON (x4.5) : \$ 1,102,500

CRESCENT HILL (x14.5) : \$ 3,552,500

\$ 4,655,000

ST. JOSEPH: 432

FRANKFORT AVE: 11,941

(INCLUDES 197 PED. CROSSINGS)

STILZ AVE: 3,741

FRANKFORT AVE: 13,751

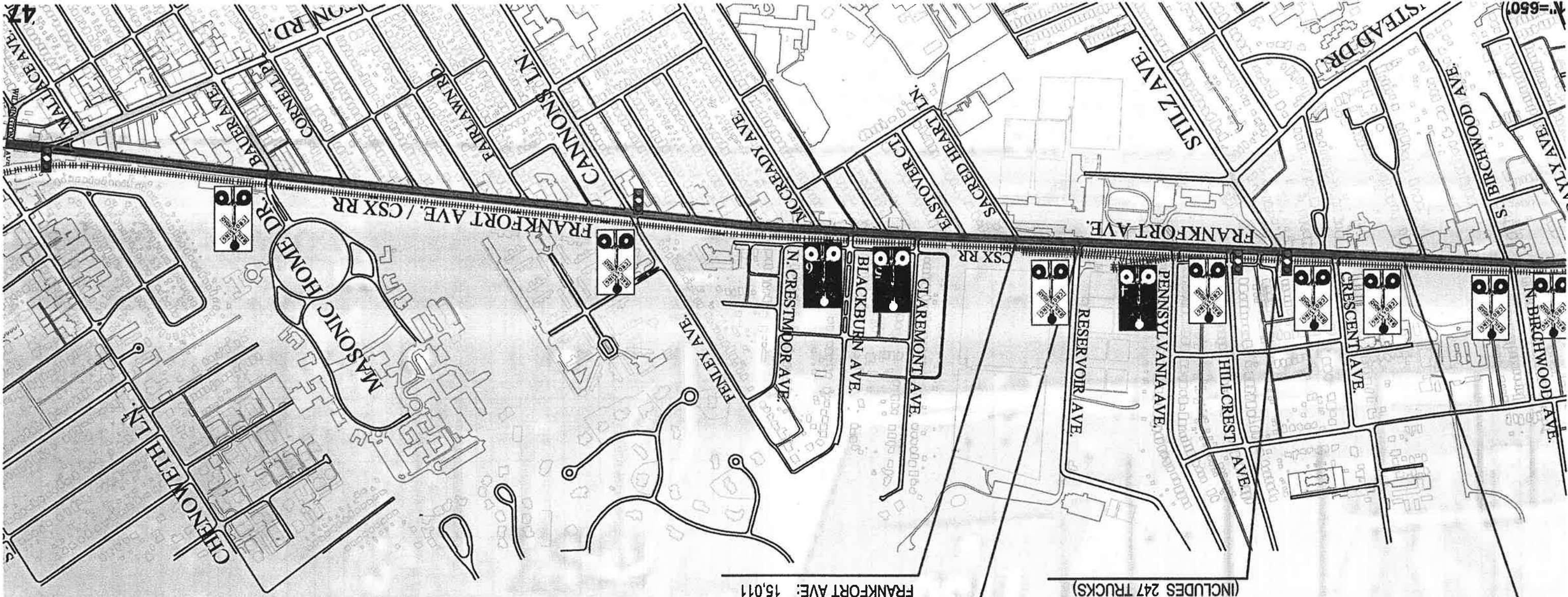
(INCLUDES 247 TRUCKS)

RESERVOIR AVE: 714

FRANKFORT AVE: 12,844

SACRED HEART LN: 205

FRANKFORT AVE: 15,011



Subtotals from detail worksheets	Cost
Construction Costs	
ButcherTown Streetscape	\$ 1,064,405
Crescent Hill Streetscape	\$ 1,522,896
Crescent Hill Streetscape	\$ 2,642,285
Clifton Quiet Zone	\$ 1,102,500
Crescent Hill Quiet Zone	\$ 3,522,500
DIRECT CONSTRUCTION COST	\$ 9,884,586

Professional Services:

Construction Costs	\$ 5,229,586.48
Est. Professional Fees	5%
Construction Documents for competitive bidding	\$ 261,479.33
Survey Right of Way with topographic survey	\$ 75,000
Reimbursable expenses	\$ 39,222
Division SubTotal	\$ 6,375,701

TOTAL PROJECT COST WITHOUT CONTINGENCY	\$ 10,260,288
BREAK DOWN	
Quiet Zone	\$ 4,655,000
ADA Improvements not including lighting	\$ 3,110,840
Subtotal	\$ 7,765,840
Other Cost	
Miles to feet	4.10
	5,280
Cost per lineal foot	\$ 115.23
Exterior Shoebox style down light fixtures	240 \$ 2,500 \$ 600,000
Miles to feet	4.1 \$ 5,280
Cost per lineal foot lighting	\$ 27.72
Other costs	\$ 1,894,448
Miles to feet	4.1 \$ 5,280
Other Costs per lineal foot	\$ 87.51
COST PER BLOCK LENGTH	300 \$ 115.23 \$ 34,568
600 \$ 115.23 \$ 69,137	

NOTE CROSSING QUANTITY AND COST FOR FEDERAL GRANTS

ADA street crossings	Quantity	Cost
ButcherTown, street crossings	8	
ButcherTown, shared ADA street crossing	2	1
Clifton, ADA street crossings	33	
Clifton shared ADA street crossings	4	2
Crescent Hill, ADA street crossings	36	
Crescent Hill, shared ADA street crossings	4	2
subtotal, street crossings	77	5
shared crossings	5	82
TOTAL	82	

Demolish non-ada cross walk (one corner 100 sf each)	1 ea	\$ 2,750.00	\$ 2,750
ADA, tactile ped crossing, 2 sloped sidewalk, drain, curb, 16 reflectors across street, striped crossing	1 ea	\$ 7,500.00	\$ 7,500
ADA Crossing signal	1 ea	\$ 4,500.00	\$ 4,500
Decorative crossing pavers in right of way with reflective bumps 4 way intersection, 960 sf	440 sf	\$ 9.25	\$ 4,070
Striping crossing	240 sf	\$ 3.00	\$ 720
Cost Each			19,540
Subtotal Cost			\$ 1,602,280

ADA curb cuts	Quantity	Cost
ButcherTown	17	
Clifton	53	
Crescent Hill	39	
		109

Demolish non-ada cross walk (one corner 100 sf each)	1 ea	\$ 1,550.00	\$ 1,550
ADA, tactile ped crossing, 2 sloped sidewalk, drain, curb, 16 reflectors across street, striped crossing	1 ea	\$ 7,500.00	\$ 7,500
ADA Crossing signal	0 ea	\$ 4,500.00	\$ -
Decorative crossing pavers in right of way with reflective bumps 4 way intersection, 960 sf	440 sf	\$ 9.25	\$ 4,070
Striping crossing	240 sf	\$ 3.00	\$ 720
Cost Each			\$ 13,840
Subtotal Cost			\$ 1,508,560
Subtotal ADA road crossings and curb cuts			\$ 3,110,840

CSX Crossing includes ADA ped crossing at each closure or gate	Quantity	Cost
Frankfort Avenue and New Main	2 ea	\$ 245,000
North Jane (reduced cost if closed)	1 ea	\$ 245,000
North Keats (reduced COST if closed)	1 ea	\$ 245,000
North Ewing	0.51 ea	\$ 245,000
Clifton Quiet Zone costs, pending federal rule implementation	4.5	\$ 1,102,500
ADA Compliance		\$ 4,213,340

CSX Quiet Zone with ADA pedestrian crossing	Quantity	Cost
Ewing	0.50 ea	\$ 245,000
North Galt	1 ea	\$ 245,000
Frank Alley (if not closed)	1 ea	\$ 245,000
North Hite	1 ea	\$ 245,000
Bayly	1 ea	\$ 245,000
Birchwood	1 ea	\$ 245,000
Crescent Ave (if not closed)	1 ea	\$ 245,000
Forrest Ave	1 ea	\$ 245,000
Hillcrest	1 ea	\$ 245,000
Pennsylvania (if not closed)	1 ea	\$ 245,000
Reservoir (if not closed)	1 ea	\$ 245,000
Claremont Avenue (if not closed)	1 ea	\$ 245,000
Blackburn Avenue (if not closed)	1 ea	\$ 245,000
Fenley Avenue	1 ea	\$ 245,000
Masonic Home Drive	1 ea	\$ 245,000
Crescent Hill Quiet Zone costs, pending Federal Rule Implementation	14.5	\$ 3,552,500
Quiet Zone Subtotal pending Federal Rule Implementation		\$ 4,855,000

	A	B	C	D	E	F	G	H	I
1									
2	Neighborhood	Melwood to William	CLIFTON						
3	Area								
4	Drawing Sheet(s)								
5	Length		9						
6			480						
7	ASSUMPTIONS:	two sidewalks, one each side							
8		utility infrastructure by utility							
9		companies							
10		road resurfacing not included							
11		some on street parking							
12			Qt.	Unit	Unit Cost	Total			
13		Silt Control, fence and straw	0 lf	\$	1.50	\$	-		
14		Traffic Control	480 lf	\$	3.00	\$	1,440		
15		Demolish Tree	5 ea	\$	100.00	\$	500		
16		Replace Tree	5 ea	\$	200.00	\$	1,000		
17		Infill tree hole 25 sf each	15 ea	\$	150.00	\$	2,250		
18		Plants in planter, daylilies	0 ea	\$	250.00	\$	-		
19		New 10' wide concrete sidewalk	0 lf	\$	40.00	\$	-		
20		New 5' wide concrete sidewalk	0 lf	\$	25.00	\$	-		
21		New 24' wide road with concrete curbs	0 lf	\$	80.00	\$	-		
22		New 24' wide road expand existing road bed add curbs resurface with concrete curbs	0 lf	\$	60.00	\$	-		
23		New 35' concrete curbcut	1 ea	\$	5,500.00	\$	5,500		
24		New 25' concrete curb cut	2 ea	\$	4,500.00	\$	9,000		
25		Demolish non-ada cross walk (one corner 100 sf each)	4 ea	\$	1,750.00	\$	7,000		
26		ADA, tactile ped crossing, 2 sloped sidewalk, drain, curb, 16 reflectors across street, striped crossing	4 ea	\$	7,500.00	\$	30,000		
27		ADA Crossing signal	4 ea	\$	4,500.00	\$	18,000		
28		Demo Concrete (0 sf to 100 sf)	100 sf	\$	6.00	\$	600		
29		Demo Concrete (100 sf to 250 sf)	250 sf	\$	5.00	\$	1,250		
30		Replace Concrete (0 sf to 100 sf)	100 sf	\$	4.00	\$	-		
31		Replace Concrete (100 sf to 250 sf)	250 sf	\$	6.00	\$	600		
32		Replace Concrete (above 250 sf)	0 sf	\$	5.00	\$	1,250		
33		Enlarge or claim landscaping in "ROW" or on private property	1700 sf	\$	4.00	\$	-		
34		New concrete sidewalk in place of curb cut	0 ea	\$	4.75	\$	8,075		
35		Demolish existing conc curb, 10 lf	0 ea	\$	1,500.00	\$	-		
36		Demolish existing conc curb 50 lf	0 ea	\$	40.00	\$	-		
37		Demolish existing conc curb 100 lf plus	0 ea	\$	30.00	\$	-		
38		Demo concrete curb cut	1 ea	\$	20.00	\$	2,000		
39		New integral 10' curb and curb	125 lf	\$	1,750.00	\$	1,750		
40		Remove utility pole	4 ea	\$	42.00	\$	5,250		
41		Remove guy wire	2 ea	\$	950.00	\$	3,800		
42		Remove chain link	50 lf	\$	550.00	\$	1,100		
43		Install new decorative fence	35 lf	\$	5.00	\$	250		
44		Install new guard rail inside	0 lf	\$	22.50	\$	788		
45		Repair historic cast iron railing	0 lf	\$	35.00	\$	-		
46		Decorative crossing pavers in right of way with reflective bumps 4 way intersection, 960 sf	8 sf	\$	62.00	\$	-		
47		Stripping crossing, 240 sf	4 ea	\$	3,500.00	\$	28,000		
48		Install decorative benches	0 ea	\$	450.00	\$	1,800		
49		New 5' Bench/Planter	0 ea	\$	1,650.00	\$	-		
50		Drinking fountain	0 ea	\$	950.00	\$	-		
51		Covered trelliss bus stop, with trash receptacle, ash can, newspaper box, other box, bench	1 ea	\$	1,250.00	\$	-		
52		Exterior shoe-box style lights 100' oc time 2	20 ea	\$	17,500.00	\$	17,500		
53		Subtotal				\$	35,500		
54		Cost per lineal,	480 lf			\$	131,203		
55		Cost of Road				\$	-		
56		subtotal; no road				\$	131,203		
57		Cost per lineal foot	480 lf			\$	273.34		
58						\$			

A	B	C	D	E	F	G	H	I
59	Neighborhood		CLIFTON					
60	Area	William to State						
61	Drawing Sheet(s)		10					
62	Length		760					
63	ASSUMPTIONS:							
64	two sidewalks, one each side							
65	utility infrastructure by utility companies							
66	road resurfacing not included							
67	some on street parking							
68			Qt.	Unit	Unit Cost	Total		
69		Silt Control, fence and straw	0 lf	\$	1.50	\$	-	
70		Traffic Control	760 lf	\$	5.00	\$	3,800	
71		Demolish Tree	13 ea	\$	100.00	\$	1,300	
72		Replace Tree	0 ea	\$	200.00	\$	-	
73		Infill tree hole 25 sf each	13 ea	\$	150.00	\$	1,950	
74		Plants in planter, daylilies	0 ea	\$	250.00	\$	-	
75		New 5' wide concrete sidewalk	0 lf	\$	25.00	\$	-	
76		New 5' wide concrete sidewalk STATE STREET, east and west side	1000 lf	\$	15.00	\$	15,000	
77		New 24' wide road with concrete curbs	0 lf	\$	80.00	\$	-	
78		New 24' wide road expand existing road bed add curbs resurface with concrete curbs	0 lf	\$	60.00	\$	-	
79		New 35' concrete curb cut	1 ea	\$	5,500.00	\$	5,500	
80		New 25' concrete curb cut	1 ea	\$	4,500.00	\$	4,500	
81		Demolish non-ada cross walk (one corner 100 sf each)	8 ea	\$	1,750.00	\$	14,000	
82		ADA, tactile ped crossing, 2 sloped sidewalk, drain, curb, 16 reflectors across street, striped crossing	8 ea	\$	7,500.00	\$	60,000	
83		ADA Crossing signal	8 ea	\$	4,500.00	\$	36,000	
84		Demo Concrete (0 sf to 100 sf)	230 sf	\$	6.00	\$	1,380	
85		Demo Concrete (100 sf to 250 sf)	450 sf	\$	5.00	\$	2,250	
86		Demo Concrete (above 250 sf)	1500 sf	\$	4.00	\$	6,000	
87		Replace Concrete (0 sf to 100 sf)	230 sf	\$	6.00	\$	1,380	
88		Replace Concrete (100 sf to 250 sf)	450 sf	\$	5.00	\$	2,250	
89		Replace Concrete (above 250 sf)	1500 sf	\$	4.00	\$	6,000	
90		Enlarge or claim landscaping in "ROW" or on private property	0 sf	\$	4.75	\$	-	
91		New concrete sidewalk in place of curb cut	0 ea	\$	1,500.00	\$	-	
92		Demolish existing conc curb, 10 lf	0 ea	\$	40.00	\$	-	
93		Demolish existing conc curb 50 lf	0 ea	\$	30.00	\$	-	
94		Demolish existing conc curb 100 lf plus	200 ea	\$	20.00	\$	4,000	
95		Demo concrete curb cut	1 ea	\$	1,750.00	\$	1,750	
96		New integral 10' curb and curb	200 lf	\$	42.00	\$	8,400	
97		Remove utility pole	3 ea	\$	950.00	\$	2,850	
98		Remove guy wire	0 ea	\$	550.00	\$	-	
99		Remove chain link	0 lf	\$	5.00	\$	-	
100		Install new decorative fence	0 lf	\$	22.50	\$	-	
101		Install new guard rail inside	0 lf	\$	35.00	\$	-	
102		Repair historic cast iron railing	0 lf	\$	62.00	\$	-	
103		Decorative crossing pavers in right of way with reflective bumps 4 way intersection, 960 sf	8 ea	\$	3,500.00	\$	28,000	
104		Stripping crossing, 240 sf	8 ea	\$	450.00	\$	3,600	
105		Bus stop	1 ea	\$	17,500.00	\$	17,500	
106		Install decorative benches	2 ea	\$	1,650.00	\$	3,300	
107		New 5' Bench/Planter	4 ea	\$	950.00	\$	3,800	
108		Drinking fountain	1 ea	\$	1,250.00	\$	1,250	
109		Subtotal with ADA crossings				\$	235,760	
110		Cost per lineal,	760 lf			\$	310.21	
111								
112		Cost of Non ADA crossing demo				\$	14,000	
113		Cost of Crossing				\$	60,000	
114		Cost of Crossing signals				\$	36,000	
115		Subtotal ADA crossings				\$	110,000	
116		Cost per ADA crossing Complete	8		\$	13,750.00		
117		subtotal; less crossing and signals				\$	125,760	
118		Cost per lineal foot NO ADA crossings	760 lf			\$	165.47	

	A	B	C	D	E	F	G	H	I
119									
	Area	State to Haldeman Drawing Sheet(s)	11, 12						
120			Qt	Unit	Unit Cost	Total			
121									
122		Silt Control, fence and straw	0 lf	lf	\$ 1.50	\$ -			
123		Traffic Control	880 lf	lf	\$ 5.00	\$ 4,400			
124		Demolish Tree	6 ea	ea	\$ 100.00	\$ 600			
125		Replace Tree	0 ea	ea	\$ 200.00	\$ -			
126		Infill tree hole 25 sf each	6 ea	ea	\$ 150.00	\$ 900			
127		Plants in planter, daylilies	800 lf	lf	\$ 15.00	\$ 12,000			
128		New 10' wide concrete sidewalk	1760 lf	lf	\$ 35.00	\$ 61,600			
129		New 5' wide concrete sidewalk STATE STREET, east and west side	1200 lf	lf	\$ 15.00	\$ 18,000			
130		ADA alley Crossing	1 ea	ea	\$ 4,500.00	\$ 4,500			
131		ADA Curb cut at	1 ea	ea	\$ 5,500.00	\$ 5,500			
132		New 24' wide road with concrete curbs	0 lf	lf	\$ 80.00	\$ -			
133		New 24' wide road expand existing road bed add curbs resurface with concrete curbs	0 lf	lf	\$ 60.00	\$ -			
134		New 35' concrete curbcut	4 ea	ea	\$ 5,500.00	\$ 22,000			
135		New 25' concrete curb cut	0 ea	ea	\$ 4,500.00	\$ -			
136		Demolish non-ada cross walk (one corner 100 sf each)	4 ea	ea	\$ 1,750.00	\$ 7,000			
137		ADA, tactile ped crossing, 2 sloped sidewalk, drain, curb, 16 reflectors across street, stripped crossing	4 ea	ea	\$ 7,500.00	\$ 30,000			
138		ADA Crossing signal	4 ea	ea	\$ 4,500.00	\$ 18,000			
139		Demo Concrete (0 sf to 100 sf)	0 sf	sf	\$ 6.00	\$ -			
140		Demo Concrete (100 sf to 250 sf)	0 sf	sf	\$ 5.00	\$ -			
141		Demo Concrete (above 250 sf)	17600 sf	sf	\$ 2.00	\$ 35,200			
142		Replace Concrete (0 sf to 100 sf)	0 sf	sf	\$ 6.00	\$ -			
143		Replace Concrete (100 sf to 250 sf)	0 sf	sf	\$ 5.00	\$ -			
144		Replace Concrete (above 250 sf)	0 sf	sf	\$ 4.00	\$ -			
145		Enlarge or claim landscaping in "ROW" or on private property	1000 sf	sf	\$ 4.75	\$ 4,750			
146		New concrete sidewalk in place of curb cut	0 ea	ea	\$ 1,500.00	\$ -			
147		Demolish existing conc curb, 10 lf	0 ea	ea	\$ 40.00	\$ -			
148		Demolish existing conc curb 50 lf	0 ea	ea	\$ 30.00	\$ -			
149		Demolish existing conc curb 100 lf plus	0 ea	ea	\$ 20.00	\$ -			
150		Demo concrete curb cut	4 ea	ea	\$ 1,750.00	\$ 7,000			
151		New integral 10' curb and curb	0 lf	lf	\$ 42.00	\$ -			
152		Remove utility pole	3 ea	ea	\$ 950.00	\$ 2,850			
153		Remove guy wire	0 ea	ea	\$ 550.00	\$ -			
154		Remove chain link	0 lf	lf	\$ 5.00	\$ -			
155		Install new decorative fence	0 lf	lf	\$ 22.50	\$ -			
156		Install new guard rail inside	0 lf	lf	\$ 35.00	\$ -			
157		Repair historic cast iron railing	0 lf	lf	\$ 62.00	\$ -			
158		Decorative crossing pavers in right of way with reflective bumps 4 way intersection, 960 sf	4 ea	ea	\$ 3,500.00	\$ 14,000			
159		Striping crossing, 240 sf	4 ea	ea	\$ 450.00	\$ 1,800			
160		Bus stop	1 ea	ea	\$ 22,500.00	\$ 22,500			
161		Install decorative benches	2 ea	ea	\$ 1,650.00	\$ 3,300			
162		New 5' Bench/Planter	4 ea	ea	\$ 950.00	\$ 3,800			
163		Exterior lights	16 ea	ea	\$ 1,350.00	\$ 21,600			
164		Drinking fountain	0 ea	ea	\$ 1,250.00	\$ -			
165		Subtotal with ADA crossings				\$	301,300		
166		Cost per lineal,	880 lf	lf	\$	342.39			
167									
168									
169									
170									

