

**HOLLY PARK - A CASE STUDY IN PLANNING,  
ARCHITECTURE, AND URBAN DESIGN**

AN URBAN ALTERNATIVE TO SUBURBAN RESIDENTIAL DEVELOPMENT

by

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Thesis submitted to the Faculty of the  
Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements for the degree of

MASTERS

in

Architecture

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Committee Chairman: Jaan Holt  
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**(ABSTRACT)**

The three professions of planning, architecture, and urban design, tend to work separately, but in fact, they are related. The disciplines are combined in this project to illustrate a comprehensive approach to land development.

The project presented here integrates planning, architecture, and urban design, and provides a variety of housing types atypical in suburban development. It also illustrates several housing types on a specific site, utilizing the planning, zoning and subdivision regulations of the two jurisdictions.

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## ACKNOWLEDGEMENTS

I would like to express my appreciation to Professor Jaan Holt and Professor Gregory Hunt for their professional guidance, input, patience and flexibility in scheduling.

I would like to thank  
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I would like to thank, Paciulli, Simmons & Associates for allowing me the time to work on this project, a place to work and the use of the office equipment for blueprinting, xeroxing, and drafting.

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## INTRODUCTION

The intent of this study is to combine planning, architecture and urban design into one project, to show the relation of the three professions.

A secondary goal of this study is to attempt to provide alternative suburban housing in a more urban environment. All too often, housing in the suburbs is predominately single family detached or townhouses. Housing types are separated, isolated and even protected from each other by barriers. In an urban environment, housing types are often mixed, but not always well planned.

The suburban jurisdictions are beginning to find that the changing population, and the high cost of housing is generating new varieties of housing. The empty nesters, the single parents, the new baby boomers, and the yuppies are beginning to create new markets.

My goal in this study is to combine the planning, architectural and urban design disciplines to create a comprehensive study for a particular site in Fairfax County/Fairfax City.

## SITE LOCATION

### REGIONAL LOCATION

For this study, an actual site was selected in Fairfax County, Virginia. Fairfax County is a rapidly growing suburb of Washington, D.C.

In the 1950's-1960's, Fairfax was a bedroom community that generally relied on close-in Arlington County and Washington D.C. for jobs and shopping. Washington D.C., with the national government, was the job focus. Most of the plans of the period radiated from the Downtown.

In the 1970's-1980's, Fairfax began to actively build an employment base within the County. Economic development became the push, and competition with other communities in the region and in the country was intense.

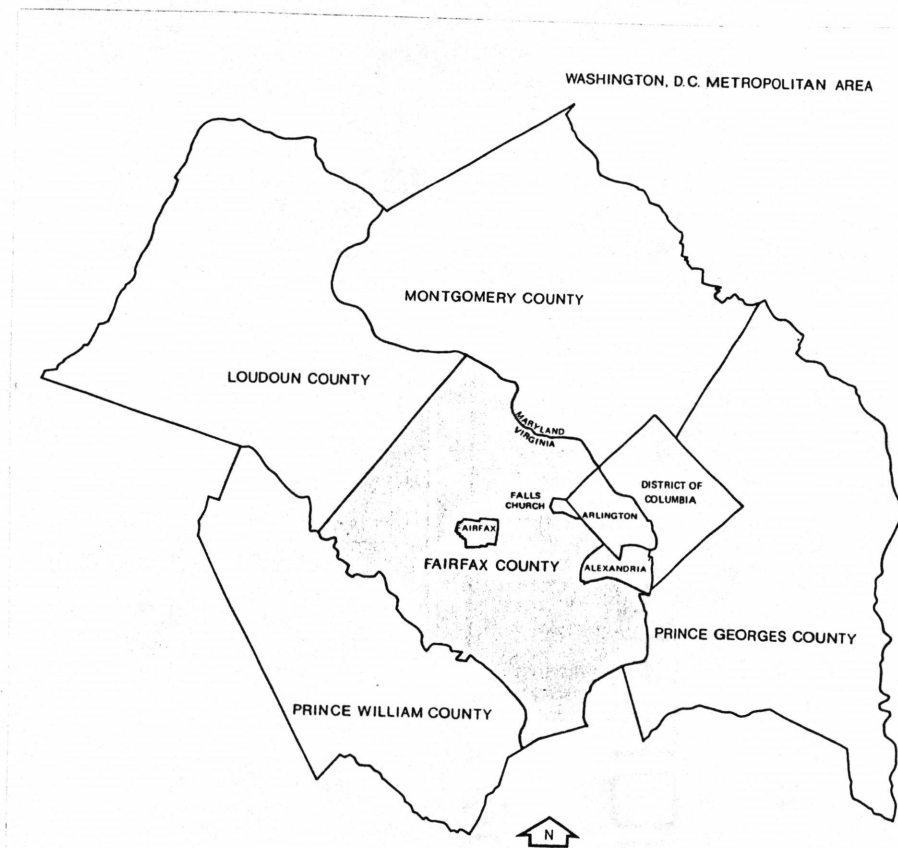
Fairfax County has become a more urban-suburb than it was two decades ago; however, the prevailing attitude of the residents and elected politicians tends to think in terms of the single family detached life styles of the 1960's.

Fairfax City was established as the Town of Providence in 1805, then it became a City in 1961. It was the original settlement surrounding the Fairfax County Court House, which was sited at it's present location in 1800.

This study site is located in both Fairfax City and Fairfax County.

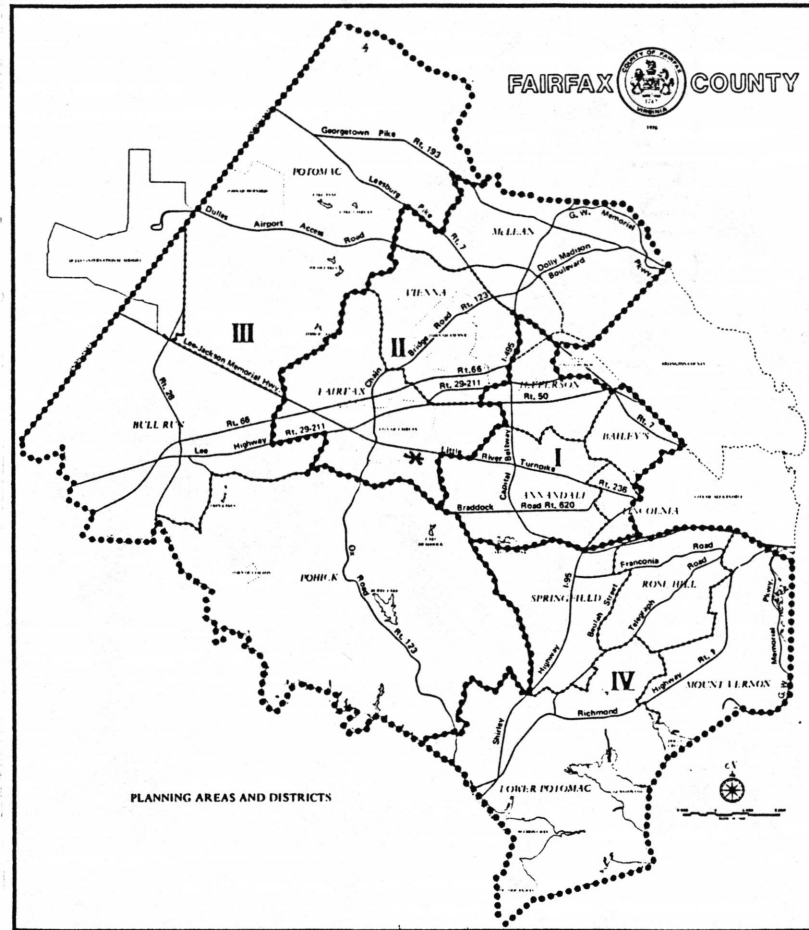
The relationship between these two jurisdictions provided the study with an extra insight into the planning administration and practice of dealing with interjurisdictional situations. The planning and architectural professions often encounter these interjurisdictional situations which can provide headaches and challenges.

This map shows the location of Fairfax County in the regional Washington D.C. context.



**COUNTYWIDE- FOUR AREA PLANS**

This map shows the planning divisions within Fairfax County. In 1973-75, Fairfax County conducted the "PLUS" planning effort. Very early in the decision process of developing the PLUS plan, it was decided that the County should be subdivided into Four Planning Areas. These areas would remain permanent, thus not be subject to changes in population. The magisterial districts from which each of the Board of Supervisors is elected, is subject to redistricting as the population changes.



The study site is located in AREA II Planning District.

**AREA II PLANNING DISTRICT**

This map shows the Area II Planning District, which includes the McLean, Vienna and Fairfax areas. The County does not perform the planning function for the Town of Vienna, or the City of Fairfax; however, the PLUS plan that was adopted in 1975 included the adopted plans for both jurisdictions.

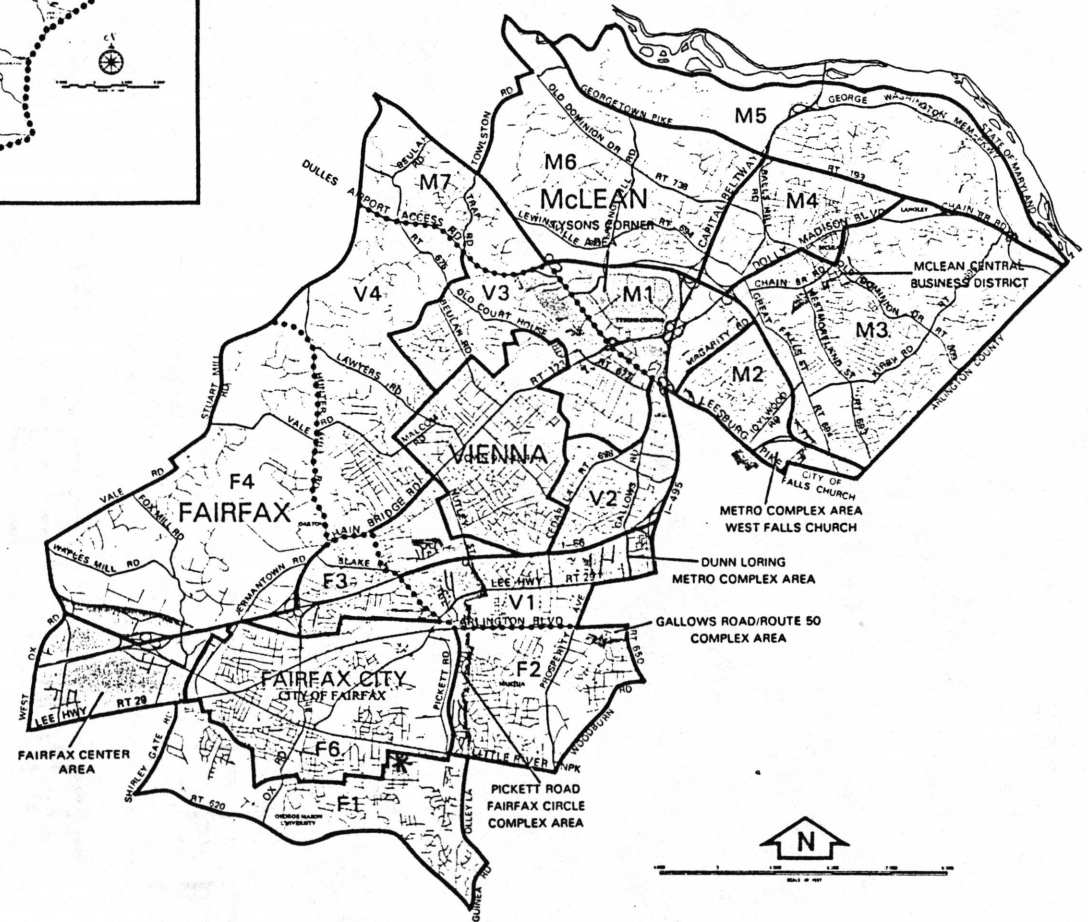
The sectors are smaller sub-areas of each of the plans. They are often equal to a neighborhood.

The study site is located in the Fairfax Planning District and F1 Sector.

**FAIRFAX PLANNING DISTRICT**

This map shows a further focusing in to the subject site. The Fairfax Planning District includes the F1 sector, known as the George Mason Sector. The study site is located in this area.

**AREA II**



**PLANNING DISTRICTS AND SECTORS**

## THE SITE

The site is at the southeast quadrant of the intersection of Little River Turnpike, Route 236, and Burke Station Road, Route 652.

The site contains approximately 29.57 acres and is physically located in two jurisdictions: Fairfax City and Fairfax County. Approximately 9.47 acres or 32% of the site is located in Fairfax County, while approximately 20.10 acres or 68% of the site is located in Fairfax City.

The site is part of the Holly Park subdivision which is an old large-lot subdivision created in the 1940's.

To the north of the subject property and on the north side of Little River Turnpike, is the Fairfax Square retail and office complex. That complex is surrounded by the Fairfax Square apartment complex. Also to the north of Little River Turnpike and further east of the apartments is the Comstock townhouse community.

To the east of the study site is the Holly Park Estates subdivision, which contains single family detached units on approximately half acre lots.

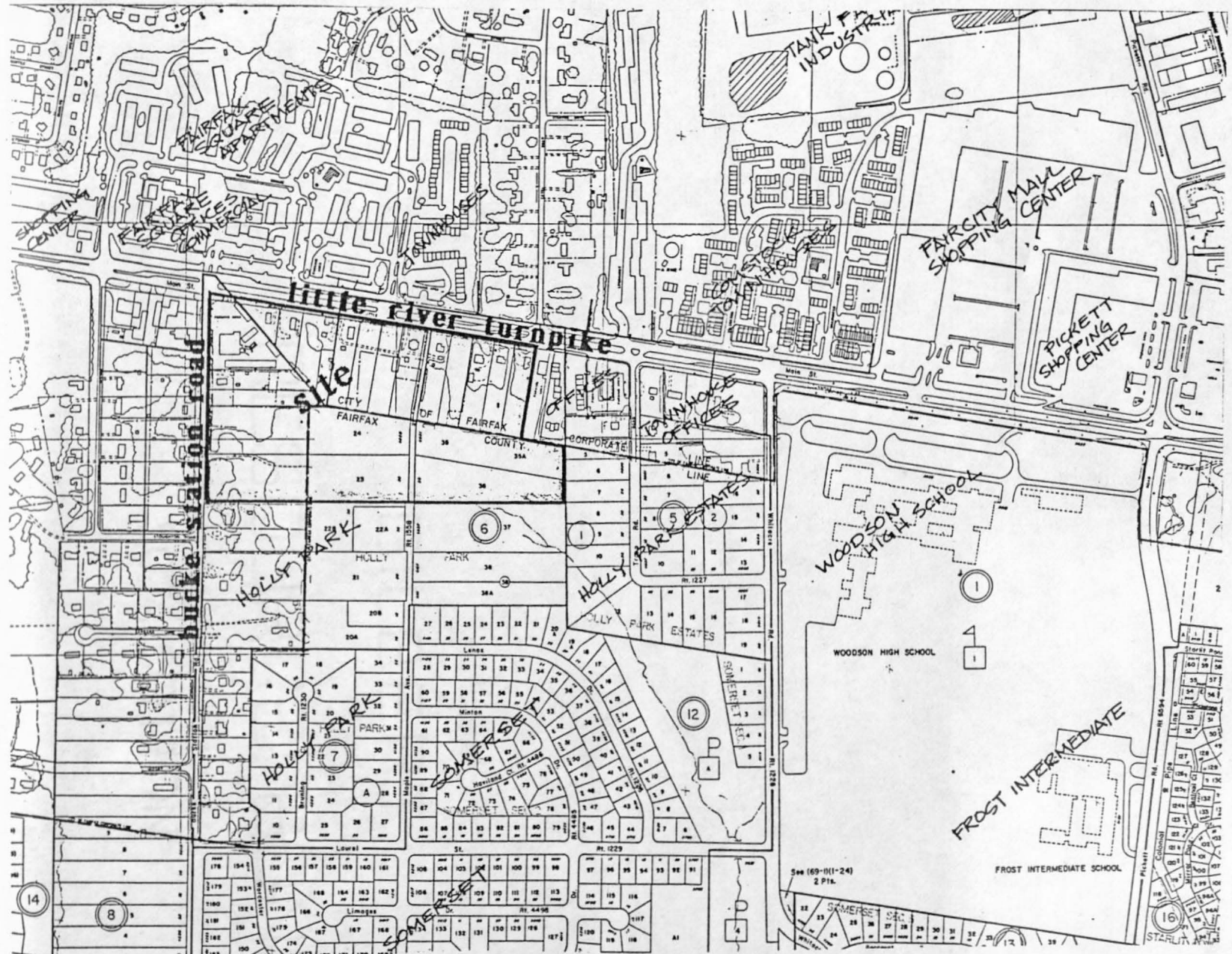
## LOCAL LANDMARKS

To the south is the Holly Park subdivision and the Somerset subdivision. Holly Park is a partially built subdivision; however, Somerset is a completed subdivision built in the 1960's.

Other than the commercial development at the intersection of Burke Station Road and Little River Turnpike, the most significant nearby landmarks include Woodson High School, the Fair City Mall and Pickett Shopping Centers to the east.

Woodson High School is located approximately 2000 feet east of the study area, and on the south side of Little River Turnpike. Also included on the Woodson campus is Frost Intermediate school; however, it is not as visible from the main thoroughfare.

Pickett Shopping Centers, which are in two parts, are located on the northeast and northwest sides of the intersection of Pickett Road and Little River Turnpike. Fair City Mall is an L-shaped shopping center which wraps around the western Pickett Shopping Center.



## PLANNING STUDY

### LAND USE ANALYSIS

#### Existing Land Uses

For purposes of this study, the property has been divided into seven parts. The following lists the land uses and acreages:

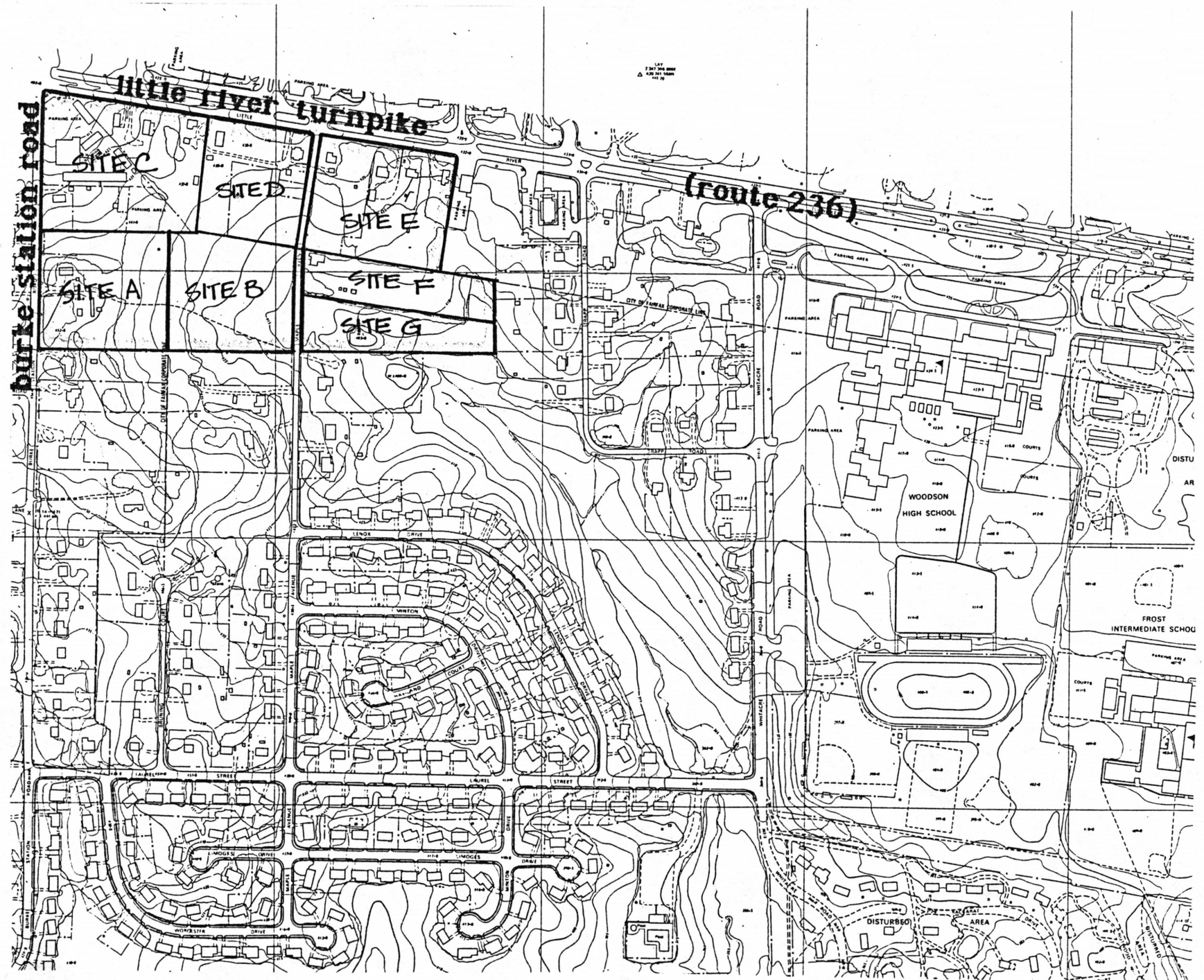
- Site A = 5.00 acres: vacant land
- Site B = 4.96 acres: vacant land
- Site C = 6.39 acres: resident, single family detached & warehouse.
- Site D = 3.89 acres: vacant land & single family detached.
- Site E = 4.82 acres: single family detached & vacant land.
- Site F = 1.72 acres: single family detached.
- Site G = 2.79 acres: vacant land.

