Landscape Design
for
Whitehall Apartment Complex
Athens, Georgia

By

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and
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A Terminal Problem Presented For

Degree Of Bachelor Of Landscape Architecture

Department Of Landscape Architecture
University Of Georgia
June 1965

H.B. Owens Resource Center
School of Environmental Design
Caldwell Hall
University of Georgia

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Historical Sketch

Athens, Georgia, county seat of Clarke county, the fourteenth largest county in the state of Georgia, is a city conscious of its planning for the future. The University of Georgia contributes as a major factor to the general welfare of Athens, thereby creating a demand for products and housing facilities.

Shopping centers such as Beechwood and Westgate are appearing on the outskirts of town. Several interstate highways are being developed in close proximity of Athens, Georgia.

Along with this expansion of both the city of Athens and the University of Georgia arises a need for housing. With the rapid turnover in people who are residing in Athens for various periods of time at the University, apartments and the development of same are of increasing value. An apartment complex developed primarily for graduate students will provide better facilities for the university students and serve as an asset to the city of Athens.

The property owned by Carroll M. Thomas, Realtor, which is located about five miles from the campus will provide an

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excellent site for such an apartment development. Prior to Mr. Thomas' ownership of this land, it was part of a tract of rural residential land owned by C.C. Williams. There is one frame dwelling house on the tract. The remainder of the site is densely wooded and has been in this condition for some years.

Mobile home development has grown rapidly in this section of town. With the increasing enrollment at the University of Georgia additional off-campus housing for students is required to provide adequate facilities.

Statement of the Problem

The Carroll M. Thomas Realtor Agency, upon the request of the Landscape Architecture Department, volunteered for use, a piece of property to be used for the development of a housing project, primarily for men and/or graduate students attending the University of Georgia.

The site of 11.42 acres located in Southeast Athens, approximately five miles from the center of the downtown district of Athens and the University of Georgia campus, Broad Street. There is a 195' frontage along the main road, adjacent to the property, East Whitehall Road. A private road leading to Pinecrest Lodge, the property of C.C. Williams, bounds the north and east sides of the tract. The southern boundary is property by M.A. Birchmore, fronting on East Whitehall. There is one existing dwelling, a residence, in the east, southeast portion of the tract.

Following a conference with Mr. Carroll M. Thomas, whose property is to be developed, and a careful study of the site, it was decided to include the following special features in the landscape plan, in addition to the usual items such as an

apartment layout, walks, drives, parking areas, etc. :
(a) an outdoor recreational area, including a pool and poolside facilities; and (b) tennis courts.

This proposed plan will include:

(1) Location of existing and proposed buildings.

(2) Design of apartment units with 500 square feet maximum area for a single unit and 650 square feet maximum for a dual unit.

(3) Vehicular and pedestrian circulation.

(4) Parking facilities.

(5) Outdoor recreational areas.

(6) Design of court areas, open lawns, tree shaded areas, shrub groupings, and ground covers.

We propose to prepare the following drawings and other documents:

(1) Site analysis sheet.

(2) Architectural drawings for the apartment units.

(3) Master plan.

(4) Grading, staking, drainage and service utilities plan.

(5) Construction details (to be selected).

(6) Planting plan.

(7) Planting details (to be selected).

(8) Scaled model of the area.

(9) Typewritten, bound comprehensive report including an analysis of the problem and justification of the solution, plant list, specifications for selected portions of the development, cost estimate, and photographs of the above listed drawings and of the site.

General Analysis of the Problem

In developing a workable design program for a given site, one must first consider all aspects of the site. The existing surroundings will reveal many patterns which the development might exploit.

Natural factors to be considered are the land form, the drainage patterns, and the climate. Orientation of the buildings to be placed on the site is dependent on all of these factors. The use of the land and its value, roads which lend accessibility to the property, boundaries, and existing utility sources are additional factors relating to the thorough survey analysis. Views and the psychological impression of openness are also considered in locating the buildings.

The site for the development of the Whitehall Apartment Complex consists of approximately eleven acres of heavily wooded land which has a general slope of 15% over-all or better. The silviculture is almost entirely that of pine, but in three growth development stages- five, fifteen, and twenty-five years. On the north and northeast boundaries along the private road to Pinecrest Lodge are found many winged elm

and honeysuckle vines. To the northwest corner of the property is found a large clump growth of oak and a very large pine, both in good condition. Drainage patterns flow to the west to join the lakes on the adjacent C.C. Williams property and in turn to the Oconee river. The land itself and that surrounding it for some distance is classified rural residential. The East Whitehall Road forms the north-east-east boundary. At present a city sewer line is not available but a water line is along East Whitehall Road.

When designing for a particular group, such as graduate students, one must consider the interior comforts as well as exterior, and for this reason architectural suggestions are offered for the preliminary architectural proposals of this apartment complex. Adequate storage space and study area are two of the main needs for graduate housing. These two needs were given major emphasis in the architectural proposals, both in the singular and dual units.

The necessity of the automobile in today's transportation system impells provision for and consideration of the circulation system in the design analysis. The

topography dictates the alignment of the roads and parking areas to a great extent. The percent of grade and amount of grading is another factor for consideration in designing for the automobile. Parking areas must be located in close proximity to the building for pedestrian access.

Plants are the landscape architects' media for aesthetic effects. Both natural groupings of trees to relate the architectural elements to the surrounding site and repetition of the architectural lines of development through plantings should be introduced to create a genuinely related sense between spatial elements. Maintenance is a prime factor in both the planting and overall design scheme.

Recreational facilities are necessary for all people. Tennis and swimming are two of the most frequented recreational pass-times by college students, one being seasonal and the other year-round. Access to the pool should be relatively convenient for all living within the complex. It is for this reason that the pool and its facilities are so situated between Pinecrest Road and Old Mill Lane.

Justification and Presentation of the Solution

After careful consideration of the existing site in its entirety, the landscape architect must determine the land which is suitable for building purposes. Justification for the development of the site as so proposed must be considered as a whole, rather than individual sections.

The proposed site development and circulation pattern were designed to require a minimum amount of paving and a maximum amount of open space to be related to every building. The alignment allows the road to fit the existing topography as much as possible to minimize the percent of slope of the roads.

Parking areas are so designed for ease of circulation and to facilitate access to the apartment buildings. Large parking areas are avoided for usual effects as well as convenience to the accessibility probiem.

Buildings are oriented with first consideration given to the existing difficult terrain, second to the views, and third to the climatic , ideal N-S orientation. All buildings follow the original line of the topography with little

exception. Views are not obstructed by other buildings.

Plantings are designed with the use of large trees, flowering trees, and ground covers to facilitate maintenance, reduce expense, and emphasize the architectural elements. Naturalized plantings of pine along the roads and row-planting of oak are inter-related to bring a relationship between the existing pine elements and proposed architectural elements, the lines of which are carried into the landscape with the oak and other flowering trees, redbud and dogwood. The informal plantings are designed to soften the architecture and relate the area to the surrounding country side.

In addition to the use of terraced land areas to present the change of levels, retaining walls are used extensively both for aesthetic and functional purposes. Economically, as well as aesthetically, the large open spaces, planting and recreation facilities will increase the value of property considerably.

1. The Site Analysis, based on the existing topographic survey by James Flanders and Associates, Engineers and Surveyors, made on Feb. 16, 1965, illustrates graphically

the land forms, drainage patterns, slope percentages, and existing features on the site. It indicates the one existing frame structure on the site.

2. The Architectural Proposals include plans on a three foot modular grid for single and dual units, both front and rear elevations of the apartments, and detail proposals for balcony railing and stair details.

3. The Grading, Staking, Vertical Alignment, Drainage, and Utilities Service Plans, based on the original topographic survey, establishes grades for all buildings, roads, pool, steps, and other surface area. Locations and grades of all surface drainage structures, buildings, and horizontal alignment for the roads.

4. The Planting Plan will locate and identify all items of plant material to be used.

5. The Construction Details will provide plans, sections, and elevations of structures on the site plan; such as, drainage facilities, steps, pool facilities, benches, and an entrance gate.

6. The Specifications cover all types of materials to be used a nd will set forth explicit and concise methods of

construction and/or installation. They shall be organized so as to separate those portions of the work which may logically be executed by the different trades or separate contractors: for example, excavation and grading, concrete and masonry work, pavements, swimming pool, planting and seeding.

7. The Plant List will identify all items of plant material, including size, quantity, variety of material and whether it is balled and burlapped or bare root.

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BACHELOR OF LANDSCAPE ARCHITECTURE
GRADUATE STUDENT
ATHENS
CLARKE COUNTY
WHITEHALL APARTMENT COMPLEX

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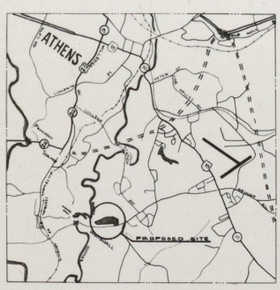
BACHELOR OF LANDSCAPE ARCHITECTURE

WHITEHALL APARTMENT COMPLEX

GRADUATE STUDENT HOUSING

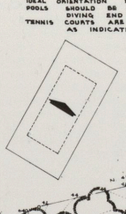
CLARKE COUNTY ATHENS, GEORGIA

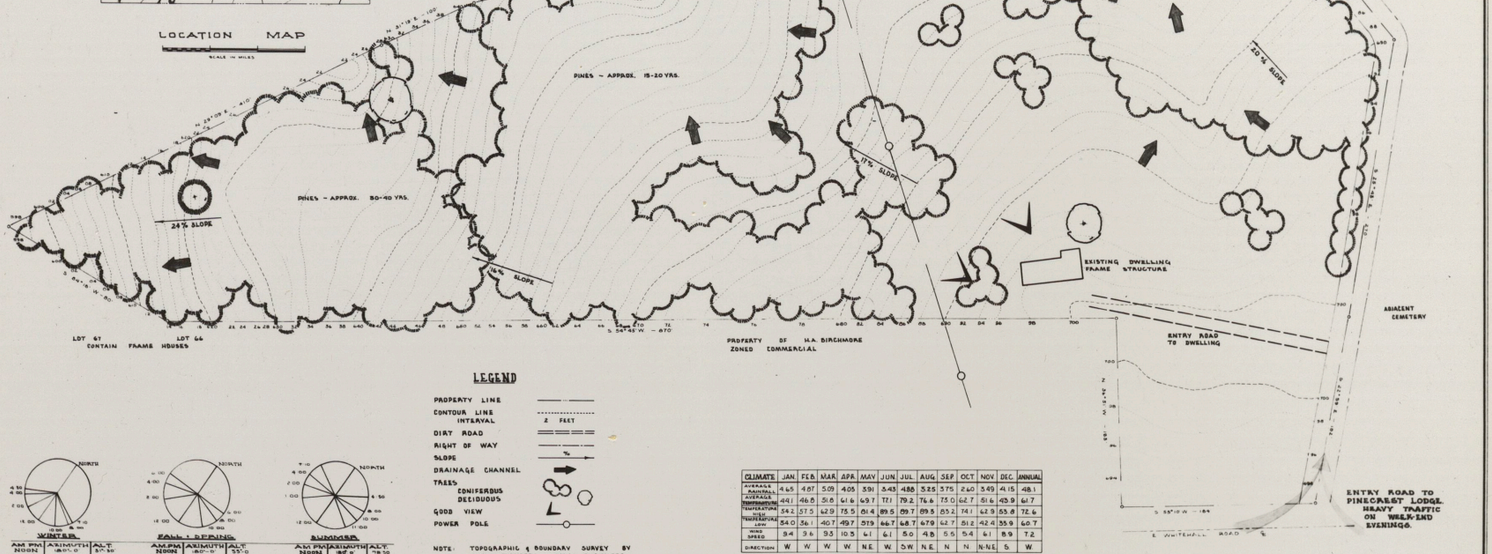


LOCATION MAP

ORIENTATION ANALYSIS

IDEAL ORIENTATION FOR APARTMENT UNITS N.-S.
POOLS SHOULD BE ORIENTED SO THAT THE DIVING END IS FACING N. OR S.
TENNIS COURTS TO BE ORIENTED N.-S. AS INDICATED BELOW.





LEGEND

PROPERTY LINE
CONTOUR LINE INTERVAL 2 FEET
DIRT ROAD
RIGHT OF WAY
SLOPE
DRAINAGE CHANNEL
TREES
CONIFEROUS
DECIDUOUS
GOOD VIEW
POWER POLE

NOTE: TOPOGRAPHIC & BOUNDARY SURVEY BY JAMES FLANDERS & ASSOC. ENGINEERS & SURVEYORS. FEBRUARY 14, 1965.

AM HOURS	AZIMUTH	ALT.
8 AM	135° SE	24° 30'
10 AM	150° SE	39° 30'
12 NOON	180° S	51° 30'

PM HOURS	AZIMUTH	ALT.
2 PM	210° SW	51° 30'
4 PM	225° SW	39° 30'
6 PM	240° SW	24° 30'

AM HOURS	AZIMUTH	ALT.
NOON	180° S	74° 30'
10 AM & 2 PM	165° SE	62° 30'
8 AM & 4 PM	135° SE	41° 30'
6 AM & 6 PM	90° E	24° 30'

PM HOURS	AZIMUTH	ALT.
NOON	180° S	74° 30'
2 PM & 10 PM	195° SW	62° 30'
4 PM & 8 PM	225° SW	41° 30'
6 PM & 6 AM	270° W	24° 30'

CLIMATE	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	ANNUAL
AVERAGE RAINFALL	4.45	4.87	5.09	4.05	3.91	3.43	4.86	3.25	3.75	2.40	3.49	4.15	48.1
AVERAGE TEMPERATURE	44.1	46.8	56.8	61.6	69.7	77.1	79.2	75.6	73.0	62.7	50.6	43.9	61.7
TEMPERATURE HIGHEST ON RECORD	84.2	87.5	92.9	95.5	101.4	89.5	99.7	99.5	95.2	94.1	82.9	85.8	72.6
TEMPERATURE LOW	34.0	36.1	40.7	49.7	57.9	66.7	68.7	67.0	62.7	51.2	42.4	35.9	40.7
WIND SPEED	9.4	9.6	9.3	10.3	9.1	8.1	8.0	7.8	7.5	7.4	8.1	8.9	7.2
DIRECTION	W	W	W	W	W	NE	W	SW	NE	N	N	NNE	S	W

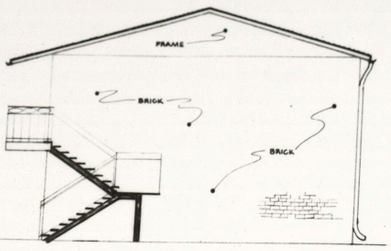
NORTH

PREPARED BY:
DANIEL W. DONELIN
V. LATANE NELMS
DATE: JUNE 1965

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA

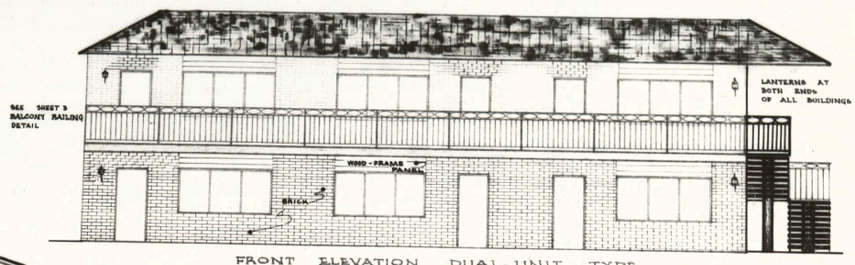
ONE INCH = FORTY FEET

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 1 OF 20
SITE ANALYSIS SHEET

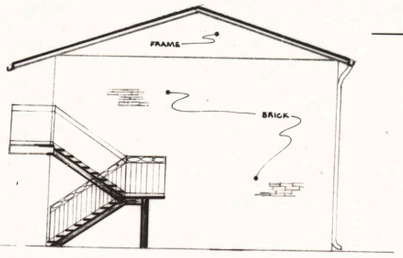


SEE SHEET 3 STAIR DETAILS

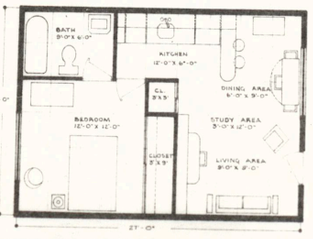
SIDE ELEVATION DUAL-UNIT TYPE
SCALE 1/4" = 1'-0"



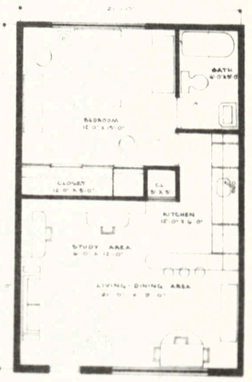
FRONT ELEVATION DUAL-UNIT TYPE
SCALE 1/4" = 1'-0"



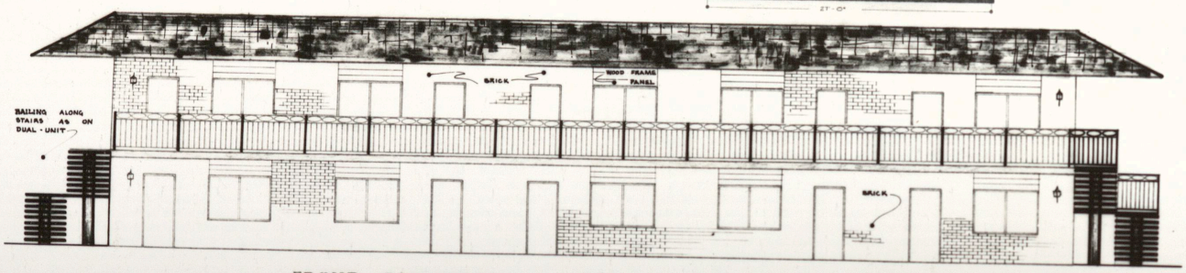
SIDE ELEVATION SINGLE-UNIT TYPE
SCALE 1/4" = 1'-0"



SINGLE-UNIT PLAN VIEW
SCALE 1/4" = 1'-0"
A THREE FOOT MODULAR GRID IS USED FOR THE ARRANGEMENT OF THE ROOMS BASED ON EVEN FOOT DIMENSIONS. THE ACTUAL SIZE IS NOT CRITICAL.



DUAL-UNIT PLAN VIEW
SCALE 1/4" = 1'-0"
A THREE FOOT MODULAR GRID IS USED FOR THE ARRANGEMENT OF THE ROOMS BASED ON EVEN FOOT DIMENSIONS. THE ACTUAL SIZE IS NOT CRITICAL. SEE PLAN FOR SCALE.



FRONT ELEVATION SINGLE-UNIT TYPE
SCALE 1/4" = 1'-0"

*APARTMENTS TO BE OF OLD BRICK WITH FRAME ROOF, ALUMINUM PANELS OVER ALL WINDOWS.