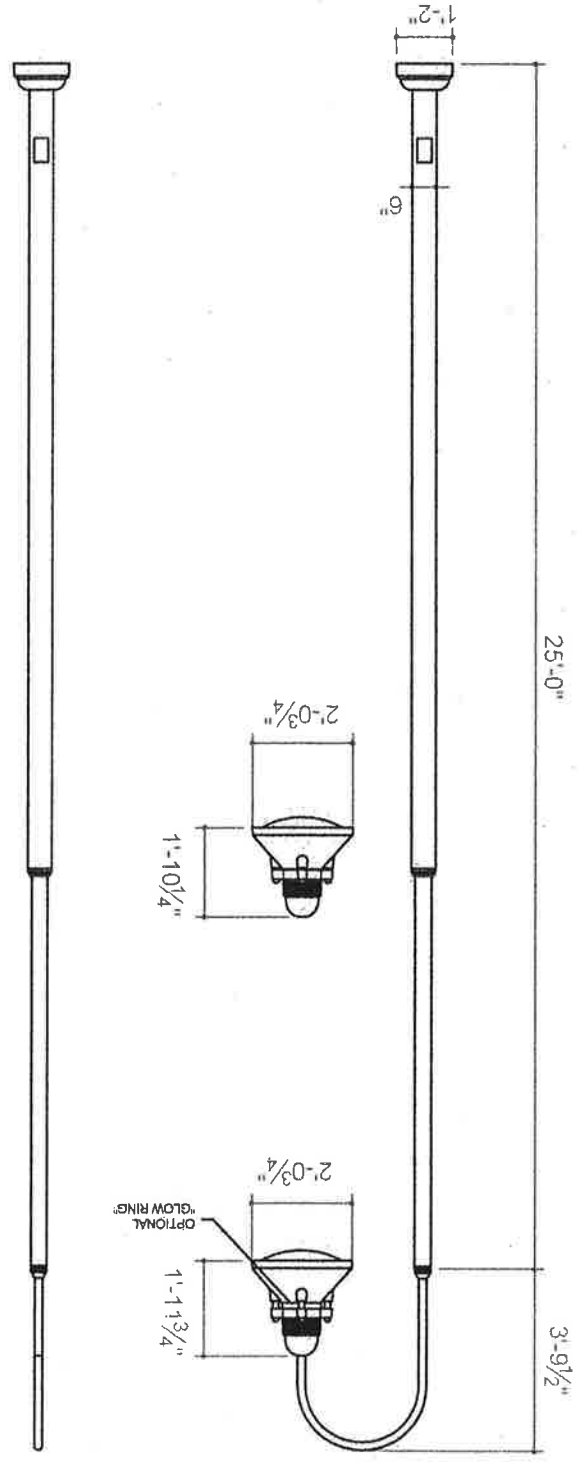
A	B	C	D	E	F	G	H	I
171	Average Cost per		480			\$ 273.34		
172			760			\$ 310.21		
173			880 lf			\$ 304.89		
174			3			\$ 888.44		
175	Average Cost per lineal foot no CSX crossings					\$ 296.15		
176								
177								
178	Area	Haldeman to Vernon						
179		Drawing Sheet(s)	12, 13, and 14					
180		Length	1290		222.11	\$ 286,522		
181								
182	Area	Vernon to Clifton						
183		Drawing Sheet(s)	14, 15					
184		Length	730		222.11	\$ 162,140		
185								
186	Area	Clifton to Ewing						
187		Drawing Sheet(s)	15, 16, 17, 18					
188		Length	1740		222.11	\$ 386,471		
189						\$ 835,134		
190								
191								
192	OTHER	Welcome to to Clifton historic stone marker at river end	2 ea	\$	6,500.00	\$ 13,000		
193		Half cost of Neighborhood marker between Butchertown and Clifton	2 ea	\$	3,250.00	\$ 6,500		
194		Other subtotal					\$ 19,500	
195								
196		SUBTOTAL STREETScape CLIFTON						\$ 1,522,896
197								
198								
199								
200								
201								
202								
203								
204								
205								

CSX Crossing includes ADA ped crossing at each closure or gate	
Frankfort Avenue and New Main	2 ea \$ 245,000 \$ 490,000
North Jane (NO Cost if closed)	1 ea \$ 245,000 \$ 245,000
North Keats (NO COST if closed_	1 ea \$ 245,000 \$ 245,000
North Ewing	0.5 ea \$ 245,000 \$ 122,500
SUBTOTAL CLIFTON Streetscape and quite zone improvements	\$ 1,102,500
	\$ 2,625,396

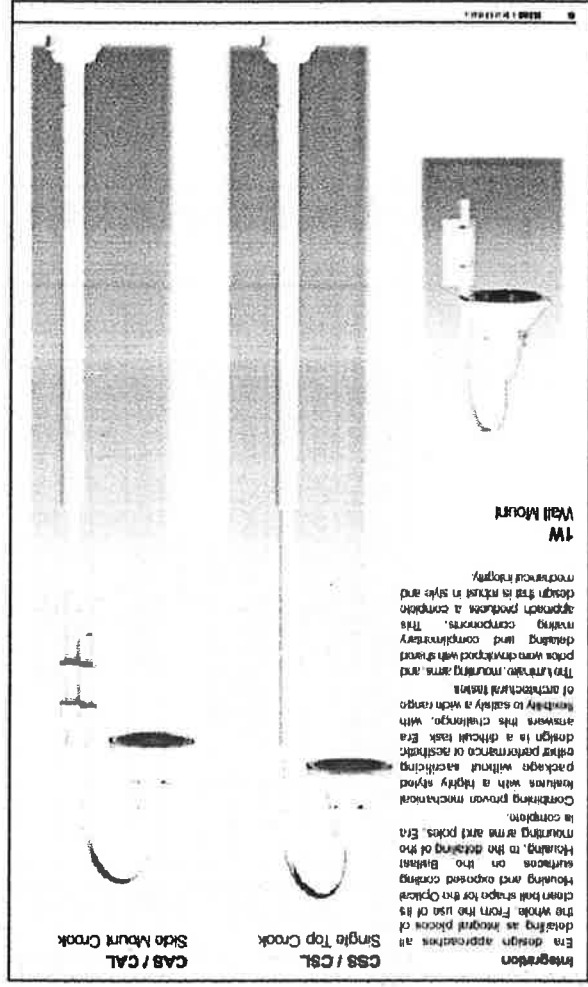
	A	B	C	D	E	F	G	H	I
1	Neighborhood:	CRESCENT HILL							
2	Area	Ewing to North Galt							
3	Drawing Sheet(s)	18, 19,							
4	Length	960							
5	ASSUMPTIONS:								
6	two sidewalks, one each side								
7	utility infrastructure by utility companys								
8	road resurfacing not included								
9	some on street parking								
10			Qt.	Unit	Unit Cost	Total			
11	Silt Control, fence and straw	960 lf	\$	1.50	\$	1,440			
12	Traffic Control	960 lf	\$	5.00	\$	4,800			
13	Demolish Tree, south side	19 ea	\$	100.00	\$	1,900			
14	Replace Tree	0 ea	\$	200.00	\$	-			
15	Infill tree hole 25 sf each	17 ea	\$	150.00	\$	2,550			
16	Plants in planter, north side	10 ea	\$	750.00	\$	7,500			
17	Plants in private property	10 ea	\$	750.00	\$	7,500			
18	New 5' wide concrete sidewalk	0 lf	\$	25.00	\$	-			
19	New yard drain at 125' oc	8 lf	\$	1,750.00	\$	13,440			
20	New 35' concrete curbcut	0 ea	\$	5,500.00	\$	-			
21	New 25' concrete curb cut	4 ea	\$	4,500.00	\$	18,000			
22	Demolish non-ada cross walk (one corner 100 sf each)	5 ea	\$	1,750.00	\$	8,750			
23	ADA, tactile ped crossing, 2 sloped sidewalk, drain, curb, 16 reflectors across street, stripped crossing	5 ea	\$	7,500.00	\$	37,500			
24	ADA Crossing signal	5 ea	\$	4,500.00	\$	22,500			
25	Demo Concrete (0 sf to 100 sf)	0 sf	\$	6.00	\$	-			
26	Demo Concrete (100 sf to 250 sf)	0 sf	\$	5.00	\$	-			
27	Demo Concrete (above 250 sf)	4800 sf	\$	3.00	\$	14,400			
28	Replace Concrete (0 sf to 100 sf)	0 sf	\$	6.00	\$	-			
29	Replace Concrete (100 sf to 250 sf)	0 sf	\$	5.00	\$	-			
30	Replace Concrete (above 250 sf)	0 sf	\$	4.00	\$	-			
31	Enlarge or claim landscaping in "ROW" or on private property	0 sf	\$	4.75	\$	-			
32	New concrete sidewalk in place of curb cut	2 ea	\$	1,500.00	\$	3,000			
33	Demolish existing conc curb, 10 lf	0 ea	\$	40.00	\$	-			
34	Demolish existing conc curb 50 lf	0 ea	\$	30.00	\$	-			
35	Demolish existing conc curb 100 lf plus	0 ea	\$	20.00	\$	-			
36	Demo concrete curb cut	5 ea	\$	1,750.00	\$	8,750			
37	New integral 6' curb and walk undulating edge	960 lf	\$	32.00	\$	30,720			
38	Bark path 10' wide	500 cy	\$	25.00	\$	12,500			
39	New integral 10' curb and curb	960 lf	\$	42.00	\$	40,320			
40	Remove utility pole	3 ea	\$	950.00	\$	2,850			
41	Remove guy wire	0 ea	\$	550.00	\$	-			
42	Remove chain link	0 lf	\$	5.00	\$	-			
43	Install new decorative fence	0 lf	\$	22.50	\$	-			
44	Install new guard rail inside	0 lf	\$	35.00	\$	-			
45	Repair historic cast iron railing	0 lf	\$	62.00	\$	-			
46	Decorative crossing pavers in right of way with reflective bumps 4 way intersection, 960 sf	5 ea	\$	3,500.00	\$	17,500			
47	Stripping crossing, 240 sf	5 ea	\$	450.00	\$	2,250			
48	Exterior lights, shoe-box style downs, north side	10 ea	\$	2,200.00	\$	22,000			
49	Bus stop	2 ea	\$	17,500.00	\$	35,000			
50	Install decorative benches	10 ea	\$	1,650.00	\$	16,500			
51	New 5' Bench/Planter	0 ea	\$	950.00	\$	-			
52	Drinking fountain	1 ea	\$	1,250.00	\$	1,250			
53	Subtotal with ADA crossings						\$	332,920	
54	Cost per lineal,	960 lf					\$	346.79	
55									

	A	B	C	D	E	F	G	H	I	
56										
57	Area	North Galt to Hite								
58	Drawing Sheet(s)	19, 20								
59	Length	690 lf			\$	260,09		\$	179,465	
60										
61	Area	North Hite to Birchwood								
62	Drawing Sheet(s)	20, 21, 22								
63	Length	620 lf			\$	260,09		\$	161,258	
64										
65	Area	Birchwood to Hilcrest, not including re-routing of stlitz								
66	Drawing Sheet(s)	22, 23, 24								
67	Length	1830 lf			\$	260,09		\$	475,972	
68										
69	Area	Hilcrest to								
70	Drawing Sheet(s)	18, 19, 7080 lf						\$	1,473,171	
71	Length				\$	208,08		\$		
72										
73	OTHER ITEMS									
74		Wecome to to Clifton historic stone marker at river end		2 ea	\$	6,500.00	\$	13,000		
75		Half cost of Neighborhood marker between Butchertown and Clifton		2 ea	\$	3,250.00	\$	6,500		
76		Other subtotal						\$	19,500	
77	CRESCENT HILL STREETScape, no rail crossings									
78										
79										
80	CSX Quiet Zone with ADA pedestrian crossing									
81		Ewing		0.50 ea	\$	245,000		122,500		
82		North Galt		1 ea	\$	245,000		245,000		
83		Franck Alley (if not closed)		1 ea	\$	245,000		245,000		
84		North Hite		1 ea	\$	245,000		245,000		
85		Bayly		1 ea	\$	245,000		245,000		
86		Birchwood		1 ea	\$	245,000		245,000		
87		Crescent Ave (if not closed)		1 ea	\$	245,000		245,000		
88		Forrest Ave		1 ea	\$	245,000		245,000		
89		Hilcrest		1 ea	\$	245,000		245,000		
90		Pennsylvania (if not closed)		1 ea	\$	245,000		245,000		
91		Reservoir (if not closed)		1 ea	\$	245,000		245,000		
92		Claremont Avenue (if not closed)		1 ea	\$	245,000		245,000		
93		Blackburn Avenue (if not closed)		1 ea	\$	245,000		245,000		
94		Fenely Avenue		1 ea	\$	245,000		245,000		
95		Masonic Home Drive		1 ea	\$	245,000		245,000		
96		Crescent Hill Quite Zone costs						3,552,500		
97		CRESCENT HILL STREETScape AND QUITE ZONE							\$ 6,194,785	

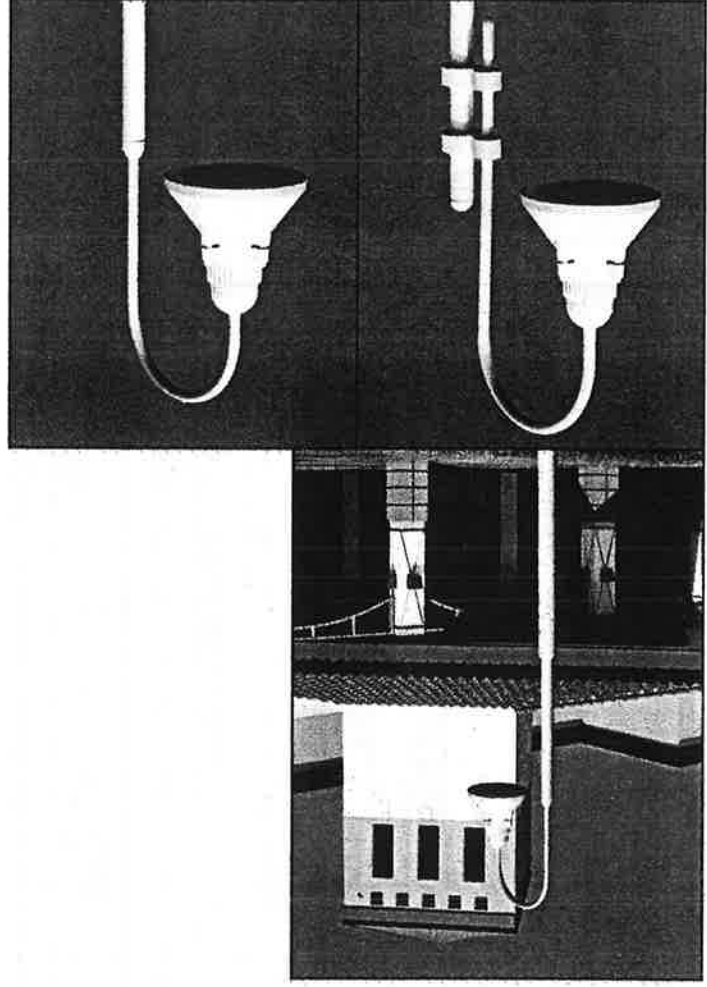
Unanimously selected by neighbors at several committee meetings have been "shepherd's hook" or "crook" arm mounted fixtures. This selection is seen as a compromise between the glare of approximate replicas of gas fixtures with visible bulbs, and the "clean" look of modern "shoe-box" style fixtures.



KIM LIGHTING'S "ERA" MODELS - CSL 25'-0" POLE WITH RAZOR FIXTURE



KIM LIGHTING'S "ERA" MODELS - CSL AND CAL STYLES



KIM - "ERA" MODEL CAL KIM - "ERA" MODEL CSL

This section is intended to become a *working reference guide* for increased order as improvements are made anywhere along the length of Frankfurt avenue. To re-state, our goal has been to facilitate a greater *Continuity* along the avenue, while continuing to allow, and embrace the current diversity

Recommended Specification: CSL25-64188A / DB-P (Large luminaire, single top crook, 25' pole, dark bronze powder coated paint finish). A 400 Watt Metal Halide lamp is likely ideal, 250 Watts is a bare minimum (Metal Halide yields a much truer, whiter light). High Pressure Sodium may be substituted in 250 Watts (produces greater light (lumens) per watt, many existing city street fixtures are of this type)

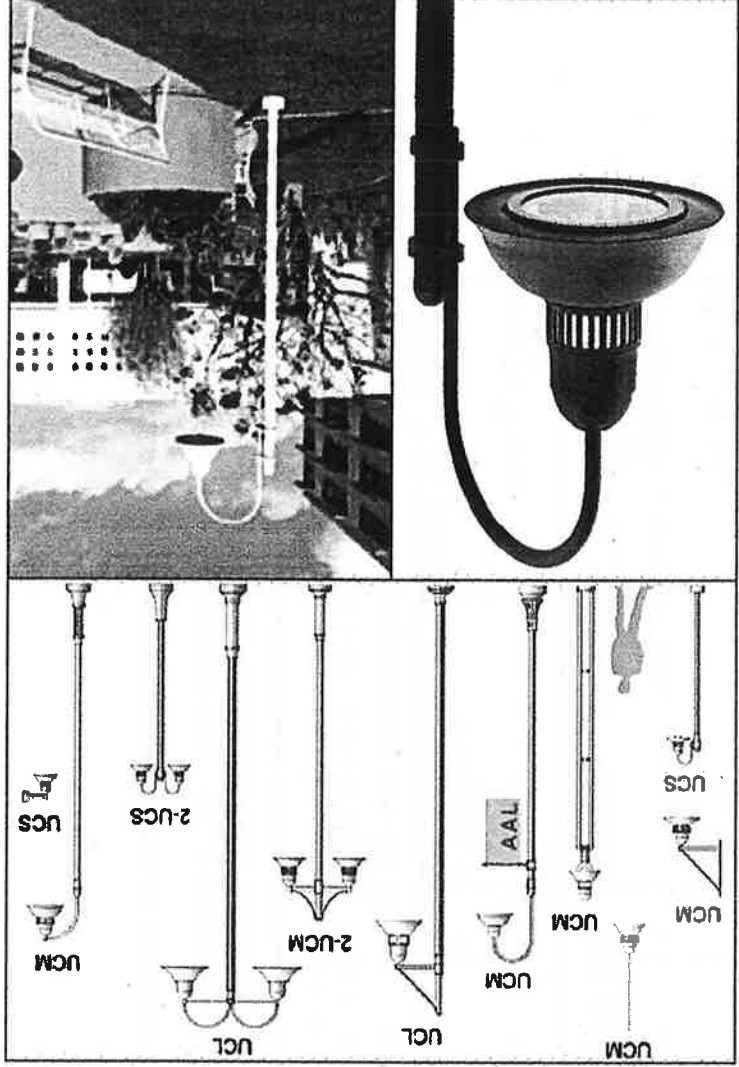
Pole heights of about 25'-0", and 'Simple' styling are recommended. Side mounted arms, and other options such as a glow ring on the fixture just above the bulb are additional options that can be determined as the first fixtures are acquired and installed.

