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A thesis Presented for
Degree of Bachelor of Landscape Architecture

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Athens, Georgia

May 1961

CLAYTON COUNTY PARK

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ROBERT R. WILLEY & THOMAS L. WEEKS

1961
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A thesis presented for

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School of Environmental Design
Owens Resource Center
Athens, Georgia

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LIST OF PLATES

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It is our intention in doing this thesis to create a recreation area that will fulfill the needs and desires of the people using the park. We are, in this case, concerned with all the people of Clayton County, and their recreation needs. By incorporating ground forms, various play, and passive areas, we have tried to create the ultimate in this type of Park. We have also tried to provide the benefit of these few people and groups of people who hesitate to venture into such development we have tried to impress upon them that good parks within the community will help to raise the moral, economic and aesthetic standards of the surrounding area. It also avoids costly redevelopment in the future. Taking into consideration the expedient growth of Jonesboro, we believe that our solution meets the needs of those who shall use the park.

LIST OF PLATES

Photographs of site	1
Master Plan	2
Grading and Retaining Plan	3
Park Road Alignment	4
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INTRODUCTION

Open space for play, relaxation and recreation areas in our modern communities has become a very high priced commodity. The reason for this present condition is due to the lack of planning and the short-sightedness of the community and county authorities during the early days of development. Today open space in the community is a matter of secondary consideration when it should, by sheer necessity, be the very first consideration. The American public has just recently awoken to this growing need and citizens are demanding more and better equipped recreation areas. This is true in places where the citizens are made aware of the present conditions. It is our intention in doing this thesis to create a recreation area that will fulfill the needs and desires of the people using the park. We are, in this case, concerned with all the people of Clayton County, and their recreation needs. By incorporating ground forms, various play, and passive areas, we have tried to create the ultimate in this type of Park. Fulton County line be- For the benefit of those few people and groups of people who hesitate to venture into such development we have tried to impress upon them that good parks within the community will help to raise the moral, economic and aesthetic standards of the surrounding area. It also avoids costly redevelopment in the future. Taking into consideration the expedient growth of Jonesboro, we believe that our solution meets the needs of those who shall use the park.

A. Owens Resource Center
 School of Environmental Design
 School Hall
 University of Georgia

INTRODUCTION

modern day, relaxation and recreation areas in our modern communities have become a very high priced commodity. The reason for this condition is due to the lack of planning and the short-sightedness of the community and county authorities during the early years of the community. Today open space in the community is a matter of great importance. The American public has just recently become aware of the present conditions. This is true in places where the growing need and citizens are demanding more and more recreation areas. This is true in places where the need for recreation is doing this to create a recreation area. The needs and desires of the people using the area, in this case, concerned with all the people of the county, and their recreation needs. By incorporating various play, and passive areas, we have tried to provide for the needs of those few people and groups of people who are interested in this type of park. In the past we have tried to impress upon the community that such development will help to raise the standards of the surrounding area, and also avoid costly redevelopment in the future. Taking into consideration the expedient growth of Jonesboro, we believe that the needs of those who shall use the park.

CLAYTON COUNTY, GEORGIA 1859 were Robert

Holliday, clerk superior court; A. J. Hayes, clerk inferior court; Clayton County was formed from parts of Fayette and Henry in 1858. The original Fayette-Henry line was between districts 12, 13 and 5, 6, passing only a few feet behind the present Courthouse and being the east line of the Panhandle section of Clayton County. Clayton County is at present one of the fastest growing counties in Georgia. From 1890 to 1950 its population increased from 11,505 to 22,872; and from 1950 to 1960 increased to 27,500. Its proximity to Atlanta makes it ideal for residential purposes, and hundreds of dwellings have been built in the last five years in the middle and northern sections of the county. due west to the county line between Henry and Fayette, thence down said line to the Spalding County line, thence due west along said line to the middle of Flint River, thence up the stream of the river to the point where Camp Creek empties into Flint River, thence up Camp Creek to the S. W. corner of lot 185 in the 13th district of Henry now Fayette, thence due west to the S. W. corner of lot 187 in the 13th district, thence north to the Fulton County line between lots 5 and 6 of the 13th district to the beginning point. The new county was named for the Honorable Augustin S. Clayton (1783-1839), a judge of the Western Circuit of Georgia, a member of the legislature and a member of Congress. He also is known for establishing the first cotton textile factory in Georgia on the Oconee River near Athens in 1829.

Several branches of county service are situated in Jonesboro. The Clayton County Library serves the entire county through branch

The first officers commissioned on January 13, 1859 were Robert Holliday, clerk superior court; A. J. Hayes, clerk inferior court; James McConnell, ordinary; William Gunter, tax receiver; Jefferson Kirkland, tax collector; B. W. Bonner, surveyor; John K. Landers, coroner and J. H. Waldrof, sheriff.

Clayton County is at present one of the fastest growing counties in Georgia. From 1940 to 1950 its population jumped from 11,665 to 22,872; and from 1950 to 1960 increased to ^{46,365}~~23,329~~. Its proximity to Atlanta makes it ideal for residential purposes, and hundreds of dwellings have been built in the last five years in the middle and northern sections of the county.

This county is also ideal for industrial purposes. It is near Atlanta, situated on two north and south railroads and on a super highway. An active County Chamber of Commerce has been instrumental in securing a countywide water system, which can serve for industrial as well as residential purposes. With the new residents there is also a great labor potential.

While Clayton County is not primarily an agricultural county, there are several peach orchards, truck farms, and cattle farms. Many small creeks and springs provide water for fish ponds and well-watered bottom land for crops. Flint River flows through the northern part of the county and forms the western boundary of the southern part.

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service at Forest Park and loan service in several other sections.
This was established in January, 1941, in cooperation with the
W. P. A. The Library is supported by the County Commission, the
County Board of Education, and the city of Jonesboro. the northeast
Other than Jonesboro, the county seat, there are several thriving
communities in the county. Forest Park has surpassed all in growth.
It, Lake City, Morrow, Mountain View, and Riverdale are incorporated
towns; and Ellenwood and Rex on the east and Lovejoy on the south
bring the total of towns to nine.

County Work Camp, State Highway Main-
tenance Shops, the City Site History Door Factory. All of these
establishments are situated on the County Road. A large earth fill
Land Lots 47 and 48 of the 12th district of Clayton County has
been in possession of the county for the last fifty years.

Situated on the site is the county work camp, county maintenance
barns, State Highway barns, a door factory, and the city dog
pound.

A large earth fill has been started along the northern boundary
of the site and is being used to cover up garbage deposited from
the City of Jonesboro.

Vehicle circulation in the park will be provided
by one main road with service drive roads
leading from it.

W

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Site History

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...and the city dog
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STATEMENT OF PROBLEM

2. Picnic areas with:
 - (a) Fire Places
 - (b) Picnic table and benches

CLAYTON COUNTY PARK

The property for the proposed park area is located in the northeast portion of Jonesboro, in Clayton County Georgia. It embraces three tracts of land which include a proposed High School development on the north, a farm to the east, a Housing project to the south and it is bounded by a County road on the west.

Located upon the site are the County Work Camp, State Highway Maintenance Shops, the City Dog Pound and a Door Factory. All of these establishments are situated on the County Road. A large earth fill is built up along the north boundary.

The Clayton County Commissioners have expressed a desire that the park be developed naturalistically or on informal lines, that it retain as much as possible of the natural plant material, and adhere to the existing topography.

The following facilities are to be included in the design of the park:

1. Vehicular circulation in the park will be provided by one main road with service and picnic roads leading from it.

March 29, 1961

STATEMENT OF PROPOSAL

CLAYTON COUNTY PARK

any for the proposed park area is located in the northeast
 and three. It embraces three
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the County Commissioners have expressed a desire that the
 be on informal lines, that it
 of the natural plant material, and adhere
 in the design of the park:
 in the park will be provided
 with service and picnic roads

2. Picnic areas will include:

- (a) Fire Places
 - (b) Picnic table and benches
 - (c) Trash receptacles
3. Drinking fountains
 4. Parking areas
 5. Two large shelters
 6. Three comfort stations
 7. Group camping area
 8. A three-acre lake, stocked for fishing
 9. Softball, Baseball and Play fields
 10. A temporary pistol range

The Work Camp, Highway Maintenance Shops, Dog Pound and Door Factory
 will be screened off from the park.

There are 1272 acres to be developed. The Door Factory site consists
 of 3 acres.

March 29, 1961

W

These areas will include:

- 1. Picnic areas and benches
- 2. Trash receptacles
- 3. Drinking fountains
- 4. Restrooms
- 5. Large shelters
- 6. Picnic shelters
- 7. Camping areas
- 8. Fishing lake, stocked for fishing
- 9. Baseball and Play fields
- 10. Pistol range
- 11. Dog pound and Deer Factory
- 12. Highway maintenance shops
- 13. Areas to be developed.

ANALYSIS OF THE PROBLEM

The primary consideration in an analysis of the problem is to determine the type of people the park will serve, the age groups into which they will fall, the approximate number of people who will use the park and their specific needs.

There are no other public parks in Clayton County therefore, this park should be designed to accommodate a variety of activities.

There should be play fields for different age groups, set apart from the other areas in order to give a maximum of freedom for the different activities.

Provision should be made for family picnicking and group picnicking. Shelters should be provided in case of unexpected weather conditions.

A camping area to accommodate group and individual campers, located near the lake could be enjoyed by its users.

Comfort stations, trash receptacles and drinking fountains should be conveniently located throughout the park.

The required pistol range must be located with consideration to human safety and correct orientation to sun and prevailing winds. Due to the transecting of the site by the proposed highway, there is not enough acreage to accommodate a nine hole golf course. We recommend that adjoining property be purchased if a golf course is to be constructed in the near future.

Another shelter and picnic site to accommodate group and individual picnickers. Two other picnic areas have been located along the park road with adequate parking within walking distance.

EXPLANATION AND JUSTIFICATION OF SOLUTION

We have presented this problem with specific objectives in mind. It must be functional, attractive and must provide ease of access for vehicle and pedestrian traffic. We will justify our solution from a functional standpoint. This being the only park of its type in the area, it will have to serve a wide range of activities. We have located two softball and one baseball field in a large open area to the west of the park, near the entrance. This will isolate these relatively noisy sports from part of the picnicking, nature and camping areas. The placing of the three fields in one large open area make it a usable field for other sports such as football, soccer and other field sports. Parking, picnic shelter, and picnic sites are provided in this area for groups participating in these sports.

Located centrally in the park is a large nature area with meandering trails. Benches will be located along the trails for those who wish to sit and enjoy the quiet and peacefulness of this area. There is also a trail located along the lake shore which has sitting areas for those who wish to enjoy the lake area.