As noted in the previous section, the surrounding land uses are predominately single family residences to the south and east.

On the north side of Little River Turnpike there are garden apartments, townhouses and single family detached units.

Further to the east, on the south side of Little River Turnpike is a strip of office development. The newest office being Woodson Square on the block between Trapp Road and Whitacre Road.

The Fairfax Square commercial office center is located on the north side of the intersection of Burke Station Road and Little River Turnpike.





**Existing Zoning**

The existing Zoning Districts for the study area are:

- Site A = R-1 District (City)
- Site B = R-2 District (County)
- Site C = R-1 District (City)
- Site D = R-1 District (City)
- Site E = R-1 District (City)
- Site F = R-1 District (County)
- Site G = R-1 District (County)

The existing zoning in Fairfax City is the R-1 District which allows a maximum density of two (2) dwelling units per acre, requires a minimum lot area of 20,000 square feet and an average lot area of 21,780 square feet.

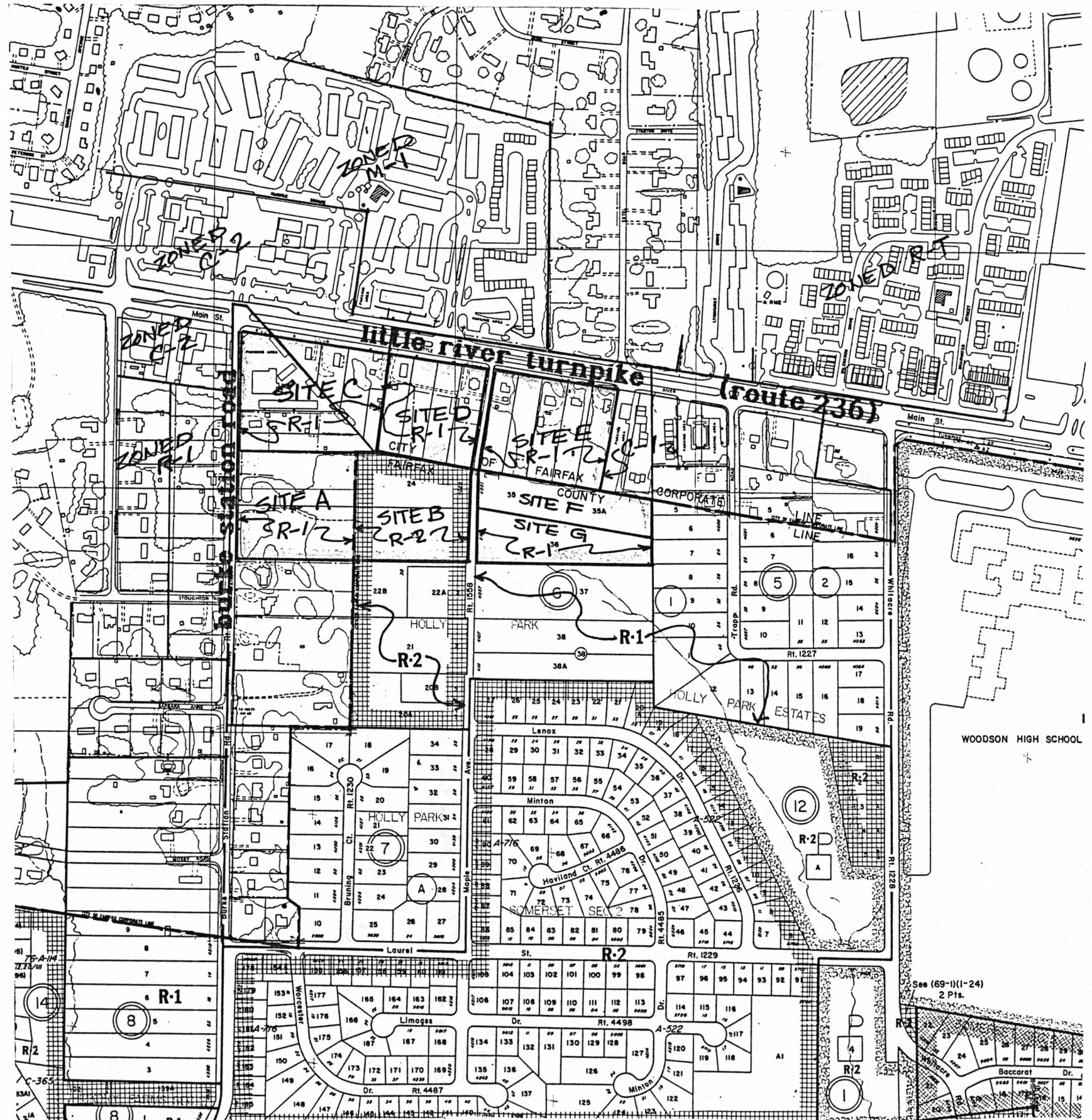
The existing zoning in Fairfax County is the R-1 District and the R-2 District. The R-1 District requirements:

- Density: 1 du/ac
- Minimum lot area:
  - conventional: 36,000 sq.ft.
  - cluster: 25,000 sq.ft.
- Average lot area: no requirement
- open space: (cluster only) 20%

The R-2 District has the following basic requirements:

- Density: 2 du/ac
- Minimum lot area:
  - conventional: 15,000 sq.ft.
  - cluster: 13,000 sq.ft.
- Average lot area: 18,000 sq.ft.
- open space: (cluster only) 15%

The Fairfax Square development is zoned C-2, Retail Commercial District. Fairfax Square apartments are zoned M-1, Multi-Family District. The Comstock townhouse community is zoned R-T Townhouse District (9 du/ac). The commercial development on the southwest corner of Burke Lake Road is zoned C-2 District. The townhouse office development next to Woodson High School is zoned C-1 Office Commercial District.



**Comprehensive Plan**

The Comprehensive Plan for Fairfax City recommends the study area as follows:

- Site A = residential 2 du/ac.
- Site C = residential 2 du/ac.  
public & quasi-public  
residential 9 du/ac.
- Site D = residential 9 du/ac.
- Site E = residential 9 du/ac.

The City Comprehensive Plan text states:

*"East Main Street  
All vacant land or redevelopable residential land fronting on the south side of Main Street from Locust Street east to Whitacre Road is replanned for residential townhouse development at a density of up to 9 dwelling units per acre."*

The City Plan was adopted in 1982 and amended in 1983. Plan amendments for the subject site may be appropriate.

The Fairfax County Comprehensive Plan recommends the study area as follows:

- Site B = residential 1-2 du/ac.
- Site F = residential 1-2 du/ac.
- Site G = residential 1-2 du/ac.

As previously noted, the F1 George Mason Community Planning Sector of the Fairfax Planning District of Area II would be the applicable section of the County's Comprehensive Plan. The Plan text does not address the specific site; however, the Plan Map shows the range of 1-2 du/ac.

The County's Comprehensive Plan was adopted in 1975, and has been the subject of numerous amendments on an annual basis. However, this area has not been subject to an amendment or a restudy since 1975.



## ENVIRONMENTAL ANALYSIS

### Existing Vegetation

The vacant portions of the study area vary from being heavily treed to open fields.

A portion of Site A contains large specimen trees that remain from when a house was on the parcel. Site B is predominately open field. Site C contains some trees on the portions occupied by residential structure; however, the corner parcel is a warehouse for the Fairfax County School Board and is paved. Sites D, E, F and G contain some trees and some open fields. Site G also contains a small pond which may be worthy of preserving as a stormwater detention facility and maintained as a site amenity.

### Soils

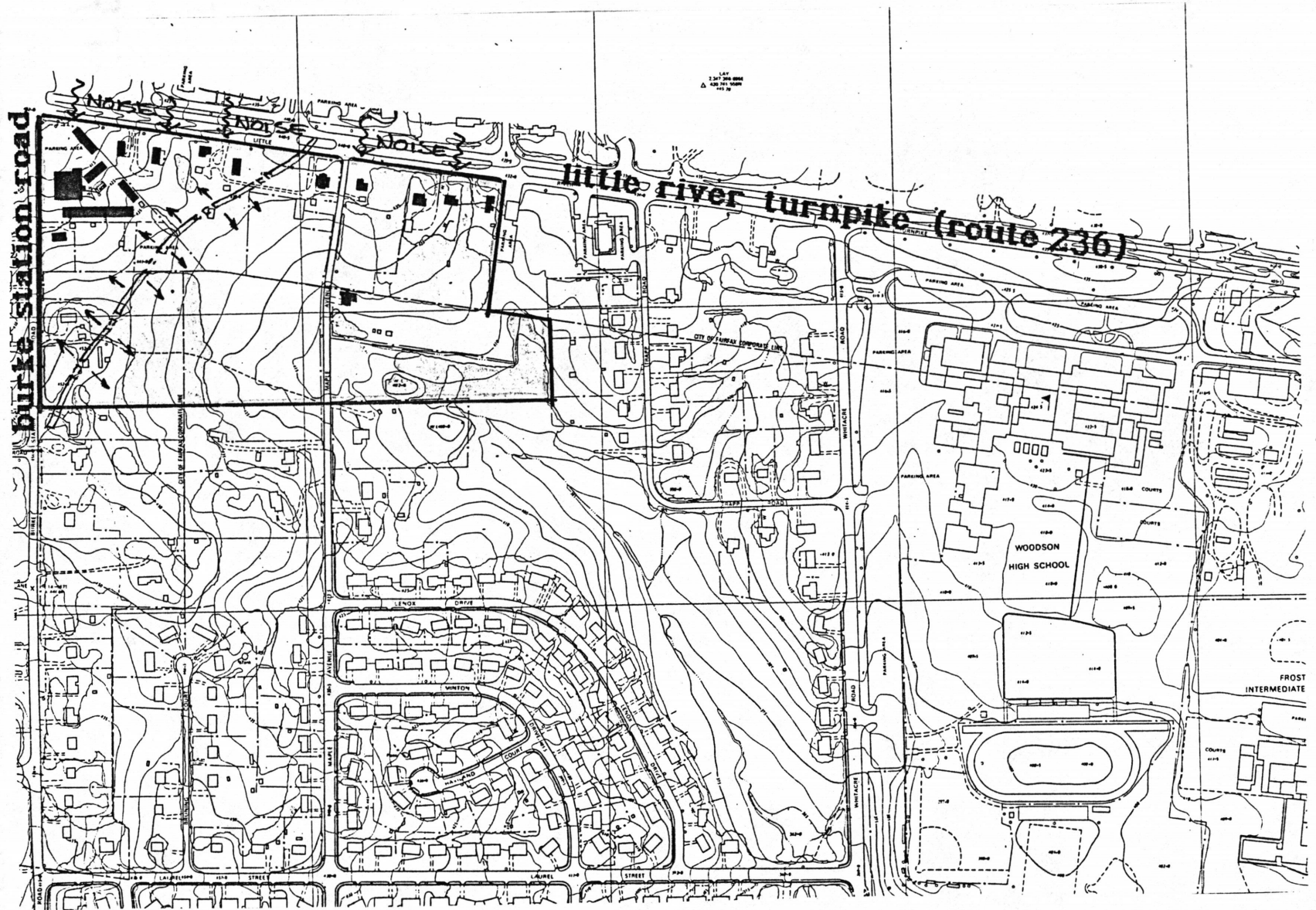
At the present time, the study area has not been mapped by the Fairfax County Soils Scientist.

During the development review process in Fairfax County, the developer of the subject site would have to prepare a soils report to submit to the County Department of Environmental Management with the site plan.

The area around Woodson High School is mapped and does not contain any soils that would create any significant development problems.

### Views

The study area does not have any significant positive views to take into consideration in preparing a site design. There are, however, two negative views to be considered. The first being the School Board warehousing facilities, and then the view toward the commercial development along Little River Turnpike. With urban design treatment the commercial portions could become an integrated off-site feature.



### Slopes

The study area is generally sloping gently from the southwest to the east at about 3-5%. The site flows into a tributary of Accotink Creek Watershed and the Long Branch Stream Valley Park to the southeast.

The northwestern portion of the site slopes towards the intersection of Burke Station Road and Little River Turnpike.

The slopes are gentle and workable. They do not present any design problem nor do they provide any significant design enhancement.

### Significant Features

The study area does not offer any significant natural features that would either curtail the site design nor any features that would enhance the site design.

The major design issues, should however take into account, the existing vegetation, where possible. In addition, the final site design should provide a design solution to both the visual and noise impacts from Little River Turnpike.

## TRANSPORTATION ANALYSIS

### Existing Roads

The site is bounded by Burke Station Road, Route 652, and Little River Turnpike (or Main Street in Fairfax City), Route 236. In addition, Maple Avenue, Route 1558, bysects the study area.

The study site has approximately 1600 feet of road frontage on Little River Turnpike, 950 feet on Burke Station Road, and 800 feet on Maple Avenue.

Little River Turnpike is a major cross county arterial, running from Alexandria to Route 50 and Route 29 to the west (going to Winchester and Warrenton/Culpeper respectively). It is a four-lane divided roadway. The north side has curb, gutter and sidewalk; however, the south side is a ditch section with no sidewalk or trail. Little River Turnpike has a posted speed limit of 35 mph.

Burke Station Road is designed as a residential street within Fairfax City; however, it is one of the few connectors between Braddock Road and Little River Turnpike. It is a two lane road with no turning lanes at any intersections. It is also a ditch section with no sidewalks or trails. Burke Station Road has a posted speed limit of 25 mph.

Maple Avenue is a two lane residential street. It is a ditch section with no sidewalks or trails in the study area; however, within the Somerset subdivision to the south, the road has curb, gutter and sidewalk. Maple Avenue has a posted speed limit of 25 mph.

The 1984 traffic counts for Little River Turnpike were 30,120 ADT's (average daily trips from Whitacre Rd. to Pickett Rd.) Burke Station Road had 5,150 ADT's (from Route 236 to Stoughton Rd.)

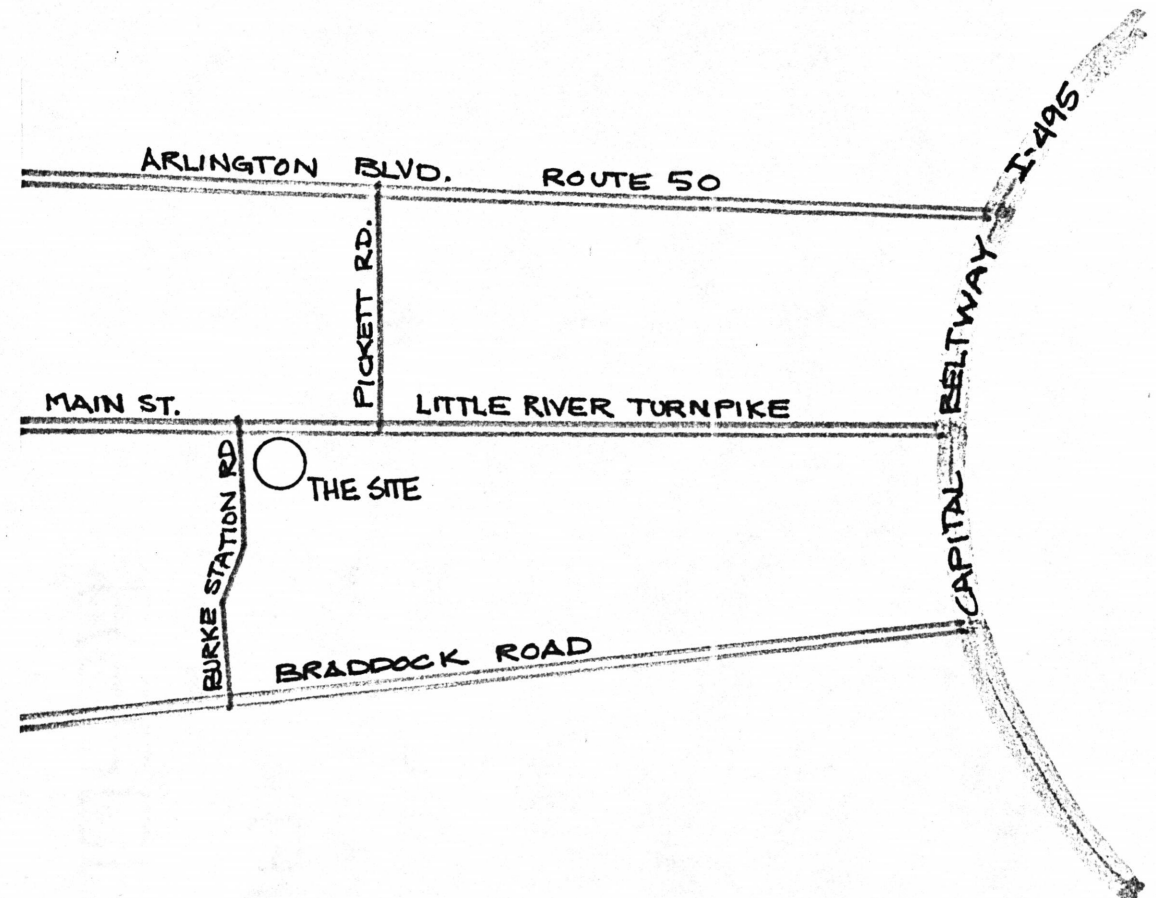
Burke Station Road, Little River Turnpike and part of Maple Avenue (located in Fairfax City) are maintained by the City; while the portion of Maple in Fairfax County is maintained by the Virginia Department of Transportation (VDOT).

Burke Station Road has an 50-60 foot right-of-way, with modified paved shoulder and asphalt curb, with no sidewalks. Little River Turnpike has an 110 foot right-of-way, with a four lane divided roadway. Little River Turnpike has concrete curb and gutter on the north side, but a ditch section on the south side; a sidewalk on the north side, but no sidewalk on the south side. Maple Avenue has an 30-40 foot right-of-way, with a 24 foot pavement and ditch sections. The portion of Maple Avenue in the Somerset subdivision has curb and gutters.

Additional dedication of 5 feet along the site frontage would probably be required along Burke Station Road. The City's Public Works Department staff indicated that a deceleration lane at a site entrance would probably not be required.

Twenty-five feet of additional dedication along the frontage of Little River Turnpike would probably be require, with construction only of the proposed new entrance, which would include a deceleration lane and proposed bus lane, including curb, gutter and sidewalk.

Maple Avenue would be required to be improved to an appropriate street standard to handle the new layout. This would probably be a 60 foot right-of-way and a 42 foot road with curb, gutter and sidewalk.



### Proposed Roads

Neither the City nor the County's Comprehensive Plans make any reference to any proposed new roads or improvements to the existing roads that would affect the study area.

