

Palmer, 1961

LANDSCAPE DEVELOPMENT
WESTERN APPROACH TO ATHENS, GEORGIA
Federal Project F-014-1 (6)

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"A Thesis Presented for the Degree of
Bachelor of Landscape Architecture,
Department of Landscape Architecture,
University of Georgia, Athens, Georgia."

December 13, 1961

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

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Robert H. Nelson
Robert H. Nelson

Thesis presented for the degree of
Master of Landscape Architecture,
Department of Landscape Architecture,
University of Georgia, Athens, Georgia.

H.B. Owen Research Center
School of Environmental Design
Caldwell Hall
University of Georgia

Thesis 12 1962

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INTRODUCTION

The geometric design of the highway has been influenced most by the high speeds which the modern motor vehicle demands. Regardless of this fact, one cannot allow this public facility to become strictly functional and void of aesthetic qualities. Under present day developments man has been exposed to attractive highway solutions; fortunately he has come to look with disfavor upon the barren scarred roadside of functional construction.

An aesthetic type of highway encompasses a good, basic, overall design. Emphasized within its scope are alignment that recognizes the terrain, appropriate treatment of slopes, restoration of land disturbed in construction, good details, and landscape treatment. Each is a distinct and separate unit, valued for its own worth, but all are essential in creating a unified and pleasing whole. These qualities, incorporated at the design stage, improve the appearance, efficiency, and safety of the modern highway.

This project deals with the highway approach to the City of Athens, Georgia, from the west, which is actually an extension of Broad Street and is commonly called the "Atlanta High-

INTRODUCTION

The design of the highway has been influenced by the high speeds which the modern motor vehicle requires. In the past, one cannot allow this to become strictly functional and void of character. Under present day developments and the need for attractive highway environment; fortunately, one is not forced with design upon the barren necessity of functional construction.

The type of highway encompasses a good, basic, design, emphasized within the scope and alignment of the terrain, appropriate treatment of slopes, and of land disturbed in construction, good details, and treatment. Each is a distinct and separate element for its own worth, but all are essential in a unified and pleasing whole. These qualities, incorporated in the design stage, improve the appearance, efficiency and safety of the modern highway.

Project deals with the highway approach to the City of Georgia, from the west, which is actually an extension of the highway and is commonly called the "Atlanta Highway".

The Georgia State Highway Department lists it as Federal Highway Project F-014-1 (6), Clarke County from the Oconee River bridge to Hancock Avenue. Several vital questions exist concerning this development. These questions relate to the deterioration or growth of business within its influence, its effect on tourist attraction and the general public, and its general contribution to the subsequent development of the City of Athens.

The highway is a link in the chain of transportation which connects the City of Athens with the rest of the State. It is a link in the chain of transportation which connects the City of Athens with the rest of the State. It is a link in the chain of transportation which connects the City of Athens with the rest of the State.

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HISTORICAL SKETCH OF HIGHWAYS

The loss of the Roman art of road building during the Middle Ages evoked new problems in the building of highways. Many aspects had to be accomplished by trial and error. A great deal of experimentation with the properties and behavior of new materials has been and still is being conducted. All of these advancements, accepted by the American people as eternal monuments of the past, actually emerged from a long and chaotic process.

Prior to the American fight for Independence, roads were no more than cleared strips through the forest, and not until the latter part of 1794 was the first carefully constructed highway in America finished. Surfaced with crushed rock, this twenty-four foot wide road started in Philadelphia and ended sixty-two miles away in Lancaster, Pennsylvania. Around the turn of the century, toll roads were built along the Atlantic coast, but few were profitable ventures, and finally each became a free road.

With the westward migration of the American people, the Federal government undertook to build the then most important westward route, the Cumberland road or National pike. Closely following this advancement, the government developed the Santa

the trail, the Oregon trail, the Mormon trail and the California trail.

In 1829 the steam locomotive made its maiden run, and resulting efforts for better roads on the part of farmers, bicyclists and other users for sixty-five years were stifled. Finally in the 1880's the bicyclists were organized and after 1900 the motorists; thereby, through their demands the greatest construction effort in history was perpetuated.

From 1900 to 1920 preparations for road building were made. Development of governmental organizations, machinery, construction methods and the acquiring of public support gained momentum. Important in this span of time was the authorization of the Federal-Aid Road act of 1916. This act gave the states an economic means of road improvement.

With the coming of the First World War a delay in road construction, caused by the lack of funds, resulted. But with its end, the states progressed even more rapidly. New advancements in motor vehicles caused new demands on the part of business and the general public. Still a lack of funds prevailed, and so a state gasoline tax and vehicle registration fee resulted. By 1929 every state collected such a tax.

From the year 1919 through 1951 the cars and trucks in the United States expanded from 7,500,000 to 52,000,000, and surfaced rural roads went from 350,000 to 1,721,000 miles.

During 1930 the nation saw the near completion of connecting roads between cities, but with this achievement came new and complexing problems. Great volumes of traffic were pouring into the cities, precipitating delay, congestion, and accidents. At this same time the roads with sharp curves, steep grades, bad sight distance and narrow widths to become obsolete.

Thus in the 1940's the government realized a need for a new approach to highway design: expressways resulting as main arteries through cities, four lane traffic with controlled access, and the modernizing of the general highway system. But World War II occurred, and almost all general highway construction halted.

However, the post war years have seen new strides in highway construction, most important of which is the interstate system. Selected by the states with government aid, this system, reaching to all regions of the country, maintains high modern standards.

With all the facets of highway history, the aspects of functional construction leaves its inevitable scars on the landscape. Early in 1921 the states of Massachusetts, Michigan and Pennsylvania sought landscape restoration programs. Although the early intentions were well meant, the results were unsatisfactory.