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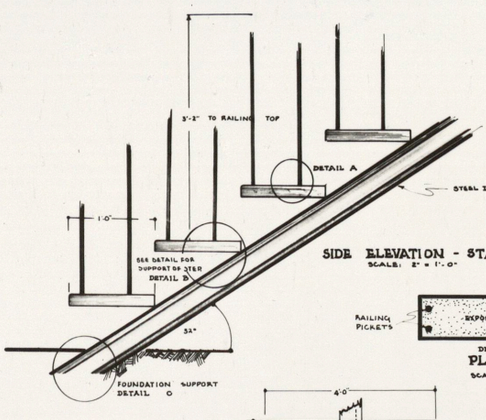
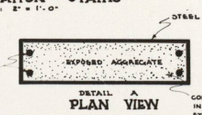
WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA
ARCHITECTURAL DRAWINGS
SCALE AS INDICATED

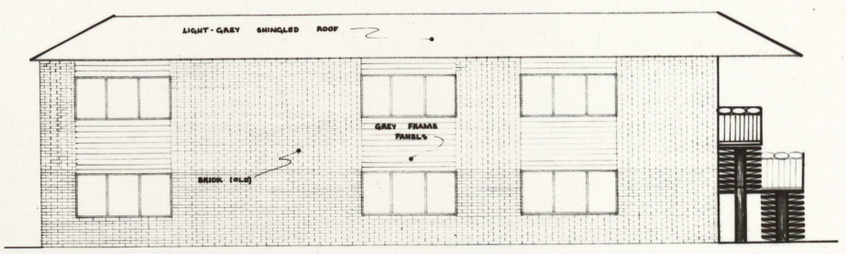
PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 2 OF 20
PLANS AND ELEVATIONS



SIDE ELEVATION - STAIRS
SCALE: 2" = 1'-0"

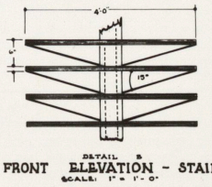


DETAIL A
PLAN VIEW
SCALE: 1" = 1'-0"
CONCRETE SET IN PREFABRICATED STEEL PAN.

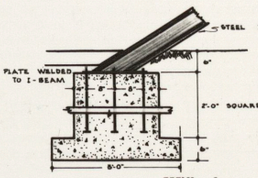


REAR ELEVATION DUAL-UNIT TYPE
SCALE: 1/4" = 1'-0"

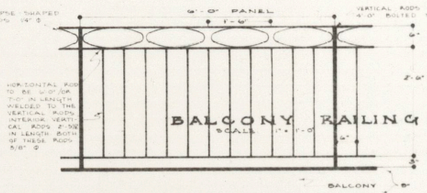
STAIR DETAILS



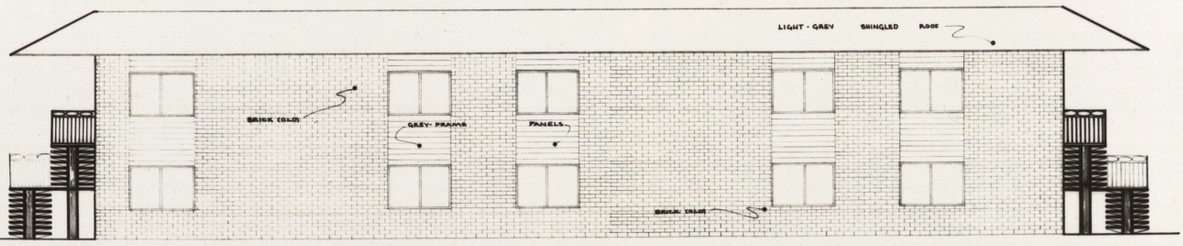
DETAIL B
FRONT ELEVATION - STAIRS
SCALE: 1" = 1'-0"



DETAIL C
FOUNDATION SUPPORT OF STAIRS
SCALE: 1" = 1'-0"



BALCONY RAILING
SCALE: 1" = 1'-0"



REAR ELEVATION SINGLE-UNIT TYPE
SCALE: 1/4" = 1'-0"

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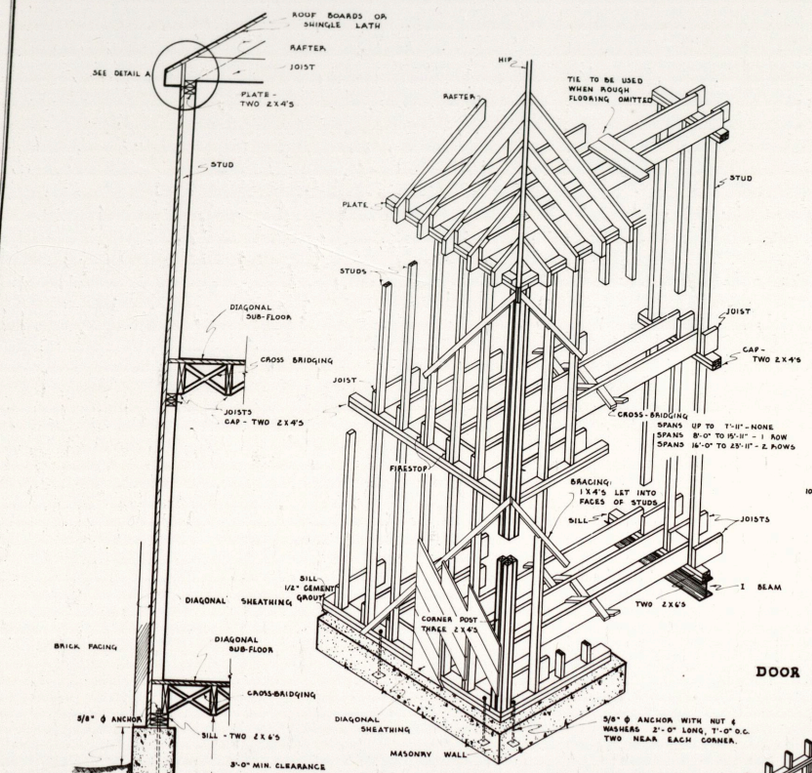
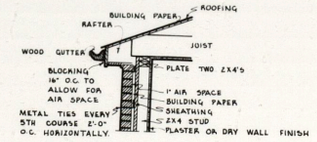
ARCHITECTURAL DRAWINGS
SCALE AS INDICATED

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 3 OF 20
ELEVATIONS AND DETAILS

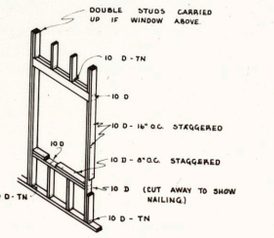


EXTERNAL WALL SECTION
SCALE: 3/4" = 1'-0"

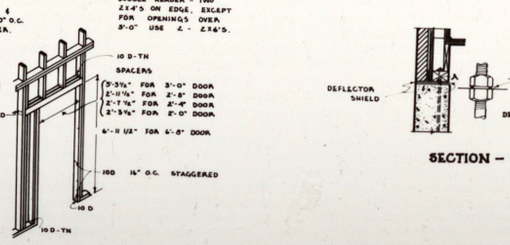
CONSTRUCTIONAL DETAIL ISOMETRIC
SCALE: 1/2" = 1'-0"



DETAIL A : SECTION EAVE, GABLE
SCALE: 3/4" = 1'-0"

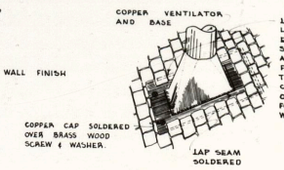


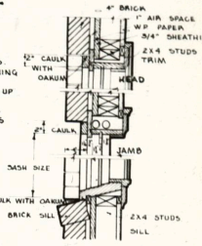
WINDOW FRAMING DETAIL
NO SCALE



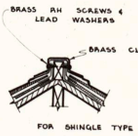
DOOR FRAMING DETAIL
NO SCALE

ROOF, VENTILATOR DETAIL
NO SCALE





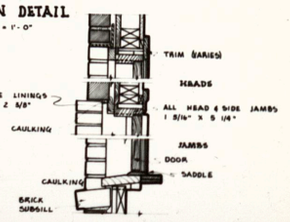
WINDOW SECTION DETAIL
SCALE: 1 1/2" = 1'-0"



SECTION HIP & RIDGE FLASHING
SCALE: 1 1/2" = 1'-0"

SECTION - VENEER WALL DETAIL
SCALE: 3/4" = 1'-0"

DOOR SECTION DETAIL
SCALE: 1 1/2" = 1'-0"





LOCATION MAP
SCALE IN MILES

LEGEND

SYMBOL	
	LARGE TREES GLEDITSIA TRIACANTHOS INERMIS, QUERCUS COCCINEA
	SMALL TREES CERCIS CANADENSIS, CORNUS FLORIDA
	LARGE TREES PINUS STROBUS
	GROUND COVERS
	GRASS AREAS
	PROPOSED CONTOUR
	EXISTING CONTOUR
	TANBARK ROAD-PATHWAY

- DATA -

APARTMENT UNITS
SINGLE 50 APARTMENTS, 5 BUILDINGS
DUAL 36 APARTMENTS, 6 BUILDINGS

PARKING FACILITIES
1 SPACE / SINGLE UNIT - 50 CARS
1.5 SPACE / DUAL UNIT - 58 CARS
TOTAL 108 PARKING SPACES

DENSITY
86 APARTMENT UNITS

LINEAR FOOTAGE

ROADS	2,480 FEET
PARKING	1,000 FEET
CURBS	4,940 FEET
WALKS	1,720 FEET
TANBARK PATH	480 FEET

GROUND COVERAGE

TENNIS	14,400 SQ. FT.
BUILDINGS	58,000 SQ. FT.
POOL, FACILITIES	4,000 SQ. FT.
GROUND COVER	46,080 SQ. FT.

ACREAGE

GROSS ACREAGE	11.42 ACRES
R.O.W. ROAD	.39 ACRES.
NET ACREAGE	11.03 ACRES
GROUND COVERAGE	4.40 ACRES
OPEN GROUND	6.45 ACRES

PREPARED BY: DANIEL W. DONELIN, V. LATANE NELMS
DATE JUNE 1965

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA
ARCHITECTURAL DRAWINGS SCALE AS INDICATED

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 3 OF 20
MASTER PLAN
ARCHITECTURAL CONSTRUCTION DRAWINGS

LEGEND

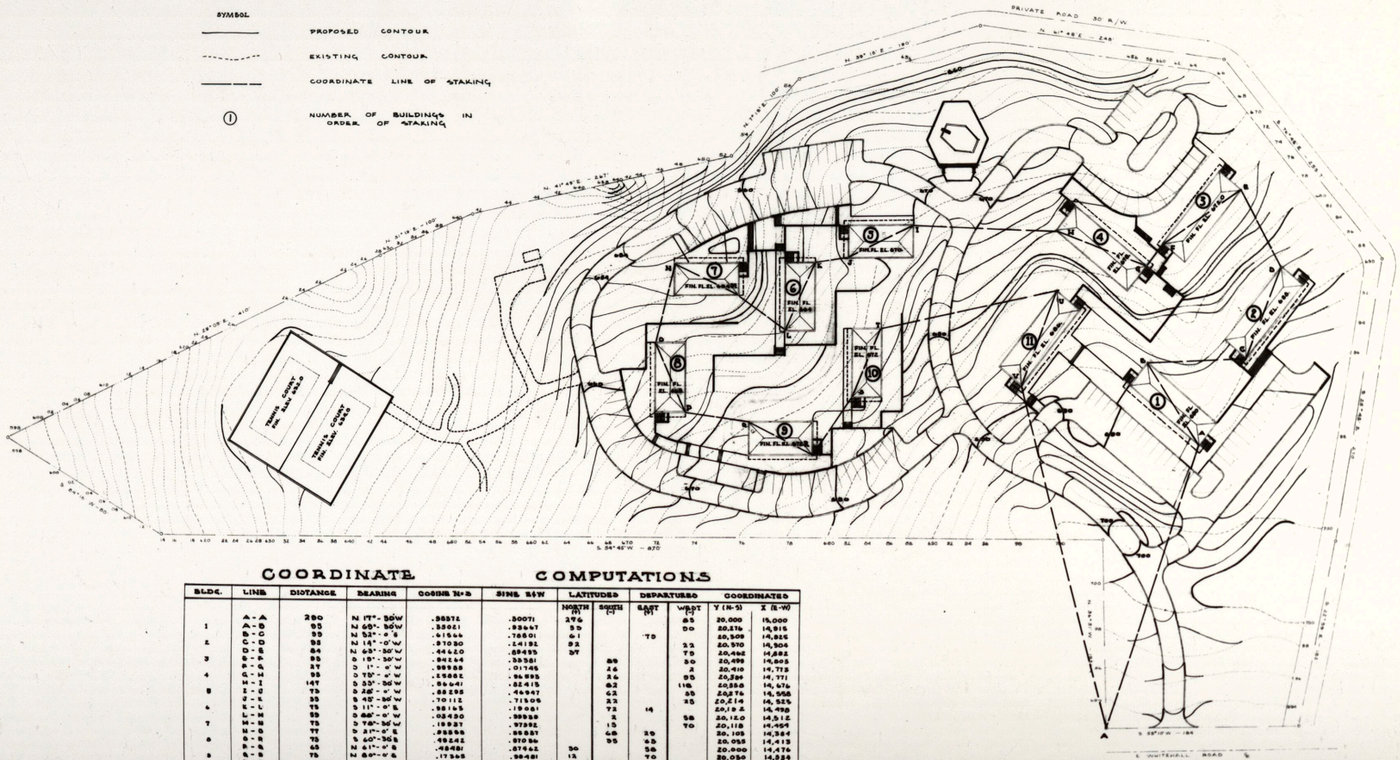
SYMBOL

PROPOSED CONTOUR

EXISTING CONTOUR

COORDINATE LINE OF STAKING

① NUMBER OF BUILDINGS IN ORDER OF STAKING



COORDINATE COMPUTATIONS

BLDG.	LINE	DISTANCE	BEARING	COSINE N=+ S=-	SINE E=W	LATITUDES NORTH (+)	LATITUDES SOUTH (-)	DEPARTURES EAST (+)	DEPARTURES WEST (-)	COORDINATES Y (N-S)	COORDINATES X (E-W)
	A - A	280	N 17° - 30' W	.95576	.29071	296		85		20,000	15,000
1	A - B	93	N 60° - 30' W	.50261	.86447	59		90		20,274	14,915
2	B - C	93	N 53° - 0' E	.61546	.78801	61			72	20,509	14,825
	C - D	93	N 18° - 0' W	.95130	.24192	88		23		20,570	14,904
3	D - E	84	N 69° - 30' W	.35493	.93469	29		78		20,468	14,882
	E - F	93	S 15° - 30' W	.96324	.26381		89	30		20,499	14,805
4	F - G	93	S 1° - 0' W	.99985	.01745		93	2		20,410	14,778
	G - H	93	S 75° - 0' W	.25882	.96593		24	90		20,386	14,771
	H - I	147	S 23° - 30' W	.91645	.40115		134		59	20,254	14,674
5	I - J	73	S 68° - 0' W	.37193	.92847		62		135	20,027	14,568
	J - K	93	S 15° - 30' W	.96324	.26381		89		25	20,214	14,523
6	K - L	93	S 11° - 0' E	.98163	.19081		73	16		20,128	14,538
	L - M	93	S 66° - 30' W	.92050	.39073		38		85	20,150	14,512
7	M - N	73	S 76° - 30' W	.23231	.97272		15		70	20,118	14,497
	N - O	93	S 21° - 0' E	.93358	.35837		68	35		20,105	14,384
8	O - P	93	S 60° - 30' E	.49242	.87036		85	80		20,058	14,413
	P - Q	93	N 61° - 0' E	.48481	.87462	36		82		20,090	14,476
9	Q - R	93	N 89° - 0' E	.01745	.99985	15		93		20,050	14,524
	R - S	93	0° - 0'	1.00000	0	93		0		20,093	14,604
10	S - T	73	N 13° - 0' W	.97815	.20791	71			15	20,109	14,589
	T - U	150	N 42° - 00' E	.73728	.67559	108		123		20,180	14,582
11	U - V	93	S 15° - 0' E	.25882	.96593		24	25		20,312	14,716
	V - A	348	S 20° - 0' E	.94278	.33249		328	245		20,218	14,787
										20,000	15,000

NORTH

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V. LATANE NELMS
DATE: JUNE 1965

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA

ONE INCH FORTY FEET

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 6 OF 10
STAKING PLAN

LEGEND

SYMBOL

EXISTING CONTOUR

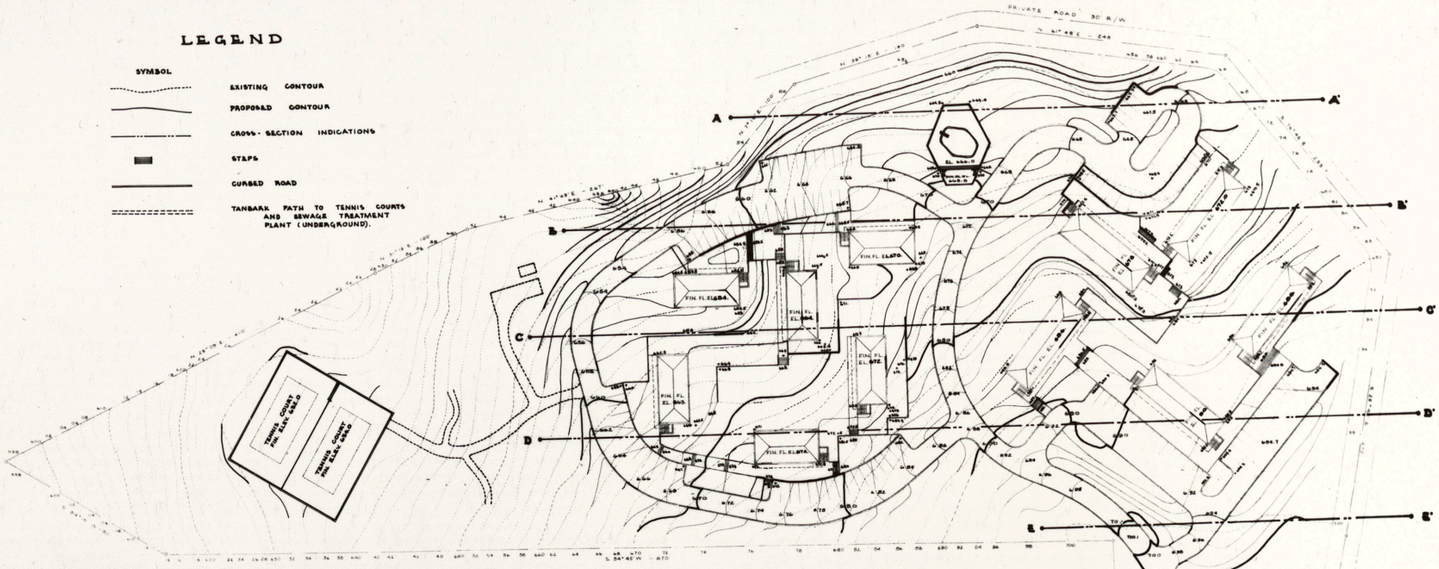
PROPOSED CONTOUR

CROSS-SECTION INDICATIONS

STAIRS

CURBED ROAD

TANBARK PATH TO TENNIS COURTS AND SEWAGE TREATMENT PLANT (UNDERGROUND).



