

ZERO LOT LINE/PUBLIC CUL-DE-SAC 5 DU/AC

Net Density 12 units on 2.38 acres = 5.0 DU/AC
 Gross Density 12 units on 2.51 acres = 4.78 DU/AC
 Average Lot Size 7,390 S.F.

Site Development Costs/DU \$10,612

Cul-de-sac
 Total Street 8,200 S.F. 683 S.F./DU
 Total R.O.W. 14,924 S.F. 1,244 S.F./DU

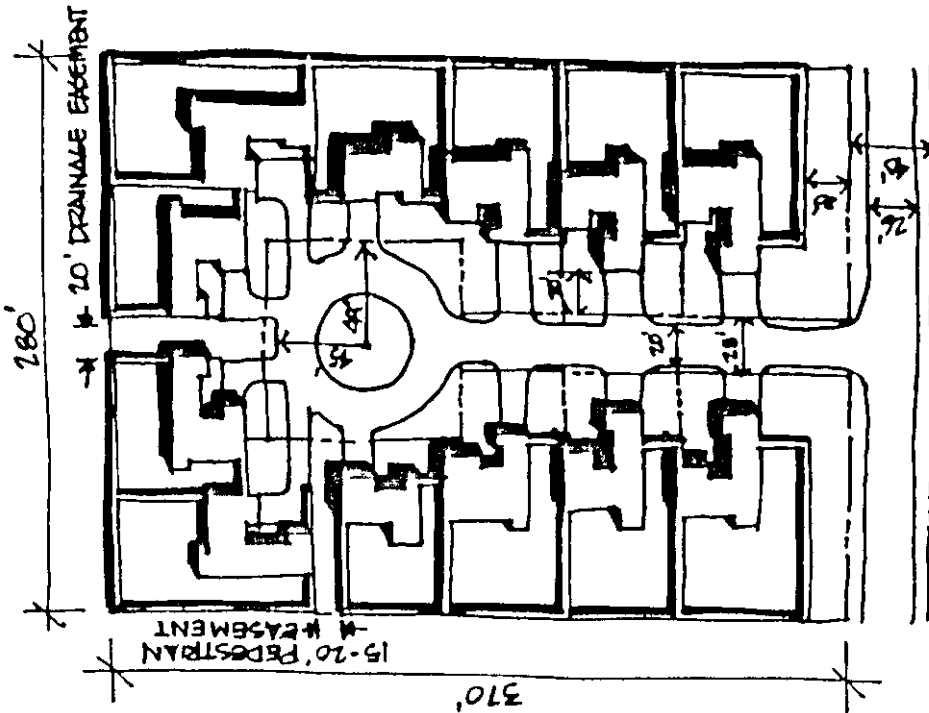
Pavement Width 20'
 R.O.W. Width 28'
 Turnaround Radius 45'
 Turnaround R.O.W. 98' x 98'

Subcollector Street (1/2 street and R.O.W.)
 Pavement Width 26' 3,636 S.F. 303 S.F./DU
 R.O.W. Width 40' 5,604 S.F. 467 S.F./DU

Setbacks
 Front Yard 20' (10' for garages parallel to R.O.W.)
 Side Yard 0' and 15' On Subcollector Street 20'

Building Coverage
 Average 1,500 S.F.
 Garage 300 S.F.
 Total Coverage 1,800 S.F. x 12 = 21,600 S.F.

Driveway Coverage
 Average 500 S.F.
 Total Coverage 500 S.F. x 12 = 6,000 S.F.

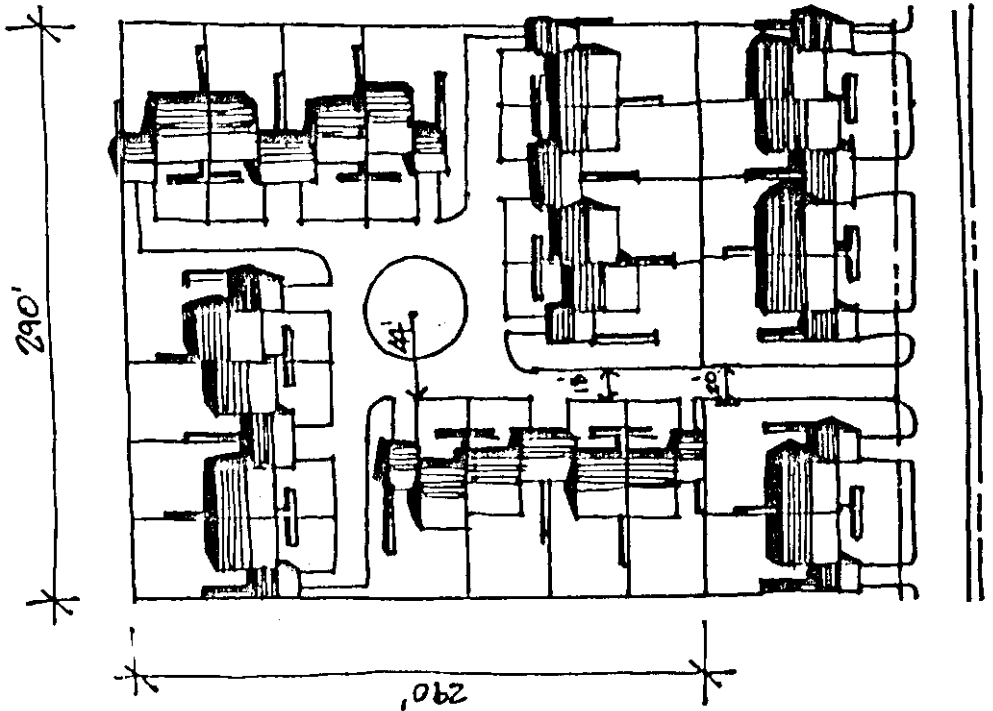


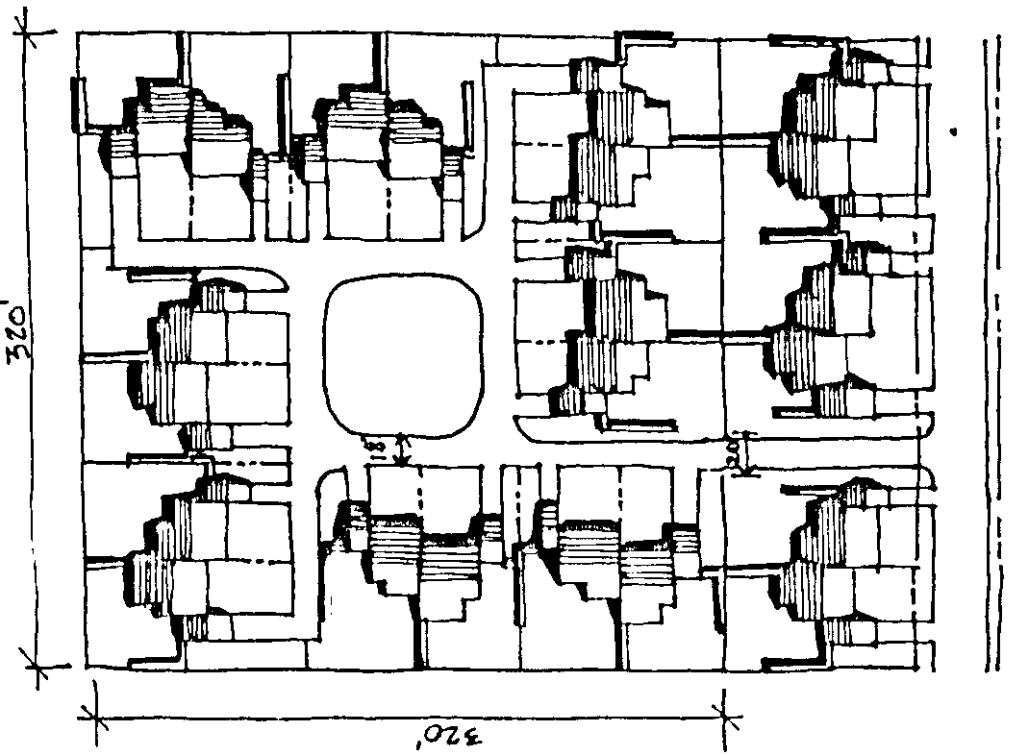
DUPLEX/PRIVATE COURT #1 8.3 DU/AC

Net Density 16 units on 1.93 acres = 8.29 DU/AC
 Gross Density 22 units on 2.73 acres = 8.06 DU/AC
 Average Lot Size 4,250 S.F. (min. 4,000 S.F.)

Site Development Costs/DU \$ 7,996

Court			
Total Street	15,036 S.F.	683 S.F./DU	
Total R.O.W.	18,100 S.F.	823 S.F./DU	
Pavement Width	18'		
R.O.W. Dimension	20'		
Subcollector Street	(1/2 street and R.O.W.)		
Pavement Width	26'	3,770 S.F.	171 S.F./DU
R.O.W. Width	40'	5,808 S.F.	264 S.F./DU
Setbacks			
Front Yard	20'		
Side Yard	10'	On Subcollector Street 20'	
Building Coverage			
Average	750 S.F.		
Garage	240 S.F.		
Total Coverage	990 S.F. x 22 = 21,780 S.F.		
Driveway Coverage			
Average	220 S.F.		
Total Coverage	220 S.F. x 22 = 4,840 S.F.		





DUPLEX/PRIVATE COURT #2 6.8 DU/AC

Net Density 16 units on 2.35 acres = 6.81 DU/AC
 Gross Density 22 units on 3.23 acres = 6.81 DU/AC
 Average Lot Size 5,000 S.F. (min. 5,000 S.F.)

Site Development Costs/DU \$ 8,724

Court			
Total Street	15,390 S.F.		700 S.F./DU
Total R.O.W.	24,400 S.F.		1,109 S.F./DU
Pavement Width	18'		
R.O.W. Dimension	20'		
Subcollector Street	(1/2 street and R.O.W.)		
Pavement Width	26'		189 S.F./DU
R.O.W. Width	40'		291 S.F./DU
Setbacks			
Front Yard	20'		
Side Yard	10'	On Subcollector Street	20'
Building Coverage			
Average	900 S.F.		
Garage	240 S.F.		
Total Coverage	1,140 S.F. × 22 =		25,080 S.F.
Driveway Coverage			
Average	250 S.F.		
Total Coverage	250 S.F. × 22 =		5,500 S.F.

DUPLEX/PUBLIC CUL-DE-SAC 7.25 DU/AC

Net Density 20 units on 2.75 acres = 7.27 DU/AC
 Gross Density 20 units on 2.99 acres = 6.69 DU/AC
 Average Lot Size 4,888 S.F. (min. 4,000 S.F.)