Another open area to the west of the lake will provide a vista onto the lake for those who drive through the park. Alongside this open area we provided another shelter and picnic sites to accommodate group and individual picnickers. Two other picnic areas have been located along the park road with adequate parking within walking

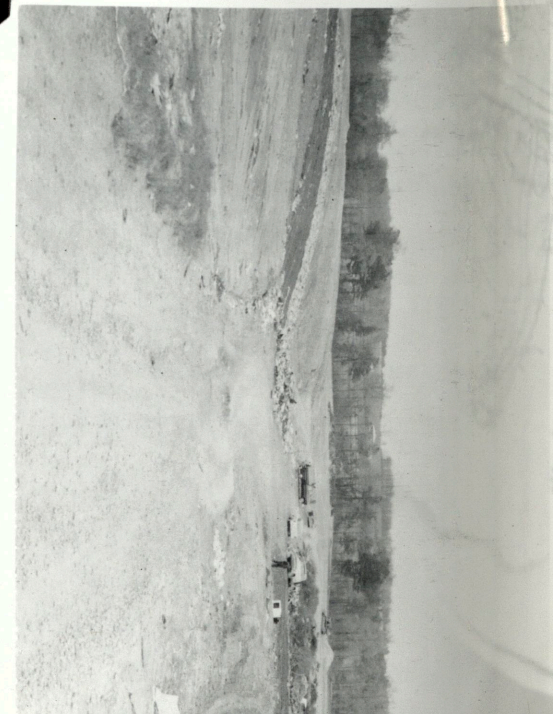
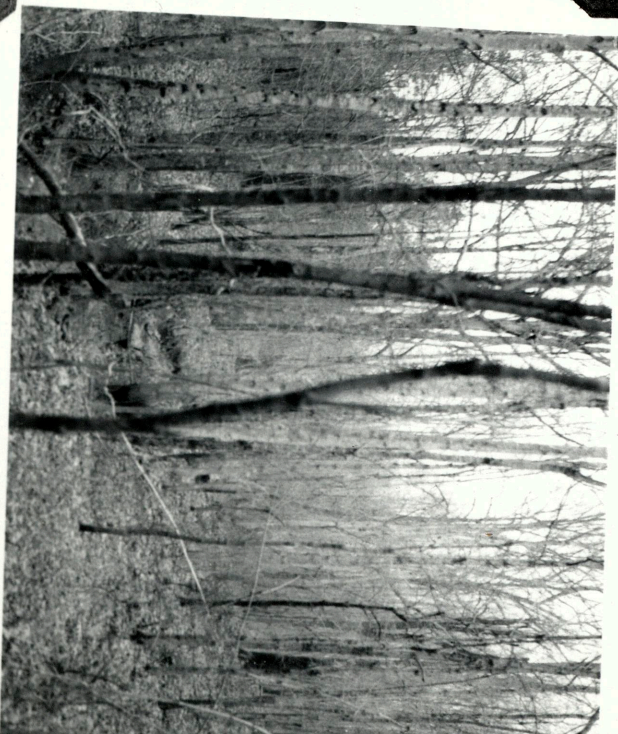
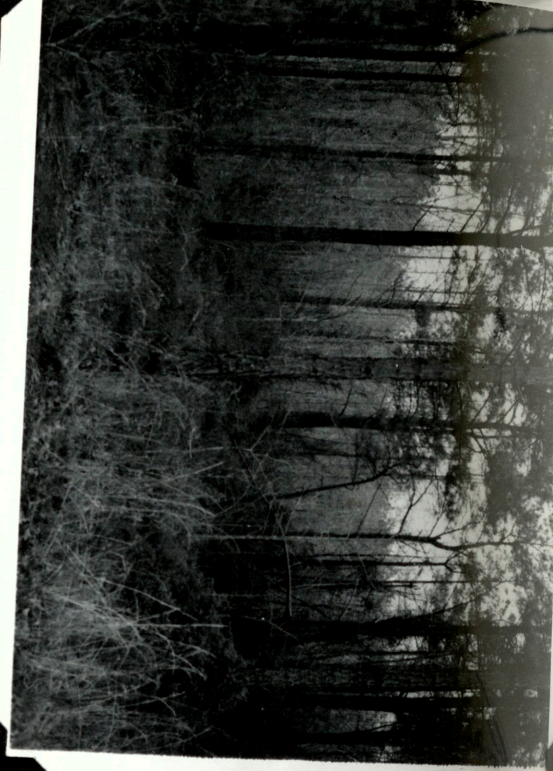
distance to the sites.

Located to the east of the lake will be a walk in the camping area for group or individual campers. A service road across the dam will be barricaded from all but service vehicular traffic and will serve as a walk from the circular parking area to the camp sites.

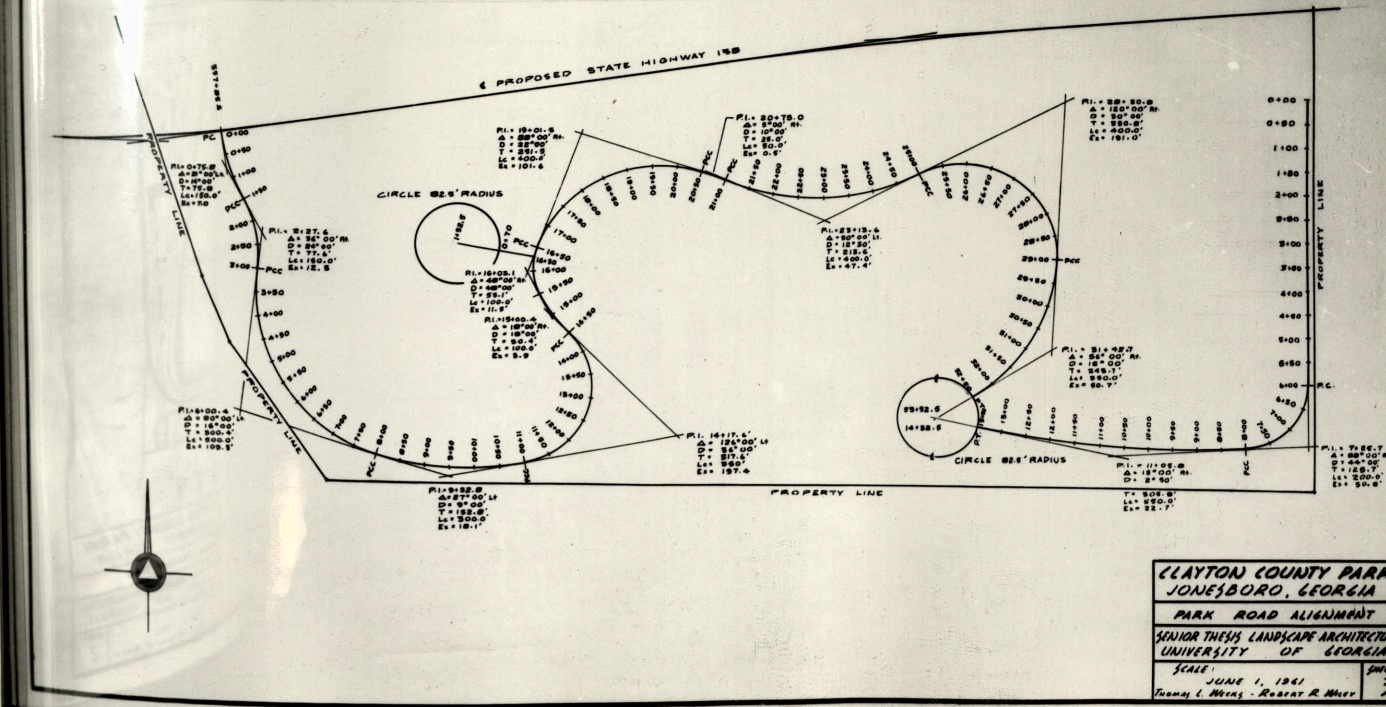
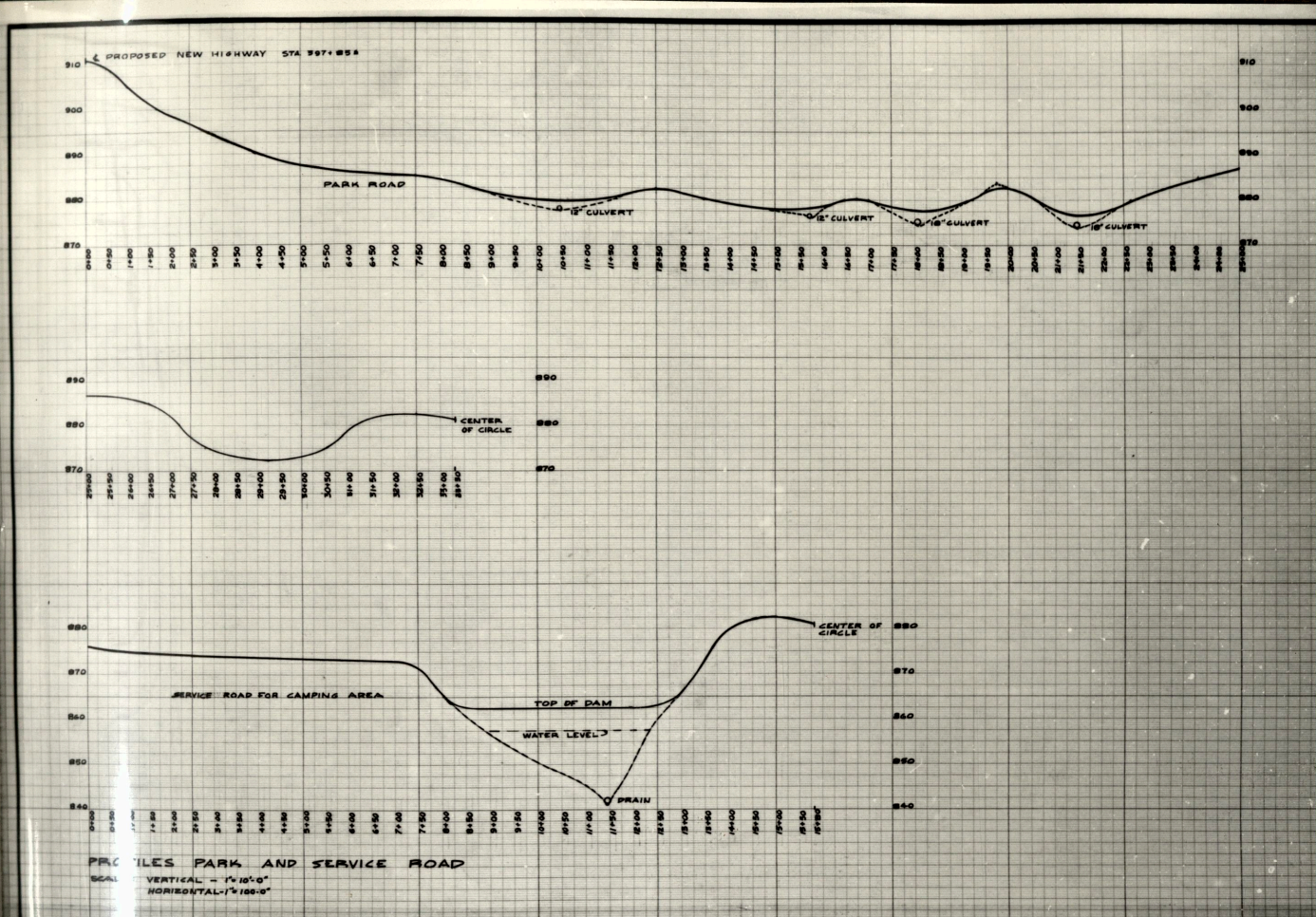
Comfort stations serving a 400 foot radius are provided and these are located to accommodate ten sites during the peak capacity of the park.

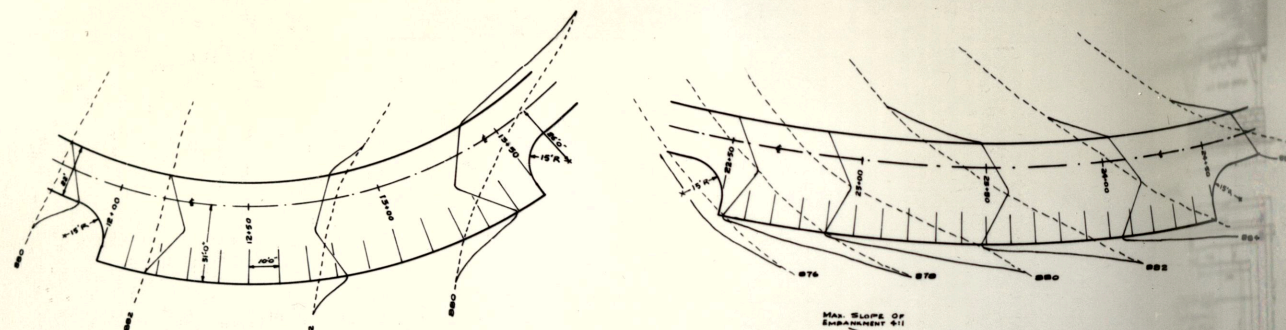
Planting in the form of screens has been placed around the maintenance and work camp area, Door Factory, Dog Pound and Pistol Range areas in order to screen these objectional conditions.

A pistol range is included at the owners request and located in the north west corner of the site and provides maximum safety to its areas and surrounding area.