Luminaire Ordering Information

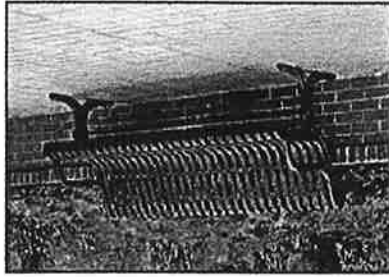
ERA Series RA17 RA25

Ordering Example: 1A / RA17 / 1750HRT / LOP / A-33 / CS1A-5158A / LOP

1 Mounting:	2 Headstock:	3 Headlight Models:	4 Pole / Arm / Bracket / Detail:
<p>1 Pole Mount</p> <p>2 Pole Mount</p> <p>3 Pole Mount</p> <p>4 Pole Mount</p> <p>5 Pole Mount</p> <p>6 Pole Mount</p> <p>7 Pole Mount</p> <p>8 Pole Mount</p> <p>9 Pole Mount</p> <p>10 Pole Mount</p> <p>11 Pole Mount</p> <p>12 Pole Mount</p> <p>13 Pole Mount</p> <p>14 Pole Mount</p> <p>15 Pole Mount</p> <p>16 Pole Mount</p> <p>17 Pole Mount</p> <p>18 Pole Mount</p> <p>19 Pole Mount</p> <p>20 Pole Mount</p>	<p>1 Headlight Model</p> <p>2 Headlight Model</p> <p>3 Headlight Model</p> <p>4 Headlight Model</p> <p>5 Headlight Model</p> <p>6 Headlight Model</p> <p>7 Headlight Model</p> <p>8 Headlight Model</p> <p>9 Headlight Model</p> <p>10 Headlight Model</p> <p>11 Headlight Model</p> <p>12 Headlight Model</p> <p>13 Headlight Model</p> <p>14 Headlight Model</p> <p>15 Headlight Model</p> <p>16 Headlight Model</p> <p>17 Headlight Model</p> <p>18 Headlight Model</p> <p>19 Headlight Model</p> <p>20 Headlight Model</p>	<p>1 Pole / Arm / Bracket / Detail</p> <p>2 Pole / Arm / Bracket / Detail</p> <p>3 Pole / Arm / Bracket / Detail</p> <p>4 Pole / Arm / Bracket / Detail</p> <p>5 Pole / Arm / Bracket / Detail</p> <p>6 Pole / Arm / Bracket / Detail</p> <p>7 Pole / Arm / Bracket / Detail</p> <p>8 Pole / Arm / Bracket / Detail</p> <p>9 Pole / Arm / Bracket / Detail</p> <p>10 Pole / Arm / Bracket / Detail</p> <p>11 Pole / Arm / Bracket / Detail</p> <p>12 Pole / Arm / Bracket / Detail</p> <p>13 Pole / Arm / Bracket / Detail</p> <p>14 Pole / Arm / Bracket / Detail</p> <p>15 Pole / Arm / Bracket / Detail</p> <p>16 Pole / Arm / Bracket / Detail</p> <p>17 Pole / Arm / Bracket / Detail</p> <p>18 Pole / Arm / Bracket / Detail</p> <p>19 Pole / Arm / Bracket / Detail</p> <p>20 Pole / Arm / Bracket / Detail</p>	<p>1 Pole / Arm / Bracket / Detail</p> <p>2 Pole / Arm / Bracket / Detail</p> <p>3 Pole / Arm / Bracket / Detail</p> <p>4 Pole / Arm / Bracket / Detail</p> <p>5 Pole / Arm / Bracket / Detail</p> <p>6 Pole / Arm / Bracket / Detail</p> <p>7 Pole / Arm / Bracket / Detail</p> <p>8 Pole / Arm / Bracket / Detail</p> <p>9 Pole / Arm / Bracket / Detail</p> <p>10 Pole / Arm / Bracket / Detail</p> <p>11 Pole / Arm / Bracket / Detail</p> <p>12 Pole / Arm / Bracket / Detail</p> <p>13 Pole / Arm / Bracket / Detail</p> <p>14 Pole / Arm / Bracket / Detail</p> <p>15 Pole / Arm / Bracket / Detail</p> <p>16 Pole / Arm / Bracket / Detail</p> <p>17 Pole / Arm / Bracket / Detail</p> <p>18 Pole / Arm / Bracket / Detail</p> <p>19 Pole / Arm / Bracket / Detail</p> <p>20 Pole / Arm / Bracket / Detail</p>



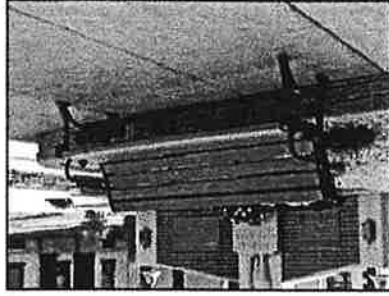
ALTERNATE MANUFACTURER - ARCHITECTURAL AREA LIGHTING'S "UNIVERSE" MODEL



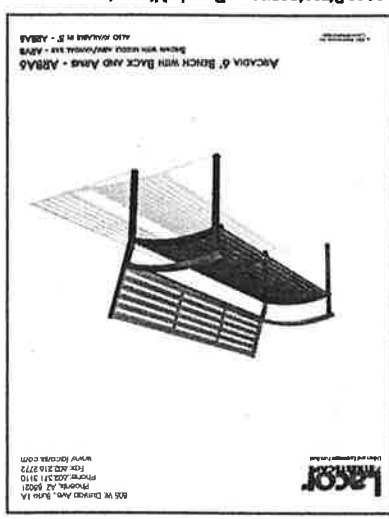
DuMur - Bench 140 (Metal)



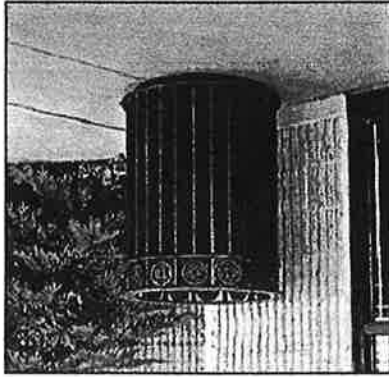
DuMur - Bench 143 (Recycled Plastic)



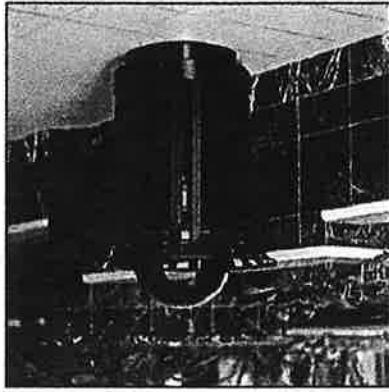
DuMur - Bench 16 (Recycled Plastic)



Lacor Streetscape - Bench Alternate



DuMur - Receptacle 148



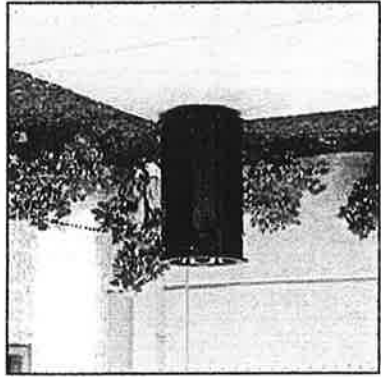
DuMur - Receptacle 84 (with optional Dome top)



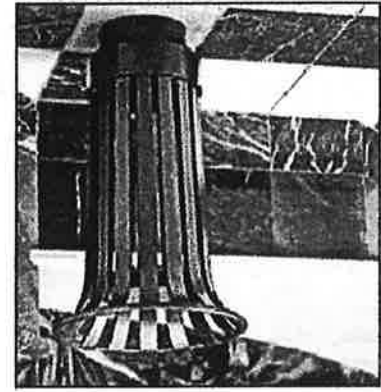
DuMur - Receptacle 102



Lacor Streetscape - 30 gal. Trash Receptacle



DuMur - Ash Urn 150



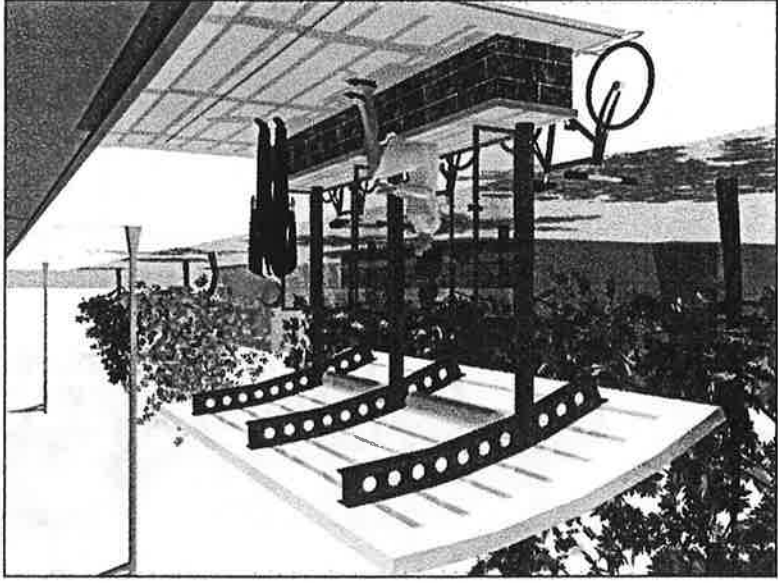
DuMur - Ash Urn 80



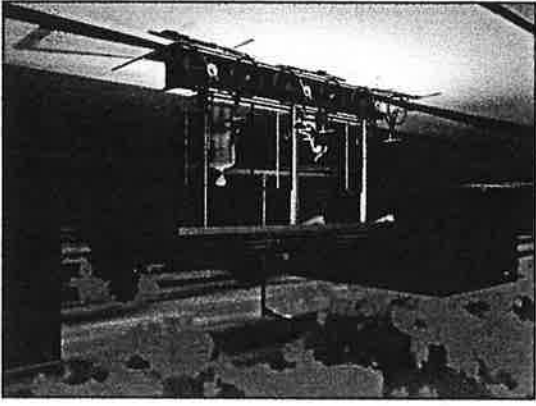
DuMur - Ash Urn 123



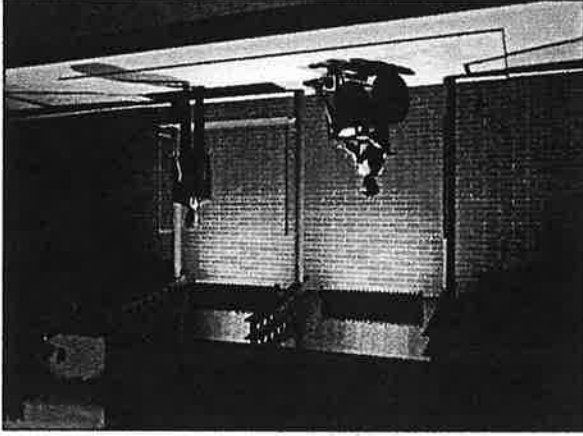
Lacor Streetscape - Ash Urn Option



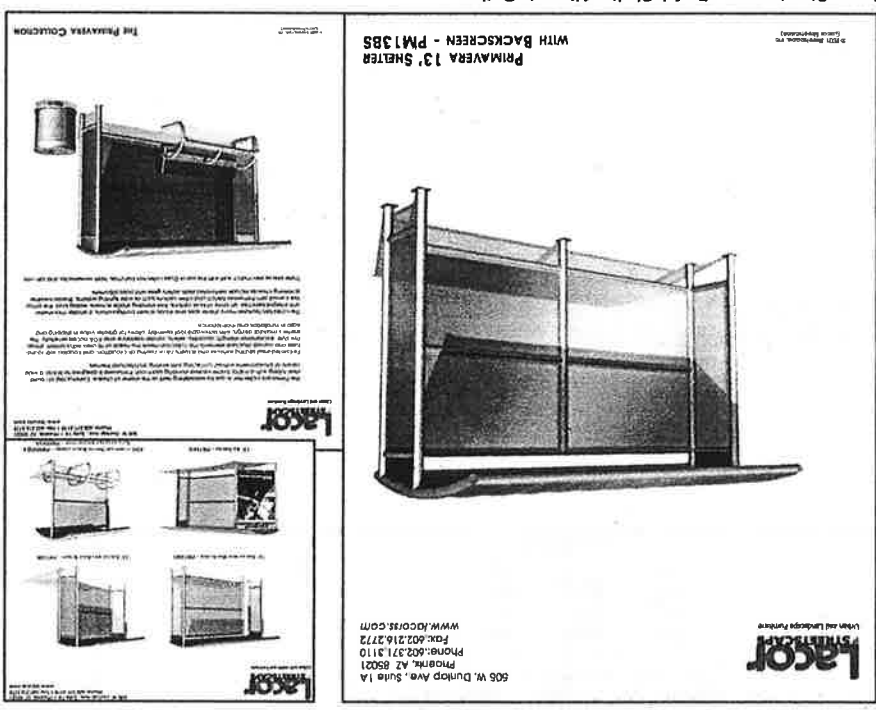
Frankfort Study - Typical Shelter Design
Translucent panel roof, steel structure, and limestone base with concrete cap.
Note: Side weather-breaker walls to extend forward in final fabrication drawings.



Typical Shelter Design at night
Showing integrated bicycle racks at rear. Solar lighting packages are now available, through Lacor and other manufacturers.



Typical Shelter Design - configured without limestone base / bench
Can accommodate more dimensionally-constrained locations and / or allow for greater ease of wheelchair use.



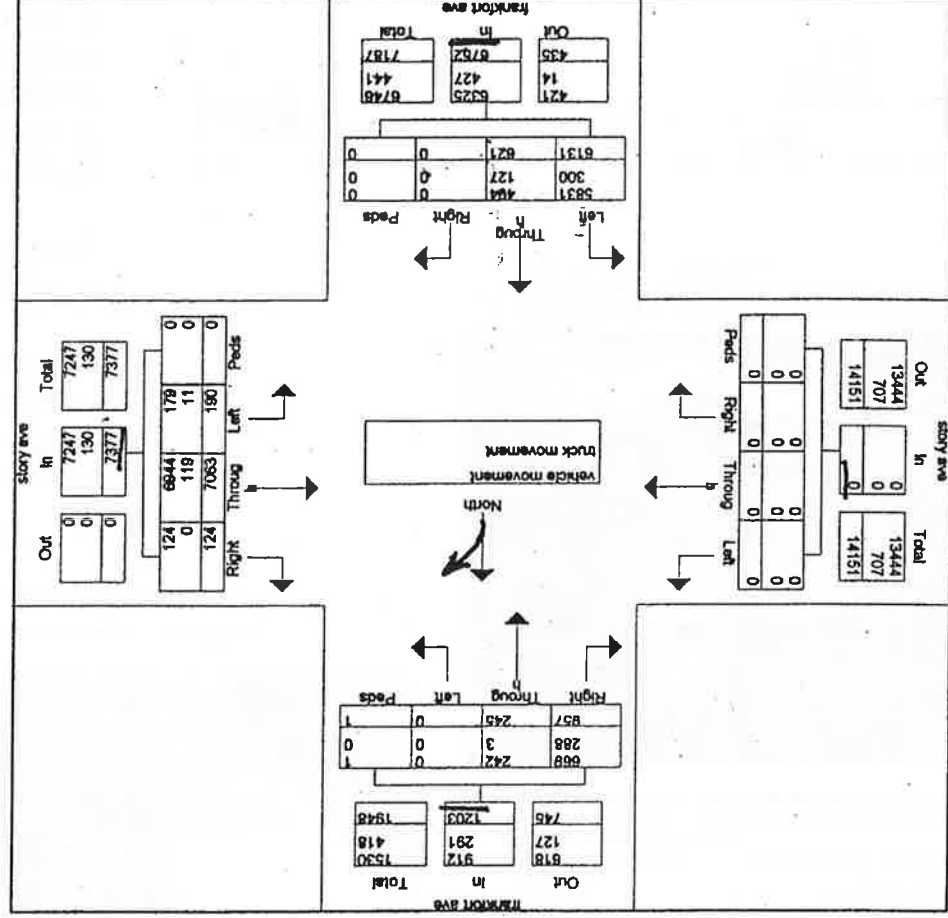
Lacor Streetscape - Prefab Shelter Alternate Option

After reviewing the many products available, items shown have been recommended to select from for future improvements along Frankfort Avenue. Many of these items provide the option to be bolted down for durability & security.

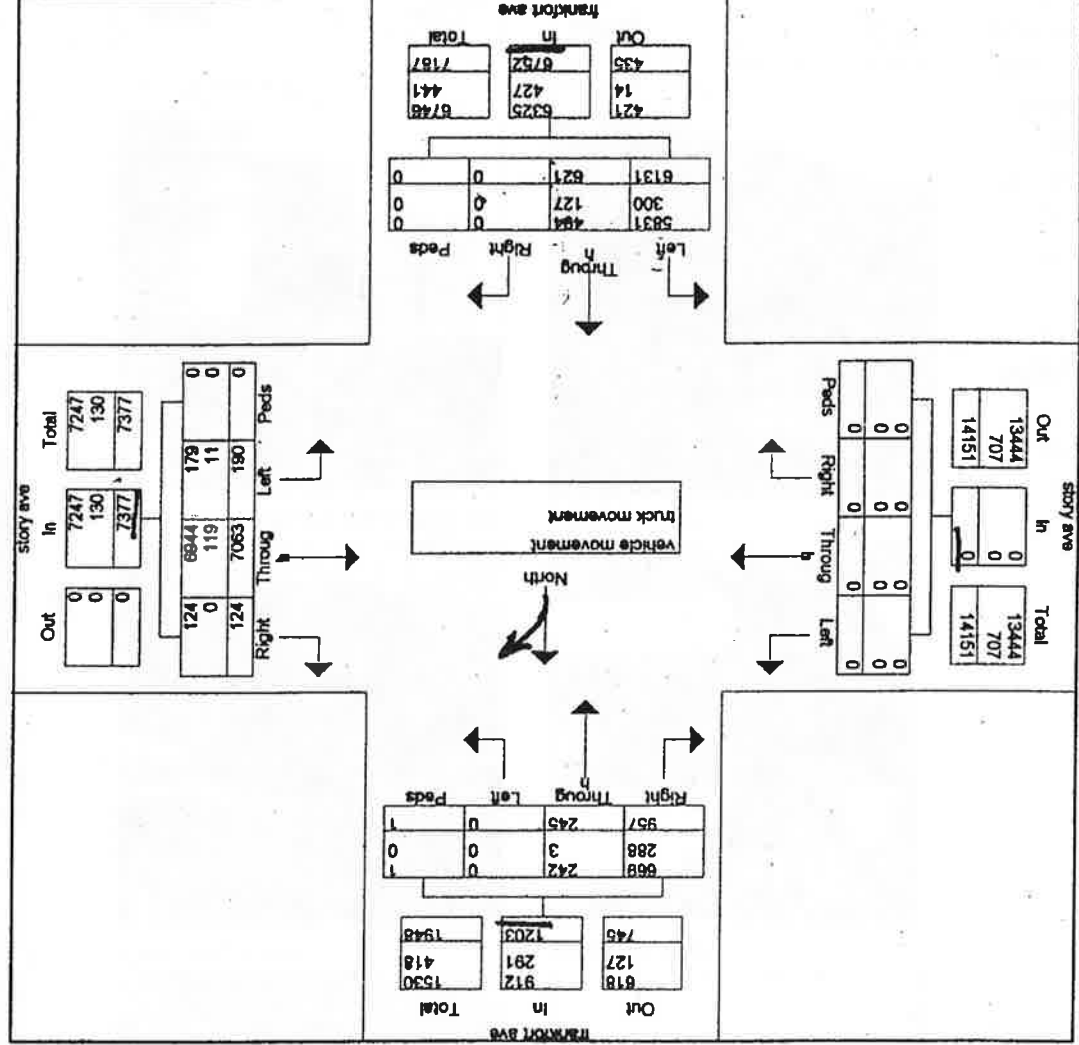
As work on early blocks begins, specific products and design schemes may be implemented for more detailed items such as: Business and residential address lettering, newspaper stands, community bulletin boards, possible continued use of banners, and bike rack design in stretches between shelters. Inviting craftsmen and women or Artists in the neighborhood to donate reduced cost commissions in this endeavor is strongly recommended.

The 'Heavier' Bus Shelter Design is suited for use at major stops such as Ewing Avenue at the Clifton / Crescent Hill intersection in St. Matthews, and possibly at Stitz Avenue in Crescent Hill, and either Mellwood Avenue or State Street in Clifton.