Site Development Costs/DU \$ 7,108

Cul-de-sac
 Total Street 8,400 S.F. 420 S.F./DU
 Total R.O.W. 15,204 S.F. 760 S.F./DU

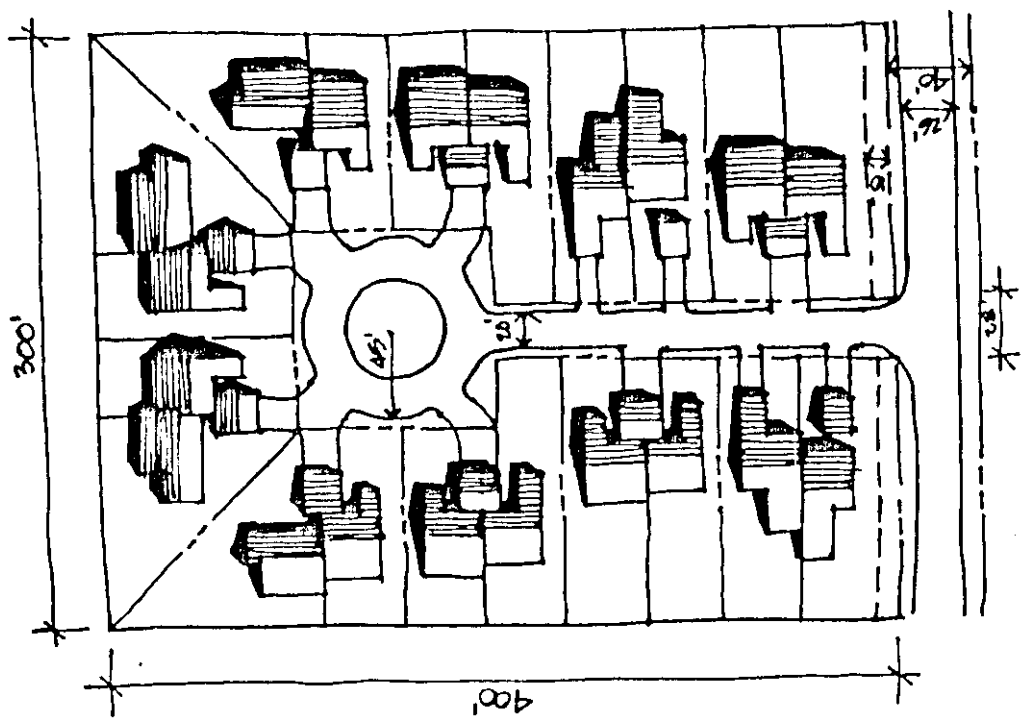
Pavement Width 20'
 R.O.W. Width 28'
 Turnaround Radius 45'
 Turnaround R.O.W. 98' x 98'

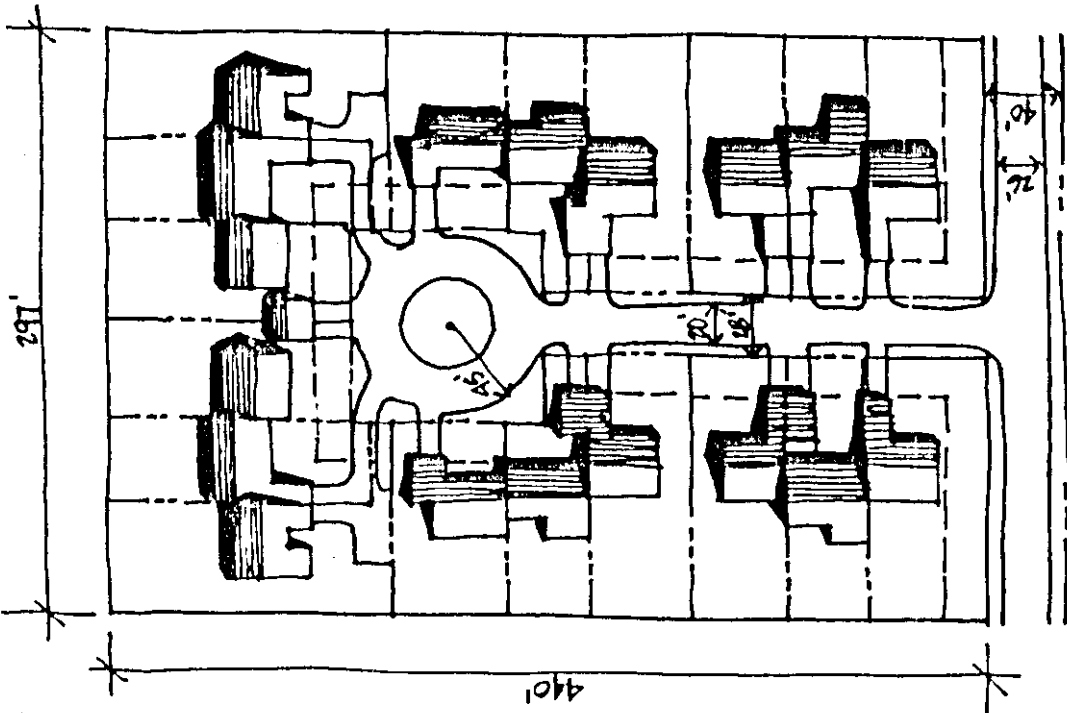
Subcollector Street (1/2 street and R.O.W.)
 Pavement Width 26' 3,900 S.F. 195 S.F./DU
 R.O.W. Width 40' 6,000 S.F. 300 S.F./DU

Setbacks
 Front Yard 20'
 Side Yard 10'
 On Subcollector Street 20'

Building Coverage
 Average 1,100 S.F.
 Garage 240 S.F.
 Total Coverage 1,340 S.F. x 20 = 26,800 S.F.

Driveway Coverage
 Average 320 S.F.
 Total Coverage 320 S.F. x 20 = 6,400 S.F.



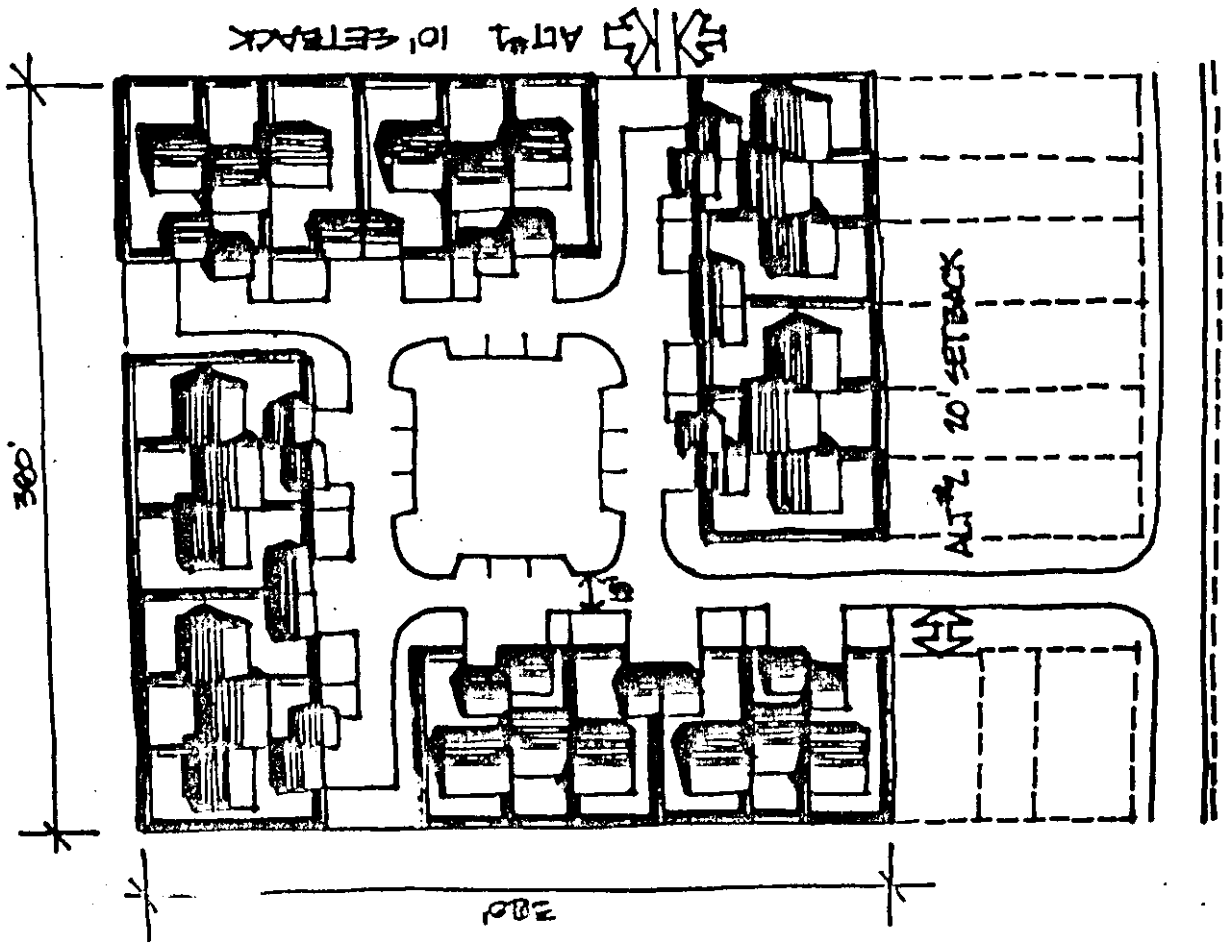


TRIPLEX/PUBLIC CUL-DE-SAC 6 DU/AC

Net Density 18 units on 3.0 acres = 6.0 DU/AC
 Gross Density 18 units on 3.14 acres = 5.73 DU/AC
 Average Lot Size 6,375 S.F. (min. 4,700 S.F.)

Site Development Costs/DU \$ 8,021

Cul-de-sac					
Total Street		8,999 S.F.			500 S.F./DU
Total R.O.W.		15,764 S.F.			876 S.F./DU
Pavement Width	20'				
R.O.W. Width	28'				
Turnaround Radius	45'				
Turnaround R.O.W.	98' x 98'				
Subcollector Street	(1/2 street and R.O.W.)				
Pavement Width	26'	3,861 S.F.			215 S.F./DU
R.O.W. Width	40'	5,940 S.F.			330 S.F./DU
Setbacks					
Front Yard	20'				
Side Yard	10'			On Subcollector Street 20'	
Building Coverage					
Average		900 S.F.			
Garage		240 S.F.			
Total Coverage		1,140 S.F. x 18 = 20,520 S.F.			
Driveway Coverage					
Average		320 S.F.			
Total Coverage		320 S.F. x 18 = 5,760 S.F.			



TRIPLEX/PRIVATE COURT 7.25 DU/AC

Net Density 24 units on 3.31 acres = 7.25 DU/AC
 Gross Density 33 units on 4.62 acres = 7.14 DU/AC
 Average Lot Size 4,583 S.F. (min. 3,300 S.F.)

Site Development Costs/DU \$ 8,079

Court
 Total Street 20,940 S.F. 635 S.F./DU
 Total R.O.W. 37,000 S.F. 1,121 S.F./DU
 Pavement Width 18'
 R.O.W. Dimension 20'

Subcollector Street (1/2 street and R.O.W.)
 Pavement Width 26' 4,940 S.F. 150 S.F./DU
 R.O.W. Width 40' 7,600 S.F. 230 S.F./DU

Setbacks
 Front Yard 10' or 20'
 Side Yard 10' On Subcollector Street 20'

Building Coverage
 Average 900 S.F.
 Garage 440 S.F.
 Total Coverage 1,340 S.F. x 33 = 44,220 S.F.