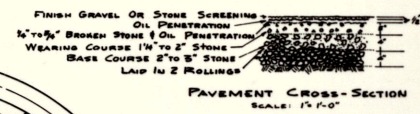
CLAYTON COUNTY PARK
JONESBORO, GEORGIA
MASTER PLAN
SENIOR THESIS LANDSCAPE ARCHITECTURE
UNIVERSITY OF GEORGIA
SCALE
JUNE 1, 1961
THOMAS L. NIXON - ROBERT R. NIXON





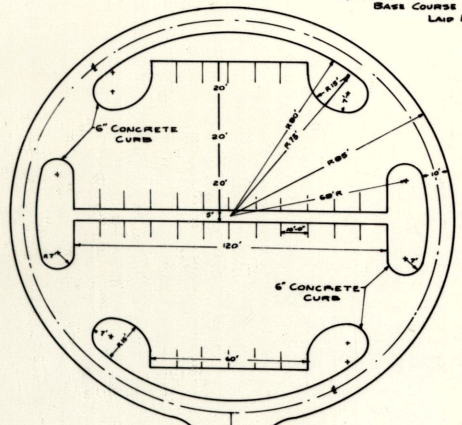
PARKING LOT No. 3
PARKING 15 CARS
SCALE: 1" = 20'-0"

PARKING LOT No. 4
PARKING 20 CARS
SCALE: 1" = 20'-0"

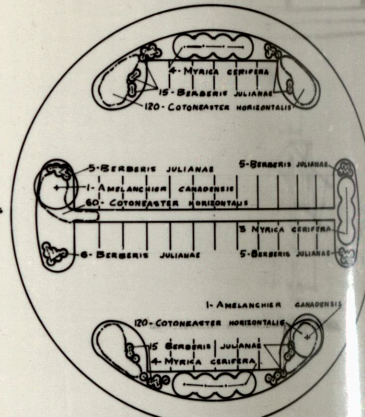


PAVEMENT CROSS-SECTION
SCALE: 1" = 4'-0"

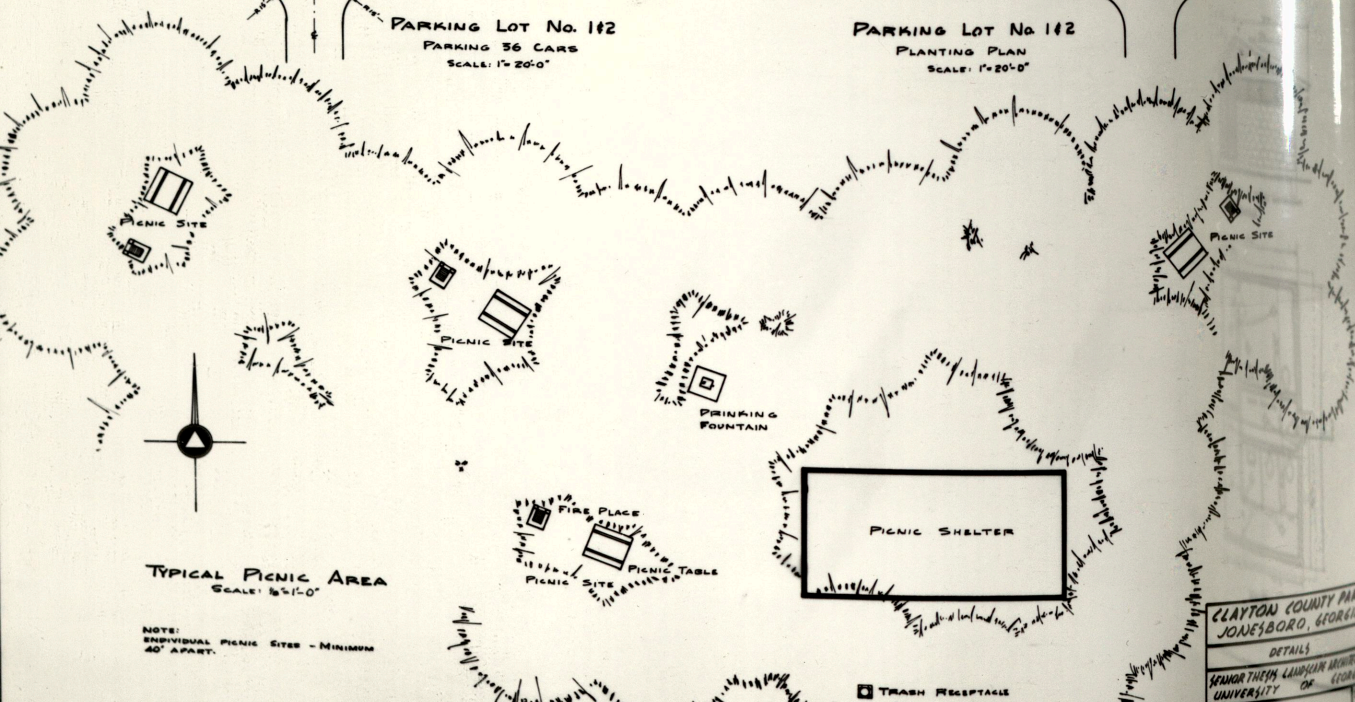
NOTE:
PLANT LIST IS ON PLANTING PLAN



PARKING LOT No. 1#2
PARKING 36 CARS
SCALE: 1" = 20'-0"



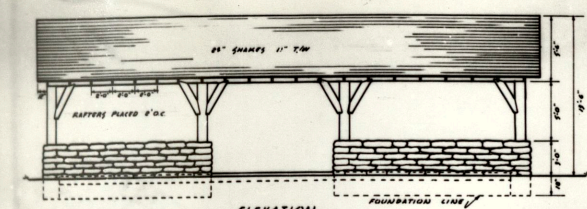
PARKING LOT No. 1#2
PLANTING PLAN
SCALE: 1" = 20'-0"



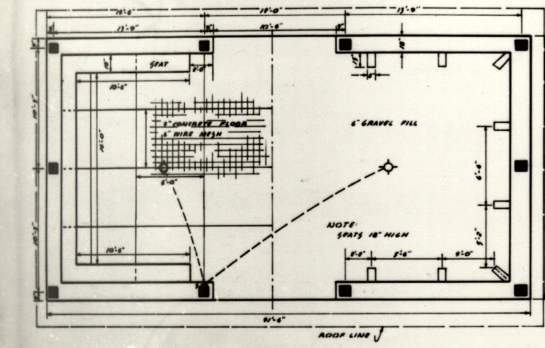
TYPICAL PICNIC AREA
SCALE: 1" = 40'-0"

NOTE:
INDIVIDUAL PICNIC SITES - MINIMUM
40' APART.

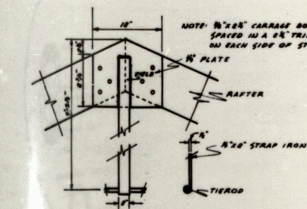
CLAYTON COUNTY PARK
JONESBORO, GEORGIA
DETAILS
SENIOR THOMAS CAMPBELL ARCHITECTS
UNIVERSITY OF GEORGIA



ELEVATION



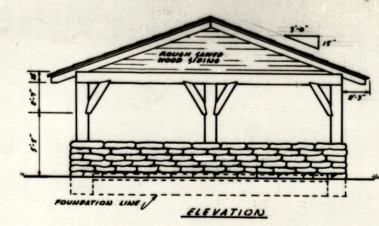
PLAN
SCALE: 1/8" = 1'-0"



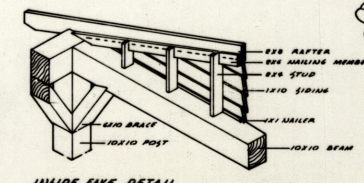
BRACE DETAIL
SCALE: 1/8" = 1'-0"

BRACE DETAIL
SCALE: 1/8" = 1'-0"

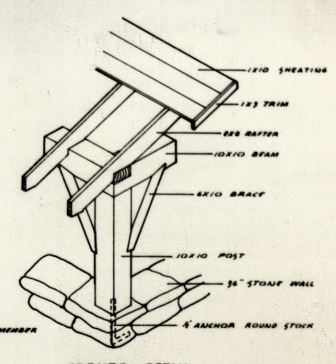
SHELTER DETAILS



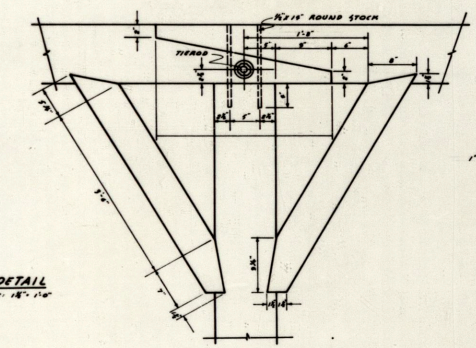
ELEVATION



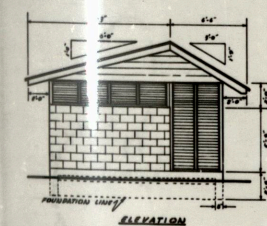
INSIDE EAVE DETAIL
SCALE: 1/8" = 1'-0"



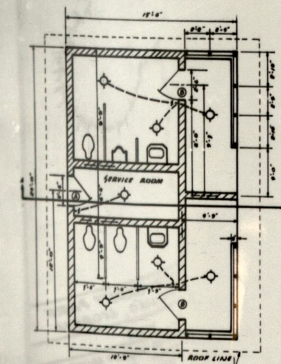
CORNER DETAIL
SCALE: 1/8" = 1'-0"



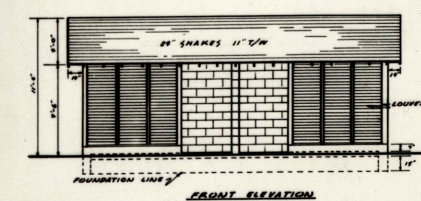
TIEROD DIAGRAM



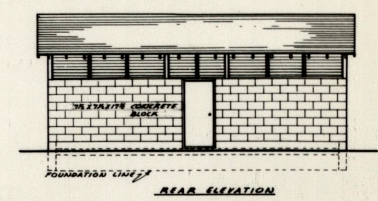
ELEVATION



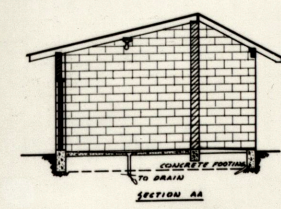
PLAN
SCALE: 1/8" = 1'-0"