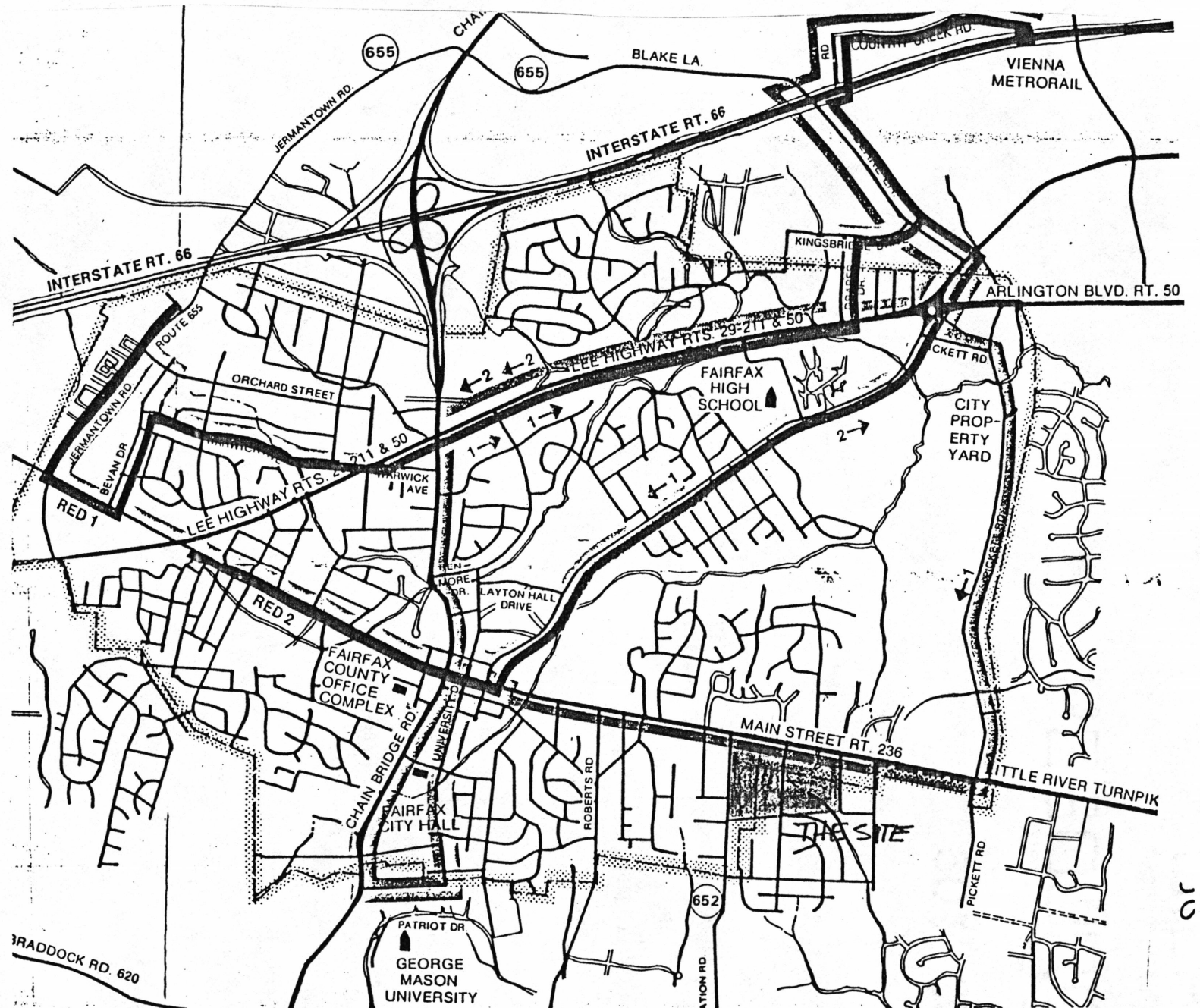
The County's six-year road program does not include any improvements to any of these roads. Through the rezoning or site plan processes, the City and the County would negotiate/require certain road improvements.

### Existing & Proposed Bus Routes

The study area is currently served by the Fairfax City/CUE bus system. The Green 1 bus runs along Little River Turnpike (Main Street). This bus system provides service to the most significant locations within Fairfax City, as well as, to the Vienna Metro Station. This availability of public transportation could be used very effectively for marketing of residential development in the subject area.

### Pedestrian Alternatives

Fairfax County has established a Countywide Trails Plan and is implementing the system through the development process. The City has some sidewalks in the vicinity of the study area. A sidewalk exists on the north side of Little River Turnpike which goes as far west as the University Shopping Center. It also goes east to the Fair City Mall and Pickett Shopping Center. The south side of Little River Turnpike does not have sidewalks. While there are no trails required for the subject property, due to the site's proximity to Woodson High School, sidewalks are required by the County in the review of any site plan.



## **DEVELOPMENT ISSUES**

The following is a brief description of the development issues that will be discussed for any proposed development in the subject area.

### **Existing Development**

The existing development is predominately single family residential, as previously discussed, thus any presentation to either Fairfax City or Fairfax County will have to start with the knowledge of the current status.

The political environment is such that while "no development" is desired by the existing surrounding communities, there is generally an awareness that more single family development must legally be allowed.

Any densities above those of the surrounding communities should be accepted by the developer as an uphill battle.

### **Planned Densities**

In Fairfax City, the planned densities may not be taken for granted. The rezoning and site plan review process is subject to political pressure.

In Fairfax County, the Plan has been interpreted to allow the lower end of the density range (one du/ac in this case) as a "by-right" density. This came about because of court cases in which it was stated that the Board of Supervisor must grant a reasonable density in a rezoning application. However, the upper end of the Plan density range (two du/ac in this case) must be earned using the established development criteria outlined in the Comprehensive Plan.

## **Unit Types**

This is perhaps the most difficult issue to be addressed by any development on the subject site. The popular misconception is that a change in unit type will lower property values and bring the "wrong element" into the neighborhood. While there are townhouse and garden apartment type of units on the north side of Little River Turnpike, it is generally perceived that the area being studied is predominately single family detached. There will probably be considerable political pressure to keep the area the same as the existing community.

One option would be to persuade the adjacent citizens that attached units would be high quality (high priced) and/or use patio/zero lot line units. The City has had a positive experience with zero lot line development. A zero lot line development in the Oakton area of Fairfax County is selling extremely well.

## **Traffic Impacts**

This is the second most significant issue.

The roads in the City and the County are extremely impacted by traffic. Building new roads or widening existing roads has not been popular with the people or the politicians because development is believed to cause congestion. Being an election year, 1987, this issue will be a difficult one.

The trend in the recent past has been to extract money contributions from the developer for road improvements or get proffers for alternative traffic strategies (car pooling, etc.).

## **Development Amenities**

On-site amenities have become popular items for local planners and jurisdictions to require. Because of the affluence of the past decade or two, the home buyer has come to expect amenities such as recreational facilities, trails, open space, etc.

## ENGINEERING STUDY

### Public Utilities – Sanitary Sewer

The study area is located within the Accotink Creek watershed and the Accotink sewershed. The portion of the site within Fairfax City would be sewered through Fairfax City to the Accotink M-2 subshed within Fairfax County. The Fairfax County portion of the site would be sewered to the Accotink M-3 subshed.

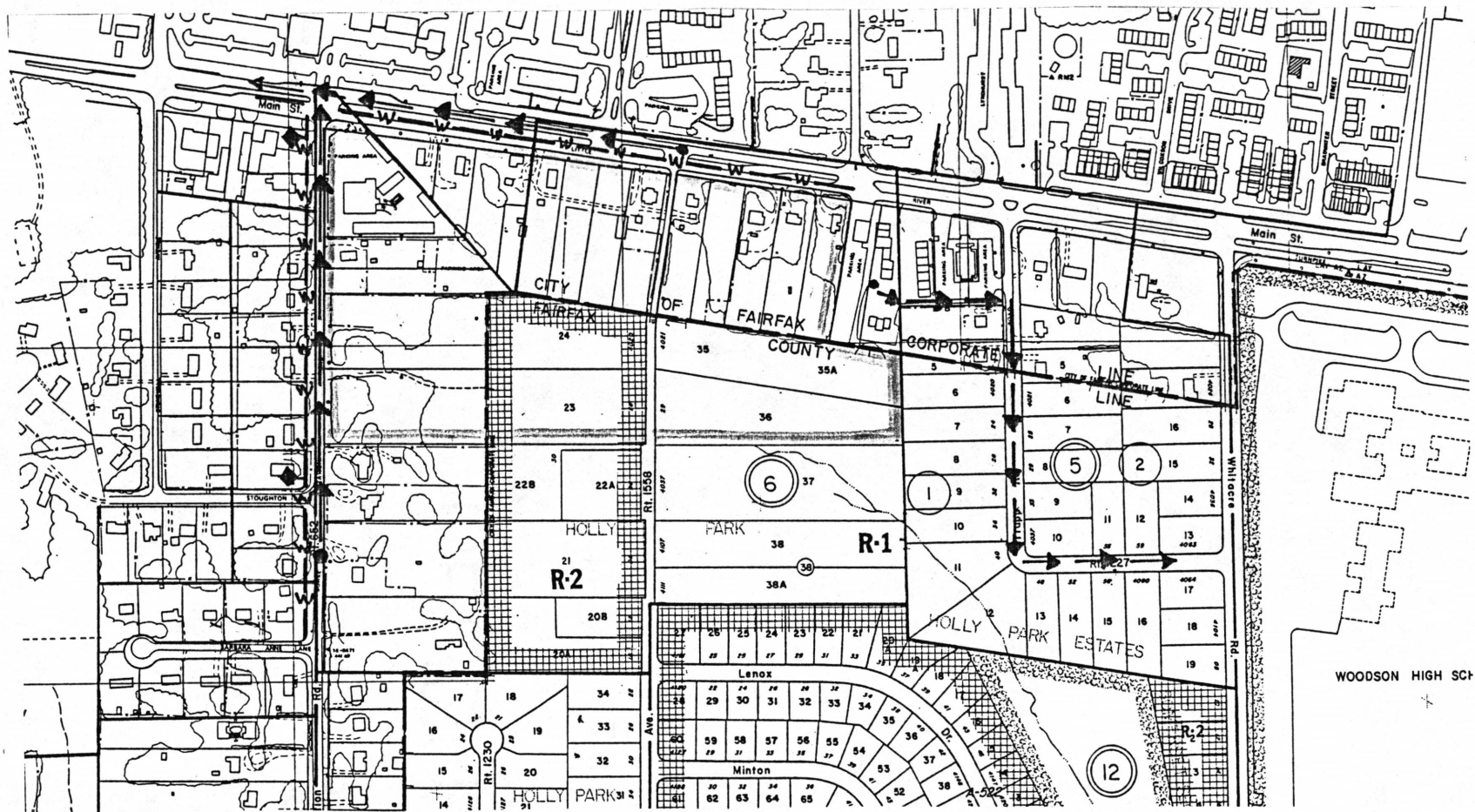
The lots located within the City will be served by an existing sanitary sewer line flowing north along Burke Station Road and by a line flowing west along Little River Turnpike. While the City would allow the County portions of the site to be sewered to the City, the area could not be served by gravity flow sewer.

The nearest gravity flow sewer line that would serve the County portion of the study area is located within the Trapp Road right-of-way. This line is approximately 600 feet from the site and would require acquisition of off-site easements.

The staff of the County's Wastewater Management Office indicated that the area is subject to a pro-rate share assessment equal to approximately \$445 per acre, if development occurs in 1986. The staff of that office also indicated that the sanitary sewer trunkline is adequate for at least 3 du/ac.

### Public Utilities – Water

The study area is served by the Fairfax City service area. There is an eight inch line located in the Burke Station right-of-way and a 24 inch line located in the Little River Turnpike right-of-way. There is no existing water line in Maple Avenue in the site area; the nearest line is located approximately 530 feet to the south, adjacent to lot 27 in the Somerset subdivision.



A fire flow test taken in March 1986 indicated that 2397 gpm (gallons per minute) at 20 psi (pounds per square inch) residual. The requirements are:

- 1000 gpm = detached single family
- 2500 gpm = townhouse

While the City's Transit and Utilities Department staff indicated that the City would permit a water tap from Burke Station Road, a loop system would be required to achieve the necessary 2500 gpm needed for townhouse development. An alternative might be to extend the lines north along Maple Avenue and/or tie into the line in Little River Turnpike.

The nearest fire hydrant is located on the west side of Burke Station Road at the intersection of Stoughton Road (adjacent to lot 3). It would be anticipated that several additional fire hydrants would be required on site to meet ordinance requirements.

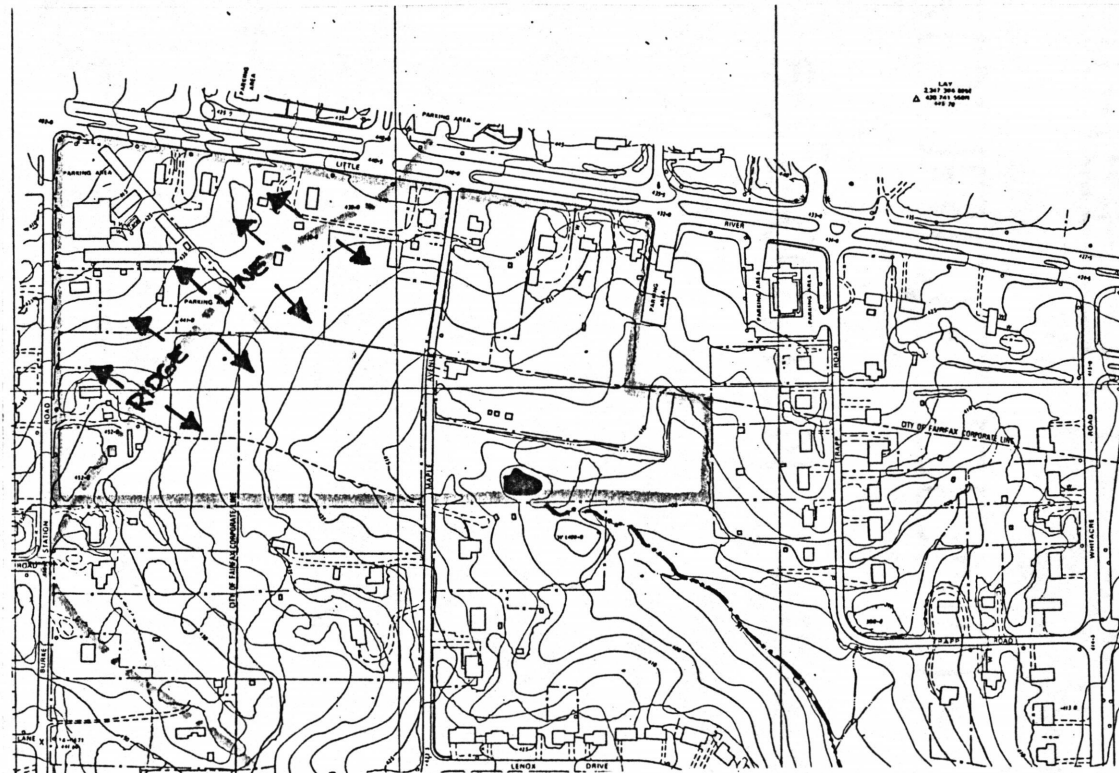
## Storm Drainage

The subject parcels are located in the Accotink watershed. The drainage from the site drains into two directions. Eighty per cent of the site drains to the southeast and twenty per cent of the site drains to the northeast. The streets in the area are generally ditch sections which currently catch the existing drainage; however, all new streets would require storm drainage, curbs and gutters.

The Citizens Complaint Division of Fairfax County's Department of Public Works indicates that there have been no downstream drainage complaints. The Department of Environmental Management (DEM) staff indicated that they receive frequent requests from a property owner to clean the drainage ditch along the northern property line of lot 36.

Pro rata share assessment for downstream drainage improvements in accordance with the anticipated volume runoff can be established for the study area in Fairfax County by a formula established by ordinance. Reducing the pro rata assessment is possible either by providing perc trenches or constructing an elaborate detention system designed to hold the runoff for an extended period of time.

Fairfax County regulations specify that stormwater drainage from any new development must be detained on site to not exceed the existing rate of runoff or a detention waiver must be approved. For the subject properties, the existing wet pond could probably be reconstructed to provide adequate detention.



## Other Utilities

Electrical and phone service are available through the overhead lines running along both Burke Station and Maple Avenue. All new lines to service the site would be required to be placed underground.

Four utility poles along Burke Station Road and two poles on Maple Avenue may need to be relocated to provide street improvements (relocation costs are paid by the developer and can cost between \$10,000 - \$20,000 per pole).

The staff of the Washington Gas Light Company indicated that a 2 inch high-pressure gas line is located within Burke Station Road and available for future residential connections.

No major transmission pipelines (petroleum) exist in the vicinity of the subject properties.



## POLITICAL ANALYSIS

### Fairfax County

Fairfax County has an Urban County form of government. The County citizens elect a Board of Supervisors from eight magisterial districts and a Chairman of the Board at-large. Each Board member's district is approximately equal in population by law, and is required to be reapportioned every ten years.

The Board of Supervisors is the legislative body that makes the local laws which include adopting a Comprehensive Plan, and adopting a zoning ordinance and subdivision regulations. The legislative authority of the Board is very restricted by the State. Traditionally, the Board can only write local legislation that the State has enabled through its own legislature.

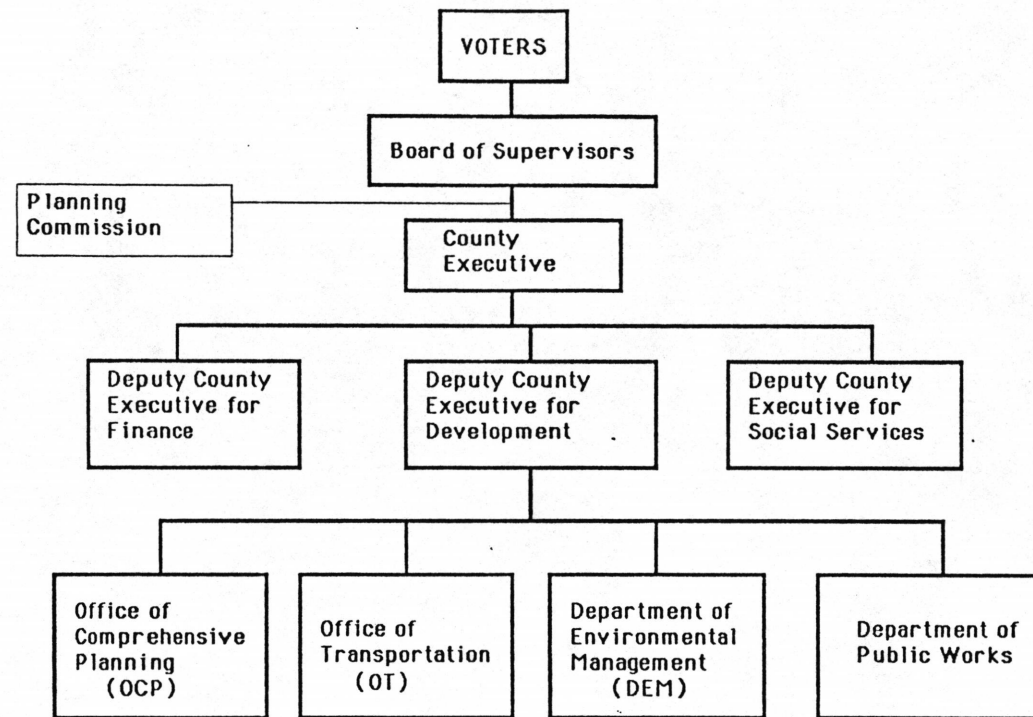
Each member of the Board of Supervisors is elected for a four-year term of office and all members are up for reelection at the same time.

The Board of Supervisors appoints a Planning Commission made up of eleven citizens, one representing one of the eight magisterial districts and three at-large members. The Commission then elects a Chairman on an annual basis.

The Planning Commissioners are appointed for four year terms, but these are generally staggered terms.

The Planning Commission's responsibilities include making recommendations to the Board of Supervisors on planning issues. They review all Comprehensive Plan Amendments and make recommendations to the Board; they review and make recommendations on special planning studies; they make recommendations on zoning changes and on ordinance amendments. The Commission holds public hearings on all planning issues as prescribed by State Law and local codes.