Driveway Coverage
 Average 500 S.F.
 Total Coverage 500 S.F. x 33 = 16,500 S.F.

QUADPLEX/PUBLIC CUL-DE-SAC 8.25 DU/AC

Net Density 24 units on 2.91 acres = 8.25 DU/AC
 Gross Density 24 units on 3.05 acres = 7.87 DU/AC
 Average Lot Size 4,628 S.F. (min. 2,940 S.F.)

Site Development Costs/DU \$ 6,513

Cul-de-sac
 Total Street 8,898 S.F. 371 S.F./DU
 Total R.O.W. 15,764 S.F. 657 S.F./DU

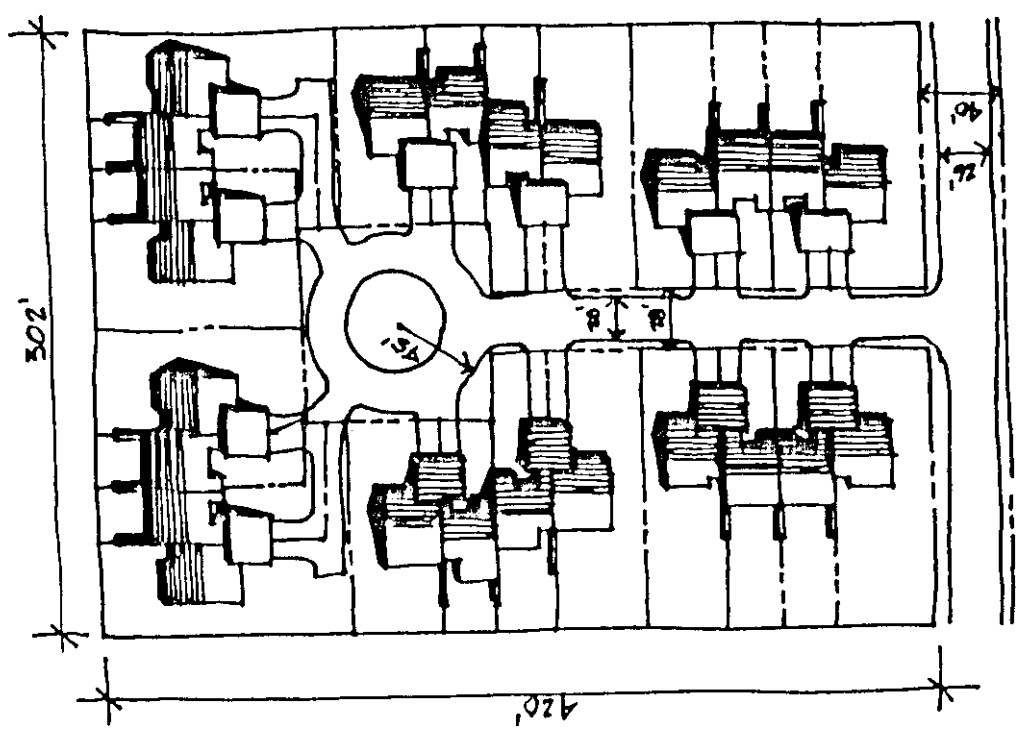
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 R.O.W. Width 28'
 Turnaround Radius 45'
 Turnaround R.O.W. 98' x 98'

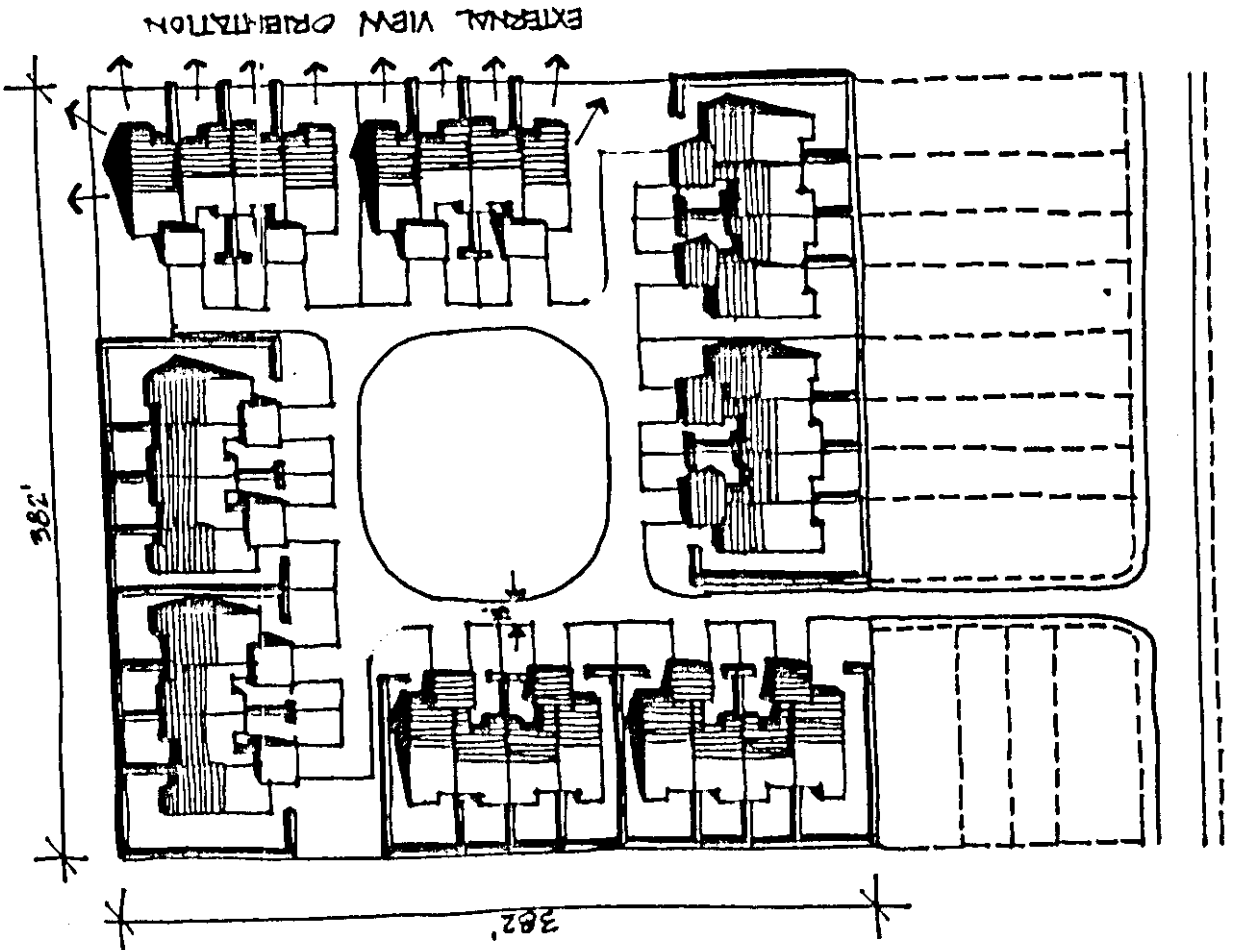
Subcollector Street
 Pavement Width 26' 164 S.F./DU
 R.O.W. Width 40' 6,040 S.F. 252 S.F./DU

Setbacks
 Front Yard 20'
 Side Yard 10' on end units On Subcollector Street 20'

Building Coverage
 Average 900 S.F.
 Garage 240 S.F.
 Total Coverage 1,140 S.F. x 27,360 S.F.

Driveway Coverage
 Average 398 S.F.
 Total Coverage 398 S.F. x 24 = 9,552 S.F.





QUADPLEX/PRIVATE COURT 9.55 DU/AC

Net Density 32 units on 3.35 acres = 9.55 DU/AC
 Gross Density 44 units on 4.66 acres = 9.44 DU/AC
 Average Lot Size 3,465 S.F. (min. 2,640 S.F.)

Site Development Costs/DU \$ 6,064

Court
 Total Street 20,700 S.F. 471 S.F./DU
 Total R.O.W. 38,220 S.F. 869 S.F./DU
 Pavement Width 18'
 R.O.W. Dimension 20', 170' x 170'

Subcollector Street (1/2 street and R.O.W.)
 Pavement Width 26' 4,966 S.F. 113 S.F./DU
 R.O.W. Width 40' 7,640 S.F. 174 S.F./DU

Setbacks
 Front Yard 20'
 Side Yard 10' or 20' On Subcollector Street 20'

Building Coverage
 Average 940 S.F.
 Garage 180 S.F.
 Total Coverage 1,120 S.F. x 44 = 49,280 S.F.

Driveway Coverage
 Average 220 S.F.
 Total Coverage 220 S.F. x 44 = 9,680 S.F.

Design of a Prototypical Community in Suburbia

Site Analysis

The site selected is located in Hamilton County, Indiana. The county is mostly a rural environment on the fringe of the Indianapolis metropolitan area. The county seat of Noblesville is located about five miles northwest of the site. Major shopping and office developments are within a ten to fifteen minute drive of the site, thus allowing for plenty of jobs for the residents of this new community. The downtown Indianapolis area is located about thirty minutes away by car. The site is bisected by State Road 238 and is less than a quarter mile from a junction with Interstate 69- one of the major arteries leading to Indianapolis. The past decade has been very prosperous for the Indianapolis metro area. Most of the growth has been occurring on the north and northeast quadrants of the city and in the southern Hamilton County area.

In the beginning site analysis phase, a study of the soil types on site is instrumental in deciding the optimal locations of design elements. Most of the soil in Hamilton County (and much of central Indiana) is very wet and weak soil- mostly used for agriculture. Therefore, it becomes even more important to make sure the soil will be able to support structures, roads, etc.

The site has roughly fifteen different soil types. Below is listed the

soil abbreviation, it's name and some characteristics of the soil.

Br: Brookston silty clay loam

CrA: Crosby silt loam, 0-3% slopes

FnB2: Fox loam, 2-6% slopes, often eroded

FxC3: Fox clay loam, 8-18% slopes, severely eroded

Ho: Houghton muck

MmA: Miami silt loam, 0-2% slopes

MmB2: Miami silt loam, 2-6% slopes, eroded

MmC2: Miami silt loam, 6-12% slopes, eroded

MmD2: Miami silt loam, 12-18% slopes, eroded

MoC3: Miami clay loam, 6-12% slopes, severely eroded

MoD3: Miami clay loam, 12-18% slopes, severely eroded

OcA: Ockley silt loam, 0-2% slopes

Pn: Patton silty clay loam

Sh: Shoals silt loam

St: Sleeth loam

Below is listing some of the characteristics of certain soil types:

Ho and Pn: generally unsuitable to build on

Fox, MmA, MmB2, OcA: recommended soils- These can be built on without having to overcome significant problems if they are left in their natural state. Care must be taken not to damage the natural soil conditions during construction.