- DATA -

CROSS-SECTIONS

TAKEN AT 100' STATIONS A-A', B-B', C-C', D-D', E-E', F-F' USED TO COMPUTE THE CUT & FILL BY THE AVERAGE END AREA METHOD. (SHEETS 10 & 11)

SPOT ELEVATIONS

GIVEN AT TOPS & BOTTOMS OF STAIRS, ALONG RETAINING WALLS, AND IN CORNERS OF PARKING AREAS.

SLOPE PERCENTILES

ENTERING GRADE ON PINECREST ROAD +4.5%
MAXIMUM ROAD GRADE ON SAME -9.5%
MINIMUM ROAD GRADE ON SAME +2.5%

MAXIMUM ROAD GRADE ON OLD MILL LANE -4.5%
MINIMUM ROAD GRADE ON SAME +4.5%

DRAINAGE

SHEET 12 CONTAINS ALL DRAINAGE FACILITIES AND ELEVATIONS OF SAME.
SHEET 13 CONTAINS SEWER LINES.

NORTH

PREPARED BY:
DANIEL W. DONELIN
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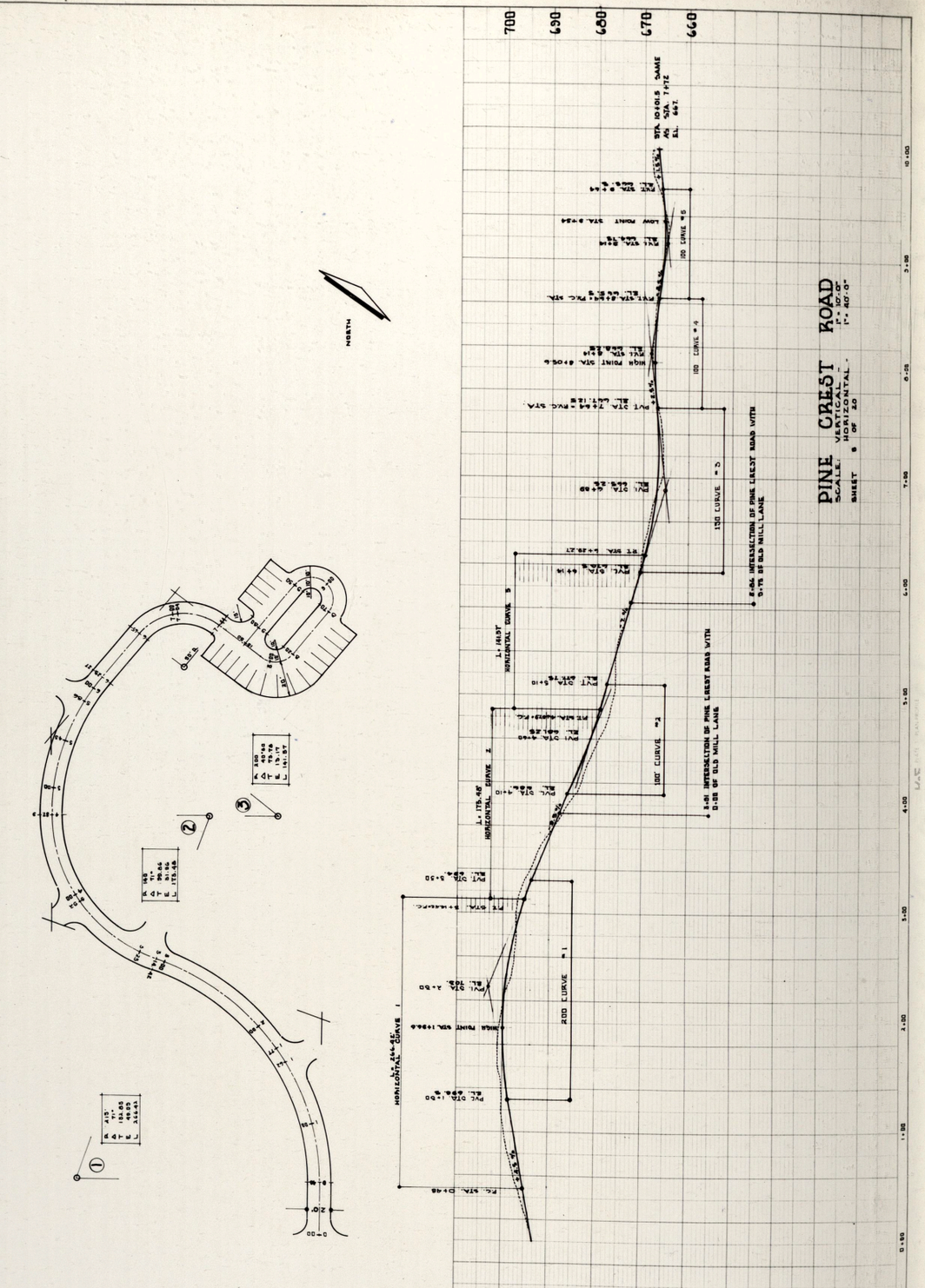
DATE: JUNE 1965

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA

ONE INCH FORTY FEET

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 7 OF 10
GRADING PLAN



Vertical Curve Data Form

Algebraic Difference = +4.5 % - (-9.5 %) = 14.0 Curve Length = 200 feet

P.V.I. Station 2 + 30 Elevation 703.

P.V.C. Station 1 + 30 Elevation 698.5

P.V.T. Station 3 + 30 Elevation 694.

Elevation of entering grade line at E.V.C. 707.5

End Ordinate 13.5

1. 4 times middle ordinate = end ordinate

Middle Ordinate $\frac{g - g' \cdot L}{800 \text{ (constant)}}$ = 3.375

1. divide end ordinate by 4

Station	Distance From B.V.C.	Tangent Rise or drop From B.V.C. @ +4.5 %	Tangent Grade Elevation	V. C. Ordinate	V. C. Elevation
1 + 30	-	-	698.5	-	698.5
1 + 80	50	2.25	700.75	.845	699.905
2 + 30	100	4.5	703.	3.375	699.625
2 + 80	150	6.75	709.75	7.6	702.15
3 + 30	200	9.	707.5	13.5	694.0

Vertical Curve Data Form

c Difference = -9.5 % - (-7. %) = 2.5 Curve Length = 100 feet

Station 4 + 60 Elevation 681.25

Station 4 + 10 Elevation 686.

Station 5 + 10 Elevation 677.75

on of entering grade line at E.V.C. 676.5

inate 1.25
4 times middle ordinate = end ordinate

Ordinate $\frac{g - g' \cdot L}{800 \text{ (constant)}}$ = .3125

. divide end ordinate by 4

on	Distance From B.V.C.	Tangent Rise or drop From B.V.C. @ -9.5 %	Tangent Grade Elevation	V. C. Ordinate	V. C. Elevation
10	-	-	686.	-	686.
60	50	4.75	681.25	.8125	681.5625
10	100	9.5	676.5	1.25	677.75

ical Curve Calculation for Pinecrest Road
. Number 2 Date June, 1965 Name Donelin & Nelms

Vertical Curve Data Form

Algebraic Difference = -7. % - (+2.5 %) = 9.5 Curve Length = 150 feet

P. V. I. Station 6 + 89 Elevation 665.25

B. V. C. Station 6 + 14 Elevation 670.5

E. V. C. Station 7 + 64 Elevation 667.125

Elevation of entering grade line at E.V.C. 660.

End Ordinate 7.125
1. 4 times middle ordinate = end ordinate

Middle Ordinate $\frac{g - g' \cdot L}{800 \text{ (constant)}}$ = 1.78125
1. divide end ordinate by 4

Station	Distance From B.V.C.	Tangent Rise or drop From B.V.C. @ -7. %	Tangent Grade Elevation	V. C. Ordinate	V. C. Elevation
6 + 14	-	-	670.5	-	670.5
6 + 89	75	5.25	665.25	1.78125	667.03
7 + 64	150	10.5	660.	7.125	667.125

Vertical Curve Calculation for Pingarest Road
V. C. Number 3 Date June, 1965 Name Donelin & Nelms

Vertical Curve Data Form

Algebraic Difference = +2.5 % - (-3.5 %) = 6.0 Curve Length = 100 feet

P. V. I. Station 8 + 14 Elevation 668.250

B. V. C. Station 7 + 64 Elevation 667.125

E. V. C. Station 8 + 64 Elevation 666.50

Elevation of entering grade line at E.V.C. 669.625

End Ordinate 3.125
1. 4 times middle ordinate = end ordinate

Middle Ordinate $\frac{g - g' \cdot L}{800 \text{ (constant)}}$ = .78125
1. divide end ordinate by 4

Station	Distance From B.V.C.	Tangent Rise or drop From B.V.C. @ 2.5 %	Tangent Grade Elevation	V. C. Ordinate	V. C. Elevation
7 + 64	-	-	667.125	-	667.125
8 + 14	50	1.25	668.375	.78	667.595
8 + 64	100	2.5	669.625	3.125	666.500

Vertical Curve Calculation for Pinecrest Road
V. C. Number 4 Date June, 1965 Name Donelin & Nelms

Vertical Curve Data Form

Algebraic Difference = -3.5 % - (+1.5 %) = 5.0 Curve Length = 100 feet

P. V. I. Station 9 + 14 Elevation 664.75

B. V. C. Station 8 + 64 Elevation 666.5

E. V. C. Station 9 + 64 Elevation 665.5

Elevation of entering grade line at E.V.C. 663.0

End Ordinate
1. 4 times middle ordinate = end ordinate 2.5

Middle Ordinate $\frac{g - g' \cdot L}{800 \text{ (constant)}}$ = .625
1. divide end ordinate by 4

Station	Distance From B.V.C.	Tangent Rise or drop From B.V.C. @ 3.5 %	Tangent Grade Elevation	V. C. Ordinate	V. C. Elevation
8 + 64	-	-	666.5	-	666.5
9 + 14	50	1.75	664.75	.625	665.375
9 + 64	100	3.5	663.0	2.5	665.5

Vertical Curve Calculation for Pinecrest Road
V. C. Number 5 Date June, 1965 Name Donclin & Nelms

Vertical Curve Data Form

Algebraic Difference = -5.0 % - (-6.5 %) = 1.5 Curve Length = 100 feet

P.V.I. Station 1 + 10 Elevation 682.

P.V.C. Station 0 + 60 Elevation 684.5

P.V.C. Station 1 + 60 Elevation 678.75

Elevation of entering grade line at E.V.C. 679.5

End Ordinate .75
1.4 times middle ordinate = end ordinate

Middle Ordinate $\frac{g - g' \cdot L}{800 \text{ (constant)}}$ = .1875
1. divide end ordinate by 4

Station	Distance From B.V.C.	Tangent Rise or drop From B.V.C. @ -5 %	Tangent Grade Elevation	V. C. Ordinate	V. C. Elevation
0 + 60	-	-	684.5	-	684.5
1 + 10	50	2.5	682.	.1875	681.8
1 + 60	100	5.	679.5	.75	678.75

Vertical Curve Calculation for Old Mill Lane
V. C. Number 1 Date June, 1965 Name Donelin & Nelms

Vertical Curve Data Form

Algebraic Difference = -6.5 % - (+6. %) = 12.5 Curve Length = 200 feet

B.V.C. Station 5 + 80 Elevation 651.

E.V.C. Station 4 + 80 Elevation 657.5

E.V.C. Station 6 + 80 Elevation 657.

Elevation of entering grade line at E.V.C. 644.5

End Ordinate 12.5
1. 4 times middle ordinate = end ordinate

Middle Ordinate $\frac{g - g' \cdot L}{800 \text{ (constant)}}$ = 3.125
1. divide end ordinate by 4

Station	Distance From B.V.C.	Tangent Rise or drop From B.V.C. @ 6.5 %	Tangent Grade Elevation	V. C. Ordinate	V. C. Elevation
4 + 80	-	-	657.5	-	657.5
5 + 30	50	3.25	654.25	.78	655.03
5 + 80	100	6.5	651.	3.125	654.125
6 + 30	150	9.75	647.85	7.	654.85
6 + 80	200	13.0	644.5	12.5	657.0

Vertical Curve Calculation for Old Mill Lane
V. C. Number ... 1965 Name Donelin & Nelms

Vertical Curve Data Form

Algebraic Difference = +6. % - (+4.5 %) = 1.5 Curve Length = 100 feet

P. V. I. Station 7 + 92 Elevation 664.

P. C. Station 7 + 42 Elevation 661.

P. C. C. Station 8 + 42 Elevation 666.25

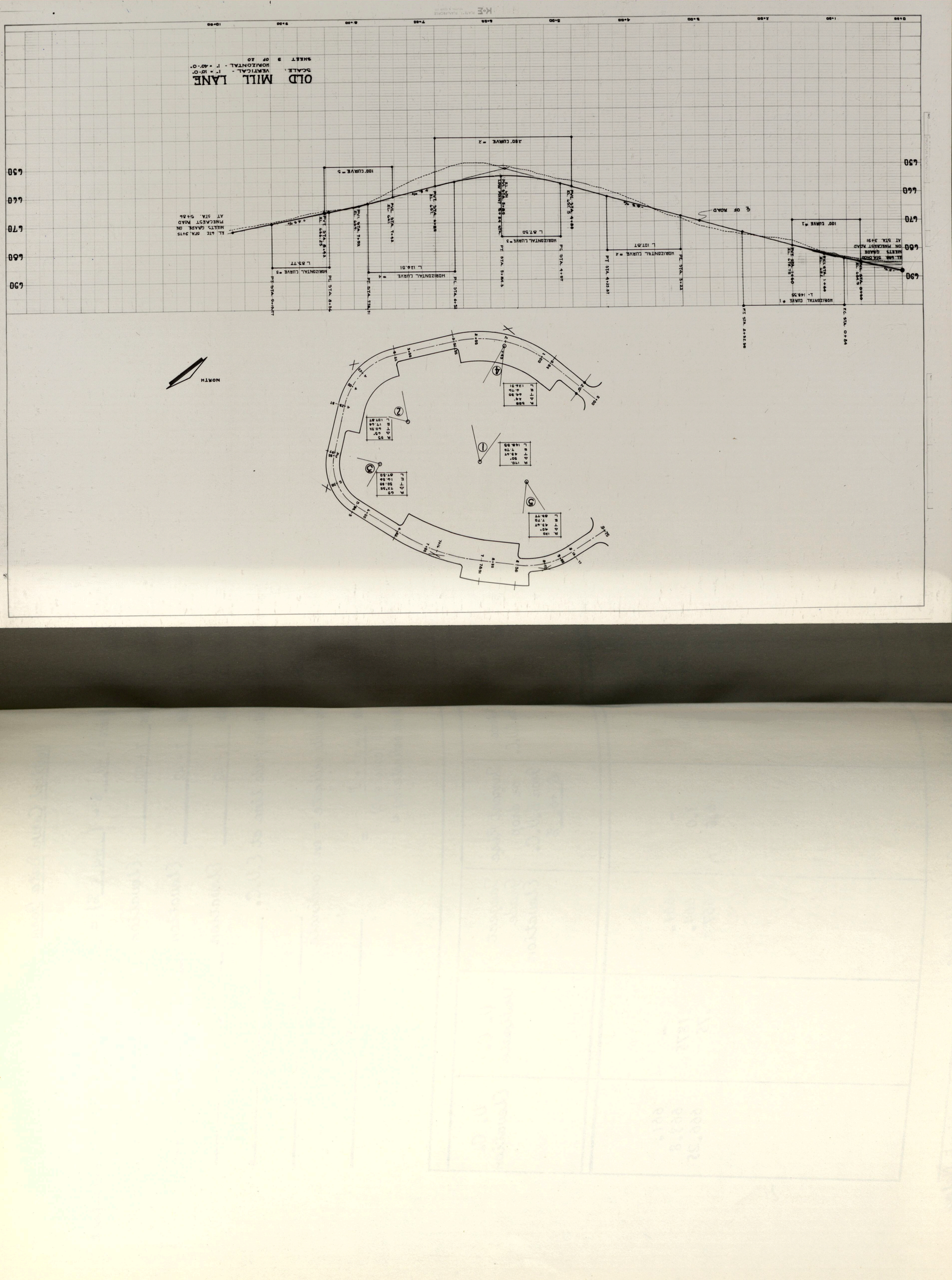
Elevation of entering grade line at E.V.C. 667.