### COUNTY ORGANIZATION : RELEVANT TO PLANNING



The Planning Commission has a staff; however, that staff is primarily administrative. They prepare and record the official minutes of meetings, schedule applications and hearings and distribute information. The Office of Comprehensive Planning under the County Executive is the professional planning staff.

The Board hires a County Executive to direct the administrative branch of the County government. He in turn hires other professionals who prepare items for the Board's review and action.

There are several departments in the County structure which deal with planning and development issues. The two primary ones are the Office of Comprehensive Planning and the Department of Environmental Management. The heads of both departments are appointed by the Board of Supervisors as recommended by the County Executive. They are directly responsible to the County Executive.

The Office of Comprehensive Planning is the professional planning staff for the County. This staff prepares: planning studies, Comprehensive Plan Amendments, rezoning applications, ordinance amendments, and enforces the zoning code. The staff also prepares the Capital Improvements Program (CIP) for public facilities.

The planning staff presents reports and recommendations to the Planning Commission and then to the Board of Supervisors.

The Department of Environmental Management is the agency that reviews and approves site plans and subdivisions, reviews and approved building permits, and enforces the building code. The staff is primarily engineering oriented. Reviews and approval within the Department of Environmental Management are usually administrative and not subject to a public hearing.

Another relevant agency in the County government, is the Office of Transportation. This department is separate from the Planning Office. Its primary function is to advise the Board on transportation issues and coordinate with the Virginia Department of Transportation (VDOT). The department does not design roads, build roads or maintain roads. It advises the Board and the Board advises the Virginia Department of Highways.

The Office of Transportation works closely with the Office of Comprehensive Planning in amending the Comprehensive Plan and reviewing rezoning applications. The department also works closely with the Department of Environmental Management in the review of subdivision and site plans.

Another agency relevant to planning is the Department of Public Works. This department builds and maintains major sewer trunk lines, sewage treatment plants, sanitary landfills, fire stations, governmental centers, and recently has been making road improvements (only those roads approved in the County Road Bond program).

## Fairfax City

Unlike Fairfax County, Fairfax City is an incorporated City with all the usual rights given such a jurisdiction in the State of Virginia.

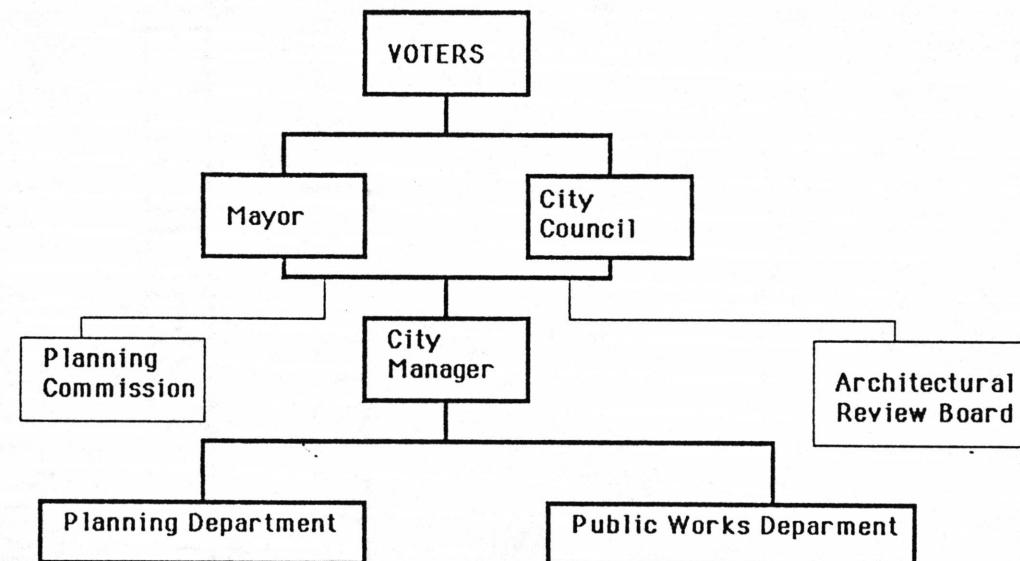
The City's legislative function is performed by the Mayor and City Council. There are six City Council members. The Mayor and Council are non-partisan, elected at-large, for two year concurrent terms of office. The Mayor is independently elected and presides over Council meetings and represents the City in a ceremonial capacity.

The administration of the City is managed by the City Manager. The City Manager appoints department heads, who serve at the pleasure of the City Council.

The Planning Department staff works for the Mayor, but presents planning issues, reports and studies to the Planning Commission, then to the City Council at public hearings. The planning staff prepares Plan Amendments, rezoning staff reports, ordinance amendments, and a Capital Improvements Program (CIP). The department does not enforce the zoning ordinance.

In the City, site plans and subdivisions are reviewed by the planning staff and the Department of Public Works. In addition, the site plans and subdivisions go to the Planning Commission and City Council for public hearing.

FAIRFAX CITY : ORGANIZATION RELEVANT TO PLANNING



The Planning Department also does the transportation planning.

The Department of Public Works does the public facilities construction, but some of these functions, such as sewage treatment, are actually done by Fairfax County.

The Fairfax City Council by City Charter, has the authority to establish and appoint Boards and Commissions. The most significant of these are the Planning Commission and the Board of Architectural Review.

The City Planning Commission has seven members. The Commission reviews plan amendments, rezoning applications and the CIP. In addition, the Commission reviews and approves subdivisions and site plans for "planned developments."

The Board of Architectural Review was established in 1964 for the review and approval of any building, or rebuilding, within the "Old & Historic Fairfax District." The Board also reviews any proposed demolition of any pre-1901 structure. In 1973, additional power was given the Board to review any design of non-residential development in the City, even outside the "Old & Historic Fairfax District."

## SITE DESIGN

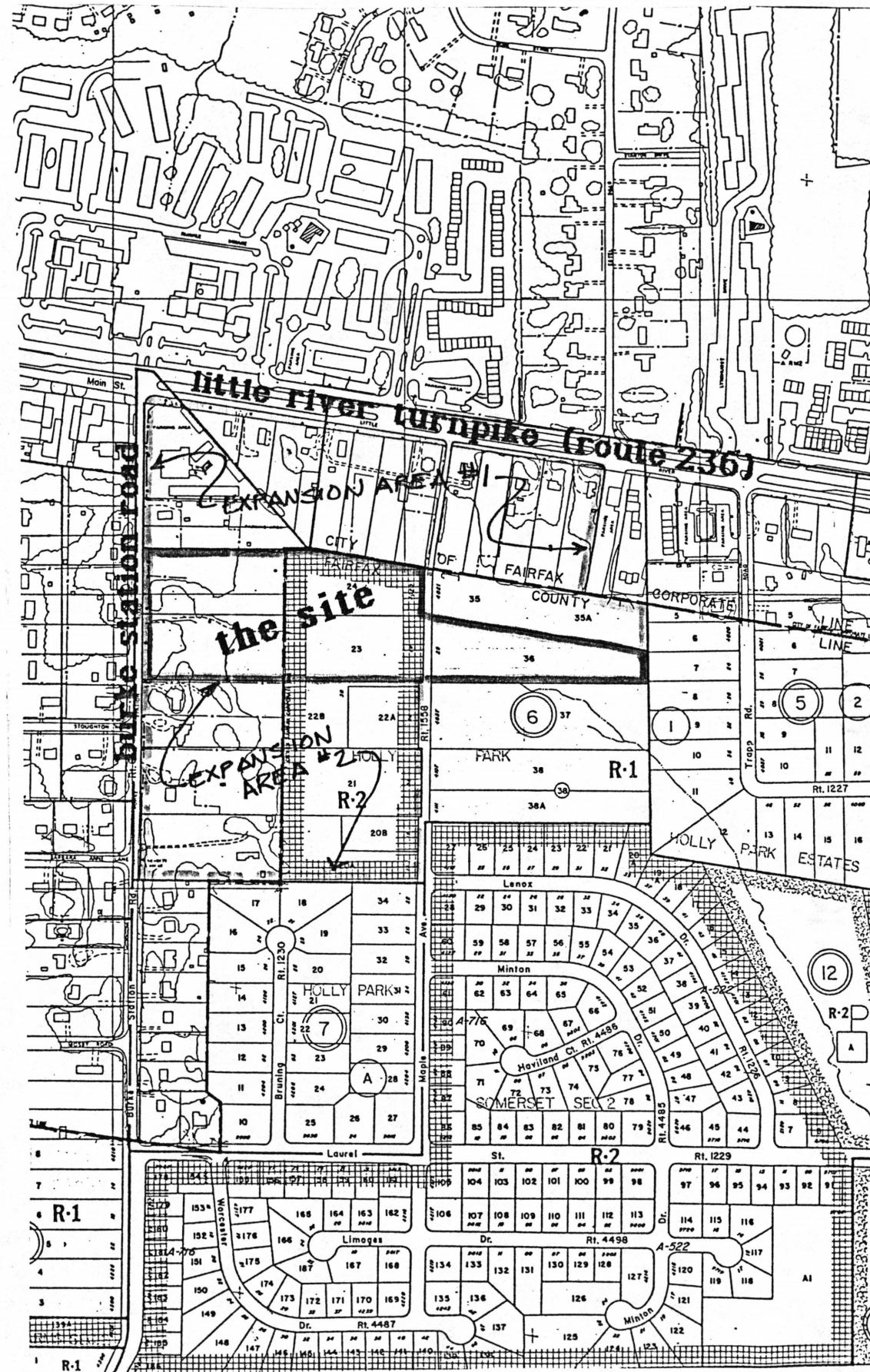
The previous sections of this report have outlined the base information needed to begin the preparation of a site design. The objective is to prepare a site design and housing unit types that would provide an environmentally sensitive, liveable community.

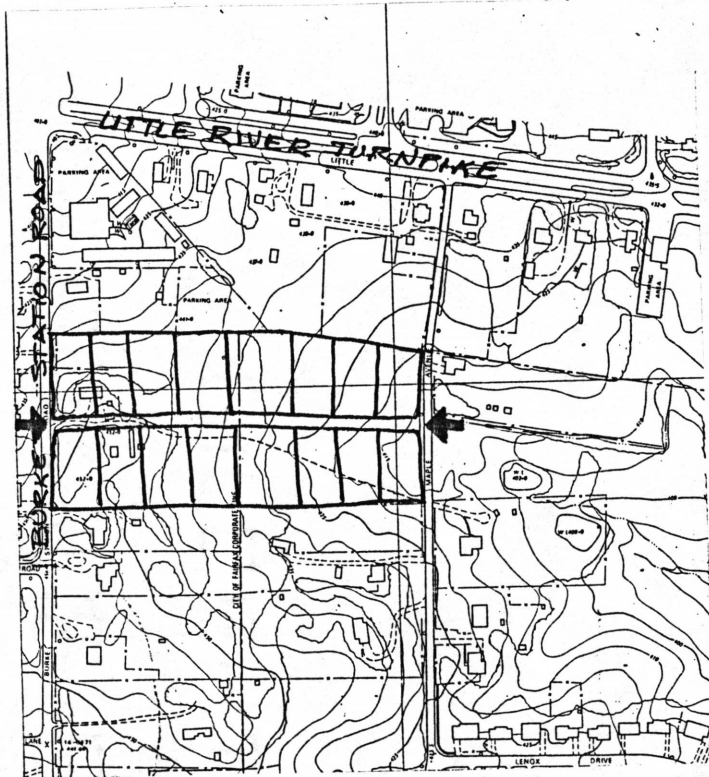
The site was originated by an actual client who wanted a feasibility study and a site layout for four parcels. It was discussed that there might be a possibility of acquisition of additional land, and a fifth lot was added. The area is a large lot area with no structures on several of the parcels.

The design goals are many. One goal is to prepare a plan that could possibly be built in phases, but in such a manner that the final layout would seem like a single solution and a total community. Along this line, the area noted as "the Site" was the original five parcels. From that area, expansion areas were identified.

Expansion area #1 is the area of higher planned density that was felt to be most ripe for redevelopment. The increased traffic along Little River Turnpike makes it inappropriate for the existing land uses and fosters redevelopment to a better use along that corridor. The City's Master plan recognizes that by indicating a townhouse density as the appropriate land use. This area is also impacted by the commercial development on Little River Turnpike. The design of the units in this area would need to provide design elements to foster compatibility.

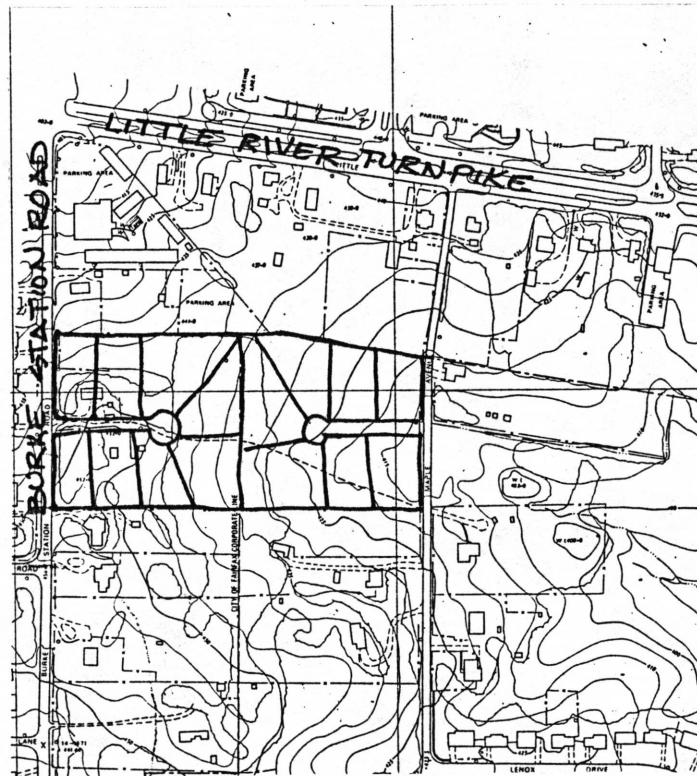
Expansion areas #2 was considered because of the potential for a more well rounded design and that fact that portions of those areas were not developed. Area #2 would be perhaps the most difficult from the political standpoint because that area gets closer to the established community.





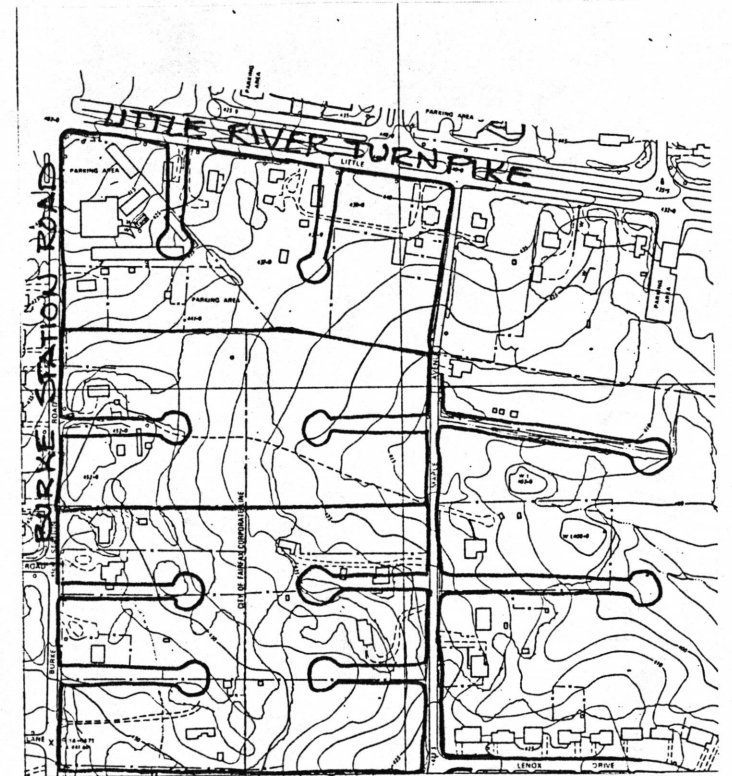
The next step was to analysis what the typical type of suburban development was. The following sketches reflect some of that thinking.

The first sketch shows the typical lot layout for detached units; however, it was not desirable to provide a connection directly from Burke Station Road to Maple Avenue. Such a connection would encourage traffic through the residential neighborhood. The solution shown would encourage traffic to try to bypass the traffic light at Burke Station Road and Little River Turnpike to go east on Little River Turnpike.



Consolidation of the parcels between Maple Avenue and Burke Station Road could result in this type of development.

The second sketch is the most obvious answer to preventing cross traffic. This solution, would solve the traffic circulation issue, but would not provide a sense of community. This might be the actual solution that most people want, because, the buying public often expresses a desire to own a single family house on a cul-de-sac within easy access of all the desired services.



This third sketch shows how the cul-de-sac solution would be taken and expanding for the larger area. Everyone could live on a cul-de-sac, in a single family house. This plan, however, does not offer an alternative to suburban design. It does not represent good urban design. It continues a variation of the grid system of streets. Traffic continues in the usual fashion, but each street gets more congested. There are too many entrances on the two north/south streets. There is no sense of community. There is no open space and there is no environmental sensitivity.

Housing costs in Fairfax County, although not part of this study, are becoming unreachable for most people. To continue with this kind of wasteful, suburban development is not good planning or in the public interest. The goal of this thesis is to show a better alternative.

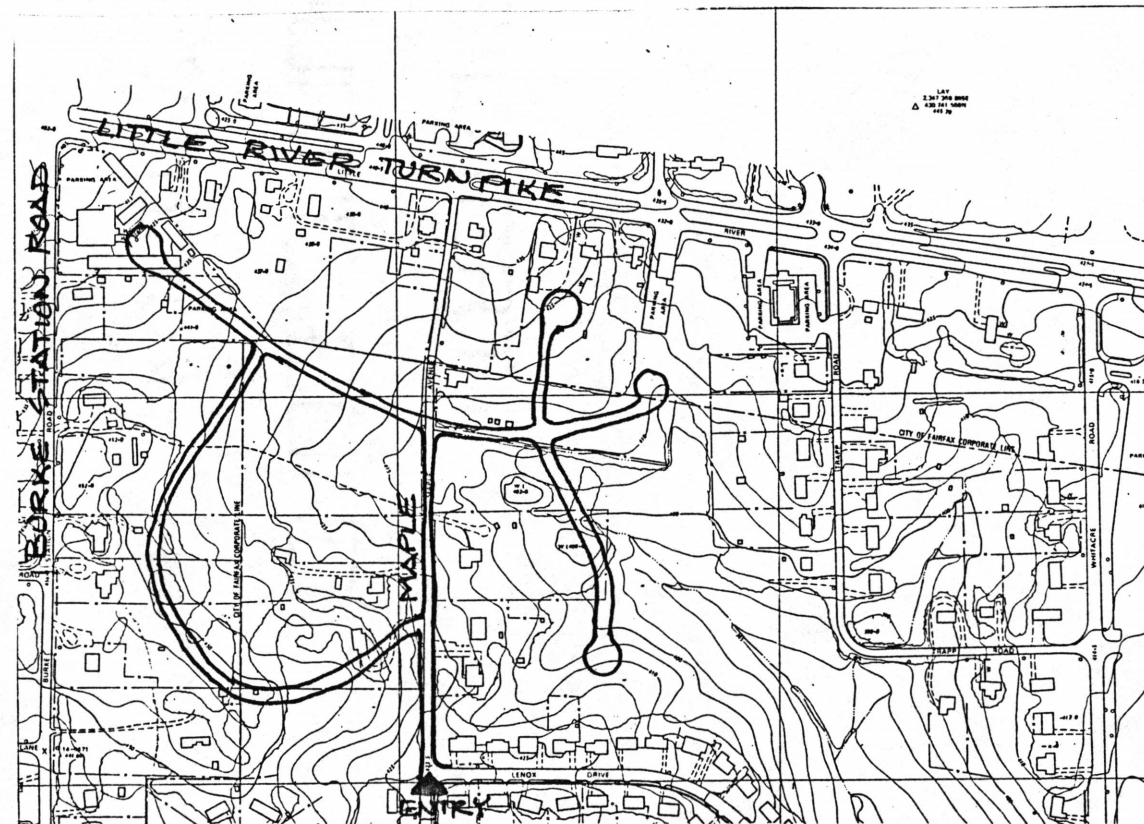
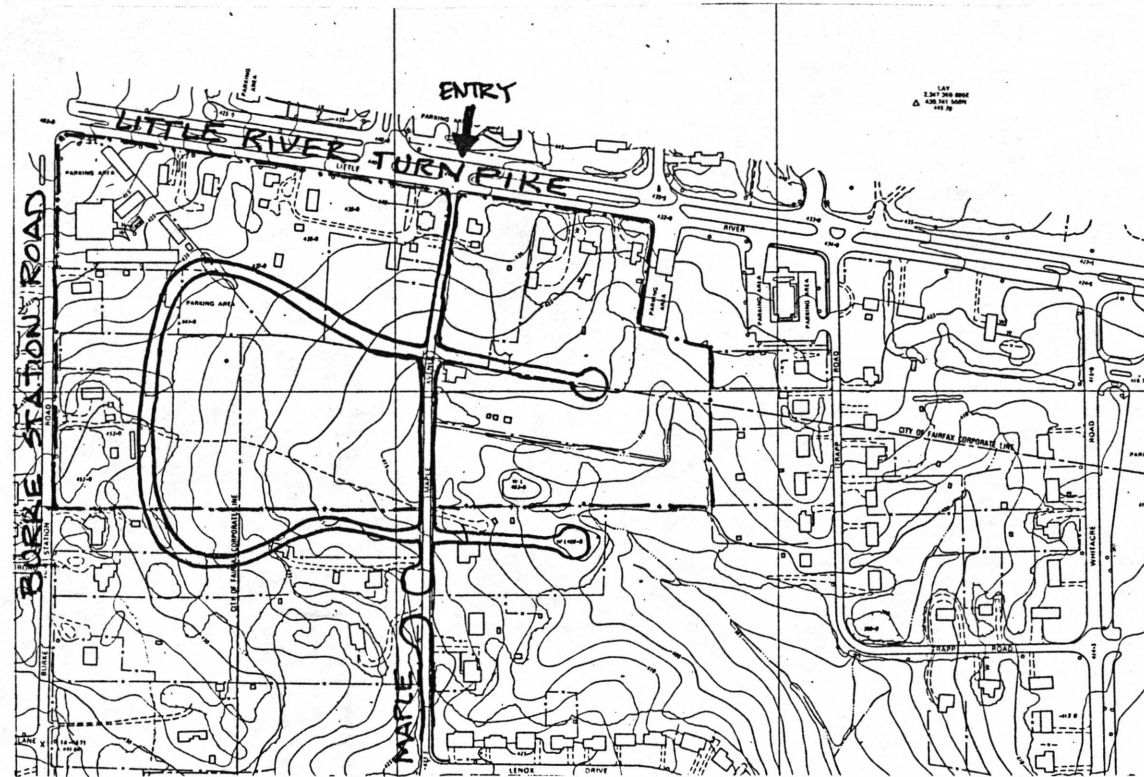
## Design Concepts

The first step to developing a design structure, was to design a road system for the site. The street system should be designed that would prevent cut through traffic and would create a sense of community.