FRONT ELEVATION

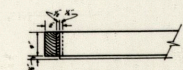


REAR ELEVATION



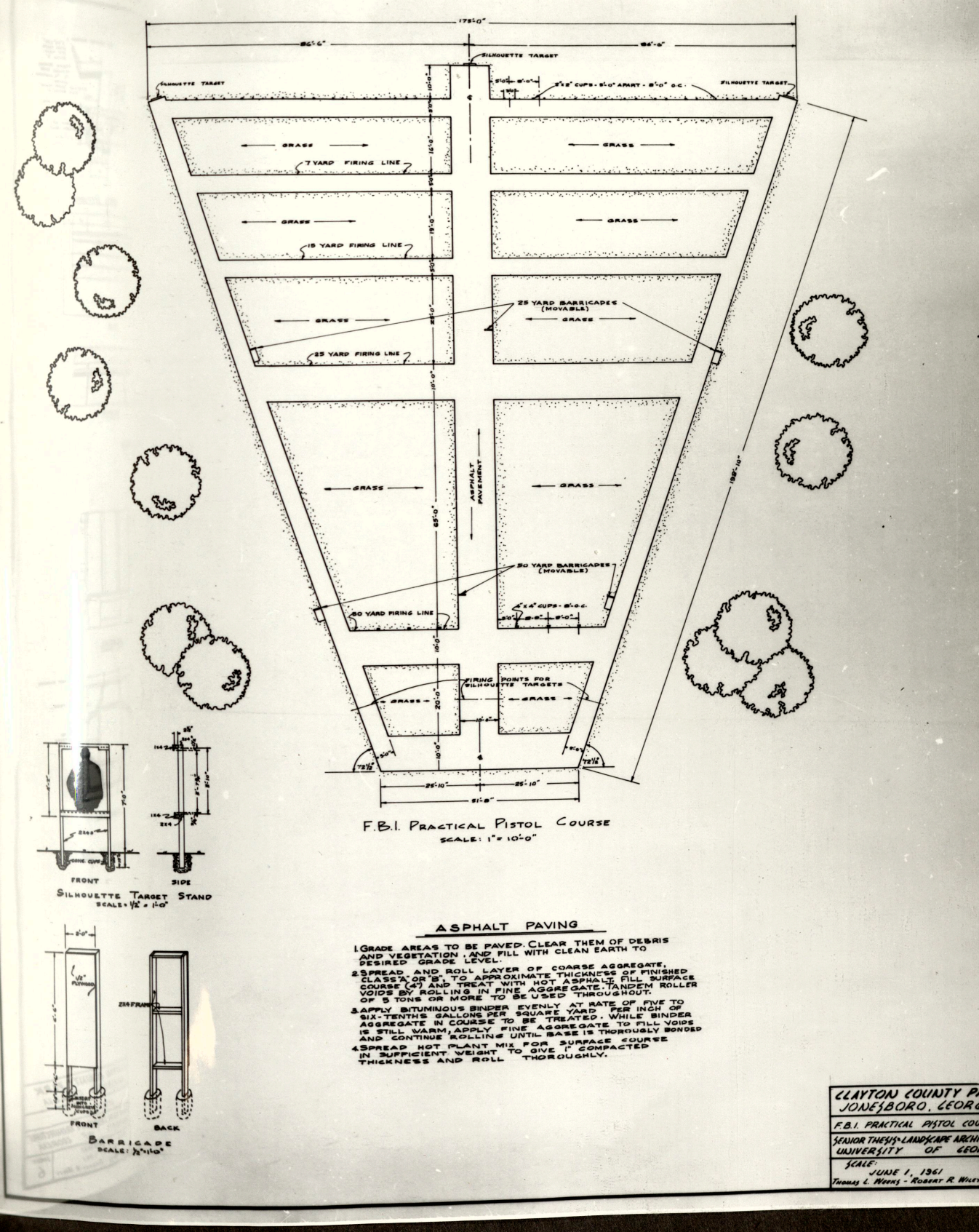
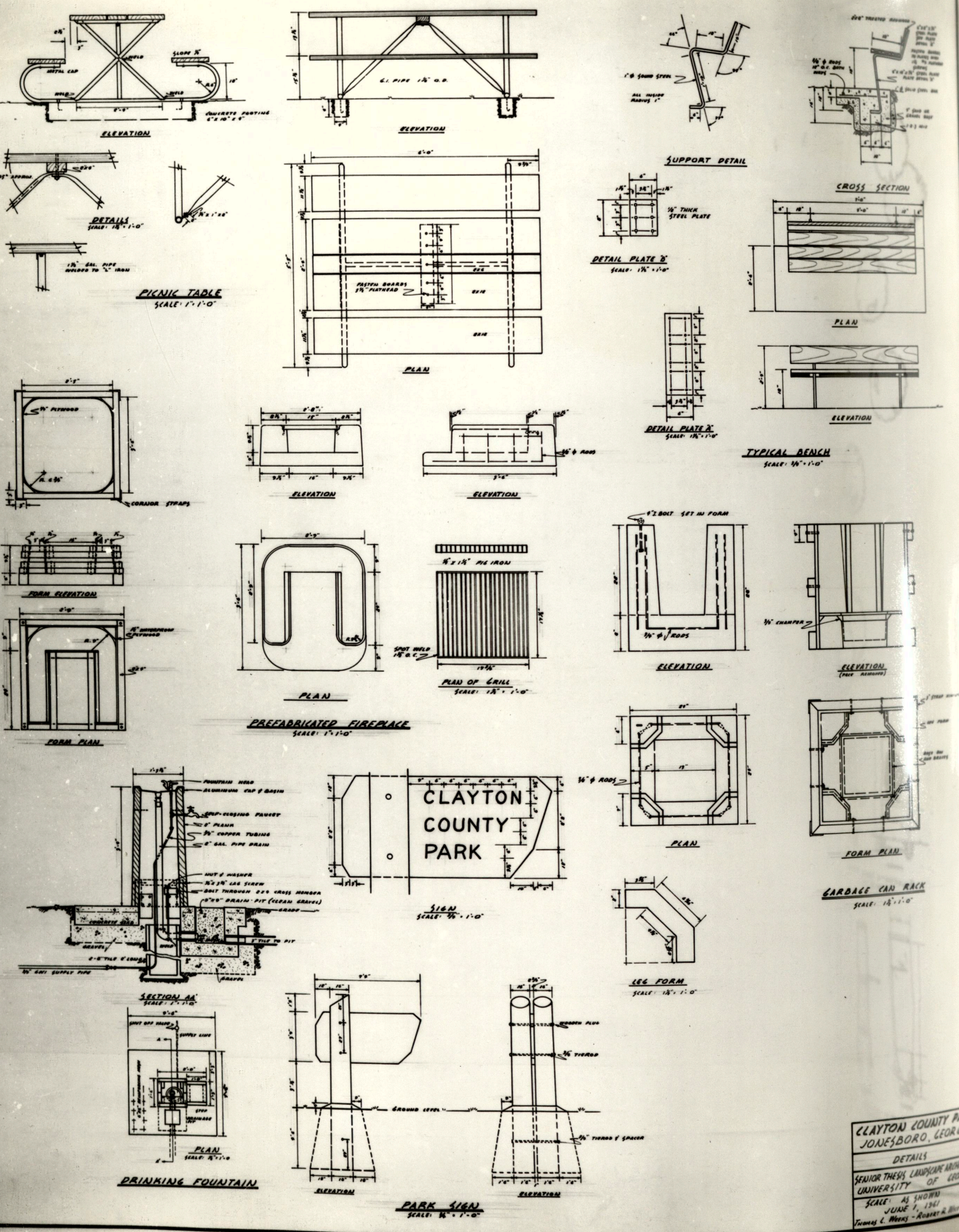
SECTION AA

COMFORT STATION DETAILS



LOUVER CONSTRUCTION DETAIL
SCALE: 1/8" = 1'-0"

NOTES:
1" OF GRAVEL FILL UNDER CONCRETE FLOOR
ALL EXPOSED WOOD TO BE PRESURE TREATED
WITH PRESERVATIVE
USE COPPER SCREENING BEHIND LOUVERS
ON INSIDE PART OF COMFORT STATION
DOORS EXTERIOR
TYPES A - 6' x 8' x 1/2" FLUSH DOOR
B - 6' x 8' x 1/2" LOUVERED DOOR



PLANT LIST					
QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	O.C.
TREES					
136	Pinus strobus	SHORTLEAF PINE	1-1 1/2"	20'	24"
15	Pinus strobus	SHORTLEAF PINE	1-1 1/2"	20'	24"
65	Celtis occidentalis	WAXLEAF	1-1 1/2"	20'	24"
15	Platanus occidentalis	PLATANUS	1-1 1/2"	20'	24"
28	Robinia pseudoacacia	BLACK LOCUST	1-1 1/2"	20'	24"
37	Quercus prinus	WHITE OAK	1-1 1/2"	20'	24"
24	Thuja occidentalis	DOUGLASS SPRUCE	1-1 1/2"	20'	24"
30	Thuja occidentalis	DOUGLASS SPRUCE	1-1 1/2"	20'	24"
15	Thuja occidentalis	DOUGLASS SPRUCE	1-1 1/2"	20'	24"
SHRUBS					
300	Cotoneaster horizontalis	ROCK COTONEASTER	2-7 1/2"	2'	24"
11	Myrica caroliniana	SOUTHERN BURNING	3-5"	10'	24"
55	Berberis julianae	MUTSBERG BERRY	1-2"	24"	24"
GRASS					
	Eleocharis acicularis	AFRICAN LOVERGRASS	SEED		



either in figures, MASTER SPECIFICATION in the specifications, the matter will be promptly submitted to the Landscape Architect for his review and approval. Any change in the plan must be made a determination in writing. Any change in the plan must be made a determination in writing.

PART I GENERAL PROVISIONS

- SCOPE OF WORK:** The work to be performed will consist of furnishing all materials, labor, supplies, and equipment for planting, grading, and construction in accordance with these specifications and in conformity with the plans.
- LOCATION:** The site of the proposed is located one mile north of the center of Jonesboro, Georgia, and east of the Central of Georgia Railroad and County Road. Property of Clayton County, twelfth land district, land lot number forty-seven and forty-eight.
- SPECIFICATIONS AND DRAWINGS:** The following drawings are a part of the supplementary to these specifications:

Title	Drawing No.
Master Plan	Sheet 1
Grading and Staking Plan	Sheet 2
Park Road Alignment	Sheet 3
Construction Details	Sheets 4 - 5 - 6 - 7
Planting Plan	Sheet 8

The drawings and these specifications are intended to be mutually explanatory and complete, and all work called for by one, even if not by the other, will be fully executed.

In case of difference between drawings and specifications, the specifications will govern. In any case of discrepancy, the specifications will govern. In any case of discrepancy, the specifications will govern.

ARTICLE TWENTY

to be performed as shown on the drawings and specifications. The Contractor shall be responsible for obtaining all necessary permits, licenses, and approvals, and for securing all necessary easements and rights of way. The Contractor shall be responsible for obtaining all necessary permits, licenses, and approvals, and for securing all necessary easements and rights of way.

LOCATION: The site of the proposed project is located on the east side of the center of the road, between the center of the road and the center of the road, and east of the center of the road.

ADJACENT PROPERTY: The property adjacent to the proposed project is owned by the City of Atlanta, Georgia.

EXISTING UTILITIES: The following utilities are shown on the drawings and specifications:

1. Water Main
2. Sewer Main
3. Gas Main
4. Electric Main
5. Telephone Main
6. Cable Main
7. Storm Sewer
8. Sanitary Sewer
9. Fire Hydrant
10. Manhole
11. Valve
12. Meter
13. Transformer
14. Pole
15. Sign
16. Light
17. Bench Mark
18. Survey Point
19. Easement
20. Right of Way

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either in figures, in the drawings, or in the specifications, the matter will be promptly submitted to the Landscape Architect, who shall promptly make a determination in writing. Any adjustment by the Contractor without this determination shall be at his own risk and expense.

4. SPIRIT AND INTENT OF SPECIFICATIONS: It is the spirit and intent of these specifications, and of the drawings forming a part of them, to provide that the work and all parts thereof will be fully completed and suitable in every way for the purposes for which they are designed. Mention in the specifications or indication on the drawings of articles or materials, operations or methods, requires that the contractor will provide each item listed - or quality, or subject to qualifications noted; perform according to conditions stated, each operation prescribed, and provide therefore all necessary labor, materials, tools, equipment and incidentals necessary to complete the work.
5. ERRORS OF OMISSIONS: The Contractor will not be allowed to take advantage of errors or omissions in these specifications or contract drawings as full instruction will be given if such errors are discovered. Upon his discovery of any statement or detail which is discrepant or otherwise appears in error, the Contractor will immediately call it to the attention of the Landscape Architect.
6. MEASUREMENTS: Before ordering any material or doing any work, the Contractor will verify all measurements at the site and shall

...in drawings, in the drawings, or in the specifications,
the latter will be promptly submitted to the Landscape Archi-
tect who shall promptly make a determination in writing. Any
adjustment by the Contractor without this determination shall be
at his own risk and expense.

MEASUREMENTS: Before ordering any material or doing any work, the

Contractor will verify all measurements at the site and shall
be responsible for correctness of same. No extra charge or
compensation shall be allowed on account of difference between
actual dimensions and the measurements indicated on the drawing.

Any difference which may be found will be submitted to the
Landscape Architect for consideration prior to beginning the
work.

7. EXAMINATION OF SITE: Before submitting bids for the work,
each bidder shall be held to have examined the premises and
satisfied himself as to the existing conditions under which

he will be pledged to operate or that in any manner shall affect
the work under this contract. No allowance shall be made
subsequently in this connection in behalf of the Contractor for

any error or negligence on his part.

8. TIMING AND SEQUENCE OF WORK: The Contractor will begin work
the first workday after receiving the "Notice to Proceed".