MmD2 and MoD3: steeply sloping soils- These are too steep to safely build on or near the crest of the slope. Soil stability and ground water are just two hazards that should be addressed before building a home on or near a steep slope. If a creek, stream or river is at the bottom of

the slope, the moving water can quickly erode the sloping soils. A minimum of 75 feet between the building and the crest of the slope is recommended.

Br, CrA, Ho, Pn, Sh and St: Soil wetness is a major problem. Often appears with wet basements and crawl spaces, septic field failure and multiple gardening problems. High water table, slow permeability and/or poor surface runoff.

Br, Ho, Pn and Sh: Flooded by overflow from adjacent water courses, or on depressional areas. A general rule is to build so the finished grade around the house is at least 18 inches higher than the street or road to avoid being flooded (4).

The following charts rank the soil types for their use in construction of different design elements: houses, small commercial buildings, local roads and streets and recreational development. The soils were ranked as either "good" "moderate" or "poor" for their suitability in construction. None of the soils were ranked as "good".

Soil Suitability for Houses:

Moderate: CrA, Fox, OcA, MmA, MmB2, MmC2 and MoC3

Poor: Br, Ho, MmD2, MoD3, Pn, Sh and St.

Soil Suitability for Small Commercial Buildings:

Moderate: CrA, FnB2, MmA, MmB2 and OcA

Poor: Br, FxC3, Ho, MmC2, MmD2, MoC3, MoD3, Pn, Sh and St

Soil Suitability for Local Roads and Streets:

Moderate: FnB2 and FxC3

Poor: Br, CrA, Ho, MmA, MmB2, MmC2, MmD2, MoC3, MoD3, OcA, Pn,

Sh and St

Soil Suitability for Recreational Development:



Moderate: CrA, FnB2, FxC3, MmA, MmB2, MmC2, MmD2, MoC3,

MoD3, OcA, Sh and St

Poor: Br, Ho and Pn (17).

The following transparencies illustrate which parts are best suited for the construction of these elements. The areas covered with diagonal lines are best suited, the white areas should be avoided if at all possible. Also included in the drawings of the site are restrictions for development such as existing vegetation, existing stream, power line easement and gas line easement. These are also supposed to be designed around if possible.