The first concept was to provide an internal street layout that would not connect to Burke Station Road and not increase the traffic potential into the Somerset Community to the south. While this may be a desirable solution it does present some problems. There is only one access to the entire new community. For safety reasons that is not a good solution, even though it is often a solution forced by the politics. The second problem is that the street layout would probably not be acceptable to the Virginia Department of Transportation (VDOT) and the City of Fairfax. The jurisdictional limits and the two owners of the roads would probably not accept this road system. Access of all new traffic would be oriented to Fairfax City which would not be politically acceptable. The State Highway department would have to go through the City to repair and maintain the streets in their jurisdiction which would not be desirable for either party.

This second layout was an attempt to internalize the design away from the Little River Turnpike Corridor. The problems with such a layout are similar to the previous one, but the traffic would all go through the County. In this case the City would have to go through the County to maintain their streets and provide their residents services.

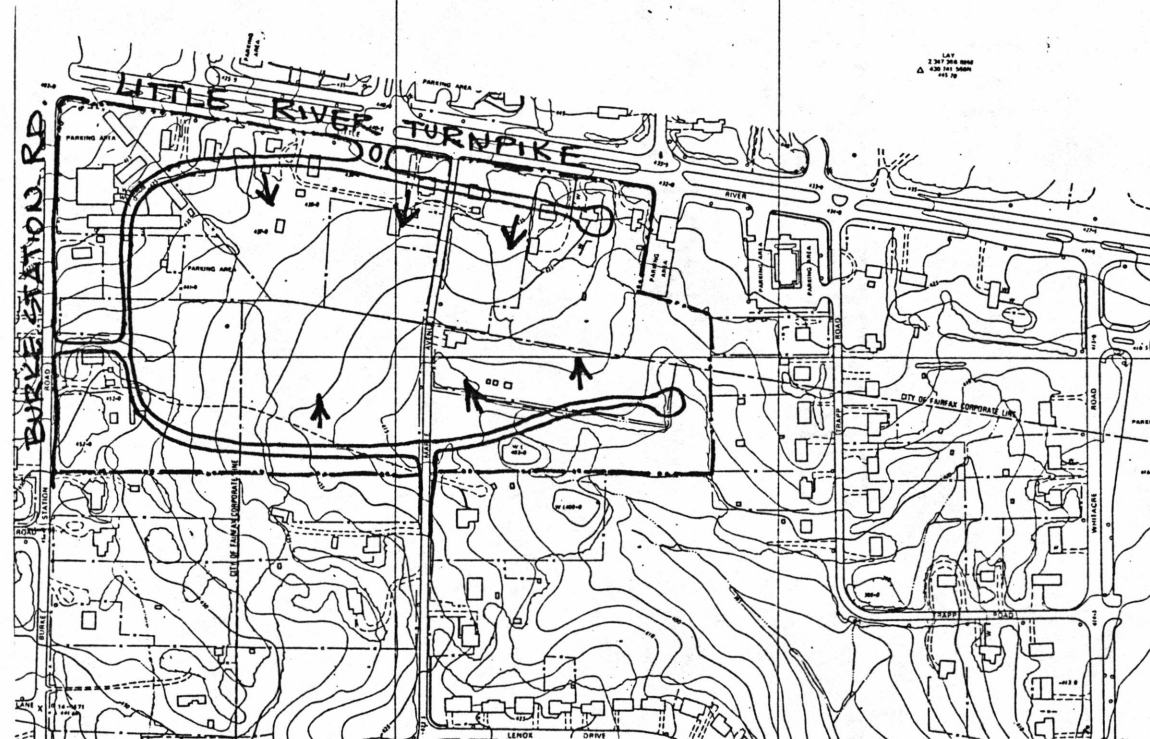
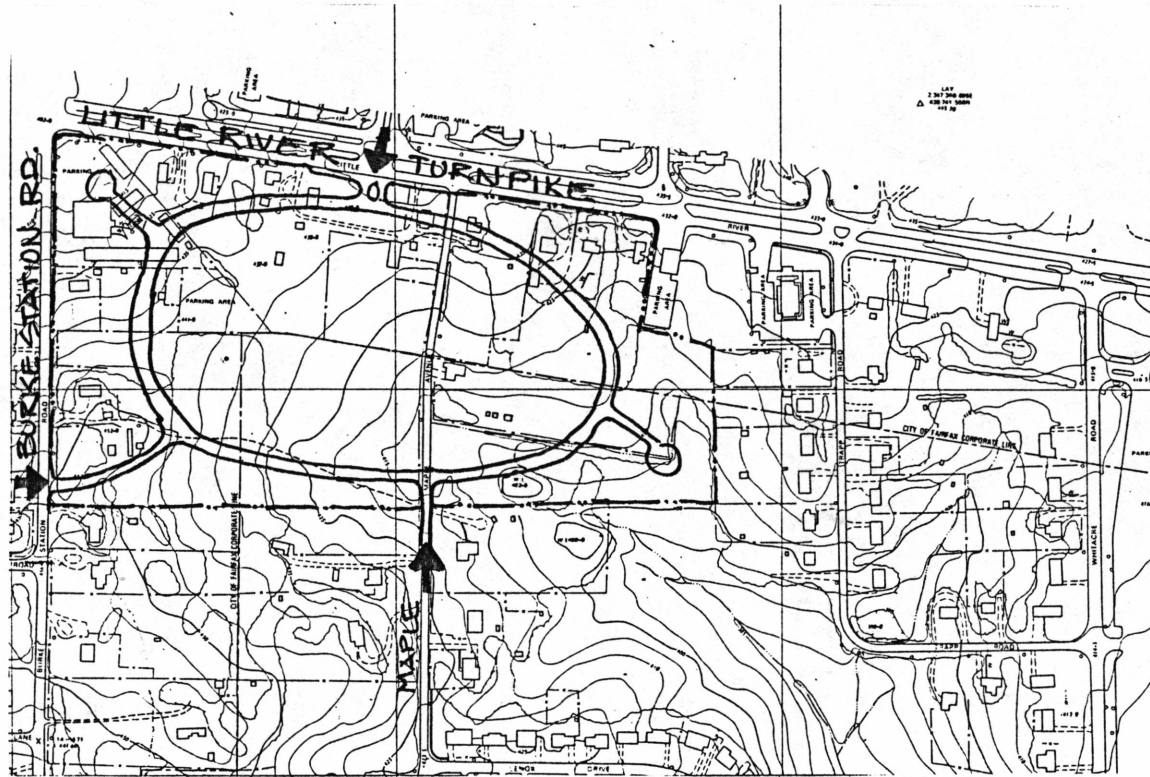
In addition, this concept puts all the additional traffic into the Somerset Community which would not be politically acceptable.

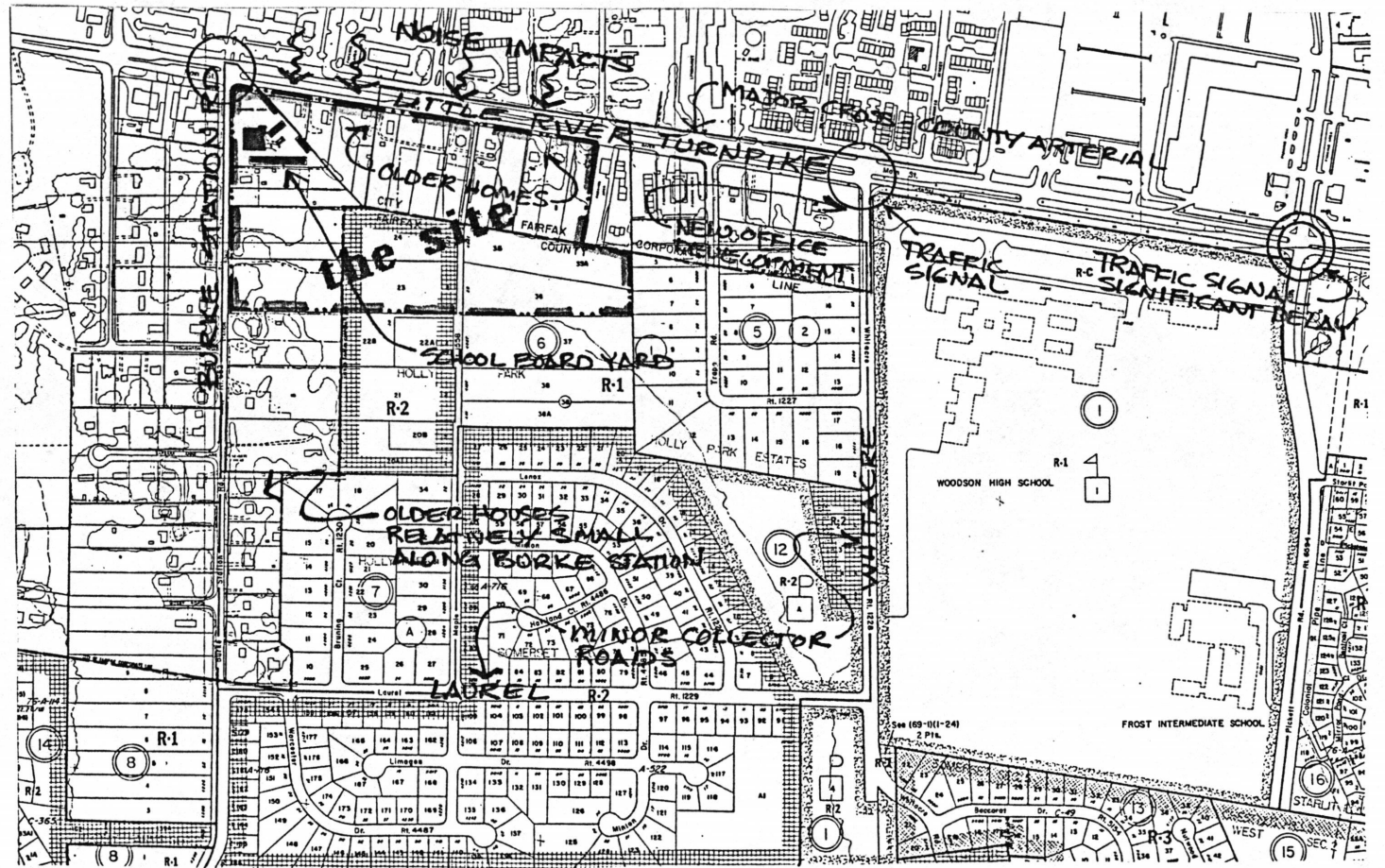


This third concept was designed to maintain existing vehicular connections to Maple Avenue and Little River Turnpike, and discourage through traffic. The design provides access from Burke Station Road, a new entrance from Little River Turnpike that lines up with the existing intersection with Fairfax Square Apartments and it maintains the entrance from Maple Avenue.

This design would distribute the traffic and provide adequate emergency accessibility. The problem of serviceability from the two jurisdictions is still a concern. The road design may not be acceptable to the two jurisdictions.

A fourth concept was created that may be more acceptable to both jurisdictions. This concept provides a connection to Burke Station Road far enough from the Little River Turnpike intersection, so it does not create turning movement or stacking conflicts. A new entrance on Little River Turnpike is created opposite the entrance from Fairfax Square Apartments. This would reduce one entrance from Little River Turnpike, the existing one for Maple Avenue. The entrance to the site from Maple Avenue would also remain, but there would not be a direct access to Little River Turnpike. These streets are designed to allow the creation of a community with minimal bisection by public roads. It is also hoped that this street system would be acceptable into the State road system and the City system.





### Urban Design and Site Analysis

A preliminary urban design and site analysis is necessary. The School Board Maintenance yard is an eye sore that the community would presumably like to get relocated. In addition the facility while located in the City, is in fact a County facility.

The houses along Little River Turnpike are relatively old, probably built in the 1900's-1930's. They are not historical or structurally substantial enough for preservation. The houses along Burke Station Road are a varied quality, and they are modest in size.

The noise impact from the traffic along Little River Turnpike is a factor that should be taken into consideration in the design of the site. Noise barriers are ugly and tend to become eyesores, therefore; landscaping, buffers and setbacks would be more appropriate.

The intersection of Burke Station Road and Little River Turnpike is the most significant focus of the area. It is an intersection with commercial development, but it does not have any urban qualities, particularly for pedestrians. Like most every development in the area, it is a vehicularly oriented development.

Little River Turnpike is a cross-county major arterial highway. It is heavily traveled, but it connects to a number of services and facilities. It also is the route of the CUE Bus with ultimate access to the Vienna Metro.

Burke Station Road is a major connector between Braddock Road and Little River Turnpike. While it was residentially developed, it has become heavily traveled and will always be a major connector, because north-south connectors in the County are limited.

Maple Avenue, Laurel Street and Whitacre Road are minor residential streets that connect neighborhoods together. They often become major cut-throughs when the other major roads become overloaded.

Traffic signals exist along Little River Turnpike at Burke Station Road, Whitacre Road and Pickett Road. Pickett Road is the most significant intersection and has the longest delay time on the traffic signal. Pickett Road also provides the major access to a significant industrial park and is heavily traveled by oil trucks.

The analysis of the site and the neighborhood did not provide any significant site design inspiration. However, the existing elements of the neighborhood did provide design concerns, such as treatment of areas adjacent to Little River Turnpike, access through and to the community, and concern for cut-through traffic.

## Unit Types

Unit types is a significant part of the development of this site, as well as, the achievement of the design goals.

The single family detached unit, while apparently the most desirable to most people, is the most costly, the most wasteful of land, and destructive of environmental features. While the proposed site does not have any significant environmental features, it would still be desirable to preserve some of the site as community open space.

To achieve that goal, other unit types must be considered. The townhouse unit type is the most commonly used. A fairly new unit type is the patio house, or zero lot line house.

The layout shown here was an attempt to provide a mix of unit types. It also shows a street layout that would be politically acceptable. The two cul-de-sacs and the patio homes on the southern portion of the site would probably be acceptable by the two jurisdictions. This type of layout and these types of unit types are typical of the piecemeal type of development that tends to occur and would probably be approved and accepted into the community. It would not necessarily be the best site design.

The open space in this layout is isolated from the new development by Maple Avenue. The density would be greater in the areas along Little River Turnpike, just like the City Plan recommends. This generally assumes that the densities between the jurisdictions could not be averaged.

While this solution needed to put on paper, it does not address the design goals and does not provide the best solution.

This layout is using the street system that was previously discussed, with a mixture of unit types. A solution such as this would come close to achieving the design goals.

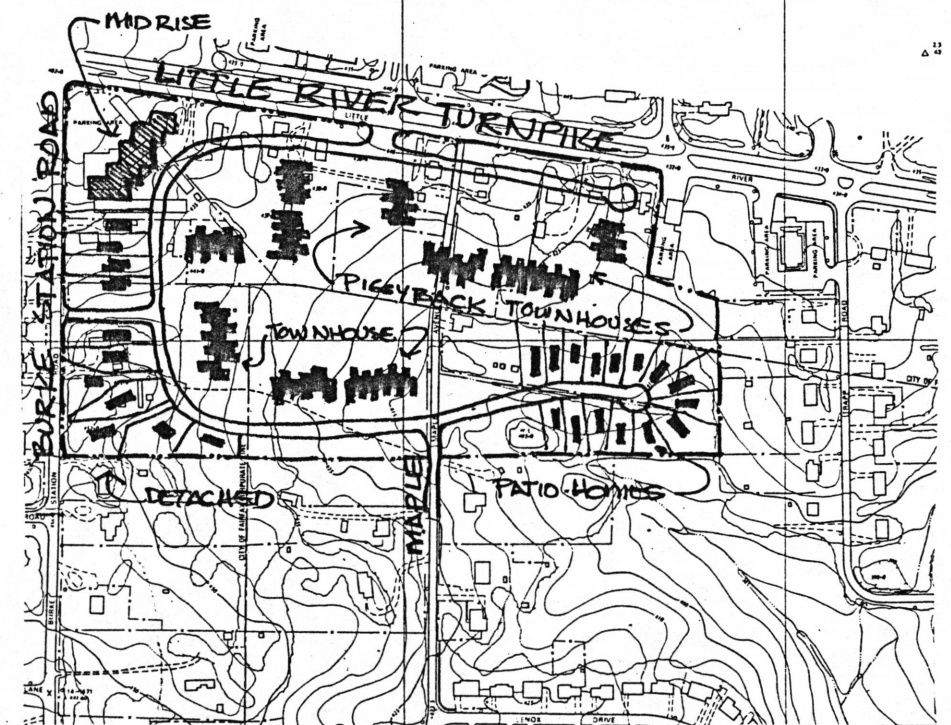
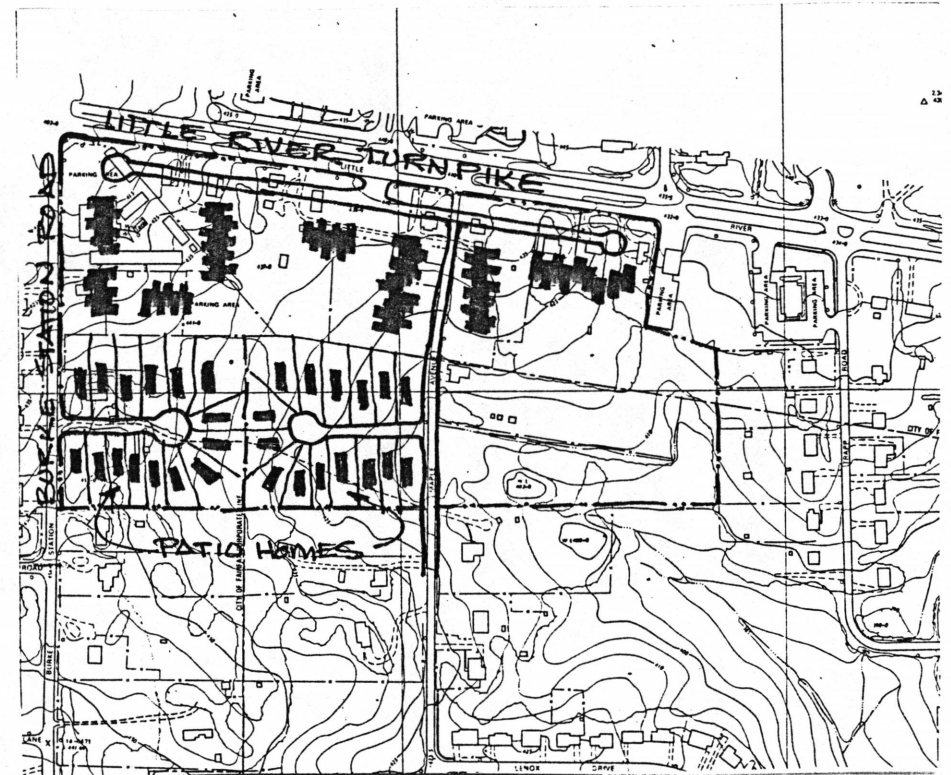
The transportation elements are improved and would foster a stronger sense of community. Access would be acceptable. The street system would probably be acceptable to the jurisdictions. Little River Turnpike would be buffered and landscaped.