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

STATEMENT OF THE PROBLEM

Concerned with the appearance of the western approach to the City of Athens, Georgia, and its influence on the future development of that area, Professor Hubert B. Owens, Head of the Department of Landscape Architecture, University of Georgia, caused the below described site to become a senior thesis with this purpose: to prepare a proposed Landscape Development Plan for the western approach to the City of Athens, Georgia [Federal Aid Project F 014-1 (6)].

The site of this development is a 1.3 mile strip of highway extending from the Oconee River Bridge to Hancock Avenue. Within its scope, the main factor to be studied will be the planting of the median and right-of-way of this highway with consideration to the adjacent land.

Also within the scope of the problem are the proposed plans for the landscape development of two existing service stations. These are the Standard Oil Station, owned by Mr. Clarence Berryman and the adjacent Bay Station, owned by the Houston Company.

STATEMENT OF THE PROBLEM

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the bridge, Georgia, and its influence on the future
of that area, Professor Hubert B. Owen, Head of
Department of Landscape Architecture, University of

and the below described site to become a center
for the purpose of preparing a proposed landscape
plan for the western approach to the City of

of this development is a 1.5 mile strip of
land along the Georgia River Bridge to Hancock
County, Georgia. The main factor to be studied will
be the effect of the median and right-of-way of this high-
way on the adjacent land.

Within the scope of the problem are the proposed
development of two existing services
along the Standard Oil Station, owned by Mr.
and the adjacent Bay Station, owned by the

AN ANALYSIS OF THE PROBLEM

The site of the proposed plan originates in a naturalistic
setting. At the present time the highway at this point exists
as a two-lane road, but expansion work with the addition of a
second bridge is now under way.

Moving toward Athens, the highway is seen flanked by
various buildings varying from residences to light industry.
Subsequent to the growing density of buildings is the lack of
natural vegetation, and there is evidence of functional road
construction, as well as the results of man's competitive
instinct.

With little exception the plan becomes limited by the
utility lines that appear along the rights-of-way. These
boundary lines, along with the many entrances cutting through
the site, tend to chop the area into bits and pieces.
Another limitation is that in the construction phase, no
provisions for irrigation were made either in the median or
right-of-way sectors.

Because of the type of maintenance involved, the opera-
tion costs must be kept to a minimum and ease of upkeep
facilitated as much as possible.

PRESENTATION AND JUSTIFICATION OF THE SOLUTION

Progressive states have long realized that modern highways are essential to industrial and residential growth. To meet the steady flow of traffic, these highways must be constructed by the most effective modern means available. While the initial stage is functional, the accompanying aesthetic considerations establish a scale through the use of trees, and a finished product results. It then becomes easier for the industrial and the residential elements to blend their designs into the established landscape treatment.

Overwhelming evidence shows that there is an increase in property value along well designed highways. However, people whose property is adjacent to the right-of-way frequently are reluctant to encourage the improvement of such traffic ways. Too often they have witnessed property deterioration as a direct result of traffic noise and fumes or litter-strewn rights-of-way. It is here that the use of plant materials demonstrates its extensive utilitarian properties. Plantings of trees and shrubs along the outer limit of the right-of-way will tend to absorb dust and fumes and deflect highway traffic. Also, attractive plantings tend to stabilize real estate values of adjacent land.

Where the surface of the highway joins the shoulders, plant materials with their properties of aesthetic appeal take over. The use of turf has long been the answer to the healing of construction defacements and proven to be economically feasible. There is sometimes an objection to the use of trees, shrubs, and flowers, in that maintenance costs would increase. This is not necessarily a reasonable objection, especially as far as trees are concerned, for wherever trees are used intelligently, maintenance cost for that area becomes negligible. In an aesthetic sense, trees are a primary consideration. When used sensitively there results a blending of the highway to the adjacent landscape.

Unsightly, uninteresting highways fail to attract the tourist or pleasure car. When a pleasing composition allows trees and shrubs to frame views both inside and outside the highway, the enjoyment of riding through the towns and country-side can be greatly increased.

The median strip of this specific project in Athens is planted in turf. This greatly facilitates the maintenance problem because it allows working space for mowing equipment. The same turf should be used on the right-of-way except on steep slopes and under trees with low-hanging branches. Here, a secondary turf which will require no mowing will be used.

While the major purpose of the landscape treatment is to

the surface of the highway joining the shoulders, maintain with their properties of resistance against the forces of frost and heavy traffic the character of the highway. The surface of the highway should be sufficiently firm to resist the forces of frost and heavy traffic.

It is sometimes an objection to the use of trees, in that maintenance costs would increase.

It is also a reasonable objection, especially

in the case of the concrete, for wherever trees are used

the maintenance cost for that area becomes negli-

gible. In the case of the concrete, trees are a primary consideration.

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establish scale and refine the highway as a finished product, headlight glare reduction, noise abatement, guidance and time-control will also be effected. As its appearance improves with time, it can exert a strong influence on the development and future appearance of the whole area.

September 20, 1961

Mrs. Carroll Downes
 Chairman of the Hands Committee
 Mr. Robert H. Bennett
 Engineer in charge of Roadside Development
 State Department of Highways
 Atlanta, Ga.

Project P-014-1 (6)
 Construction

Dear Mr. Bennett:

Last March, when you spoke to the Conference for Roadside Development, the Athens Garden Club Council, had several representatives present. I was one of the representatives.

Since that time the Garden Club Council has decided to sponsor the Hands Committee which is the Home and Neighborhood Development Sponsors set up by the Sears-Roebuck Foundation.

No doubt you are familiar with the new four lane highway which has just been completed, in Athens, running out West Broad Street to the bridge. The Hands Committee would like to know how to go about getting information as to the planting of shrubs or plants on the median of this highway.