• EXISTING VEGETATION
 • EXISTING EASEMENTS
 • KEY:
 MODERATE 
 POOR 



SOIL SUITABILITY FOR:
 • HOUSING
 • COMMERCIAL BUILDINGS
 • RECREATIONAL AREAS
 • ROADWAYS

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 05

DESIGN FOR A PROTOTYPICAL
 COMMUNITY IN SUBURBIA
 HAMILTON COUNTY, INDIANA





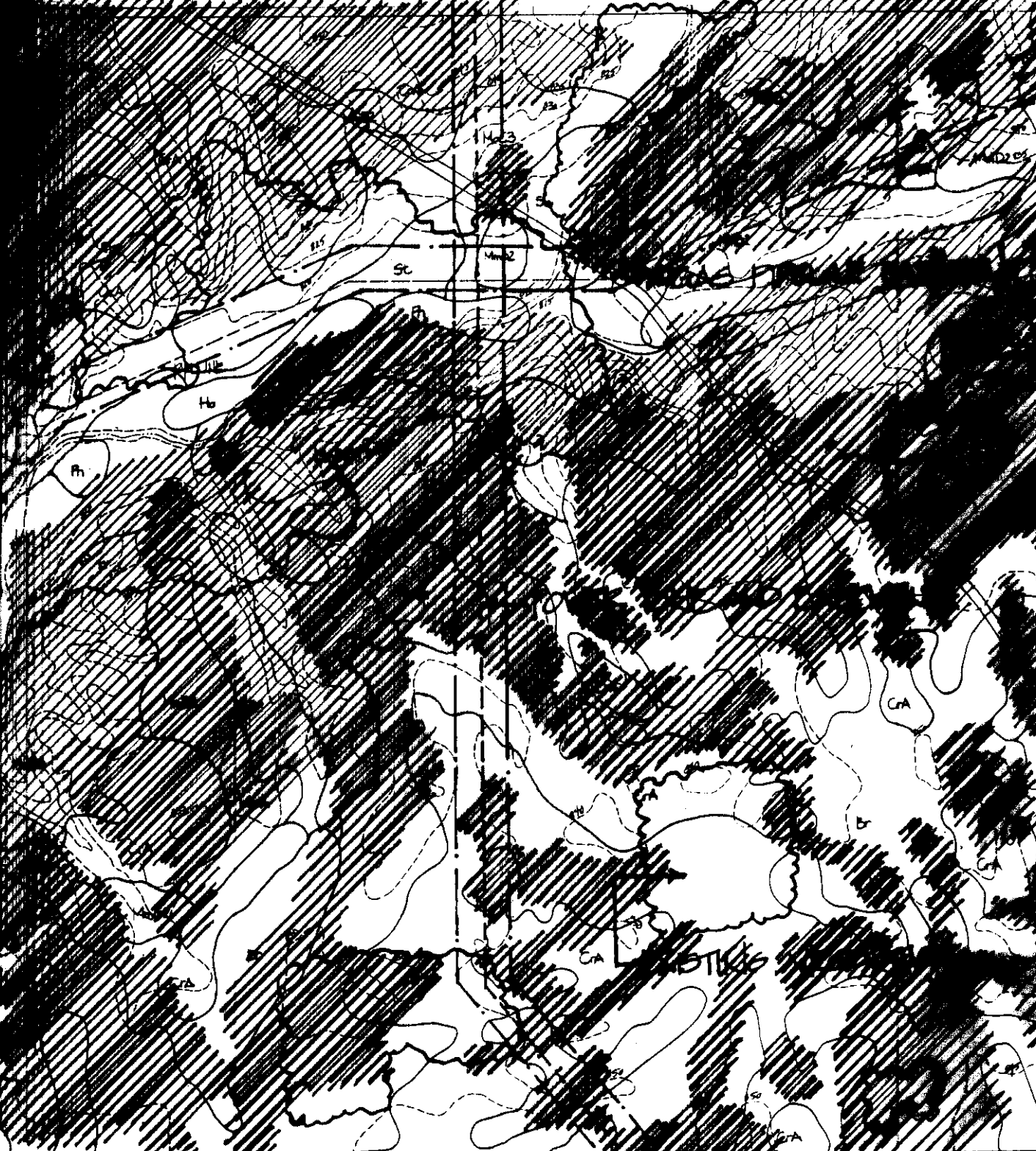
- EXISTING VEGETATION
- EXISTING BUILDINGS
- KEY:
- MODERATE 
- POOR 

- SUBSIDIARY FOR:
- HOUSING
 - COMMERCIAL BUILDINGS
 - RECREATIONAL AREAS

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COMMUNITY IN SUBURBIA
HAMILTON COUNTY, INDIANA

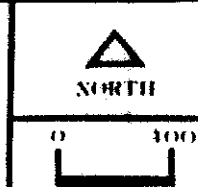


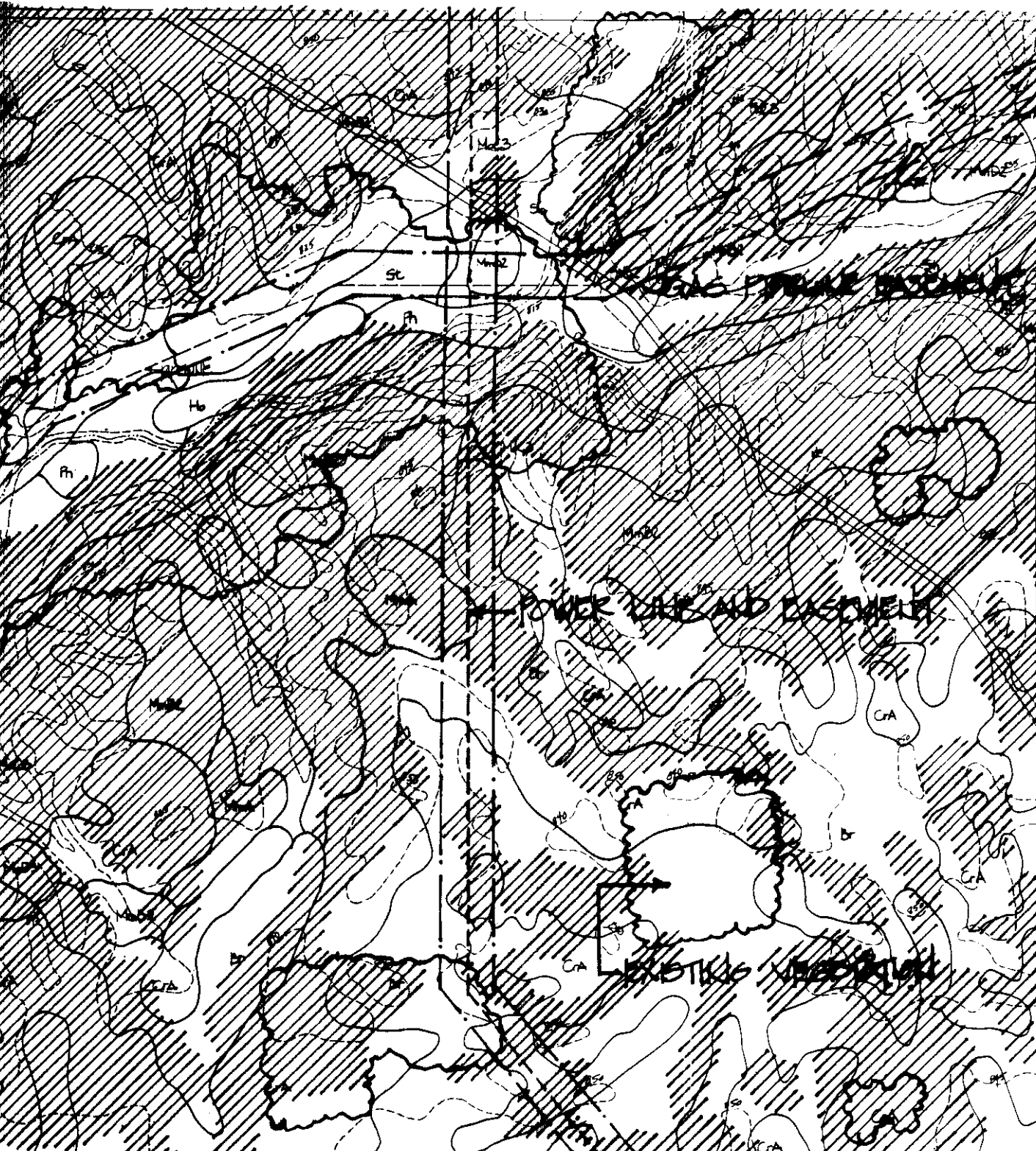


• EXISTING VEGETATION
 • EXISTING BUILDINGS
 • KEY:
 MODERATE POOR





SOIL SUITABILITY FOR:
 • HOUSING
 • COMMERCIAL BUILDINGS

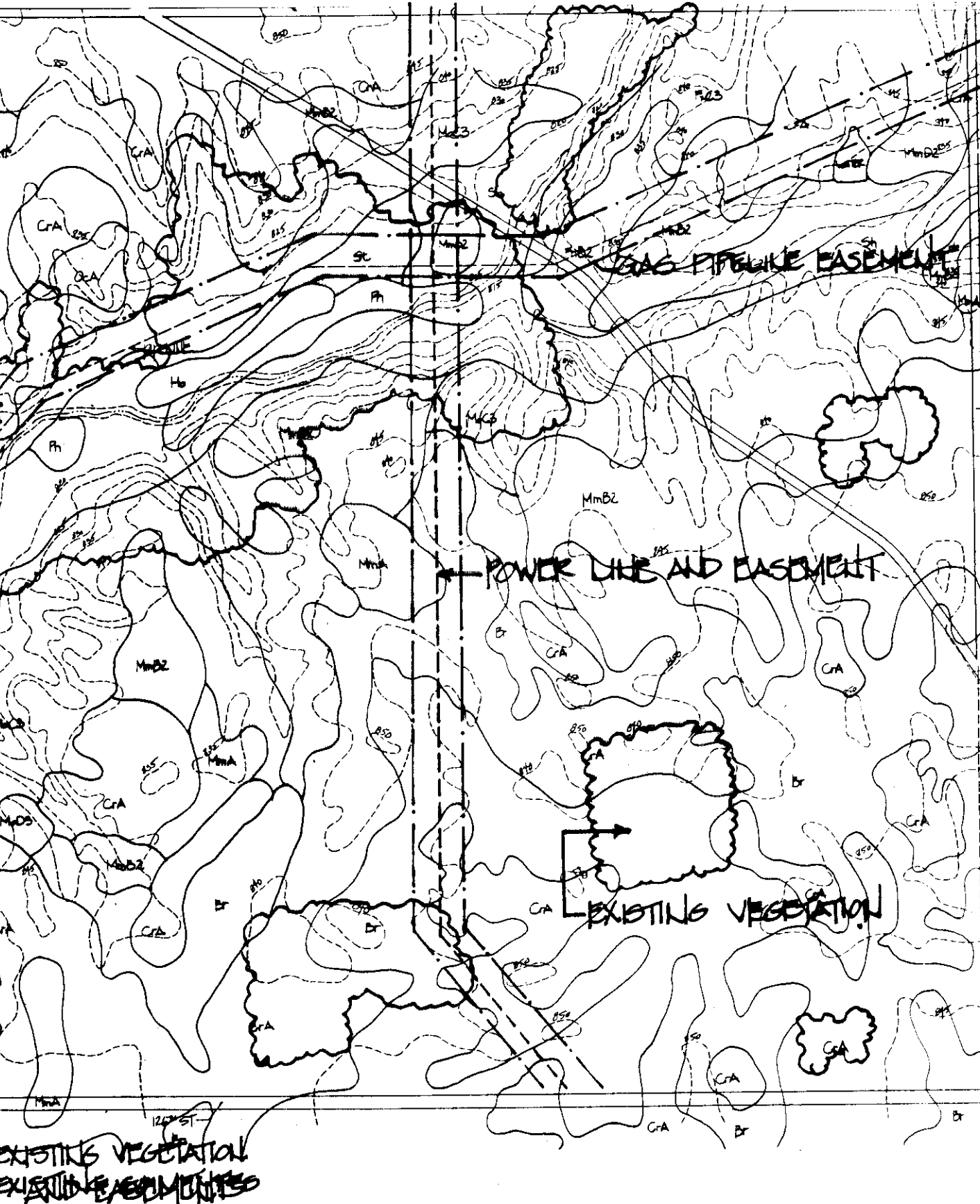




EXISTING VEGETATION
EXISTING BASEMENTS

SOIL SUITABILITY FOR:
HOUSING

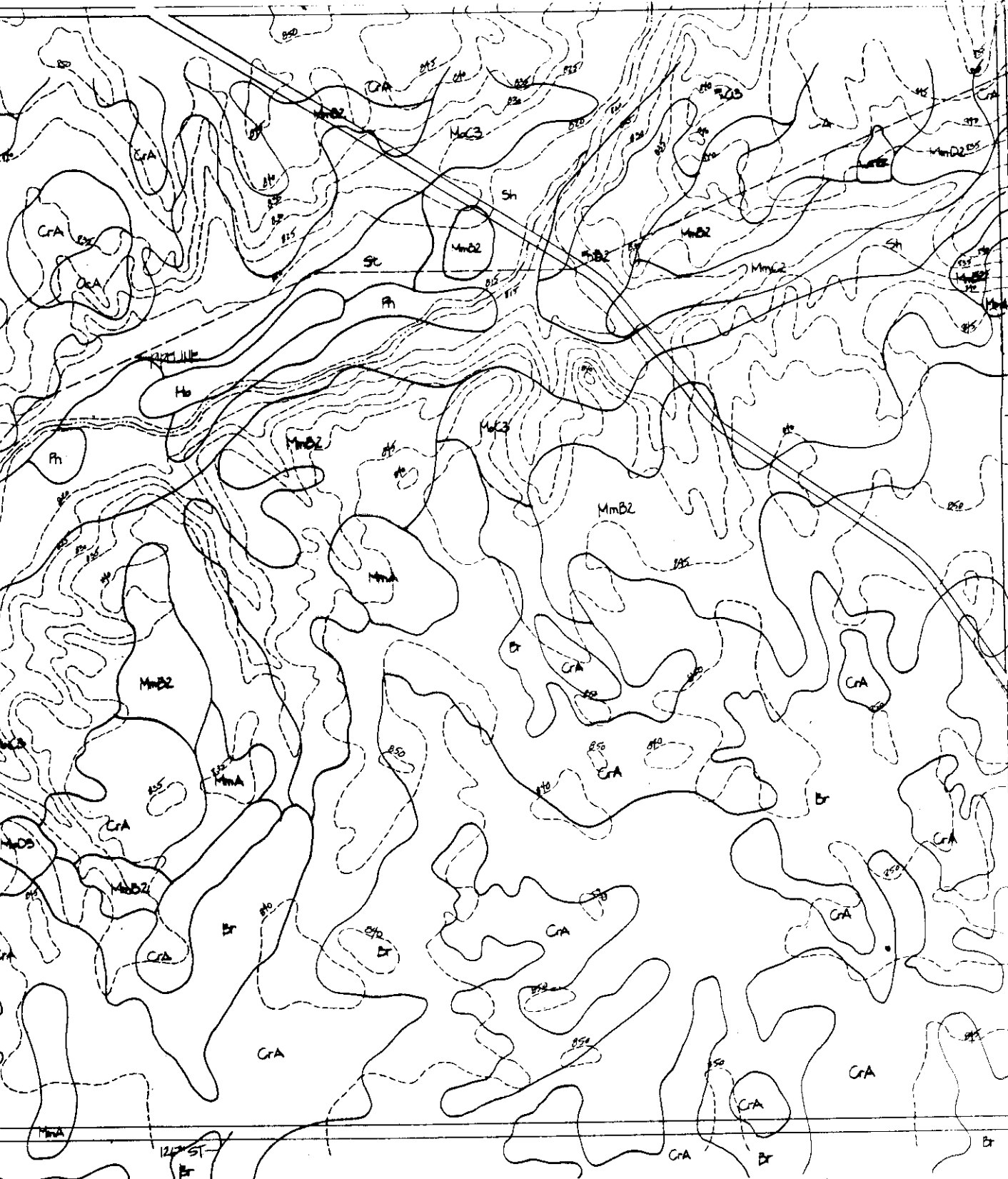
KEY:
MODERATE 
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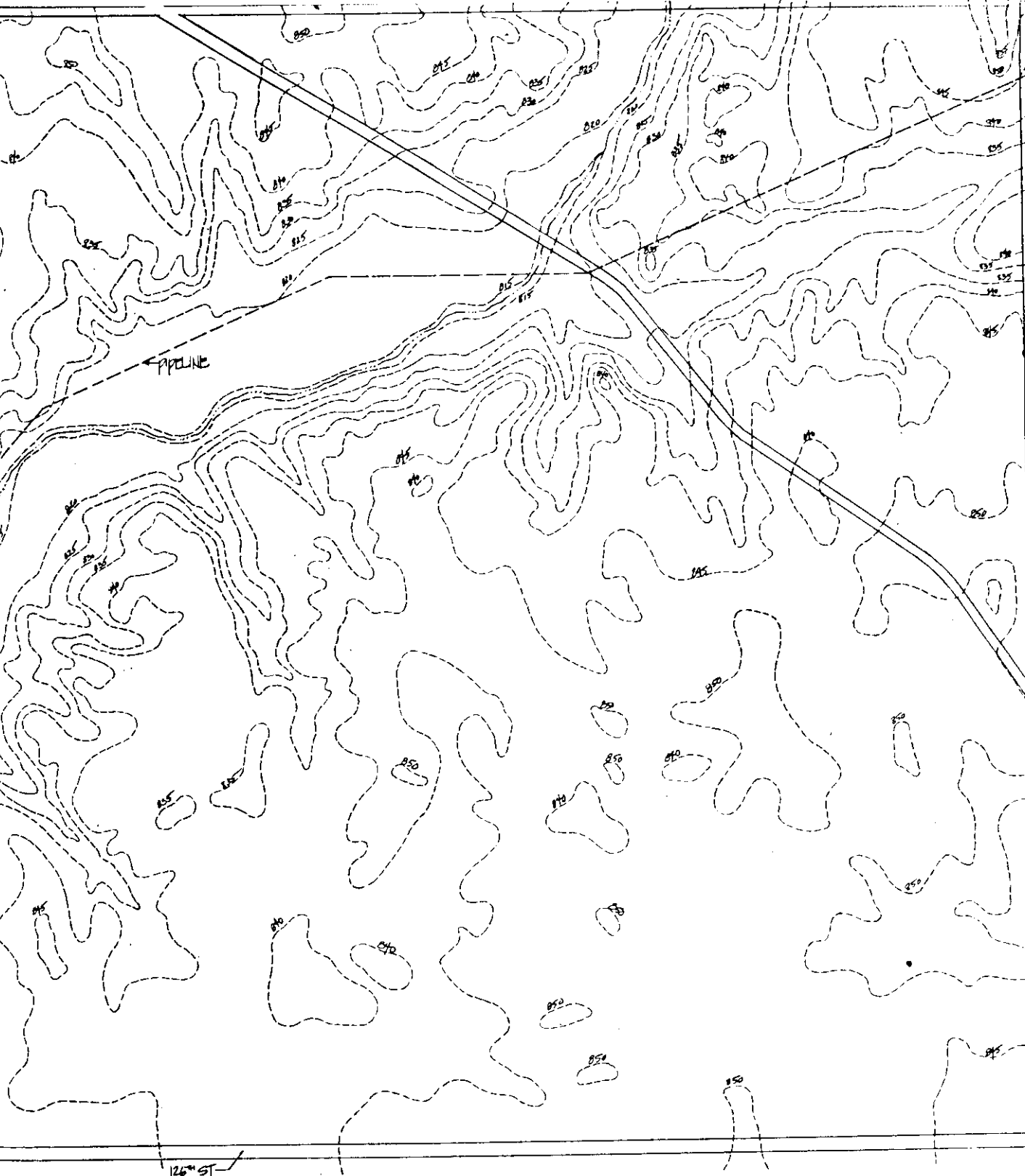
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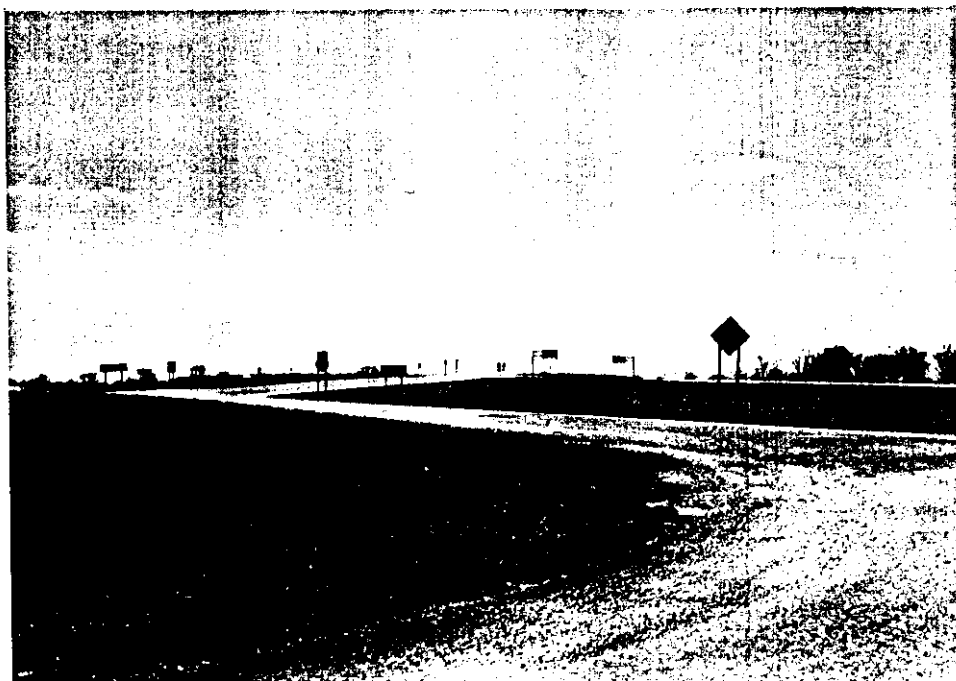
DESIGN FOR A PROTOTYPICAL
COMMUNITY IN SUBURBIA
HAMILTON COUNTY, INDIANA