The central open space would be a community focus. A significant number of the units would literally back onto the common open space areas.

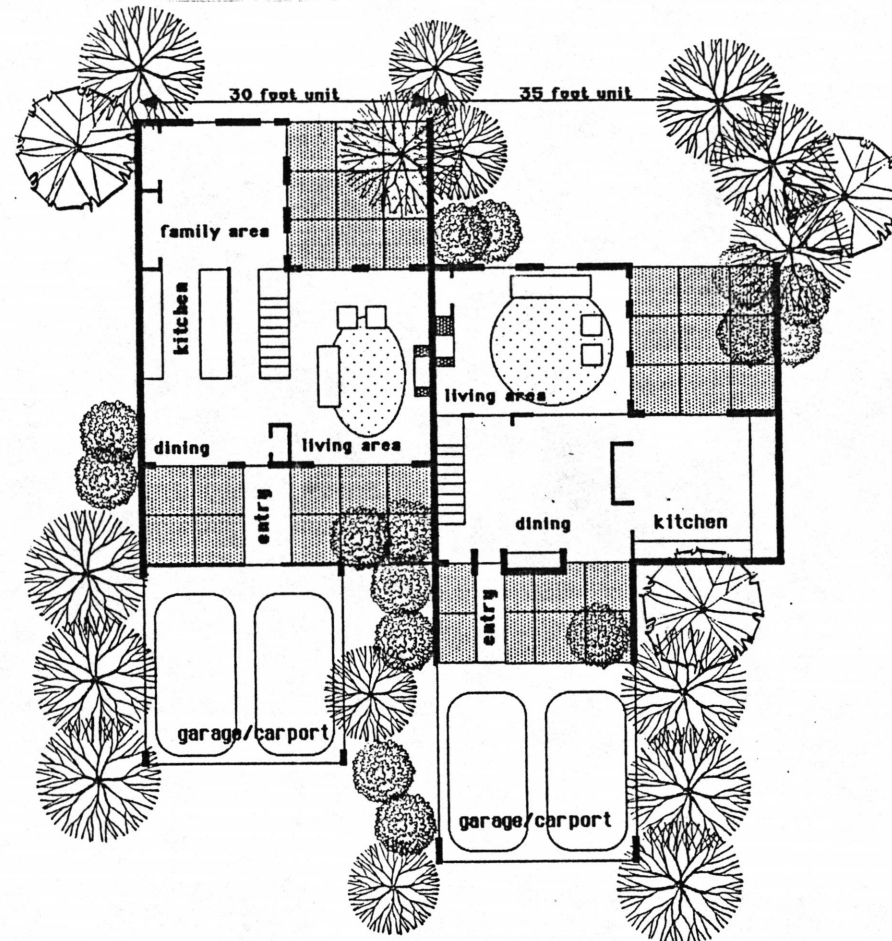
The adjacent community to the south would be adequately landscaped and buffered.

Significant urban design features could be incorporated into the site design. Trails, lighting, open space with both active and passive recreation could be provided. Pedestrian connections could be made to the existing commercial areas and bus shelters could be provided at the entrance on Little River Turnpike.

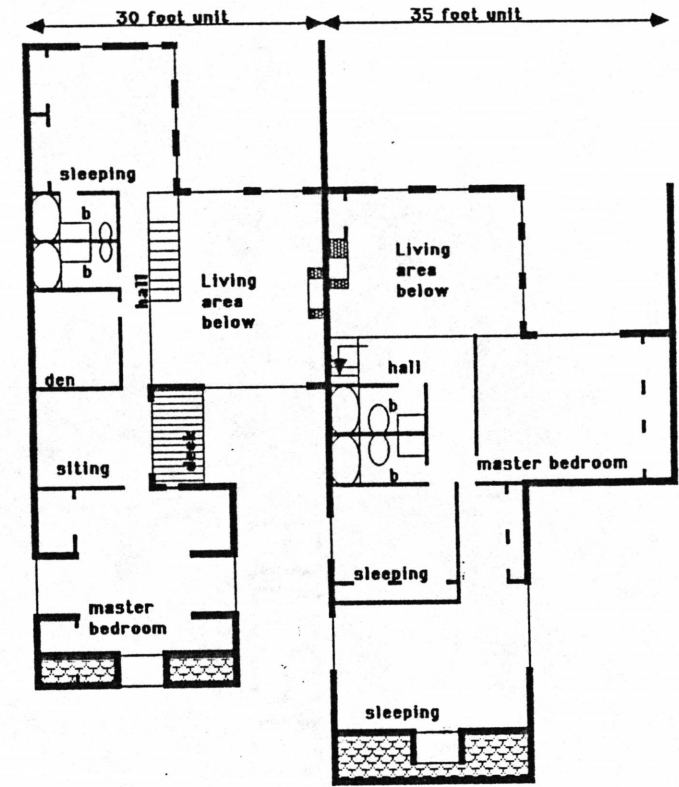
This layout also illustrates a mix of unit types from a detached unit, townhouse or attached units, patio homes and a possibility of mid-rise apartments at the intersection of Burke Station Road and Little River Turnpike. Those mid-rise could be elderly housing, thus rounding out the age mix in the community.







Unit A First Floor Plan      Unit B First Floor Plan



Unit A Second Floor      Unit B Second Floor

### Floor Plans

A design goal was to design units that could offer a selection of space arrangements to accommodate various lifestyles.

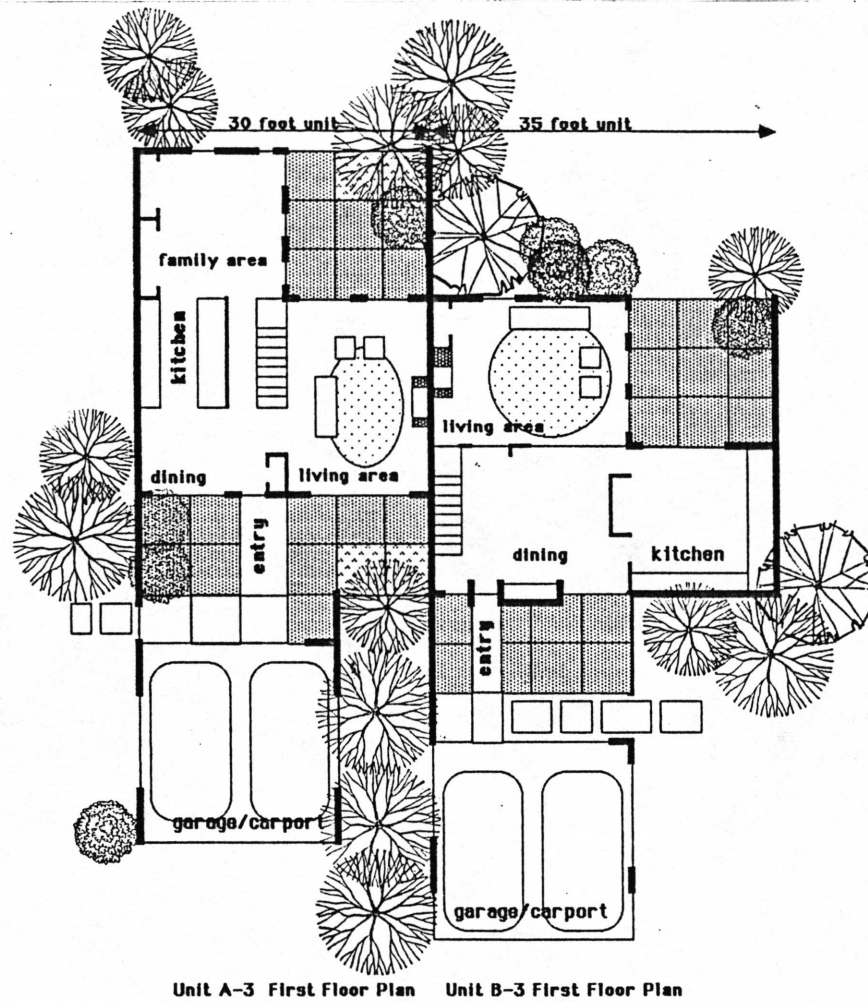
The attached unit is the most common unit and is relatively efficient. Attached units can offer privacy, variety, and can be designed to meet any lifestyle need. Such units can meet the needs of a growing family as well as a single person or elderly.

Unit A is shown as a two level, two bedroom unit. It has a garage or carport which can be altered to orient in several directions. This unit has a two level living area and two sleeping areas. It could also be used as a three bedroom, one over the living area, with or without a room over the garage area.

The outdoor privacy areas could be arranged in a variety of ways depending upon the location on the site and the site conditions. The entry area could be enlarged and extended along the side of the carport area.

Unit B also has flexibility. The unit shown has a two level living space and three sleeping areas. The sleeping area over the garage could be used as a play room and a sleeping space added over the living area.

The privacy areas could be arranged several ways. Again additional privacy areas could be adjacent to the garage area. The privacy areas would be dependent upon the site conditions and the amount of land area to be platted for each lot.



Unit A-3 First Floor Plan    Unit B-3 First Floor Plan

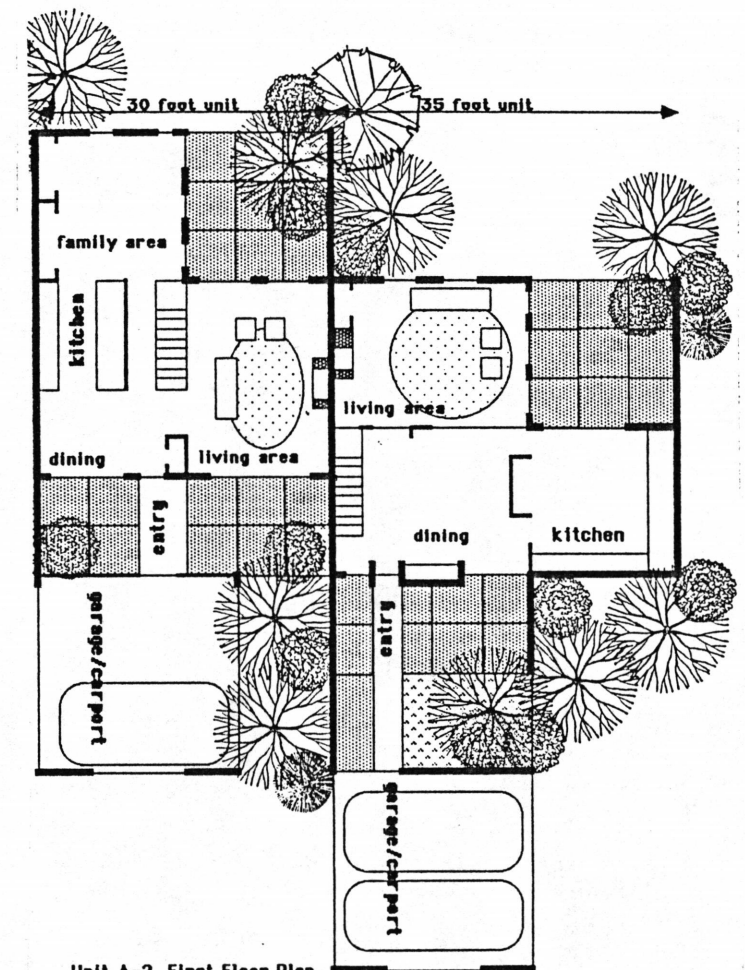
Unit A-2 and B-2 are variations on the previous plans. They illustrate a shift in the garage/carport direction, and variations on the private entry areas.

These units are shown as 30 foot wide and 35 feet wide units. They could be provided with or without basement areas and the number of bedrooms could vary, thus offering a variety of prices with in the community.

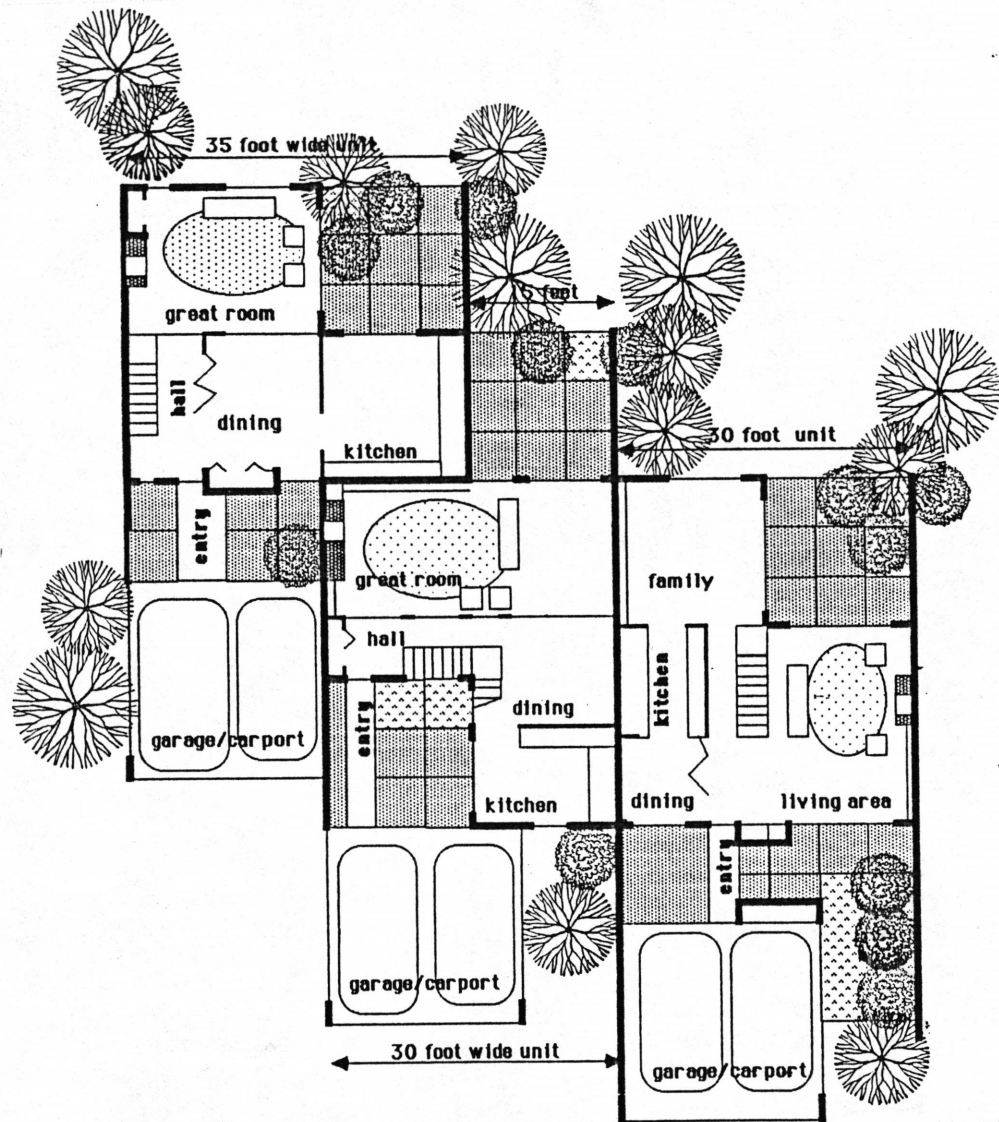
Storage units could be added in several locations for each of the unit types.

Another option would be to group the units as either duplexes (two units), triplexes (three units), townhouse (multiple units). They could also be detached by adding window areas on the sides.

Other options would be to turn the units around in different arrangements.



Unit A-2 First Floor Plan    Unit B-2 First Floor Plan

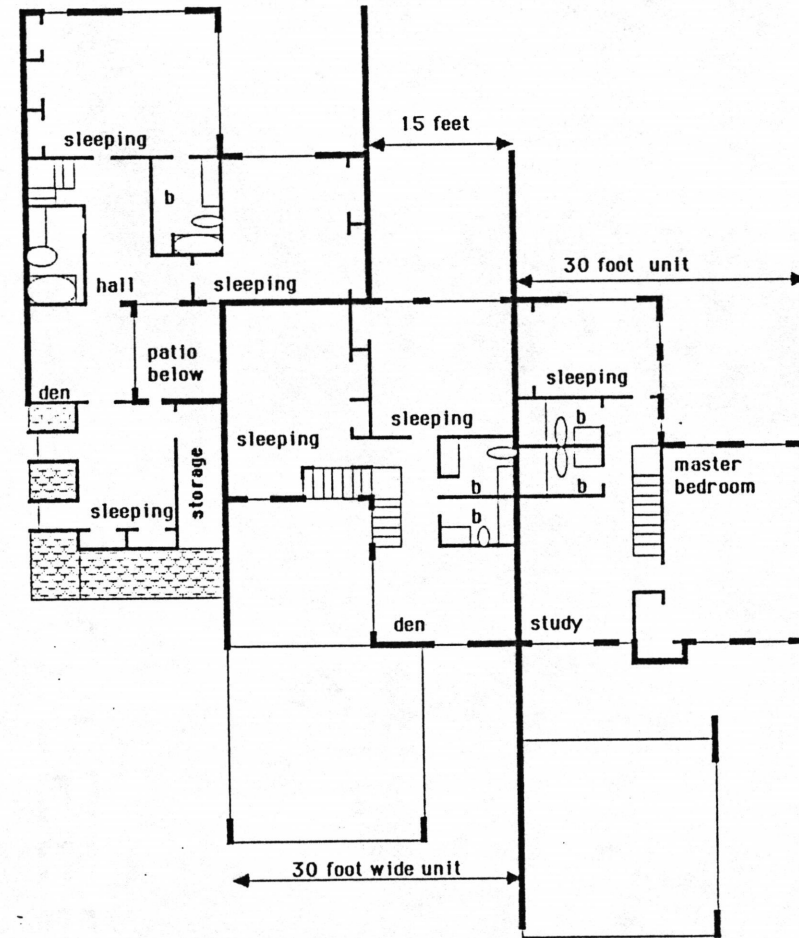


Unit C first floor    Unit D first floor

Unit A-1 first floor

Unit A-1, Unit C and Unit D are additional variations on the attached units presented in the previous sections. Again these units are shown as attached and are 30 foot and 35 foot wide units. The major difference in this arrangement is the overlapping of Unit C and Unit D.

These units can be designed in several different ways to accommodate different lifestyles. Like the other units, the garage/carports can be turned different directions to accommodate the site or the market.



Unit C second floor    Unit D second floor

Unit A-1 second floor

Unit A-1 is shown as a two bedroom with a study area on the second floor. It does not have any room over the garage and does not have a two story living space.

Unit C has three bedrooms and a den, but again does not have a two story living area.