I have talked to Mr. H.D. McCoy, Resident Engineer, and he has referred me to you.

This highway is an important entrance to the city of Athens and beautification of the median would be of great value to the community. If interest can be aroused, we feel that the property owners on the highway would be inspired to clean up and landscape their sites.

We would appreciate any help or information that you can give us. The planting season is fast approaching so the sooner we can get to work on this project the better.

Thank you for your attention.

Sincerely yours,

Ruth J. Downes
 Chairman of the Hands Committee

Mrs. Carroll Downes
 524 Hill St.
 Athens, Ga.

(COPY)

1. *Thymus*

the night, when you spoke to the Controller for Honolulu
Department, the Atlanta Section Chief, and several
representatives. I was one of the representatives.

that the Garden Club Council has decided to sponsor a fund-raising drive for the Garden Club of America, which is the largest and oldest organization of its kind in the world.

and now to go about getting information as to the plans of the KKK in the vicinity of this highway.

I have failed to Mr. E.D. McCoy, Assistant Engineer, and he
is referred to you.

the highway is an important entrance to the city of Atlanta and beautification of the median would be of great value to the community. If interest can be aroused, we feel that the property owners on the highway would be delighted to clean up and improve their area.

It would appreciate any help or information that you can
give us. The planning session is fast approaching so the
more we can get in work on this project the better.

Thank you for your attention.

1911

Chairman of the Senate Committee
John F. Downes

Mr. Carroll Bowman
20 Hill St.
Boston, Ma.

(1900)

October 9, 1961

Mrs. Carroll Downes
Chairman of the Hands Committee
524 Hill Street
Athens, Georgia

Project F-014-1 (6)
Construction

Dear Mrs. Downes:

We have often approved plans for the beautification of median strips on our highways but since this is an important urban project we shall have to have drawings showing exactly what you want to do. For the preliminary part of these plans we enclose a title sheet showing the general location of the work.

Safety is an important factor in any planting done in the median, and there are two safety features to be considered. One of them is the elimination of headlight glare, and for this reason a dense hedge-like development would be effective. For example, ligustrum, eleagnus and other similar evergreen shrubs have been used for this purpose. The other angle is visibility between lanes. Since there are many crossings in the project we believe that no planting should be done within 100 ft. of any of these crossings, so that drivers crossing from one lane to the other will be able to see oncoming vehicles.

It occurs to me that Dr. Hubert B. Owens of the School of Landscape Architecture at the University might wish to give you some advice or even to make it a classroom project, and I have sent him a copy of this letter. In the latter case, we shall be glad to furnish you with plan-profile sheets showing the details of construction.

I also enclose a copy of the permit required, and if you will address this to me together with further details about your plant I will see that it gets into the right hands for its possible approval.

Yours very truly,

Robert H. Bennett
Highway Construction Engineer

RHB/ssm
Enclosures
CC: Messrs: Flynt, Leftwich, Patrick (Tennille) and H.D.
McCoy (Athens) Dr. Hubert B. Owens

(C-2)

October 12, 1961

Mr. Robert H. Bennett
Highway Construction Engineer
State Department of Highways
Atlanta, Georgia

Dear Sir:

Professor Hubert B. Owens has requested that I write you concerning your letter of October 9, 1961 to Mrs. Carroll Downes, Chairman of the Hands Committee, Athens, Georgia. In this letter you state your willingness to furnish her with plan-profile sheets showing the details of construction Project F-014-1 (6).

Professor Owens is considering this strip, under the request of Mrs. Downes, as a project for a landscape architecture class in which I am enrolled.

If the plans are now available Professor Owens has requested me to inform you to kindly send him a copy at your earliest convenience. An inspection of these plans is necessary before a final decision relative to class participation can be made.

Thank you for giving this matter your prompt attention.

Yours truly,
(signed) Kenneth D. Swindle
Kenneth D. Swindle

(COPY)

October 9, 1961

Project F-014-1 (6)
Construction

A plan-profile sheet showing the details of construction Project F-014-1 (6) is being prepared. This sheet is being prepared for the purpose of showing the details of construction Project F-014-1 (6) to the Chairman of the Hands Committee, Athens, Georgia.

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I am enclosing a copy of the plan-profile sheet showing the details of construction Project F-014-1 (6) to the Chairman of the Hands Committee, Athens, Georgia.

Very truly yours,
Robert H. Bennett
Highway Construction Engineer

(COPY)

October 12, 1961

Robert E. Bennett
Highway Construction Engineer
State Department of Highways
Atlanta, Georgia

Professor Hubert B. Owens has requested that I
write you concerning your letter of October 9, 1961 in
which you requested that the Board of the Highway
Department, Chairman of the Board, Atlanta, Georgia,
be informed of your letter and your willingness to
submit plans with plan-profile sheets showing the details of
the proposed project F-014-1 (6).

Professor Owens is considering this step, under
the request of Mrs. Downes, as a project for a landscape
architecture class in which I am enrolled.

If the plans are now available Professor Owens has
requested me to inform you to kindly send him a copy of
the plans for his review. An inspection of these plans is
being held before a final decision relative to class project
can be made.

Thank you for giving this matter your prompt
attention.

Yours truly,
(signed) Robert E. Bennett
Robert E. Bennett

(COPY)

State Highway Department of Georgia
Atlanta

October 20, 1961

Dr. Hubert Owens, Head
School of Landscape Architecture
University of Georgia
Athens, Georgia

Project F-014-1 (6)
Construction
Roadside Development Plans

Dear Dr. Owens:

Mrs. Carroll Downes wrote to me on October 12, 1961, saying
that she had been in contact with you and that you proposed
to make the landscape improvements of the job a classroom
project. I am very happy to know that you are interested in
it and a set of drawings showing plan and profile has been
sent to you separately.