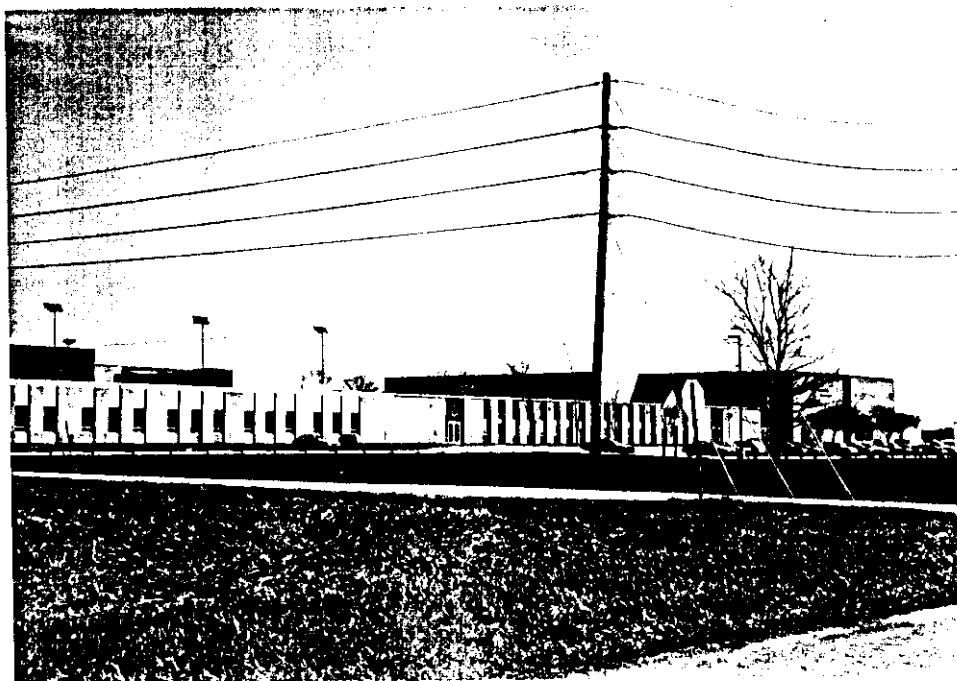


EXISTING SOIL TYPES





The site for the Village at Ridgewood Farm is ideally located off of the intersection of Interstate 69 with State Road 238. The picture above is looking towards this intersection from the northwest corner of the site. Hamilton Southeastern High School is located adjacent to the site on its southwestern corner (at the intersection of Olio Road and 126th Street).



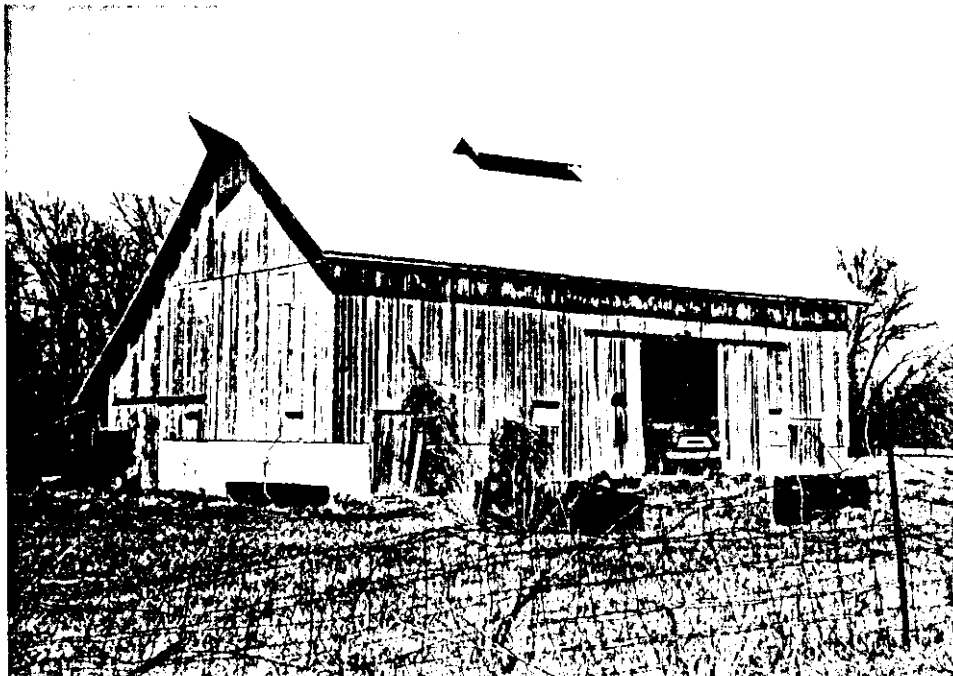


Existing church and school house are located directly off the site on Olio Road near State Road 238.





These existing barns located on the site will serve as entry features into the community. The concept for a semi-agrarian community is expressed in the natural beauty of these structures.





Large wooded areas are located around Mud Creek. These photos taken from Olio Road looking east express the rural heritage of the site.





Located just off the site for the Village at Ridgewood Farm is gently rolling farmland used for grazing. Mud Creek cuts through the green meadows and woodland in the countryside around the community.



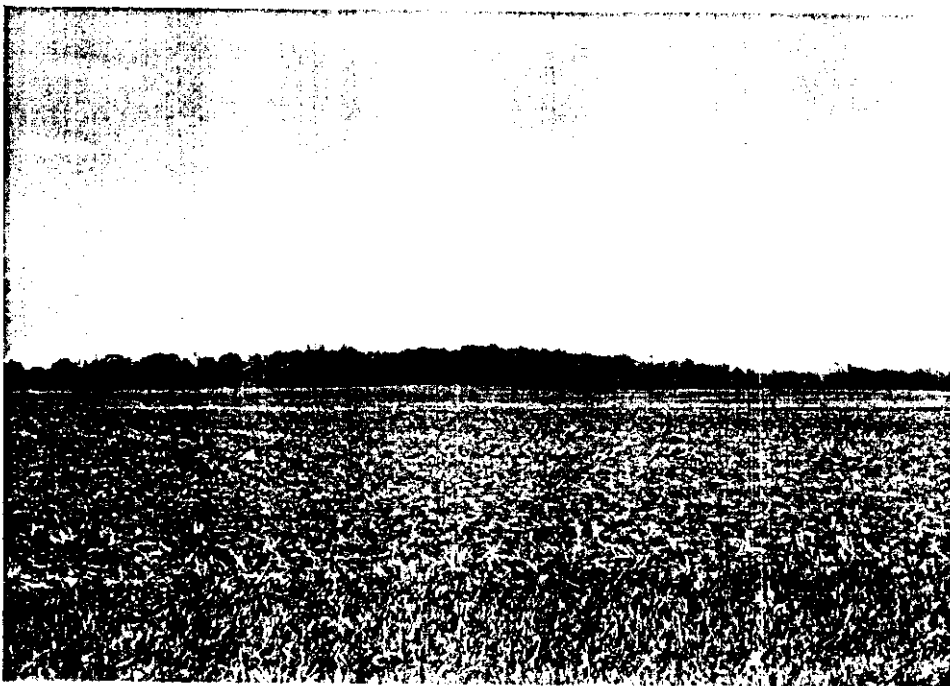


Existing structures on the site endure the test of time. The dilapidated buildings represent a period in history long since past.





The topography of the site is varied from gently rolling hills and wooded areas to flat agricultural fields. The top photo is looking east from Olio Road into the proposed office park. The bottom photo is looking north from Hamilton Southeastern High School.



Design Development

After studying the analysis of the site, it was determined which areas were suitable for certain types of development. One of the criteria set forth in the early stages of this project was to allow the natural features, such as the soil qualities, existing vegetation and existing creek to dictate the actual design itself. Certain areas of the site were found to be very poor for building both residential and commercial areas. By deciding to use these "pockets" of land instead for open space, the developer is able to save an extreme amount of money that would have been spent towards preparing the poor soil to make it buildable. At the same time, the developer can reap the profits of providing amenities, such as recreational facilities, large wooded areas, walking and jogging trails and even a centrally located lake. These amenities allow the developer to sell the houses for much more money, and at the same time encourage resident interaction.

The community is to be known as the Village at Ridgewood Farm and is to create a community-focused atmosphere around the existing rural/ agrarian environment which currently exists on the site. The development is not to be in definitional terms an actual "new town" mainly because of it's small size and lack of industry. However, the site is located directly off of a major interstate highway leading into the northeast quadrant of Indianapolis. Major growth of this region (much in the form of corporate offices) could allow the site to incorporate a large office park on it's northwest corner. In the design, the office park has been located here because of it's close proximity to the freeway. A large wooded area surrounding the existing creek allows for a natural buffer between the

office park and the rest of the development. It was decided that a vehicular roadway would not be built through the woods in order to preserve it's natural beauty. However, bike and walking trails would connect the residential areas with the office park in hopes that residents of the town would be able to go to their jobs in the office park without having to rely on the automobile.