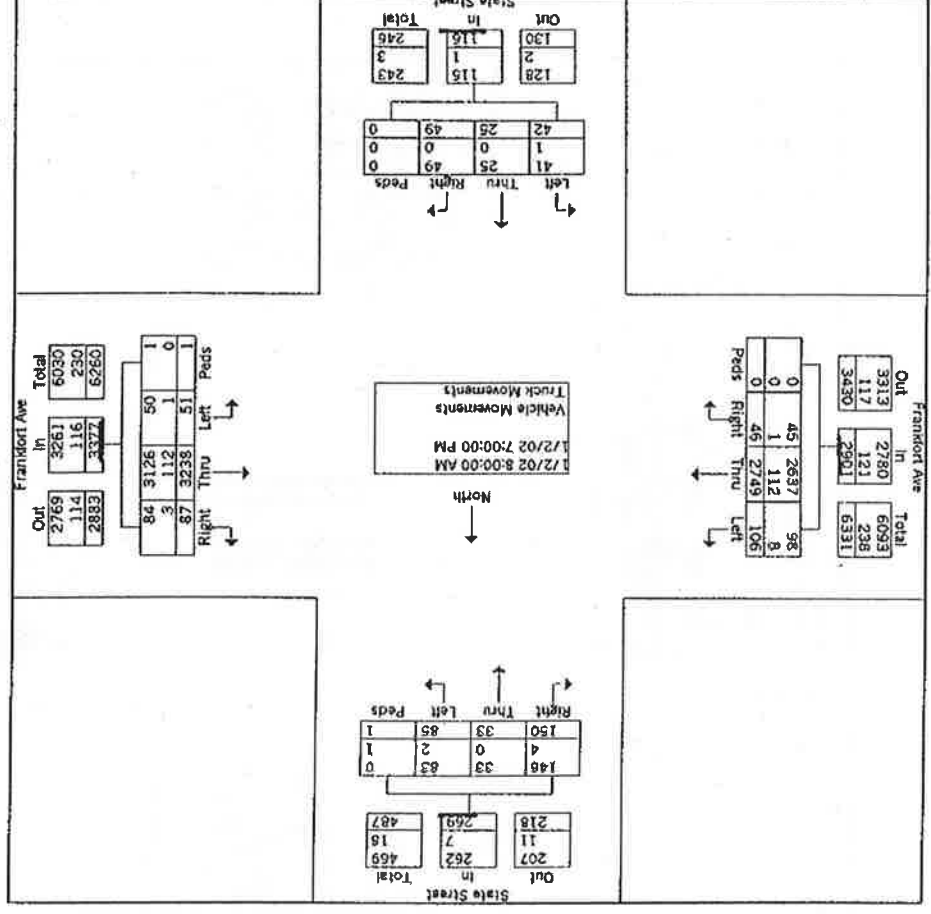
Story & Frankfort



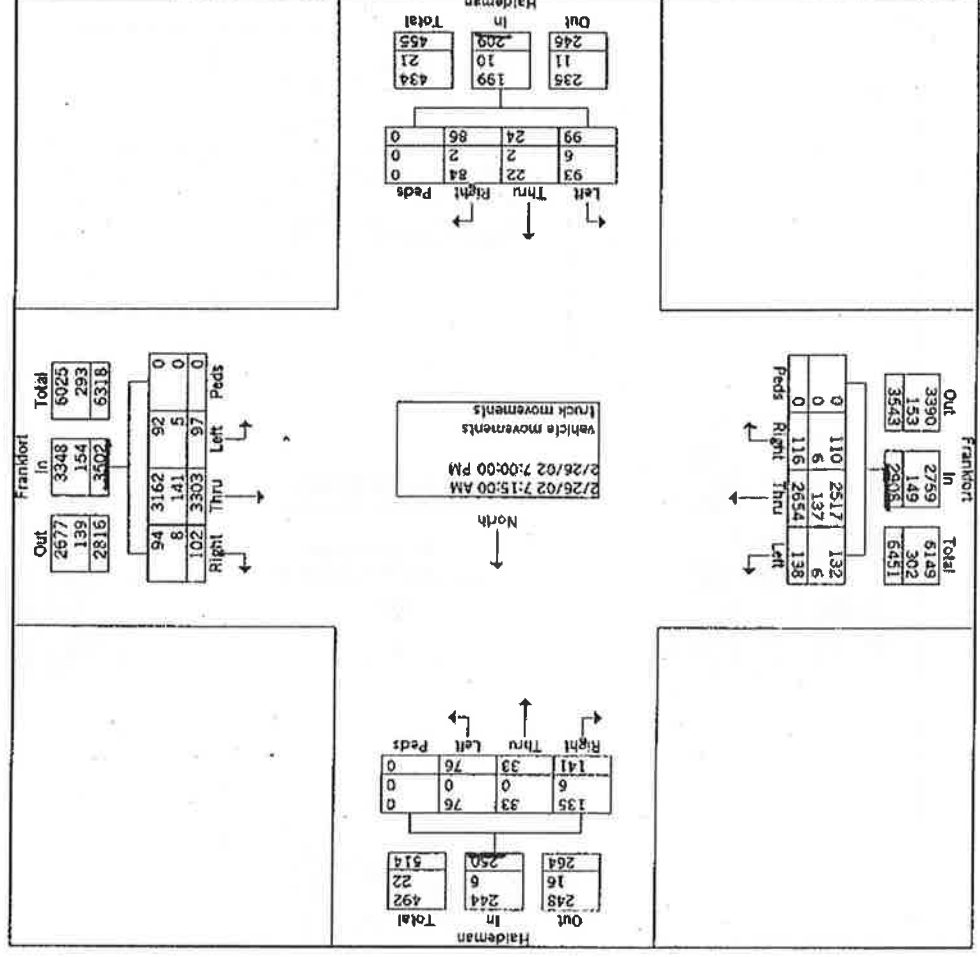
Melwood & Frankfort



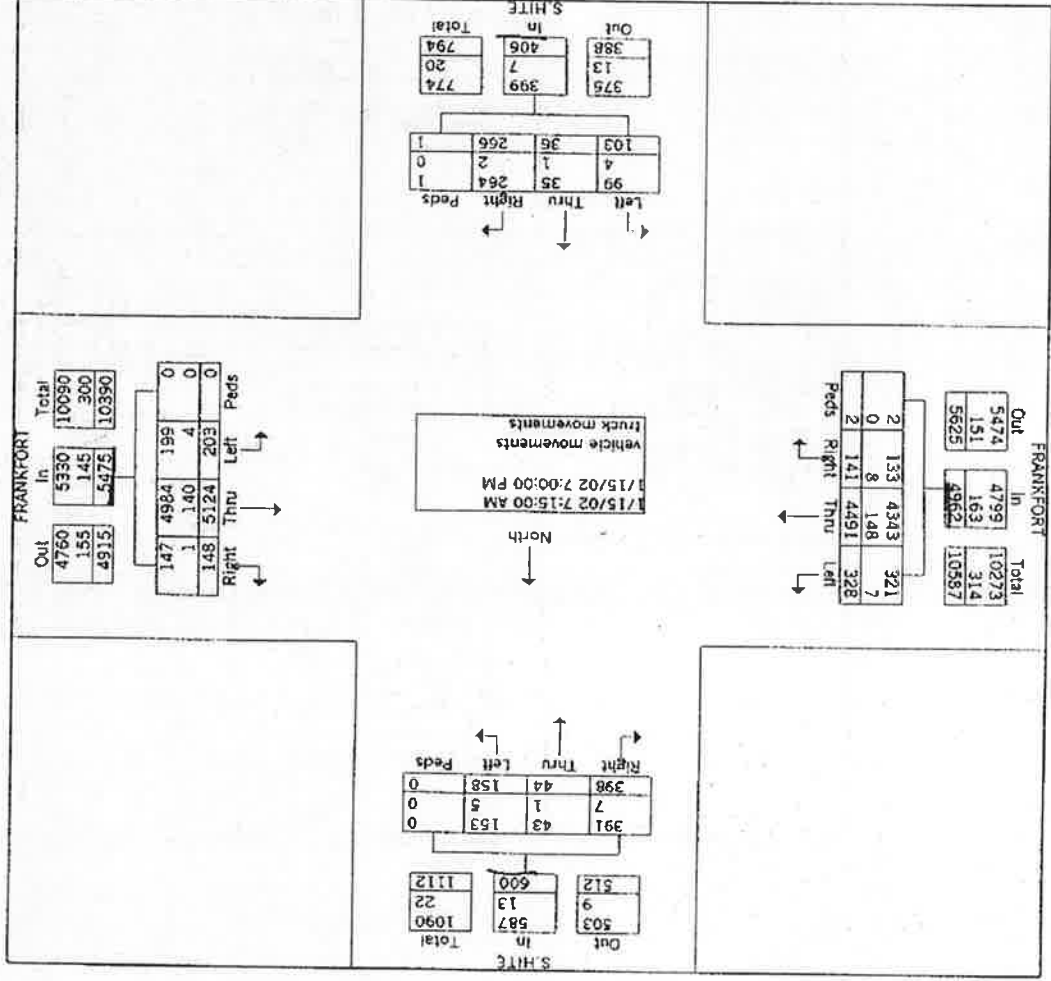
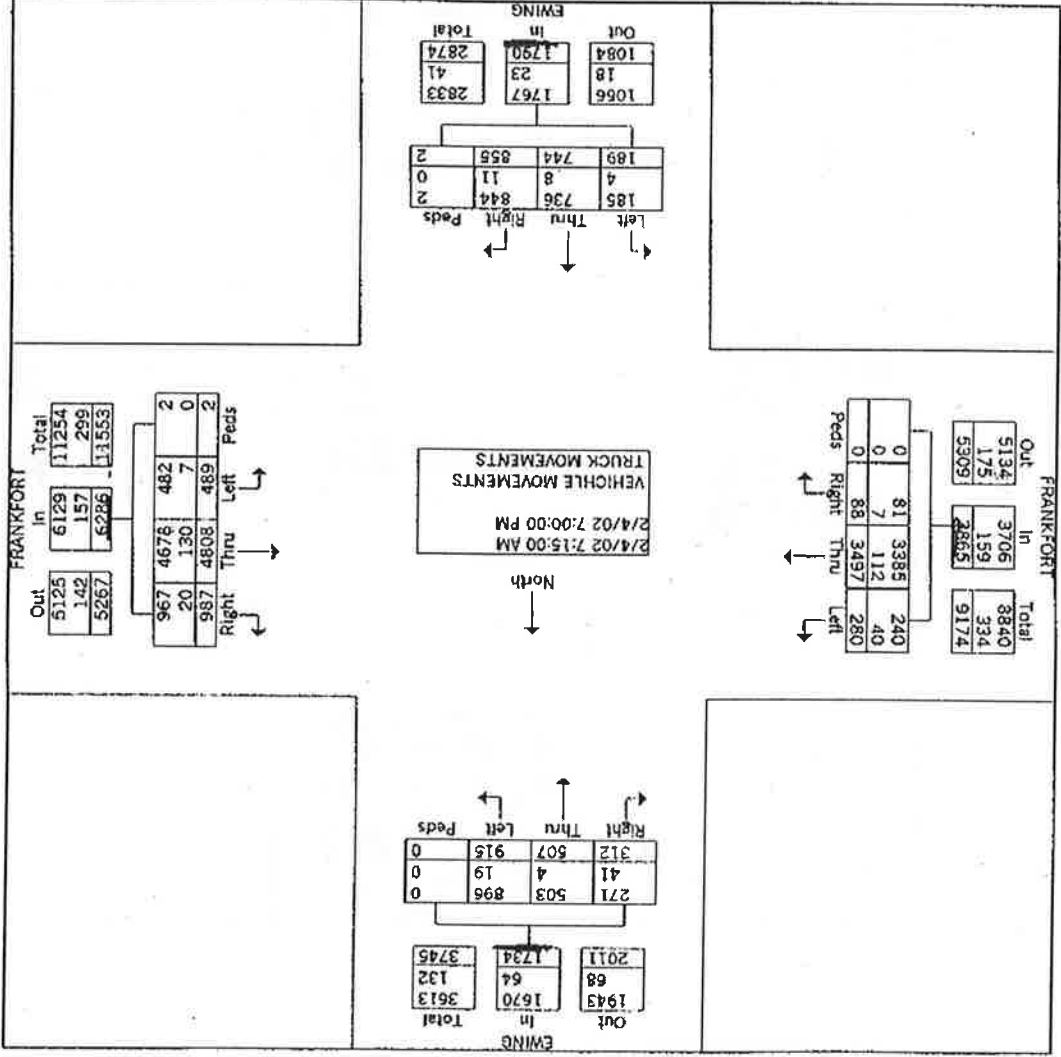
Traffic Engineering Counts