The Contractor shall have _____ calendar days in which to
complete the work except for extensions approved by the

Supervisor. The Contractor will give due and adequate notice
of all work he proposes to start to those in control of

properties which may be affected by his operations. Work is
to proceed in an orderly way. The organization of these

specifications or contract drawings do not necessarily indicate
the order of sequence in which the work is to be performed.

grades and quantities. Where equipment, materials, or articles
are referred to in the specifications as "equal to" any
particular standard, the Engineer shall decide the question
of quality. When required by the specifications, or when called

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the order of sequence in which the work is to be performed.

grades and quantities. Where equipment, materials, or articles
are referred to in the specifications as "equal to" any
particular standard, the Engineer shall decide the question
of quality. When required by the specifications, or when called

- For the Supervisor, the Contractor will furnish the material.
9. TEMPORARY SUSPENSION OF WORK: The Supervisor shall have the authority to suspend the work, wholly or in part, for such period as he may deem to the best interest of the owner, due to conditions which are considered unfavorable to the suitable carrying out of the work, or for failure on the part of the Contractor to carry out orders given or to perform any provision of the contract. The Contractor will immediately respect the written order of the Owner to suspend the work wholly or in part. The Contractor will not suspend work without such written authority, and will immediately resume work when conditions are favorable or when methods have been corrected, as approved by the Supervisor in writing.
10. OTHER CONTRACTS: The County Commission may undertake or award other contracts for additional work, and the Contractor shall fully cooperate with such other contractors and the Owner or his employees and carefully fit his own work to such additional work as directed by the Supervisor. The Contractor will not commit or permit any act which will interfere with the performance of work by any other contractor or employee of the owner.
11. MATERIALS AND WORKMANSHIP: Workmanship Materials will be as prescribed by these specifications and the contract drawings. When ever not explicitly described, all workmanship used or employed in carrying out the work will be the best of the respective grades and qualities. Where equipment, materials, or articles are referred to in the specifications as "equal to" any particular standard, the Supervisor shall decide the question of equality. When required by the specifications, or when called

of equal quality, when required by the specifications, or when called particular standard, the Supervisor shall decide the question are referred to in the specifications as "equal to" any grades and qualities. Where equipment, materials, or articles in carrying out the work will be the best of the respective ever not explicitly described, all workmanship used or employed specified by these specifications and the contract drawings. When MATERIALS AND WORKMANSHIP: Workmanship Materials will be as pre- of work by any other contractor or employee of the owner. permit or permit any act which will interfere with the performance work as directed by the Supervisor. The Contractor will not his employees and carefully fit his own work to such additional fully cooperate with such other contractors and the Owner or other contracts for additional work, and the Contractor shall 10. OTHER CONTRACTS: The County Commission may undertake or award as approved by the Supervisor in writing. conditions are favorable or when methods have been corrected, and written authority, and will immediately resume work when wholly or in part. The Contractor will not suspend work without respect the written order of the Owner to suspend the work provision of the contract. The Contractor will immediately of the Contractor to carry out orders given or to perform any the carrying out of the work, or for failure on the part to conditions which are considered unfavorable to the shift- period as he may deem to be in the best interest of the owner, due authority to suspend the work, wholly or in part, for such TEMPORARY SUSPENSION OF WORK: The Supervisor shall have the

for the Supervisor, the Contractor will furnish for approval full information concerning the materials or articles which he contemplates incorporation in the work. Samples of materials will be submitted for approval when so directed. Machinery equipment and materials and articles installed or used without such approval will be at the risk of rejection.

12. MINOR MODIFICATIONS: The Contractor will make such minor changes in the execution of the work to be done under these specifications as, in the judgment of the Supervisor, may be necessary or expedient to carry out the intent of the contract. No increase over the contract price will be paid to the Contractor on account of such minor modifications provided that at the time the change is to be made the work involved has not already been executed. Work which materially increases the cost to the Contractor will not be ordered under the provision of this paragraph.

13. GUARANTEE: The Contractor will guarantee all work under this contract for one year from the date of acceptance by the County Commission, except as otherwise agreed upon in writing by the parties to the contract. Whenever work is required to be guaranteed, the Contractor, when notified by the County Commission must immediately notify the latter.

(1) place in satisfactory condition in every particular of the guaranteed work.

(2) make good all damage to the structures and grounds or equipment and contents thereof if such unsatisfactory condition or damage develops within the stipulated period and is due to the use of materials or workmanship which are inferior, defective or not in accordance with this contract, and must make good any work or materials or grounds which are disturbed in fulfilling the requirements of this guarantee.

14. PAYMENT: Payment of 90% of bid will be made upon completion of all work. The remaining 10% will be held until expiration of the guarantee.
15. REJECTION: All materials which do not meet these specifications or the requirements of the contract drawings shall be rejected by the Supervisor and will be removed from the site and replaced by proper materials by the Contractor at his own expense.
16. CONTRACTOR'S RESPONSIBILITIES: The Contractor will, without additional expense to the Owner, obtain all licenses and permits required for the prosecution of the work. The Contractor will provide and maintain all temporary roadways and utilities which may be authorized, and all barriers, colored lights, danger signals and other devices necessary to provide for the traffic and safety. The Contractor will keep his equipment, operations and materials confined to the limits indicated on the contract

(3) Make good all damage to the structures and grounds or equipment and contents thereof if such unsatisfactory condition or damage develops within the stipulated period and is due to the use of materials or workmanship which are inferior, defective or not in accordance with this contract, and must make good any work on materials or grounds which are disturbed in fulfilling the requirements of this guarantee.

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drawings. The Contractor will restore, at his expense, any damage to any property and will take such action to insure protection of any existing material, trees, structures, utilities in, on, or over the site. The Contractor will conduct his operations and leave the site so as to in no way endanger the health or lives of anyone. He will be responsible for all damages to persons or property that occur as a result of his fault or negligence in connection with the prosecution of the work. He shall also be responsible for all materials delivered and work performed until completion and final acceptance. The Contractor will, at all times, be responsible for the safety and conduct of his employees. The County Commission may in writing require the Contractor to remove from the work such employee as he deems incompetent, careless, insubordinate, or otherwise objectionable, or whose continued employment on the work is deemed by the County Commission to be contrary to the Owner's interest.

17. SPACE FOR STORAGE OF CONSTRUCTION MATERIALS: The Contractor will provide suitable storage for material and equipment on the site and will maintain all storage space in a safe and orderly condition. The Owner assumes no liability for loss or damage to materials or equipment due to improper storage, lack of protection from the elements or from any other cause. Inflammable materials will be enclosed in safe containers.

18. CLEAN UP: The Contractor will remove all debris from his operations each evening of every workday to the satisfaction of the owner. All brick bats, rock, wood debris, metal objects and similar materials.

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uncovered during excavation operations will be disposed, leaving the completed work in a neat, polished manner.

grading has been completed to a minimum of 1/2" to a maximum of 1 1/2", for the entire area of the work.

Gravel: Fine aggregate for concrete shall consist of clean, well sorted gravel or crushed stone, No. 4 sieve, not less than 50% shall pass No. 10 sieve; No. 3 sieve, not more than 10% shall pass a No. 100 sieve.

Concrete: All concrete shall be placed in a minimum of 3,000 lbs. per cu. yd. to 4,000 lbs. per cu. yd.

Reinforcing Bars: Reinforcing bars shall be of the type specified in the contract documents. All bars shall be of the type specified in the contract documents.

Water: All water used in the concrete shall be of the type specified in the contract documents.

Formwork: Formwork shall be of the type specified in the contract documents.

CONSTRUCTION SPECIFICATIONS

CONCRETE

Course Aggregate: Gravel or crushed stone must be hard, clean and free from organic matter, acid or other chemicals and grading reasonably uniform in size from a minimum of 1/2" to a maximum of 1 1/4", for the different classes of the work.

Fine Aggregate: Fine aggregate for concrete shall consist of clean, washed sand, 95% of which shall pass a No. 4 sieve. Not less than 50% shall be retained on a No. 3 sieve; not more than 5% shall pass a 100 mesh sieve.

Concrete Quality: All concrete shall have an ultimate compressive strength of 3,000 lbs. per square inch at the end of twenty-eight days.

Portland Cement: Shall be of one approved brand throughout, meeting requirements of American Society for Testing Materials., standard specifications designation C - 150 - 42. type I.

Water: All water used must be clean filtered drinking water containing no alkali, acid, vegetable matter or other chemicals injurious to the concrete.

Mixing and Placing Concrete: Shall be approved, ready mixed concrete or shall be mixed on the site in a mechanical mixer of the type approved by the County Engineer.

Concrete

Gravel: Gravel or crushed stone must be hard, clean and free from organic matter, acid or other chemicals and grading

reasonably uniform in size from a minimum of 1/2" to a maximum

of 1 1/4", for the different classes of the work.

Aggregate: The aggregate for concrete shall consist of clean,

well graded sand, 95% of which shall pass a No. 1 sieve. Not less than

90% shall be retained on a No. 3 sieve; not more than 2% shall

pass a 100 mesh sieve.

Concrete Quality: All concrete shall have an ultimate compressive

strength of 3,000 lbs. per square inch at the end of twenty-eight

days.

Portland Cement: Shall be of one approved brand throughout,

meeting requirements of American Society for Testing Materials.

Standard specifications designation C - 150 - 112, type I.

Water: All water used must be clean filtered drinking water

containing no alkali, acid, vegetable matter or other chemicals

injurious to the concrete.

Mixing and Placing Concrete: Shall be approved, ready mixed

concrete or shall be mixed on the site in a mechanical mixer of

the type approved by the County Engineer.

Slab on Earth: Concrete slabs for Shelter and Comfort Stations on earth, shall have mesh reinforcement, where no other reinforcements are shown or detailed.

This division includes all materials and equipment

necessary for preparation of final subgrades in lawn and planting

areas; tree walls and root protection; finished grading; soil

retention; and, except for grading, planting of trees, and shrubs;

and removal of trees, shrubs, and other vegetation; and, removal of trees, shrubs, and other vegetation;

and removal of trees, shrubs, and other vegetation; and, removal of trees, shrubs, and other vegetation;

and removal of trees, shrubs, and other vegetation; and, removal of trees, shrubs, and other vegetation;

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and removal of trees, shrubs, and other vegetation; and, removal of trees, shrubs, and other vegetation;

and removal of trees, shrubs, and other vegetation; and, removal of trees, shrubs, and other vegetation;

Concrete slabs for shelter and comfort stations on
shall have mesh reinforcement, where no other reinforcements
as shown or detailed.

2. MATERIALS

SPECIFICATIONS

(a) Topsoil Stripped and Stored under the division Excavating,
Filling and Grading will be tested for qualitative analysis per acre.

LAWNS AND PLANTING

1. SCOPE

This division includes furnishing all materials and equipment before necessary for preparation of final subgrades in lawn and planting areas; tree wells and root protection; finished grading; soil treatment; lawn construction; planting of trees, and shrubs; protection, maintenance, guarantee, and replacement of lawns and plants; and related items required to complete the work indicated on the drawings and specified except: (1) protection of existing trees and shrubs, specified in the division Demolition and Clearing of Site; (2) protection, pruning, and repair of existing trees and shrubs to remain, and tree removal; (3) stripping and storing of existing topsoil for refuse; (4) restrictions regarding material used for fill; and (5) rough grading of subgrade to a point approximately 3 inches below finished grade established for lawn and planting areas, specified in the division Excavating, Filling and Grading, which operations are to be completed before work of the lawns and planting can proceed.

(d) Lime shall be ground limestone containing not less than 85 per cent of total carbonates and shall be ground to such a fineness that 50 per cent will pass through a 100-mesh sieve and 90 per cent will pass through a 20-mesh sieve. Coarser material will be acceptable, provided the specified rates of application are increased proportionately on the basis of quantities passing the 100-mesh sieve.

SPECIFICATIONS LAWNS AND PLANTING

This division includes furnishing all materials and equipment necessary for preparation of final subgrade in lawn and planting areas; tree wells and root protection; finished grading; soil treatment; lawn construction; planting of trees, shrubs, and vines; protection, maintenance, guarantee, and replacement of lawns and shrubs; and related items required to complete the work indicated on the drawings and specified except: (1) protection of existing trees and shrubs, specified in the division Demolition and Clearing of Site; (2) protection, pruning, and repair of existing trees and shrubs to remain; and tree removal; (3) stripping and storing of existing topsoil for reuse; (4) restrictions regarding material used for fill; and (5) rough grading of subgrade to a point approximately 3 inches below finished grade established for lawn and planting areas, specified in the division Excavating, Filling and Grading, which operations are to be completed before work of the lawn and planting can proceed.