You already have a copy of my letter of October 9 addressed
to Mrs. Downes giving in general the precautions that ought
to be observed. Otherwise I have no special suggestions to
make, especially since you are already familiar with this
particular application of landscape architecture.

Perhaps the second paragraph of my letter of October 9 might
be modified to some extent where it refers to planting with-
in 100 feet of crossovers. I see no objection to this kind
of planting provided it be done with very low-growing shrubs
which could never grow high enough to obstruct vision from
the drivers seat.

As you know, I do not have the authority to authorize any
work on the right-of-way; but will bring your plans to the
attention of others here who have that authority. I suggest
that you send the plans to me when they are ready, so that I
can direct them to the right people.

Very truly yours,
(signed) Robert E. Bennett
Robert E. Bennett
Highway Construction Engineer

RHB:mas

CC: Mrs. Carroll Downes, Mr. Marion Patrick, Mr. C.W.
Leftwich, Mr. Roy A. Flynt, Mr. S.P. Allison

(COPY)

Atlanta, Georgia
October 27, 1961

Mr. Robert H. Bennett, Highway Construction Engineer

Department of Landscape Architecture
University of Georgia
Athens, Georgia
October 24, 1961

Mr. Robert H. Bennett
Highway Construction Engineer
State Department of Highways
Atlanta, Georgia

Dear Sir:

Thank you for sending the requested drawings for Federal Project F-014-1 (6).

Enclosed is a preliminary layout of a typical section. Our concern at this time is the use of trees in the medium strip. We feel the need of making a transition from the natural growth outside the right-of-way to the project. This can best be made in the proposed manner. Realizing the possible hazard that could result, we would appreciate your advice pertaining to this matter.

Please feel free to make any comments on the drawing which could improve this idea.

Yours truly,
(signed) Kenneth D. Swindle
Kenneth D. Swindle

(COPY)

State Highway Department of Georgia
Atlanta

October 28, 1961

Project F-014-1 (6)
Construction
Roadside Development Plans

Small changes were made to the October 12, 1961, reply. It has been in contact with you and that you proposed the landscape improvements of the job a revision. I am very happy to know that you are interested in the project and that you are working on it. We are very happy to hear that you are working on it. We are very happy to hear that you are working on it.

I have a copy of my letter of October 9 addressed to you. I have also a copy of the preliminary layout of a typical section. I have also a copy of the preliminary layout of a typical section. I have also a copy of the preliminary layout of a typical section.

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Very truly yours,
(signed) Robert H. Bennett
Robert H. Bennett
Highway Construction Engineer

Mr. Robert H. Bennett, Highway Construction Engineer
State Department of Highways
Atlanta, Georgia

(COPY)

State Highway Department of Georgia
Atlanta, Georgia
October 27, 1961

Mr. Robert H. Bennett, Highway Construction Engineer

Mr. Roy A. Flynt, State Highway Planning Engineer
Mr. J.O. Bacon, State Highway Maintenance Engineer
Mr. John M. Wilkerson, Jr., State Road Design Engineer

Project F-014-1 (6) Construction
Roadside Development Plans

A copy of my letter of October 20 addressed to Dr. Hubert Owens, Head, School of Landscape Architecture at the University of Georgia is attached. This letter will explain why the Department of Landscape Architecture is interested in the project identified above.

We now have a preliminary plan and typical section of the proposed layout which is attached. I do not see any objection to it from the safety or maintenance points of view. It is now brought to your attention for critical comments and suggestions which should be addressed to me.

It is requested that Mr. Flynt, Mr. Bacon, and Mr. Wilkerson review the proposed development one after the other by forwarding the original of this letter along with the comments of each person involved.

Robert H. Bennett
Highway Construction Engineer

RHB:mas

Attachments

CC: Mr. Kenneth D. Swindle
Mrs. Carroll Downes
Mr. Marion Patrick

(COPY)

Continued --

State Highway Department of Georgia

Atlanta

November 9, 1961

Mr. Kenneth D. Swindle
Department of Landscape Architecture
University of Georgia
Athens, Georgia

Landscape Development
Project F-014-1 (6)
Project U-003-3 (13)
Clarke County

Dear Mr. Swindle:

The preliminary plan you sent us with your letter of October 24 has been exposed to the officials of this department who are most concerned with the results of such a landscape project, and their comments are attached to this letter. I disagreed with them in the beginning because I felt that you would have little opportunity to develop this project without doing at least some planting in the medians and in the areas between the sidewalk and the pavement. After having been reminded that this is an urban area already developed rather thoroughly as a shopping district and that it will be well lighted at night, it now appears to me that the comments are appropriate.

If you believe that the project can be improved by landscaping within the restrictions mentioned in the attached letter, I suggest that you go ahead with it.

There is another project at Athens consisting of a by-pass which all agree to be more susceptible to landscape design than the one we are now discussing. A cover sheet giving a skeleton layout of this project is attached. Full development of the by-pass will require a considerable outlay of money, but it seems to me that we have the necessary resources for this purpose. In this connection let me assume that the City of Athens, Clarke County, along with the State Highway Department and the U.S. Bureau of Public Roads could all be persuaded to contribute to its cost. If, as seems probable, the Bureau would contribute, their share would be 50 per cent of the total cost and the remainder would have to be raised through the other three agencies. There should be some public sponsorship, probably by the group represented by Mrs. Downes.

Continued --

File: F-014-1 (6)
U-003-3 (13)

November 9, 1961

To: Mr. Kenneth D. Swindle

From: Robert H. Bennett

I cannot predict what their reaction would be, but it seems to me that we ought to take the first step which would consist of a preliminary layout and estimate of cost.