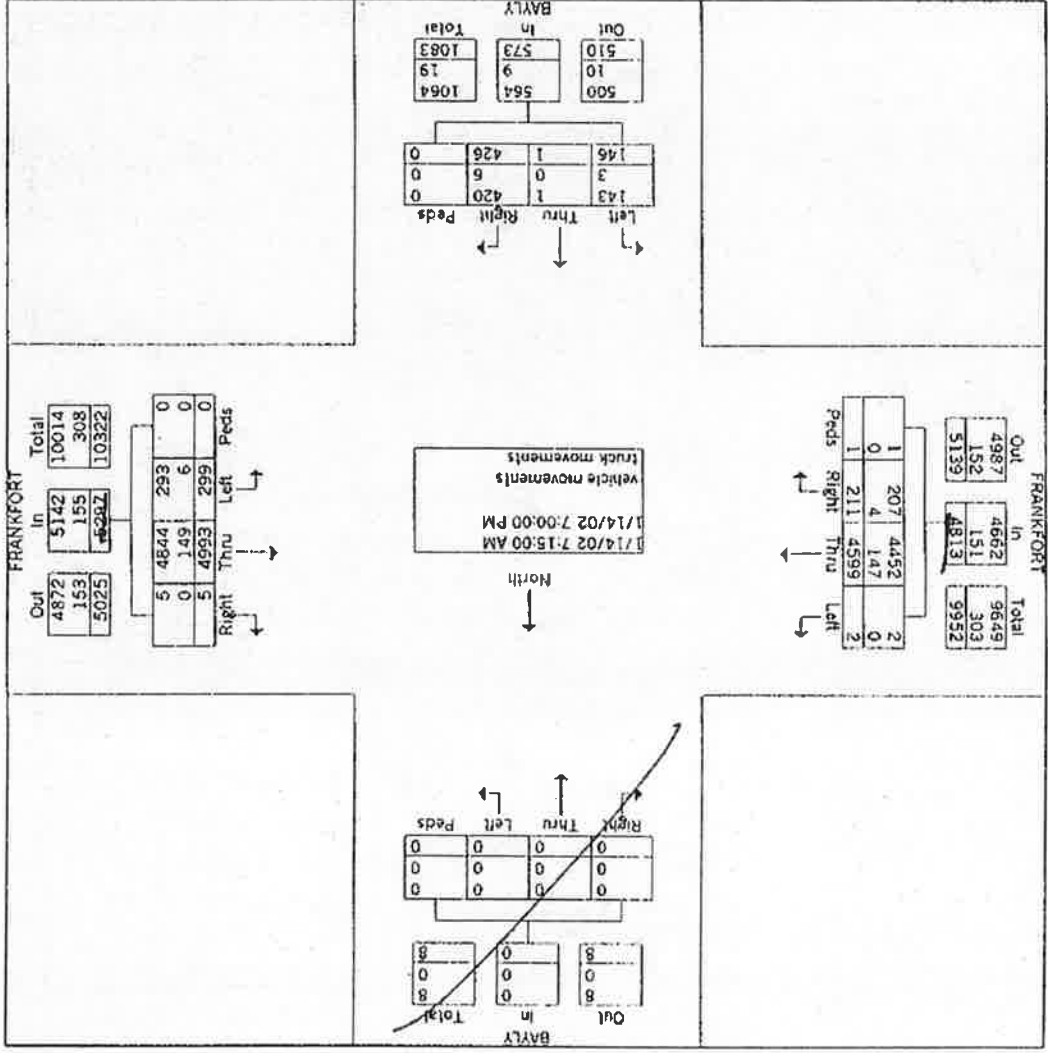
State & Frankfort



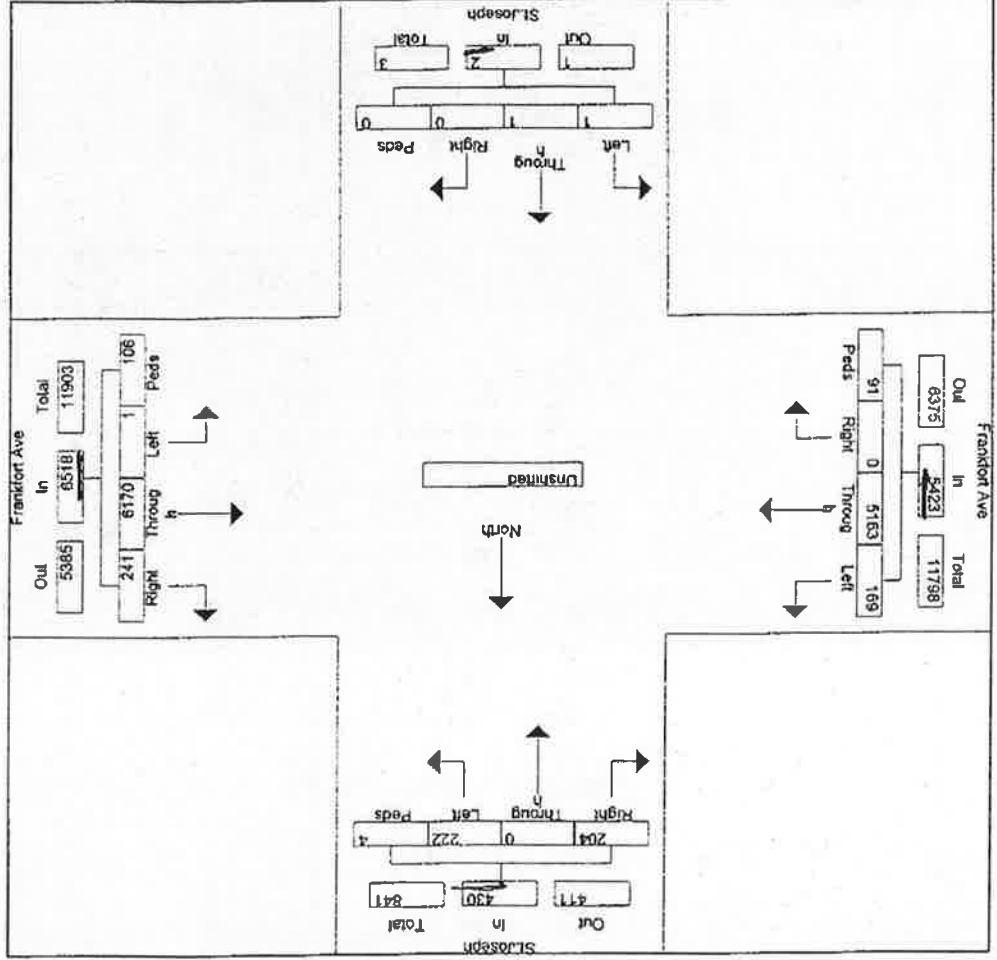
Halderman & Frankfort



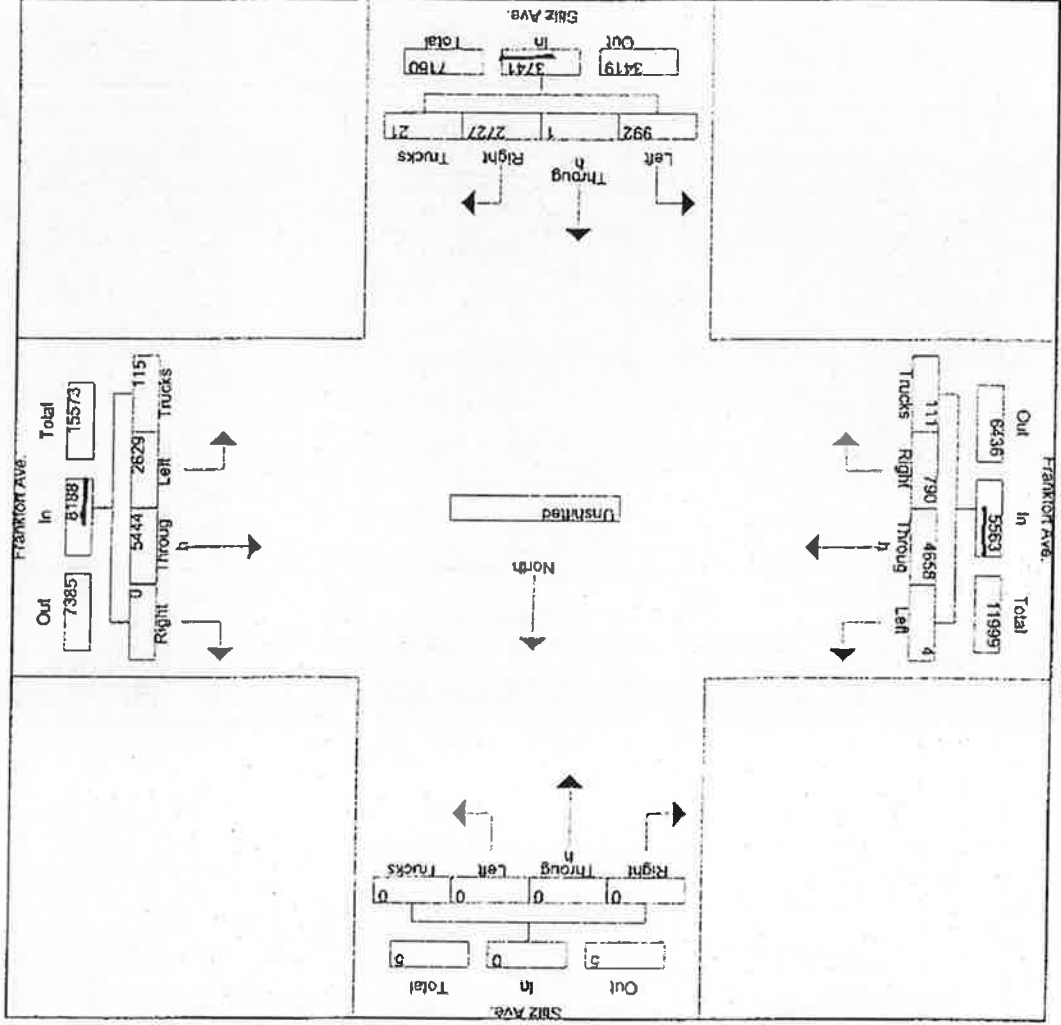
Bayly & Frankfort



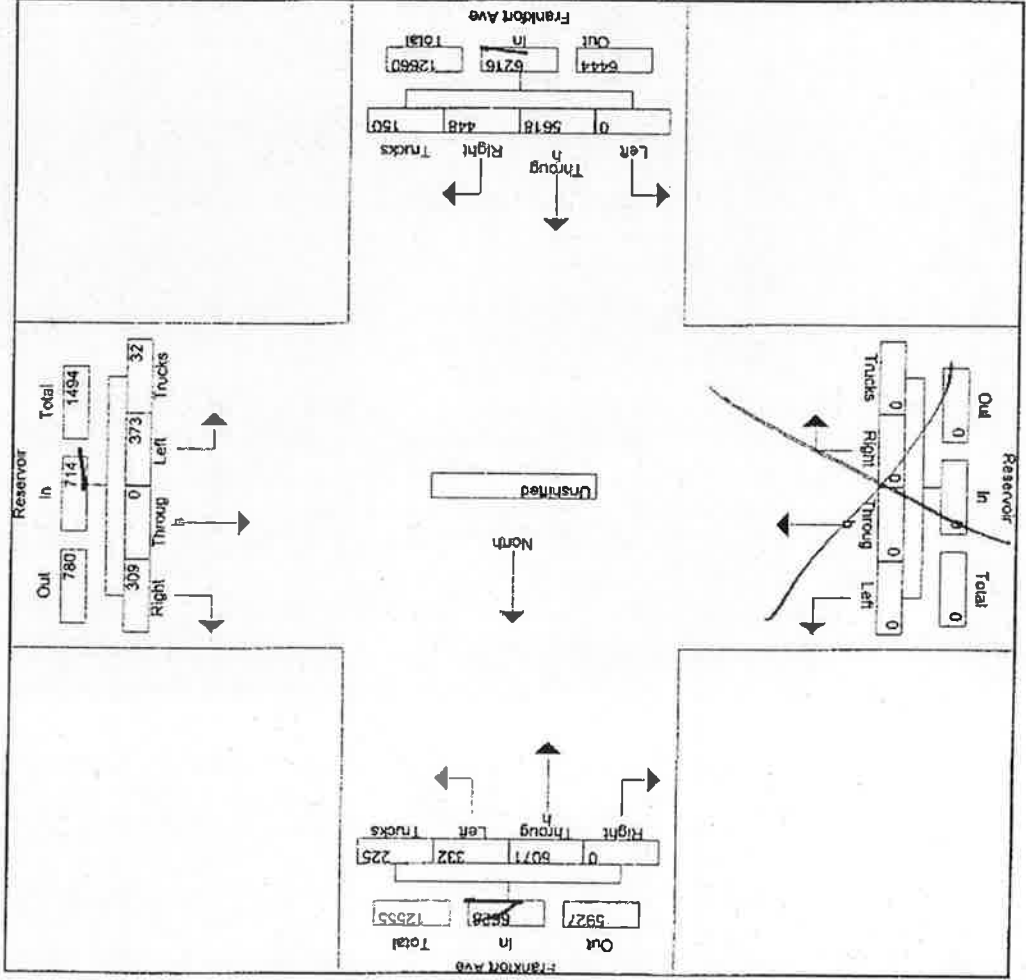
St. Joe's Driveway & Frankfort



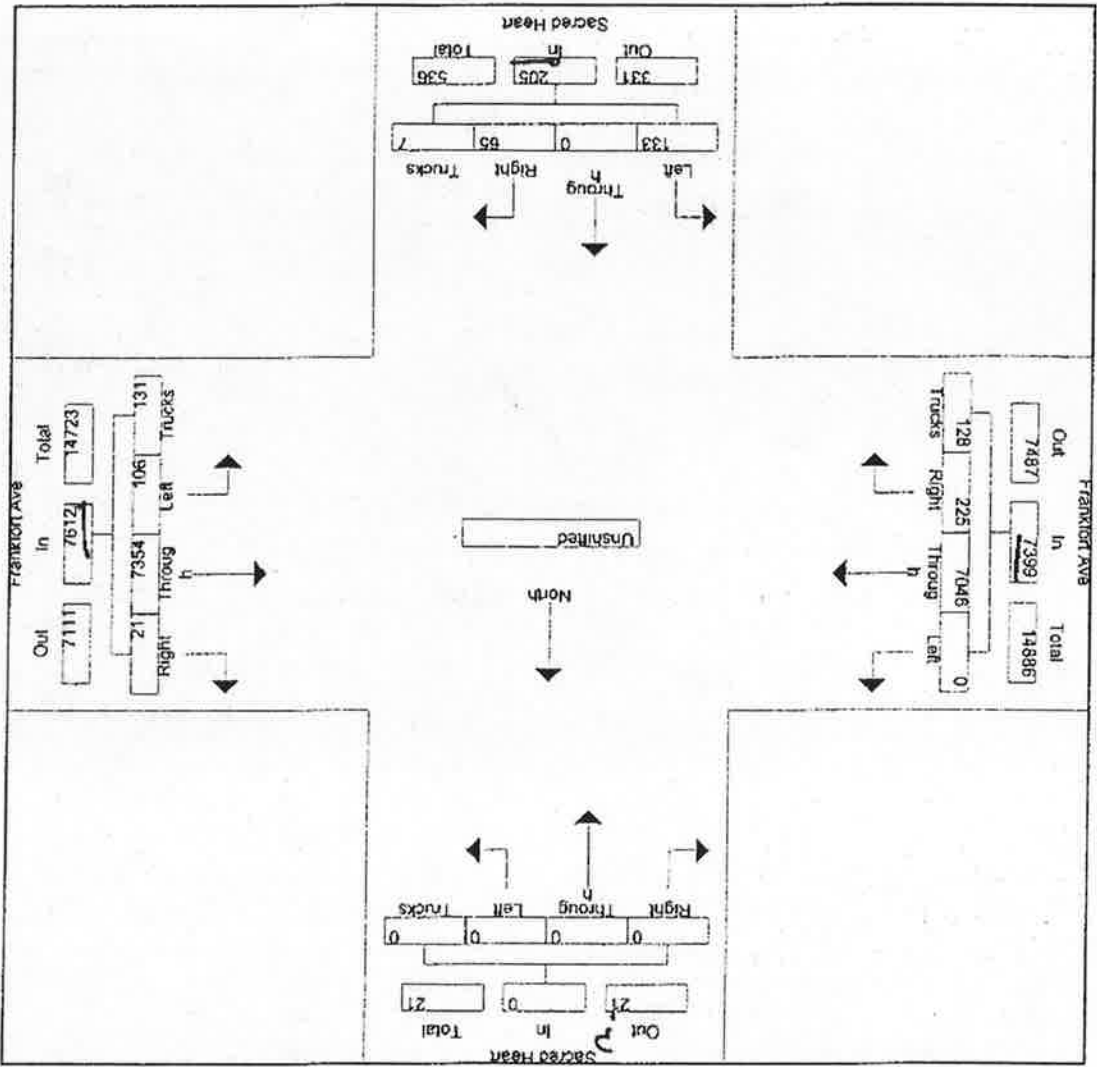
Stitz & Frankfort



Reservoir & Frankfort



Sacred Heart & Frankfort



APPENDIX D

CRIME REPORT DATA

NUMBER OF OFFENSES

BUTCHERTOWN:

FULTON STREET through MELLWOOD AVENUE 16 17

CLIFTON:

MELLWOOD AVENUE through STATE STREET 23 22

STATE STREET through CLIFTON AVENUE 8 19

CLIFTON AVENUE through EWING AVENUE 25 24

CRESCENT HILL:

EWING AVENUE through ST. JOSEPH'S ORPHANAGE 19 30

ST. JOSEPH'S through THE LOUISVILLE WATER CO. RESERVOIR 16 11

THE RESERVOIR through CHENOWETH LANE 20 19

TOTAL

127

142

2000

2001

DETECTABLE WARNINGS: Chapter 7: U.S. Detectable Warning Products" excerpted from the U.S. Access Board document: "Detectable Warnings: Synthesis,"

Chapter 7

U.S. Detectable Warning Products

Summary

This chapter includes information on detectable warning products that are produced in the U.S. Information in this chapter is based on research and telephone interviews conducted in late 1999 through April 2000.

Only products and tooling systems generally complying with ADAAG technical provisions for truncated dome detectable warnings are included.

This chapter covers the following topics:

Topic	Page
Spacing of truncated domes	114
Shape of truncated domes	116
Types of detectable warning products	117
Dimensional pavers	118
Thin tiles and sheet goods	119
On-site fabrication of truncated dome surfaces	120
Characteristics of detectable warning products	123
Detectable warning product matrix	125
Photographs of detectable warning products	126
Detectable warning manufacturers	132

Chapter contents

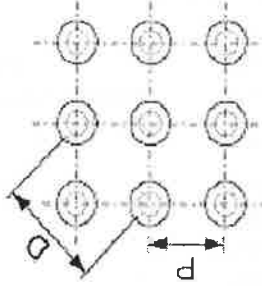
Spacing of truncated domes

Manufacturing standards

In complying with the *Americans with Disabilities Act Accessibility Guidelines* (ADAAG), manufacturers have adopted various dome configurations to accommodate existing industry-standard sizes of paving products

The ADAAG 4.29.2 (1991)

specification for a detectable warning surface is an array of truncated domes. (See the full specification at the beginning of Chapter 2.)



ADAAG includes no illustration of the truncated dome profile or of the dome pattern. It also does not specify where required dimensions are measured.

However, the Access Board issued *Detectable Warnings Bulletin #1* in 1993 to provide additional guidance. A figure in this bulletin shows spacing (2.35 in) measured diagonally.

Another figure shows the .9 in dome diameter applied to the base of the domes.

ADAAG technical specification

Brick pavers

Detectable warning brick pavers must conform to the relatively small 4 in x 8 in module to be compatible with the industry standard for flat surface pavers.

Four manufacturers have handled the truncated dome spacing in an identical manner:

- Adjacent spacing = 2.00 in
- Diagonal spacing = 2.82 in

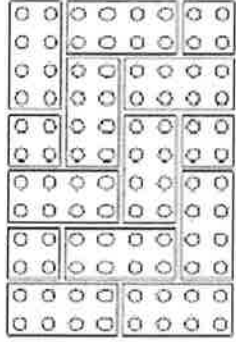


FIG. 7-2. HERRINGBONE BOND WITH DETECTABLE WARNING BRICK PAVERS. This is a slightly larger dome to dome spacing that is typically found for larger tiles.

Continued on next page

Shape of truncated domes

Truncated dome diameter
 There are two ways to conform to ADAAGs dome size specification: Generally U.S. manufacturers apply the required 0.9 in dimension at the truncated dome base.

Two products conform by applying the dimension to the flattened dome top.

Figure 7-6 illustrates how domes with different base diameters conform to ADAAG. The dome on the right has a base diameter of 1.25 in.



FIG. 7-6. APPLYING DOME DIMENSION GUIDELINES.

The ADAAG specification is open to a number of interpretations. In part, this explains why currently available detectable warning products vary considerably in appearance.



FIG. 7-7. FULL-SCALE CROSS SECTIONS OF TRUNCATED DOMES FROM VARIOUS PRODUCTS.

Manufacturers' response

Spacing of truncated domes, continued

Pattern repetition
 Most detectable warning products are configured so that repeating a single unit (tile, paver, or sheet) will result in a continuation of the ADAAG-specified pattern of truncated domes. A gap in pattern between adjacent tiles does not impair detectability (Benzen et al., 1993).

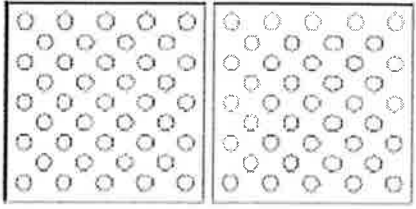


FIG. 7-3. TYPICAL 12"x12" TILES.

Complementary tile pairs
 One manufacturer (Crossville Ceramics) produces a detectable warning tile system consisting of two complementary tile pairs:

- Type A tile (rows of 3-2-3-2-3 domes)
- Type B tile (rows of 2-3-2-3-2 domes)

Type A tiles are used in conjunction with Type B tiles to produce an unbroken, repeating pattern.

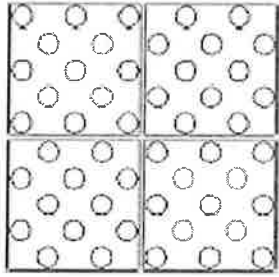


FIG. 7-4. COMBINATION OF 12 AND 13 DOME TILES.

Working with irregular shapes
 Fitting square modular pavers within the irregular shape of a radius curb line can be a challenge. Systems with field-applied truncated domes can accommodate to irregular surfaces and to irregular boundaries.

Figure 7-5 shows how detectable warning pavers can be splayed to match the radius of a street boundary.

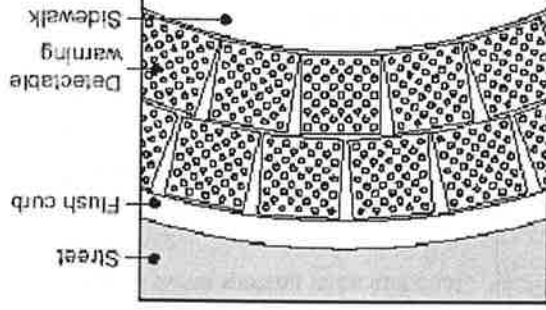


FIG. 7-5. SPAYED 12 IN TILES ON AN 8 FT TO 10 FT RADIUS.

Pattern repetition

Complementary tile pairs

Working with irregular shapes

Dimensional pavers

Definition

Dimensional pavers as discussed in this section include all products that are sufficiently thick to require that they be recessed into the platform, sidewalk, or curb ramp.

These products vary in thickness from 1/2 in to 3 or 4 in.

Paving stones manufactured with a truncated dome surface are available in natural granite (Cold Spring Granite) and a similar looking product made of reconstituted granite (Kyowa from Architectural Tile & Ceramic) which is pressed and fired at high temperature.

Crushed limestone and granite pavers are available (Hanover) as two inch thick pavers in nominal 12 in x 12 in, 24 in x 24 in, and 24 in x 36 in sizes.

Detectable warning products marketed as ceramic tiles and porcelain stone tiles (Summitville and Crossville) are designed to be used in conjunction with a wide range of modularized flooring tile systems.

Brick and concrete brick pavers that incorporate truncated domes are produced in nominal 4 in x 8 in sizes. This includes pavers measuring an actual 4 in x 8 in, and those that are 3 5/8 in x 7 5/8 in that include a mortar allowance. Thicknesses vary from 1/2 in to 2 1/4 in.

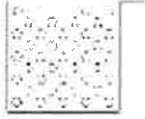
Detectable warning brick pavers (and concrete brick pavers) have a uniform spacing of truncated domes that allows the bricks to be laid in a running bond, stack bond, or herringbone pattern (See Fig. 7-2).

Large precast concrete units are available for detectable warning surfaces. One manufacturer (Steps Plus) makes a 3 ft square sidewalk unit, and a curb ramp unit with ramp and flared sides cast in concrete as a single unit.

Durability of domes has been reported as a problem with some concrete products (see Chapter 5).

One composite stone product (Hanover) mentioned above also markets detectable warning pavers up to 2 ft x 3 ft in dimension.

Natural stone, stone composites, & ceramic tile



Brick pavers



Large precast units



Types of detectable warning products

Summary

Detectable warning products are produced using a variety of manufacturing processes and materials.

- Natural stone and stone composites
 - Brick and concrete
 - Rigid polymer and flexible polyurethane sheets and tiles
 - Large precast assemblies
 - Tools to produce the warning surface in wet concrete
 - Surface applied domes used with membrane decking
- Each product type is discussed in this chapter. Manufacturers' names are included in parentheses.

This publication uses the term "detectable warning" to mean the walking surface consisting of truncated domes as specified ADAAG. A number of other textured surfaces are used for flooring and paving. These are not highly detectable and are not comparable in usability to truncated domes.

Persons selecting detectable warning products should rely on current specifications. Manufacturer's product literature may feature products that comply with out-of-date specifications such as ANSI A117.1-1986, which has been superseded by ANSI A117.1-1998.

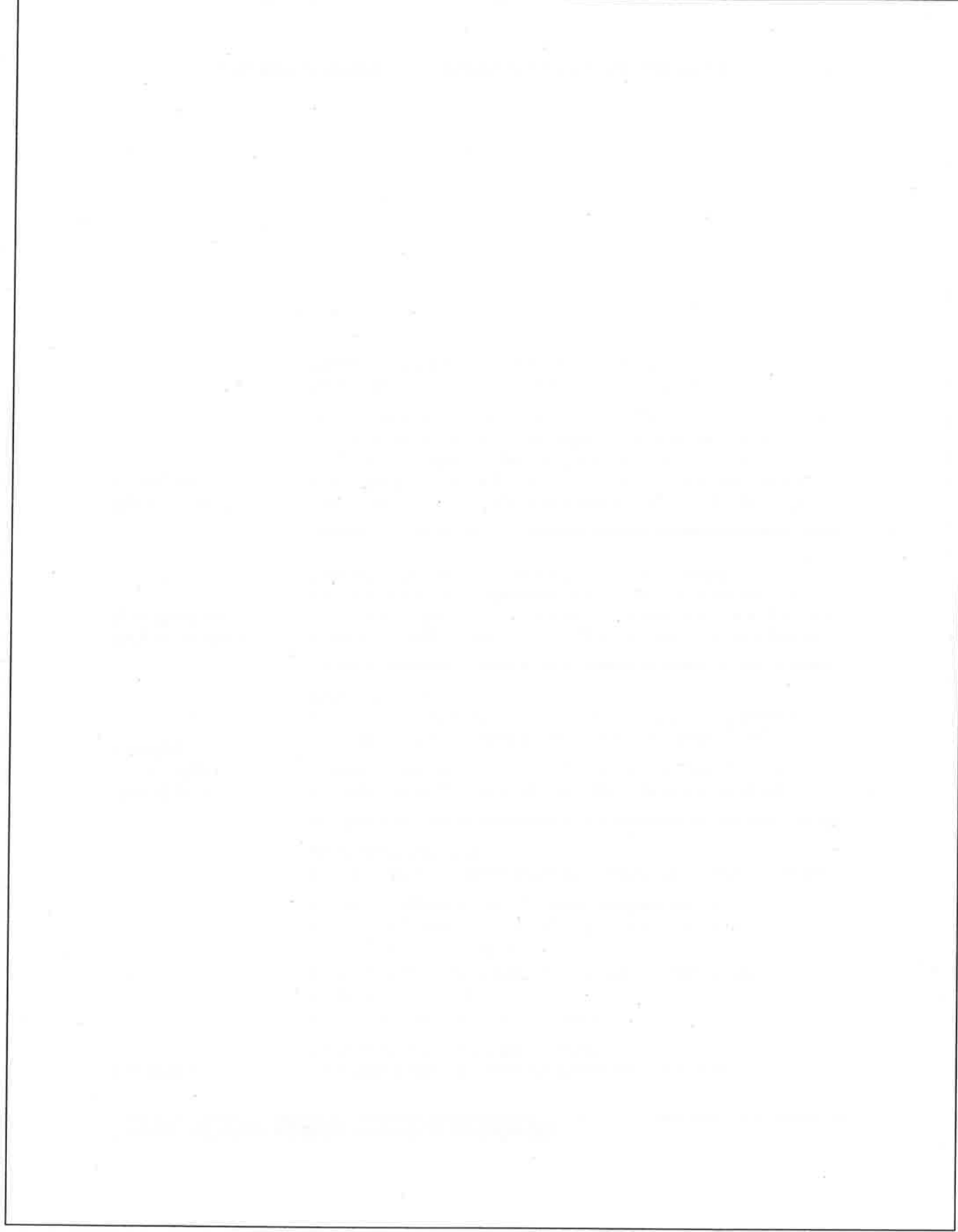
This chapter discusses detectable warning products available in the U.S. at the time of writing. The discussion is based on sales/technical literature and product samples, and is an introduction to the wide variety of material types that are offered. Far more options are available than can be suggested in this brief space.