End Ordinate
1. 4 times middle ordinate = end ordinate .75

Middle Ordinate $\frac{g - g' \cdot L}{800 \text{ (constant)}}$ = .1875
1. divide end ordinate by 4

Station	Distance From B.V.C.	Tangent Rise or drop From B.V.C. @ +6. %	Tangent Grade Elevation	V. C. Ordinate	V. C. Elevation
7 +42	-	-	661.	-	661.
7 +92	50	3.0	664.	.1875	663.8
8 +42	100	6.0	667	.75	666.25

Vertical Curve Calculation for Old Mill Lane
V. C. Number 3 Date June, 1965 Name Donelin & Nelms


OLD MILL LANE
SCALE: VERTICAL - 1" = 10'-0"
HORIZONTAL - 1" = 40'-0"
SHEET 3 OF 20
NORTH
PC STA. 0+00
PT STA. 2+32.96
HORIZONTAL CURVE #1
L. 148.35
100' CURVE #1
PC STA. 0+64
PT STA. 1+48
PVI STA. 1+06
EL. 668
PVI STA. 0+60
EL. 674.9715
MEETS GRADE ON PINECREST ROAD AT STA. 3+91
PVI STA. 0+44
EL. 672
PVI STA. 0+28
EL. 670
PVI STA. 0+12
EL. 668
PVC STA. 0+00
PVT STA. 0+44.28
PVI STA. 0+88
PVC STA. 0+72
PVT STA. 1+16.28
PVI STA. 1+44
PVC STA. 1+28
PVT STA. 1+72
PVI STA. 2+00
PVC STA. 1+84
PVT STA. 2+28
PVI STA. 2+56
PVC STA. 2+40
PVT STA. 2+84
EL. 672
MEETS GRADE ON PINECREST ROAD AT STA. 3+48
PVI STA. 3+12
EL. 670
PVC STA. 2+96
PVT STA. 3+40
PVI STA. 3+68
PVC STA. 3+52
PVT STA. 3+96
PVI STA. 4+24
PVC STA. 4+08
PVT STA. 4+52
PVI STA. 4+80
PVC STA. 4+64
PVT STA. 5+08
PVI STA. 5+36
PVC STA. 5+20
PVT STA. 5+64
PVI STA. 5+92
PVC STA. 5+76
PVT STA. 6+20
PVI STA. 6+48
PVC STA. 6+32
PVT STA. 6+76
PVI STA. 7+04
PVC STA. 6+88
PVT STA. 7+32
PVI STA. 7+60
PVC STA. 7+44
PVT STA. 7+88
PVI STA. 8+16
PVC STA. 8+00
PVT STA. 8+44
PVI STA. 8+72
PVC STA. 8+56
PVT STA. 9+00
PVI STA. 9+28
PVC STA. 9+12
PVT STA. 9+56
PVI STA. 9+84
PVC STA. 9+68
PVT STA. 10+12
PVI STA. 10+40
PVC STA. 10+24
PVT STA. 10+68
PVI STA. 10+96
PVC STA. 10+80
PVT STA. 11+24
PVI STA. 11+52
PVC STA. 11+36
PVT STA. 11+80
PVI STA. 12+08
PVC STA. 11+92
PVT STA. 12+36
PVI STA. 12+64
PVC STA. 12+48
PVT STA. 12+92
PVI STA. 13+20
PVC STA. 13+04
PVT STA. 13+48
PVI STA. 13+76
PVC STA. 13+60
PVT STA. 14+04
PVI STA. 14+32
PVC STA. 14+16
PVT STA. 14+60
PVI STA. 14+88
PVC STA. 14+72
PVT STA. 15+16
PVI STA. 15+44
PVC STA. 15+28
PVT STA. 15+72
PVI STA. 16+00
PVC STA. 15+84
PVT STA. 16+28
PVI STA. 16+56
PVC STA. 16+40
PVT STA. 16+84
PVI STA. 17+12
PVC STA. 16+96
PVT STA. 17+40
PVI STA. 17+68
PVC STA. 17+52
PVT STA. 17+96
PVI STA. 18+24
PVC STA. 18+08
PVT STA. 18+52
PVI STA. 18+80
PVC STA. 18+64
PVT STA. 19+08
PVI STA. 19+36
PVC STA. 19+20
PVT STA. 19+64
PVI STA. 19+92
PVC STA. 19+76
PVT STA. 20+20
PVI STA. 20+48
PVC STA. 20+32
PVT STA. 20+76
PVI STA. 21+04
PVC STA. 20+88
PVT STA. 21+32
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PVC STA. 21+44
PVT STA. 21+88
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PVC STA. 22+56
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PVC STA. 27+60
PVT STA. 28+04
PVI STA. 28+32
PVC STA. 28+16
PVT STA. 28+60
PVI STA. 28+88
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PVC STA. 32+64
PVT STA. 33+08
PVI STA. 33+36
PVC STA. 33+20
PVT STA. 33+64
PVI STA. 33+92
PVC STA. 33+76
PVT STA. 34+20
PVI STA. 34+48
PVC STA. 34+32
PVT STA. 34+76
PVI STA. 35+04
PVC STA. 34+88
PVT STA. 35+32
PVI STA. 35+60
PVC STA. 35+44
PVT STA. 35+88
PVI STA. 36+16
PVC STA. 36+00
PVT STA. 36+44
PVI STA. 36+72
PVC STA. 36+56
PVT STA. 37+00
PVI STA. 37+28
PVC STA. 37+12
PVT STA. 37+56
PVI STA. 37+84
PVC STA. 37+68
PVT STA. 38+12
PVI STA. 38+40
PVC STA. 38+24
PVT STA. 38+68
PVI STA. 38+96
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PVT STA. 39+24
PVI STA. 39+52
PVC STA. 39+36
PVT STA. 39+80
PVI STA. 40+08
PVC STA. 39+92
PVT STA. 40+36
PVI STA. 40+64
PVC STA. 40+48
PVT STA. 40+92
PVI STA. 41+20
PVC STA. 41+04
PVT STA. 41+48
PVI STA. 41+76
PVC STA. 41+60
PVT STA. 42+04
PVI STA. 42+32
PVC STA. 42+16
PVT STA. 42+60
PVI STA. 42+88
PVC STA. 42+72
PVT STA. 43+16
PVI STA. 43+44
PVC STA. 43+28
PVT STA. 43+72
PVI STA. 44+00
PVC STA. 43+84
PVT STA. 44+28
PVI STA. 44+56
PVC STA. 44+40
PVT STA. 44+84
PVI STA. 45+12
PVC STA. 44+96
PVT STA. 45+40
PVI STA. 45+68
PVC STA. 45+52
PVT STA. 45+96
PVI STA. 46+24
PVC STA. 46+08
PVT STA. 46+52
PVI STA. 46+80
PVC STA. 46+64
PVT STA. 47+08
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PVC STA. 47+20
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PVI STA. 48+48
PVC STA. 48+32
PVT STA. 48+76
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PVC STA. 48+88
PVT STA. 49+32
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PVC STA. 51+12
PVT STA. 51+56
PVI STA. 51+84
PVC STA. 51+68
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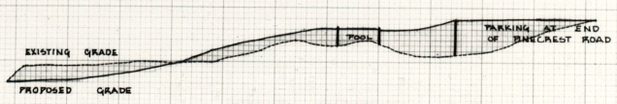
AVERAGE END AREA METHOD:
CUBIC YARDS

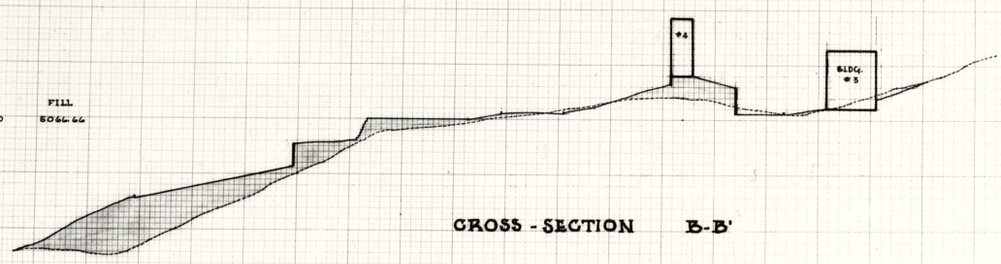
	CUT	FILL
A - O	75.30 C.Y.	318.51 C.Y.



CROSS - SECTION A-A'

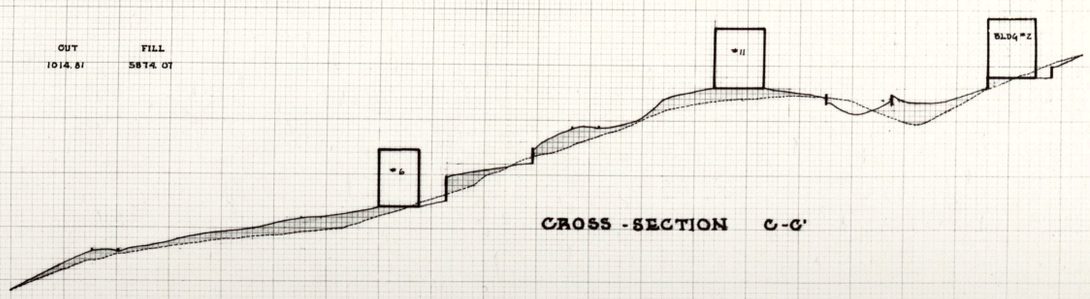
100' STATIONS

	CUT	FILL
A - B	607.40	5066.66



CROSS - SECTION B-B'

	CUT	FILL
B - C	1014.81	5874.01



CROSS - SECTION C-C'

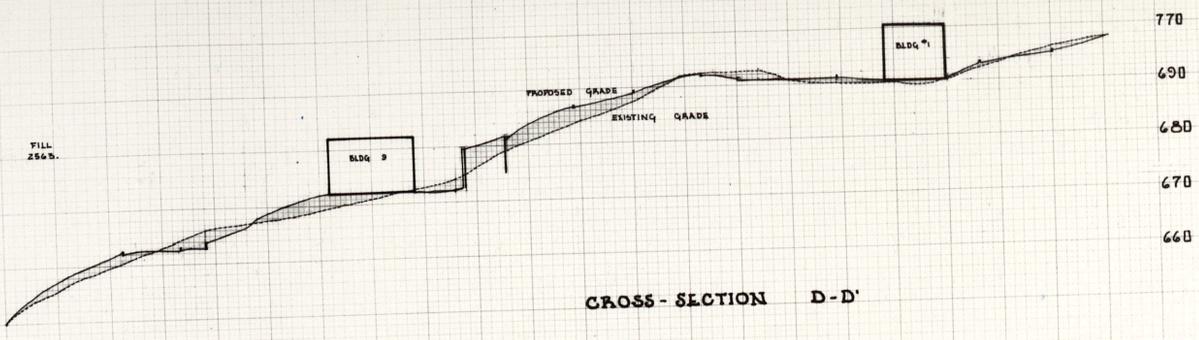
CROSS-SECTIONS FOR CUT & FILL COMPUTATIONS

SCALE: HORIZONTAL 1" = 40'-0"
VERTICAL 1" = 10'-0"

SHEET 10 OF 20

AVERAGE END AREA METHOD
CUBIC YARDS

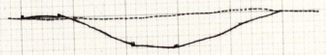
	CUT	FILL
C - D	1518.51	2565.



CROSS - SECTION D-D'

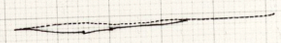
100' STATIONS

	CUT.	FILL.
D - E	1777.77 C.Y.	1785.18 C.Y.



CROSS - SECTION E-E'

	CUT	FILL
E - F	1525.92 C.Y.	14.80 C.Y.
F	34.56 C.Y.	



CROSS - SECTION F-F'

TOTALS

CUT	FILL
6,554.27	15,622.22 CU. YD.
	- 6,554.27 CU. YD. CUT
	9,267.95 CU. YD.
	1,562.22 10% FILL CU. YD.
	10,830.17 CU. YD. CUT NEEDED

CROSS-SECTIONS FOR CUT & FILL COMPUTATIONS

SCALE: HORIZONTAL 1" = 40'-0"
VERTICAL 1" = 10'-0"

SHEET 11 OF 20

KEY

SYMBOL	
●	DROP-INLET, DI
●	CATCH-BASIN MANHOLE, CB-MH
⌒	HEADWALL
———	DRAIN PIPE

NOTES

ALL AREAS DRAIN TO AN EXISTING DRAINAGE CHANNEL ALONG THE NORTH - NORTHEAST BOUNDARY OF THE PROPERTY IN THE 30' R.O.W. THIS DRAINAGE CHANNEL CONTINUES TO THE LAKES ON THE ADJACENT PROPERTY OF C.C. WILLIAMS.

DRAIN PIPE WILL BE PLACED AROUND EACH BUILDING'S FOUNDATION.

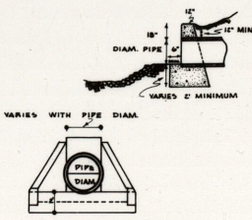
FOR DETAILS OF THE DI AND CB-MH SEE SHEET 17.

PIPE TO BE USED - VITRIFIED CLAY PIPE. TO BE LAID ACCORDING TO A.S.T.M. SPECIFICATIONS.

QUANTITIES OF DRAINAGE FACILITIES

PIPES:	SIZE	LENGTH
	8"	925'
	10"	695'
	12"	432'
	16"	50'

STRUCTURE	QUANTITY
DI	7
CB-MH	3
CB	21
MH	1
TOTAL	32



SECTION - HEADWALL

- TO BE CARRIED DOWN TO ORIGINAL GRADE - FOR GOOD BEARING AND FROST PROTECTION.

ELEVATION - HEADWALL

DRAINAGE COMPUTATIONS

LINE	TYPE	PIPE LENGTH	PIPE SLOPE	PIPE DIAMETER	TOP ELEV.	INVERT ELEV.
A - 1	DI				694.5	681.5
1-2	CB	35	1 ¾	8"	694.1	693.15
2 - DITCH		110	1 %	8"		690.
B - 1	DI			8"	695.	693.54
1-2	CB	45	11 ¾	8"	688.88	683.59
2-3	CB	7	11.7	8"	688.65	687.98
3-4	CB	100	3 %	8"	684.98	684.46
4-5	CB	80	8.1 %	10"	678.	671.
5-6	MH	50	20 %	10"	673.5	662.5
6 -	CB			8"	670.	662.5
6-7	CB	25	4 %	10"	673.	670.
7-8	MH	50	21 ¼	12"	673.5	662.0
8-9	CB	110	12 %	12"	678.5	666.5
9 - DITCH		110	1.4 %	12"		664.
C - 1	CB				688.	683.5
1-2	CB	80	10.6 %	8"	684.	677.0
2-3	CB	100	8 %	8"	672.	668.0
3-4	CB	80	8.1 %	8"	668.	662.
4-5	CB	50	8 %	8"	663.5	659.5
5-6	DI	15	8 %	10"	663.	660.
6-7	CB	50	6.4 %	12"	661.	657.
7 - DITCH		65	1.4 %	12"		656.

LINE	TYPE	PIPE LENGTH	PIPE SLOPE	PIPE DIAMETER	TOP ELEV.	INVERT ELEV.
D - 1	DI			8"	677.	675.0
1-2	CB	50	4 %	8"	676.	673.0
2-3	CB	30	27 %	8"	668.	667.
3-5	CB-MH	110	10 %	10"	695.	685.54
4	DI			8"	661.5	660.5
4-5	CB-MH	50	1 %	8"	695.	690.
5-6	CB	55	13 %	12"	693.	692.8
6-9	CB-MH	25	4 %	12"	693.4	693.
7	CB			8"	695.	694.
7-8	CB	45	3 %	8"	695.	692.5
8-9	CB-MH	75	6 %	10"	693.5	693.5
9 - DITCH		50	10 %	14"		688.
E - 1	CB			8"	675.	670.5
1-2	DI	25	4 %	8"	672.0	670.
2-3	CB-MH	95	3 %	8"	661.5	664.5
3 - DITCH		110	1 %	10"		661.4
F - 1	DI			8"	676.5	668.
1-2	CB	40	7.5 %	10"	661.5	664.5
2 - DITCH		100	4.8 %	10"		660.

NORTH

PREPARED BY:
DANIEL W. DONELIN
V. LATANE NELMS
DATE: JUNE 1963

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA

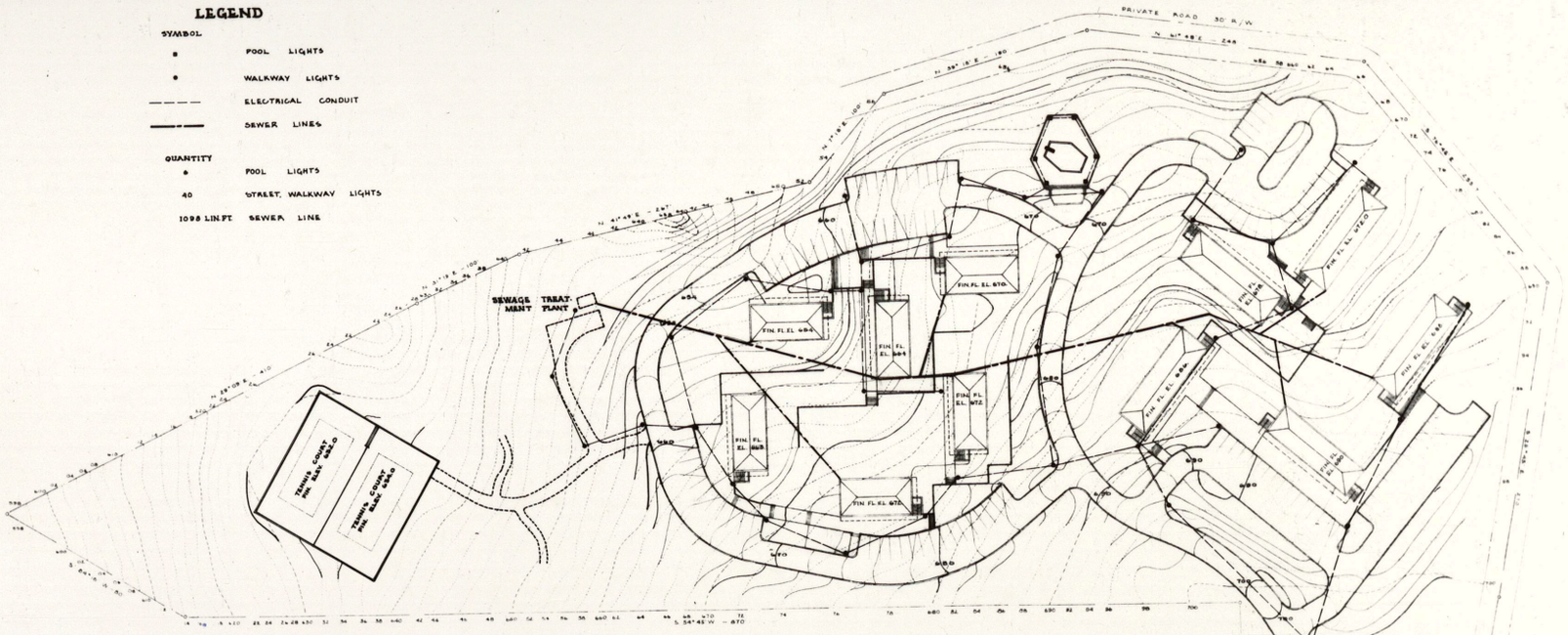
ONE INCH — FORTY FEET

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 18 OF 20
DRAINAGE PLAN

LEGEND

SYMBOL	
●	POOL LIGHTS
•	WALKWAY LIGHTS
————	ELECTRICAL CONDUIT
——•—•——	SEWER LINES

QUANTITY	
6	POOL LIGHTS
40	STREET, WALKWAY LIGHTS
1098 LIN.FT.	SEWER LINE



— D A T A —

LIGHTING

MINIMUM RECOMMENDED FOOTCANDLES FOR WALKWAYS .5.
RECOMMENDED WATTAGE / 50 FT. .25
SPACING 100' - 170'
MOUNTING HEIGHT 15-19' (14' *)
MERCURY LIGHT.

MINIMUM RECOMMENDED FOOTCANDLES FOR POOL 10.
RECOMMENDED WATTAGE / 50 FT. .5
MERCURY LIGHT

SEWAGE TREATMENT PLANT

*DAVCO AEROBIC PLANT -
THE DAVCO PLANT PRODUCES AN EFFLUENT THAT IS STABLE AND IS ACCEPTABLE WITH LITTLE OR NO DILUTION BY THE RECEIVING WATERS. DUE TO THE ABUNDANT AIR SUPPLY, NO ANAEROBIC DIGESTION TAKES PLACE AND AS A RESULT, NO ODORS ARE PRODUCED.