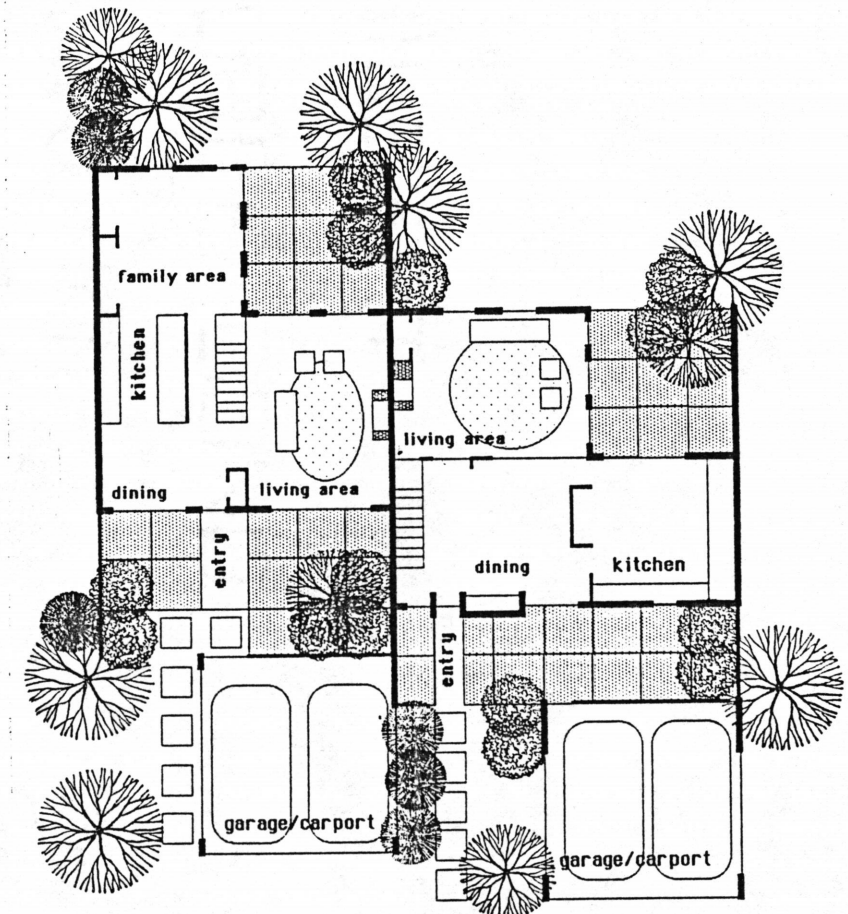
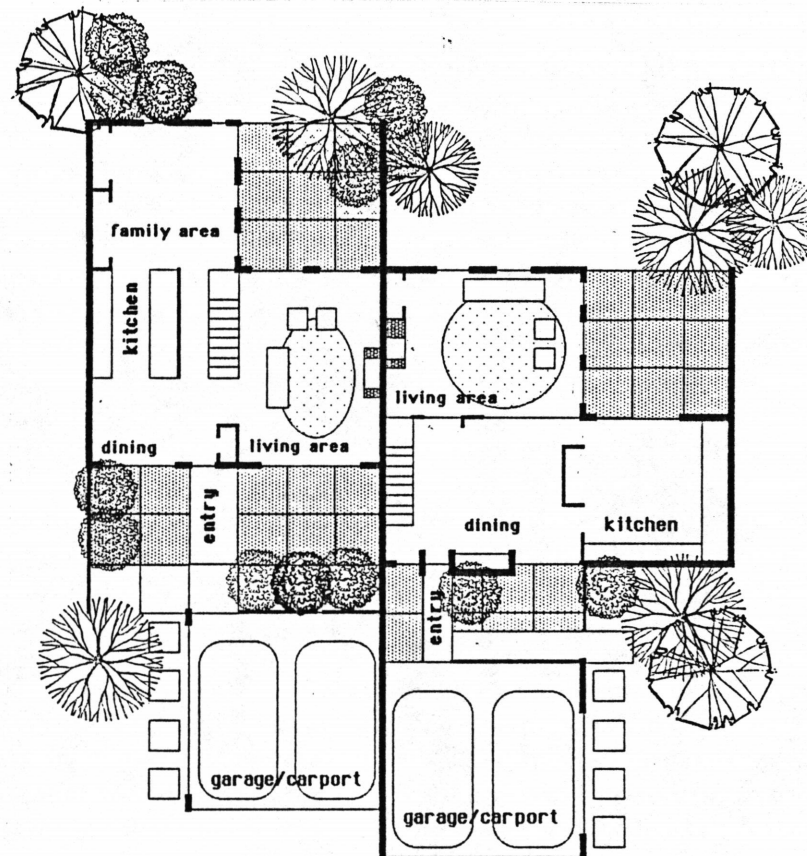
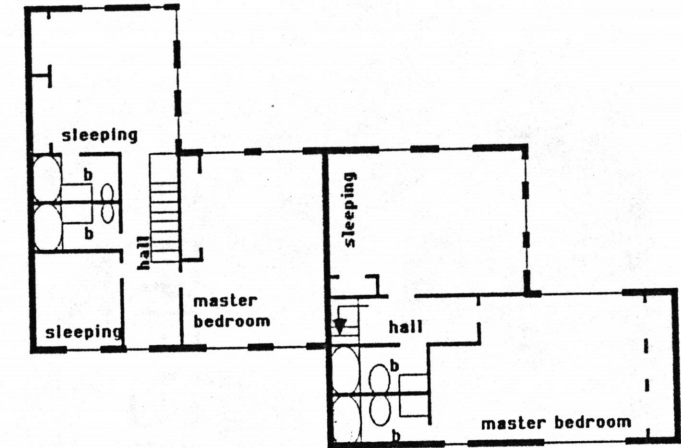
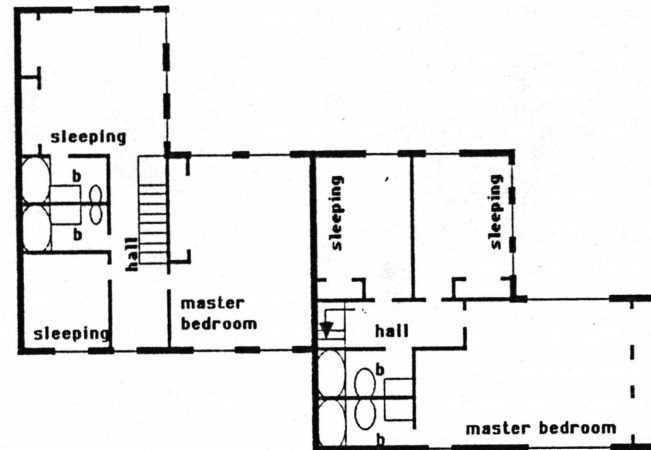
Unit D is a two bedroom unit with a den and also does not have a two level living space.

In these examples, the private entry patio areas could be increased in size. Also additional space could be added by building rooms over the garage areas.

Unit A Variation and B Variation as shown are illustrations of how the units can be altered slightly to meet a variety of needs. The carports can be shifted to provide entrance landscaping and walkways to the units. Solid walls, half walls or screens can be used between the units. The units can be either two bedroom or three bedroom units. More space could be added by expansion over the garage/carport areas.

Another type of unit is the detached or patio unit. This type of unit could be created by using variations of the basic plans already presented. The plan show here is the A unit with a two story living space and two bedrooms. It could be either designed as shown as a box car plan or walls can be realigned to create more variety.

On option which has not been shown in any of the examples, would be to offer a unit without the garage or carport. That would provide for a less expensive unit. A parking space or pad would be provided and the family would have the option of adding the garage or carport at a later time. Each of these units would have the opportunity to expand as the family grows.

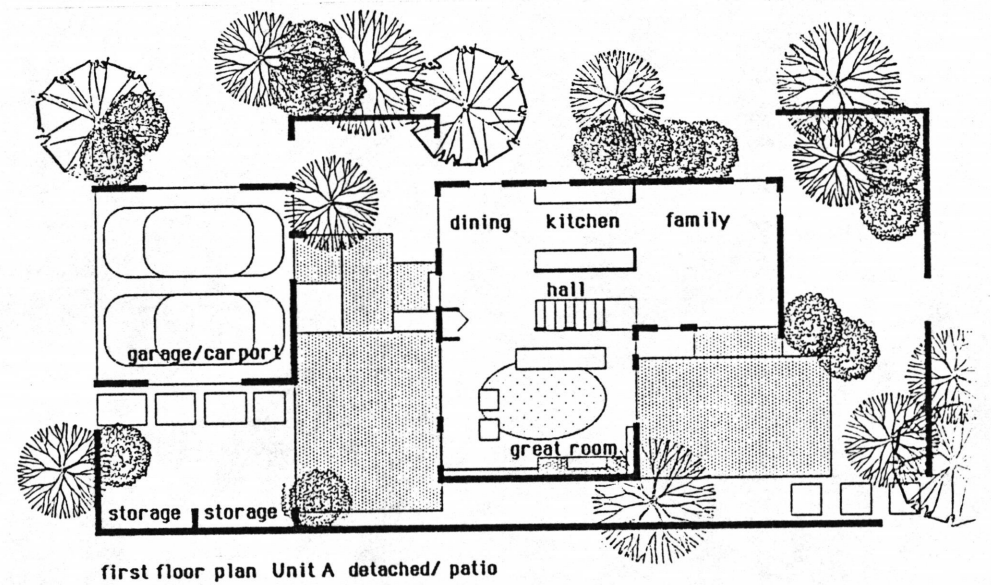
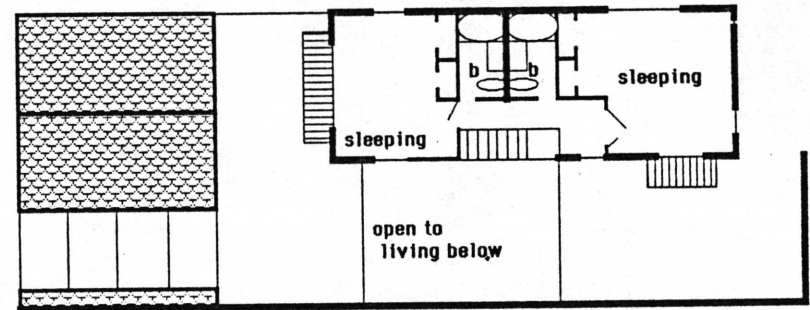
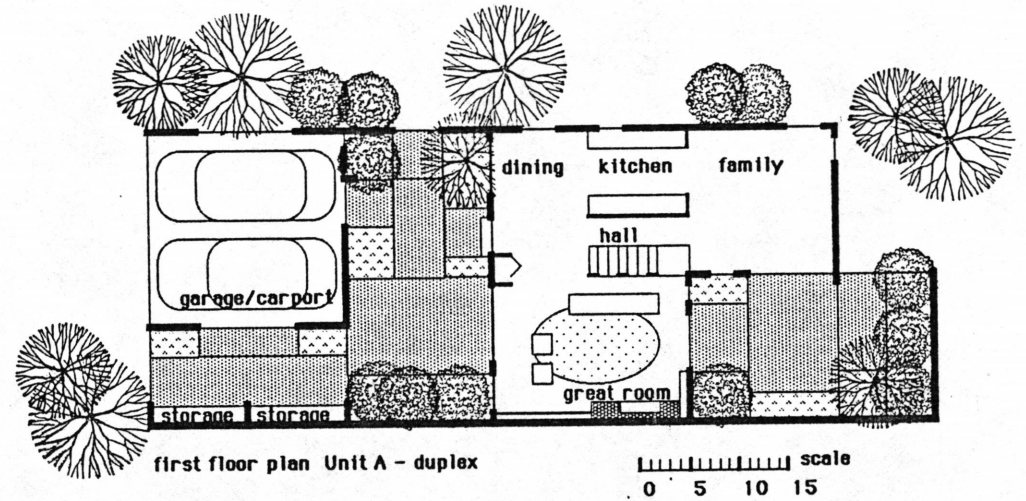


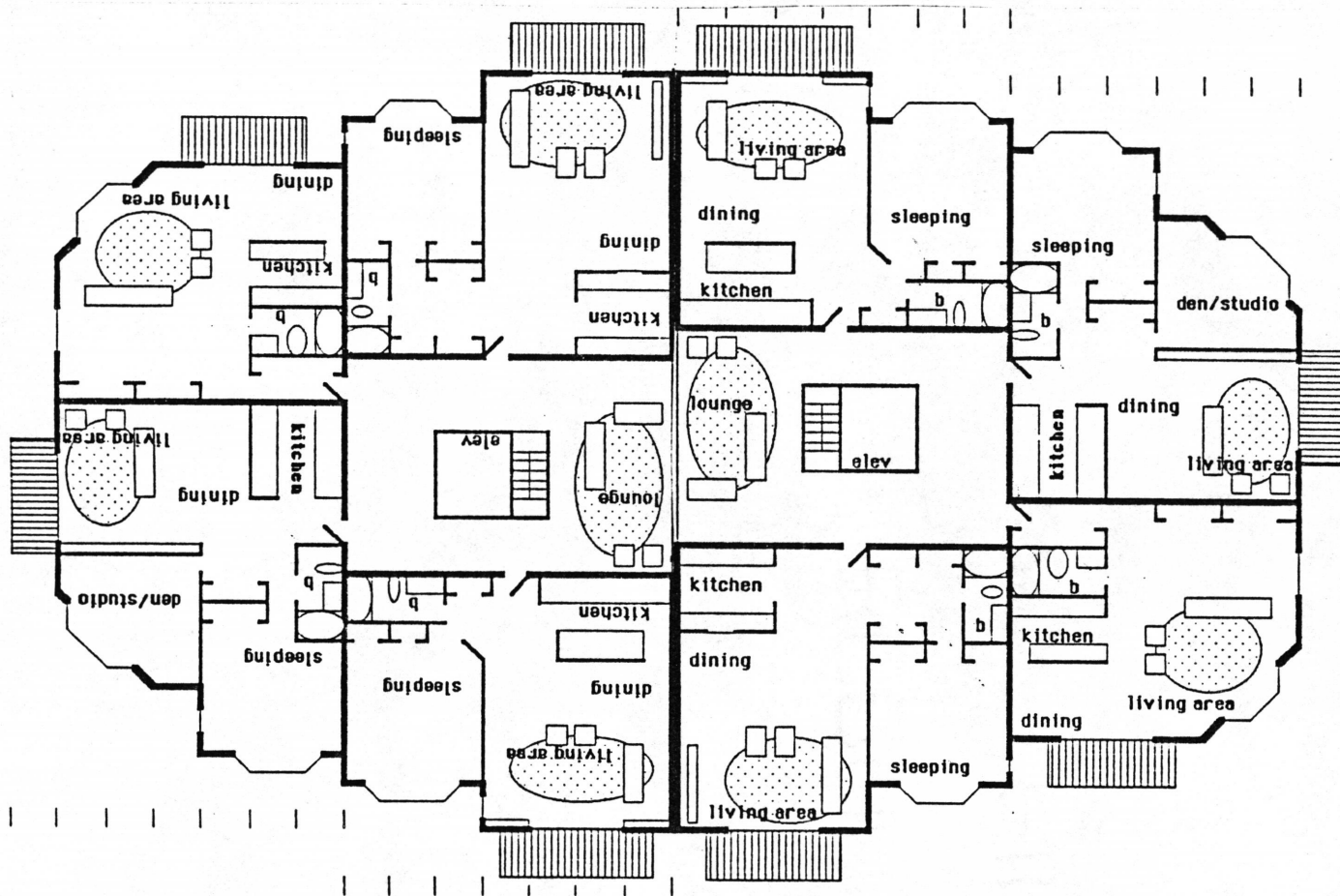
Unit A variation  
First Floor Plan

Unit B variation  
First Floor Plan

Unit A variation  
First Floor Plan

Unit B variation  
First Floor Plan





The elderly units were designed in groups of four with a total of eight units per floor. Each floor has a lobby space for group activities. Each unit is designed for independent living and yet the resident can participate in group activities in the central lobby areas. The units vary from studio units, one bedroom units and one bedroom plus den units. Each unit also has a private balcony area which depending upon the site design would have a view.

## The Site Plan

The analysis of the Comprehensive Plans for both Fairfax City and Fairfax County indicate that with averaging the densities one could most likely develop 155-156 units on the subject site. Three site plans were developed to achieve differing design objectives. The three site plans have some characteristics in common. They all have the same street pattern, the land uses are approximately the same, but the unit mix varies.

The street pattern was determined early in the design process to be the structure of the design. The access to the site is from three directions which was felt to be the best way to provide safe access as well as distribute the traffic to the degree possible. The main entrance is from Little River Turnpike, which is a major entrance with a median. This would become a major design feature with entry signage, lights and landscaping.

A second access would be from Burke Station Road; however, that entrance was designed such that cut through traffic could be held to a minimum. Stop signs could be placed on site to discourage cut through traffic. A deceleration lane is shown at the Burke Station Road entrance and the entrance is set back from the intersection of Little River Turnpike to prevent stacking problems or movement conflicts. A deceleration lane is also shown at Little River Turnpike to improve that traffic flow at the traffic signal.

The third entrance to the site is from Maple Avenue. That connection would continue so that the Sommerset community would continue to have access out to Little River Turnpike; however, it would be more circuitous. This entry would also have signage with some lighting and landscaping, so that one would have a sense of entry to the community. It is also shown with three turn lanes to facilitate the traffic movements.

The adjacent areas to the south are buffered from the new unit types being introduced into the neighborhood. Also the frontage along Little River Turnpike has an extensive buffer area for softening the visual impacts. The noise is addressed through the use of distance and insulation of the units and the privacy fencing. A noise barrier along Little River Turnpike was rejected as being unattractive.

Since Little River Turnpike is the route of the Fairfax City CUE bus system, a bus shelter would be provided near the main entrance on Little River Turnpike. A deceleration lane is shown at the main entrance, as well as, an acceleration lane which could accommodate the bus stop area.

### Site Plan One

The first layout, which shows 102 attached units and 53 mid-rise units for a total of 155 units. The mid-rise building would consist of one three story building and one four story building. There is some question as to the viability of only 53 units within the mid-rise structures. It is felt that if there is any possibility of bonus density, then additional units should be put into the mid-rise units to give the structures more height.

One criticism of this first plan is that it does not offer a mix units. The units are predominately attached units. While the clustering is attractive and gives each grouping a neighborhood feeling, there could be more variety in unit types. The cluster groupings vary from six units to twenty-one units. Another criticism would be the minimal amount of open space. One design goal is for maximum use of open space.

### Site Plan Two

This site plan is alternative using less attached units for a total of 76 attached units and 80 mid-rise units for a total of 155 units. The mid-rise buildings are five stories in each building.

This layout provides more open space and retains the community feeling. Another feature of this particular layout is the preservation of the trees along Burke Station Road. As in the first plan, extensive buffers are shown next to the southern boundary. Also, extensive buffering is provided along Little River Turnpike.

Each entry to the site looks into an open space area. Automobile lights would not be shining into any units at the entries.

Each of the units is oriented better for potential use of solar energy. The first plan has a large number of units with a north/south orientation; the second plan orients most units northeast to southwest.

This plan has the greatest number of units oriented toward the central open space. Only eight units are situated across the street from the central space. Each cluster of units was held to six or eight units. This would give a stronger sense of neighborhood. People would know their neighbor and the public spaces would be more defensible.

Site plan two does not meet the design goal of providing a mixture of units. It also does not provide a gradation of unit types towards the intersection of Burke Station Road and Little River Turnpike. If politically, the attached unit type is acceptable to the surrounding community, this site design would be one of the most environmentally sensitive and preserves the largest amount of open space.

