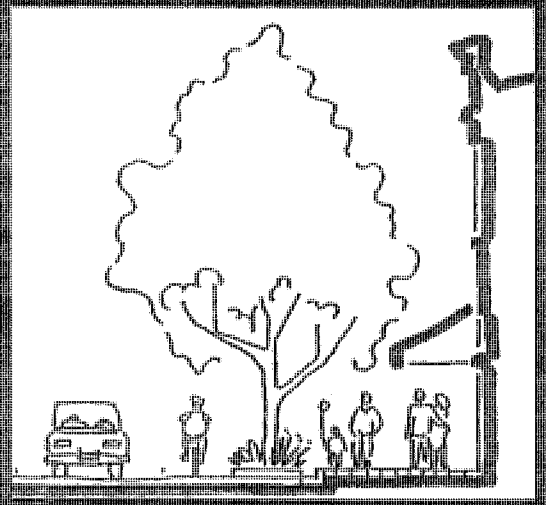
Charlotte Street Transportation Enhancement Study

Prepared by:
Kubilins Transportation Group, Inc.

For: The City of Asheville

January, 2002

Kubilins
TRANSPORTATION GROUP, INC.



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BACKGROUND

The Charlotte Street corridor is rich with history from both a cultural heritage and architectural perspective. From the presence of early hospitals to the grandeur of the Grove Park and Manor Inns, as well as the landmarks and neighborhoods which developed around them, they all serve as a reminder of the prominence the area once had and continues to hold on to. While many of the original structures have changed tenants and properties have redeveloped, so too has the transportation of the corridor been transformed. Once a simple dirt road, Charlotte Street has undergone tremendous transportation changes over the years. The street has been laden with brick, lined with trolley tracks, paved, trolley tracks removed, widened, and been interrupted by the construction of I-240 freeway.

Prior to 1934, Charlotte Street was serviced by a streetcar system. Like most post war communities, the widespread acceptance of the automobile and rapid growth in development ultimately caused the demise of the streetcar system. Charlotte Street likewise underwent a transformation when the trolley tracks were removed. Over time, the street was adapted to accommodate the rising traffic volumes. Since the time of the streetcar, Charlotte Street's function has been expanded from a neighborhood collector street to a thoroughfare, providing vehicular access to points north and east of Asheville.

Much of Charlotte Street is now dominated by the automobile and is pedestrian unfriendly. The four through lanes move vehicular traffic somewhat efficiently, yet is difficult for pedestrians to cross, encourages higher traffic speeds and lacks the urban design characteristics necessary to encourage and retain pedestrians.

While the four-lane cross-section appears to provide additional capacity to the street, observations reveal that during peak traffic conditions, the roadway tends to function similar to a three-lane facility. This occurs due to the lack of turn lanes at intersections and throughout the corridor. The left turning vehicles (which must yield to oncoming traffic) create blockages that restrict the flow of through traffic. This tends to result in an effective reduction in traffic capacity for the street. Given this restriction in traffic flow, experienced drivers responded by remaining in the far right lane until they reach their desired sidestreet.

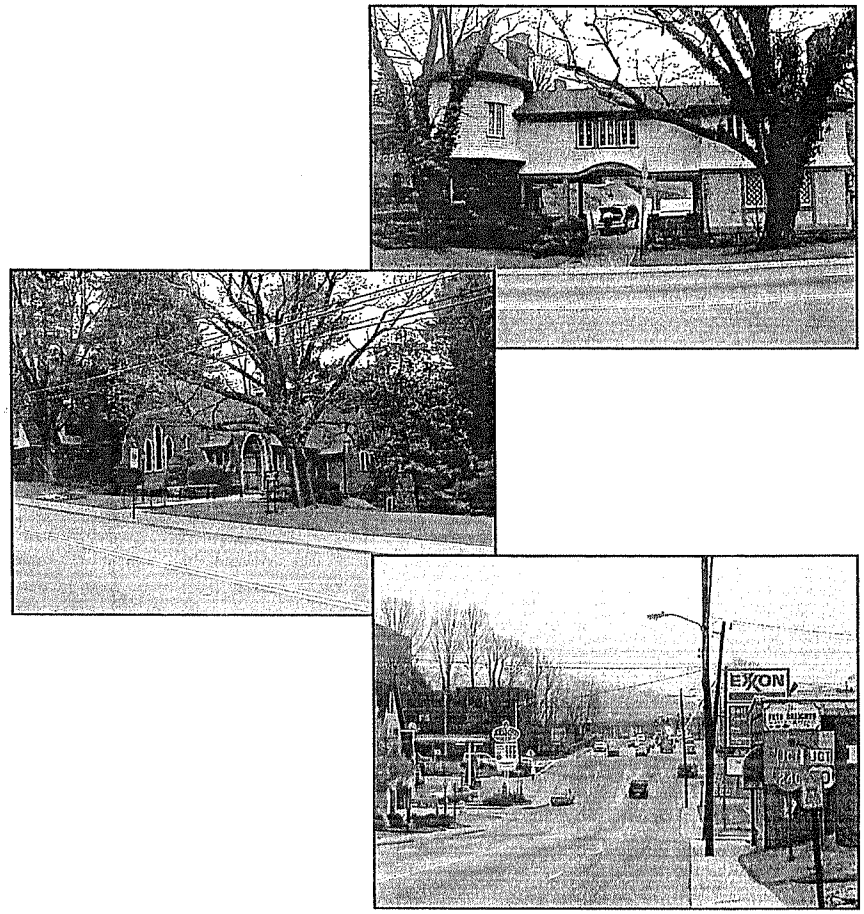
The 2010 Charlotte Street Small Area Plan established important guidelines for future land use and transportation in the corridor, illuminating ways to fulfill the transportation related objectives:

- Improve the Safety & Efficiency for All Modes
- Promote Increased Pedestrian Activity
- Continue a Balanced Mix of Land Uses
- Encourage Economically Vibrant Pedestrian Environment
- Improve the Image of the Corridor

Another goal of the 2010 Plan is to, "Encourage compatible new development that serves adjacent neighborhoods and helps to create an economically vibrant pedestrian environment." As a means to promote this and other goals, the City of Asheville recently adopted a set of development guidelines as an overlay zoning district. The incentive based guidelines encourage urban design characteristics which promote walkability, including reduced building setbacks, parking located at the side or preferably the rear of the building. The code regulates the height and scale of buildings, as well as appropriate mixes of land uses.

In addition to the zoning overlay district, the 2010 Plan outlines a series of specific action items regarding transportation. An excerpt of applicable items include the following:

- Provide pedestrian and bicycling amenities within the public right-of-way.
- Explore and select among various options to improve traffic safety and allow for pedestrian crossings at major intersections.
- Enhance the function of the street by working with property owners...identify locations where drive entrances should be eliminated or redesigned in order to improve corridor safety.
- Improve condition and consistency of sidewalks, striving for a non-obstructed width of five feet.
- Improve pedestrian access to Charlotte Street.
- Provide ADA accessibility at all intersections along the street.
- Continue to explore additional methods to improve the safety and efficiency of all modes of transportation within the corridor.



COMMUNITY VIEWS AND ISSUES

In an effort to gain further insight to community views and concerns, the project team met with various key members of the Charlotte Street community during the months of July and August. In addition, two public forums were conducted during this time frame, providing the public an opportunity to communicate their desires and concerns for the corridor. In addition, meetings were held with business leaders and commercial property owners as well as representatives of the adjoining neighborhood associations. Questionnaire responses and attendance lists from the community forums are included in the technical appendix.

Information gathered during these meetings established that there were several overarching views and issues that need to be addressed. The following represents a summary of the questionnaire responses from the first public meeting:

Questionnaire Responses

1. If improvements are to be made to Charlotte Street, what should be the greatest priority?
   a. Improving walkability (31 responses)
   b. Incorporating bike lanes (12 responses)
   c. Providing on-street parking (7 responses)
   d. Enhancing traffic operations (6 responses)

**Most popular responses.*

2. What is/are the greatest traffic problem location(s) along the study corridor?

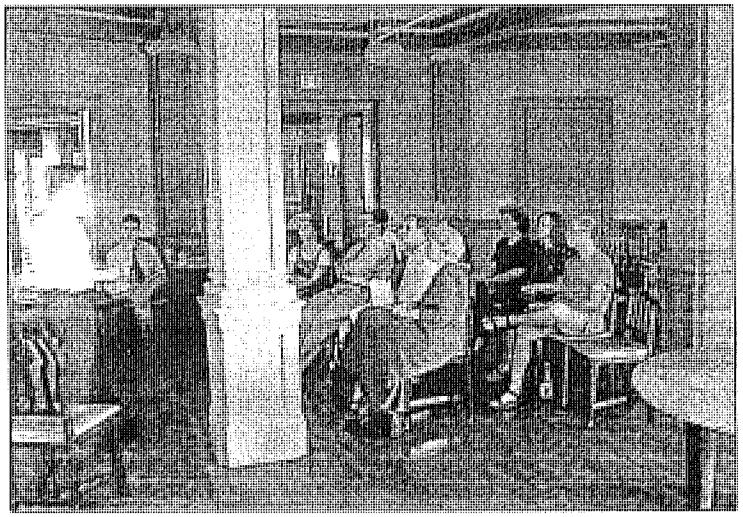
- Intersection of Charlotte St./Edwin Pl/Cherokee Rd.
- Chestnut St./Charlotte St. – Lights are red on 2 lanes of Charlotte St. and green on the other 2 lanes, so makes it very difficult to cross.
- Difficult to walk/bike (or change lanes in a car) from the on-ramp to I-240 until College St.
- Traffic stacking up to enter I-240 both directions
- Dangerous walking to businesses near Edwin (Chinese restaurant, video store, etc.)
- Drivers ignore crosswalks
- Traffic unable to move efficiently.
- Timer on green light for left turn on Chestnut needs to be longer
- Traffic too close to pedestrian/bike traffic all along Charlotte St.
- Charlotte St. @ Hillside, Charlotte @ Edwin, and Charlotte @ Chestnut need turn lanes
- Merriman Ave. is not clear at the I-240 interchange, so a lot of Merriman traffic ends up on Charlotte St.

6. What is your greatest concern regarding future improvements to the Charlotte Street corridor?

- Desire is for it to become a beautiful, vibrant, pedestrian friendly and SAFE street, not a more dangerous and congested artery simply to move cars.*
- It will take too long.
- Make it pedestrian friendly*
- Traffic will be accommodated/increased and kill possibilities of developing walkable, shopping neighborhood.*
- Nothing will be done due to expense and controversy.
- Traffic count used to prepare this traffic study is not accurate.
- Bike lanes between parked cars & sidewalks, NOT between traffic & parked cars.
- Traffic to & from Grove Park Inn – encroachment of commercial use into residential area.
- Intersection of Cherokee/Charlotte St. improvements.
- Present four lanes will be reduced.
- Existing property owners will be considered and not make a more congested venue.
- Traffic be slowed down* and access to Charlotte destinations enhanced.
- Traffic (cars) concerns taking priority over foot traffic.*
- Loss of historic nature of street.
- Zoning conflicts

**Most popular responses.*

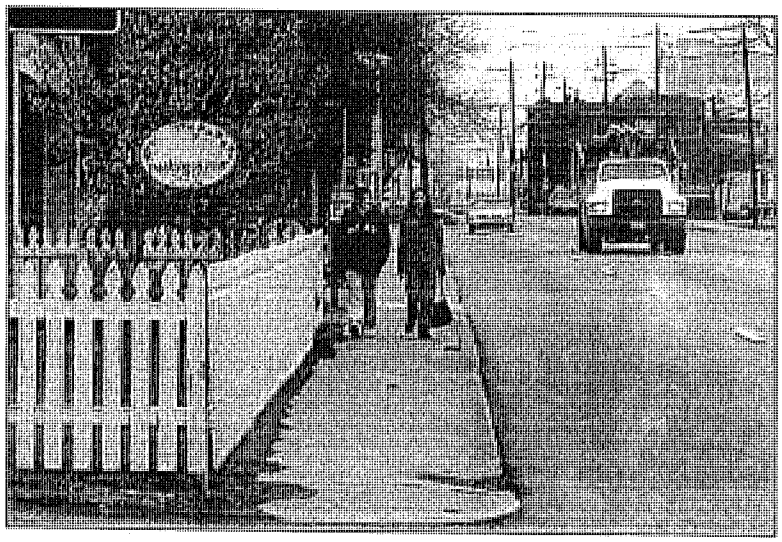
Stakeholder Meetings
Above: Meeting with property and business owners
Below: Meeting with homeowner associations



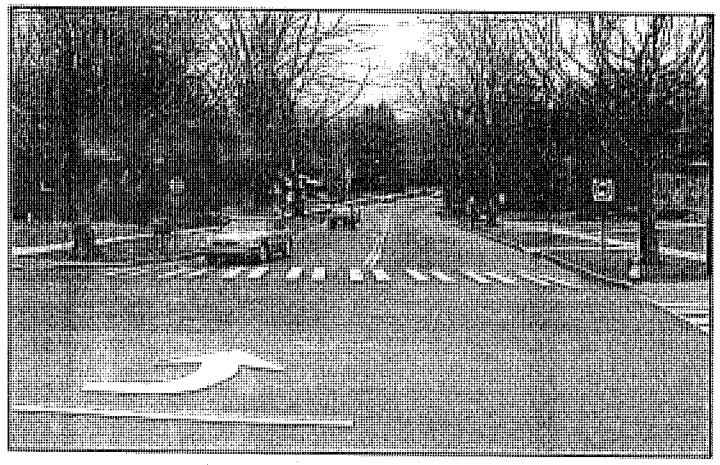
PEDESTRIAN & BICYCLE PATTERNS

Field observations revealed strong pedestrian connections to nearly all sidestreets with Charlotte Street. Most of these connections include sidewalks. In addition, it was noted that there are a number of bike routes designated on the City of Asheville Bicycle Plan with direct connections to the corridor. These routes connect at the following streets:

Evelyn Place	E. Chestnut Street
Edwin Street	Baird Street
Lenox Street	Sunset Parkway
Hillside Street	Macon Avenue

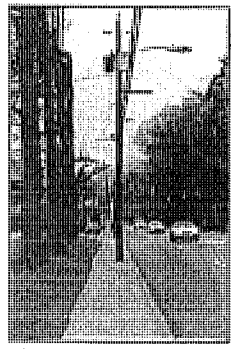


Undefined pedestrian realm.



High visibility crosswalk at Edwin Street.

As mentioned earlier in this report (*see previous section on Traffic Speed*), nearly the entire Charlotte Street corridor is lined on both sides with sidewalks; however, the corridor remains unfriendly to pedestrians. In many cases the predominate sidewalk width is only four feet and does not include adequate separation from moving traffic. In addition, utility poles are located in the middle of the sidewalk obstructing the way of those choosing to walk the corridor. It was even cited during a neighborhood forum that this creates an increased burden for individuals with disabilities to traverse the corridor. The traffic signals located at Hillside Street and Chestnut Street include pedestrian phases as well as pedestrian signal heads improving the safety parameters of pedestrians crossing activity. Other positive attributes of the corridor include the presence of clearly defined crosswalks at significant intersections such as Edwin, Hillside, and Chestnut Street.



PARKING IN THE CORRIDOR

Primarily all of the parking in the corridor takes place off street. There are a number of business establishments with dedicated areas for parking. However, there exist only limited amounts of excess public parking in the corridor. The only defined on-street parking location is located between Lenox and Edwin Street. It has been noted that the relatively high price of land and construction cost associated with the preferred design guidelines creates hardships for providing dedicated off-street parking within the corridor. Increasing the amount of available public parking (on-street and/or off street) may help stimulate investment in the desired land uses for the corridor. In addition, on-street parking tends to reduce the scale of streets sometimes resulting in reduced travel speeds for motorists. In addition, parked cars can serve as a pedestrian buffer to moving vehicles.

OPPORTUNITIES AND CONSTRAINTS

The neighborhood as well as business owners in the corridor were guided through a participatory planning technique in order to identify the issues surrounding Charlotte Street and transportation conditions as well as the externalities associated with the development of the corridor plan. The resulting list of Project Constraints as well as Project Opportunities set the framework for the direction of the Plan as well as began a list of measures of effectiveness serving as a benchmark for plan evaluation. Understanding community perception bridges the gap between community vision and plan implementation.

Project Constraints

- Existing right-of-way
- Existing homes/structures
- Safety/pedestrian accommodations
- Cost $$
- Utilities
- Resistance to change
- Storm Water
- EMS response
- Access to parcels
- Potential impacts to businesses
- Lack of Funding

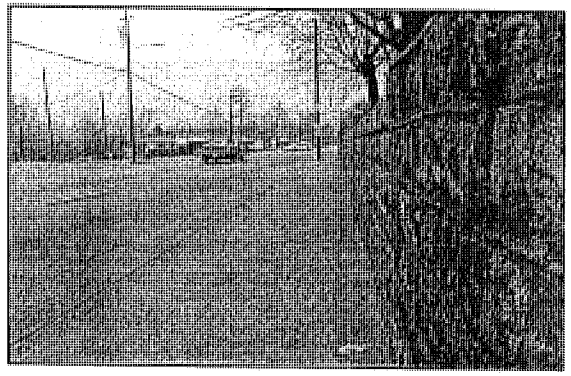
Project Opportunities

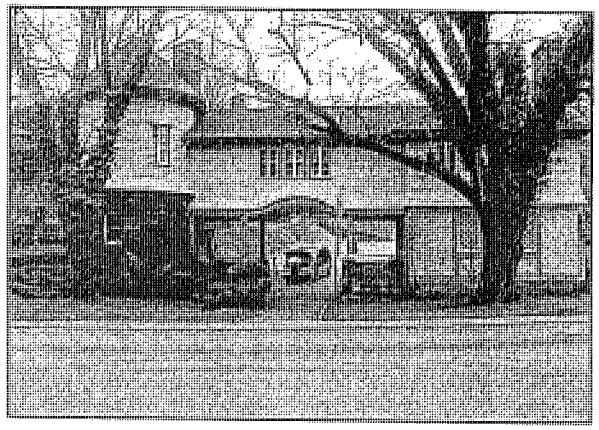
- Improve traffic conditions
- Pedestrian activity/safety
- Aesthetics and beautification of corridor
- Redevelopment opportunities
- Positive development that compliments the community
- Provide for community needs

Charlotte Street has 17 intersections between I-240 and its' northern terminus. Several of these sidestreets intersect Charlotte Street at an offset or skewed angle. This type of intersection geometry can create potential hazards for both the pedestrian and the vehicle. Three of the 17 intersections along Charlotte Street are signalized, including: the I-240 ramp, Chestnut Street, and Hillside Street. The later two of these intersections have pedestrian phases in the signal timing; the exception is the intersection of Charlotte Street and the I-240 Ramps.

The right-of-way width for Charlotte Street is approximately 50 feet, which is narrow by today's standards. Throughout the corridor the right-of-way can be found at the back of the sidewalk. With such a narrow right-of-way, little room is available for widening of the roadway without further land acquisition.

Other features such as historical rock retaining walls and buildings line Charlotte Street. These historic structures and architectural features are a part of the unique history of the Charlotte Street corridor and efforts should be made to insure their preservation.