*MODEL NO. 30A8
10,000 GALLONS CAPACITY
LENGTH 14'-6"
WIDTH 9'-0"
TOTAL CHAMBER LENGTH 29'-6 3/4"

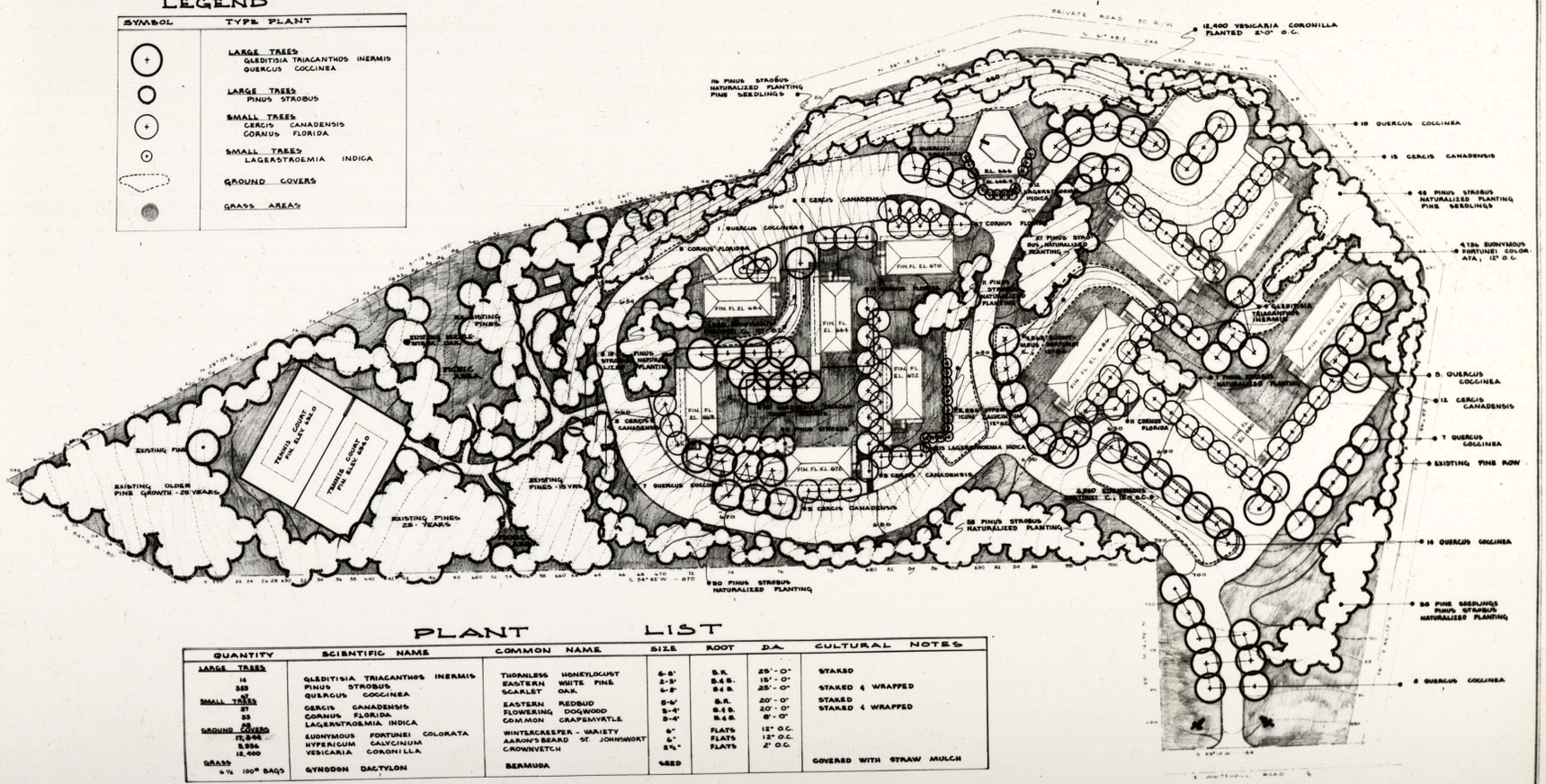
WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA

PREPARED BY:
DANIEL W. DONELIN
V. LATANE NELMS
DATE: JUNE 1963

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 19 OF 20
SERVICE, UTILITIES PLAN

LEGEND

SYMBOL	TYPE PLANT
	LARGE TREES GLEDITSIA TRIACANTHOS INERMIS QUERCUS COCCINEA
	LARGE TREES PINUS STROBUS
	SMALL TREES CERCIS CANADENSIS CORNUS FLORIDA
	SMALL TREES LAGERSTROEMIA INDICA
	GROUND COVERS
	GRASS AREAS



PLANT LIST

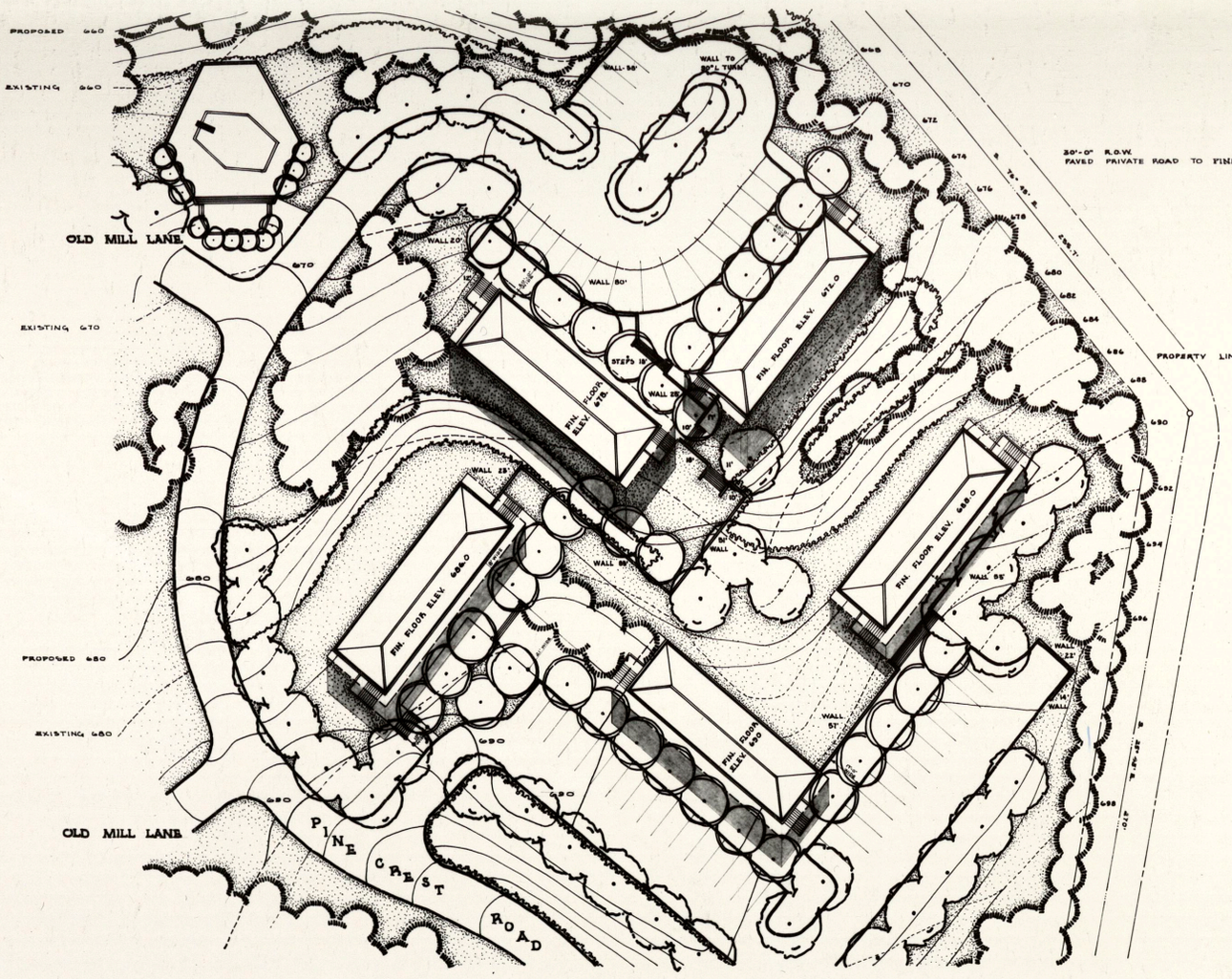
QUANTITY	SCIENTIFIC NAME	COMMON NAME	SIZE	ROOT	D.A.	CULTURAL NOTES
LARGE TREES						
14	GLEDITSIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	6-8'	B.&.	25'-0"	STAKED
369	PINUS STROBUS	EASTERN WHITE PINE	2-3'	B.&B.	15'-0"	
10	QUERCUS COCCINEA	SCARLET OAK	6-8'	B&B.	25'-0"	STAKED & WRAPPED
SMALL TREES						
21	CERCIS CANADENSIS	EASTERN REDBUD	5-6'	B.R.	20'-0"	STAKED
23	CORNUS FLORIDA	FLOWERING DOGWOOD	3-4'	B.&B.	20'-0"	STAKED & WRAPPED
28	LAGERSTROEMIA INDICA	COMMON CRAPEMYRTLE	3-4'	B.&B.	8'-0"	
GROUND COVERS						
17,946	EUONYMOUS FORTUNEI COLORATA	WINTERCREEPER - VARIETY	6"	FLATS	12" O.C.	
8,334	HYPERICUM CALYCINUM	AARON'S BEARD ST. JOHNSWORT	6"	FLATS	12" O.C.	
12,400	VESICARIA CORONILLA	CROWNVETCH	2½"	FLATS	2' O.C.	
GRASS						
6½ 100# BAGS	CYNODON DACTYLON	BERMUDA	SEED			COVERED WITH STRAW MULCH

NORTH

PREPARED BY:
DANIEL W. DONELIN
V. LATANE NELMS
DATE: JUNE 1965

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA
ONE INCH = FORTY FEET

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 14 OF 20
PLANTING PLAN



LEGEND

SYMBOL

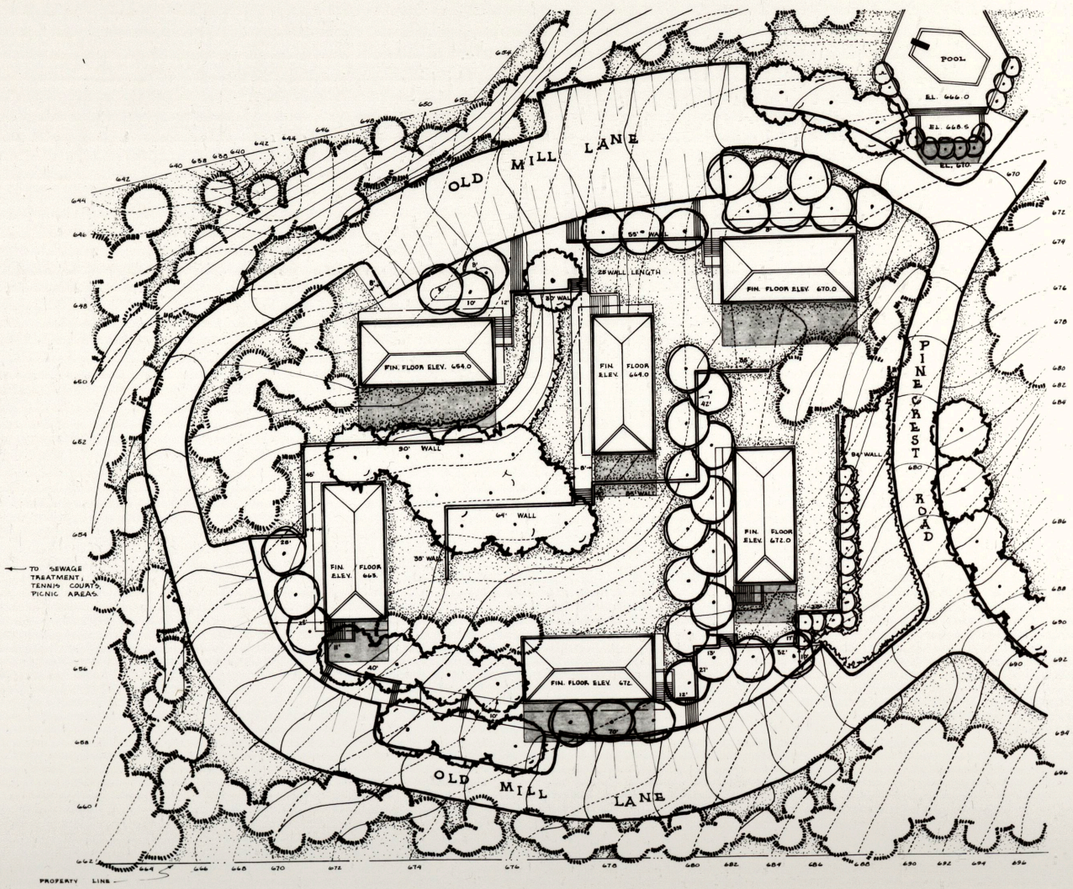
- LARGE TREES — GLEDITSIA TRIACANTHOS INERMIS, QUERCUS COCCINEA
- SMALL TREES — CERCIS CANADENSIS, CORNUS FLORIDA
- LARGE TREES — PINUS STROBUS
- GROUND COVERS
- GRASS AREAS
- PROPOSED CONTOUR

NORTH

PREPARED BY:
DANIEL W. DONELIN
V. LATANE NELMS
DATE: JUNE 1965

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA
ONE INCH = TWENTY FEET

PREPARED FOR C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 15 OF 20
MASTER PLAN DETAIL



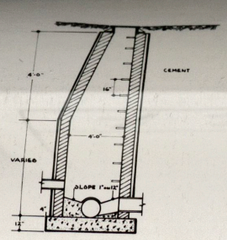
NORTH

PREPARED BY:
DANIEL W. DONELIN
V. LATANE NELMS
DATE: JUNE 1965

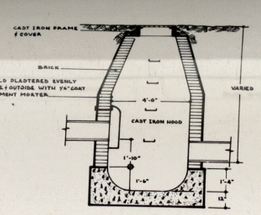
WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA

ONE INCH = TWENTY FEET

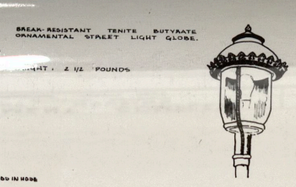
PREPARED FOR: C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 16 OF 20
MASTER PLAN DETAIL



SECTION - MANHOLE
SCALE: 3/8" = 1'-0"



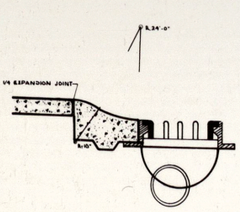
SECTION - CATCH-BASIN
NO SCALE



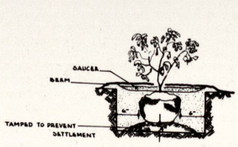
BREAK-RESISTANT TENITE BUTYRATE ORNAMENTAL STREET LIGHT GLOBE.
WEIGHT: 4 1/2 POUNDS

GAS LAMP GLOBE
NO SCALE

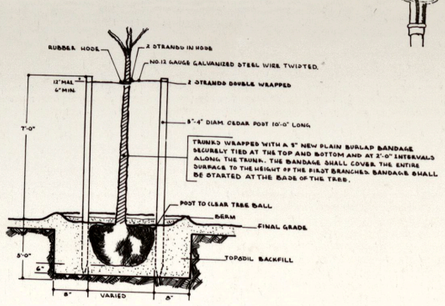
T- 46 VICTORIAN STYLE
B 1/16" O.D. BASE
H 1/4" O.D. TOP
18 1/2" HEIGHT



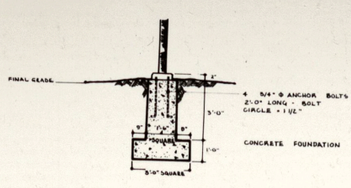
CURB & DROP-INLET SECTION
NO SCALE



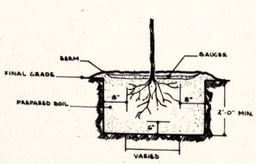
BALLED & BURLAPPED
NO SCALE



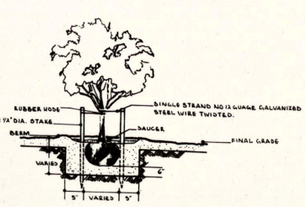
STAKING MAJOR TREES
SCALE: 1/2" = 1'-0"



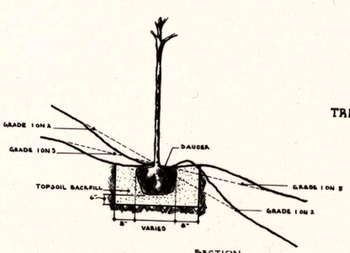
YARD LIGHT STANDARD
SCALE: 1/2" = 1'-0"



BARE-ROOT TREE
NO SCALE



STAKING MINOR TREES
SCALE: 1/2" = 1'-0"



GRADING TREE ON SLOPE
SCALE: 1/2" = 1'-0"

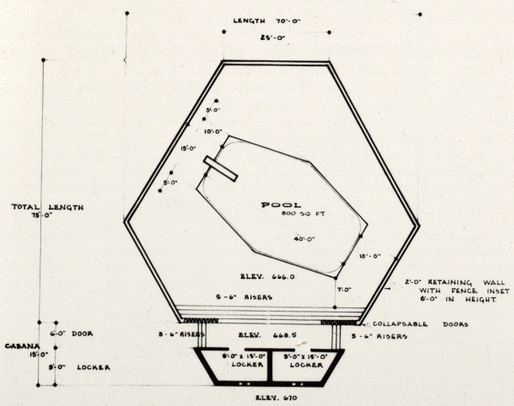


TRIPLE-GUYING FOR TREES
NO SCALE

PREPARED BY:
DANIEL W. DONELIN
V. LATANE NELMS
DATE: JUNE 1965

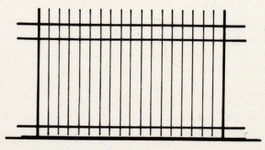
WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA
CONSTRUCTION DRAWINGS
SCALE AS INDICATED

PREPARED FOR: C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 17 OF 20
LANDSCAPE CONSTRUCTION DETAILS



POOL & DECK FACILITIES

SCALE : 1" = 10'-0"

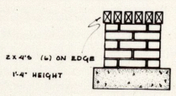


POOL FENCE

SCALE: 1/2" = 1'-0"

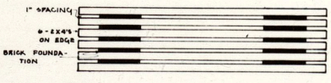
WESTMORELAND TRADITIONAL PICKET FENCE
HEIGHT 72" (6'-0")
POSTS:
LINE, CORNER, TERMINAL 2" SQ. - 18 GA.
RAILS: 1 1/8" SQ. - 16 GA.
PICKETS: 5/8" SQ. - 20 GA.
STANDARD SECTIONS: 72"
DISTANCE BETWEEN TOP & BOTTOM RAIL: 60"

INSET IN RETAINING WALL AROUND DECK



SIDE ELEVATION

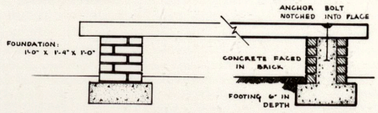
SCALE: 1" = 1'-0"



PLAN VIEW

SCALE: 1" = 1'-0"

BENCH DETAILS

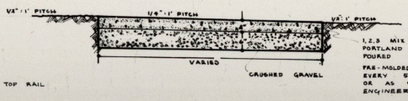


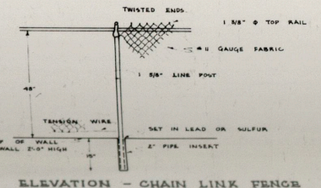
ELEVATION - FRONT - SECTION

SCALE: 1" = 1'-0"

SECTION - SIDEWALK DETAIL

SCALE: 1" = 1'-0"

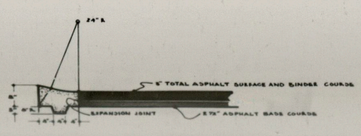




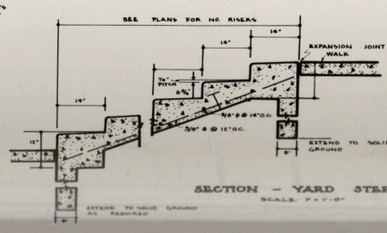
ELEVATION - CHAIN LINK FENCE

FOR TENNIS COURTS

SCALE: 3/4" = 1'-0"



CURB & ROAD DETAIL



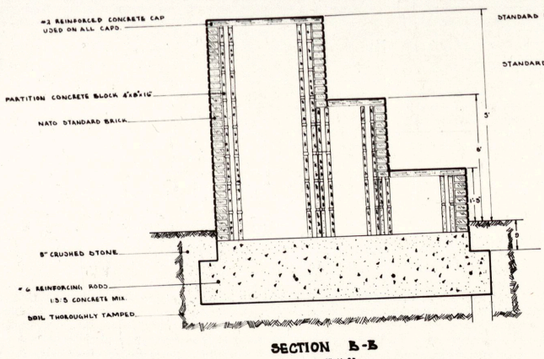
SECTION - YARD STEPS

SCALE: 1" = 1'-0"

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING

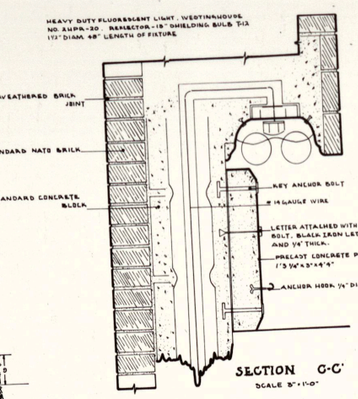
WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING

METHOD OF CONSTRUCTION
FOOTING POURED ON SITE. ALLOW FOOTING TO SET.
ERECT CONCRETE BLOCK AND BRICK STRUCTURE ON FOOTING.
INSTALL WIRING AND LIGHTING FIXTURE DURING CONSTRUCTION OF WALL.
PUT ON CAPPING.
INSTALL CONCRETE PLAQUE.
ATTACH LETTERS.