All product specifications should be verified with their respective manufacturers for accuracy and current availability.

Use of term "detectable warning"

Rely on current specifications

Details should be verified



Thin tiles & sheet goods	Definition	Rigid & flexible product composition	Tile size	Installation
<p>Thin tiles and sheet goods are discussed in this section. This grouping includes those products that are a nominal 1/8 in thick. These products may be applied to the surface of a new or existing platform, sidewalk, or curb ramp. Often these products are available with a beveled edge to make a smoother transition to adjoining surfaces.</p>	<p>Two manufacturers (ADA Fabricators and Engineered Plastics) supply rigid tiles or panels of polymer composition. The material is described as:</p> <ul style="list-style-type: none"> • Glass and carbon reinforced copolymer composite, or • Vitrified Polymer Composite (VPC). <p>One supplier (Disability Devices Distributor) offers a flexible tile or mat described as:</p> <ul style="list-style-type: none"> • Flexible polyurethane. 	<p>Applied tiles or panels with truncated domes are available in a variety of sizes including: 12 in x 12 in; 24 in x 24 in; 24 in x 36 in; and 24 in x 48 in.</p> <p>These products are a nominal 1/8 in thickness (exclusive of the height of the truncated domes).</p> <p>Armor-Tile (Engineered Plastics) also has a second detectable warning product available with truncated domes of 0.9 in top diameter and 1.325 in base diameter. This distinctive product has dome spacing closely resembling that used on the 4 in x 8 in brick pavers.</p>	<p>Surface applied tiles are secured to the substrate with a structural adhesive system. Two products (Engineered Plastics and Disability Devices Distributor) are available with optional mechanical fasteners that function as anchors into the supporting surface.</p> <p>In addition, two of these manufacturers offer a thick composite shell product that can be filled with concrete and installed similar to a paving stone.</p>	<p>U.S. Access Board — Detectable Warnings: Synthesis</p>

On-site fabrication of truncated dome surfaces, continued

Individual truncated domes may be applied to an existing surface, often concrete or bituminous.

Surface-applied dome products

The domes of the Vanguard product (Tilco) may be applied to a surface as shown in Fig. 7-12. The underlying surface is not otherwise coated in this installation. Vanguard also offers a concrete micro-coating system which can be applied to the domes and immediately surrounding surface. This coating provides a high level of visual contrast in white or safety yellow.

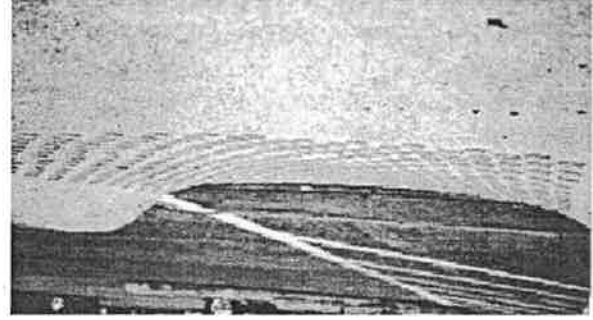


FIG. 7-12. SURFACE-APPLIED TRUNCATED DOMES SHOWN CONFORMING TO IRREGULAR SURFACE (VANGUARD / TILCO).

In one product application (COTE-L), a polyurethane coating is applied to the underlying surface. The coating includes rubber granules that give increased friction and resilience. Rubber truncated domes, which come attached to a carrier sheet, are pressed on top of the fresh polyurethane coating. The plastic carrier sheet is peeled off, and three additional coats of polyurethane coating are applied.

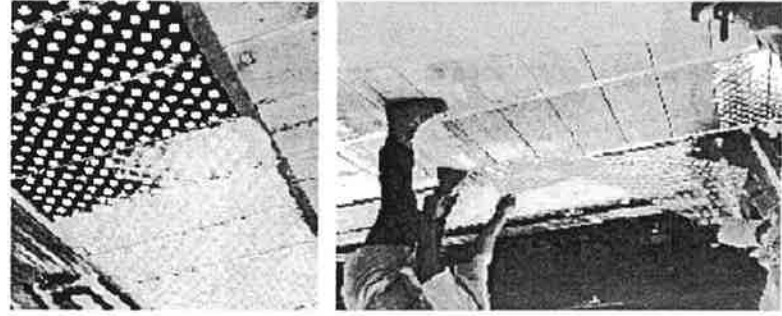


FIG. 7-13, (LEFT) TRUNCATED DOMES ARE ARRANGED ON A CARRIER SHEET (COTE-L). FIG. 7-14, (RIGHT) DOMES SHOWN ADHERED TO PLATFORM SURFACE. A SAFETY YELLOW POLYURETHANE COATING IS BEING APPLIED (COTE-L)

On-site fabrication of truncated dome surfaces, continued

Local concrete contractors use stamping tools to produce raised truncated domes on the surface of freshly poured concrete (Cobblecrete and Increte).

A high-quality surface can only be obtained with a skilled installer. See Chapter 5 for case study discussions of problems of casting truncated domes on a sloping surface. Quality control is necessary to prevent premature dome wear.

These on-site procedures for producing truncated domes are an extension of an existing technology which is widely used to impart textures to concrete surfaces to resemble slate, brick, flag-stone, and so forth.

Concrete may be integrally colored, or have mineral pigments broadcast over the surface, or both. The stamping tool may be rigid or flexible, and made of rubber or polyurethane. This tool is pressed into the concrete surface with sufficient force to create the pattern of truncated domes.

After the concrete surface has partially cured, a clear sealer is brushed on.

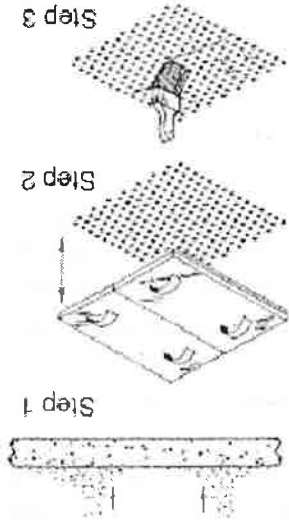


FIG. 7-10. ONE PROCEDURE FOR PRODUCING STAMPED CONCRETE (INCRETE SYSTEMS).

Stamped concrete

The surface-applied truncated dome products have a special advantage when a detectable warning surface is required on a flexible surface such as a wooden deck above grade.

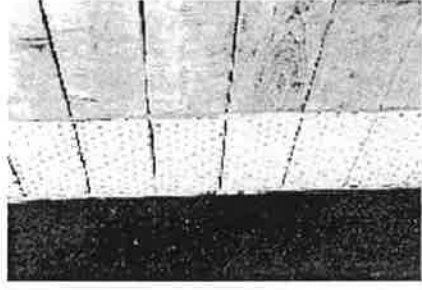


FIG. 7-11. TRUNCATED DOMES APPLIED TO A WOODEN RAILROAD PLATFORM (COTE-L).

Detectable warnings that are not on grade

Continued on next page

Characteristics of detectable warning products, continued

Sound on cane-contact & resiliency

Detectable warning surfaces may also differ in resiliency from the adjoining platform, street, or sidewalk surface. This aids detectability under foot and with a long cane. One product (COTE-L) uses rubber domes that are inherently resilient. Another resilient product is flexible polyurethane tile (Disability Devices Distributor). One product (Armor-Tile) has a series of raised bosses on the lower side of the tile. The purpose of these is to allow the tile to be supported without full adhesive coverage. This in turn produces a "hollow" sound that is detectable by a blind person using a long cane (Benzon & Myers, 1997).

Durability

The durability of detectable warning products, particularly of the raised truncated domes, is an important concern. Over the years, a number of jurisdictions have conducted laboratory and field tests of detectable warning products. In Chapter 3, refer to the section titled "Evaluation of detectable warning materials." For additional discussion, see the case studies in Chapter 5. Each case study covers durability and maintenance.

Characteristics of detectable warning products

Slip resistance

Products use several methods to improve traction and reduce potential pedestrian slipping incidents:

- Glass beads embedded in the domes and/or a surface coating
- Small raised bumps molded onto the field surface and dome surface of rigid polymer products
- A gritty applied traction coating
- Raised concentric circles on dome top

Color

Manufacturers offer detectable warning products in a wide range of standard and custom colors.

ADAAG requires that detectable warnings contrast with adjacent surfaces, but it does not specify a particular color. Research indicates that standardized safety yellow is especially visible, and it is strongly preferred by many people having low vision (Benzon et al., 1995; Hughes, 1995). A number of products are available in safety yellow. Some products are available in a more muted yellow or buff color.

A traditional brick red color can be obtained by using traditional brick detectable warning pavers; concrete pavers with integral red color, or stamped concrete with red mineral pigments applied to wet concrete. Traditional granite colors are available by using actual granite, or composite stone pavers that incorporate granite aggregates. In Atlanta, a polymer detectable warning material was matched to existing granite when this became an architectural requirement (see MARTA case study in Chapter 5).

Color is required by ADAAG to be integral to the product. Some products meet this requirement through the roller application of a heavy coating of pigmented pedestrian decking material. This should not be confused with surface painting.

Contrast

ADAAG (4.29.2) requires that the detectable warning surface contrast visually with adjoining surfaces, and the ADAAG Appendix to that document recommends that the materials should contrast by at least 70%.

Many products come in a wide range of colors from light grays and tans to dark red and blacks. Contrast at curb-ramps helps pedestrians with low vision recognize curb-ramps, and it helps in directing all pedestrians—especially those of short stature—toward the opposite corner.

Photographs of detectable warning products

Sample photography
 The photographs in this section are of product samples provided by the manufacturer. All products are shown at the same magnification. Some manufacturers have more detectable warning products than are illustrated here. Many of the products come in a variety of sizes and thicknesses. The photographs here may not reflect product size; the sample may be cut from a larger paver block or sheet.

Note that the products which require placing truncated domes on an existing walking surface substrate are shown applied to a backing material (plywood or sheet plastic) which is not part of the product.

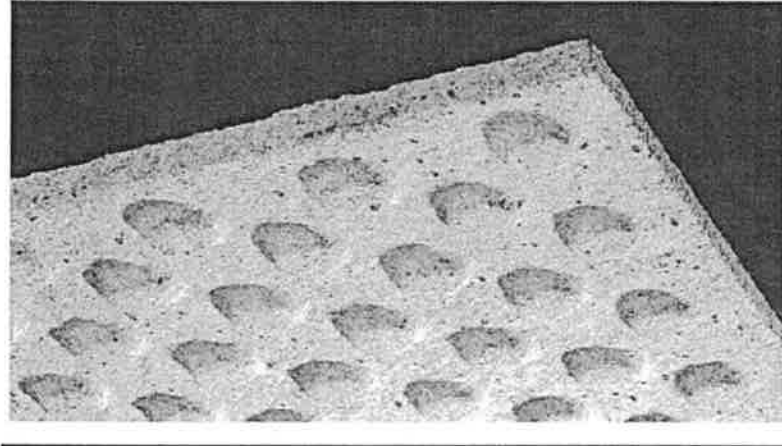


FIG. 7-15.
 COLD SPRING
 GRANITE COMPANY
 R & S TRUNCATED
 DOMES FINISH, IN
 SIERRA WHITE.

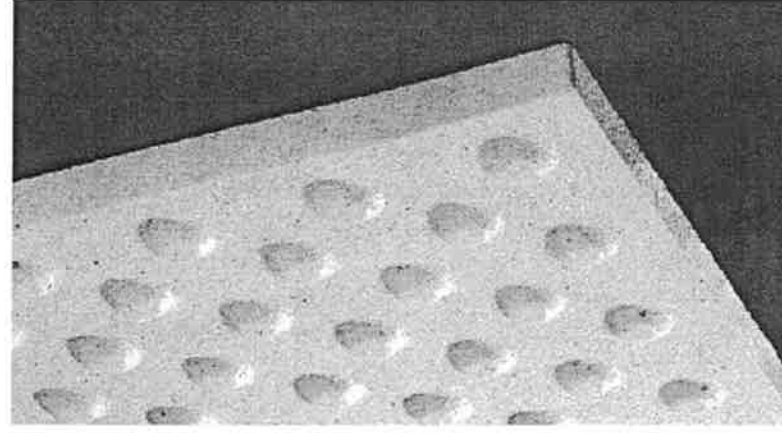


FIG. 7-16.
 ARCHITECTURAL TILE
 & GRANITE, INC.
 RYOWA PRESSED STONE
 PAVLR - BRAILLE
 SERIES, DOME TACTILE
 TYPE WITH DIAGONAL
 ROW.

Detectable warning product matrix

MANUFACTURER / SUPPLIER	MATERIAL TYPE / COLOR	DIMENSIONAL																							
		Cold Spring Granite	Arch. Tile & Granite	Hanover Arch. Prods.	Steps Plus	Summitville Tiles	Crossville Ceramics	Endicott Clay Prods.	Whitacre-Greer	Suprock Block	PAVESTONE	Castek / Transpo	THIN PAVERS	ADA Fabrications	Engineered Plastics	Disability Devices	APPLIED DOMES	Vanguard-Tilco	COTE-L	Strongwall	STAMPED IN PLACE	Cobblecrete	Increte Systems		
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
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Photographs of detectable warning products continued

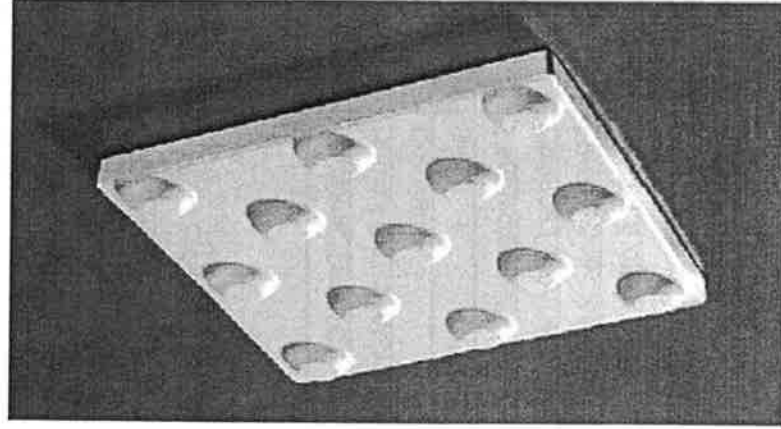


FIG. 7-20.
CROSSVILLE CERAMICS
COMPANY, L.P.
A301 TAC TILE.

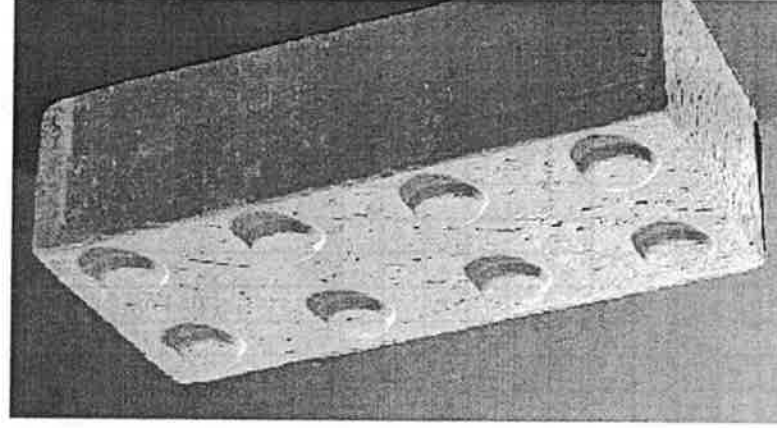


FIG. 7-21.
ENDICOTT CLAY
PRODUCTS CO.
HANDICAP DETECTABLE
WARNING PAVER.

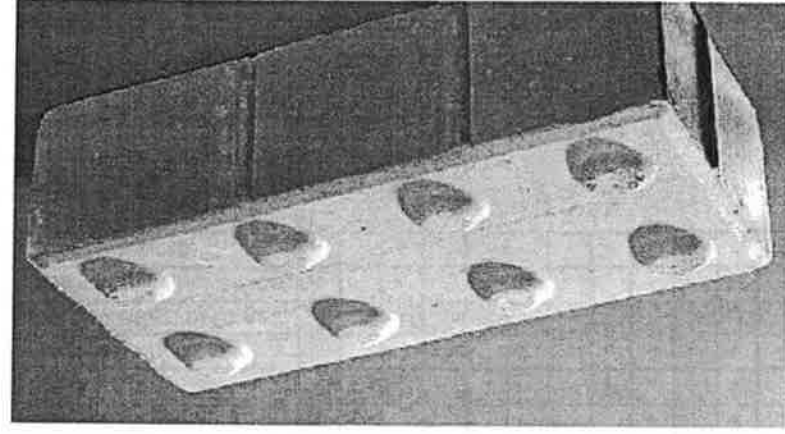


FIG. 7-22.
WHITACRE-GREER
FIREPROOFING CO.
DETECTABLE WARNING
PAVER.

Photographs of detectable warning products continued

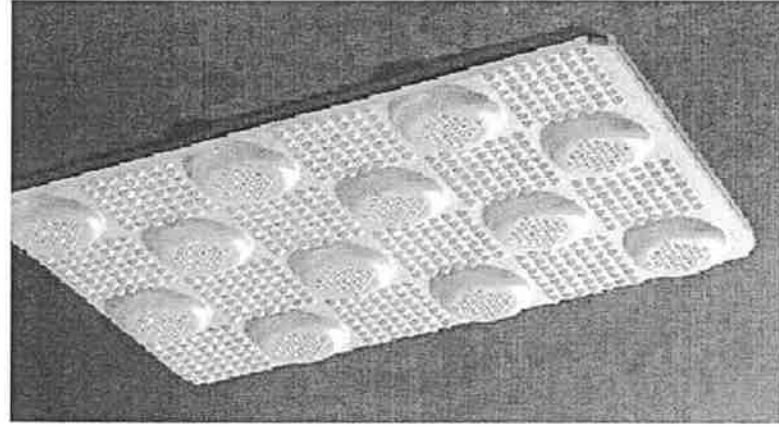


FIG. 7-26.
ENGINEERED
PLASTICS, INC.
ARMOR-TILE STANDARD
EPOXY POLYMER
COMPOSITE TILE.

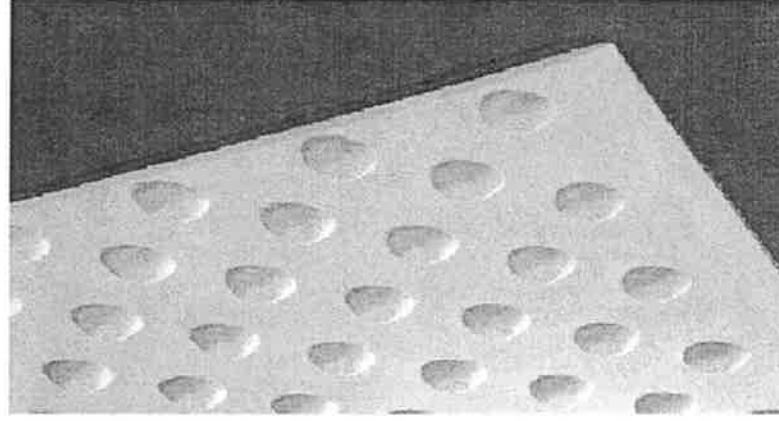


FIG. 7-27.
DISABILITY DEVICES
DISTRIBUTOR
POLYURETHANE
DETECTABLE WARNING
MAT™.

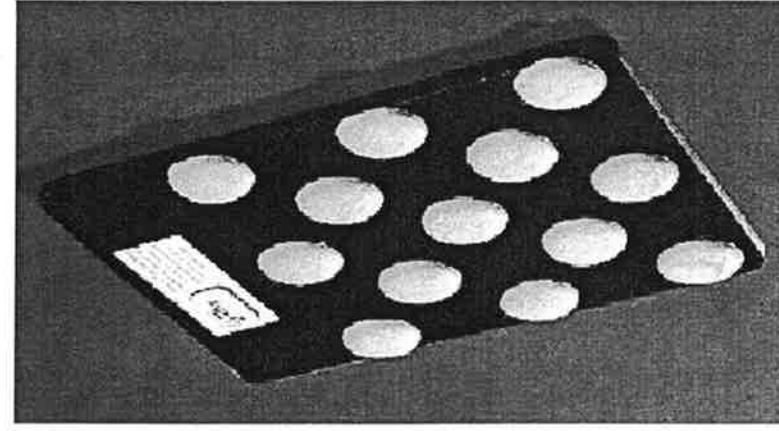


FIG. 7-28.
VANGUARD ADA
PRODUCTS OF AMERICA,
TILCO, INC.
APPLIED TRUNCATED
DOMES (SHOWN ON
BLACK SHEET ACRYLIC
BACKING FOR SAMPLE
ONLY).