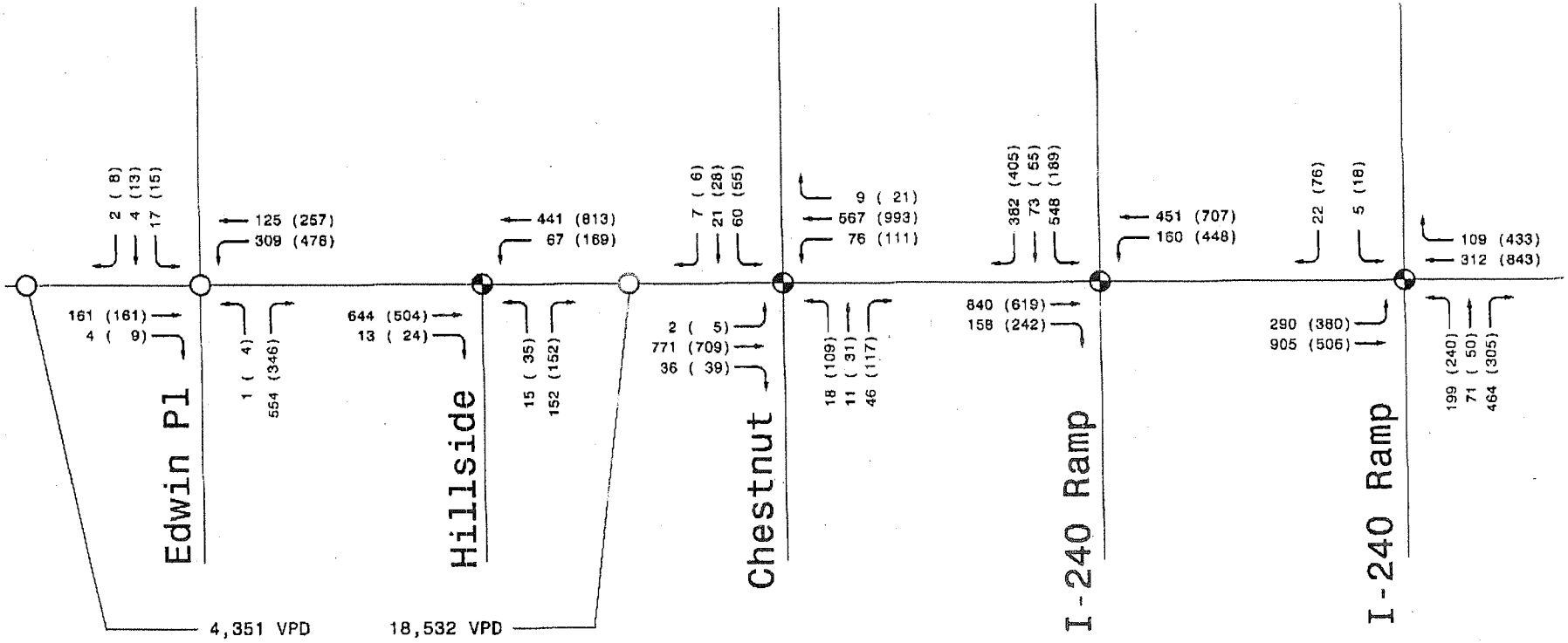


CORRIDOR CHARACTER

Based on the existing land uses and the proposed land uses identified in the 2010 Plan, and the existing transportation system, the Charlotte Street corridor can be divided into two distinct area portraying their own characteristics:

I-240 Ramps to Edwin Place	Existing and emerging commercial / office
Edwin Place north to terminus	Primarily residential

Figure 1: Charlotte Street 2000 Traffic Volumes



vehicle speeds observed by vehicular traffic. This effectively "tamed" traffic will enhance the safety of alternate modes such as bicyclists and pedestrians. Streetscaping elements include street trees spaced at 50-foot intervals. This will provide for a uniform cadence throughout the area. Brick or pavement treatments at intersections should be used to designate the pedestrian realm from the vehicular zone. These should be used in conjunction with bulb-outs at the intersection. Bulb-outs will reduce the crossing times between intersections thus promoting, safe walkability thereby increasing the sense of security for pedestrians. Parallel parking on one side of the street (at strategic locations) is encouraged. This will provide for traffic buffering as well as enhancing access to local businesses.

Residential Street (Edwin to terminus)

The third and final component of Charlotte Street is the residential street. The residential street is the backbone for Charlotte Street. It provides the resources to allow the neighborhood commerce to flourish.

The streets in this section are narrower than the other areas to further reduce speeds. This again provides the opportunity for multiple modes of transportation to exist together. This is accomplished through the use of medians or planted islands or wider sidewalks. Trees should be placed on a 50-foot spacing as in the previous areas. Further plantings are encouraged. Areas of high pedestrian activity should be designated with the use of either brick or textured, colored pavement. Street lighting and pedestrian lighting should be installed as well.

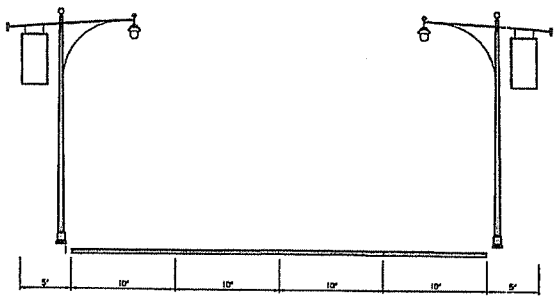
Design Alternatives

As mentioned earlier, the 2010 Charlotte Street Small Area Plan was the catalyst for this project. This Plan established important guidelines for future land use and transportation in the corridor and communicated the following transportation related objectives:

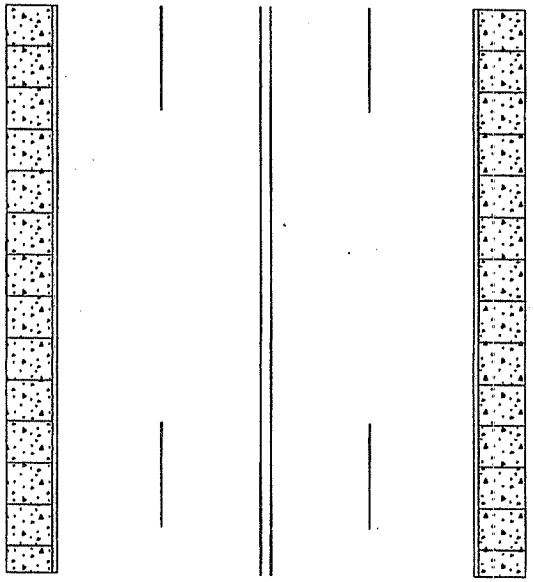
- Improve the Safety & Efficiency for All Modes
- Promote Increased Pedestrian Activity
- Continue a Balanced Mix of Land Uses
- Encourage Economically Vibrant Pedestrian Environment

These objectives represent a recipe for a "walkable community" or in this case, neighborhood corridor. Therefore, the project team was challenged to develop design alternatives that address the transportation initiative clearly stated in the 2010 Small Area Plan and that addressed community needs. In order to fulfill this mission, it was necessary for the project team to once again revisit goals and objectives with stakeholders and residents as previously discussed in this report. In addition, the team had to develop design alternatives which recognized the constraints of the corridor. The major design constraint along Charlotte Street is the limited amount of right-of-way. In addition to the limited right-of-way is the close proximity of buildings and

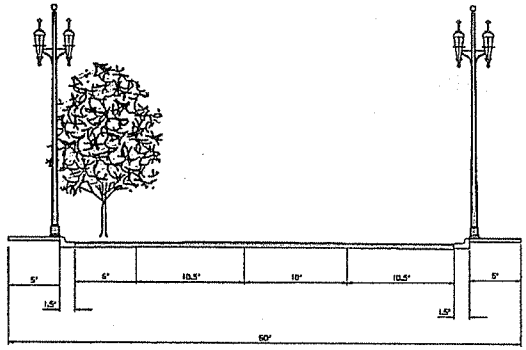
Figure 2: Charlotte Street: Typical Sections



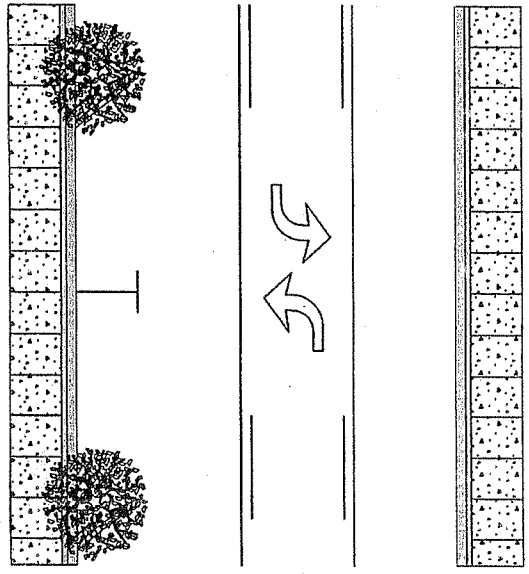
4–LANE TYPICAL SECTION



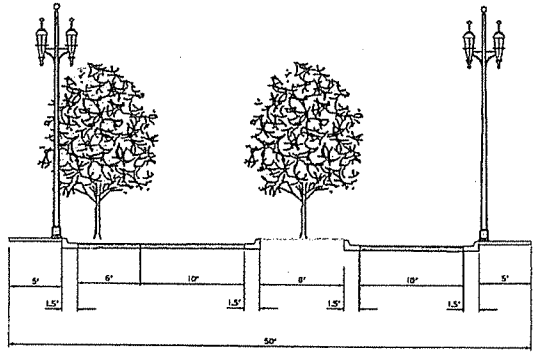
Specifications	
Design Speed	35 m.p.h.
Pavement Width	40′
R.O.W. Width	50′
Pedestrian Crossing Time	10.0sec
Traffic Pattern	two way
Parking	yes



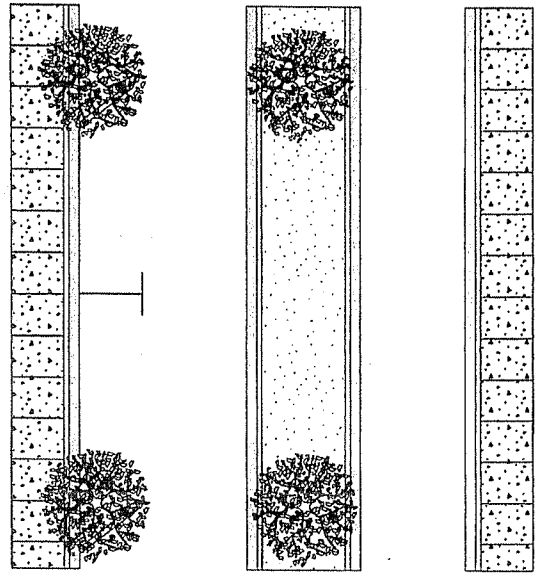
3–LANE TYPICAL SECTION –A–



Specifications	
Design Speed	35 m.p.h.
Pavement Width	37′
R.O.W. Width	50′
Pedestrian Crossing Time	9.25 sec
Traffic Pattern	two way
Parking	yes



3–LANE TYPICAL SECTION –B–



Specifications	
Design Speed	35 m.p.h.
Pavement Width	37′
R.O.W. Width	50′
Pedestrian Crossing Time	9.25 sec
Traffic Pattern	two way
Parking	yes

TABLE 1: LEVEL OF SERVICE
2001 TRAFFIC VOLUMES EXISTING CONDITIONS

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	Level of Service	Delay (sec/veh)	Level of Service
2001 Existing Conditions				
I-240WB Ramps / Charlotte St (signalized)	34.1	C	27.7	C
Chestnut St / Charlotte St (signalized))	12.5	B	33.6	C
Hillside St / Charlotte St (signalized)	8.1	A	10.2	B
Edwin Pl / Charlotte St (unsignalized)	*	F	*	F

TABLE 2: LEVEL OF SERVICE
2001 TRAFFIC VOLUMES THREE-LANE SCENARIO

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	Level of Service	Delay (sec/veh)	Level of Service
2001 3-Lane Scenario				
I-240WB Ramps / Charlotte St (signalized)	34.6	C	29.1	C
Chestnut St / Charlotte St (signalized))	13.3	B	26.4	C
Hillside St / Charlotte St (signalized)	10.5	B	34.2	C
Edwin Pl / Charlotte St (unsignalized)	*	F	*	F

**Delay calculations are not meaningful when v/c exceeds 1.2 or when delay value exceeds 180 seconds.*
For unsignalized intersections, delay, v/c (Flow Rate/Movement Capacity), and LOS corresponds to the most critical movement

EVALUATING A REDUCTION IN LANEAGE

Recognizing the limited amount of right-of-way and other project constraints, limited choices remain for consideration. Of these choices the most dramatic and effective may be the reduction of through lanes. Present conditions include four through lanes of travel. However, the traffic analysis reveals that reducing the roadway to include two through lanes and dedicated left-turn lanes produces similar modeling results as the existing conditions (four-lanes without left-turn lanes). Given the results of the traffic analysis one must consider the potential benefit associated with a potential laneage reduction.

Consider a scenario with two through-lanes and a third lane dedicated for turning movements. This design is a variation of a three-lane typical section that includes a bi-directional center turn lane. The three-lane scenario operates near the same level of efficiency as the current four-lane scenario. While it may seem that a four-lane scenario would provide for better traffic flow and thus increased capacity and efficiency, the traffic analysis reveals otherwise. In an urban setting where there are a high number of left turning vehicles, the capacity and efficiency of a given road is decreased. The absence of a protected turn-lane, requires left turning vehicles to stop in the left-lane to wait for an acceptable gap. Cars that become trapped behind this turning vehicle are forced to wait or merge to the right hand lane. Drivers that are accustomed to the lack of progression in the left-lane, instinctively stay in the right hand lane until they arrive at the desired side-street. Both peak hour observation and traffic analysis have identified this effective reduction in capacity.

The three-lane design incorporates the same design features as the four-lane design: improved signal timings at signalized intersections, improved accommodation for the disabled, and improved pedestrian cross walks. In addition, the three-lane section increases the width of the sidewalk from four feet to five feet as well as the installation of new 2.5-foot curb and gutter. The three-lane design also incorporates on street parking in locations. In areas where there is adequate separation between intersections, landscaped medians where installed. The landscaped medians provide a safe pedestrian refuge for those crossing the street as well as enhance the aesthetic quality of the street providing landscape opportunities for street plantings. In addition, the proposed medians may effectively reduce the relative scale of the street and act as a traffic calming device.

<u>Three-lane considerations:</u>

- Enhanced pedestrian accommodations,
- Improved safety due to traffic separation & clearly defined pedestrian realm,
- On-street parking,
- Added room to provide corridor landscaping,
- Medians may "calm" traffic and provide pedestrian refuge,
- Likely to stimulate pedestrian scale infill development,

CONCLUSION

While this project was not intended as a streetscaping project; it depicts conceptual designs, which demonstrate viable options that accommodate both vehicular as well as pedestrian traffic. Most importantly, the study recognizes the constraints of the corridor by inventorying those design elements that are feasible given the need to effectively manage existing and future traffic within the existing right-of-way.

As future decisions regarding the operation and design of the corridor are debated, careful consideration of those elements that further the goals of the 2010 Plan should be given priority.

A number of outstanding issues with regard to the streetscape design will require the collaboration of the City, property owners, and neighborhood representatives, including:

- Lighting type and style
- Pavement treatments
- Design of gateway elements
- Possible utility relocation
- Street tree species

It remains clear that there is dissention amongst various interest groups on the topic of transforming the corridor from an automobile dominated environment to a corridor where mobility options are balanced for all modes. If the latter is to prevail as is recommended in the 2010 Charlotte Street Corridor Plan, a design compromise must be made. Given the right-of-way constraints, the property gained through a potential laneage reduction is imperative to providing practically any enhancements to the corridor. Transforming this real estate into accommodations for on-street parking, improved pedestrian facilities and potentially planted medians, is feasible considering the traffic analysis conducted by the City of Asheville and would serve as a step towards realizing the vision established in the 2010 corridor plan.

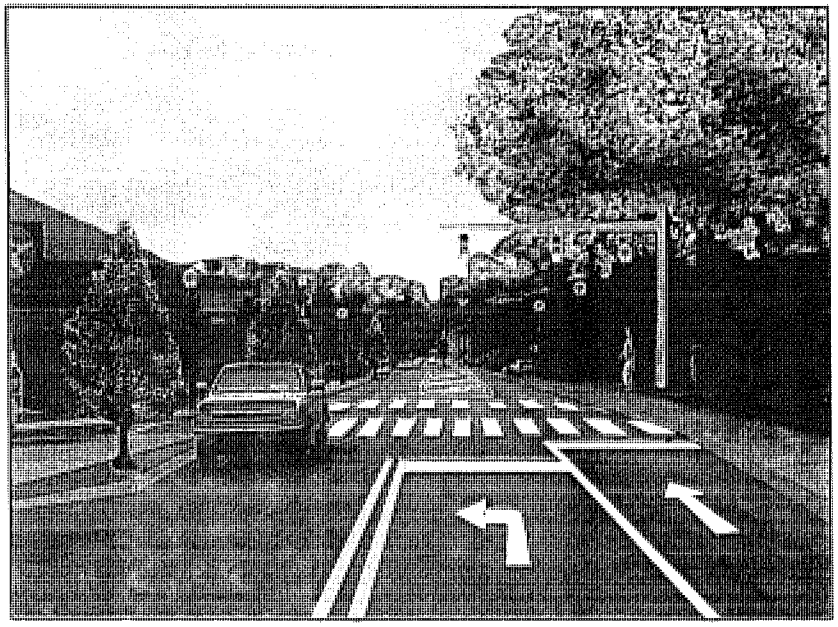


Photo enhancement of Charlotte Street

SUMMARY RECOMMENDATIONS

The following represents a list of summary recommendations that should be considered as the planning for Charlotte Street continues.

Parking Study: A study, which inventories existing parking and predicts future parking demand is recommended. The study should identify a strategy for accommodating expected parking demand through appropriate volumes of on-street, private, and public lots.

Comprehensive Traffic Operations Study: A comprehensive study of traffic operations should be conducted as a follow-up to the analysis performed by the City of Asheville Engineering Department. The study would model all affected intersections and provide critical information regarding, roadway geometry and signal timing and phasing. Opportunities that enhance traffic operations, safety, and corridor walkability should be implemented based on known guidelines and sound engineering judgment.

Non-Profit Development Corporation: Consideration should be given to the development of a non-profit development corporation. This organization could include in its charter the goal of encouraging compatible new development that serves adjacent neighborhoods and helps to create an economically vibrant pedestrian environment as well as other goals cited in the 2010 corridor plan. The membership of this organization may include property owners, area residents, business leaders, as well as other stakeholders such as the City of Asheville. Meeting regularly, this group may be able to gain consensus on the issues germane to improving Charlotte Street. The group would also be eligible to solicit funding for various projects via private donations, grants and other innovative sources deemed appropriate.

Develop a Streetscape Design Plan: After the traffic operations plan has been completed and consensus is reached on a conceptual design. A streetscape plan that addresses the design elements of the street should be prepared. This plan will address:

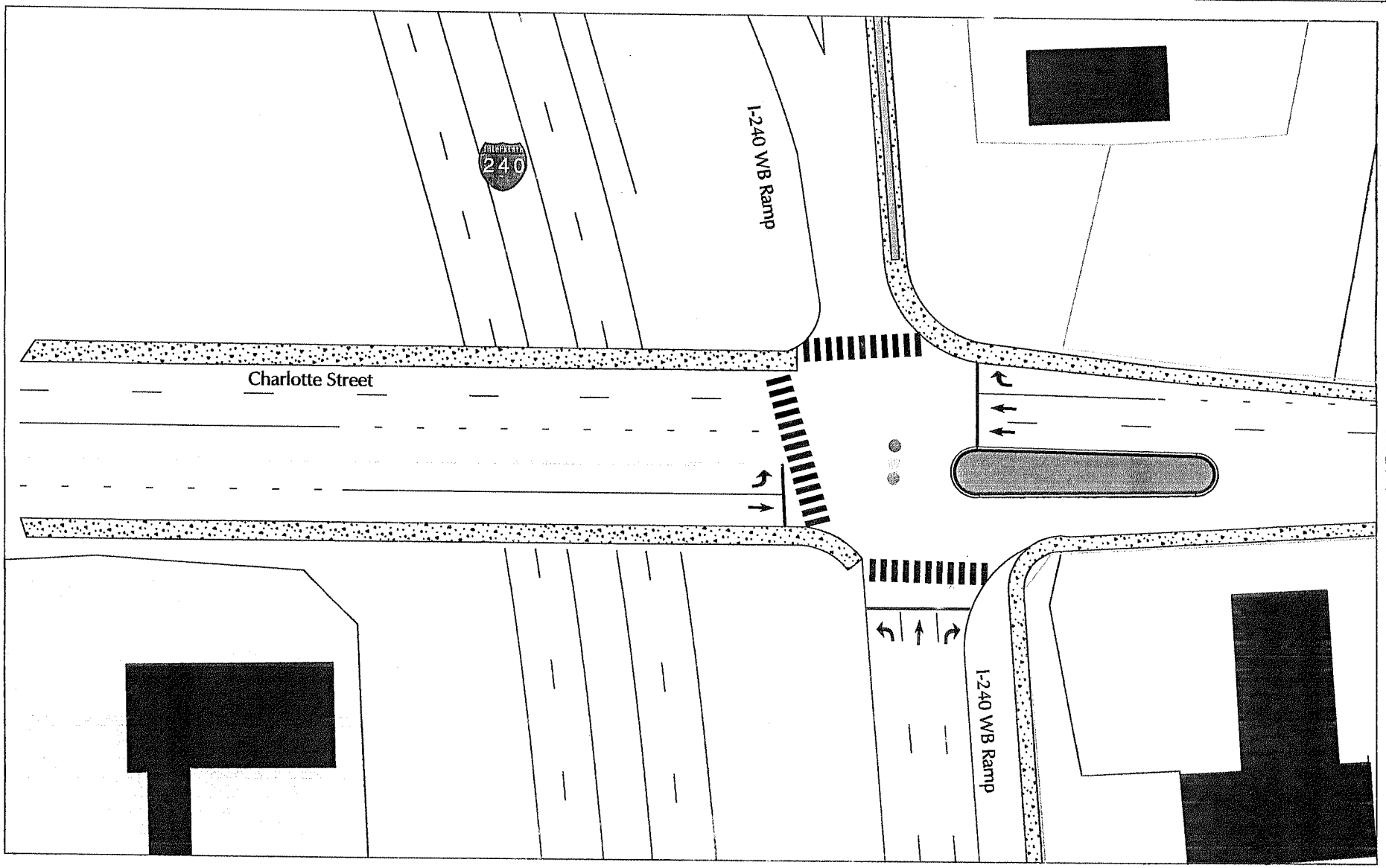
Lighting type and style	Pavement treatments
Design of gateway elements	Possible utility relocation
Street tree species	

A detailed cost estimate should likewise be prepared so that funding sources can be identified.