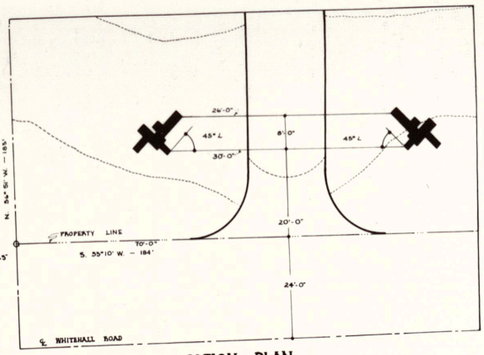
SECTION B-B

SCALE 1"=1'-0"



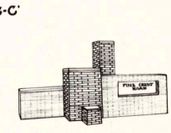
SECTION C-C'

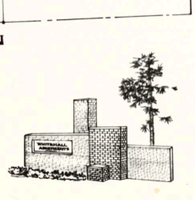
SCALE 3/4"=1'-0"



LOCATION PLAN

SCALE = 1"=10'-0"

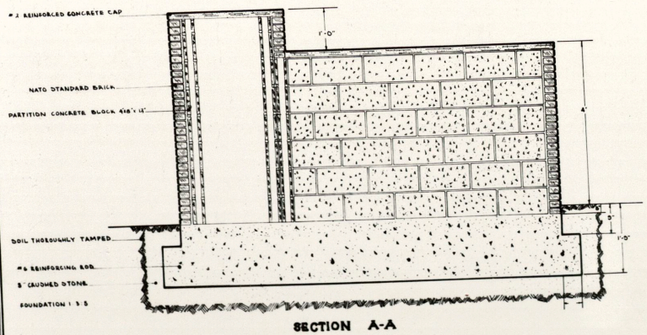




PERSPECTIVE

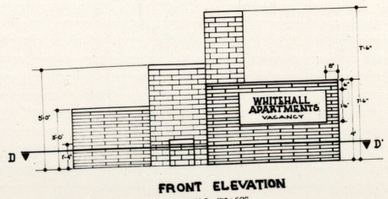
NOTES

NATO STANDARD AND ROMAN BRICK OF MINGLING RED COLOR.
VACANCY AND NO VACANCY SIGNS OF WHITE LETTERS ON BLACK IRON PLAQUE ARE DETACHABLE.
LIGHTING CONTROLLED BY SWITCH AT OFFICE APPARTMENT.
MORTER MIX 1:3.
BAKA BOND IRREGULAR FLEMISH



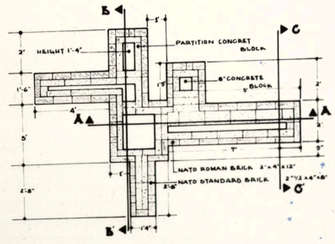
SECTION A-A

SCALE 1"=1'-0"



FRONT ELEVATION

SCALE 3/4" = 1'-0"



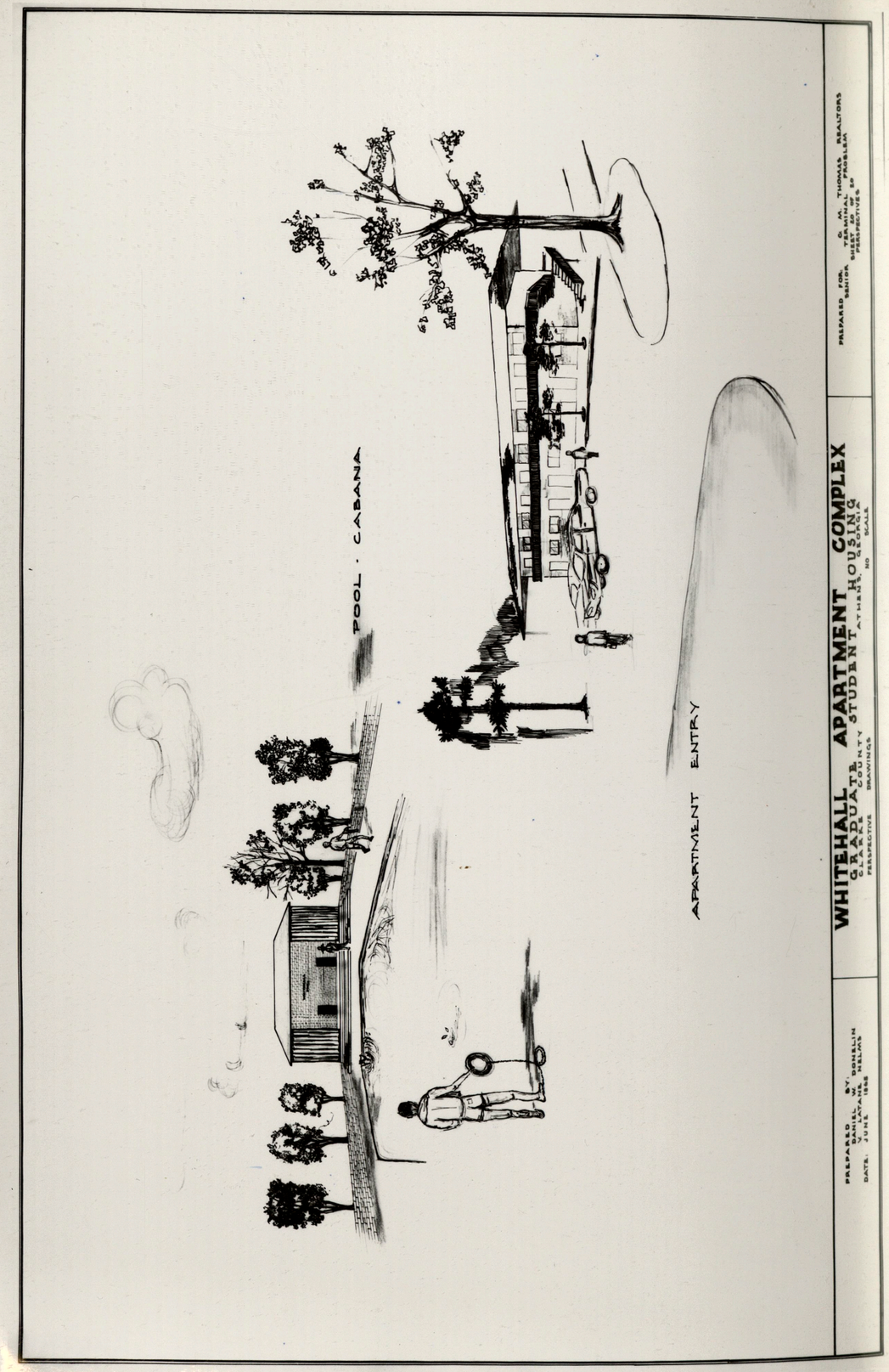
PLAN SECTION D-D'

SCALE 3/4"=1'-0"

PREPARED BY:
DANIEL W. DONELIN
V. LATANE HELMS
DATE: JUNE 1965

WHITEHALL APARTMENT COMPLEX
GRADUATE STUDENT HOUSING
CLARKE COUNTY ATHENS, GEORGIA
CONSTRUCTION DRAWINGS
SCALE AS INDICATED

PREPARED FOR: C. M. THOMAS REALTORS
SENIOR TERMINAL PROBLEM
SHEET 18 OF 20
ENTRANCE GATE



Contents

Specifications

for

Whitehall Apartment Complex

Athens, Georgia

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Information for Bidders		1-5
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Division Pl - 1		1-8
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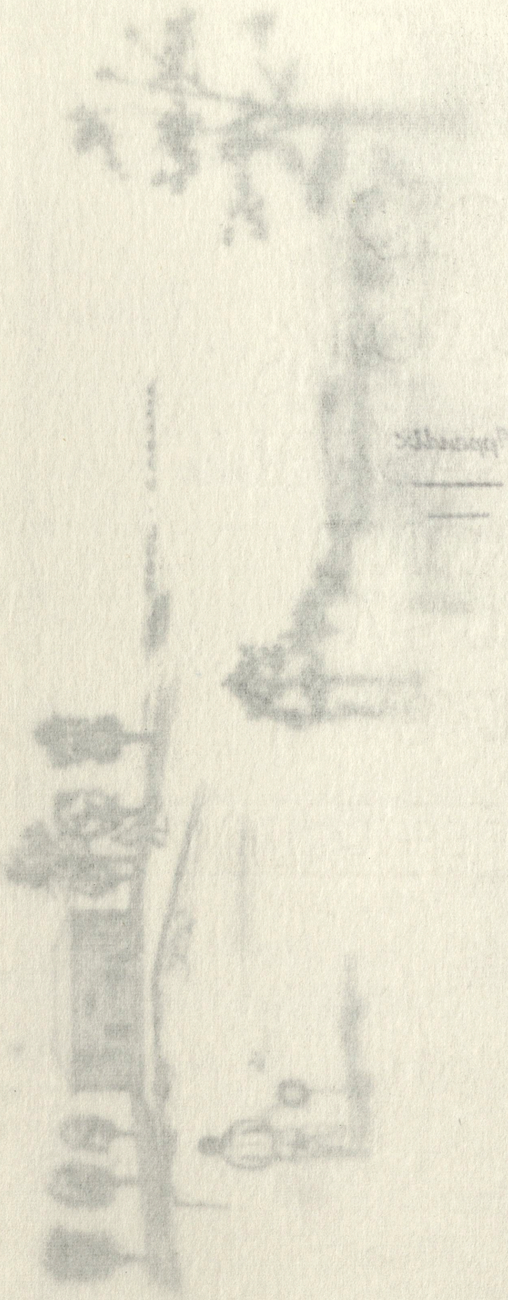

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Division Pt - 2	9-15
Form of Proposal	1-5

Specifications for

Labor and Materials Required and to be Furnished

for

Whitehall Apartment Complex
East Whitehall Road
Athens, Georgia

Date June 1, 1965

Daniel William Donelin
Vivian Latane Nelms
Landscape Architects
University of Georgia
Athens, Georgia

Planting Plan
dated June 1, 1965

Approved by:

Carroll M. Thomas
Realtor
Athens, Georgia

Notice to Bidders

Carroll M. Thomas
Realtor
Athens, Georgia

Notice is hereby given for installation of plant materials at the Whitehall Apartment Complex. The site is located on East Whitehall Road, Athens, Georgia. Sealed bids shall be received by Mr. Carroll M. Thomas, Realtor, on Friday, June 29, 1965 at 3 o'clock Eastern Standard Time, in his office on Baxter Avenue, Athens, Georgia.

The work will comprise the following:

Supplying and Installing All Plant Materials, Establishing Finished Grade and Lawn, Construction of Paved Areas, Benches, Retaining Wall, and Drainage System.

The Contract shall be awarded to the lowest responsible bidder, subject, however, to the discretionary right reserved by the Owner to waive any informalities in, reject any or all proposals and to request new proposals, if, in his opinion the best interest of the Whitehall Apartment Complex shall thereby be promoted.

Each bidder must deposit with his bid, security in an amount not less than five (5%) percentum of the bid, in the form and subject to the conditions provided in the Information to Bidders.

Date June , 1965

Information for Bidders
for the

Planting Work
for

Whitehall Apartment Complex
Athens, Georgia

1. Receipt and Opening of Bids

(a) Mr. Carroll M. Thomas, Realtor, Athens, Georgia, (herein after called the Owner) invites separate sealed bids for the:

Supply and Installation of All Plant Material, Establishing Finished Grade and Lawn, Construction of Paved Areas, Benches, Retaining Wall, and Drainage System.

at the Whitehall Apartment Complex.

(b) Bids shall be received by Mr. Carroll M. Thomas, Realtor, Athens, Georgia on Friday, June 29, 1965 at Three o'clock Eastern Standard Time, in the Thomas Realty Office, Baxter Avenue, Athens, Georgia.

(c) Any bids received after the time and date specified will not be considered. No bids will be withdrawn pending the decision of the Owner.

2. Preparation of Proposal

(a) Proposals must be submitted on the prescribed form, two copies of which are attached hereto, all blanks filled by printing, in ink, in both words and figures. The Contractor shall remove proposal from Specifications, and submit as his bid one copy, and keep the other copy for his records.

(b) All proposals must be submitted in sealed envelopes, bearing on the outside the name of the Bidder, his address, the name of the project, and the Contract bid upon.

(c) Proposals so enclosed shall be delivered to the aforementioned place on or before the hour and the date noted above.

3. Obligation of Bidders

(a) At the time of the opening of bids, each Bidder shall be presumed to have inspected the site and to have examined and to be thoroughly familiar with the drawing. General Conditions, General Requirements of the Contract, and Specifications (including all addenda thereto). The failure of or omission of any Bidder to receive or examine any drawings, form, instruction or document shall in no wise relieve such Bidder from any obligation in respect to his bid.

(b) Each Bidder shall, by careful examination of the site, satisfy himself as to the location of the work, the character, the quality and quantity of the work to be performed and materials to be furnished, the character of equipment and facilities needed preliminary to and during prosecution of the work, the general and local conditions and all other matters which in any way effect the work specified herein.

(c) After the contract has been entered into, no consideration shall be given for any misunderstanding as to work and materials set forth herein and shown on any of the accompanying drawings, details and schedules, it being mutually understood that the tender of a bid carries with it an agreement to this and other obligations set forth in the Contract or Specifications, and further implies a full understanding of the Specifications, Drawings and Details, notes, indications and requirements.

4. Awards

Contract will be awarded to the lowest responsible Bidder,

subject, however, to the discretionary right reserved by the Owner to waive any informalities in or to reject any or all proposals if, in his opinion, the best interests of Whitehall Apartment Complex shall thereby be promoted.

5. Addenda and Interpretation

(a) Bidders are expressly notified that their proposals shall be based upon materials, products, and methods specified. For the purpose of estimate, no deviation from the drawings and specifications will be considered, except as provided. No interpretation of the meaning of the drawings, specifications, or other Contract documents shall be made to any Bidder orally. Every request for such interpretation should be in writing addressed to Mr. Carroll M. Thomas, Realtor, Baxter Avenue, Athens, Georgia, and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental drawings which, if issued, shall be mailed to all prospective Bidders (at the respective addresses furnished for such purposes) not later than three days prior to the date fixed for the opening of bids. Failure of any Bidder to receive any such addends or interpretation shall not relieve any bidder from any obligation, under his bid as submitted.

6. Time for Completion

The Contractor shall state in the bid form the number of days required for him to complete the project.

7. Bid Security

Each bid must be accompanied by the certified check of the Bidder, or by a Bid Bond duly executed by the Bidder as principal, and having as surety thereon a surety company approved by the Owner, in an amount not less than five (5) percentum of the amount of the bid. Such check or Bid Bond shall be returned to all except the successful Bidder within 48 hours after the Owner and the accepted

Bidder have executed the Contract, or if no Contract has been executed within fifteen (15) days after the opening of the bids, upon demands of the Bidder, or any time thereafter, so long as he has not been notified of the acceptance of his bid.

8. Security of Faithful Performance

(a) Simultaneously with the delivery of the executed Contract, the successful Bidder must deliver to the Owner an executed Performance Bond of a corporate surety licensed to do business in the State of Georgia in the amount of one hundred percent (100%) of the accepted bid for the faithful performance of the terms, covenants, and conditions of the Contract and a further separate Labor and Material payment Bond, in the amount of fifty percent (50%) of the accepted bid guaranteeing the prompt payment of all indebtedness incurred by the Contractor or Sub-contractor for supplies, materials, or labor furnished, used or consumed in connection with or in or about the construction of the project, including fuels, lubricants, power, etc. The forms of both Performance Bond and Labor and Material Payment Bond shall be as per form No. 107 (AIA)

(b) The Broker for the Bond and the Surety Company shall be approved by the Owner.

(c) The premium on all bonds shall be paid for by the Contractor.

9. Liquidated Damages for Failure to Enter into Contract

The successful Bidder, upon failure to enter into or refusal to execute the Contract, and the Bond required within eight (8) days after he has received notice of the acceptance of his bid, shall forfeit to the Owner as liquidated damages for such failure or refusal, the security with bond.

10. Insurances

(a) The successful Contractor shall not commence work

or allow his sub-contractors to commence work until the following insurances have been obtained, approved and certificates delivered to the Owner.

(b) Workmans' Compensation Insurance.

(c) Public Liability Insurance shall be furnished in amounts of $100,000/300,000, and Property Damage Insurance in amounts of $50,000.

(d) Before final payment is made, this Contractor will provide an affidavit stating all costs for labor and materials have been paid, and that the Owner is indemified against any lien.

General Conditions

Art. I. Definitions.

(a) The Contract Documents consist of the Agreement, the General Conditions of the Contract, the Drawings, and Specifications, including all modifications thereof incorporated in the documents before their execution. These form the Contract.

(b) The term Subcontractor as employed herein, includes only those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the plans or specifications of this work, but does not include one who merely furnishes material not so worked.

(c) The term "work" of the Contractor or Subcontractor includes labor or materials or both.

Art. II. Execution, Correlation, and Intent of Documents.
The Contract Documents will be signed in duplicate by the Owner and the General Contractor. The Contract is Complementary, and what is called for by anyone will be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment, and transportation necessary for the proper execution of the work. Recognized standards will apply to materials or work with well-known technical or trade meaning.