In the central part of the site is located the town center, which is to become the heart of the community. Included in the town center would be a community center- used for meetings, banquets, parties, as well as housing the real estate offices and visitors center. Commercial shops of varying sizes would be clustered around open courtyards which overlook the man-made lake. Included in the shops would be a grocery store, drug store, hardware store, bakery, post office, small cafes or restaurants, barber shop, card shop, and other specialty shops. The lake connects the town center with several residential districts, as well as with a large recreational area.

The residential districts are located throughout the site and a variety of homes are available. Residents have the choice to live in garden apartments, townhomes with attached garages and patios, small detached homes built on the zero lot line concept of utilizing every square foot of lawn space, up to larger detached homes on one-half of an acre. The road system is established through a hierarchy of roads. Larger roads serving as the main arteries are used mostly to move traffic through the different parts of the development. Smaller roads branch off of these and move traffic into the individual neighborhoods. Still smaller roads branch off of these and feed to the individual cul-de-sacs.

Open space is integrated throughout the town and in between the

different neighborhoods. A large recreational area is located in the central part of the development just across the lake from the town center. Located here is a community swimming pool, tennis courts, volleyball courts, basketball courts, and open areas for softball, football and soccer. Tennis courts and basketball courts are also located in a few other areas on the site.

In order to encourage the idea of "getting back to nature", community owned and operated garden plots are located in four areas of the sites. The residents are encouraged to utilize these community gardens instead of using space in their own yards for gardening. This way 100% of the lawns could be used for purposes other than gardening.

Most of the clustered housing, such as the apartments, townhouses and small zero lot line houses are located near the entries of the site and around the town center. The reasoning behind this is because these types of development will produce a lot of traffic, thus if they are located in the interior regions of the site, more traffic will follow. Therefore, the larger lots of about .25 to .50 acre are located further back into the site.

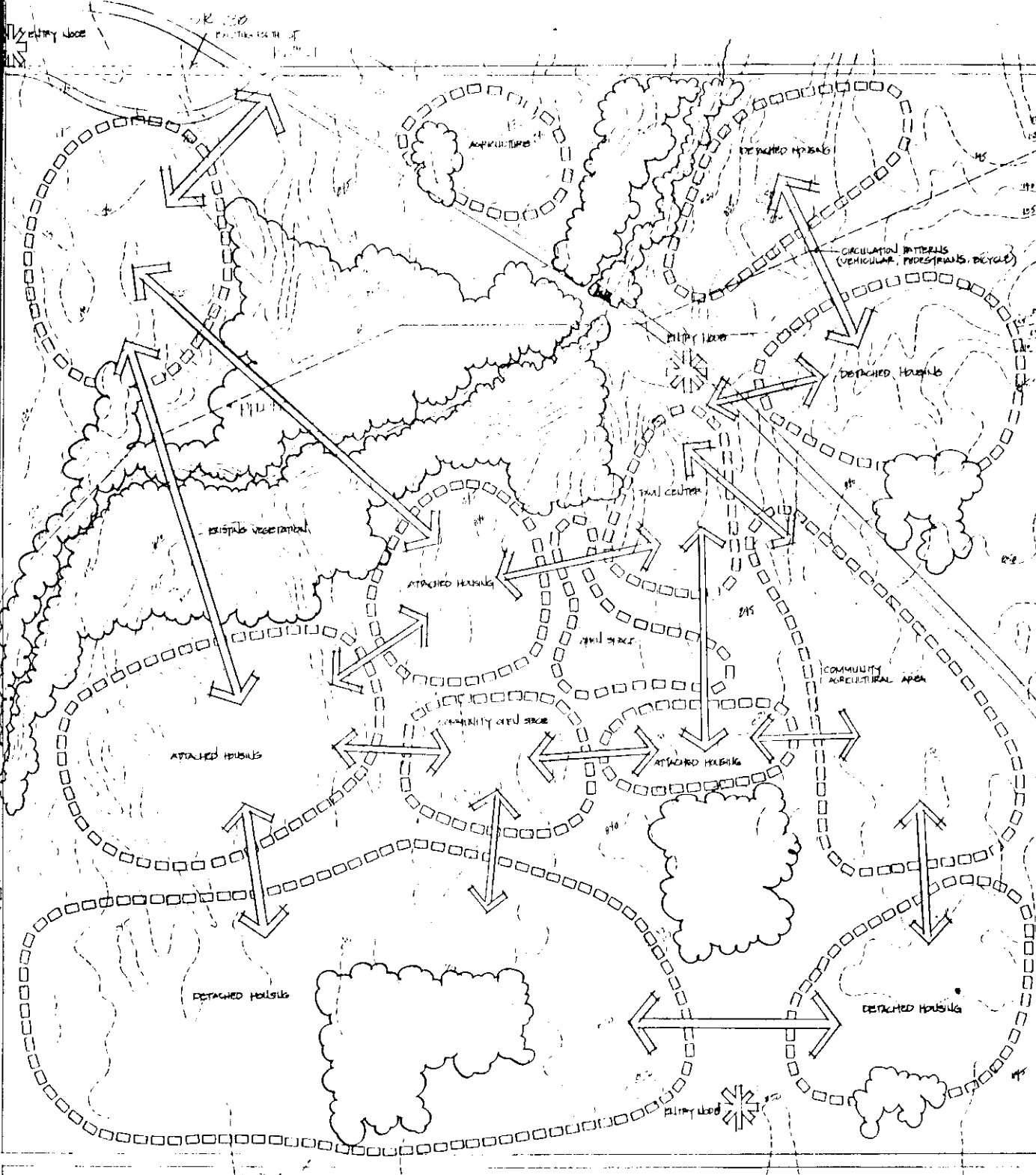
In order to encourage the residents to exercise more often, a series of trails (used for bicycles, walking and jogging) wind throughout the entire site, connecting the neighborhoods with each other as well as with the town center, community garden plots, office park and recreational facilities.

After completion of the design, it was found that 1,444 units would exist on the site. At an average of 2.5 residents per unit it was calculated that the Village at Ridgewood Farm would have a population of about 3,610 residents. A total of 708 apartment units are designed at the western edge of the site. Seventeen buildings will house 24-units each

and twenty-five buildings will contain twelve units each. Townhomes, clustered in groups of four units each are located nearest to the town center. Sixty groupings, or a total of 240 units, of townhomes are found in the plan. The rest of the housing is utilized as detached housing units.

The plan calls for 496 lots used for detached housing, all but about 75 of these would use the zero lot line concept of detached housing.

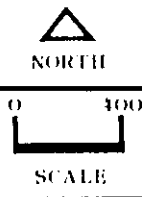
The design for the Village at Ridgewood Farm offers an alternative to modern-day development. The percentage of land used for buildings adds up to 56% of the site, leaving the other 44% as open space of some type. The apartments use 45 acres of the site, or approximately 7%. The townhomes use about 65 acres or 10%. The town center takes up 12.4 acres or 2%. The zero lot line detached houses use 191 acres or 30%. The office park requires 45 acres or 7% of the land. Ninety-one acres or 14% of the site is used for agriculture, and 148 acres or 23% of the site is left as woodland. The community agricultural plots use four acres or .006% of the site, and the community lake takes up 8.25 acres or 1% of the site. The recreational areas use 19.3 acres or 3% of the site. Approximately 47,000 square feet of commercial space is available in the town center and about 217,000 square feet is available in the office condo park.



EXISTING HIGH SCHOOL AND MIDDLE SCHOOL

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Spring 1989



DESIGN FOR A PROTOTYPICAL
COMMUNITY IN SUBURBIA
HAMILTON COUNTY, INDIANA
LAND USE ANALYSIS





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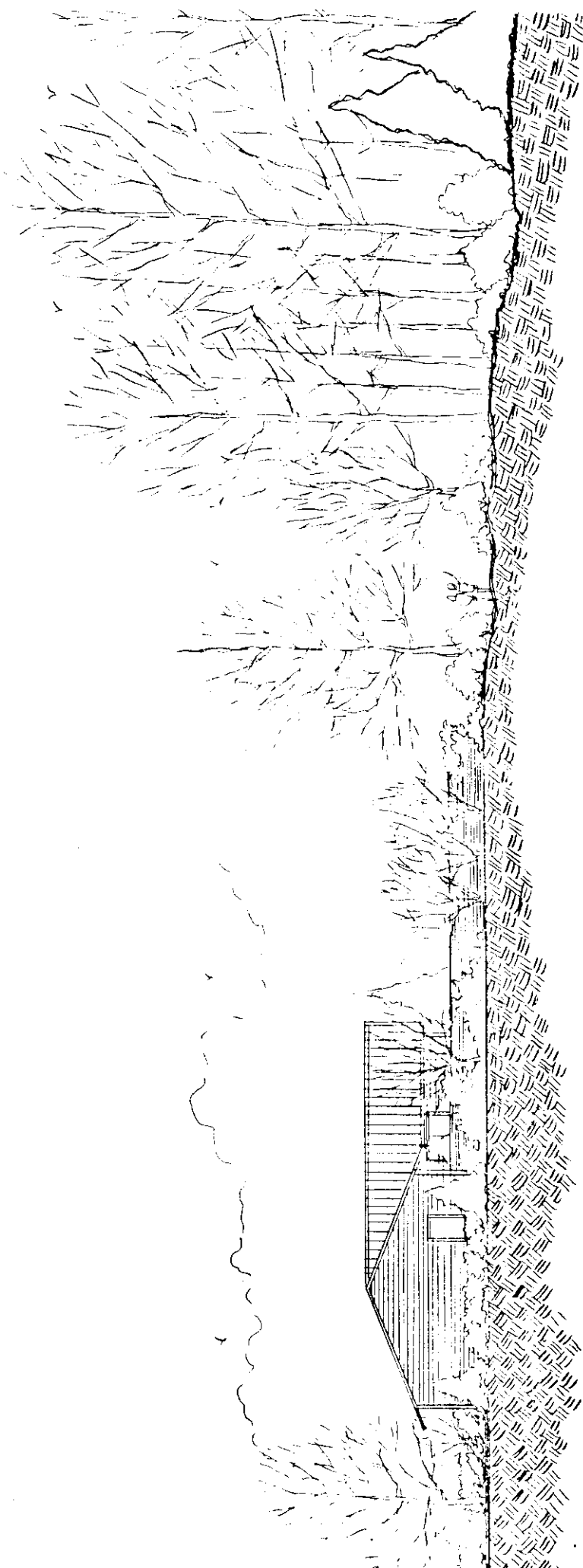
DESIGN FOR A PROTOTYPICAL
 COMMUNITY IN SUBURBIA
 HAMILTON COUNTY, INDIANA
 MASTER PLAN-The Village at Ridgewood Farm