Interim Solutions: Recommendations identified in the Traffic Operations Plan may include interim recommendation that are easily implemented without tremendous cost, including changes in pavement markings, laneage, parking, signage, and updates to signal timing and phasing. Those recommendations, which enhance walkability, safety, and traffic operations, should be considered.

ALTERNATIVE A

Charlotte Street	SHEET NO.
	PS-A-1



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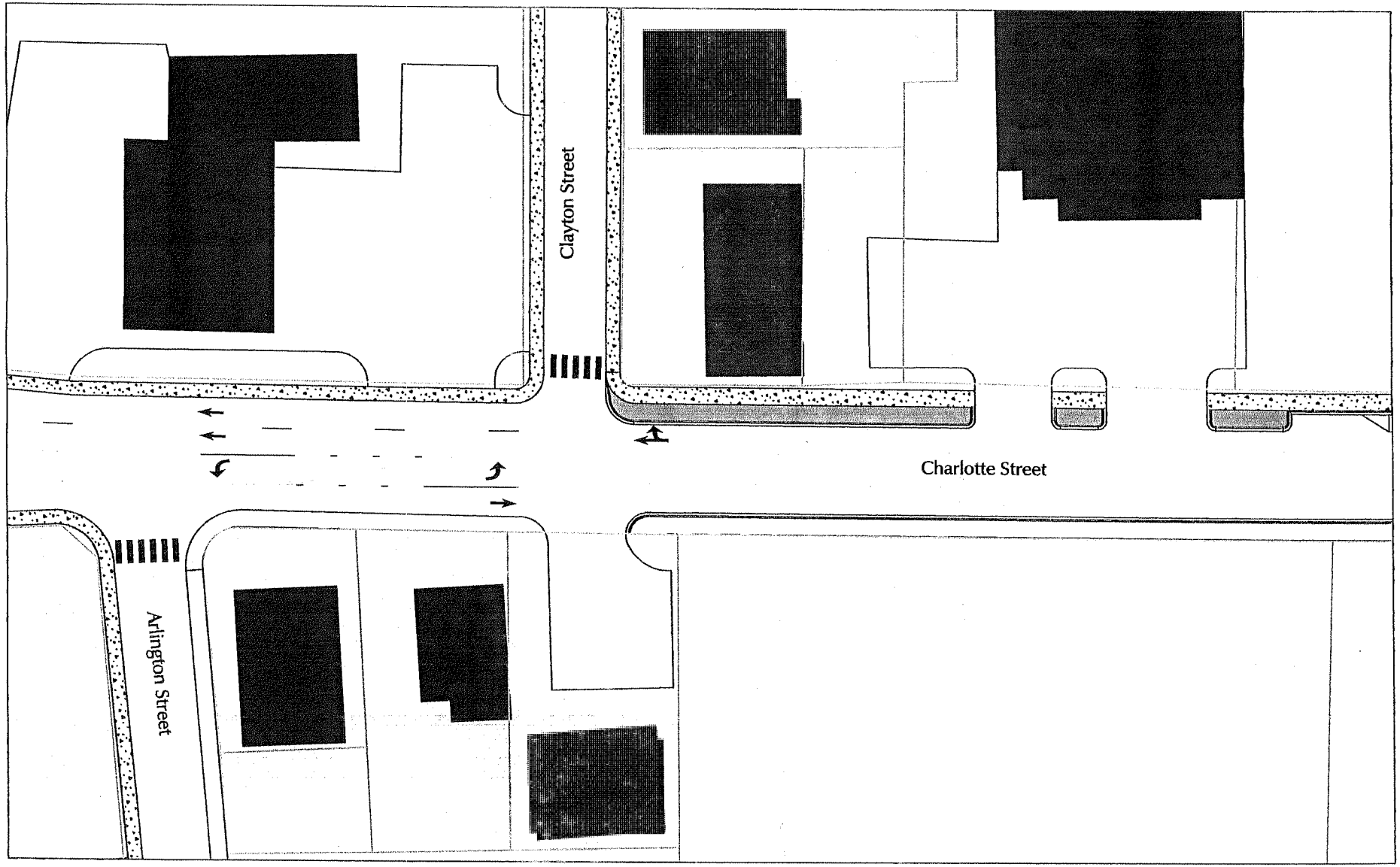
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO.
	PS-A-2



Kubilins
TRANSPORTATION GROUP, INC.

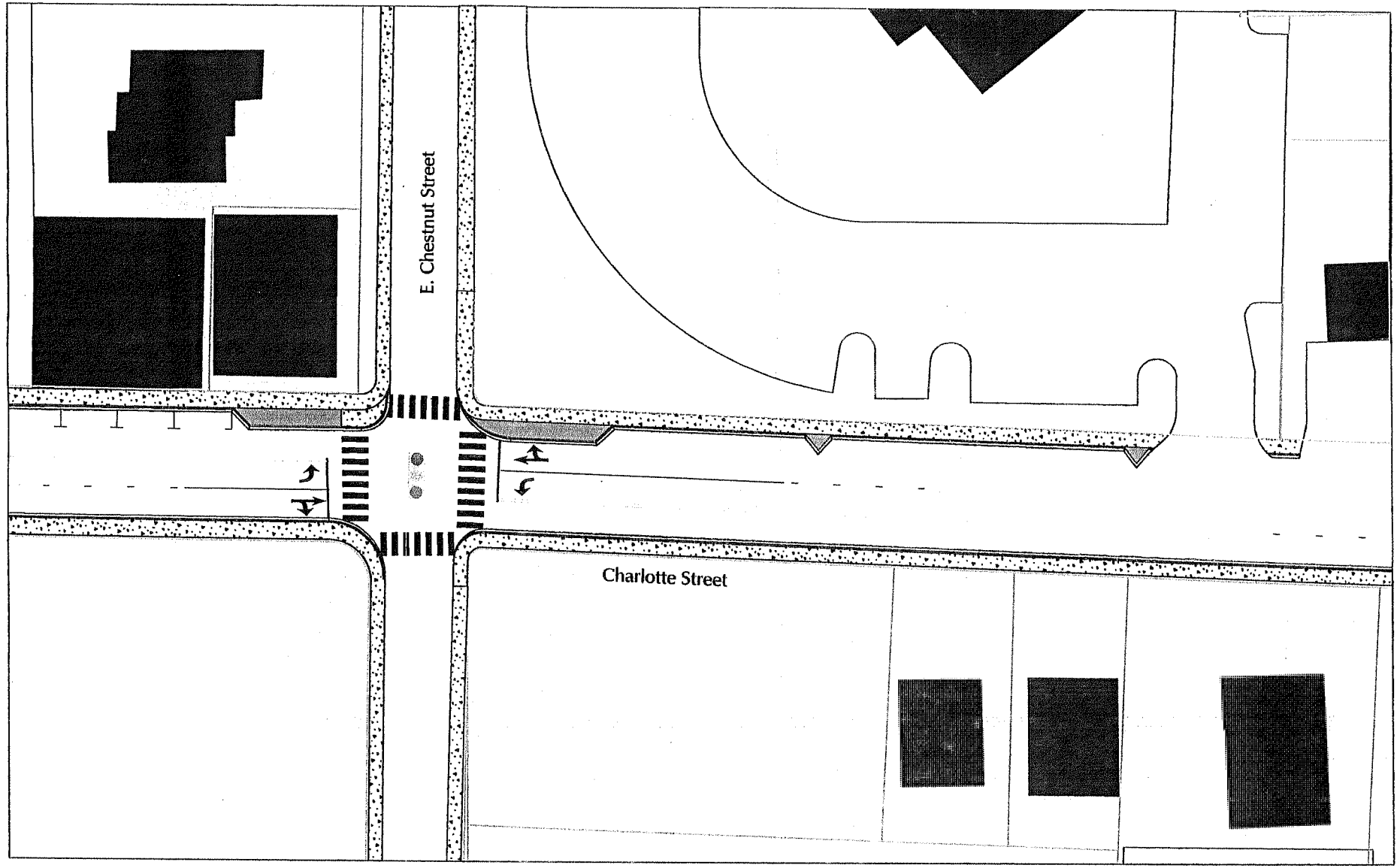
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO.
	PS-A-3



Kubilins
TRANSPORTATION GROUP, INC.

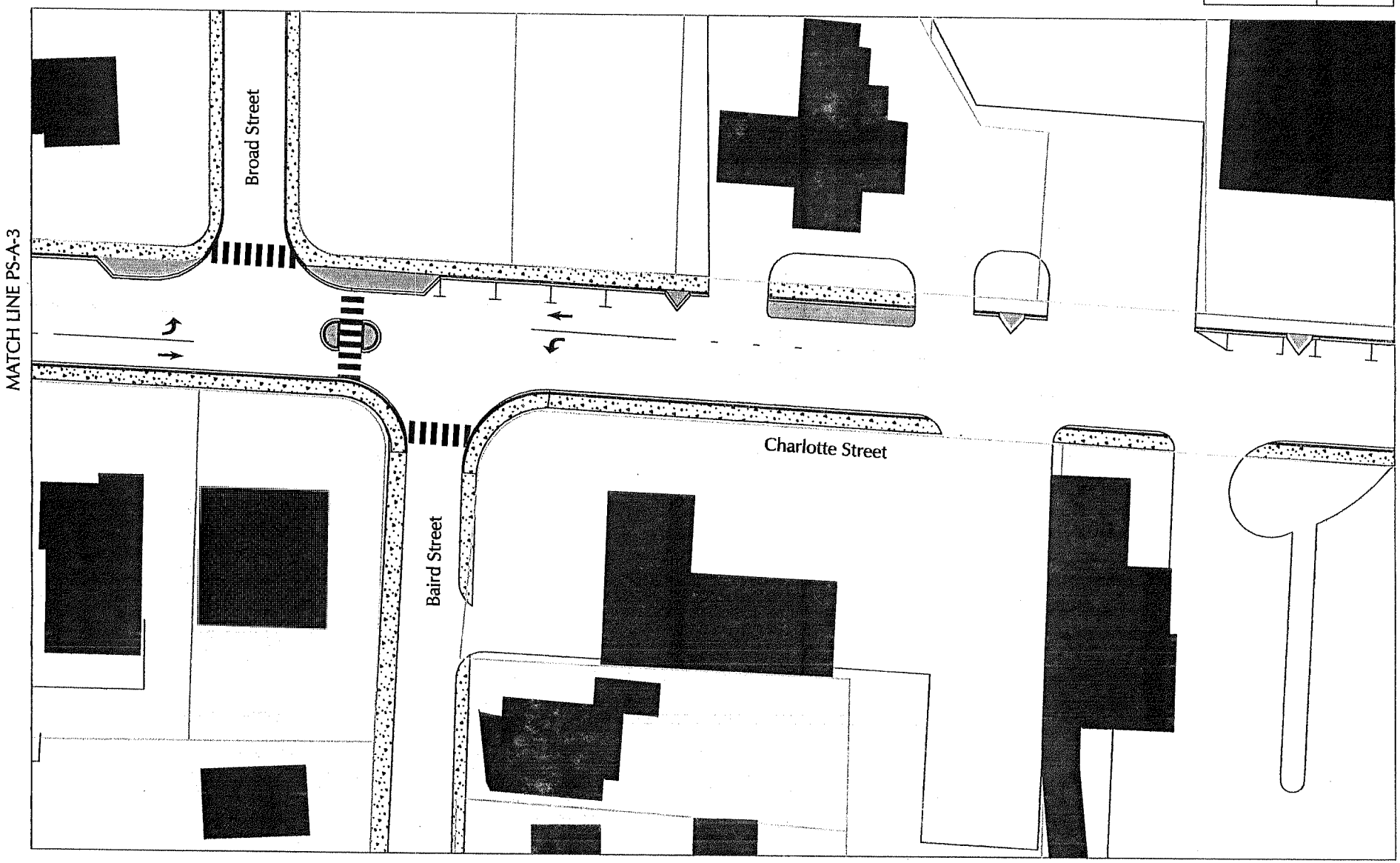
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO. PS-A-4



Kubilins
TRANSPORTATION GROUP, INC.

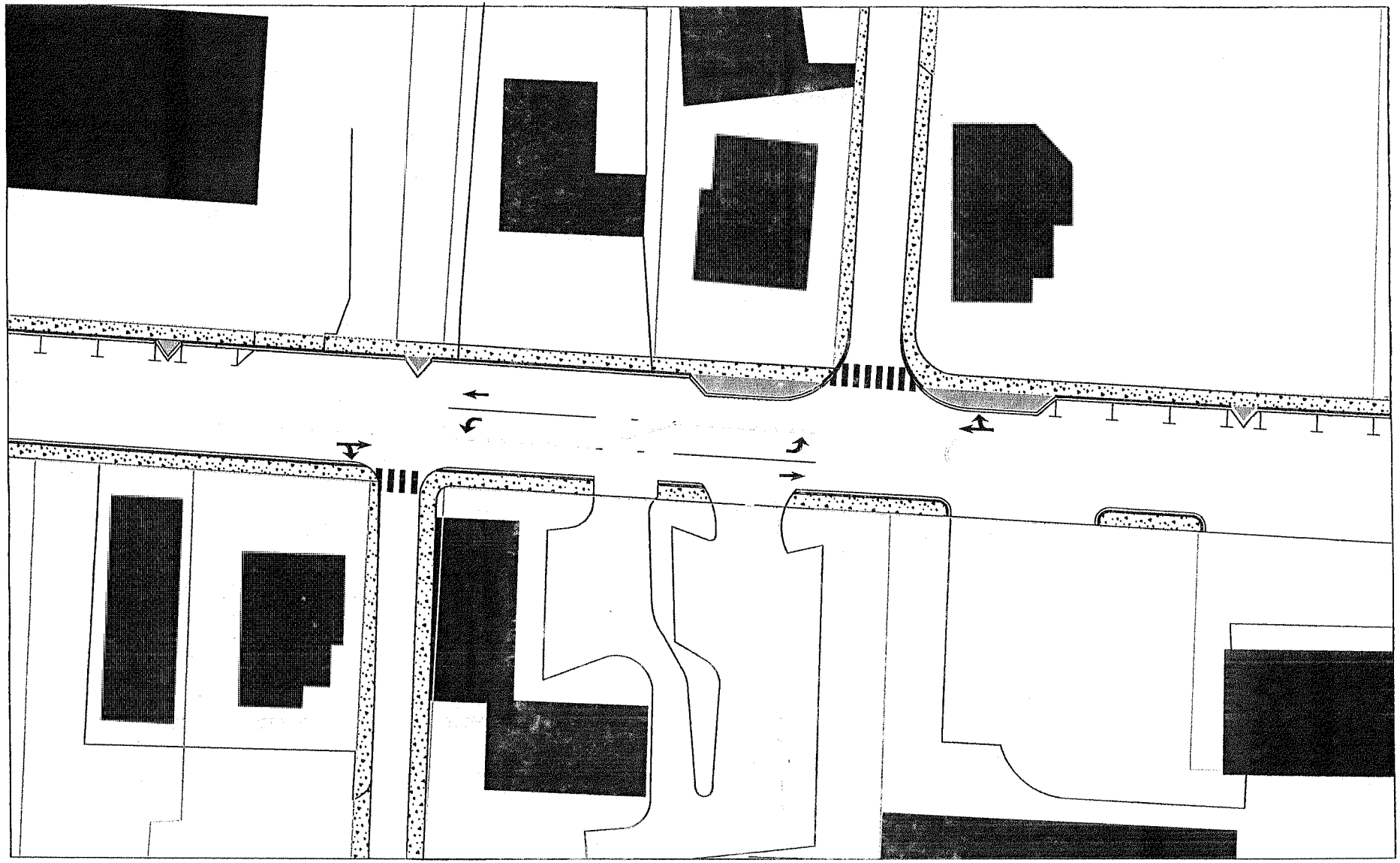
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO.
	PS-A-5



Kubilins
TRANSPORTATION GROUP, INC.

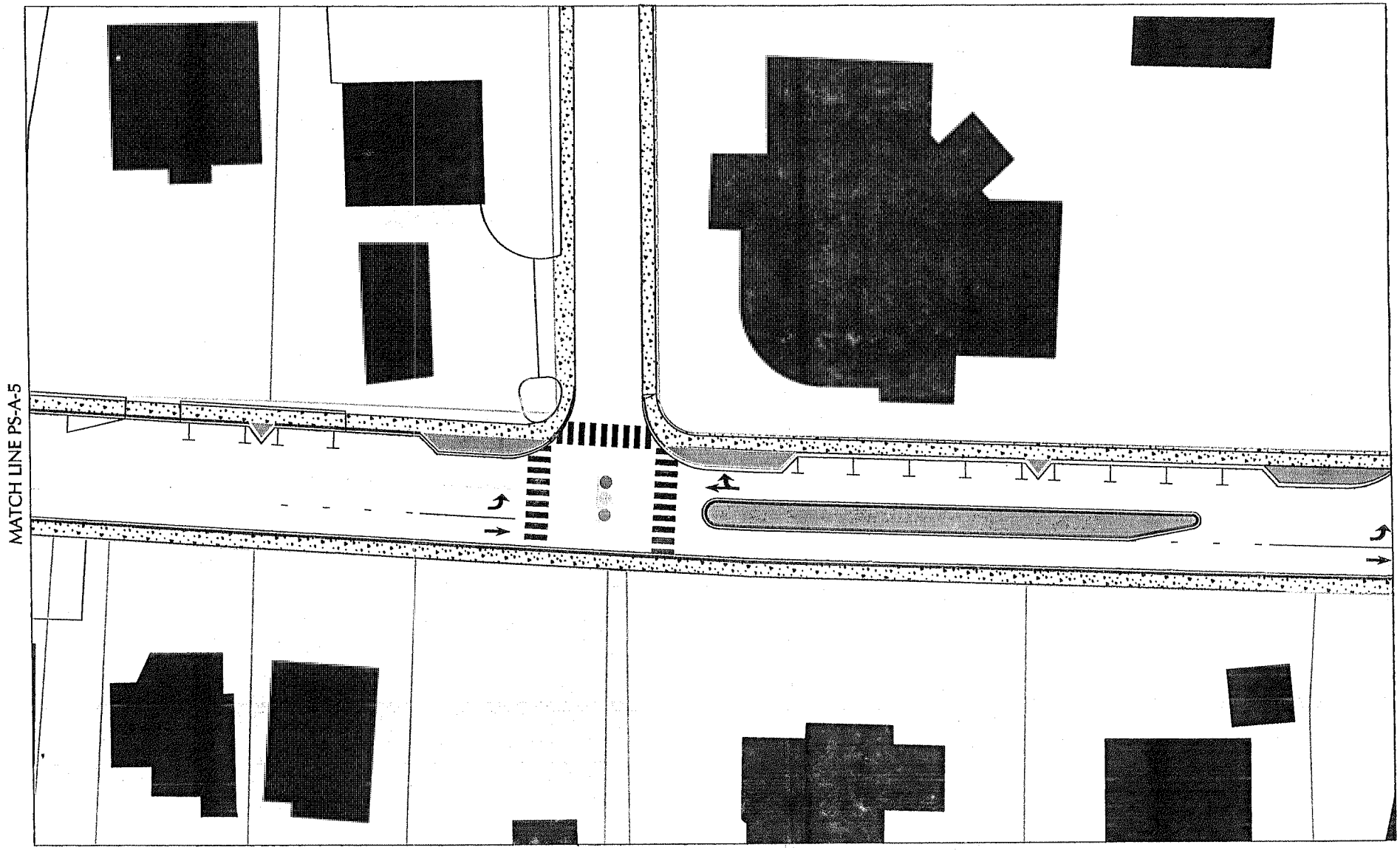
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO. PS-A-6



Kubilins
TRANSPORTATION GROUP, INC.