130 U.S. Access Board — Detectable Warnings: Synthesis

Photographs of detectable warning products continued

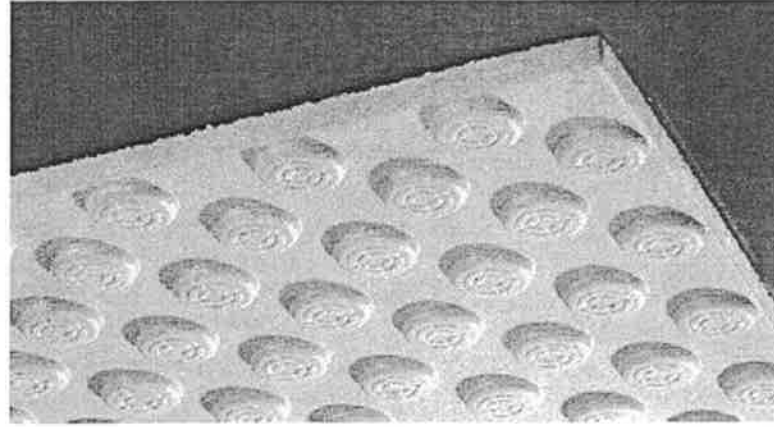


FIG. 7-23.
CASTEK, INC.
PRECAST POLYMER
CONCRETE TILE.

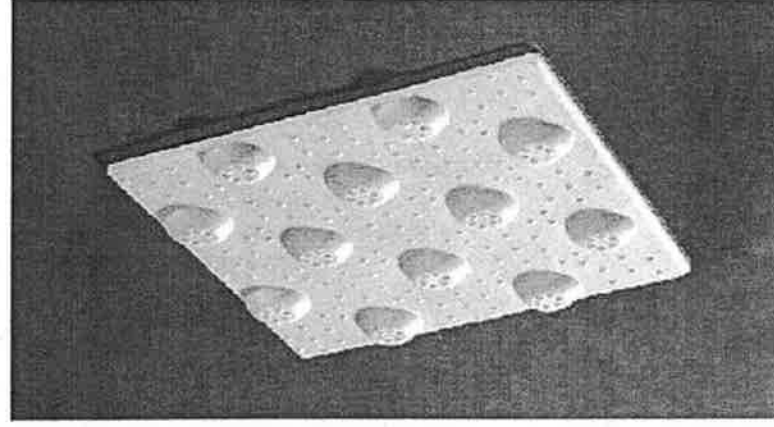


FIG. 7-24.
ADA
FABRICATORS, INC.
COPOLYMER COMPOSITE
TILE.

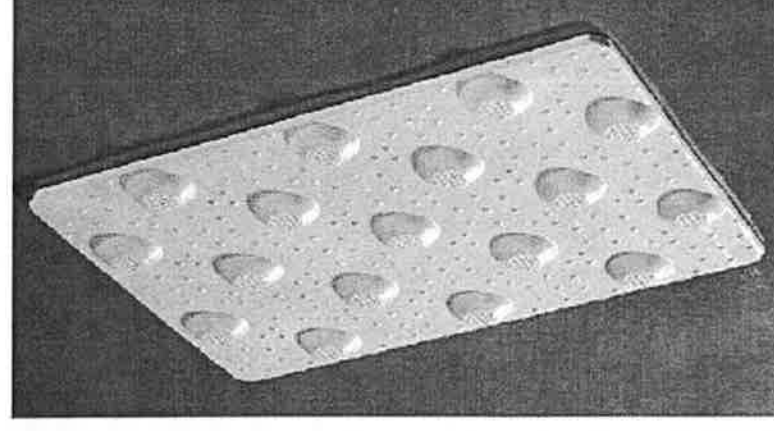


FIG. 7-25.
ENGINEERED
PLASTICS, INC.
ARMOR-TILE ADA
EPOXY POLYMER
COMPOSITE TILE.

129 U.S. Access Board — Detectable Warnings: Synthesis

Detectable warning manufacturers

The manufacturers listed below offer truncated dome detectable warning products.

ADA Fabricators, Inc.
P.O. Box 179, N. Billerica, MA 01862
[Copolymer composite tile]
Phone: (978) 262-9900, (800) 372-0519
Fax: (978) 262-1455

Architectural Tile and Granite, Inc.
P.O. Box 3542, Sunriver, OR 97707
[Kyowa Braille Series
reconstituted granite paver]
Phone / Fax: (541) 593-1790

Cashek Division, Transpo Industries, Inc.
20 Jones Street, New Rochelle, NY 10801
[Step-Safe® precast polymer concrete tile]
Phone: (800) 321-7870 or (914) 636-1000
Fax: (914) 636-1282

Cobblecrete International, Inc.
485 West 2000 South, Orem, UT 84058
[TurboMat (roller) for on-site texturing]
Phone: (800) 798-5791 or (801) 224-6662
Fax: (801) 225-1690
E-mail: cobbie@burgoyn.com
Web: www.cobblecrete.com

COTE-L Industries, Inc.
1542 Jefferson St., Teaneck, NJ 07666
[Salti-Trax™ applied rubber domes
& Duraback polyurethane coating]
Phone: (201) 836-0733
Fax: (201) 836-5220
E-mail: cotel@sprynet.com
Web: www.cotelind.com

Cold Spring Granite Company
202 South 3rd Ave.
Cold Spring, MN 56320
[Granite paver]
Phone: (320) 685-3621, (800) 328-7038
Fax: (320) 685-5490
Web: www.coldspringgranite.com

Crossville Ceramics Co., L.P.
P.O. Box 1168, Crossville, TN 38555
[Porcelain stone tile]
Phone: (931) 484-2110
Fax: (931) 484-8418
E-mail: crossc@crossville.com
Web: www.crossville-ceramics.com

Disability Devices Distributor
17420 Mount Hermon St. #C
Fountain Valley, CA 92708
[Polyurethane Detectable Warning Mat™]
Phone: (714) 437-9237, (800) 747-5651
Fax: (714) 437-9309

Endicott Clay Products Co.
P.O. Box 17, Fairbury, NE 68352
[Handicap Detectable Warning Paver, brick]
Phone: (402) 729-3315
Fax: (402) 729-5804
E-mail: endicott@endicott.com
Web: www.endicott.com

Engineered Plastics Inc.
Olympic Towers, 300 Pearl Street, Suite 200
Buffalo, NY 14202
[Armor-Tile epoxy polymer composite]
Phone: (800) 682-2525 or (716) 842-6039
Fax: (800) 769-4463
Web: www.enplastics.com

Continued on next page

Detectable warning manufacturers, continued

Hanover Architectural Products, Inc.
 240 Bender Rd., Hanover, PA 17331
 [Reconstituted pressed limestone & granite Detectable Warning Paver™]
 Phone: (717) 637-0500
 Fax: (717) 637-7145
 Web: www.hanoverpavers.com

Inco Chemical Supply Co., Inc.
 8509 Sunstate St., Tampa, FL 33634
 [Stamping tools for ADA Tactile Detectable Warning Systems]
 Phone: (800) 752-4626, (813) 886-8811
 Fax: (813) 886-0188
 Web: www.inco.com

Pavestone Company
 4835 LBJ Freeway, Suite 700
 Dallas, TX 75244
 [Concrete detectable warning paver]
 Phone: (800) 245-PAVE, (972) 404-0400
 Fax: (972) 404-9200
 E-mail: info@pavestone.com
 Web: www.pavestone.com

Steps Plus, Inc.
 6375 Thompson Rd., Syracuse, NY 13206
 [Precast reinforced concrete Detectable Warning Units]
 Phone: (315) 432-0885
 Fax: (315) 432-0612
 Web: www.steps-plus.com

Strongwall Industries, Inc.
 P.O. Box 201, Ridgewood, NJ 07451
 [Applied latex-modified mortar domes & traffic deck membrane system]
 Phone: (800) 535-0668 or (201) 445-4633
 Fax: (201) 447-2317
 Web: www.strongwall.com

Summitville Tiles, Inc.
 P.O. Box 73, Summitville, OH 43962
 [Tactile-Tread ceramic tile]
 Phone: (330) 223-1511
 Fax: (330) 223-1414
 Web: www.summitville.com

Superock Block Company Inc.
 3301 27th Avenue N, P O Box 5326
 Birmingham, AL 35207-0326
 [Compressed concrete StoneScape Detectable Warning Paver]
 Phone: (205) 324-8624
 Fax: (205) 324-8671
 http://egum@lighthousecement.com

Vanguard ADA Products of America Tico, Inc.
 20628 Broadway Avenue,
 Snohomish, WA 98296
 [Applied truncated domes]
 Phone: (800) 290-5700
 Fax: (360) 668-3335
 E-mail: ilicovngtr@aol.com
 Web: www.vngtrd.com

Whitacre-Greer Fireproofing Company
 1400 S. Mahoning Avenue,
 Alliance, OH 44601
 [Detectable warning ADA Brick]
 Phone: (800) WGPAPER, (330) 823-1610
 Fax: (330) 823-5502
 E-mail: info@wgpaver.com
 Web: www.wgpaver.com

The following companies do not currently offer ADA detectable warning products. Their names appear on earlier supplier lists:

Advantage Metal
 High Quality Tactile
 American Ocean
 Lanxide (SMC)
 Bomanite
 Rechau, Inc.
Carsonite (Pathfinder)
 Roppe Corp.
Daltile Corp.
 Specialty Concrete
 Synctech Molded
 Terra Clay Products
Hastings Pavement

AUDIBLE PEDESTRIAN SIGNALS

BROSCHURE / BROSCHYR PRISMA TS

ENGLISH / SVENSKA

PRISMA TS

Computerised acoustic pedestrian push button signal



GENERAL DESCRIPTION

The PRISMA TS is an advanced acoustic pedestrian signal with a clear traffic environment information indicator to assist blind/weak sighted and elderly pedestrians. The unique electronic front panel is a trouble-free solution for operating the signal. It uses the latest electronic technology and is manufactured to guarantee the highest level of security and long life. Easy installation and modular construction facilitates replacement and maintenance.

The rugged housing is made of strengthened anodized aluminium. Alternative mounting holes simplify replacement of old signals. The printed circuit is the highest quality to ensure reliable operation in a harsh environment. The electronics are fitted in a separate, inner aluminium profile and are covered with protective silicone. The cable is connected by a snap-on terminal.

The acoustic signal strength is microprocessor controlled and automatically adjusted to the ambient noise level within the range of 55 - 83 dBA. A choice of 10 individual sound characteristics enables separate sound to be used for different walking directions. The digitally recorded sounds are produced by a speaker and LEDs light and a "beep" is emitted.

The information for blind, weak sighted and elderly pedestrians is supplied by a number of braille symbols, that are slotted into the side of housing. They help the user to visualize the crossing, e.g. the symbols can show bicycle paths, car lanes, refuges, tram lanes and their relative position, see below. On the top of the signal is an enclosed arrow that indicates the walking direction. An optional vibro-tactile arrow is available.

Informationen till synskaddade förmedlas via ett antal olika valfritt symboler. På sidan av PRISMA TS finns det ett spår, där man placeras de korrekta symbolerna för en lätt baserövning av övergångssättet. En synskaddad kan på detta sätt tillgodogöra sig information om körsätt, cykelbanor och rättningslinjer som måste passeras för att komma över gatan. På överdelen av signalen sitter en riktningssymbol för att visa gångriktningen.

Informationen till synskaddade förmedlas via ett antal olika valfritt symboler. På sidan av PRISMA TS finns det ett spår, där man placeras de korrekta symbolerna för en lätt baserövning av övergångssättet. En synskaddad kan på detta sätt tillgodogöra sig information om körsätt, cykelbanor och rättningslinjer som måste passeras för att komma över gatan. På överdelen av signalen sitter en riktningssymbol för att visa gångriktningen.

OPTIONS

VIBRATOR
The direction indicator (top or bottom) is connected to a vibrator to help disabled pedestrians to know when to cross. The vibrator pulse can be set to follow pedestrian sound or green/walk so and only.

SPEECH MESSAGE
A message lasting 1-16 seconds can be digitally recorded and is automatically played when the front panel is operated and/or at green phase. This can be useful e.g. to give information of wheel street you are about to cross.

FAULT RELAY
Should an internal short circuit or program error occur or if the controller sends abnormal signals, this option will switch off the unit and send a message to the central supervising system.

RELIEF SYMBOLS/RELEFSYMBOLER	EXPLoded VIEW/SPRÅNGSKISS
------------------------------	---------------------------

STOPP/STOPP

VEHICULAR TRAFFIC / FORDONSTRAFIK
*(reversible /vändbar)

TRAMLINE / SPÅRUNDEN TRAFIK
*(reversible /vändbar)

BICYCLE PATH / CYKELBANA
*(reversible /vändbar)

BICYCLE PATH / CYKELBANA
*(reversible /vändbar)

REFUGE / REFUG

START / START

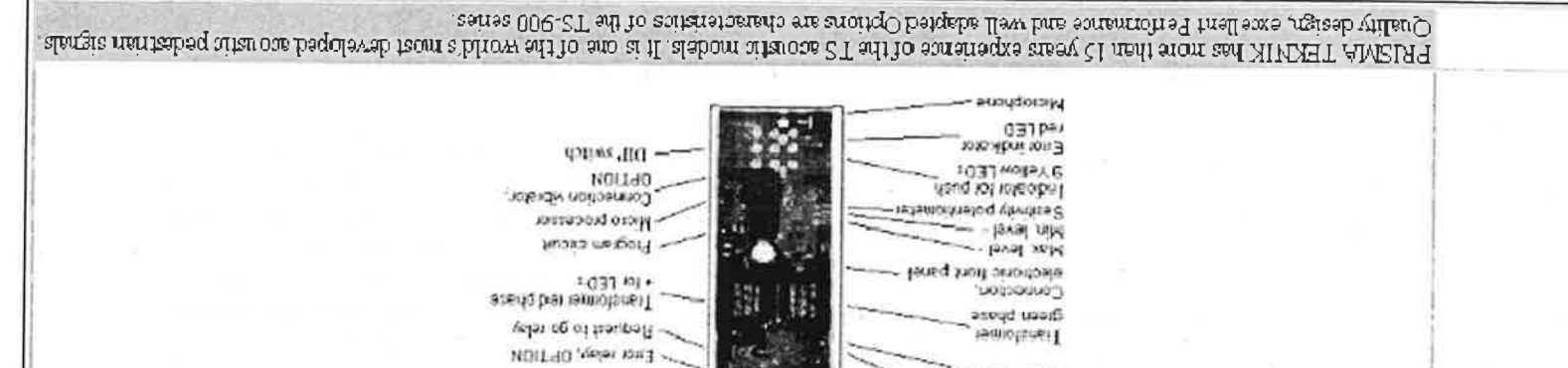
* The symbols shown always show from which direction the traffic is coming.

* Symbolerna skall alltid visas på det håll varifrån trafiken kommer.

PRISMA TS ELECTRONIC FRONT PANEL / PRISMA TS ELEKTRONISK TRYCKFRONT

The ENTIRE electronic front panel area acts as a pushbutton. This unique feature enables pedestrians of all ages to operate easily. Since there are no moving parts, vandalism is considerably reduced. If the front panel is distorted by i.e. a hammer blow, it recovers within seconds and is fully functional again. Furthermore, disruptions caused by traffic dust and varying weather conditions are eliminated. A distinct "beep" is emitted when operated and simultaneously the LEDs light.

HELA den elektroniska tryckfronten fungerar som tryckyta och följande i alla åldrar kan därför lätt använda. Tryckfronten ersätter den mekaniska tryckknappen och därmed reduceras skador p.g.a. vandalism. Can panelen utsläts för överkän, ex. ett hammarslag, nollställs den sig inom ett par sekunder och fungerar igen. Driftstörningar orsakade av trafiksmuts och skiftande väderleksförhållanden elimineras. Vid användning erhålls ett "kvitenspip", samtidigt som lysdioderna tänds.



As we enter the 21st century, the issues of Equal Access to Information and Freedom of Mobility for all people is at the forefront of everyone's needs and desires. In its quest to provide all people with Equal Access to Information at signalized intersections, Polara Engineering is introducing the Navigator APS. The Navigator is a highly reliable, vandal resistant Accessible Pedestrian Signal (APS) that provides a VIB-tactile ADA compliant push button with a raised directional arrow and audible sounds during the walk cycle.

What is it???

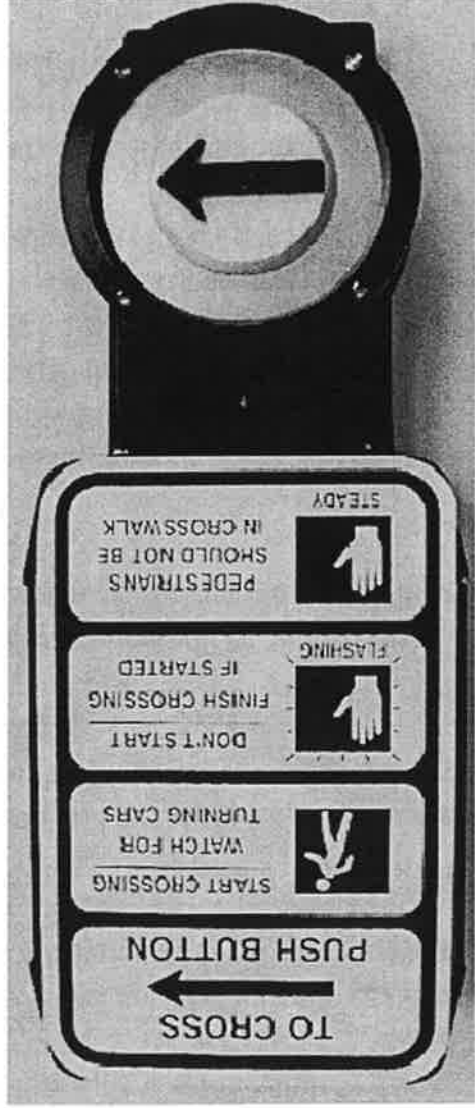
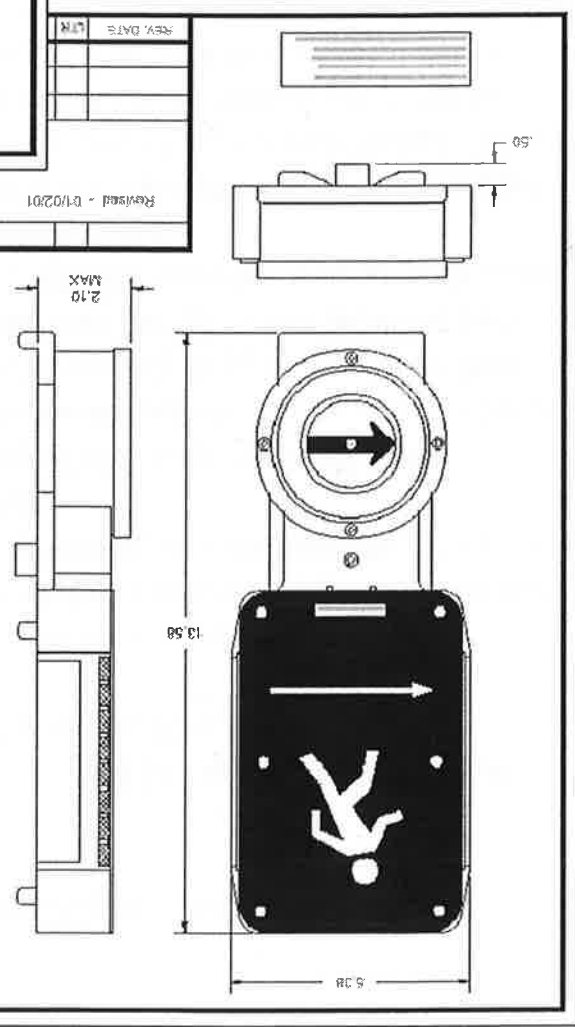


Image Description:
 The image shows the Navigator Accessible Pedestrian Signal (APS) with the option B plate marking. The option B plate is separated into four sections:
 • Top section: The words "To Cross, Push Button" are separated by a right arrow.
 • Top-Middle Section: An image of a walking pedestrian is displayed next to the words "Start Crossing" and "Watch For Turning Cars".
 • Bottom-Middle Section: An image of a flashing hand is displayed next to the words "Don't Start" and "Finish".
 • Bottom-Section: An image of a steady hand is displayed next to the words "Pedestrians Should Not Be In Crosswalk".
 Below the informative plate is where the led indicator and arrow push button are located.