 NORTH

 0 400
 SCALE

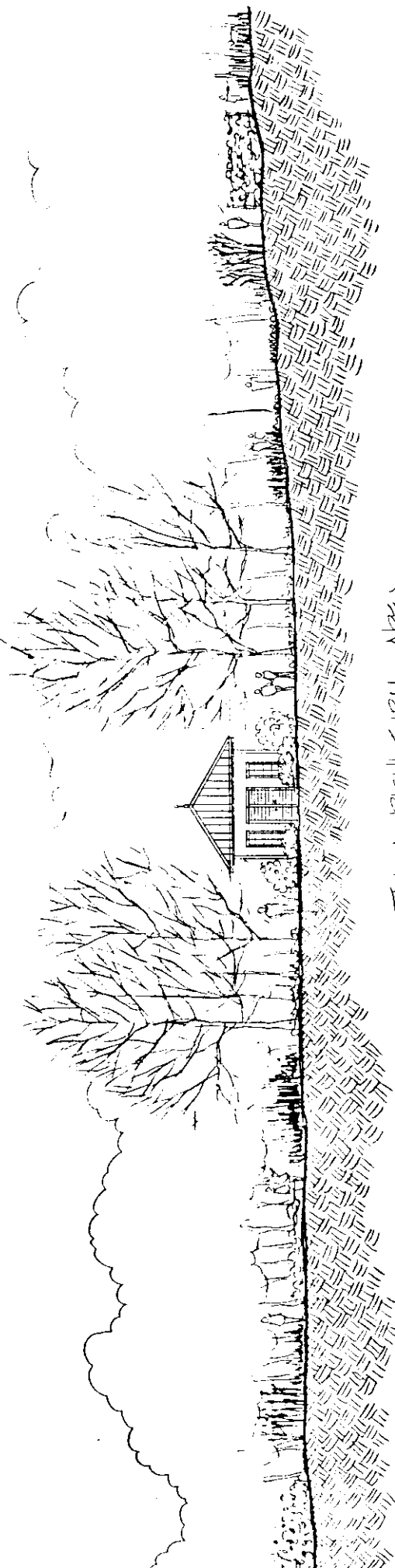


ZERO LOT LINE LAYOUT
SCALE 1" = 20'

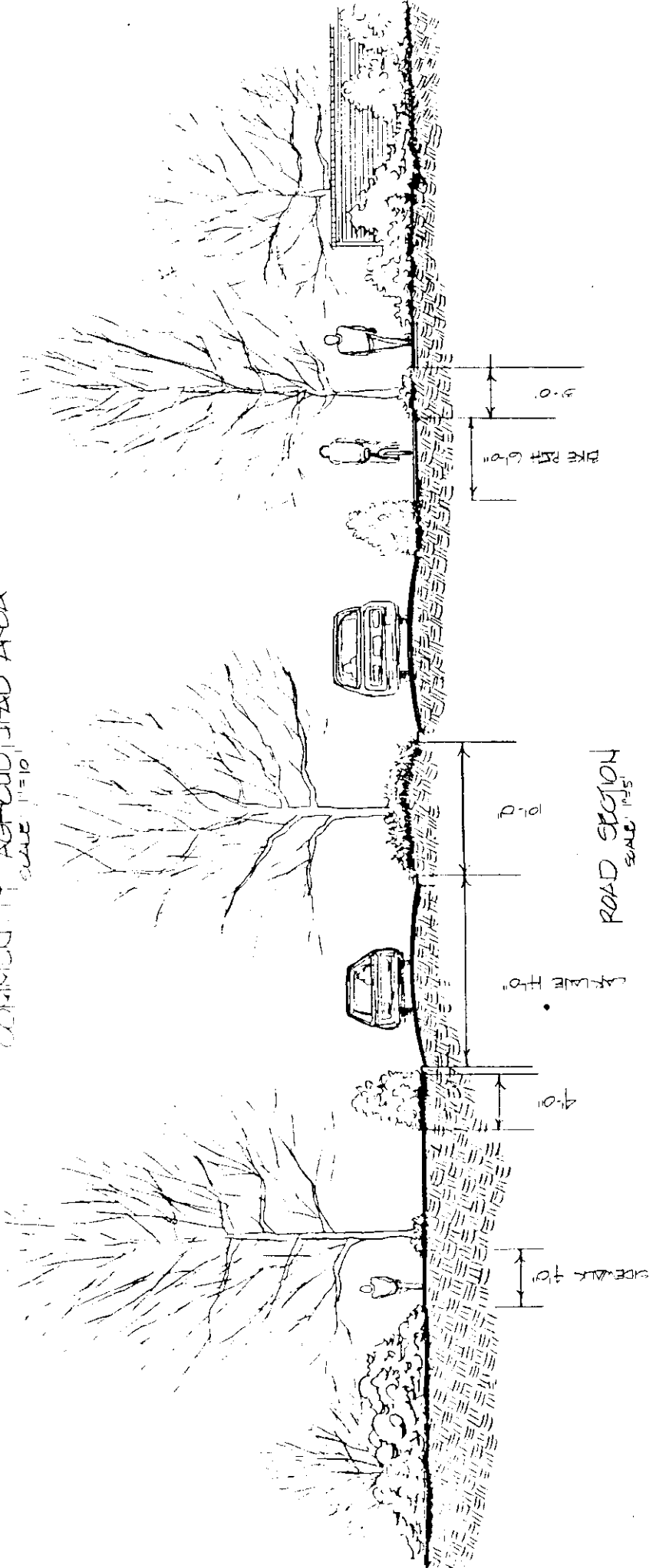




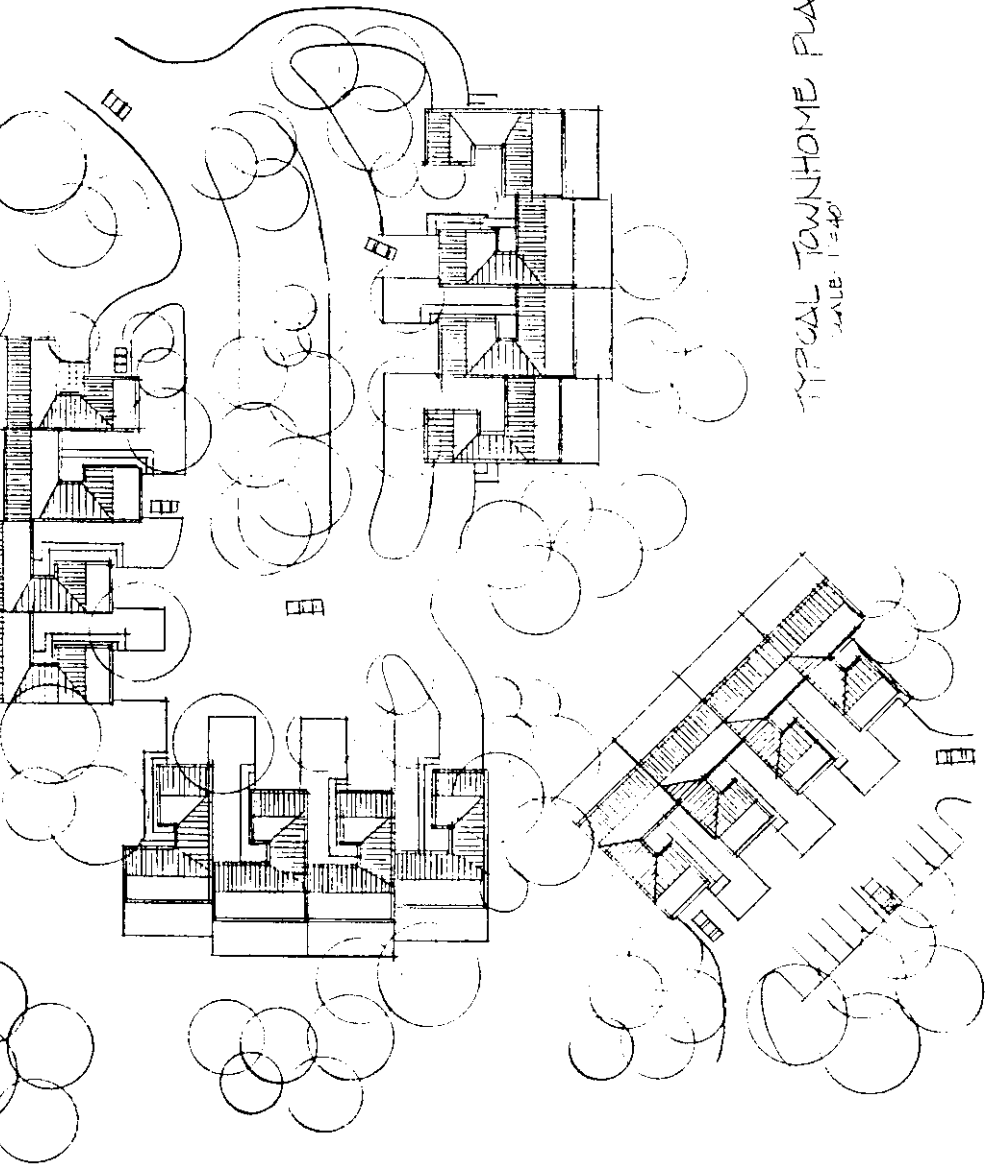
SECTION OF RESIDENTIAL AREA AND OPEN SPACE
SCALE 1/4"=10'



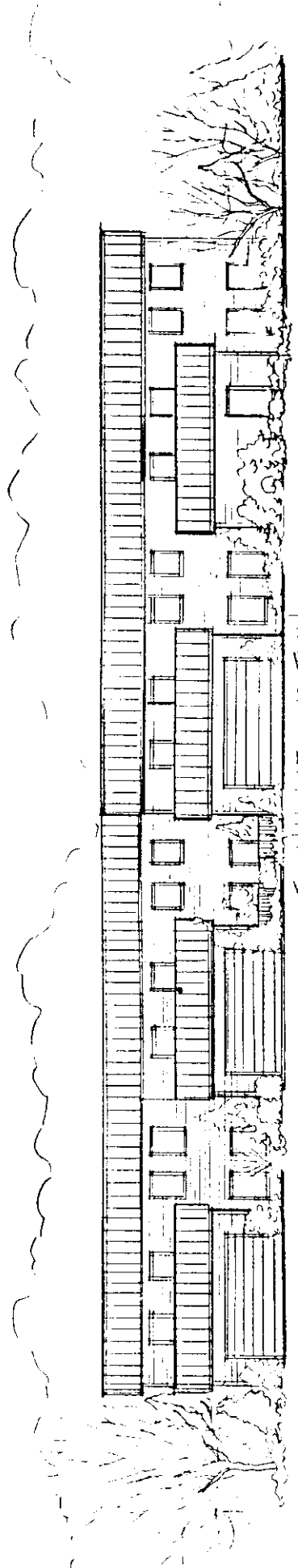
COMMUNITY AGRICULTURAL AREA
SCALE 1"=10'



ROAD SECTION
SCALE 1"=5'



TYPICAL TOWNHOME PLAN
SCALE 1"=40'



TOWNHOME SECTION

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