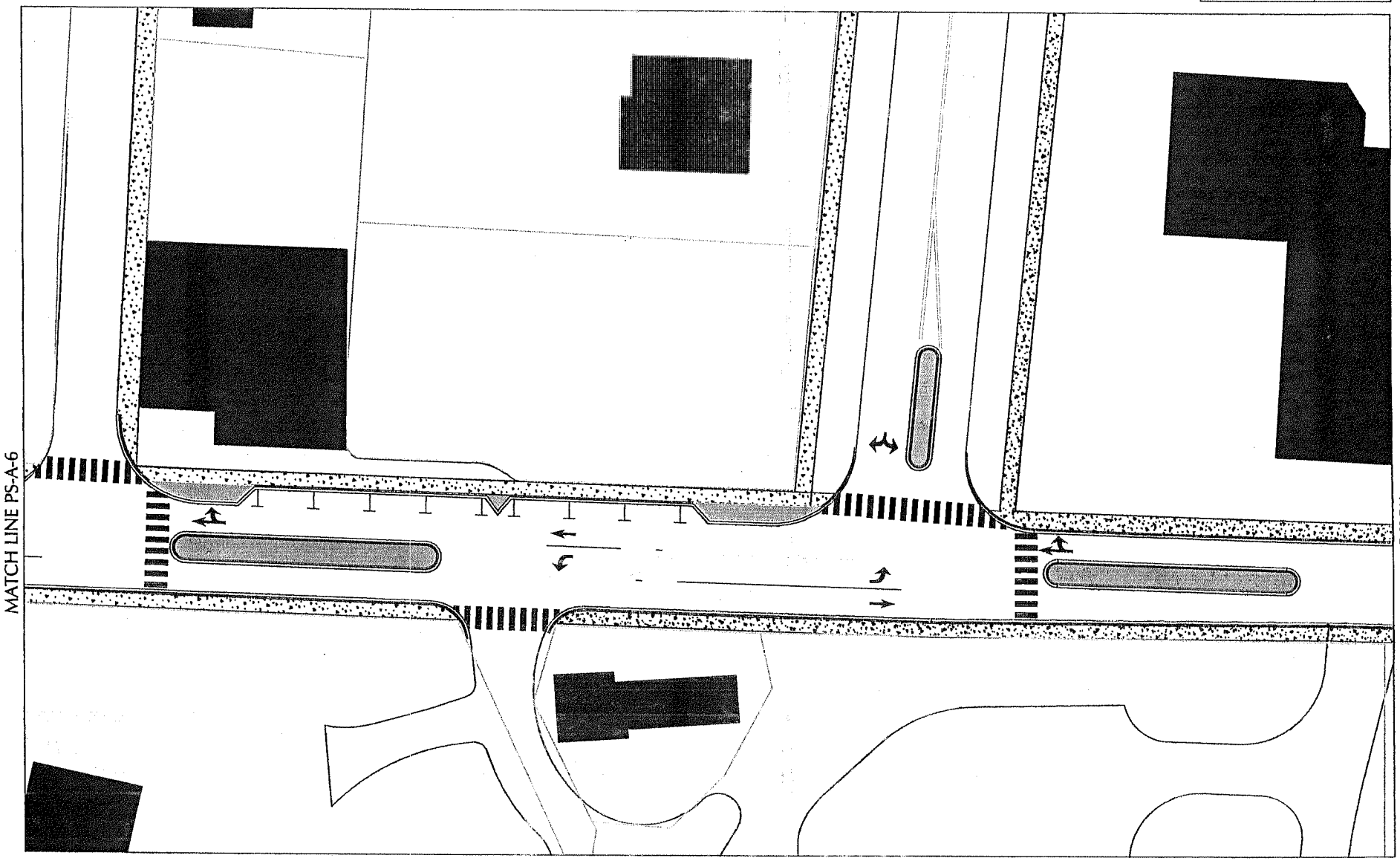
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO.
	PS-A-7



Kubilins
TRANSPORTATION GROUP, INC.

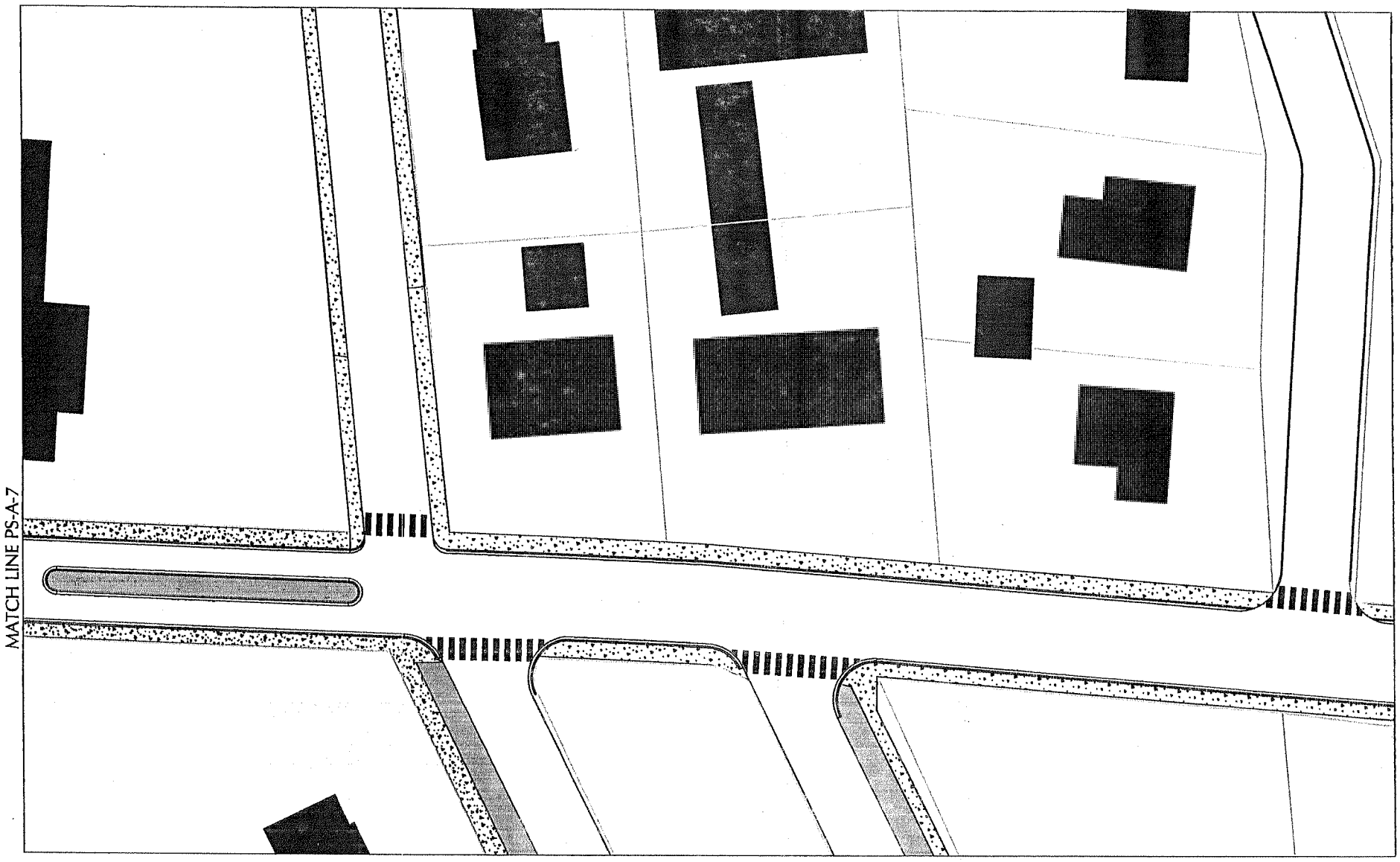
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO. PS-A-8



Kubilins
TRANSPORTATION GROUP, INC.

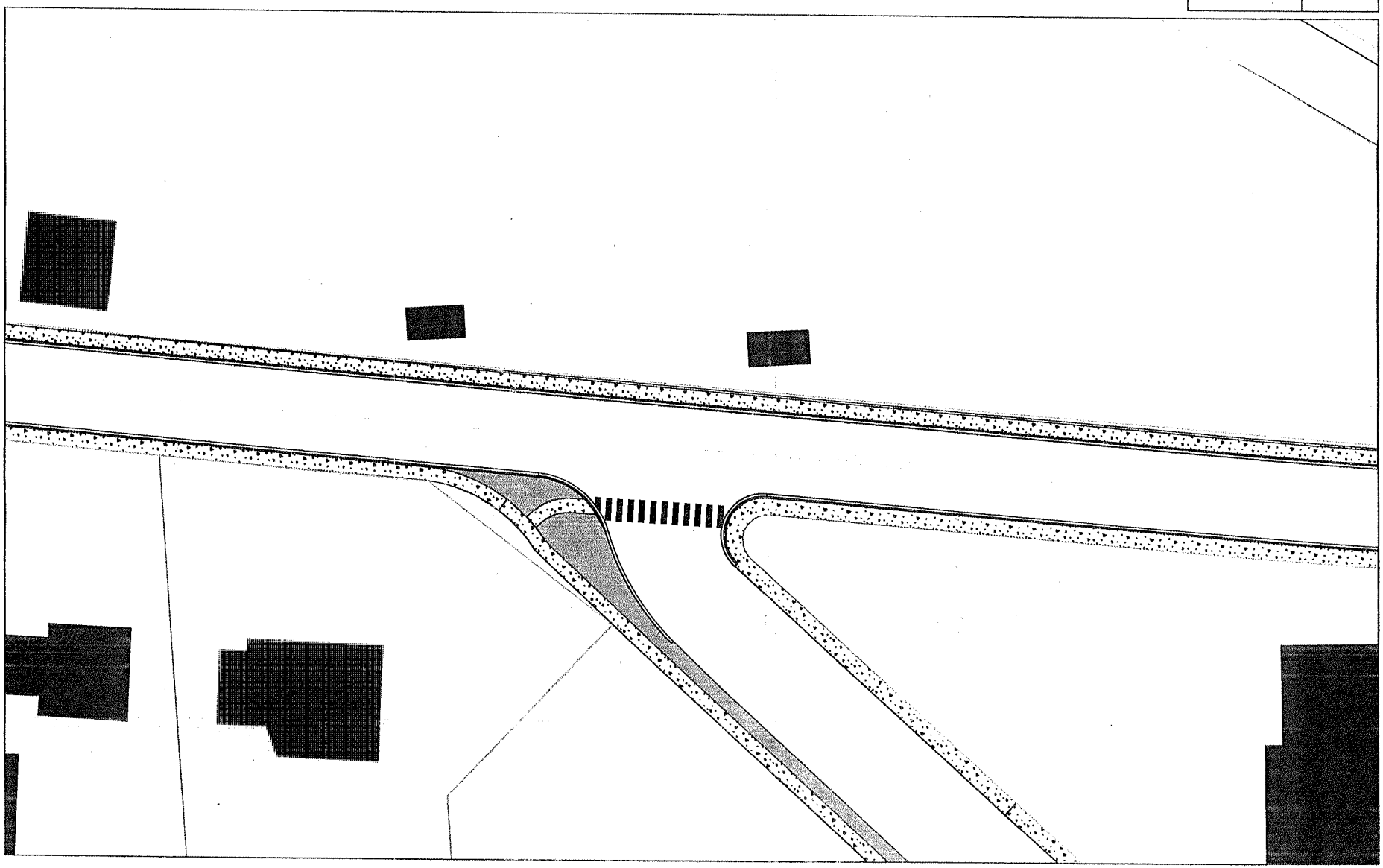
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO. PS-A-9



Kubilins
TRANSPORTATION GROUP, INC.

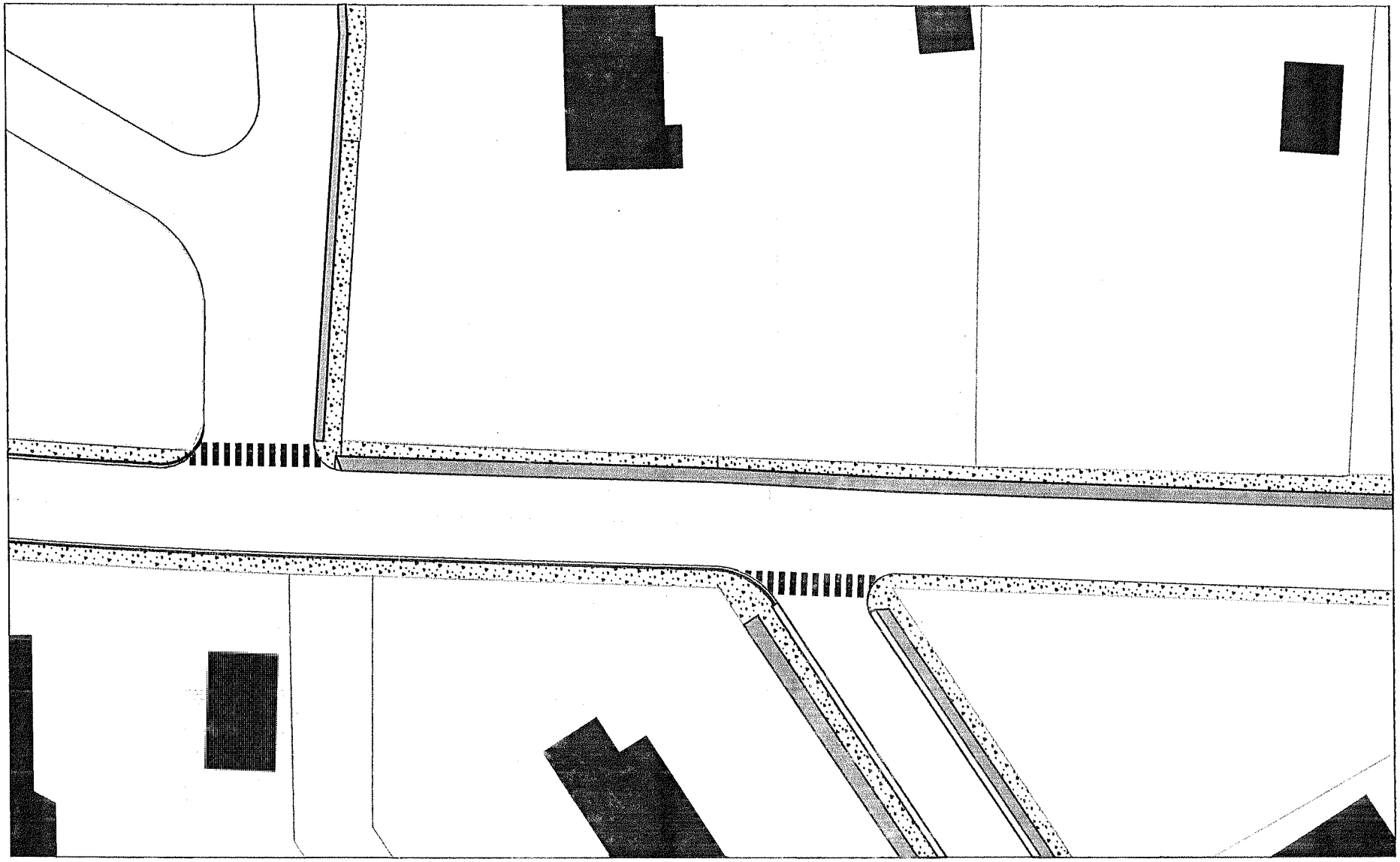
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO.
	PS-A-10



Kubilins
TRANSPORTATION GROUP, INC.

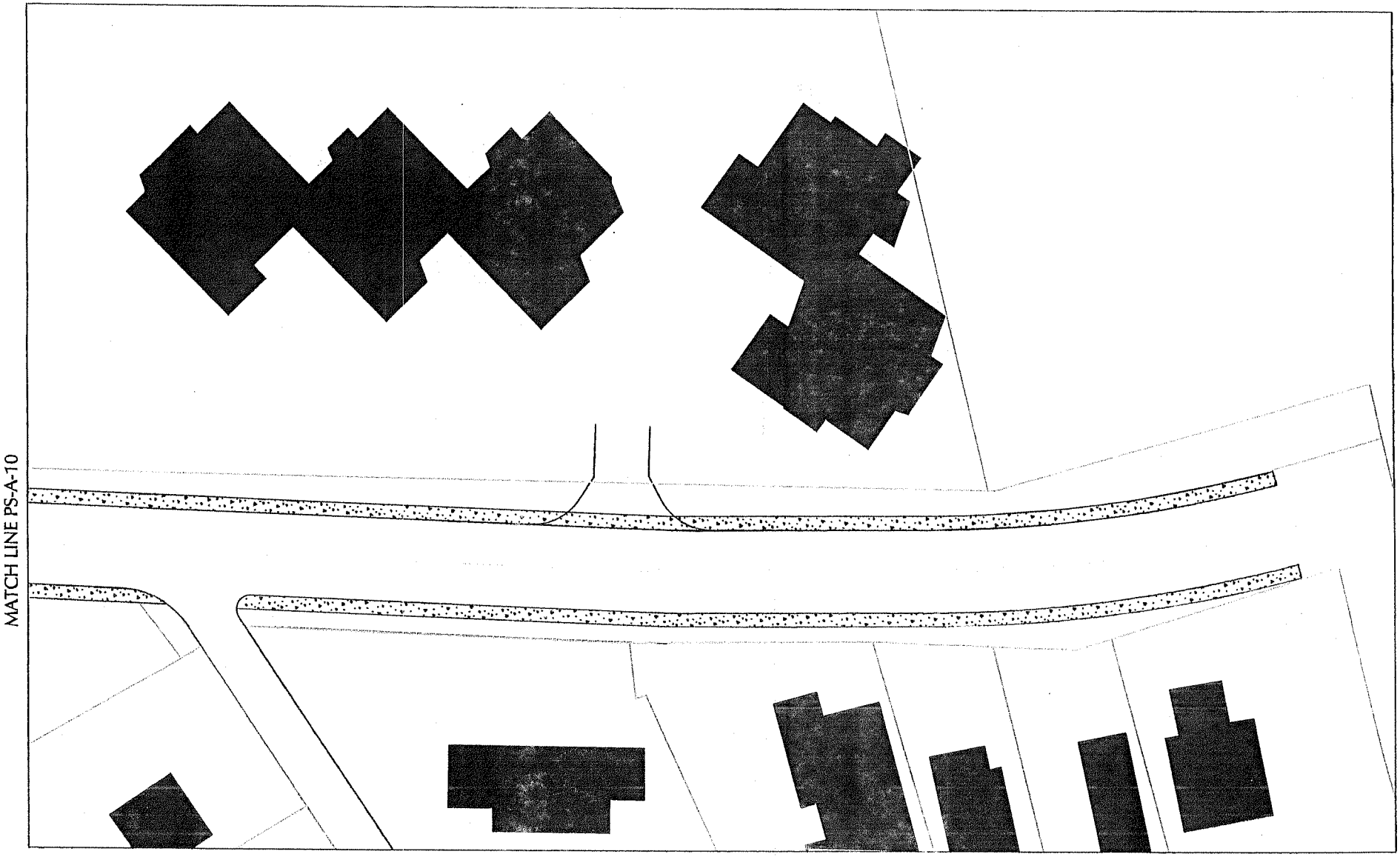
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

Charlotte Street	SHEET NO. PS-A-11



Kubilins TRANSPORTATION GROUP, INC.

SCALE 1'=50'

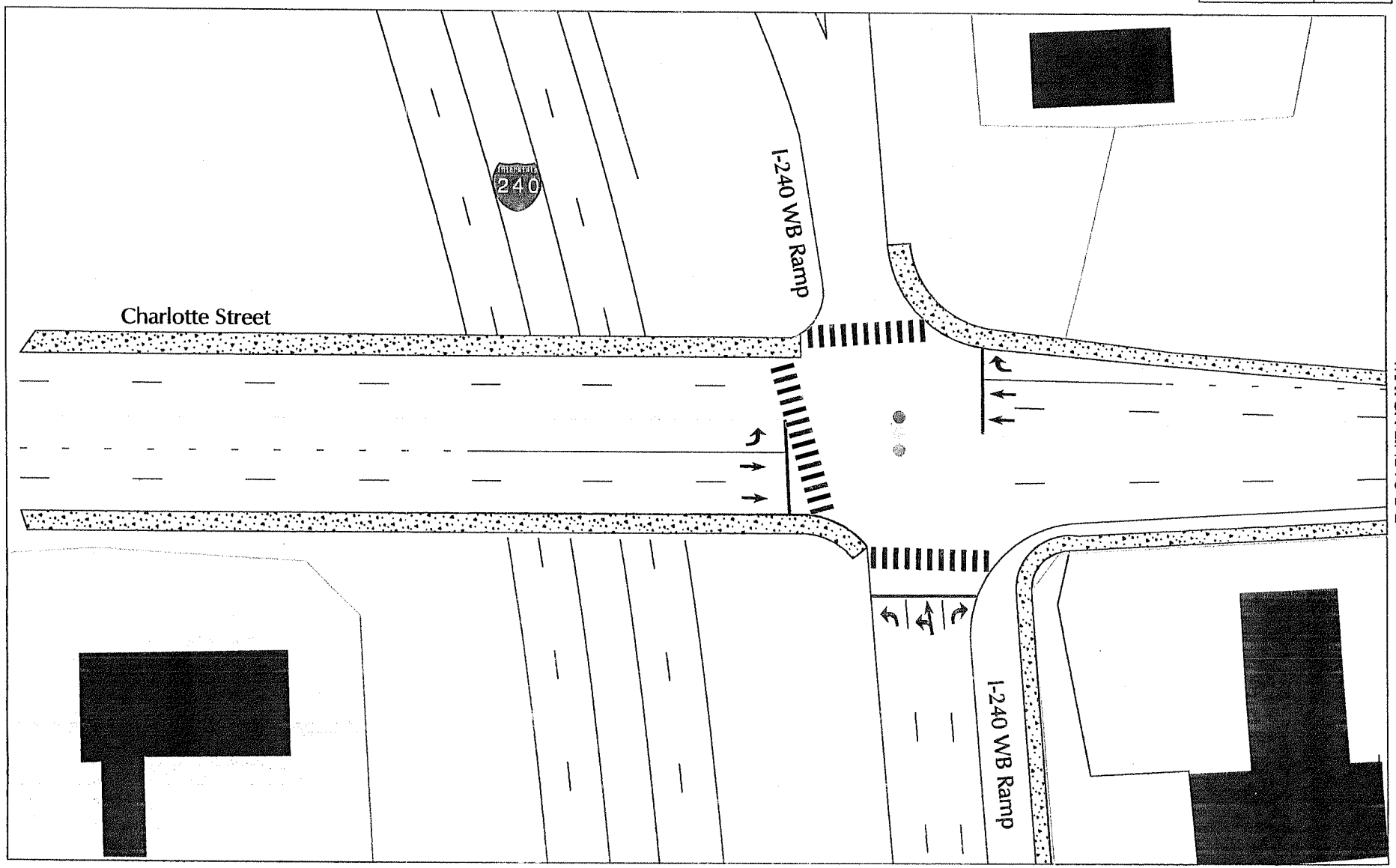
CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "A"

ALTERNATIVE B

Charlotte Street	SHEET NO. PS-B-1



Kubilins
TRANSPORTATION GROUP, INC.