I am leaving this suggestion with you for what it is worth and will try to get down to see you and Dr. Owens some time within the next two weeks, at which time I should like to have an open discussion with all concerned. I will telephone ahead.

Very truly yours,

(signed) Robert H. Bennett
Robert H. Bennett
Highway Construction Engineer

RHB:msm

Attachments

CC: Mrs. Carroll Downes
Mr. Marion Patrick
Mr. C.W. Leftwich
Mr. Roy A. Flynt
Mr. John M. Wilkerson, Jr.
Mr. J.C. Bacon

(COPY)

November 2, 1961

Robert H. Bennett
Highway Construction Engineer

I am sorry that I cannot give you a more definite answer at this time. I will be sure to get back to you as soon as I can.

I am sorry that I cannot give you a more definite answer at this time. I will be sure to get back to you as soon as I can.

Very truly yours,

(signed) Robert H. Bennett

Robert H. Bennett
Highway Construction Engineer

Robert H. Bennett
Highway Construction Engineer

(COPIED)

State Highway Department of Georgia

Interdepartment Correspondence

File Office Atlanta, Georgia
Date October 31, 1961

From Roy A. Flynt, State Highway Planning Engineer
To Robert H. Bennett, Highway Construction Engineer
Subject Roadside Development - Project F014-1 (6), Clarke County

This office is not too well versed in landscape architecture nor its application to roadside development; however, from practical application based on our limited knowledge of planting materials, this office offers the following observations:

- (1) Due to narrow median width, dogwood trees should be eliminated because of branch interference with travelway. The pines may offer some interference during early stages of growth but in time should attain sufficient height to overcome this obstacle.
- (2) Likewise, the dogwoods should be set back from sidewalk to provide free clearance for pedestrian traffic.
- (3) In cases of roadside development of this type, it must be recognized that maintenance to a large extent will be restricted to hand tools including mowing. For this reason and all practical purposes, the plantings should be restricted to the area back of sidewalks, preferably near right-of-way lines leaving a free area to turf in order to permit the use of motorized self-propelled mowing equipment.

(signed) Roy A. Flynt
Roy A. Flynt
State Highway Planning Engineer

REH:ew

(COPIED)

State Highway Department of Georgia

Interdepartment Correspondence

File F-024-1 (6) Clarke Office Atlanta, Georgia
Date November 8, 1961

From John M. Wilderson, Jr., State Road Design Engineer
To Robert H. Bennett, Highway Construction Engineer

Subject Roadside Development Plans

Reference is made to your letter of October 27, 1961, regarding roadside development proposed for the subject project. This office concurs in the comments made by both Mr. Flynt and Mr. Bacon as to the restrictions which should be placed on planting on this type of project.

This project is commercially developed from Epps Bridge Road to Hancock Avenue. From West Lake Road to Hancock Avenue, street lighting has been installed on both sides of the roadway. The level of illumination is such that a motorist may see a pedestrian crossing the roadway. Median planting would interfere with this sight distance and produce a potential hazard.

On this project the width of the median, 16 feet, is entirely too narrow for the type of development shown on the typical drawing submitted with your letter. Your attention is invited to the fact that the 24' travelways and parking lanes must be kept clear of limbs and overhanging branches to a height of 20 feet. This is required in our specifications to prevent damage, particularly to new automobiles on vehicle carriers.

There are no long stretches of median and some of the medians are constructed entirely of concrete. Left turn lanes introduced into the medians in practically every block reduce the median width to 4 feet for a considerable distance. The typical planting section shown on the plans submitted make no provision for this reduction in median width. For these reasons there would be no symmetry of planting possible on the project.

continued --

State Highway Department of Georgia

November 8, 1961

File: F-014-1 (6) Clarke
 To: Robert H. Bennett
 From: John M. Wilkerson, Jr.
 Subj: Roadside Development Plans

Since symmetrical planting would not be possible and the inclusion of trees of intermittent shrubbery in the median would kill the effect of the street lighting, it does not appear that this project lends itself to any type of planting within the median area, or for that matter, in the utility area between the sidewalks and curbs. The latter area between the curbs and sidewalks is full of utilities and must be made available to utility companies periodically for maintenance.

Due to the restrictions required in the middle of the road and the fact that all planting should be limited to the area back of the sidewalks, which is highly developed as a commercial street, it hardly appears feasible to use this project as a beautification experiment.

Yours very truly,
 (signed) John M. Wilkerson, Jr.
 State Road Design Engineer

JMW:lr

cc: J.O. Bacon
 R.A. Flynt

(COPY)

Yours very truly,
 (signed) J.O. Bacon
 State Highway Design Engineer

State Highway Department of Georgia

Interdepartment Correspondence

File Office Atlanta, Georgia
 Date November 6, 1961
 From J.O. Bacon, State Highway Maintenance Engineer
 To Robert H. Bennett, Highway Construction Engineer
 Subject Roadside Development - Project F-014-1 (6) Clarke County

This refers to your letter of October 27, 1961, addressed to Roy A. Flynt, to this office, and to John M. Wilkerson, regarding Roadside Development on the above project.

We concur in all of the comments made in Mr. Flynt's letter to you dated October 31, 1961, which is attached hereto. In addition to the comments made by Mr. Flynt we are of the opinion that where trees are planted in the median at intervals, unless in the intervening intervals a solid type of shrubbery is planted there will be intermittent glare from headlights in opposite directions by reason of the intermittent shadows and areas of light.

We certainly wish to stress the idea of omitting planting within the median areas and that such roadside development be restricted as outlined in Mr. Flynt's letter to the area back of sidewalks and preferably near right-of-way lines leaving a free area in which to permit the use of motorized mowing equipment.