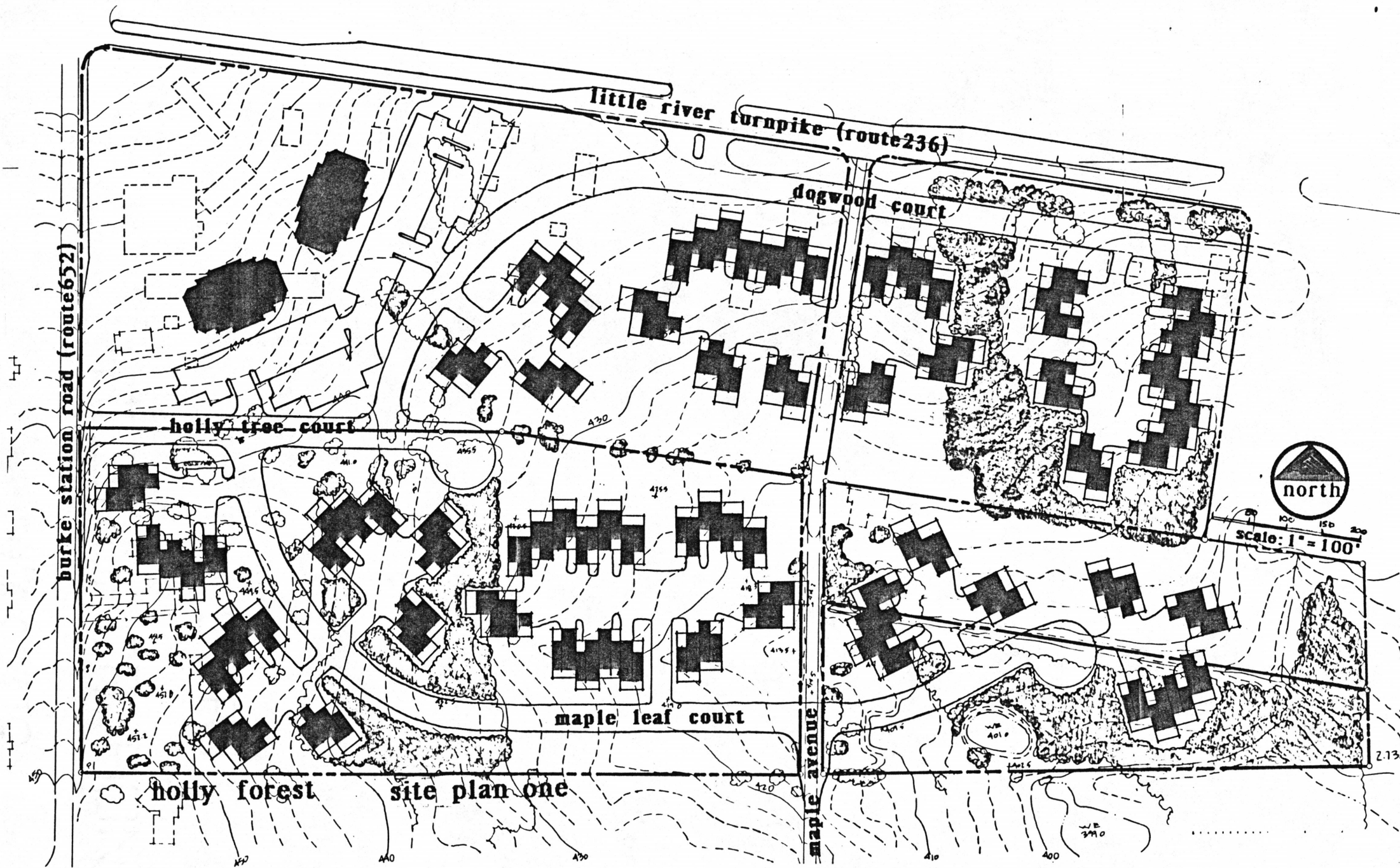
### Site Plan Three

This third site plan shows 46 detached or patio units, 30 attached units and 80 mid-rise units for a total of 156 units. This arrangement is very similar to the second plan, but the individual lots in the southern portion of the plan are larger and the units are detached. It was felt that this may be a more politically palatable layout, transitioning from single family detached units to the attached, then the mid-rise at the intersection.

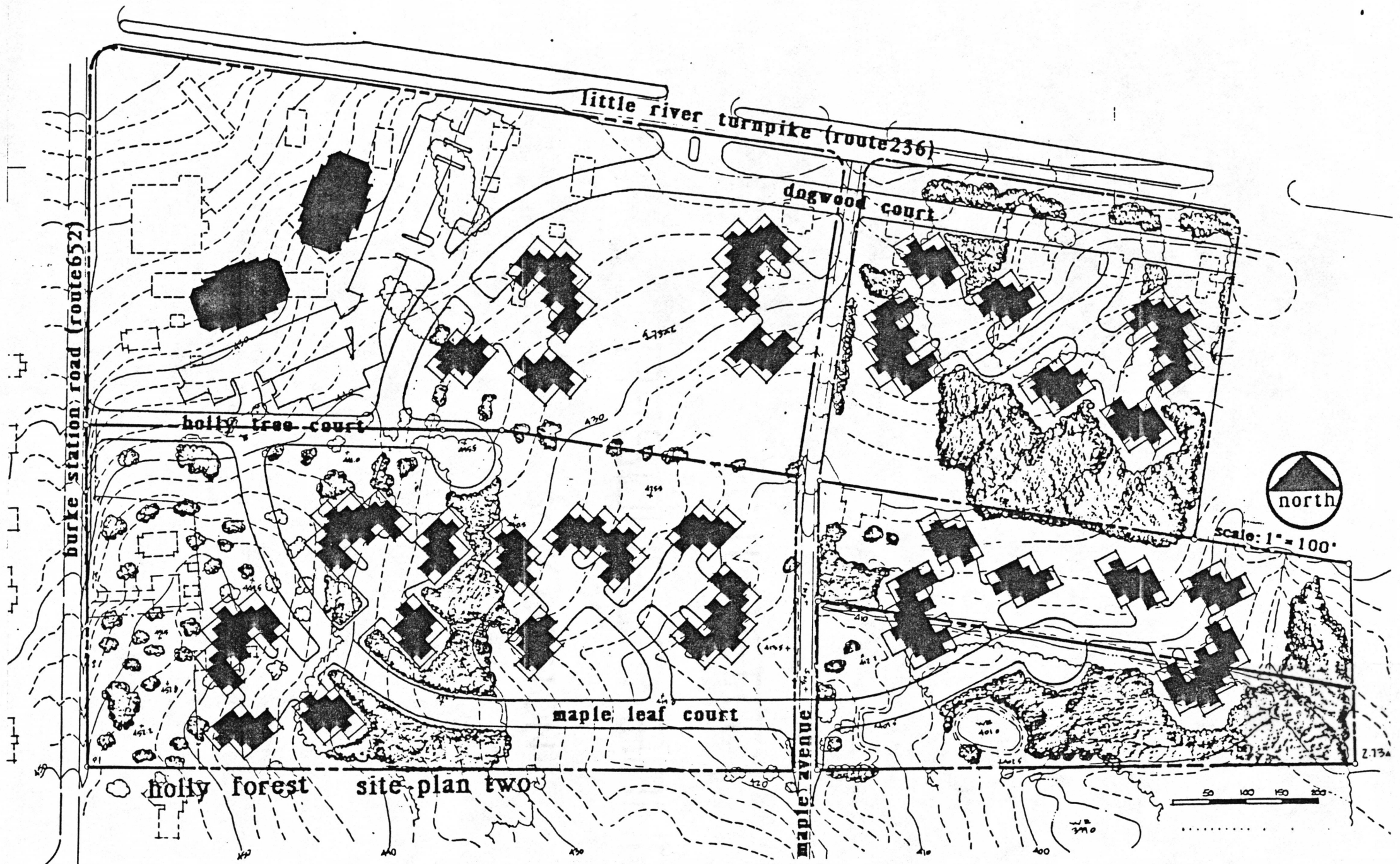
This site design achieves the design goal of providing a variety of housing types and provides for an environmentally sensitive development. The clusters again remain in groups of six to eight units. This provides for a stronger sense of neighborhood.

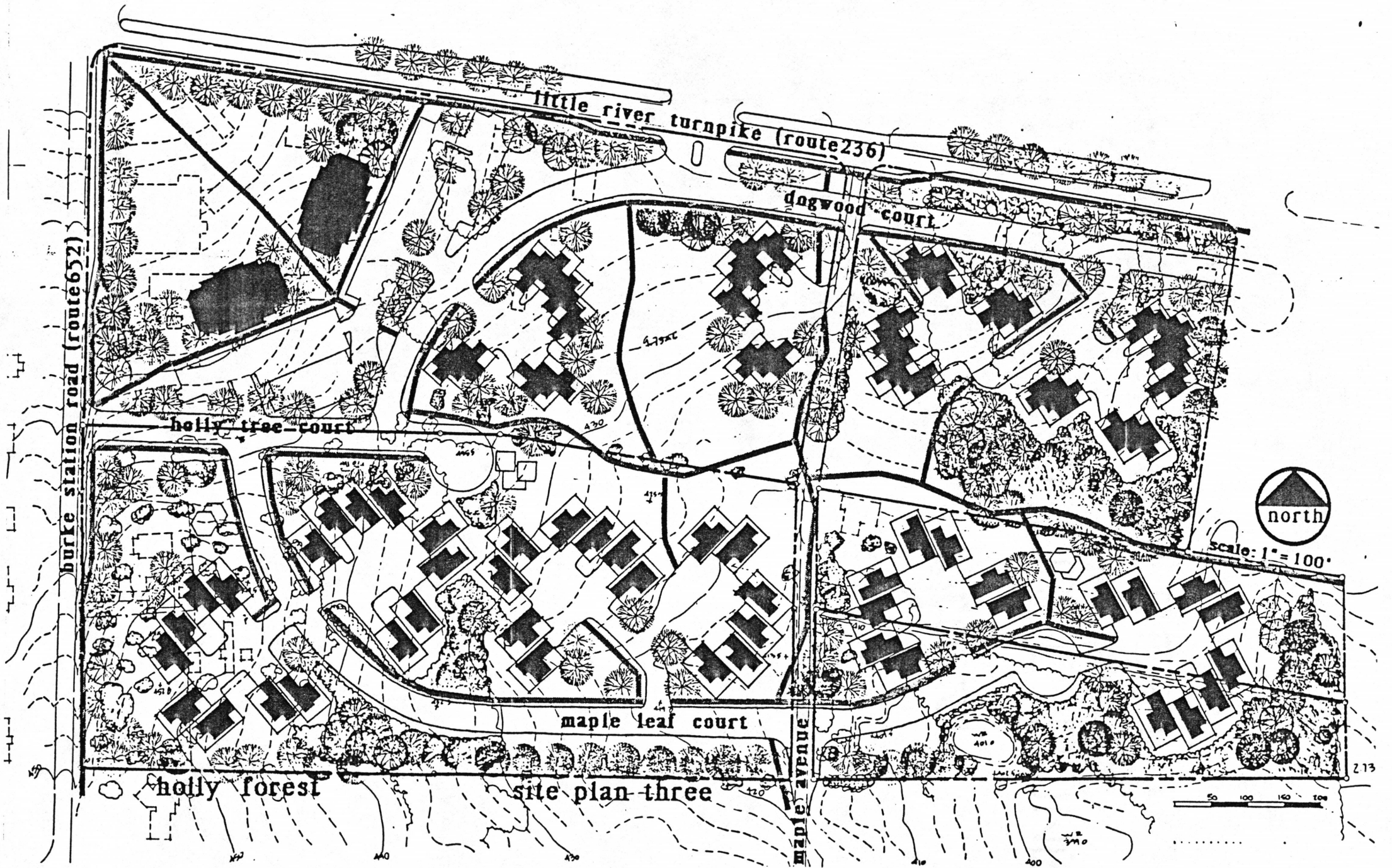
The site plan includes a trail system that was designed to provide access for the children to get to the school bus locations and for the adults to get to the CUE bus shelter on Little River Turnpike. The trail system could also be utilized as a jogging trail.

The central space in the core of the site was conceived as the community space where the homeowners association could have their annual meetings and neighbors could have picnics in the summer. Four playground areas are provided in locations that would be easily accessible to all the units. Several of the playgrounds should be designed for small children, with seating for adults adjacent, but one should be designed for use by the teenagers. It should contain a basketball court and other active recreational facilities.









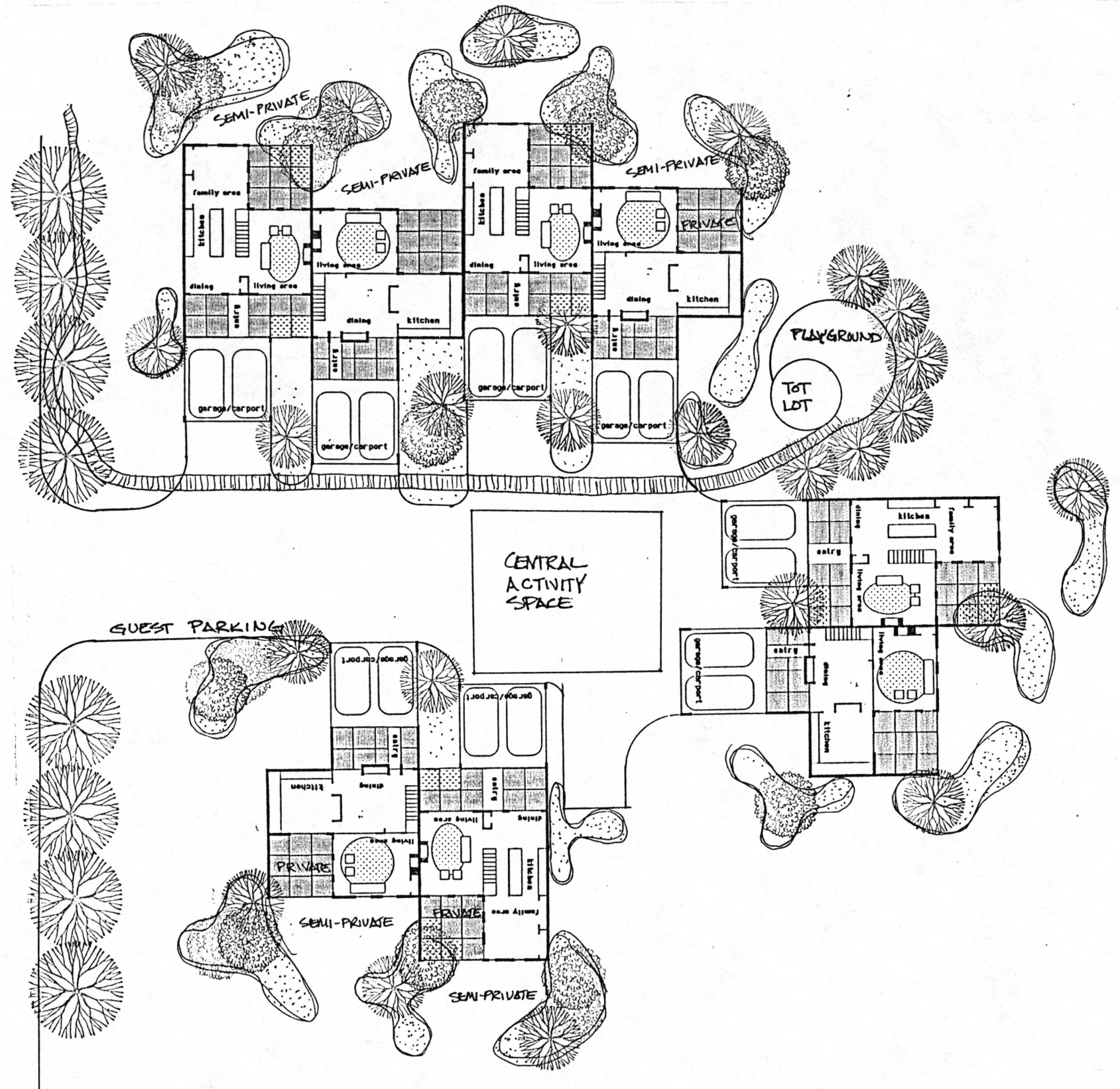
## Typical Cluster

This is an enlargement of a typical clustering of units. The units could vary and each cluster could be designed with a different theme, so that each cluster is different. One cluster could have a particular texture, such as a brick cluster; another cluster could have a landscaping theme such as a dogwood cluster.

Each cluster is located on a private street system. The street is designed so that anyone entering the street would know that it is also a playground, for young and old. The central space is an area with a concrete and/or brick texture with play activities painted on the surface. In the summer evenings, the adults should be seen playing volley ball in the central space. After the game the nets would be removed.

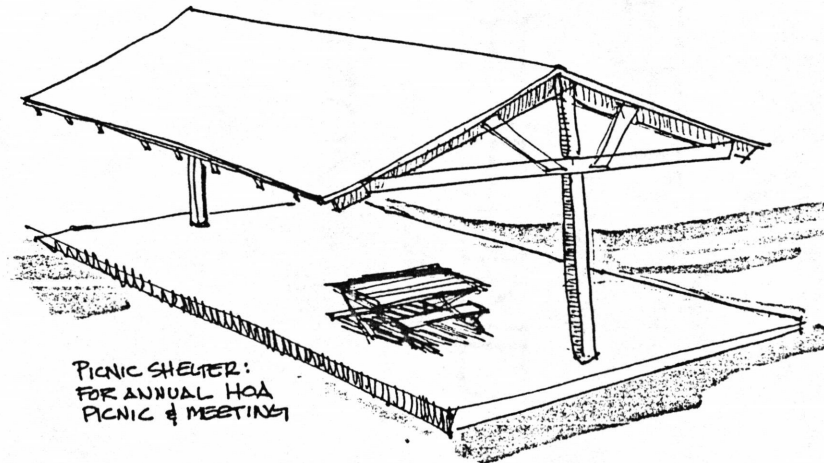
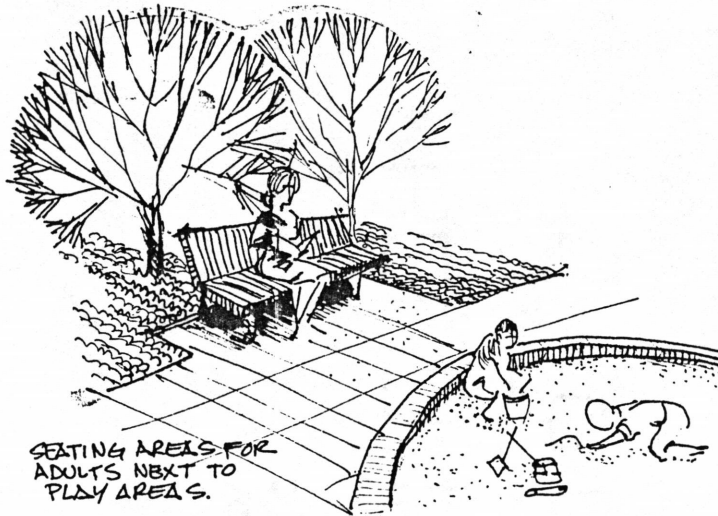
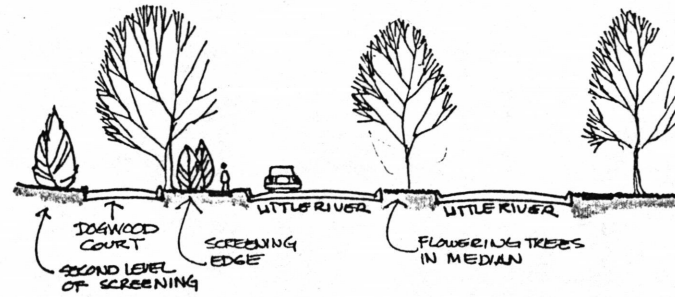
Each unit is arranged so that there is private space for the unit owner, in the form of enclosed/partially fenced courtyards. Then there is the semi-private space in front of each units, that becomes the presumed territory of the unit owner. As a result the actually owned space or lot is expanded by each unit owner. Each semi-private space then flows into the common space that belongs to the community at large.

The trail system was intended to be built with a texture or material separate from the asphalt of the driveway areas. Changing textures within the functional uses is an excellent method of demarking separation.



## Urban Design Features

Several urban design features were to be incorporated in the site design. Urban design features include shelters for the children to wait for the school bus, a bus shelter on Little River Turnpike for the CUE bus, entrance signage, lights and landscaping at the Little River Turnpike entrance and the Maple Avenue entrance. Signage also is located at the Burke Station entrance. A flowering treescape theme would be appropriate in the replanting of the elderly site, as well as, along the street frontage of Little River Turnpike. It may even be possible with Fairfax City's agreement to replant the median strip in Little River Turnpike. The design of the playground areas should be also carefully thought out. Each of the four areas should be design different from the other, so that more variety is possible. It is often difficult to design such facilities desires of the new residents is known.



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