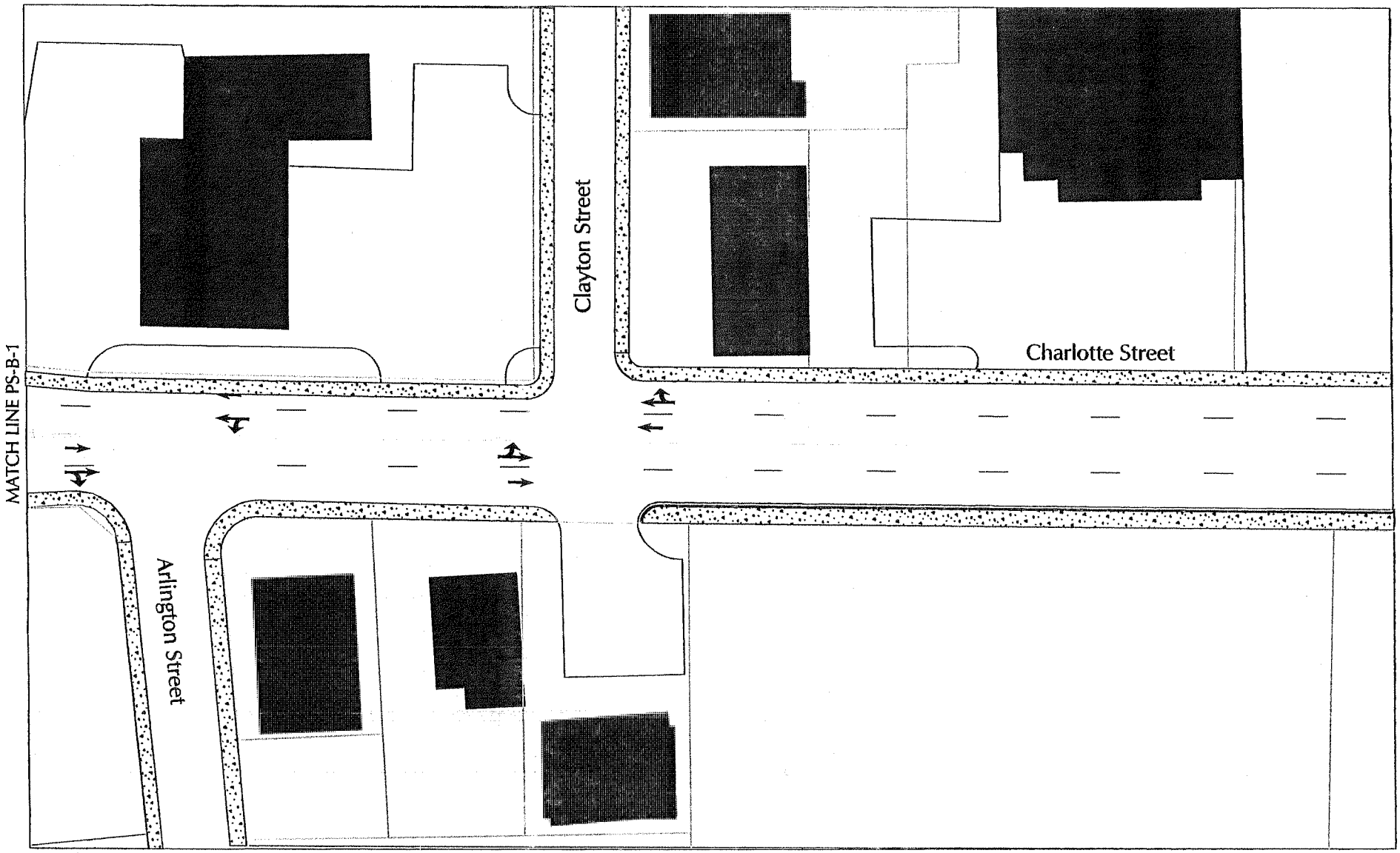
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO.
	PS-B-2



Kubilins
TRANSPORTATION GROUP, INC.

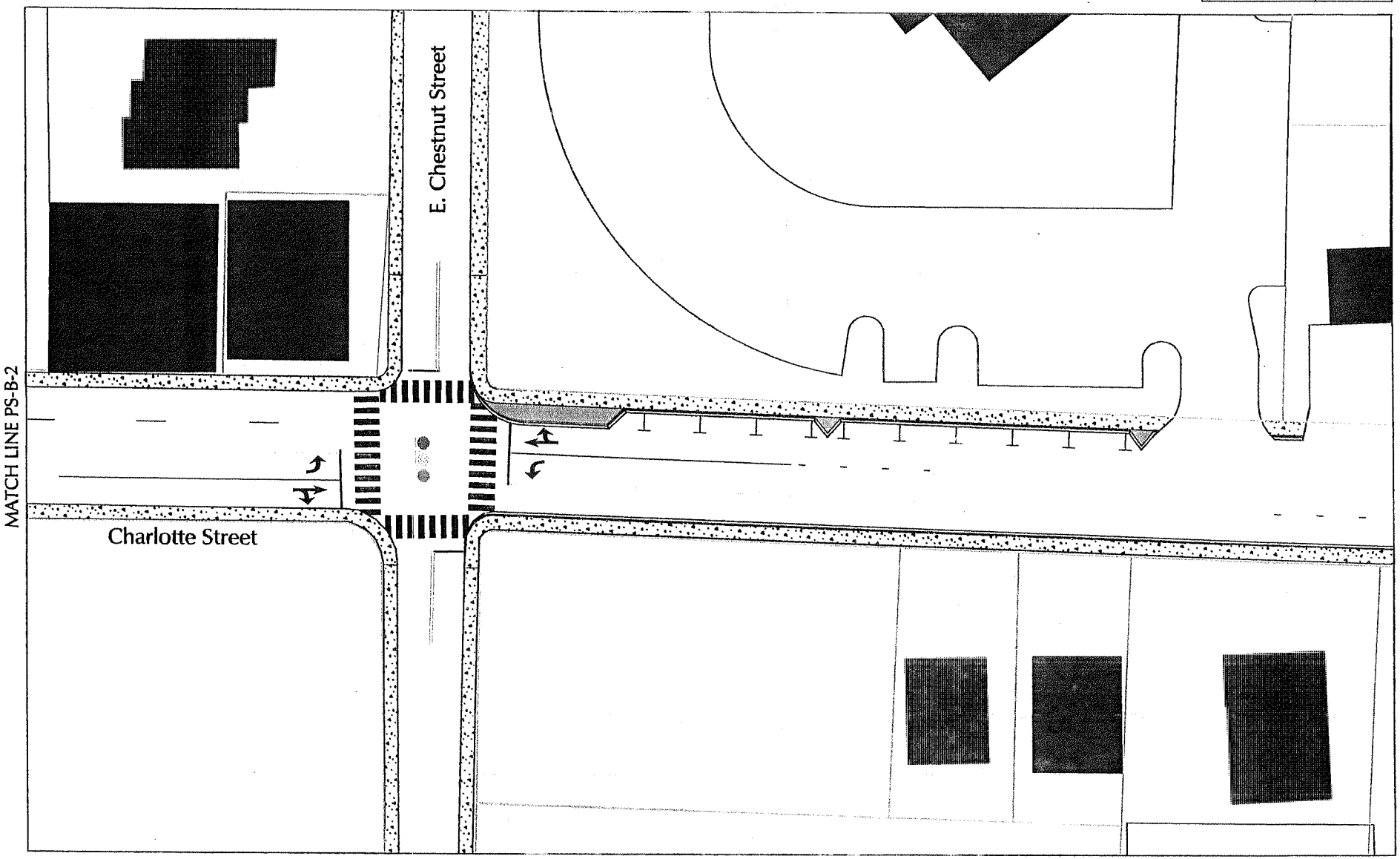
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO.
	PS-B-3



Kubilins
TRANSPORTATION GROUP, INC.

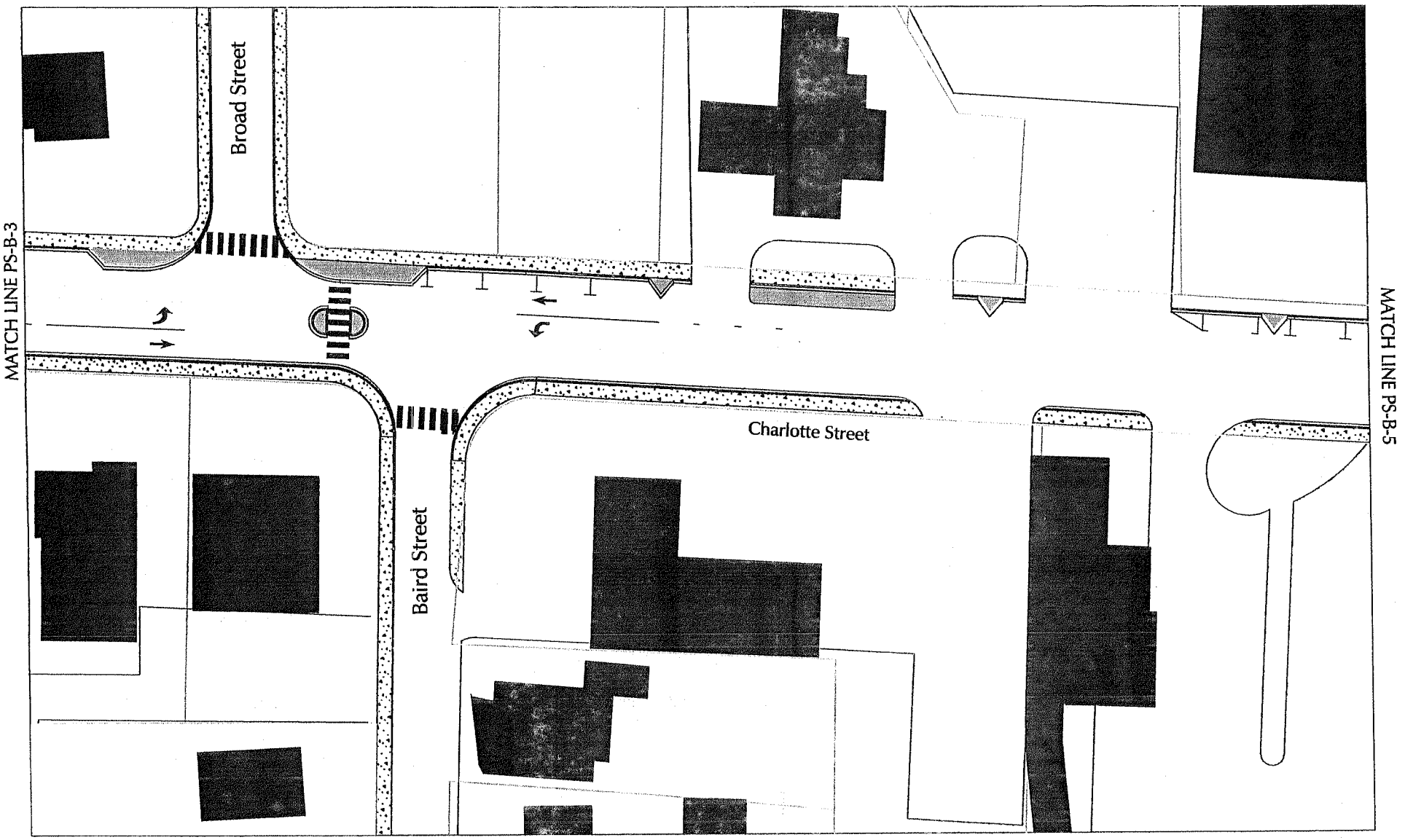
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO. PS-B-4



Kubilins
TRANSPORTATION GROUP, INC.

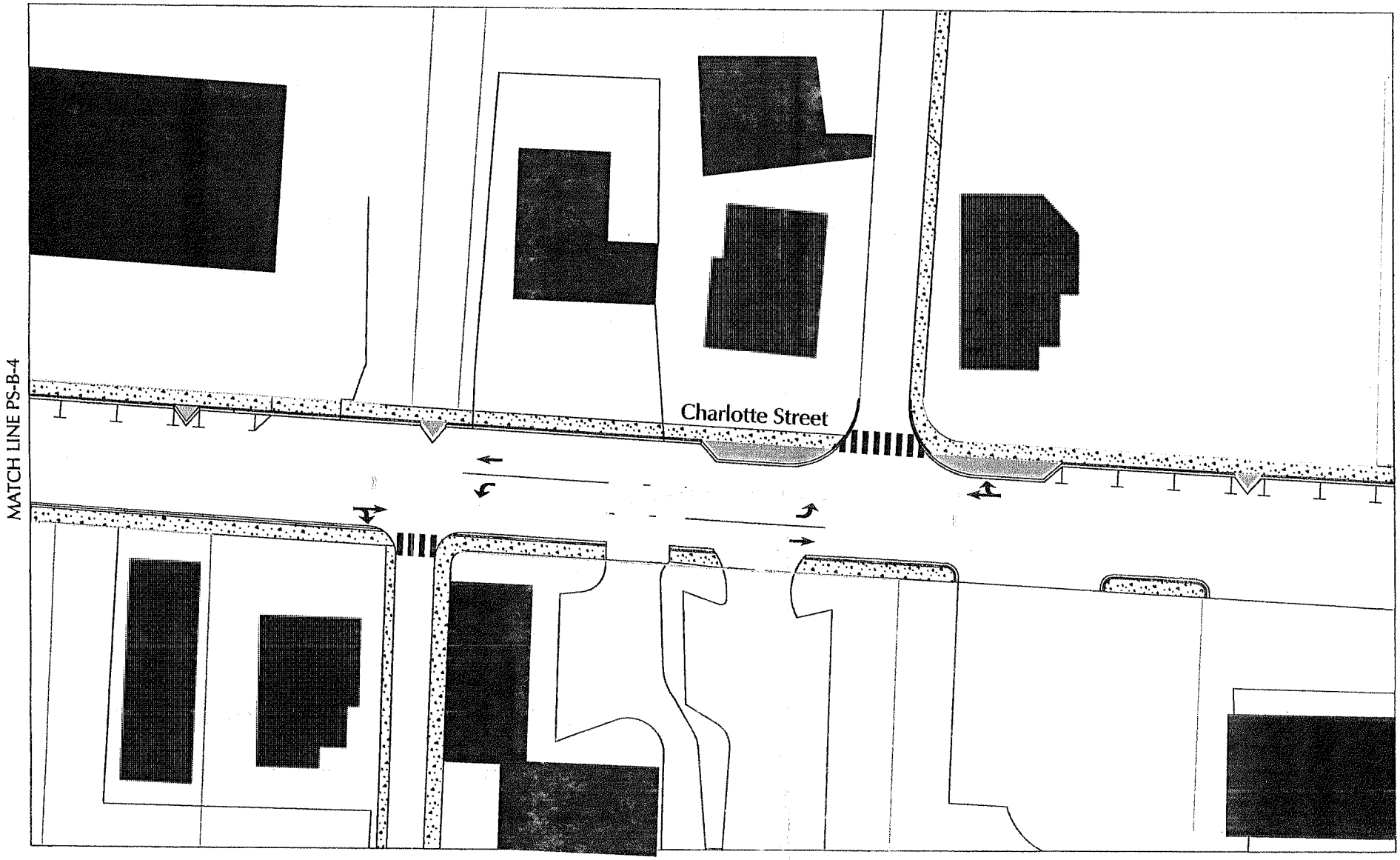
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO.
	PS-B-5



Kubilins
TRANSPORTATION GROUP, INC.

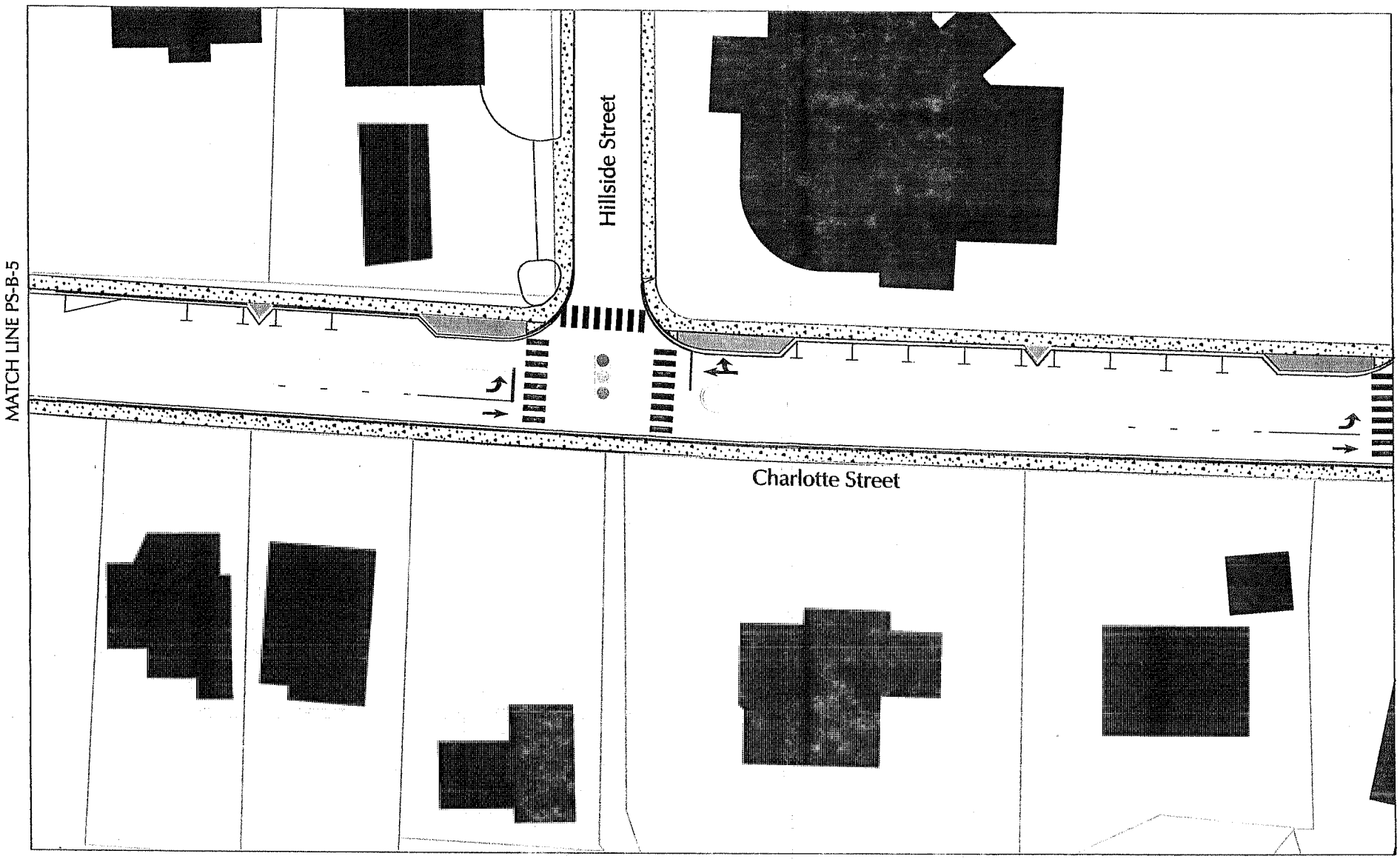
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO. PS-B-6



Kubilins
TRANSPORTATION GROUP, INC.