In addition to the foregoing objections, we might also point out that although loblolly pines are considered evergreen there would still remain the maintenance problem of raking and disposal of pine needles and pine cones falling within the median area.

The complete file on this subject is being forwarded to John M. Wilkerson, for further comments from him and for returning the complete file to your office with his reply

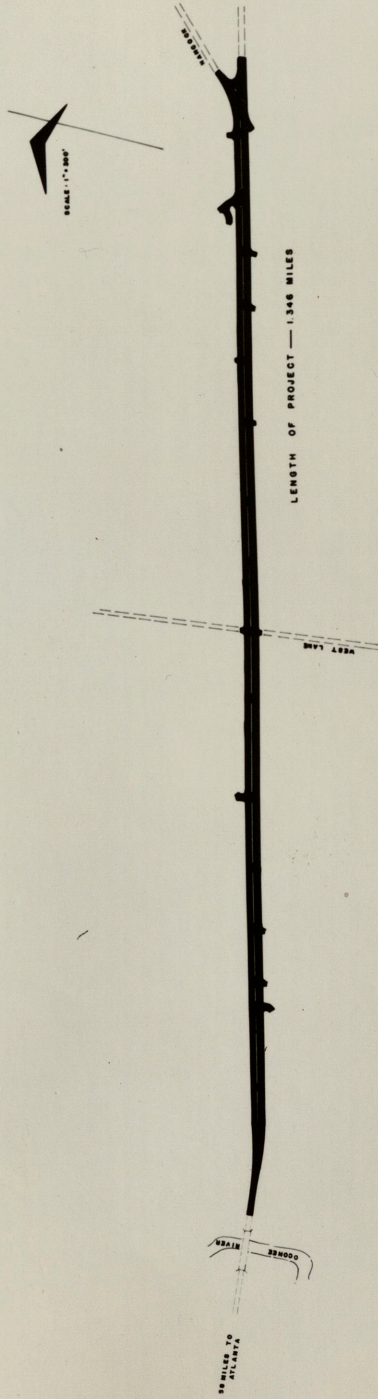
Yours very truly,
 (signed) J.O. Bacon
 State Highway Main. Engineer

JOB/WBB/pn Attachment cc: Roy A. Flynt John M. Wilkerson
 (COPY)

(1961)
 Department of Landscape Architecture
 University of Georgia
 Athens, Georgia
 Project: F-014-1 (6)
 Clarke