2. MATERIALS

(a) Topsoil Stripped and Stored under the division Excavating, Filling and Grading will be tested for qualitative analysis per Acre. This soil can be conditioned by addition of superphosphates, peat moss, organic material, etc., thoroughly mixed with the soil; before use.

(b) Topsoil to be Furnished. If the quantity of stored topsoil is inadequate, sufficient additional topsoil shall be furnished. Topsoil furnished shall be a natural, fertile, friable soil, possessing characteristics of representative productive soils in the vicinity. It shall be obtained from naturally well-drained areas. It shall not be excessively acid or alkaline nor contain toxic substances which may be harmful to plant growth. Topsoil shall be without a mixture of subsoil and shall be cleaned and reasonably free from clay lumps, stones, stumps, roots or similar substances two inches or more in diameter, debris, or other objects which might be a hindrance to planting operations.

(c) Manure shall be well-rotted, unleached, stable or cattle manure, reasonably free from shavings, sawdust, or refuse, and shall not contain any harmful materials.

(d) Lime shall be ground limestone containing not less than 85 per cent of total carbonates and shall be ground to such a fineness that 50 per cent will pass through a 100-mesh sieve and 90 per cent will pass through a 20-mesh sieve. Coarser material will be acceptable, provided the specified rates of application are increased proportionately on the basis of quantities passing the 100-mesh sieve.

(a) Topsoil stripped and stored under the division excavating, filling and grading will be tested for qualitative analysis per acre. The soil can be conditioned by addition of superphosphates, peat, organic material, etc., thoroughly mixed with the soil; before

(b) Topsoil to be furnished. If the quantity of stored topsoil is inadequate, sufficient additional topsoil shall be furnished. Topsoil furnished shall be a natural, fertile, friable soil, possessing characteristics of representative productive soils in the vicinity. It shall be obtained from naturally well-drained areas. It shall not be excessively acid or alkaline nor contain toxic substances which may be harmful to plant growth. Topsoil shall be without a mixture of subsoil and shall be cleaned and reasonably free from clay lumps, stones, stumps, roots or similar substances two inches or more in diameter, debris, or other objects which might be a hindrance to planting operations.

(c) Manure shall be well-rotted, unashed, stable or cattle manure, reasonably free from shavings, sawdust, or refuse, and shall not contain any harmful materials.

(d) Lime shall be ground limestone containing not less than 85 per cent of total carbonates and shall be ground to such a fineness that 90 per cent will pass through a 100-mesh sieve and 90 per cent will pass through a 20-mesh sieve. Coarser material will be acceptable, provided the specified rates of application are increased proportionately on the basis of quantities passing the 100-mesh sieve.

(e) Commercial fertilizer shall be used, and shall conform to the applicable state fertilizer laws. It shall be uniform in

composition, dry and free flowing and shall be delivered to the site in the original, unopened container, each bearing the manufacturer's guaranteed analysis. Any fertilizer which becomes caked or otherwise damaged, making it unsuitable for use, will not be acceptable.

(f) Water used in this work will be furnished by the Local Authority and will be suitable for irrigation and free from ingredients harmful to plant life. Hose and other watering equipment for the work shall be furnished by the contractor.

(g) Materials for Staking, Guying and Wrapping.

(1) Notched stakes and deadmen for anchoring guy wires shall be about 2 by 4 inches by 3 feet sound wood, erected.

(2) Stakes for supporting trees shall be 2 1/2 inches square or round, by 8 feet sound wood, creosoted one-half their length.

(3) Wire for guys or for fastening trees to stakes shall be No. 12 gauge pliable, galvanized iron.

(4) Flags to be fastened to guys shall be of sound wood about 1/2" x 12" with a 3/8" hole centered 1-1/2" from each end, or 1-1/2" x 12" sheet metal with corners clipped and punched both ends, painted white.

(e) Commercial fertilizer shall be used, and shall conform to

the applicable state fertilizer laws. It shall be uniform in

composition, dry and free flowing and shall be delivered to the

site in the original, unopened container, each bearing the

manufacturer's guaranteed analysis. Any fertilizer which

becomes caked or otherwise damaged, making it unsuitable for use,

will not be acceptable.

(f) Water used in this work will be furnished by the local

authority and will be suitable for irrigation and free from

invertebrates harmful to plant life. Hose and other watering equipment

for the work shall be furnished by the contractor.

(g) Materials for Staking, Guying and Whipping.

(1) Notched stakes and deadmen for anchoring guy wires

shall be about 2 by 4 inches by 3 feet sound wood, erected.

(2) Stakes for supporting trees shall be 2 1/2 inches

square or round, by 8 feet sound wood, crosscutted one-half their

(3) Wires for guys or for fastening trees to stakes

shall be No. 12 gauge pliable, galvanized iron.

(4) Rings to be fastened to guys shall be of sound

wood about 1 1/2" x 1 1/2" x 12" with a 3/8" hole centered 1-1/2" from

each end, or 1-1/2" x 12" sheet metal with corners clipped

and punched both ends, painted white.

(5) Hose to encase guy wires or wires used for fastening trees to stakes shall be new or used 2-ply reinforced rubber garden hose:

(6) Wrapping material for tree trunks shall be standard burlap, heavy crepe paper, or other suitable material, in strips 6 to 10 inches wide.

(h) Lawn Materials

(1) Sprigs shall be Bermuda grass. They shall be healthy, virorous, freshly dug, free of pernicious weeds, and shall be properly protected until planted.

(2) Sod shall be at least 60 percent Bermuda grass; strongly rooted, and free of pernicious weeds. It shall be mowed to a height not to exceed 3" before lifting and shall be uniform thickness with not over 1 1/2" or less than 1" soil.

(i) Plant Materials

(1) Plant List. A list of plants is shown on the planting plan.

(2) Nomenclature. The names of plants required under this contract conform to those given in Standardized Plant Names, 1942 Edition, prepared by the American Joint Committee of Horticultural Nomenclature. Names of varieties not included therein conform generally with names accepted in the nursery trade.

(3) Quantities. Quantities necessary to complete the planting as shown and located on the drawings shall be furnished. The contractor may at his option furnish the plant material listed

(2) Hose to encase guy wires or wires used for fastening
wires to stakes shall be new or used S-ply reinforced rubber garden

(3) Wrapping material for tree trunks shall be standard
white, heavy crepe paper, or other suitable material, in strips

6 to 10 inches wide.

(4) Plant Materials

(1) Plants shall be Bermuda grass. They shall be
healthy, vigorous, freshly dug, free of pernicious weeds, and
shall be properly protected until planted.

(2) Seed shall be at least 60 percent Bermuda grass;
strongly rooted, and free of pernicious weeds. It shall be
seed to a height not to exceed 3" before lifting and shall be
within thickness with not over 1 1/2" or less than 1" soil.

(1) Plant Materials

(1) Plant List. A list of plants is shown on the

(2) Nomenclature. The names of plants required under this

contract conform to those given in Standardized Plant Names, 1912

edition, prepared by the American Joint Committee of Horticultural

Nomenclature. Names of varieties not included therein conform

generally with names accepted in the nursery trade.

(3) Quantities. Quantities necessary to complete the

planting as shown and located on the drawings shall be furnished.

The contractor may at his option furnish the plant material listed

as an alternate in any instance, provided matched plantings are used
wherever shown.

(4) Quality and Size. Plants shall have a habit of growth
that is normal for the species and shall be sound, healthy, vigorous,
and free from insects pests, plant diseases, and injuries. All
plants shall equal or exceed the measurements specified in the Plant
List, which are minimum acceptable sizes. They shall be measured
before pruning, with branches in normal position. Any necessary
pruning shall be done at time of planting. Requirements for the
measurement, branching, grading, quality, balling and burlapping
of plants in the Plant List generally follow the code of standards
currently recommended by the American Association of Nurserymen Inc.,
in the American Standard for Nursery Stock.

(5) Type of Protection to Roots

(a) Balled and Burlapped Plants. Plants designated
"B&B" in the Plant List shall be balled and burlapped. They shall
be dug with firm, natural balls of earth of sufficient diameter
and depth to encompass the fibrous and feeding root system necessary
for full recovery of the plant. Balls shall be firmly wrapped with
burlap or similar material and bound with twine, cord or wire mesh.
Where necessary to prevent breaking or cracking of the ball during
the process of planting, the ball may be secured to a platform.

(b) Bare-Root Plants. Plants designated "BR" in the
Plant List shall be dug and earth removed without injury

to the roots. Delivery of topsoil may begin
after approval of the sample.

as an alternative in any instance, provided matched plantings are used
however shown.

(a) Quality and Size. Plants shall have a habit of growth
that is natural for the species and shall be sound, healthy, vigorous,

and free from insect pests, plant diseases, and injuries. All
plants shall equal or exceed the measurements specified in the Plant

list, which are minimum acceptable sizes. They shall be measured
before planting, with branches in normal position. Any necessary

pruning shall be done at time of planting. Requirements for the
measurement, branching, grading, quality, balling and wrapping

of plants in the Plant list generally follow the code of standards
currently recommended by the American Association of Nurserymen Inc.,

in the Standard for Nursery Stock.
(b) Type of Protection to Roots

(a) Balled and Burlapped Plants. Plants designated
"B" in the Plant list shall be balled and burlapped. They shall

be dug with firm, natural balls of earth of sufficient diameter
and depth to encase the fibrous and feeding root system necessary

for full recovery of the plant. Balls shall be firmly wrapped with
burlap or similar material and bound with twine, cord or wire mesh.

It is necessary to prevent breaking or cracking of the ball during
the process of planting, the ball may be secured to a platform.

(b) Bare-root Plants. Plants designated "BR"
in the Plant list shall be dug and earth removed without injury

to the fibrous root system necessary for the full recovery of the
plant. Roots shall be covered with a thick coating of mud by
puddling or wrapped in wet straw, moss, or other suitable packing
material immediately after they are dug, for protection until delivered.

(c) Protection after Delivery. The balls of "B&B"
plants which cannot be planted immediately on delivery shall be
covered with moist soil or mulch, or other protection from
drying winds and sun. Bare-rooted plants shall be planted or
heeled in immediately upon delivery. All plants shall be watered as
necessary until planted.

3. SAMPLES, TESTS, AND INSPECTIONS.

(a) Notice of Sources. Within ten days following acceptance
of the bid, the Supervisor shall be notified of the sources of the
materials required or desired to be inspected or tested.

(b) Topsoil to be Furnished. The Supervisor will inspect
topsoil to be furnished at its source, to determine whether or
not it meets the requirement specified and to approve the depth
to which it may be stripped. At the time of inspection, the
Contractor may be required to take representative soil samples,
under the direction of the Supervisor, to the proposed stripping
depth, from several locations in the area under consideration.
If samples are required, tests will be made by a state or
commercial soil testing laboratory using methods approved by the
Association of Official Agricultural Chemists or to State
Agricultural Experiment Station. Delivery of topsoil may begin
after approval of the sample.

to the fireproof roof system necessary for the full recovery of the
plant. Plants shall be covered with a thick coating of mud by
padding or wrapped in wet straw, moss, or other suitable packing
material immediately after they are dug, for protection until delivered.

(c) Protection after Delivery. The balls of "B&B"

plants which cannot be planted immediately on delivery shall be
covered with moist soil or mulch, or other protection from
dry winds and sun. Bare-rooted plants shall be planted or
placed in immediately upon delivery. All plants shall be watered as
necessary until planted.

4. SAMPLES, TESTS, AND INSPECTIONS.

(a) Notice of Sources. Within ten days following acceptance

of the bid, the Supervisor shall be notified of the sources of the
materials required or desired to be inspected or tested.

(b) Access to be Furnished. The Supervisor will inspect

plants to be furnished at its source, to determine whether or
not it meets the requirement specified and to approve the depth
to which it may be stripped. At the time of inspection, the
Contractor may be required to take representative soil samples,
under the direction of the Supervisor, to the proposed stripping
depth, from several locations in the area under consideration.