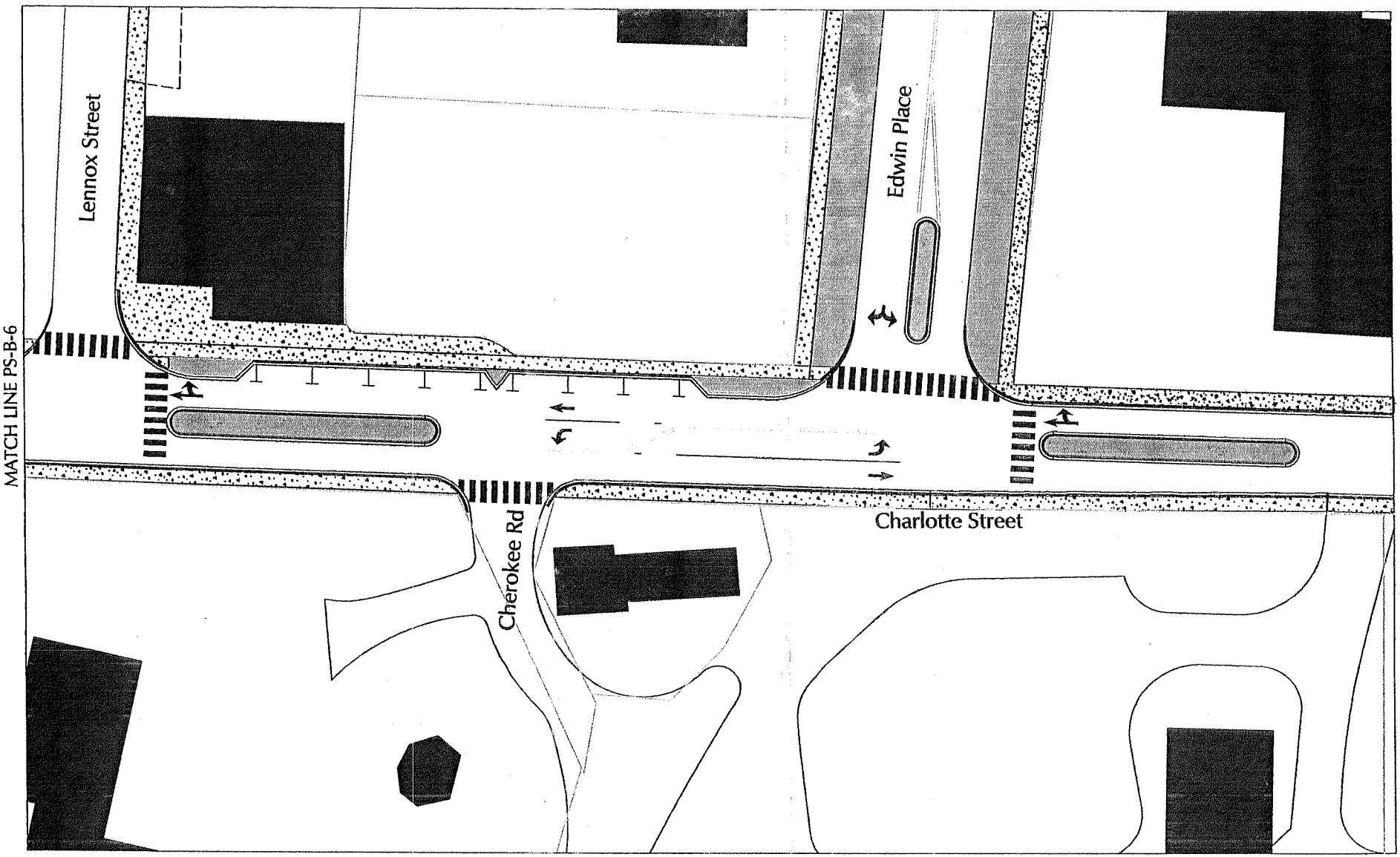
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO. PS-B-7



Kubilins
TRANSPORTATION GROUP, INC.

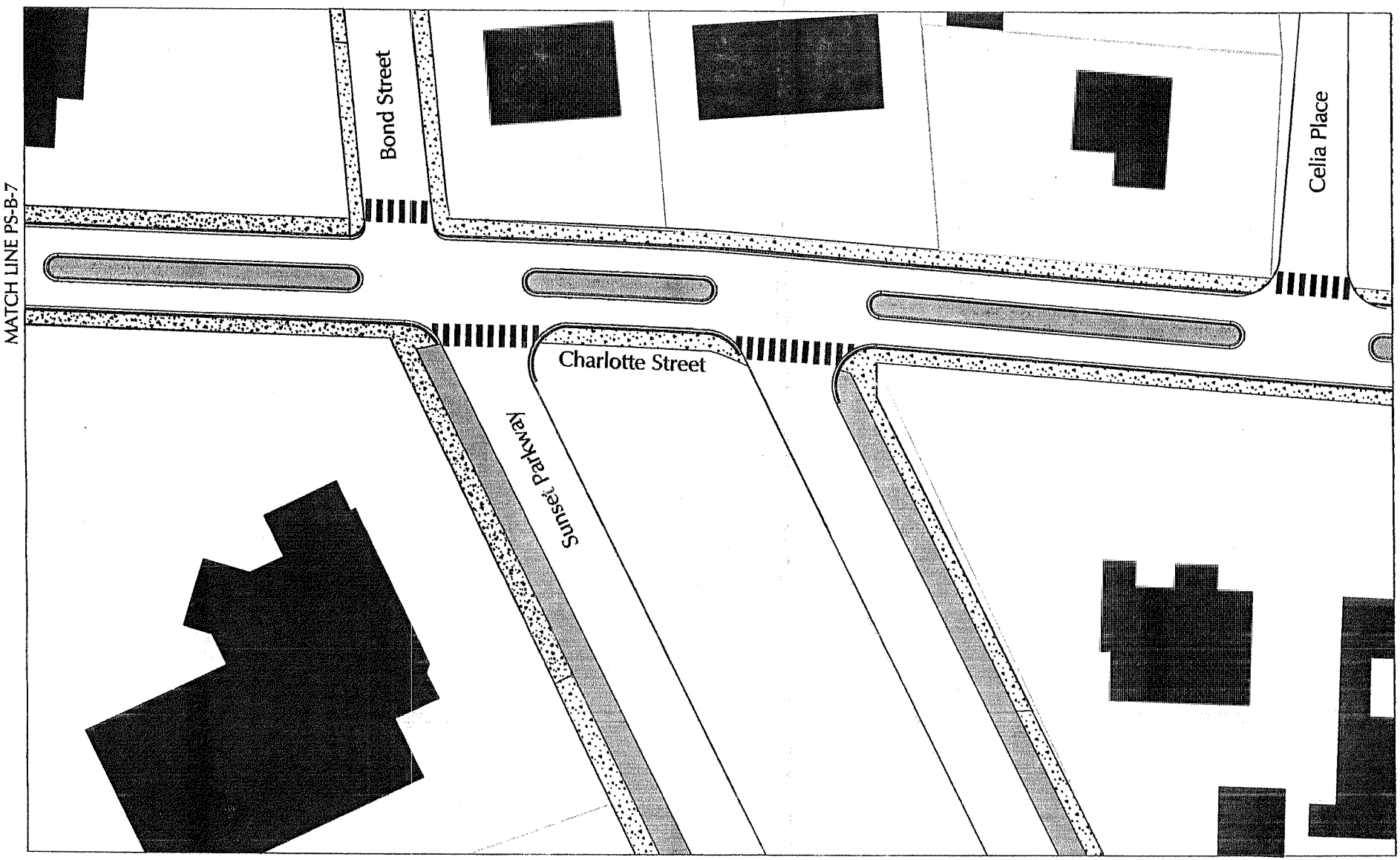
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO. PS-B-8



Kubilins
TRANSPORTATION GROUP, INC.

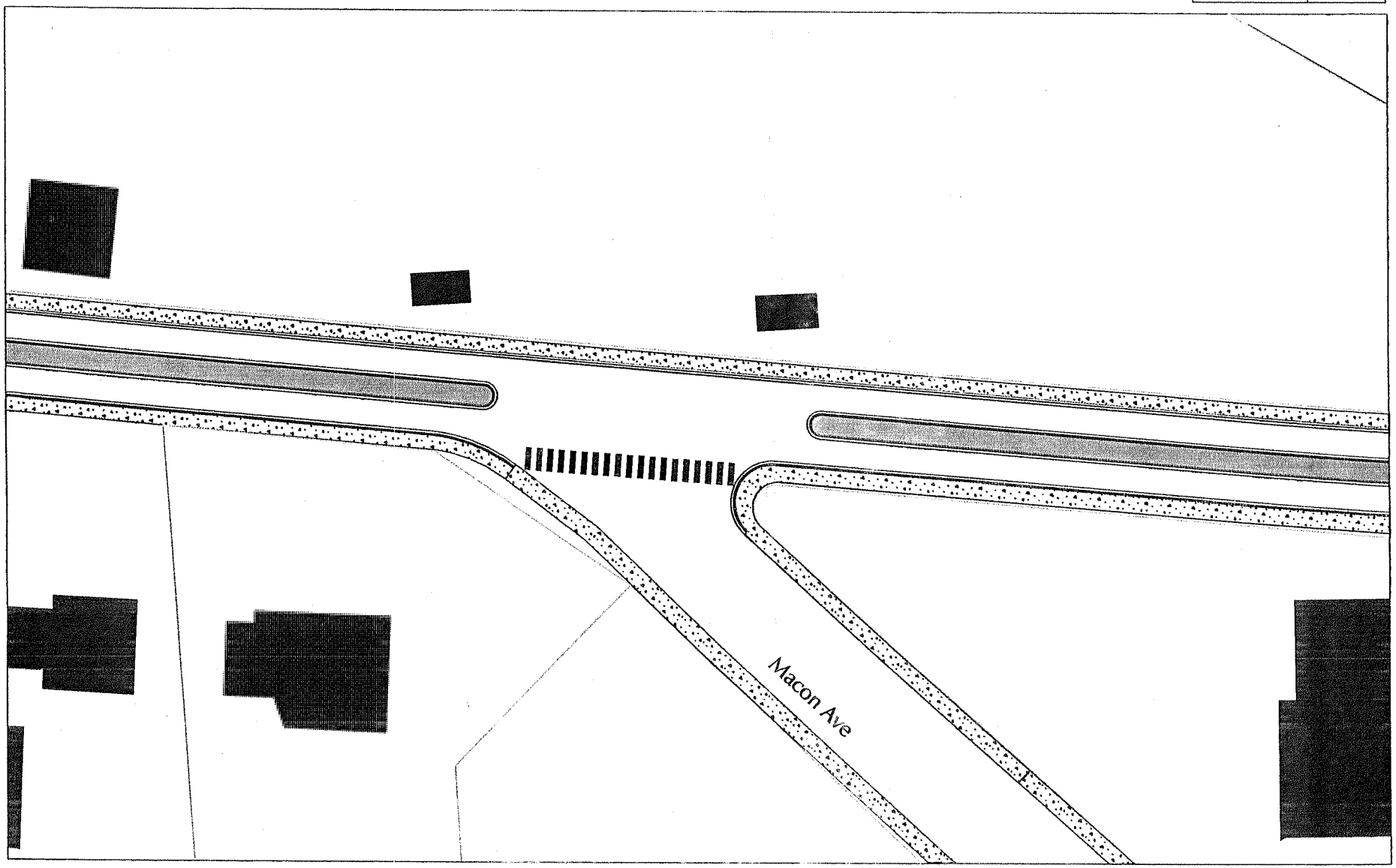
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO. PS-B-9



Kubilins
TRANSPORTATION GROUP, INC.

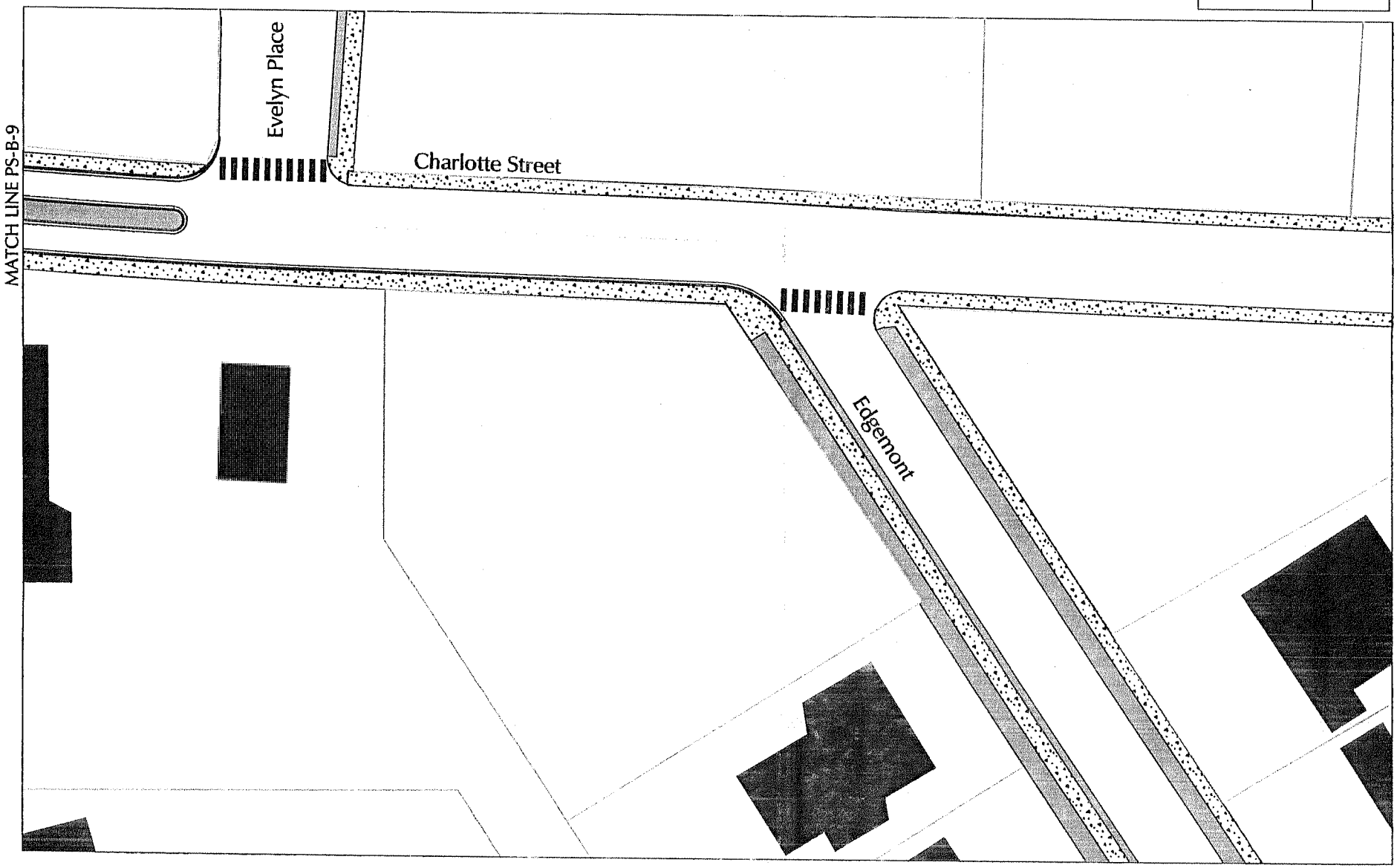
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO. PS-B-10



Kubilins
TRANSPORTATION GROUP, INC.

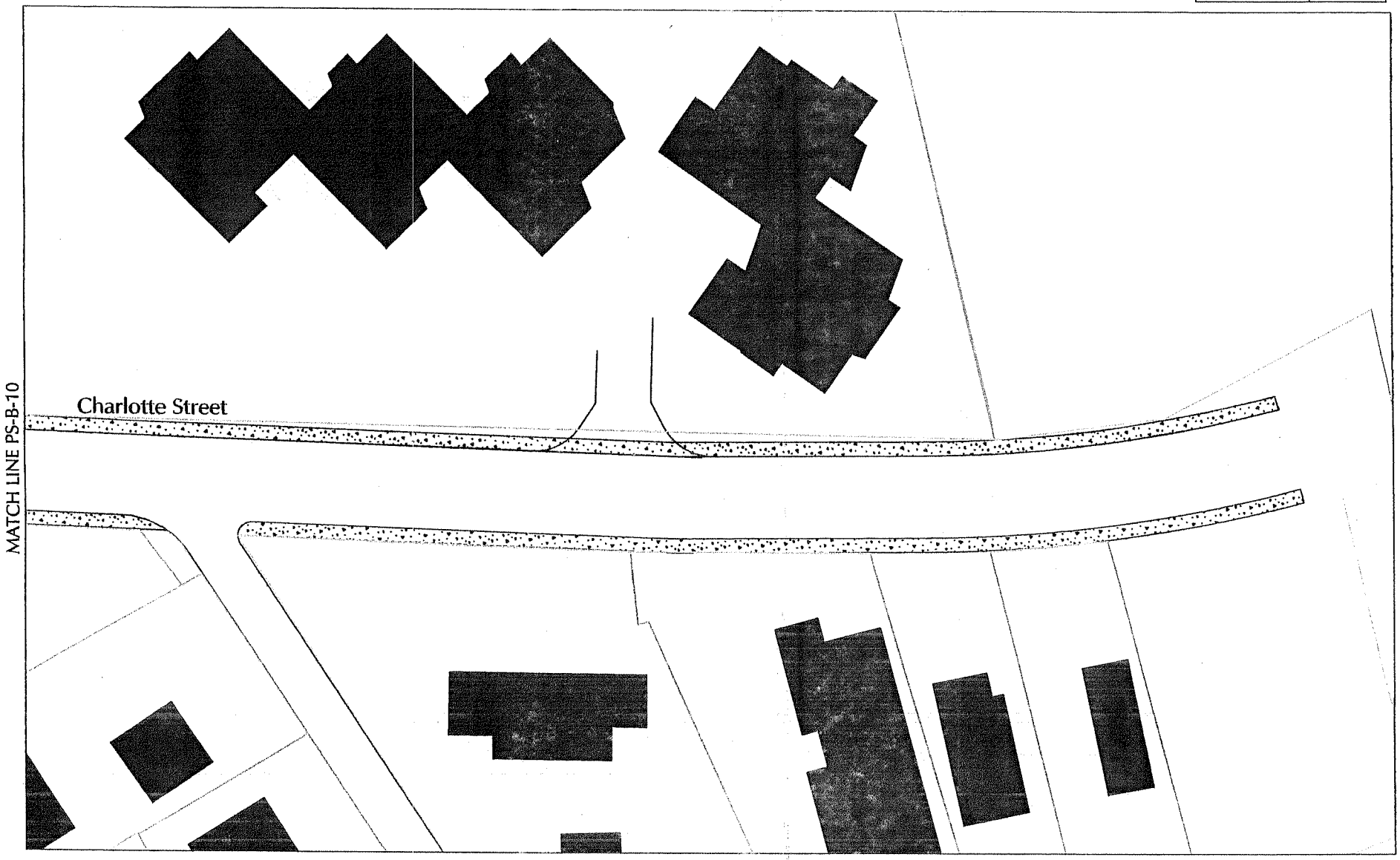
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

Charlotte Street	SHEET NO.
	PS-B-11



Kubilins
TRANSPORTATION GROUP, INC.