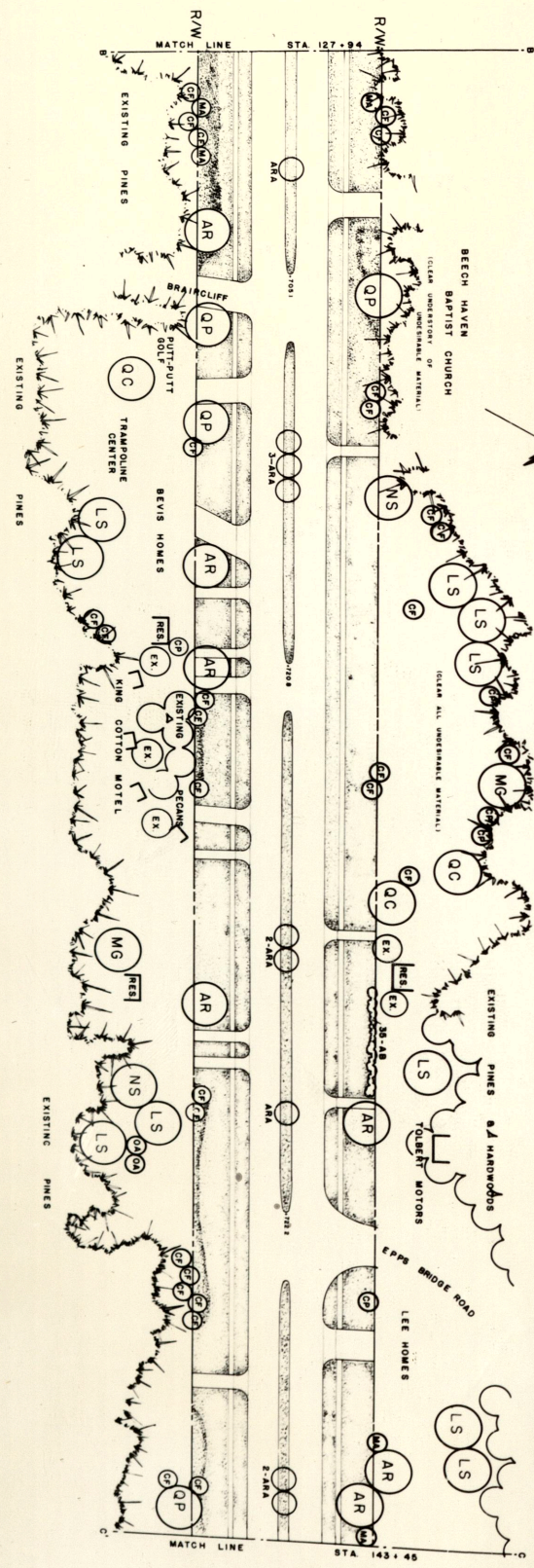
WESTERN ATHENS, APPROACH GEORGIA

(FEDERAL - AID PROJECT F-014-1 (6))
 CLARKE

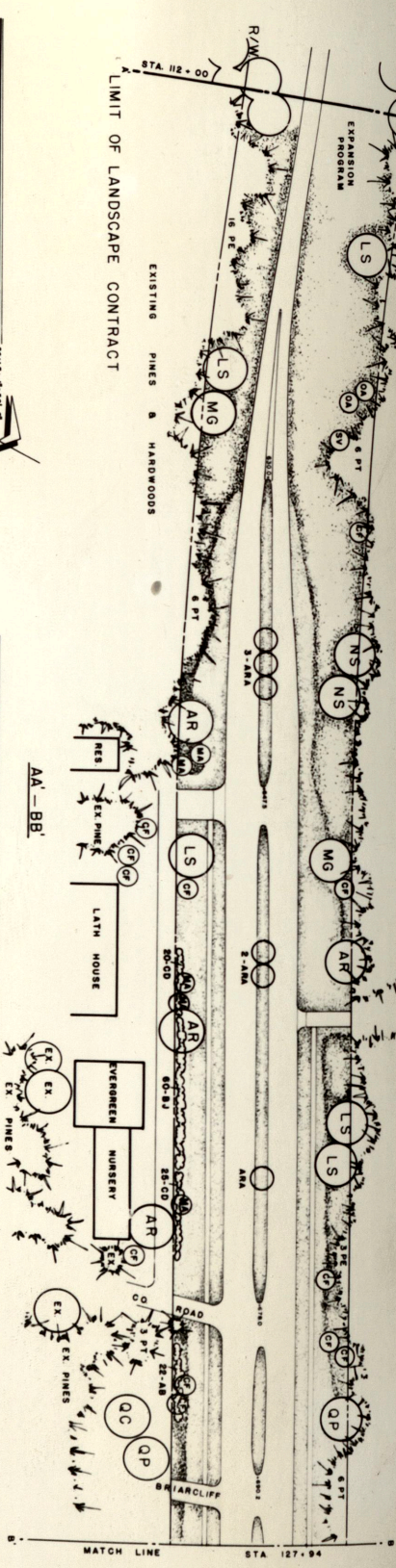


DEPARTMENT OF LANDSCAPE ARCHITECTURE
 UNIVERSITY OF GEORGIA

BB'-CC'



AA-BB'



KEY	SYMBOL	PLANT	QUANTITY
AR	Circle with 'AR'	ACER RUBRUM	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
NS	Circle with 'NS'	NEEDLE PALM	10
MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
NS	Circle with 'NS'	NEEDLE PALM	10
MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10

KEY	SYMBOL	PLANT	QUANTITY
AR	Circle with 'AR'	ACER RUBRUM	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
NS	Circle with 'NS'	NEEDLE PALM	10
MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
NS	Circle with 'NS'	NEEDLE PALM	10
MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10

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MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
NS	Circle with 'NS'	NEEDLE PALM	10
MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10