Art. III. Detail Drawings and Instructions.
If necessary the Architect will furnish additional instructions, by means of drawings or otherwise, for the proper execution of the work. The work will be executed in conformity with the drawings and instructions. The Contractor will do no work without proper drawings and instructions.

Art. IV. Copies Furnished.
Unless otherwise provided in the Contract Documents, the Architect will furnish to the Contractor, free of charge, all copies of drawings and specifications necessary for the execution of the work.

Art. V. Drawings and Specifications on the Work.
The Contractor will keep one copy of drawings and specifications on the work, in good order, available to the Architect.

Art. VI. Ownership of Drawings.
The drawings and specifications furnished by the Architect are his property. They are not to be used on other work and are to be returned to him on request, at the completion of the work.

Art. VII. Materials, Appliances, Employees.
Unless otherwise stipulated, the Contractor will provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary for the execution and completion of the work.

Art. VIII. Surveys, Permits, and Regulations.
The Owner shall furnish all surveys unless otherwise specified. Permits and licenses of a temporary nature necessary for the prosecution of the work will be secured and paid for by the Contractor. Permit, licenses, and easements for permanent structures or permanent changes in existing facilities will be secured and paid for by the Owner, unless otherwise specified.

Art. IX. Protection of Work and Property.
The Contractor will maintain adequate protection of all his work from damage and will protect the Owner's property from injury or loss arising in connection with the Contract. He will make good any such damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. He will adequately protect adjacent property as provided for by law. The Contractor will take all necessary precautions for the safety of employees on the work, and will comply with all applicable provisions of Federal, State, and Municipal safety laws to prevent accidents or injury to person on, about, or adjacent to the premises where the work is being performed. He will erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workmen and the public.

Art. X. Inspection of Work.
The Architect will at all times have access to the work wherever it is in progress, and the Contractor will provide proper facilities for such access and for inspection. Re-examination of questioned work may be ordered by the Architect, and if so ordered the work must be uncovered by the Contractor. The Contractor will pay the cost of re-examination and replacement if such work is not in accordance with the Contract Documents.

Art. XI. Superintendence: Supervision.
The Contractor will keep on his work, during its progress, a competent superintendent, satisfactory to the Architect. The Contractor will give efficient supervision to the work, using his best skill and attention. He will carefully study and compare all drawings, specifications and will at once report to the Architect any error, inconsistency, or omission which he may discover, but he will not be held responsible for their existence or discovery.

Art. XII. Changes in the Work.
The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to, or deducting from the work, the Contract sum being adjusted accordingly. All such work will be executed under the conditions of the original Contract. In giving instructions, the Architect will have authority to make minor changes in the work not involving extra cost. The value of any extra work or change will be determined in one of the following ways:
(a) By estimate and acceptance in a lump sum.
(b) By unit prices named in the contract or subsequently agreed upon.
(c) By cost and percentage or by cost and fixed fee.

Art. XIII. Claims for Extra Cost.
If the Contractor claims that any instructions by drawings or otherwise involve extra cost under this contract, he will give the Architect written notice thereof within a reasonable time after the receipt of such instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property, and the procedure will then be as provided for changes in the work.

Art. XIV. Correction of Work Before Final Payment.
If the Contractor does not remove fromthe premises all work condemned by the Architect as failing to conform to the Contract within a reasonable time, fixed by written notice, the Owner may remove it and may store the material at the expense of the Contractor. If the Contractor does not pay the expenses of such removal within ten days' time thereafter, the Owner may, upon ten days' notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the cost and expenses that should have been borne by the Contractor.

Art. XV. Correction of Work after Final Payment.
Neither the final certificate nor payment nor any provision in the Contract Documents will relieve the Contractor of responsibility for faulty materials or workmanship, and, unless otherwise specified, he will remedy any defects due thereto, and pay for damage to other work resulting therefrom, which will appear within a period of one year from the date of substantial completion. The Owner will give notice of observed defects with reasonable promptness. All questions arising under this article will be decided by the Architect subject to arbitration.

Art. XVI. The Owner's Right to Do Work.
If the Contractor should neglect to prosecute the work properly or fail to perform any provisions of this contract, the Owner, after three days' written notice to the Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor, provided, however, that the Architect will approve both such action and the amount charged to the Contractor.

XVII. Owner's Right to Terminate Contract.
If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances,

or the instructions of the Architect, or otherwise be guilty of a substantial violation of any provision of the contract, then the Owner, upon the certificate of the Architect that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven days' written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method he may deem expedient. In such case the Contractor will not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work including compensation for additional managerial and administrative services, such excess will be paid to the Contractor. If such expenses shall exceed such unpaid balance, the Contractor will pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, will be certified by the Architect.

Art. XVIII. Contractor's Right to Stop Work or Terminate Contract.

If the work should be stopped under an order of any court, or other authority, for a period of three months, through no act or fault of the Contractor or of anyone employed by him, or if the Architect should fail to issue any certificate for payment within seven days after it is due, or if the Owner should fail to pay to the Contractor within seven days after its maturity and presentation, any sum certified by the Architect or awarded by arbitrators, then the Contractor may, upon seven days' written notice to the Owner and the Architect, stop work or terminate this contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

Art. XIX. Applications for Payment.

The Contractor will submit to the Architect an application for each payment, and, if required, receipts or other vouchers, showing his payments for materials and labor,

including payments to subcontractors as required by article XXXI.

If payments are made on valuation of work done, such application will be submitted at least ten days before each payment falls due, and, if required, the Contractor will, before the first application, submit to the Architect a schedule of values of the various parts of the work, including quantities, aggregating the total sum of the divided so as to facilitate payments to subcontractors in accordance with article XXXI (e), made out in such form as the Architect and the Contractor may agree upon, and, if required, supported by such evidence as to its correctness as the Architect may direct. This schedule, when approved by the Architect, will be used as a basis for certificates of payment, unless it be found to be in error. In applying for payments, the Contractor will submit a statement based upon this schedule, and, if required, itemized in such form and supported by such evidence as the Architect may direct, showing his right to the payment claimed.

If payments are made on account of materials delivered and suitably stored at the site, but not incorporated in the work, they will, if required by the Architect, be conditional upon submission by the Contract of bills of sale or such other procedure as will establish the Owner's title to such material or otherwise adequately protect the Owner's interest.

Art. XX. Certificates of Payments.

If the Contractor has made application as above, the Architect will, not later than the date when each payment falls due, issue to the Contractor a certificate for such amount as he decides to be properly due, or state in writing his reasons for withholding a certificate.

No certificate issued nor payment made to the Contractor, nor partial or entire use or occupancy of the work by the Owner, will be an acceptance of any work or materials not in accordance with this contract. The making and acceptance of the final payment will constitute a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work appearing after final payment or from requirement of the specifications, and of all claims by the Contractor, except those previously made and still unsettled.

Should the Owner fail to pay the sum named in any certificate of the Architect or in any award by arbitration, upon demand when due, the Contractor will receive, in addition to the sum named in the certificate, interest thereon at the legal rate in force at the place of building.

Art. XXI. Payments Withheld.
The Architect may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect the Owner from loss on account of:

(a) Defective work not remedied.
(b) Claims filed or reasonable evidence indicating probable filing of Claims.
(c) Failure of the Contractor to make payments properly to subcontractors or for material or labor.
(d) A reasonable doubt that the contract can be completed for the balance then unpaid.
(e) Damage to another Contractor.

When the above grounds are removed, payment will be made for amounts withheld because of them.

Art. XXII. Contractor's Liability Insurance.
The Contractor will maintain such insurance as will protect him from claims under workmen's compensation acts and from claims for damages because of bodily injury, including death, which may arise from and during operations under this Contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. This insurance will be written for not less than any limits of liability specified as part of this contract.

Art. XXIII. Owner's Liability Insurance.
The Owner will be responsible for and at his option may maintain such insurance as will protect him from his contingent liability to others for damages because of bodily injury, including death, which may arise from operations under this contract, and any other liability for damages which the Contractor is required to insure under any provision of this contract.

such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and will be adjusted by agreement or arbitration.
The Contractor is relieved of responsibility for damages to the work due to causes beyond the control of and without fault or negligence of the Contractor.

Art. XXIII. Liens.
Neither the final payment nor any part of the retained percentage will become due until the Contractor, if required, will deliver to the Owner a complete release of all liens arising out of this Contract, or receipts in full lien thereof, and, if required in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the Contractor may, if any subcontractor refuses to finish a release or receipt in full, furnish a bond satisfactory to the Owner, to indemnify him against any lien. If any lien remain unsatisfied after all payments are made, the Contractor will refund to the Owner all money that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

Art. XXIV. Assignment.
Neither party to the Contract will assign the Contract or sublet it as a whole without the written consent of the other, nor will the Contractor assign any money due or to become due to him hereunder, without the previous written consent of the Owner.

Art. XXV. Mutual Responsibility of Contractors.
Should the Contractor cause damage to any separate contractor on the work the Contractor agrees, to settle with such contractor by agreement or arbitration, if he will so settle. If such separate contractors sue the Owner on account of any damage alleged to have been so sustained, the Owner will notify the Contractor, who will defend such proceedings at the Owner's expense, and, if any judgment against the Owner arise therefrom, the Contractor will pay or satisfy it and pay all costs incurred by the Owner.

such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and will be adjusted by agreement or arbitration.
The Contractor is relieved of responsibility for damages to the work due to causes beyond the control of and without fault or negligence of the Contractor.

Art. XXVII. Liens.
Neither the final payment nor any part of the retained percentage will become due until the Contractor, if required, will deliver to the Owner a complete release of all liens arising out of this Contract, or receipts in full lien thereof, and, if required in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the Contractor may, if any subcontractor refuses to finish a release or receipt in full, furnish a bond satisfactory to the Owner, to indemnify him against any lien. If any lien remain unsatisfied after all payments are made, the Contractor will refund to the Owner all money that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

Art. XXVIII. Assignment.
Neither party to the Contract will assign the Contract or sublet it as a whole without the written consent of the other, nor will the Contractor assign any money due or to become due to him hereunder, without the previous written consent of the Owner.

Art. XXIX. Mutual Responsibility of Contractors.
Should the Contractor cause damage to any separate contractor on the work the Contractor agrees, to settle with such contractor by agreement or arbitration, if he will so settle. If such separate contractors sue the Owner on account of any damage alleged to have been so sustained, the Owner will notify the Contractor, who will defend such proceedings at the Owner's expense, and, if any judgment against the Owner arise therefrom, the Contractor will pay or satisfy it and pay all costs incurred by the Owner.

Art. XXX. Separate Contracts.
The Owner reserves the right to let other contracts in connection with this work. The Contractor will afford other contractors reasonable opportunity for introduction and storage of their materials and the execution of their work, and will properly connect and coordinate his work with theirs.

Art. XXXI. Subcontractors.
The Contractor will as soon as practicable after the execution of the contract, notify the Architect in writing of the names of subcontractors proposed for the principal parts of the work and for such others as the Architect may direct and will not employ any that the Architect may within a reasonable time object to as incompetent or unfit.
If the Contractor has submitted before execution of the contract a list of subcontractors and the change of any name on such a list is required in writing by the Owner after such execution, the contract price will be increased or diminished by the difference in cost occasioned by such changes.
The Architect will, on request, furnish to any subcontractor, wherever practicable, evidence of the amounts certified on his account.
The Contractor agrees that he is as fully responsible to the Owner for the acts of his subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.
Nothing contained in the contract document will create any contractual reaction between any subcontractor and the Owner.

Art. XXXII. Relations of Contractor and Subcontractor.
The Contractor agrees to bind every Subcontractor and every Subcontractor agrees to be bound by the terms of the Agreement, the General Conditions, the Drawings, and Specifications as far as applicable to his work, including the following provisions of this article.
The Subcontractor agrees—
(a) To be bound to the Contractor by the terms of the Agreement, General Conditions, Drawings, and Specifications, and to assume toward him all the obligations and responsibilities that he assumes toward the Owner.
(b) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Art. XIX of the General Conditions.

(c) To make claims for extras to the Contractor in the manner provided in the General Conditions for like claims by the Contractor upon the Owner, except that the time for making claims for extra cost is one week.

The Contractor agrees--

(d) To be bound to the Subcontractor by all the obligations that the Owner assumes to the Contractor under the Agreement, General Conditions, Drawings, Specifications and by all the provisions thereof affording remedies to the Contractor from the Owner.

(e) To pay the Subcontractor, upon the payment of certificates, if issued under the schedule of values in Art. XIX of the General Conditions, the amount allowed to the Contractor's on account of the Subcontractor's work to the extent of the Subcontractor's interest therein.

(f) To pay the Subcontractor, upon the payment of certificates, if issued otherwise than as in (e), so that at all times his total payments will be as large in proportion to the value of the work done by him as the total amount certified to the Contractor is to the value of the work done by him.

(g) To pay the Subcontractor to such extent as may be provided by the Contract Documents or the sub-contract, if either of these provides for earlier or larger payments than the above.

(h) To pay the Subcontractor on demand for his work or materials as far as executed and fixed in place less the retained percentage, at the time the certificate is issued.

(i) To pay the Subcontractor a just share of any fire insurance money received by him, the Contractor.

(j) To make no demand for liquidated damages or penalty for delay in any sum in excess of such amount as may be specified in the contract.

(k) That no claim for services rendered or materials furnished by the Contractor to the Subcontractor will be valid unless written notice thereof is given by the Contractor to the Subcontractor

will be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first ten days of the calendar month following that in which the claim originated.

(l) To give the Subcontractor an opportunity to be present and to submit evidence in any arbitration involving his rights.

(m) To name as arbitrator as provided for in the General Conditions the person nominated by the Subcontractor, if the sole cause of dispute is the work, materials, rights, or responsibilities of the Subcontractor.

The Contractor and Subcontractor agree--

(n) In the matter of arbitration, their rights and obligations and all procedure will be analogous to those set forth in this contract. Nothing in this article will create any obligation on the part of the Owner to pay or to see to the payment of any sums to any subcontractor.

Art. XXXIII. Architect's Status.

He is the agent of the Owner as provided in the Contract Documents.

The Architect will side neither with the Owner nor with the Contractor, but will use his power under the contract to enforce its faithful performance by both.

Art. XXXIV. Architect's Decisions.

The Architect will, within a reasonable time, make decisions on all claims of the Owner or Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

Art. XXXV. Arbitration.

All disputes, claims, or questions subject to arbitration under this contract will be submitted to arbitration in accordance with the provisions, then obtaining, of the Standard Form of Arbitration Procedure of the American Institute of Architects.

Art. XXXVI. Cash Allowances.

The Contractor will include in the contract sum all allowance named in the Contract Documents and will cause the work so

covered to be done by such contractors and for such sums as the Architect may direct, the contract sum being adjusted in conformity therewith.
The Contractor will not be required to employ for any such work persons against whom he has a reasonable objection.

Art. XXXVII. Use of Premises.
The Contractor will confine his apparatus, the storage of materials, and the operations of his workmen to the limits indicated by law, ordinances, permits, or directions of the Architect and will not unreasonably encumber the premises with his materials.

Art. XXXVIII. Cleaning Up.
The Contractor will dispose of, on the site or as directed by the Architect, all subsoil excavated from his work. All other debris including branches, paper and rubbish resulting from his work will be removed from the site as work proceeds.
All areas will be kept neat and orderly condition at all times.
Prior to final acceptance the Contractor will clean up his work areas to the satisfaction of the Architect.

Division Pl - Planting

Planting Work

Pl 1.1 General

(a) Work under this division is indicated on drawings entitled "Landscape Planting Plan" prepared by Daniel William Donelin and Vivian Latane Nelms, Landscape Architects, Athens, Georgia.

(b) Each Bidder will familiarize himself with the Contract documents and shall visit the site of proposed work to acquaint himself with existing conditions pertinant to the execution of all work described herein.

(c) Should a Bidder find a discrepancy or omission in the Specifications, or should he be in doubt as to the meaning of any portion of them, he shall notify the Architect who shall then instruct all Bidders in the matter by an Addendum.

(d) This Contractor shall protect, and guard against damage to existing work. Any work already completed, that is disturbed or in any way damaged or changed shall be replaced to original condition, or as shown on the drawings.

Pl 1.2 Work Included

(e) The work covered by this Specification consists of furnishing all labor, materials, equipment and appliances necessary for Planting of Major and Minor Plants, as shown on drawings and schedules and as specified herein, including but not limited to the following:

Excavating for all tree, shrub, and ground cover pits and beds.

Furnishing and preparing of topsoil for backfilling of all shrub trees and ground cover pits and beds.

Furnishing and incorporating fertilizer and peat.

Furnishing and planting trees and plants as shown.

Furnishing and spreading topsoil, as needed beyond that furnished on site.

Mulching.

Maintenance inspection.

Replacements of unsatisfactory plant material.

Installation of lawn area.

(b) All labor, materials, and equipment necessary in establishing lawn areas, as specified herein, include but not limited to the following:

Testing soil for content.

Furnishing and incorporating fertilizer and soil conditioner.

Establishing a grade.

Furnishing and installing sprigs.

Watering area as specified in Pt 1.9.

Pl 1.3 Protection of Existing Utilities

(a) The Contractor shall ascertain the location of all electrical cables, utility lines, cesspools, and supply lines.

(b) The Contractor shall be held responsible for any damage to existing utilities incurred during the process of work under this Contract.

Pl 1.4 Inspection.

(a) Plants shall be subject to inspection and approval at place of growth, or upon delivery, for quality, size, variety, and health.

Pl 1.5

(a) Fertilizer for trees, shrubs, and lawn area shall be complete, shall bear manufacturer's guaranteed statement of analysis, and will meet the following minimum requirements:

(Six) 6% Nitrogen

(Twelve) 12% Super Phosphae

(Twelve) 12% Potash

(b) Commercial fertilizer shall be thoroughly incorporated with topsoil and loam planting mixture at the rate of three (3) lbs. per inch caliper of tree (approximately three shovels per tree).

(c) Fertilizer shall be applied on lawn areas at the rates that follow:

(1) Six (6), Twelve (12), Twelve (12) fertilizer shall be applied at the rate of thirty (30) pounds per thousand (1000) square feet.

(2) Ammonium Nitrate shall be applied at the rate of three (3) pounds per thousand (1000) square feet every six (6) weeks during the growing season.

(d) Contractor shall provide weather-proof storage space for fertilizer until its use.

(e) The Contractor shall use a fine mist when watering.

(f) These specifications are based on warm season plantings. Adjustments will be necessary for earlier and later plantings, temperature and rainfall variations.

PL 1.6 Soil Conditioner

(a) Peat moss shall be domestic, incorporated into soil planting mixture to sufficient quantity to provide a friable planting mixture.

(b) Agriculture limestone, dolemetric limestone recommended, shall be incorporated into the fifty soil mixture for lawn area at the rate of fifty(50) pounds per thousand (1000) square feet.