SCALE
1"=50'

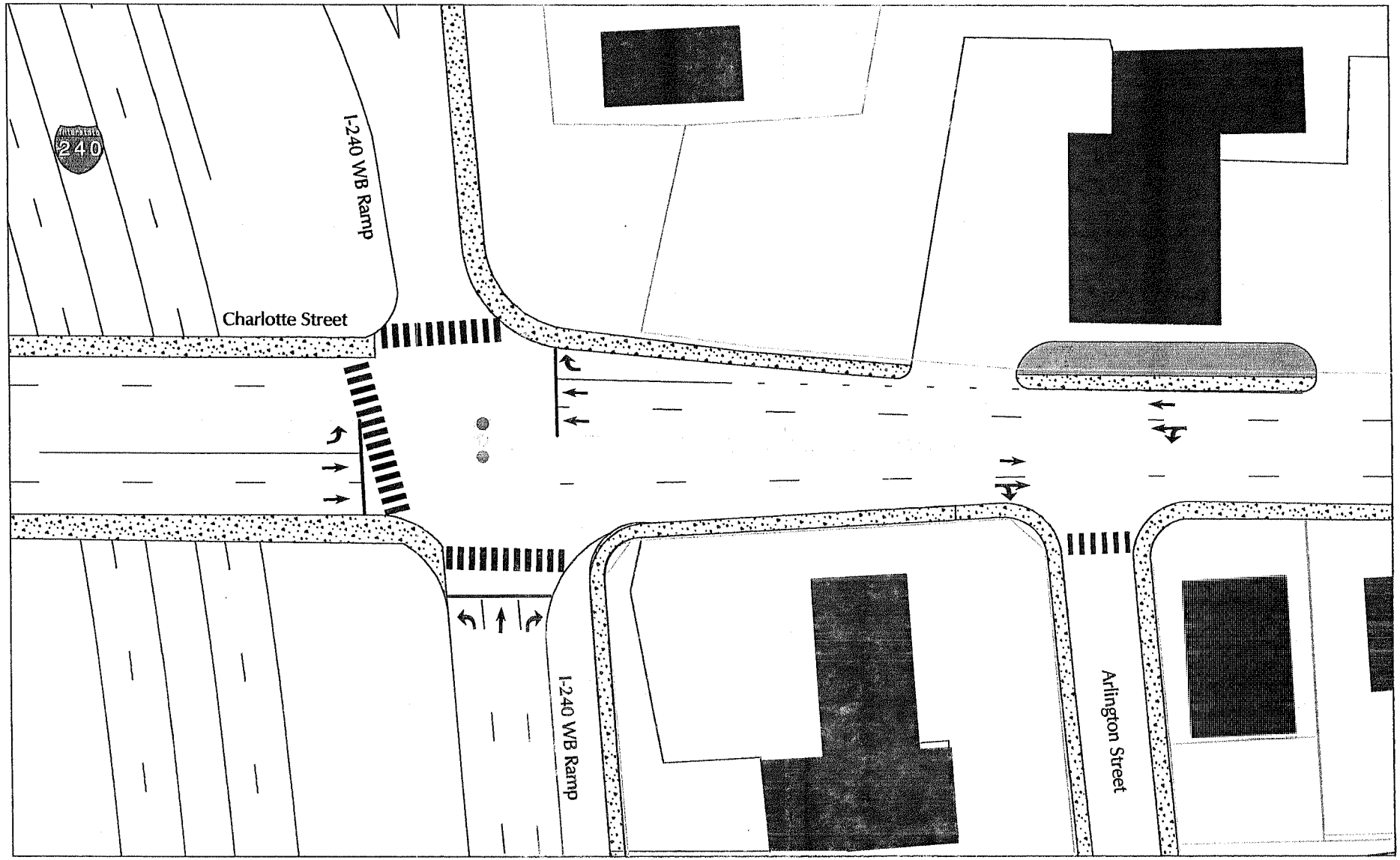
CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "B"

ALTERNATIVE C

Charlotte Street	SHEET NO.
	PS-C-1



Kubilins
TRANSPORTATION GROUP, INC.

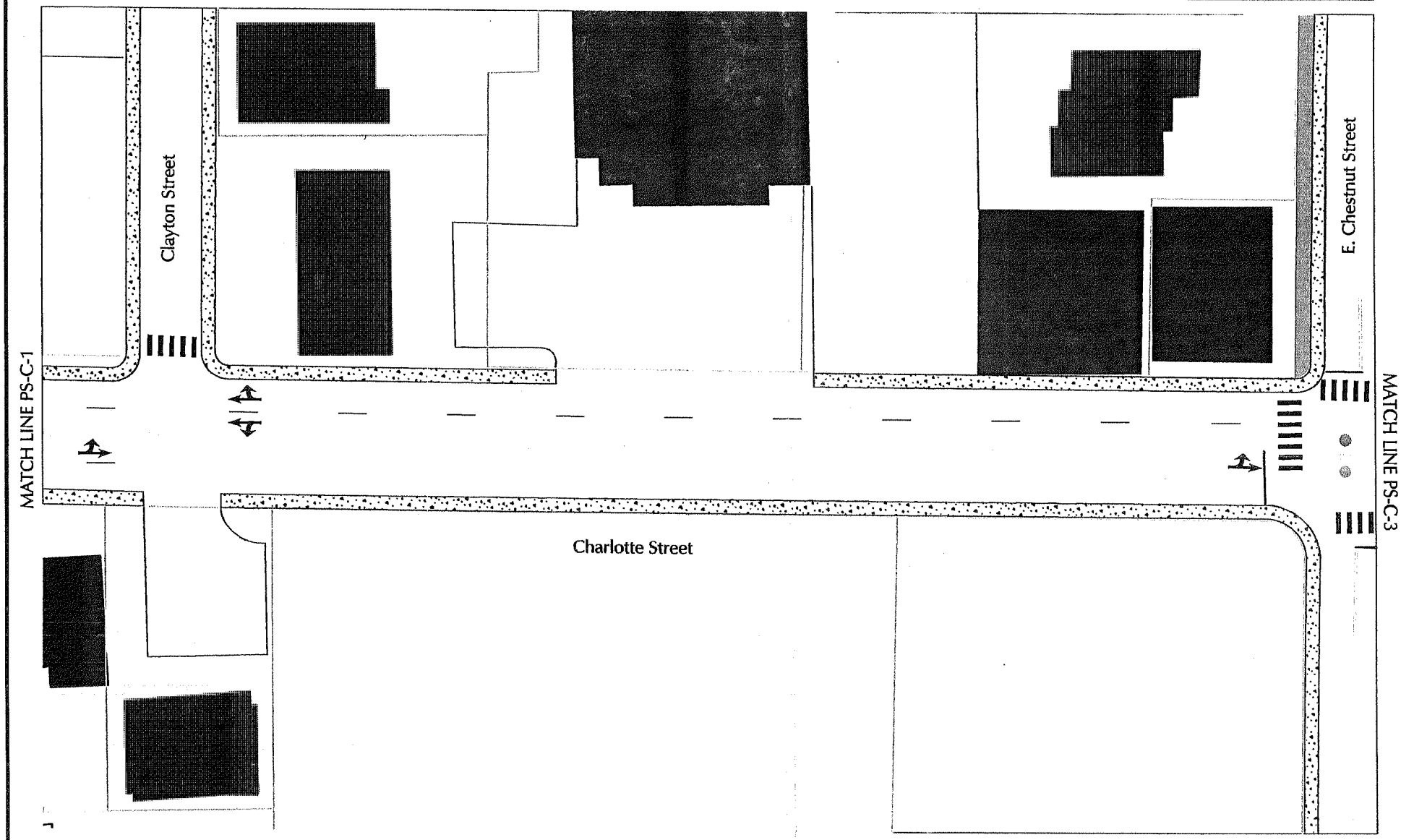
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"

Charlotte Street	SHEET NO. PS-C-2



Kubilins
TRANSPORTATION GROUP, INC.

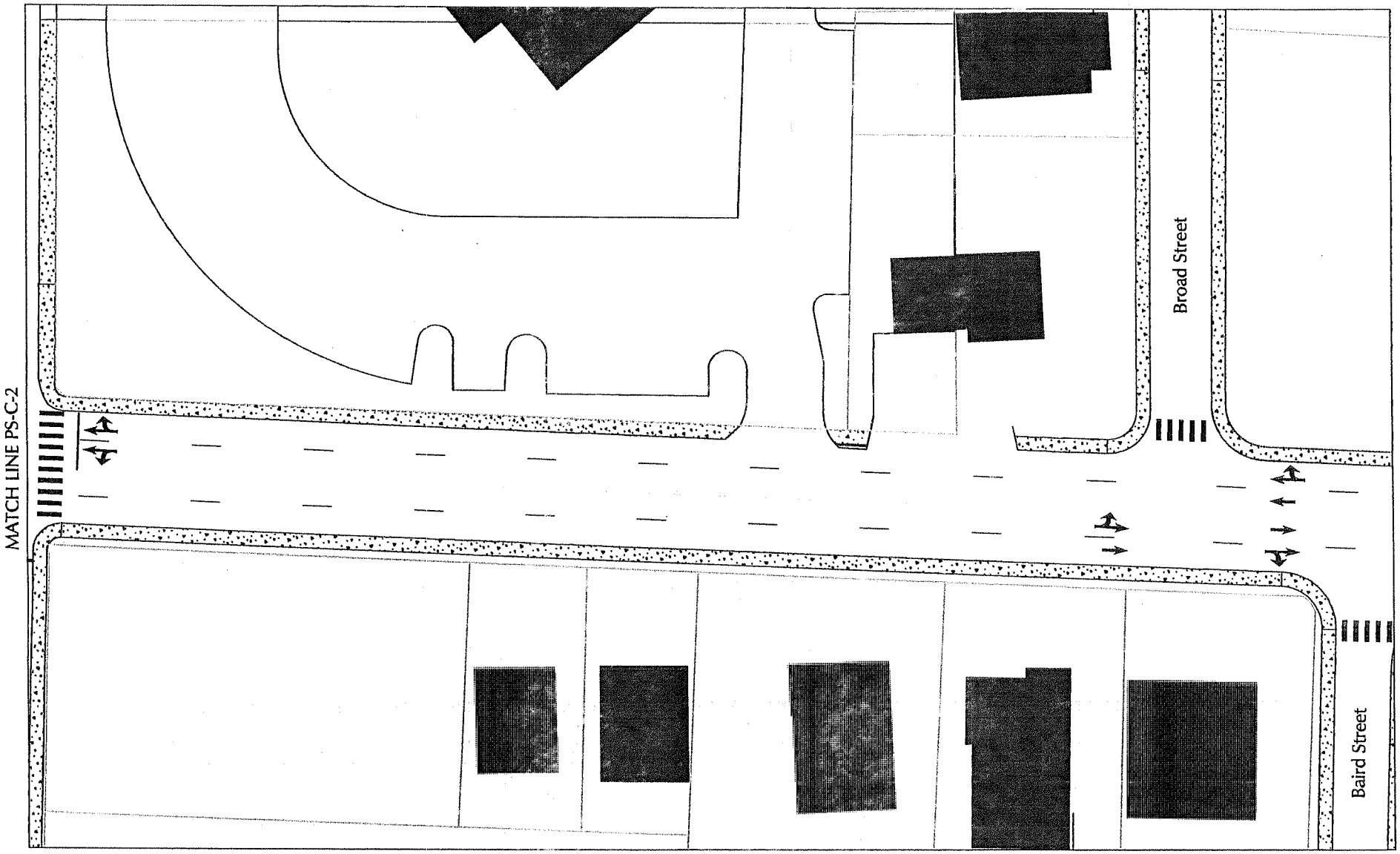
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"

Charlotte Street	SHEET NO.
	PS-C-3



Kubilins
TRANSPORTATION GROUP, INC.

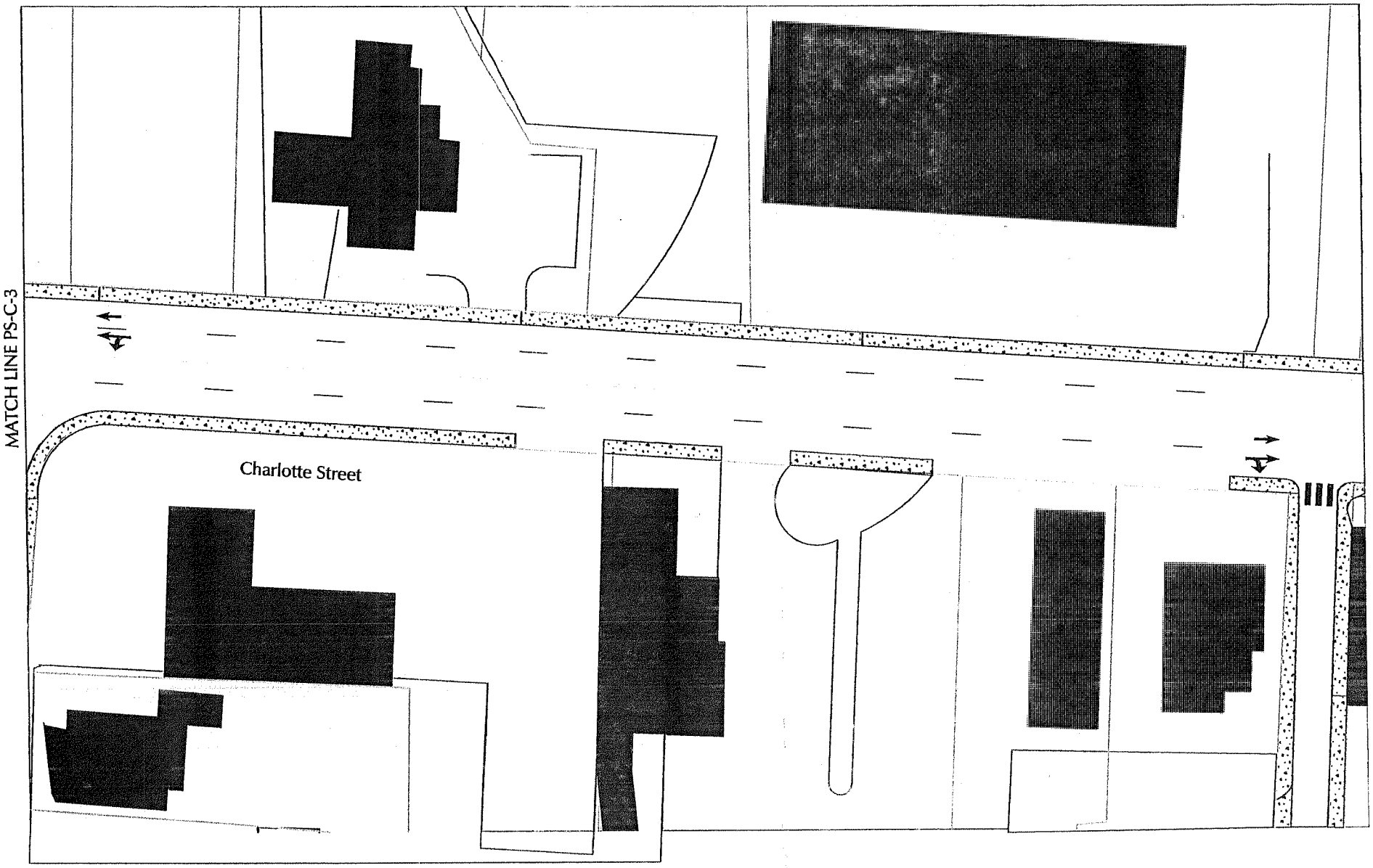
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"

Charlotte Street	SHEET NO.
	PS-C-4



ALTERNATIVE "C"

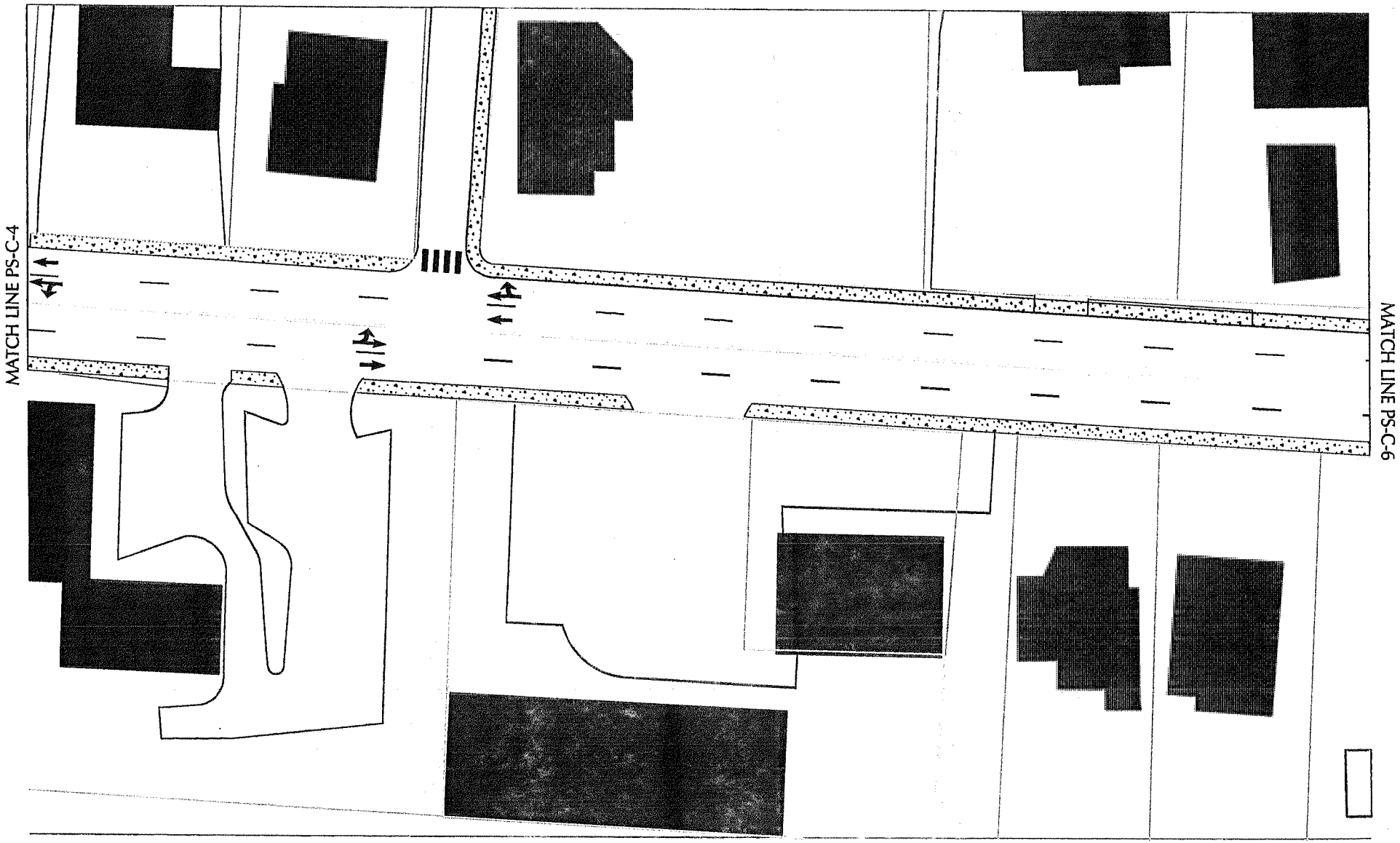
Kubilins
TRANSPORTATION GROUP, INC.

SCALE
1'=40'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

Charlotte Street	SHEET NO.
	PS-C-5



Kubilins
TRANSPORTATION GROUP, INC.

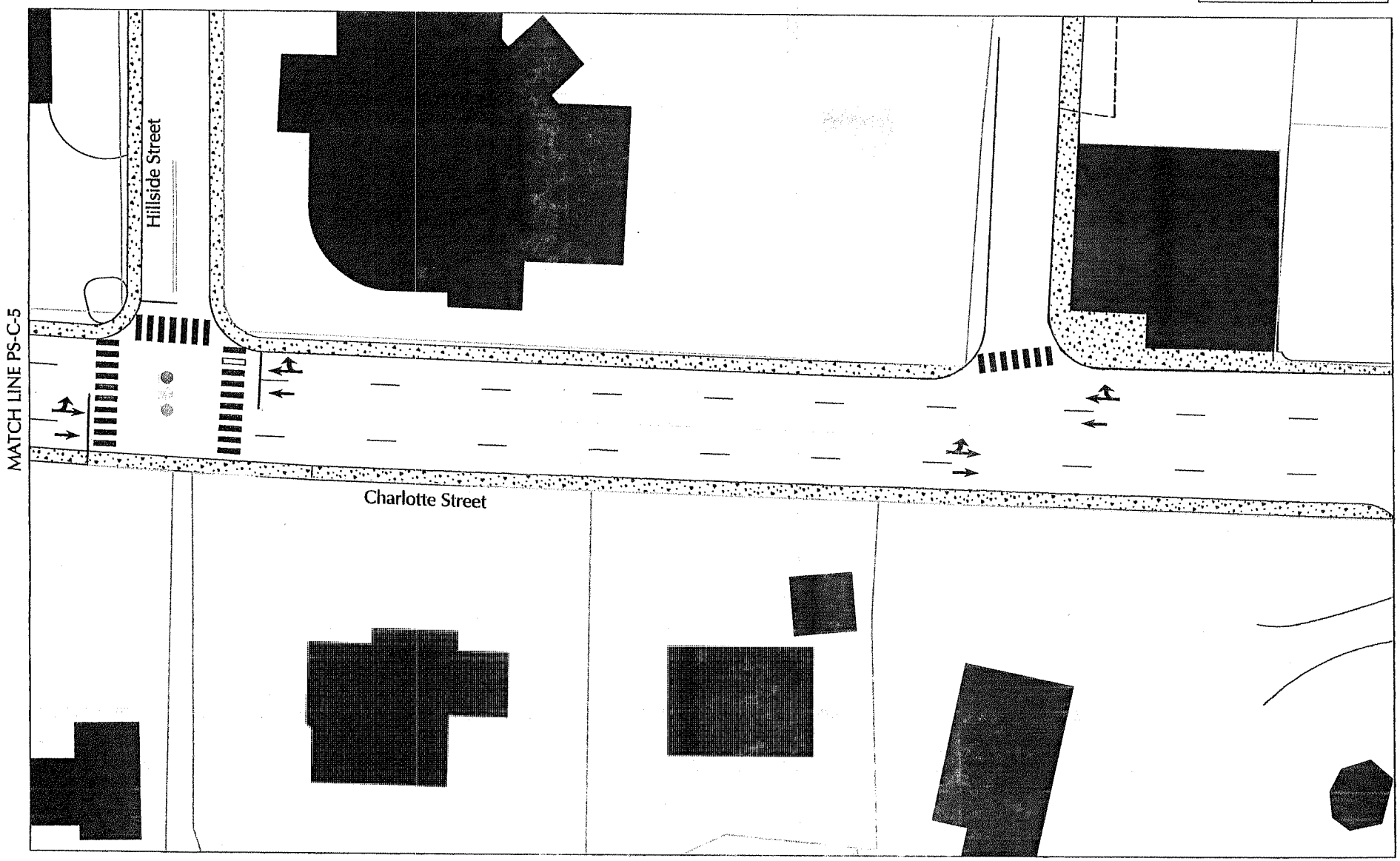
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"

Charlotte Street	SHEET NO.
	PS-C-6



Kubilins
TRANSPORTATION GROUP, INC.