REV. DATE LTR

4115 W. ARTESIA AVE., FULLERTON, CA. 92833

NSXZAND-X

DESCRIPTION

The Navigator is an Accessible Pedestrian Signal (APS) that provides both a vibrating arrow button and audible sounds during the walk interval. During the PED clearance and DON'T WALK interval a locating tone is available.

Sounds are emitted from the sides of the unit. The weather proof speaker is mounted behind a face plate with a window that is set on the side. A sunlight visible LED confirms the button has been pushed.

System includes: Frame with Option "A" sign, ADA compliant push button, mounting hardware, and control unit with the following field selectable options:
 Locating tone, extended Push activation, an Audible "CUCKOO" or "CHIRP", or WALK SIGN IS ON" voice message during the walk cycle, selectable times for duration of walk cycle sound, and fixed or automatic volume adjustment of all sounds.
 Under automatic adjustment the volume of the locating tone and audible sounds automatically adjust in relation to ambient noise levels.

Additional options available include:
 - Voice on Location Custom Messages
 - Special Voice Messages or Sounds during Walk Cycle
 - Baffle on Face Plate
 - Option B Plate Marking or custom marking
 A special order form must be filed out if any of the options are desired.
 X-All end of part number specifies Hexma color:
 -G = Green, -B = Black, -Y = Yellow

CONTROL UNIT

The control unit mounts inside road pedestal or outside the pedestal in a separate enclosure. One control unit is required for each Navigator Push Button Station. The control unit is powered from 120 VAC supplied by the WALK and DON'T WALK wires in the pedestal.

SPECIFICATIONS

POWER SUPPLIED TO VIBRATOR: 15 VDC pulsed
 Operates during walk interval only.
 CONFLICT DETECT: WALK indication is ignored in the event of a WALK/DON'T WALK conflict.
 AUDIO AMPLIFIER POWER OUTPUT: 10 W RMS into 8 W
 VOLUME CONTROL: Chorus driving potentiometer for overall adjustment.
 Separate control for Locals tone.
 VOLUME CONTROL/ADJUSTMENT RANGE: 28 dB MAX
 MICROPHONE FOR AMBIENT NOISE: Approximate frequency range: 170 Hz to 2.3 kHz
 PED PUSH BUTTON INTERFACED: Approx. 12 to 48 V A.C.D.C imposed by connection to push button in parallel with existing traffic signal controller.

LED OPERATION: The LED lights when button is pushed. The LED remains lit until the next walk phase.
 BUTTON TONE: A brief "tick" confirms each button push.
 DIP SWITCH SELECTABLE OPTIONS: Chirp, Cuckoo, Walk Message; selectable walk sound duration, fixed or auto volume of local tone; Locating Message if available, Extended Push or triggering; Locating tone; Audible Locating Tone; 850 Hz plus harmonic; 0.1 second duration; 1 second interval.
 Audible Chirp Sound: From 2700 Hz to 1700 Hz.
 2 second duration; 1 second interval; on only during walk intervals.
 Audible Cuckoo Sound: 1250 Hz and 1000 Hz.
 3 second duration; 1.8 second interval; on only during walk interval.

REV. DATE LTR

4115 W. ARTESIA AVE., FULLERTON, CA. 92833

NSXZAND-X

NAVIGATOR SPECIFICATION

PED POLE UNIT

VIBRATOR POWER: 16 VDC pulsed
 SPEAKER: 8 W 16 W MAX, weather proof
 TEMPERATURE RANGE: -40°C to +155°C
 PUSH BUTTON, ADA compliant, connects to control unit in parallel with traffic signal controller connection.
 LED: Sunlight visible, red.
 CONSTRUCTION:
 FRAME: Cast aluminum, powder coated
 FACE PLATE: Aluminum, powder coated, ink marking
 ARROW PUSH BUTTON: Aluminum, hand anodized, powder coated
 PLATE MARKING OPTIONS:

TO CROSS
 START CROSSING
 WATCH FOR TURNING CARS
 PUSH BUTTON

STANDARD OPTION A

OPTION B

FACE PLATE MARKING OPTIONS

TO CROSS
 START CROSSING
 WATCH FOR TURNING CARS
 PUSH BUTTON

NAVIGATOR

NSXZAND-X

REMOTE INFRARED AUDIBLE SIGNAGE (RIAS)

Excerpted From:

Building a True Community
Final Report

Public Rights-of-Way Access Advisory Committee

U.S. Architectural & Transportation Barriers Compliance

Board

January 10, 2001

PART III: RECOMMENDED STANDARDS, SCOPING,
AND TECHNICAL PROVISIONS

X02.3.8.8 Audible Signs.

(A) General. Where there are audible signs, a visual equivalent shall be provided.

(B) Requirements for Remote Infrared Audible Sign (RIAS) Receivers.

(1) Where personal receivers are used to make information on signs accessible to persons who are blind or who have print disabilities, basic speech messages shall

be frequency modulated at 25 kHz (+/- 10 percent deviation), and shall have an infrared wavelength from 850 to 950 nanometer (nm). (2) Receiver shall produce a 12 decibel (dB) signal-plus-noise ration with a kHz modulation tone at +/- 25 kHz deviation of the 25 kHz sub carrier at an optical power density of 26 Pico watts per square millimeter measured as the receiver photosensor aperture.

(3) The audio output from an internal speaker shall be at 75 dB(A) minimum at 18 inches with a maximum of 10 percent distortion.

(4) The receiver photosensor aperture shall be 80 degrees in acceptance angle.

(5) The receiver shall be designed for a high dynamic range and capable of operating in full-sun background illumination.

(6) Capture of the receiver by the stronger of two signals in thereceiver field of view requires a received power ratio on the order of 20dB for negligible interference; adjacent transmitter frequency tolerance of 50 Hz to 100Hz

improves the intelligibility of interfering signals. **Advisory:** Transit stations and platforms are routinely used by persons who are blind. Tactile signs do not necessarily help persons who are blind to locate station entrances and exits, fare gates, fare machines, stairs and escalators, platforms, and other amenities, because tactile signs cannot be located consistently enough

for persons who are blind to find them efficiently. Remote infrared audible signs are suggested as a wayfinding system because, like vision, they enable users to scan the environment (using a personal receiver) and "read messages" from a distance. They are able to provide directional and informational messages in a way that enables persons who are blind to travel as independently as persons who can read print signs. to ensure simultaneous systems operations without disruption.

Discussion:

Remote infrared audible signs (RIAS) have been found to be a particularly effective means to make wayfinding information accessible to persons who are blind or who have print disabilities. Many transmission media are potentially available for use in communicating wayfinding information to people with print-reading disabilities (e.g., blindness, low vision, dyslexia, and mental retardation). A key concern at this stage of technology development is the possibility of blocking development of new technologies by inadvertently limiting compliance to existing technologies.

Discussion:

Currently there is a need to provide a uniform protocol for communication of information by RIAs so that:

(1) Users will not be required to carry more than one receiver (one for each wayfinding application) to acquire basic wayfinding information;

(2) Users will be able to use the same receiver in any location (within or between cities) so that the wayfinding environment is "seamless";

(3) Manufacturers will be able to design basic functionality around a single communication protocol. Additional enhancements would be permitted.

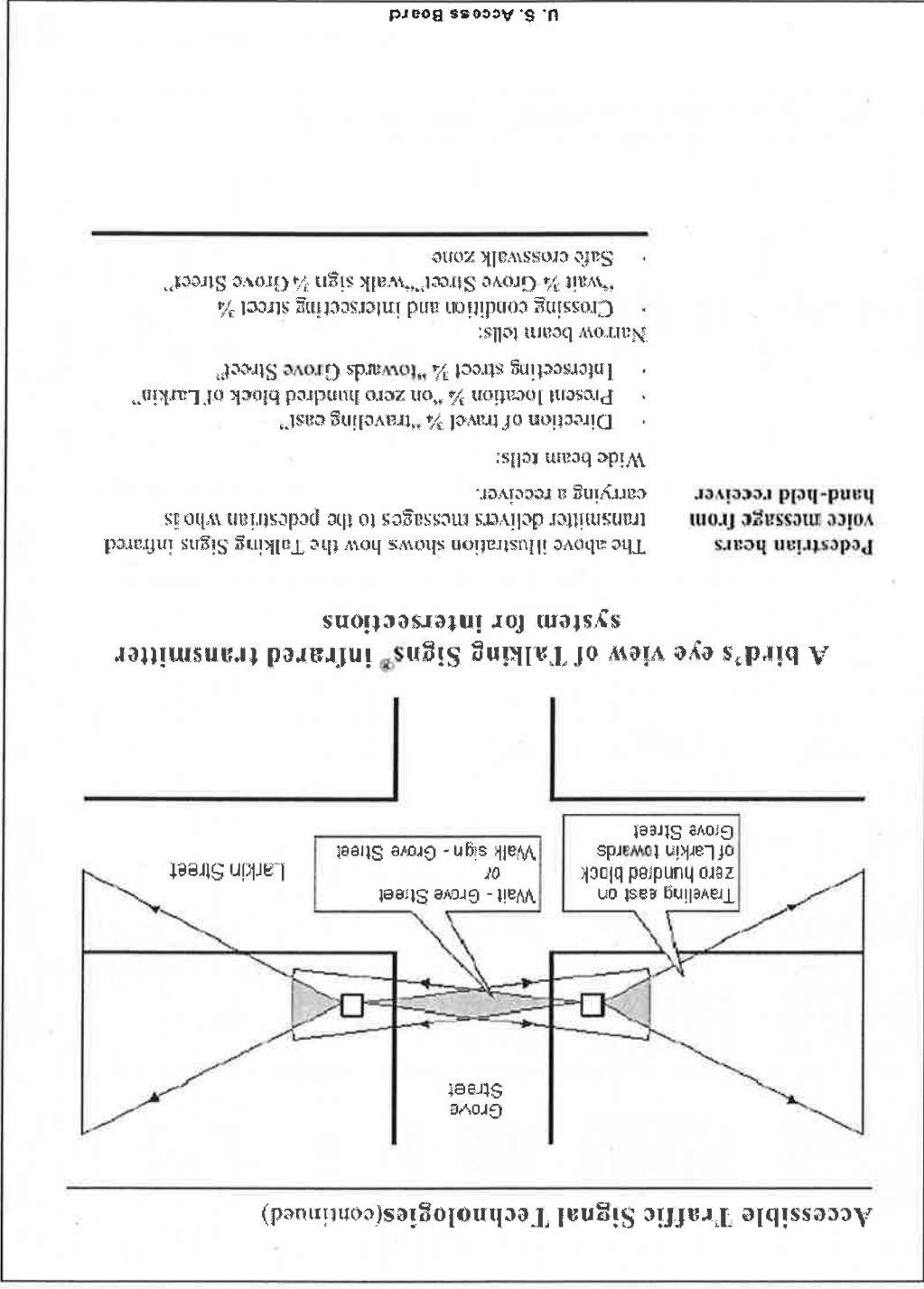
(4) Manufacturers and users will be able to take the protocol specifications to national and international standards groups. Registering the protocol would help

provide a clear channel (free from interference from competing communication technologies and interfering signals from other electronic devices and systems).

(5) Protocol must be coordinated with existing assistive listening device systems to ensure simultaneous systems operations without disruption.

Further Reading & Resources:

The results of this study <csun.html> were presented at the CSUN conference in March 2000.
coming soon: James Marston's white paper: "The Accessible City"
 Email the author, James Marston <mailto:marstonj@geog.ucsb.edu>:
 <marstonj@geog.ucsb.edu>



An excerpt from the United Blind Advocates of Talking Signs (UBATS) Website by James R. Marston, UCSB Geography Department:

In the empirical tests, we collected data from our subjects when making transfers and other transit tasks, both using their regular method and using the RIAS. After the field tasks, we asked many of the same questions as in the preliminary interviews to compare changes in users' ratings and their attitudes. The results are summarized below.

- Many transit tasks are rated as difficult or very difficult by blind travelers. After using the RIAS, these same tasks were rated close to or at the rating of not at all difficult.
- Subjects using RIAS had improvements in walking times between locations that were highly significant.
- Subjects had to ask for help often to find their destinations using their regular techniques, but, when using RIAS, no one asked for help.

- Street crossings were much quicker and made more safely when using RIAS. With the normal techniques, many subjects tried to make unsafe street crossings and a few would not even attempt the crossing.

- Subjects using RIAS could travel independently and obtain specific confirmation of their location and their arrival at the correct destination.

- The use of RIAS greatly increased the acquisition of spatial knowledge about the local environment and allowed people to discover locations they were not even searching for.

Blind users said that the use of RIAS would increase their use of transit and allow them to make more trips. Questions about benefits of the system revealed that the subjects would be willing to pay more money than previously believed. They said the increased mobility and independence would be worth paying full fare or more in order to achieve this level of access. Many people with vision impairments thought that the use of RIAS would help them find jobs or increase their income, and almost all said they could save money that they now spend on getting travel assistance. Subjects strongly agreed that RIAS should be installed at many transit locations, including in terminals, on buses and rail cars, at bus and transit stops, and at street corners.

One can easily see that the addition of a few pieces of auditory information makes a great difference in efficient performance, safety, and attitudes about independent travel. With specific identity labels and directional cues, legally blind subjects can greatly increase their ability to travel without assistance and to have access to more urban opportunities, including better access to job search and employment possibilities.

For over 200 years, the Declaration of Independence has reminded us that governments are instituted to secure certain unalienable rights, including life, liberty, and the pursuit of happiness. Since 1990, the Americans with Disabilities Act has mandated equal access to transit and public buildings for all populations. Social equity and freedom to travel and use transit and public facilities is an ongoing concern for planners and public agencies. Much improvement has been made in removing structural barriers encountered by those in wheelchairs. Curb cuts, ramps, and lifts or elevators are now common as mitigation measures to increase access. However, little progress has been made in bringing equal access to urban opportunities to those who have vision impairments as they face the functional barriers to equal access.

If a blind person cannot find a bus stop, locate and board the proper bus, navigate through a complex transfer station, or find boarding areas, fare machines, amenities, and doorways, they face functional barriers, every bit as daunting as structural barriers, to equal access to transit and buildings. Legally blind people, by law, cannot drive vehicles and must rely on public transportation in order to travel independently. Their travel time or effort is often no more than for the general public. The major problem is in accessing these forms of transportation. Whether we consider how people access transit information without sight, how they can get to the proper area and identify the proper mode, or how they can disembark and find the next destination or amenity, blind travelers find that these situations are where they face the biggest challenge to independent travel.

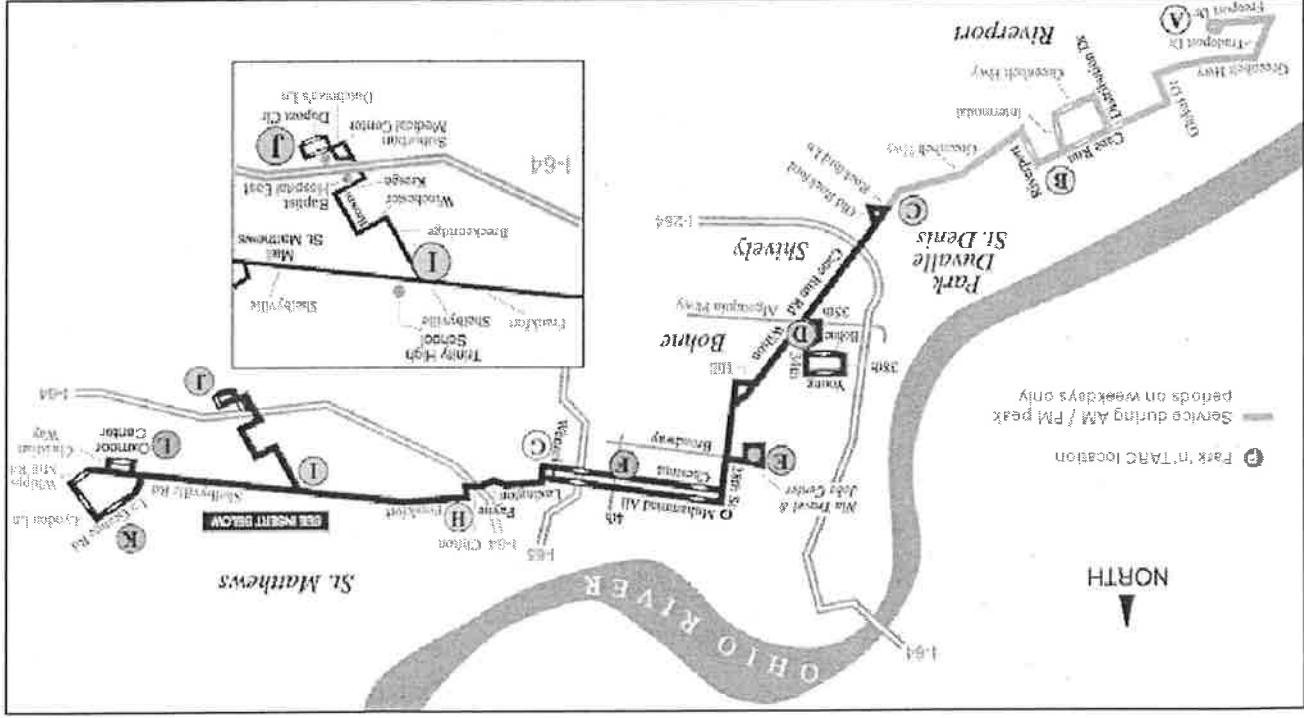
The research reported here examines these and many other situations that limit access to urban opportunities and transit. We collected data about problems of travel from 30 legally blind subjects, documenting the wide range of tasks that they must undertake and how difficult they were to perform. We also collected many data about trip making activities. We then conducted empirical field tests at the San Francisco CalTrain station and its surrounding area, where Remote Infrared Audible Signage (RIAS) had been installed.

Vision is by far the supreme sensory modality that benefits wayfinding and navigation. In its absence, auditory cues can be used to inform those without vision about the environment. The RIAS simply gives the user two important cues to the environment, a label or identity of the signed location and a directional beam to that object.

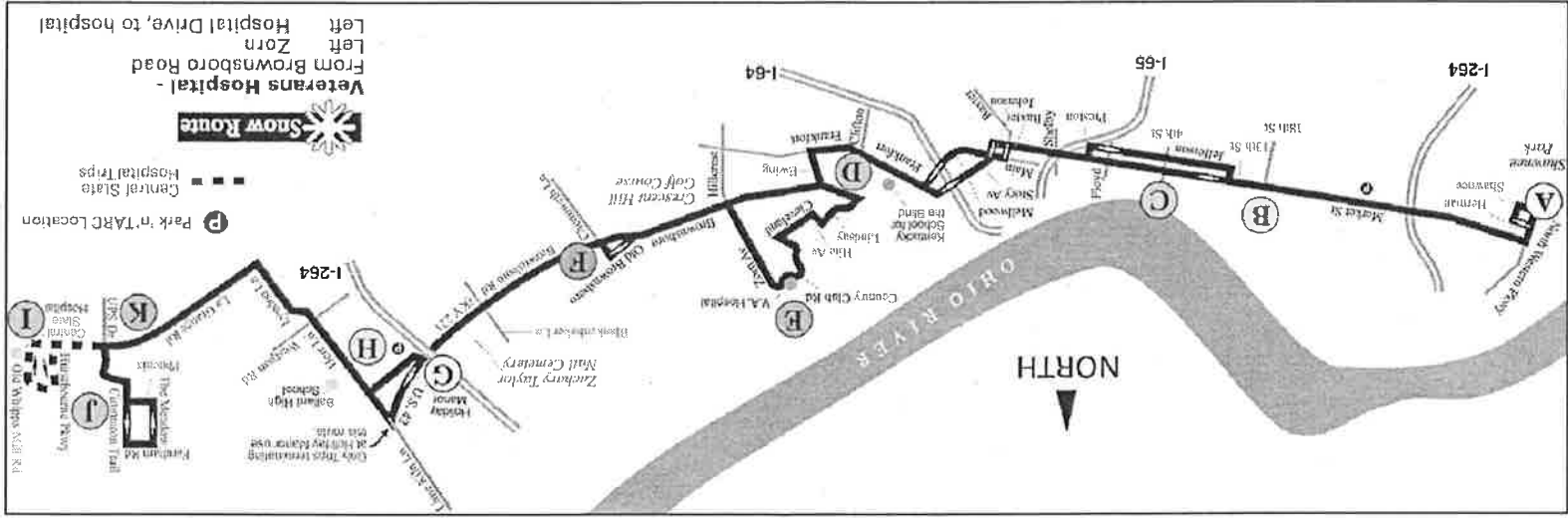
**TRANSIT AUTHORITY OF RIVER CITY (TARC)
BUS ROUTE MAPS - ALONG FRANKFORT AVENUE**

UNALTERED ACTUAL ROUTE MAPS, AS PUBLICLY DISTRIBUTED BY TARC

19 MUHAMMAD ALI BOULEVARD



15 MARKET STREET



31 MIDDLETOWN