If samples are required, tests will be made by a state or
commercial soil testing laboratory using methods approved by the
Association of Official Agricultural Chemists or to State
Agricultural Experiment Station. Delivery of topsoil may begin

after approval of the sample.

(c) Plants. The Contractor shall be responsible for all
certificates of inspection of plant materials that may be required
by Federal, State or other authorities to accompany shipments of
plants. Inspection of plants to be balled and burlapped will be made
at the place of growth. All plants must be inspected and approved
before they are planted. Inspection and approval by the Supervisor
of plants at the place of growth or upon delivery shall be for
quality, size, and variety only and shall not in any way impair
the right of rejection for failure to meet other requirements
during progress of the work.

4. CONSTRUCTION METHODS

(a) Time of Planting. The Contractor shall be notified in
writing by the Supervisor, when other divisions of work have
progressed sufficiently, to commence work of lawns and planting,
including placing of topsoil to finished grade. Thereafter,
planting operations shall be conducted under favorable weather
conditions during the next specified season, or seasons.
Trees, shrubs and vines to be planted between December 1 and
March 15; Bermuda grass lawns to be planted between April 1,
and September 1. If establishment of a Rye Grass lawn is necessary
for a temporary measure, this shall be done between September 15,
and March 15.

(b) Existing trees to remain.

(1) Temporary structures erected for protection of
existing trees during the construction required under division,

(c) Plants. The Contractor shall be responsible for all
certificates of inspection of plant materials that may be required
by Federal, State or other authorities to accompany shipments of
plants. Inspection of plants to be balled and burlapped will be made
at the place of growth. All plants must be inspected and approved
before they are planted. Inspection and approval by the supervisor
at place of growth or upon delivery shall be for
quality, size, and variety only and shall not in any way impair
the right of rejection for failure to meet other requirements
during progress of the work.

(d) Time of Planting. The Contractor shall be notified in
writing by the supervisor, when other divisions of work have
progressed sufficiently, to commence work of lawns and planting,
including placing of topsoil to finished grade. Thereafter,
planting operations shall be conducted under favorable weather
conditions during the next specified season, or seasons.
Trees, shrubs and vines to be planted between December 1 and
March 15; Perennials grass lawns to be planted between April 1,
and September 1. If establishment of a new grass lawn is necessary
for a temporary measure, this shall be done between September 15,
and March 15.

(e) Existing trees to remain.
(1) Temporary structures erected for protection of
existing trees during the construction required under division

Demolition and Clearing of Site and Excavating. Filling and
Grading, shall be removed only when necessary to facilitate the
work of lawns and plants.

(2) Permanent tree-root protection shall be provided
where indicated for existing trees as shown on the drawings.

(3) The area for tree root protection shall be
considered as that over which the branches spread. The object-
ive of tree root protection is to maintain the normal air and
water content and fertility of the soil about the tree.
Before making a fill, remove the vegetation, sod, leaf-
litter, and other organic matter from beneath the trees and
loosen the surface soil. Care shall be taken that the trees
and their roots are not damaged by construction operation.

(c) Transplanting.

(d) Pruning and Repair. Upon completion of the work of
this contract, all trees and shrubs shall have been pruned
and any injuries repaired. The amount of pruning shall be
limited to the minimum necessary to remove dead or injured
twigs and branches to compensate for the loss as a result of
transplanting operations. Pruning shall be done in such a
manner as not to change the natural habit or shape of the
plant. All cuts shall be made flush, leaving no stubs.
On all cuts over 3/4 inch in diameter and bruises or scars
on the bark, the injured cambium shall be traced back to

Removal and clearing of site and excavating. Filling and
restoration shall be removed only when necessary to facilitate the
work of laws and plants.

(2) Permanent tree-root protection shall be provided

as indicated for existing trees as shown on the drawings.

(3) The area for tree root protection shall be

considered as that over which the branches spread. The object-

ive of tree root protection is to maintain the normal air and

water content and fertility of the soil about the tree.

When making a fill, remove the vegetation, sod, leaf-

litter, and other organic matter from beneath the trees and

loosen the surface soil. Care shall be taken that the trees

and their roots are not damaged by construction operation.

(e) Transplanting.

(d) Pruning and Repair. Upon completion of the work of

the contract, all trees and shrubs shall have been pruned

and any injuries repaired. The amount of pruning shall be

limited to the minimum necessary to remove dead or injured

limbs and branches to compensate for the loss as a result of

transplanting operations. Pruning shall be done in such a

manner as not to change the natural habit or shape of the

plant. All cuts shall be made flush, leaving no stubs.

In all cuts over 3/4 inch in diameter and bruises or scars

on the bark, the injured cambium shall be traced back to

living tissue and removed; wounds shall be smoothed and shaped

so as not to retain water; and the treated area shall be coated

with shellac.

(e) Obstructions Below Ground or Overhead.

(1) It is not contemplated that planting shall be done

where the depths of soil over underground construction, obstructions

or rock is insufficient to accommodate the roots or share pockets in

rock or impervious soil will require drainage. Where such conditions

are encountered in excavation of planting areas and where the stone,

boulders, or other obstructions cannot be broken and removed by

hand methods in the course of digging plant pits of the usual size,

and where trees to be planted are found to be under overhead wires,

other locations for the underground construction or overhead

wires or for the planting may be designated by the Supervisor.

(2) Removal of rock or other underground obstructions,

relocation of construction, and provision of drainage for

planting areas shall be done only as directed by the Supervisor.

(f) New Planting.

(1) Layout. The new planting shall be located where

shown on the plans excepting where obstructions below ground

or overhead are encountered or where changes have been made

in the construction. Necessary adjustments shall be

approved by the Supervisor. No planting excepting ground

cover and vines shall be placed closer than two feet to

pavements or structures.

(2) Planting Pits. Circular pits with vertical sides shall be excavated for all plants except for hedge and plants specifically designated on the plans to be planted in beds. Diameter of pits for trees and B&B shrubs and vines shall be at least two feet greater than the diameter of the ball or spread of roots. Diameter of pits for bare-rooted (BR) shrubs and vines shall be at least two feet greater than the diameter of the ball or spread of roots. The depth of pits for trees, shrubs and vines shall be enough to accommodate the ball or roots when the plant is set to finished grade allowing for 3 inches of compacted topsoil or prepared soil in the bottom of the pit.

(3) Soil Preparation. Soil used in planting shall be topsoil, as herein before specified, or suitable existing soil shall be thoroughly mixed with one part of peat and one part of manure to five parts of existing soil. Very poor soils, gravel, hard-pans, or other soil injurious to plants shall not be used. Except for ericaceous plants, very acid or sour soil shall be mixed thoroughly with 5 pounds of 10-6-4 formula commercial fertilizer per cubic yard.

(4) Excess excavated soil shall be disposed of where and as directed by the landscape architect.

(5) Setting Plants. Unless otherwise specified, all plants shall be planted in pits, centered, and set on 3 inches of compacted topsoil or prepared soil to such depth that the

that the finished grade level at the plant after settlement, will be the same as that at which the plant was grown. They shall be planted upright and faced to give the best appearance or relationship to adjacent structures. No burlap shall be pulled out from under balls. Plantforms, wire, and surplus binding from top and sides of the balls shall be removed. Roots shall be spread in their normal position. All broken or frayed roots shall be cut off cleanly. Topsoil or prepared soil shall be placed and compacted carefully to avoid injury to roots and to fill all voids. When the hole is nearly filled, add water as necessary and allow it to soak away. Fill the hole to finished grade, and form a shallow saucer around each plant by placing a ridge of topsoil around the edge of each pit. After the ground settles, additional soil shall be filled into the level of the finished grade.

(6) Guying, Staking, Wrapping. Trees shall be supported immediately after planting. All trees 6 inches and over in the trunk diameter shall be guyed and wrapped. Smaller trees shall be staked. Wires shall be encased in hose to prevent direct contact with bark of the tree and shall be placed around the trunk in a single loop. Wires shall be tightened and kept taut by twisting the strands together.

(a) Guying. Guying shall be done with three guys spaced equally above a tree. Each guy shall consist of two strands of wire attached to the tree trunk at an

angle of 45 degrees to the height of the second branch. All wrapping shall be neat and the material

angle of about 60 degrees at about two-fifths of the height of the tree and anchored at the ground either to notched stakes which have been driven into the ground at an angle away from the tree so that the tops of the anchor stakes are below finished grade, or (where underground utilities are within four feet of finished grade) to deadmen placed at least 3 feet below finished grade. A wood or metal flag shall be secured to each guy a few inches above ground.

(b) Staking. Stakes shall be equally spaced about each tree and the creosoted end shall be driven vertically into the ground to a depth of 2 1/2 to 3 feet in such manner as not to injure the bark or roots. These shall be fastened to each stake at a height of about 5 feet by means of two strands of wire. Stakes shall be uniform in height and placed according to the diameter of the tree trunk, as follows:

3 to 6 inches - 3 stakes

2 to 3 inches - 2 stakes

2 inches or less - 1 stake

(c) Permanent tree guards shall be set as specified and trees securely fastened thereto by 3-way guys consisting of two strands of wire passed through rubber hose to protect the bark.

(d) Wrapping. Promptly after planting, the trunks of all trees designated to be wrapped shall be strapped spirally from the groundline to the height of the second branch. All wrapping shall be neat and snug and the material

angle of about 60 degrees at about two-fifths of the height of the tree and anchored at the ground either to notched stakes which have been driven into the ground at an angle away from the tree so that the tops of the anchor stakes are below finished grade, or (where underground utilities are within four feet of finished grade) to cast-in-place concrete footings below finished grade. A wood or metal flag shall be secured to each guy a few inches above ground.

(b) Staking. Stakes shall be equally spaced about each tree and the cross-arms shall be driven vertically into the ground to a depth of 2 1/2 to 3 feet in such manner as not to injure the ball or roots. These shall be fastened to each stake at a height of about 5 feet by means of two strands of wire. Stakes shall be uniform in height and placed according to the diameter of the tree trunk, as follows:

3 to 6 inches - 3 stakes
 6 to 12 inches - 2 stakes
 12 inches or less - 1 stake

(c) Permanent tree guards shall be set as specified and trees securely fastened thereto by 3-way guys consisting of two strands of wire passed through rubber hose to protect the bark.

(d) Wrapping. Promptly after planting, the trunks of all trees designated to be wrapped shall be wrapped equally from the groundline to the height of the second branch. All wrapping shall be neat and snug and the material shall be held in place by a suitable cord.

(7) Mulching. All plants shall be mulched with a thin 2-inch layer of well-rotted manure within 2 days after planting. This mulch shall entirely cover the area of the planting pit, bed, or saucer around each plant.

(g) Lawns.

(1) All areas not required to be developed otherwise shall be sprigged and sodded to grass.

(a) If construction is completed at a time out of season for sprigging and sodding with Bermuda grass, all areas not required to be developed otherwise shall be seeded to Italian Rye at the rate of 5 lbs. to every 1000 square feet.

(2) Preparation of Subgrade. The subsoil shall be graded and uniformly compacted so that it will be parallel to the finished grade. The subgrade material shall be loosened and mixed to a depth of two to four inches and all stones over two inches size, sticks and rubbish removed. No heavy objects except lawn rollers shall be removed over the lawn areas after the subgrade soil has been prepared unless the subgrade soil is again graded and loosened as specified above before topsoil is spread.

(3) Finished Grading lawn areas. After the subgrade soil has been prepared, topsoil shall be spread evenly thereon and lightly compacted. No topsoil shall be spread in a frozen or muddy conditions.

(a) Areas to be seeded or sprigged shall be

shall be held in place by a suitable cord.

(7) Mulching. All plants shall be mulched with a 2-inch layer of well-rotted manure within 3 days after planting. The mulch shall entirely cover the area of the planting pit, bed, or sward around each plant.

(8) Lawns.

(I) All areas not required to be developed otherwise shall be sprayed and soded to grass.

(a) If construction is completed at a time out of season for spraying and sodding with Bermuda grass, all areas not required to be developed otherwise shall be seeded to Italian Ryegrass at the rate of 5 lbs. to every 1000 square feet.