Pt 1.7 TopSoil and Loam

(a) Mixture to be used in plantings shall consist of 50% clean topsoil and 50% clay loam. 50% of clay loam will consist of clay. To this mixture add prescribed amounts of peat moss and fertilizer.

Pt 1.8 Seed Lawn Installation

(a) Cynodon dactylon (Bermuda Grass) shall be installed by using the broadcasting method.

(b) The rate of application shall be One hundred (100) pounds of seed material per acre.

(c) The soil shall be disturbed by discing.

(d) Lime and fertilizer shall be applied and mixed into soil before planting aforementioned.

Pt 1.9 Watering

(a) The contractor shall not allow freshly planted grass to go more than two (2) hours without applying water after planting.

(b) The contractor shall make three (3) light waterings per day at the rate one-eighth (1/8) inch per day.

(c) If soil is dry at planting time the contractor shall apply one-half (½) of water the first day.

(d) After a period of four (4) days the frequency of applications of water may

(b) Topsoil for beds of ericaceous plants shall be cut in half. As the grass gets established the irrigation frequency can again be reduced, but the amount of water per application should be increased.

Pl 1.10 Guarantee of Plant Growth

(a) All plants shall be typical of their species or variety and shall have a normal habit of growth.

(b) All plants and plant material shall be guaranteed by the Planting Contractor to be true to name and size, and in vigorous growing condition. All plant material shall be guaranteed for at least one year after acceptance. Replacements shall be made at the beginning of the first succeeding planting season.

Pl 1.11 Excavation, Handling and Planting Operations

(a) All plants shall be handled so that roots are adequately protected at all times. During shipment they shall be protected by tarpaulin or other suitable covering. All balled and burlapped plants which cannot be planted immediately upon delivery shall be set on the ground and be well protected with soil.

(b) All trees shall be planted as shown on the plan according to the standards of the Georgia State Nurserymen's Association.

(c) No planting shall be done during unfavorable weather conditions.

Pl 1.12 Preparation of Topsoil for Plant Pits and Beds

(a) Topsoil for planting pits and beds, except ericaceous plants shall be prepared by mixing with peat moss in the proportions of one (1) of peat moss to seven (7) of topsoil by volume. The mixture will be thoroughly blended before use.

(b) Topsoil for beds of ericaceous plants shall be prepared by mixing topsoil with peat moss in the proportion of one (1) of peat to five (5) parts topsoil by volume, thoroughly mixed.

Pl 1.13 Mulching

(a) A 2" mulch of peat shall be applied on all planting beds, tree pits and shrub pits after planting.

(b) All evergreens, broadleaved evergreens, ground cover plants and ericaceous material shall be mulched to a depth of 2" with a mixture consisting of 50% leaf mold, and 50% peat moss. A portion of this will be scratched into the top 1½" of soil.

Pl 1.14 Planting Season

(a) Planting of plant materials shall be done during the season or seasons which are normal for such work as determined by weather conditions and by accepted practice in the locality.

(b) At the option of and on responsibility of the Contractor, planting of plant material may be done under unseasonable conditions, without extra compensation, subject to approval as to time or work and methods of operation.

Pl 1.15 Staking, Guying, Wrapping

(a) All trees over 3" caliper shall be guyed by wire guys encased in water hose at the trunk. Guys will be securely staked or anchored to "dead men" or otherwise secured in an approved manner. All wire will be pliable iron of ga. shown on guying sketches.

(b) Stakes for supporting trees shall be of sound wood of uniform size, capable of standing in ground at least two years. They will be at least 2" actual dimension and not less than 8' in length, unless otherwise specified.

(c) Stakes shall be placed a minimum of 12" from the trunk of the tree, taking care to clear the roots. They shall be driven into the ground to the depth shown.

(d) Wrapping material shall be first quality burlap or water-proofed crepe paper not less than 6" or more than 10" in width, and of suitable length.

(e) The trunks of all trees of three inch caliper or greater shall be wrapped, and the material securely tied at top and bottom, and at two foot intervals. Bandaging will start at base, and will cover the entire surface of the trunk to the first branches.

(f) All guying, staking and wrapping shall be done immediately after planting. All plants shall stand plump after guying and staking.

Pl.1.16 Maintenance of Planting Until Acceptance

(a) Areas around trees shall be kept cultivated, free of weeds and grass, and properly watered until acceptance. Replacement will be done as soon as dead material appears.

(b) If any tree, shrub or plant bed settles more than three (3) inches below the established grade, it shall be raised to the proper level, and not merely filled with additional topsoil.

Pt 1.17 Cleaning Up

(a) The Contractor shall dispose of, on the site or as directed by the Architect, all subsoil excavated from his work. All other debris including branches, paper and rubbish resulting from his work shall be removed from the site as work proceeds.

(b) All areas shall be kept in a neat and orderly condition at all times. Prior to final acceptance the Contractor will clean up his work across areas to the satisfaction of the Architect.

Pt 1.18 Inspection for Acceptance

(a) Inspection by the Architect shall be made upon completion of all work, at the notification of the contractor.

(b) Payment shall be made after acceptance by the Architect. Such payment shall not relieve Contractor of responsibility of guarantees, or of conformance with provisions for plant replacement as specified below. (1.19)

Pt 1.19 Guarantee of Warranty

(a) The Contractor warrants that all work executed under this division shall be free from defective plant material or workmanship for a period of one year after Architect's acceptance of the work.

(b) The Contractor shall guarantee to replace all defective plants and workmanship by approved methods and at his own expense whensoever such defects may appear prior to the conclusion of this guarantee.

Pt 1.20 Replacements

(a) Any trees, shrubs or vines not found to be in a healthy growing condition at any time during the period of guarantee, shall be removed from the site and replaced, as soon as weather and seasonal conditions permit, as determined by the Architect.

(b) Plant replacements shall be the same kind and size as specified in the itemized plant list, all replacements shall be furnished, planted, and mulched as specified, at the Contractor's Expense.

(c) The Contractor shall be liable for any damage to property including lawns, sprinkler systems, pavements, curbs, etc. caused by replacing operations.

Pt 1.21 Cooperation

(a) This Contractor shall agree to complete cooperation and coordination with the General Contractor engaged in all adjacent work.

Pt 1.22 Sequence of the Work

(a) The Contractor shall do the work specified in the following order:
(1) Sub. grade (1-2 inches)
(2) Construction work and Planting work
(3) Spread topsoil
(4) Spreading of seed

Division Pl - 2

Construction Work

Pl 2.1 General

(a) Refer to Pl 1.1 under Planing Work for information concerned with general provisions.

Pl 2.2 Work Included

(a) The work covered by this specification consist of furnishing labor and materials, equipment and appliances necessary for establishing finished grade and for construction of paved areas, benches, retaining wall, and drainage system as specified herein, including but not limited to the following:

(1) General excavation of the site.
(2) Grading and establishing base for paved areas.
(3) Furnishing materials used in base.
(4) Furnishing lumber, thread rods, concrete bench supports, steel bench supports, and all other necessary materials for the construction of benches. (If Contractor constructs cast concrete supports, the necessary ingredients shall be furnished by the Contractor.)
(5) Furnishing asphalt for surface course.
(6) Furnishing forms, temperature rods, reinforcement rods, tie rods, concrete bricks and all other materials necessary for the construction of the retaining wall.

(If Contractor constructs forms, the necessary materials shall be furnished by Contractor)

(7) Furnishing drainage tile for drainage system.

(8) Furnishing the necessary materials for the construction of manholes.

Pl 2.3 Concrete

(a) All cement shall be Portland cement and shall be dry and shall be in its original container.

(b) Fine aggregate shall consist of clean washed sand, ninety-five (95) percent which shall pass through a number four (4) seive. Not less than fifty (50) percent shall be retained on a number thirty (30) seive, and not more than five (5) percent shall pass a one hundred (100) mesh seive.

(c) Coarse aggregate shall consist of well graded, uniformly mixed broken stone, crushed gravel, screened gravel, or broken slag.
Coarse aggregate coated with or containing mud, clay, dirt, stone dust, or other objectionable materials shall be washed to the satisfactionof the Landscape Architect.
Coarse aggregate shall consist of a mixture of number one (1) and number (2) size particles, provided that not more than fifty (50) per cent or less than thirty (30) per-cent shall be of number one (1) size and more than seventy (70) percent or less than fifty (50) percent shall be of number two (2) size.

(d) All water used shall be clean filtered drinking water containing no alkalines, acids, vegetable matter or other chemicals objectionable to concrete.

(e) All concrete shall have an ultimate compressive strength of three thousand (3000) pounds per square inch at the end of twenty-eight (28) days.

Pl 2.4 Reinforced Steel

(a) All rods for concrete reinforcement shall be perporned rods, rolled of new billet steel, conforming to the specifications of the American Society for Testing Materials.

Pl 2.5 Masonry Work

(a) All bricks used shall be new, sound and hard, burned throughout, and of uniform size and quality.

(b) Masonry units shall be laid in the best manner, well bonded with the joints and corners true and laid in a full bed of mortar with joints slushed full. Care must be taken during the course of work to keep this work free from injurious strains. After completion of masonry work, all exposed work shall be washed down and left clean and in everyway acceptable to the Owner.

Pl 2.6 Earth Work

(a) The Contractor shall excavate or fill, as the case may be, to grades as shown on the drawings.

(b) Excavation for walks, walls, and footings shall be cut full size as shown on the drawings.

Pl 2.7 Paved Areas

(a) The Contractor shall construct paved areas as shown on the drawings as follows:

(1) The Contractor shall have the responsibility of installing asphalt walks,.

Pl 2.8 Retaining Wall

(a) The Contractor shall construct retaining walls as shown on drawings:

(1) Concrete structures shall be the indicated length as stipulated in Detail Master Plan (6) six inches below finished grade; heights as indicated on Grading Plan.

(2) The concrete used for the construction of the retaining walls shall be mixed in the proportions of one (1) part of Portland cement, three (3) parts sand, and five (5) parts gravel or crushed stone.

(3) Form work shall be constructed as necessary on site under supervision.

(4) Concrete shall be poured in continuous layers, six (6) to eight (8) inches deep.

(5) Number three (3) reinforcing rods, eleven and one half (11½) inches on center shall be wire tied to the tie rods.

(6) Number seven temperature rods shall be laid on top of tie rods and fastened with wire.

Pl 2.9 Bench

(a) The Contractor shall establish benches as follows:

(b) Benches located in sitting areas shall be constructed as follows:

(1) Bench shall be constructed of six (6) two by fours (2x4's) by seven(7) feet.

(2) Bench shall be tied together with three eighths (3/8) inch thread rods.

(3) Bench shall be treated with Ressec Redwood Stain.

(4) Two (2) bench supports shall be located six (6) inches from the end of bench.

(5) Bench supports shall be one foot square of brick set in place, one and one half (1½) inches below finish grade.

(6) Form work plans shall be submitted by contractor and approved by Landscape Architect before being used on the work, no special remuneration shall be made for form work, the cost of such work being included in the price tendered for concrete.

(7) The concrete shall be mixed in the proportions of one (1) part Portland cement, two (2) parts sand and (3) parts gravel or crushed stone.

(8) Number three (3) reinforcement rods shall be placed in bench supports.

(9) After all forms have been removed, all exposed surfaces shall be rubbed with carborundum bricks and clean water only to a uniform color and finish satisfactory to the Landscape Architect.

(10) After the cast standards have been removed from the forms, they shall be cured for a period of at least seven

(7) days before being removed from the original pallet. Curing shall be done in a closed room which can be maintained at an even temperature. Cast standards shall be moistened every four (4) hours during the curing period.

(11) Contractor shall not commence quantity production on the cast bench standards until a finished sample has been approved by Landscape Architect.

Pl 2,6 Manholes

(a) The Contractor shall build manholes of the size called for on the plans, where indicated on the plans or ordered by the Landscape Architect, in accordance with the plans and specifications, and the directions of the Landscape Architect.

(b) The Contractor shall construct manholes as follows:

(1) The concrete shall be mixed in the proportions of one (1) part Portland cement, two (2) parts fine aggregate and four (4) parts coarse aggregate, with the maximum size of stone limited to one (1) inch.

(2) Mortar shall be composed of one (1) part Portland cement and two (2) parts fine aggregate, with not more than five (5) percent of the cement content of hydrated lime or lime putty.

(3) Ladder rungs for manhole shall be constructed of wrought iron and shall be hot-dipped galvanized after bending.

(4) Frames and covers shall be of the type directed by Landscape Architect.

(5) Frames shall be adjusted to the final grades by the use of cement mortar or by brick masonry set in cement mortar.

(6) The Contractor shall furnish materials for and do all incidental work to complete the structure, including the work of setting and adjusting frames and plastering.

No additional payment will be allowed for the aforesaid, but the cost thereof will be deemed to have been incl uded in all the prices bid for all the items, for which prices are named in the contract.

Pursuant to and in compliance with plans and specifications and documents related thereto, the undersigned hereby offers to furnish all labor, materials, supplies, equipment and other facilities and things necessary and proper for or incidental to the completion of the work as required by and in strict accordance with the applicable provisions of the Contract Documents, including the Drawings, the Specifications and all Addenda issued by the Owner prior to the date of the opening of the bids, whether received by the undersigned or not, for the following sum:

_____

_____ Dollars, ($_____)

Time of Completion

If awarded the Contract, the undersigned agrees to complete the work within _____ calendar days from the date of the award of the Contract.

Form of Proposal for the

Planting Work

at

Whitehall Apartment Complex

East Whitehall Road

Athens, Georgia

To:
Mr. Carroll M. Thomas, Realtor
Baxter Avenue
Athens, Georgia

Dear Sir:

Pursuant to and in compliance with plans and specifications and documents related thereto, the undersigned hereby offers to furnish all labor, materials, supplies, equipment and other facilities and things necessary and proper for or incidental to the completion of the work as required by and in strict accordance with the applicable provisions of the Contract Documents, including the Drawings, the Specifications and all Addenda issued by the Owner prior to the date of the opening of the bids, whether received by the undersigned or not, for the following sum:

_____

_____ Dollars, ($_____)

Time of Completion

If awarded the Contract, the undersigned agrees to complete the work within _____ calendar days from the date of the award of the Contract.

Cost Estimate

Daniel Willian Donelin and Vivian Latane Nelms
Landscape Architects
University of Georgia
Athens, Georgia

Project: Whitehall Apartment Complex
Athens, Georgia

Counted By: Daniel Willian Donelin & Vivian Latane Nelms

Checked By: Vivian Latane Nelms & Daniel Willian Donelin

Job Description: To landscape the entire property for the ultimate design of the apartment complex.

Plant Materials:

Quantity	Botanical and Common Name	Size	Unit Price	Total
	Large Trees			
14	*Gleditisia triacanthos inermis* Thornless Honeylocust	6-8'	$2.00	$ 28.00
359	*Pinus strobus* Eastern White Pine	2-3'	1.50	538.50
67	*Quercus coccinea* Scarlet Oak	6-8'	6.00	402.00
	Small Trees			
37	*Cercis canadensis* Eastern Redbud	5-6'	1.25	46.25
33	*Cornus florida* Flowering Dogwood	3-4'	2.75	90.75
25	*Lagerstroemia indica* Common Crapemyrtle	3-4'	4.00	100.00
	Ground Covers			
17,344	*Euonymous fortunei colorata* Wintercreeper variety	6"	50/1000	870.00

3,936	Hypericum calycinum Aaronsbeard St. Johnswort	6"	.25/plant	$984.00
12,400	Vesicara coronilla Crownvetch	2½"	15./1000	186.00
	Grass			
6½	Cynodon dactylon Bermuda (seed)	seed	75./100#	487.50
	Plant Materials Total			$ 3,733.10

Grand Total (Total Bid)	$ 11,701.35

Cost Estimate

Cost Analysis

Wholesale price of plants		$ 3,733.10
Transportation cost		559.97
Special Equipment (Fertilizer, Wire and Hose, Wilt Proof, Gravel, Tree Wrap)		186.66
Soil (Cut, Fill, Top, Peat)		746.62
Labor and Equipment		3,733.10
Contingencies		186.66
Overhead		746.62
Profit		1,829.22
Grand Total (Total Bid)		$ 11,721.95

Cost Estimate

	Cubic Yards	Unit Price	Total
I. Earthwork			
A. Grading			
Rough	12,940.	.50/cu. yd.	$6470.00
Fine	10,325.3	.75/cu. yd.	7743.97
B. Topsoil	3,226.6	3.00/cu. yd.	9679.80
II. Paving Materials			
A. Tanbark	4800 Sq. Ft.	1.00/100Sq. Ft.	48.00
B. Concrete curbs	6960 Lin. Ft.	1.90/Lin. Ft.	13,224.00
C. Concrete walks	25800 Sq. Ft.	.40/Sq. Ft.	10,320.00
D. Asphalt roads	5511 Sq. Yds.	2.60/Sq. Yd.	14,328.60
III. Planting			
Plant Materials Cost Estimate			11,721.95
Sub-Total			$ 73,536.32
Contractor's Profit			22,060.90
Landscape Architect's Fees			5,882.90
Grand Total			$ 101,480.12

* Note: It is therfore concluded that with an average rental scaled to meet the demands of the graduate student, repayment would occur before 25 years.

Economic Analysis

Total number of units on site	86
Total parking	108
Gross density of 11.49 acres	7.4
Net density of 11.03 acres	7.7
Total number units x $6,000 = Cost of buildings	$ 516,000.
Site development cost for parking and landscape development	101,480.12
First cost of project - ownership (assumption)	11,000.
Development of land @ $3,000/acre	33,000.
Design and Admin. cost - 15% of project cost (Assumption)	2,000.
Capital outlay	663,480.12
Breakdown figure	$ 1,065.63
Cost / acre for landscape development	136.30
Cost / unit for landscape development	7,714.88
Total capital cost / unit	
Repayment over 25 years @ 7.00/$1000/mo.	5.40
Monthly cost / unit	
Add:	
Maintenance and repair) Heating and janitor) 15%	.81
Vacancy rate 20%	1.08
General Overhead) Advertising) General Administration) 20%	1.08
Profit 15%	.81
Average Monthly Cost	$ 9.18

* Note: It is therfore concluded that with an average rental scaled to meet the demands of the graduate student, repayment would occur before 25 years.

Acknowledgements

We would like to acknowledge the guidance of the staff of the City Engineers of Athens, Georgia, and the Clarke County Planning Commission.

Bibliography

The Zoning Resolution of the Unincorporated Portions of Clarke County, Ga.

Article XIII Suburban Residential District "R - 15"

Section B. Permitted Uses

11. c. Multiple dwellings; provided that the minimum lot area for a multiple dwelling shall be determined by the provision of 4000 square feet lot area for each dwelling unit, but in no case shall a lot have less than 15,000 square feet. Furthermore, multiple dwellings, other than a studio or efficiency apartment, shall have a minimum floor area of 650 square feet per dwelling unit, and studio and efficiency apartments shall have a minimum floor area of 450 square feet, per dwelling unit.

Section C. Area, Yard and Height Regulations

3. Minimum required front yard	20 feet
4. Minimum required side yards	10 feet
5. Minimum required rear yard	25 feet
6. Maximum building height	2 ½ stories

Not to exceed 35 feet in height.

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