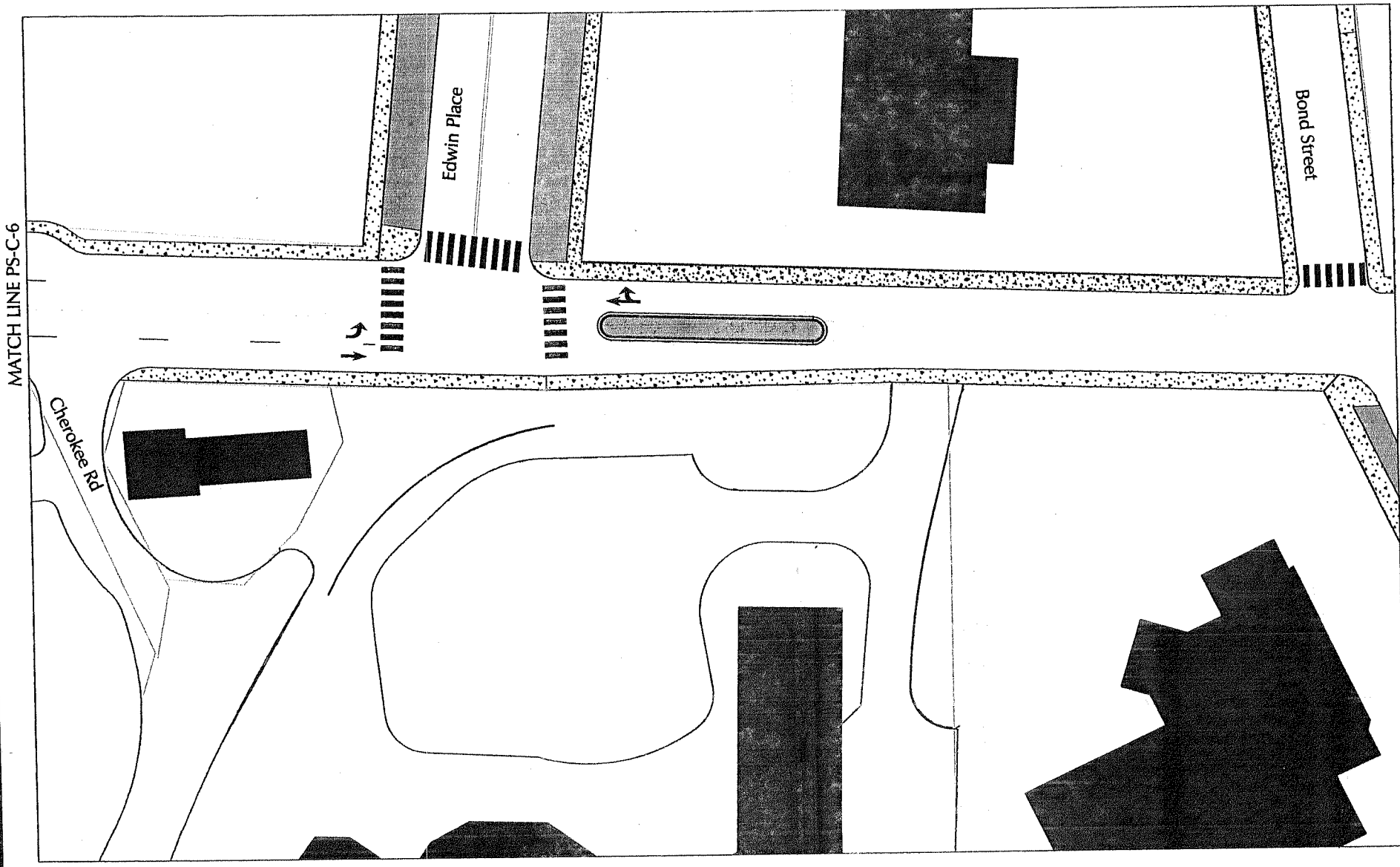
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"

Charlotte Street	SHEET NO. PS-C-7



Kubilins
TRANSPORTATION GROUP, INC.

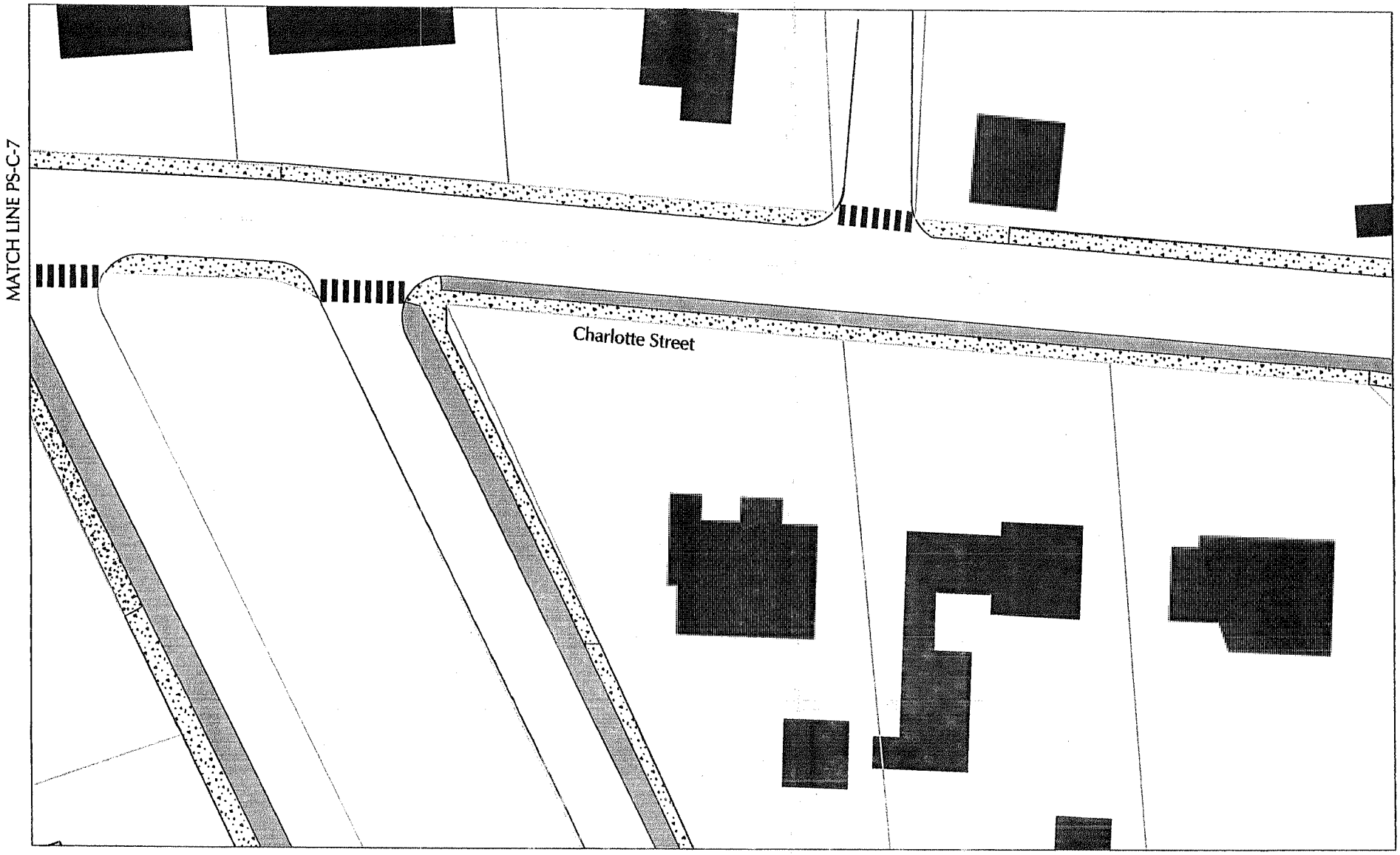
SCALE
1"=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"

Charlotte Street	SHEET NO.
	PS-C-8



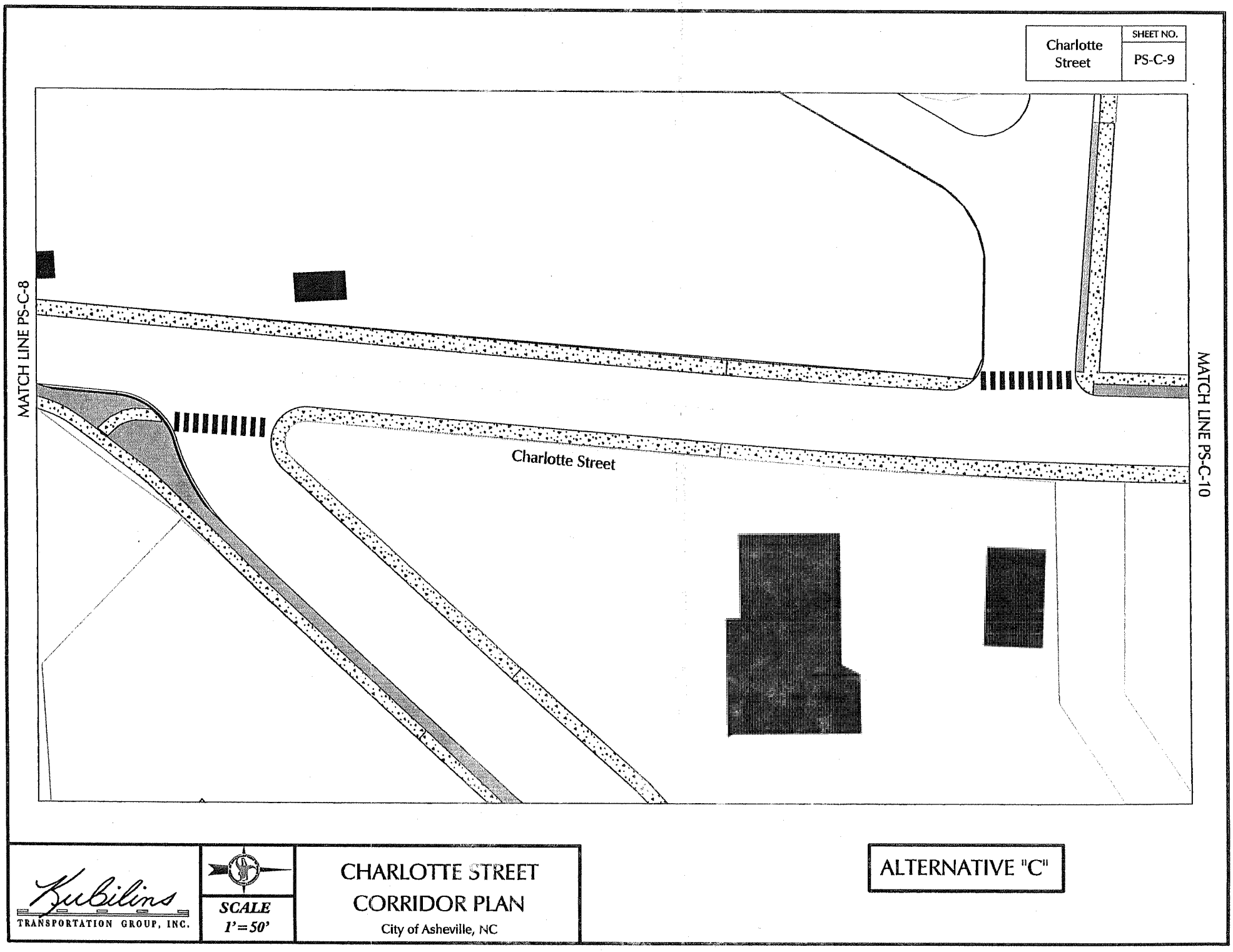
Kubilins
TRANSPORTATION GROUP, INC.

SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"



Kubilins
TRANSPORTATION GROUP, INC.

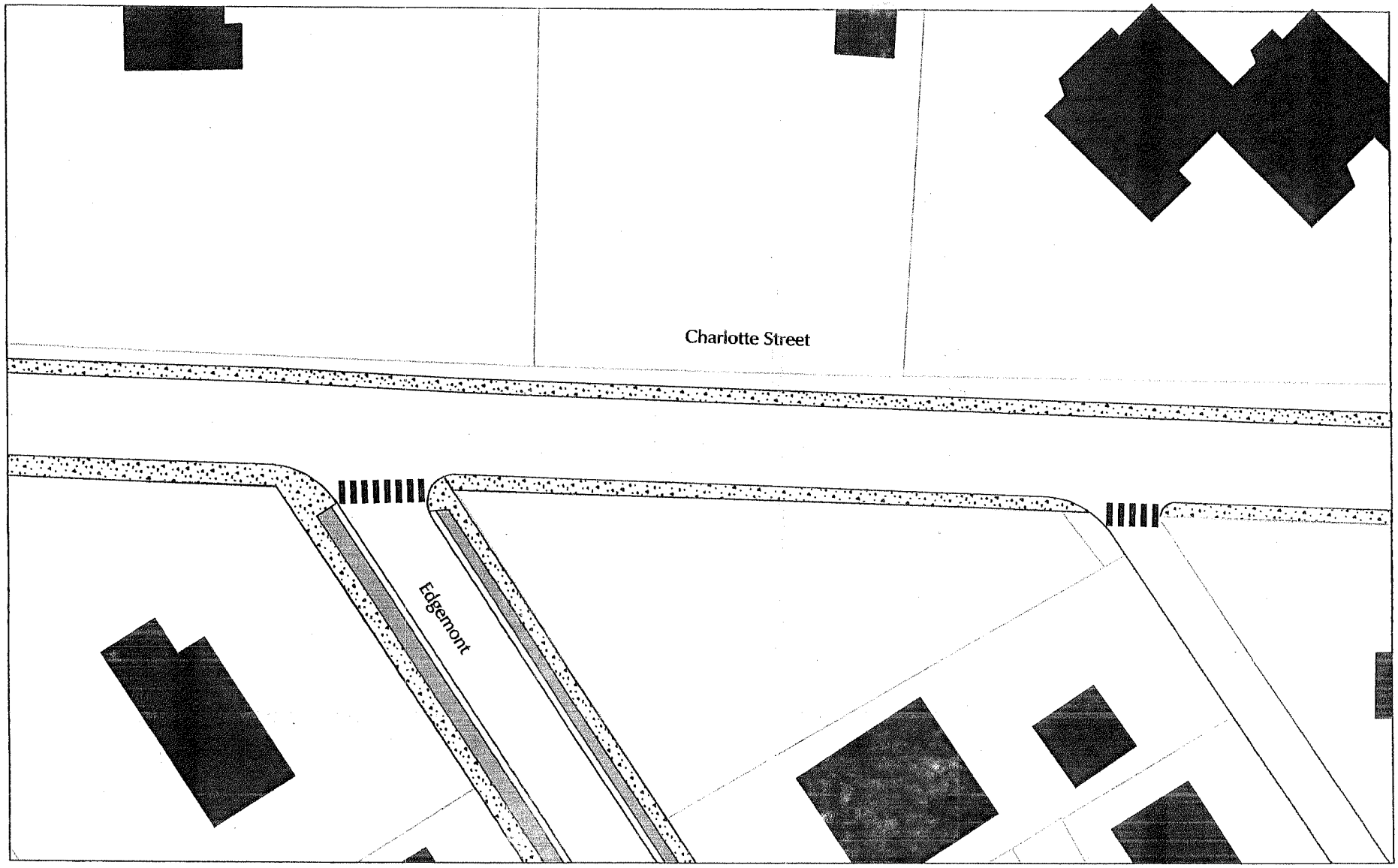
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"

Charlotte Street	SHEET NO.
	PS-C-10



Kubilins
TRANSPORTATION GROUP, INC.

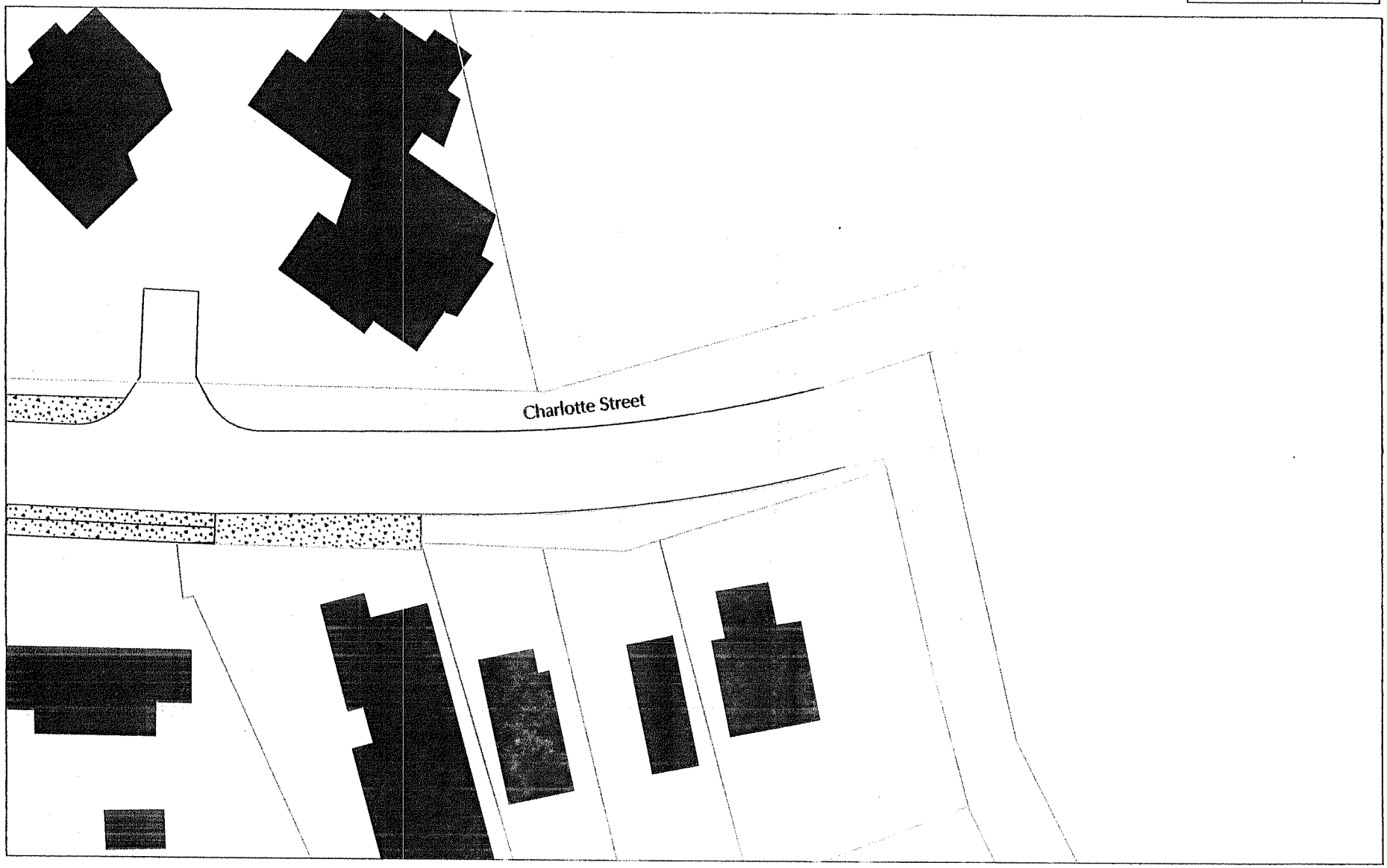
SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC

ALTERNATIVE "C"

Charlotte Street	SHEET NO.
	PS-C-11



Kubilins
TRANSPORTATION GROUP, INC.

SCALE
1'=50'

CHARLOTTE STREET CORRIDOR PLAN

City of Asheville, NC