(2) Preparation of Subgrade. The subsoil shall be graded and uniformly compacted so that it will be parallel to the finished grade. The subgrade material shall be loosened and mixed to a depth of two to four inches and all stones over two inches size, sticks and rubbish removed. No heavy objects except lawn rollers shall be removed over the lawn areas after the subgrade soil has been prepared unless the subgrade soil is again graded and loosened as specified above before topsoil is spread.

(3) Finished Grading Lawn Areas. After the subgrade soil has been prepared, topsoil shall be spread evenly thereon and lightly compacted. No topsoil shall be spread in a frozen or windy condition.

(a) Areas to be seeded or sprayed shall be

brought to finished grade and smoothed.

(b) Areas to be sodded shall be brought to within the thickness of the sod of the finished grade.

(c) Allowance for settlement shall be made.

(d) Areas where the topsoil has not been removed shall be scarified, smoothed, and sticks, stones and rubbish shall be removed.

(e) Applying arsenate of lead. Arsenate of lead shall be applied at the rate of ten pounds to 1000 square feet to the finished surface of the topsoil. It shall be thoroughly mixed with 25 times its own volume of surface and then immediately and thoroughly watered in.

(4) Applying Lime. Lime shall be applied at the rate of 75 pounds to 1000 square feet to the grass areas being prepared for planting.

(5) Applying Fertilizer. Commercial fertilizer shall be applied at the rate of 50 pounds of 1000 feet to the grass areas being prepared for planting. Fertilizer may be applied with seed.

(h) Planting of Lawns.

(1) Sowing of seed. Immediately before any seed is to be sown, the ground shall be scarified as necessary and shall be raked until the surface is smooth, friable, and of uniform fine texture. Sown areas shall be seeded evenly with a mechanical

spread at the rate of 2-1/2 pounds to 1000 square feet of area, lightly raked, rolled with a 200 pound roller, and watered with a fine spray. The method of seeding may be varied at a discretion of the Contractor on his own responsibility to establish a smooth, uniform grassed lawn.

(2) Row Sprigging. Furrows 12 inches apart, preferably parallel with contours, shall be opened to the depth necessary to insure covering of sprigs to a depth of two inches after compaction. As soon as practical after opening, before soil is dried, cut sprigs shall be placed in the furrows continuously with the ends overlapping, approximately one cubic yard of sod should be used for sprigs per 1000 square feet. The sprigs shall be covered immediately, the surface leveled to established grade, cleaned, suitably compacted, and thoroughly soaked by watering with a fine spray. The method of planting sprigs may be varied at the discretion of the Contractor on his own responsibility to establish a smooth, uniformly grassed lawn.

(3) Laying of sod. Before any sod is laid all soft spots and inequalities in grade shall be corrected. Fertilizer spread shall be raked in. Sod shall be laid so that no voids occur and tauped or rolled. Screened topsoil shall be brushed or raked over the sodded area and the sod shall then be thoroughly watered. The completed sodded surface shall be true to finished grade even and firm at all points.

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(a) Sod on slopes steeper than 2 to 1 shall be held in place by wooden pins about one inch square and about six inches long driven through the sod into the soil until they are flush with the tops of the sod.

(b) Strip or spot sod shall be placed so that the surface of the compacted sod will be slightly below the surrounding surface soil.

(4) Slopes of Banks. At the option of the contractor sod may be used for establishing grass on the slopes or banks in lawn areas.

(i) Clean Up. Any soil, manure, peat or similiar material which has been brought onto paved areas by hauling operations or otherwise shall be removed promptly, keeping these areas clean at all times. Upon completion of the planting all excess soil, stones and debris which has not previously been cleaned up shall be removed from the site or disposed of as directed by the Supervisor. All lawns and planting areas shall be prepared for final inspection.

5. MAINTENANCE

Maintenance shall begin immediately after each portion of lawn and each plant is planted and shall continue in the accordance with the following requirements.

(a) Lawns shall be protected and maintained by watering, and replanting as necessary for at least 30 days after completion of lawn operations and as much longer as is necessary to establish

(a) Sod on slopes steeper than 2 to 1 shall be laid in place by wooden pins about one inch square and about six inches long driven through the sod into the soil until they are flush with the tops of the sod.

(b) Strip or spot sod shall be placed so that the surface of the compacted sod will be slightly below the surrounding surface soil.

(c) Slopes of banks. At the option of the contractor sod may be used for establishing grass on the slopes or banks in lawn areas.

(d) Clean Up. Any soil, manure, pest or similar material which has been brought onto paved areas by hauling operations or otherwise shall be removed promptly, keeping these areas clean at all times. Upon completion of the planting all excess soil, stones and debris which has not previously been cleaned up shall be removed from the site or disposed of as directed by the Supervisor. All lawns and planting areas shall be prepared for final inspection.

5. MAINTENANCE

Maintenance shall begin immediately after each portion of lawn and each plant is planted and shall continue in the accordance with the following requirements.

(a) Lawns shall be protected and maintained by watering, and replanting as necessary for at least 90 days after completion of lawn operations and as much longer as is necessary to establish

a uniform stand of the specified grasses and until acceptance. Scattered bare spots, none of which is larger than one square foot, will be allowed up to a maximum of 3 percent of any lawn area.

(b) New planting shall be protected and maintained until the end of the lawn maintenance period or, if installed after the lawn maintenance period, until installation of planting is completed. Maintenance shall include watering, weeding, cultivating, mulching, tightening and repairing of guys, removal of dead material, resetting plants to proper grades or upright position and restoration of the planting saucer, and other necessary operations. If planting is done after lawn preparation, proper protection to lawn areas shall be provided and any damage resulting from planting operations repaired promptly.

(c) Repairs to Lawns or Replacements of Plants necessary during the maintenance period due to the removal, loss or damage resulting from occupancy of dwelling units, vandalism, or acts of neglect on the part of others may be made on the order of the Supervisor and will be at their expense.

6. INSPECTION FOR ACCEPTANCE.

(a) Inspection of the work of Lawns and Planting to determine completion of contract work, exclusive of the possible replacement of plants, will be made by the County Commissioners at the conclusion of the maintenance period upon written notice requesting such inspection submitted by the

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maintenance period, until installation of planting is completed.
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lightening and repairing of grubs, removal of dead material, resetting
plants to proper grades or upright position and restoration of the
planting sand, and other necessary operations. If planting is
done after lawn preparation, proper protection to lawn areas shall
be provided and any damage resulting from planting operations
repaired promptly.

(c) Repair to lawns or replacements of plants necessary
during the maintenance period due to the removal, loss or damage
resulting from occupancy of dwelling units, vandalism, or acts of
neglect on the part of others may be made on the order of the
superintendent and will be at their expense.

INSPECTION FOR ACCEPTANCE.

(a) Inspection of the work of lawns and planting to
determine completion of contract work, exclusive of the
possible replacement of plants, will be made by the County
Commissioners at the conclusion of the maintenance period upon
written notice requesting such inspection submitted by the

Contractor at least 10 days prior to the anticipated date. The
conditions of lawns will be noted and determination made by the
Landscape Architect whether maintenance shall continue in any part.

(b) Acceptance. After inspection, the Contractor will be
notified in writing by the County Commissioners of acceptance of
all work of the Division, Lawns and Planting, exclusive of the possible
replacement of plants subject to guaranty, or, if there are any
deficiencies, of the requirements for completion of the work. Lawn
Maintenance or other work remaining to be done shall be subject
to reinspection before Acceptance.

(c) Acceptance in part. The work of lawns and planting will be
accepted in part by the County Commissioners upon written application
by the Contractor provided the work offered for acceptance comprises
all of the work of this Division entirely completed, including Lawn
Maintenance, but exclusive of the possible replacement of plants,
located within a continuous area which is a substantial portion
definitely separated from the remainder of the site by roads,
walks, fences, other structural barriers, or readily defined
topographical features.

7. PLANT GUARANTY AND REPLACEMENT

(a) Guaranty. Plants shall be guaranteed for the duration
of one full growing season, beginning April 1 and ending
November 1, after planting, and shall be alive in satisfactory

and labor, will be retained by the County Commissioners and shall be
Contractor only after all replacements have been made and
approved.

Contractor at least 10 days prior to the anticipated date. The conditions of lawns will be noted and determination made by the Landscape Architect whether maintenance shall continue in any part.

(b) Acceptance. After inspection, the Contractor will be notified in writing by the County Commissioners of acceptance of all work of the Division, Lawns and Planting, exclusive of the possible replacement of plants subject to guaranty, or, if there are any deficiencies, of the requirements for completion of the work. Lawn maintenance or other work remaining to be done shall be subject to reinspection before acceptance.

(c) Acceptance in part. The work of lawns and planting will be accepted in part by the County Commissioners upon written application by the Contractor provided the work offered for acceptance comprises all of the work of this Division entirely completed, including lawn maintenance, but exclusive of the possible replacement of plants located within a continuous area which is a substantial portion definitely separated from the remainder of the site by roads, walls, fences, other structural barriers, or readily defined topographical features.

1. PLANT GUARANTY AND REPLACEMENT. Plants shall be guaranteed for the duration of one full growing season, beginning April 1 and ending November 1, after planting, and shall be alive in satisfactory condition at the time of inspection.

growth at the end of the guaranty period.

(b) Replacement. At the end of the guaranty period, inspection will be made by the County Commissioners upon written notice requesting such inspection submitted by the Contractor at least ten days before the anticipated date. Any plant required under this contract that is dead or not satisfactory in growth, as determined by the County Commissioner, shall be removed from the site, these and any plants missing, due to the Contractor's negligence shall be replaced as soon as conditions permit, but during the normal planting season. In case any of the condition and satisfactory establishment of the rejected plant is questioned, the Contractor may elect to allow such plant to remain through another complete growing season at which time the rejected plant if found to be dead, in an unhealthy or badly impaired condition, shall be replaced.

(c) Materials and Operations. All replacements shall be plants of the same kind and size as specified in the Plant List. They shall be furnished and planted as specified under new planting; the cost shall be borne by the Contractor, except for possible replacements resulting from removal, loss or damage due to occupancy of the project in any part, vandalism, or acts of neglect on the part of others.

(d) Costs of Plant Replacements. A sum sufficient to cover the estimated cost of possible replacements, including materials and labor, will be retained by the County Commissioners and paid the Contractor only after all replacements have been made and approved.

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Key	Botanical Name	Common Name	Root & Size	Quantity	Price	Total
		<u>Trees</u>				
P.e	<i>Pinus echinata</i>	Shortleaf pine	BR 1'-1½'	136	.25	34.00
F.g	<i>Fagus grandifolia</i>	American Beech	BR 3'-4'	13	3.00	39.00
C.p.g	<i>Celtis pumilla georgiana</i>	Hackberry	BR 3'-4'	45	3.00	135.00
P.o.	<i>Platanus occidentalis</i>	Sycamore	B&B 6'-8'	14	5.00	70.00
R.P.	<i>Robinia Pseudoacacia</i>	Black Locust	BR 4'-5'	58	1.50	87.00
LS.	<i>Liquidambar styraciflua</i>	Sweetgum	B&B 5'-7'	37	4.95	183.15
Dv.	<i>Diospyros virginiana</i>	Persimmon	BR 3'-5'	26	2.50	65.00
O.a.	<i>Oxydendrum arboreum</i>	Sourwood	BR 3'-5'	22	3.00	66.00
Ac	<i>Amelanchia canadensis</i>	Serviceberry	BR 3'-5'	15	1.50	22.50
Fa	<i>Fraxinus americana</i>	White Ash	B&B 5'-7'	14	2.25	31.50
		<u>Shrubs</u>				
Ch	<i>Cotoneaster horizontalis</i>	Rock Cotoneaster	Can 2 yr.	300	1.95	585.00
Mc	<i>Myrica cerifera</i>	Southern Waxmyrtle	BR 3'-5'	11	3.95	43.45
Bj	<i>Berberis julianae</i>	Wintergreen Barberry	BR 1'-2'	55	1.95	107.25
		<u>Grass</u>				<u>1258.85</u>
Ea	<i>Eragrostic abyssinica</i>	African Lovegrass	Seed			



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