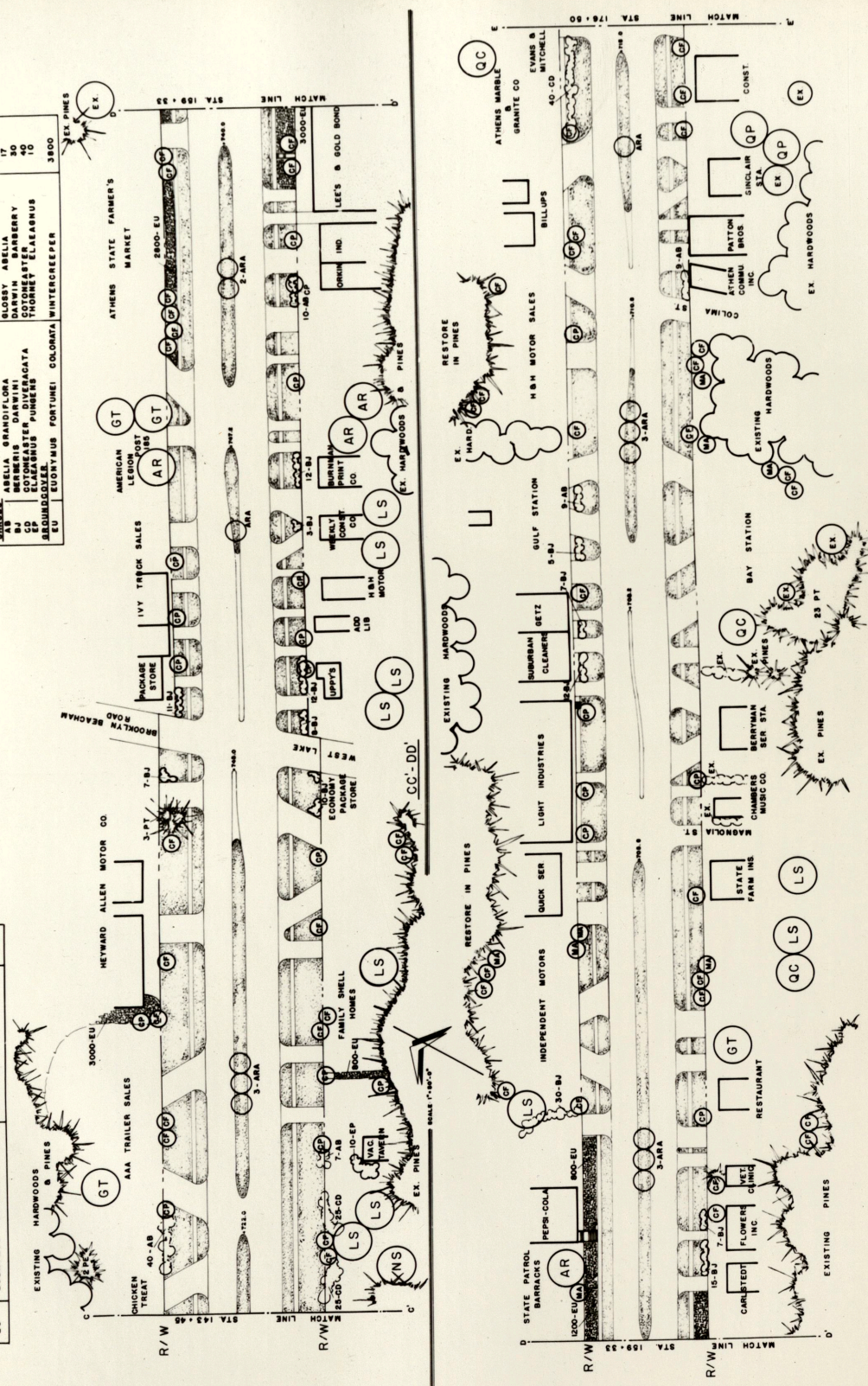
PLANT LIST THIS SHEET

KEY	SYMBOL	PLANT	QUANTITY
AR	Circle with 'AR'	ACER RUBRUM	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
NS	Circle with 'NS'	NEEDLE PALM	10
MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
NS	Circle with 'NS'	NEEDLE PALM	10
MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10

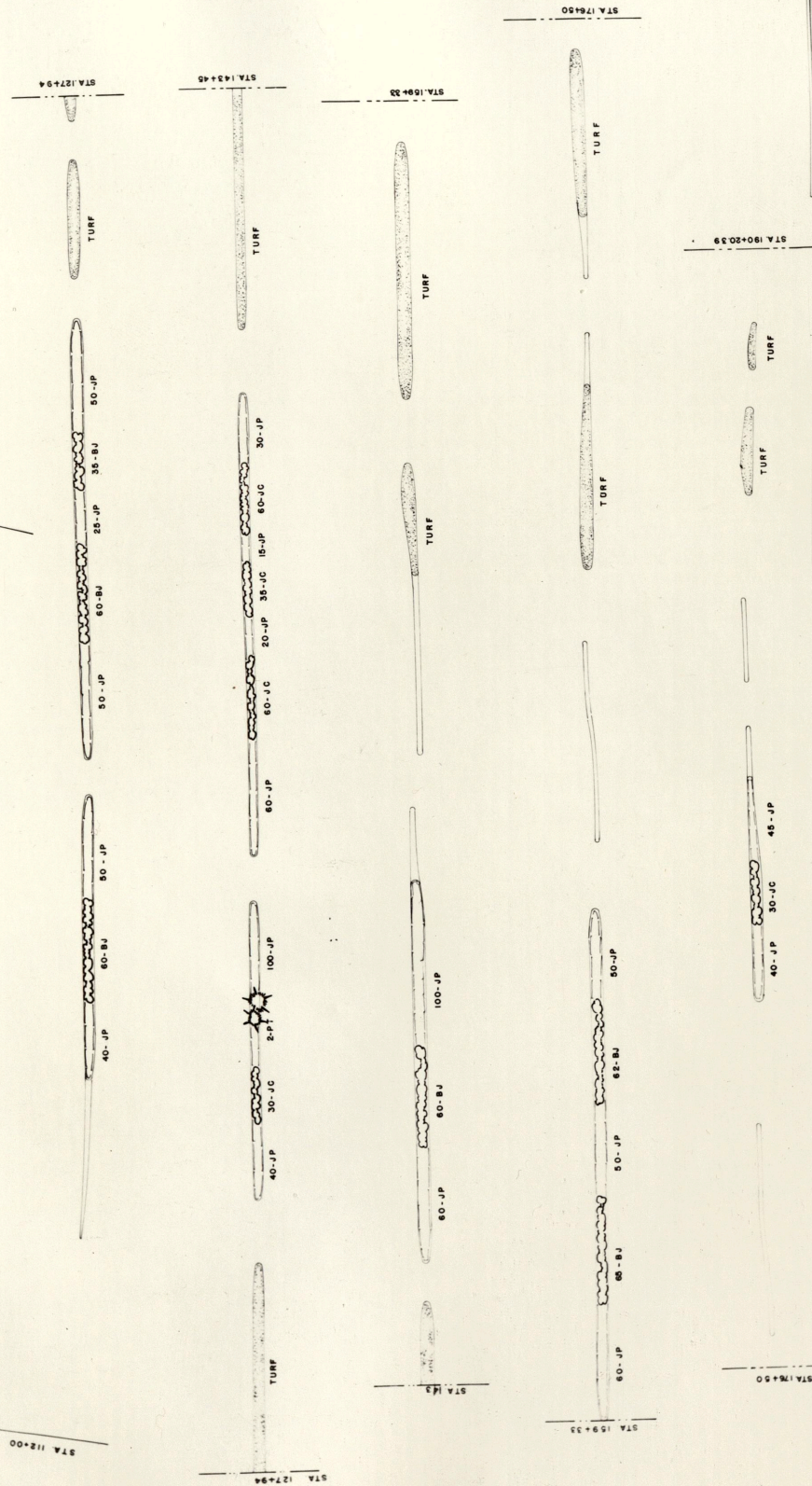
PLANT LIST THIS SHEET

KEY	SYMBOL	PLANT	QUANTITY
AR	Circle with 'AR'	ACER RUBRUM	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
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EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10
LS	Circle with 'LS'	LEAFLESS SWEETGUM	10
QC	Circle with 'QC'	QUERCUS COCA	10
NS	Circle with 'NS'	NEEDLE PALM	10
MG	Circle with 'MG'	MAGNOLIA	10
PT	Circle with 'PT'	PISTIA STRIATA	10
CD	Circle with 'CD'	COTONEASTER	10
EU	Circle with 'EU'	EUCALYPTUS	10
GT	Circle with 'GT'	GRAPTELEAF	10
SN	Circle with 'SN'	SINUALEAF	10

NOTE: ADD 13 ARMSTRONG RED MAPLES (ACER RUBRUM) ARMSTRONG THIS SHEET.



DD'-EE'



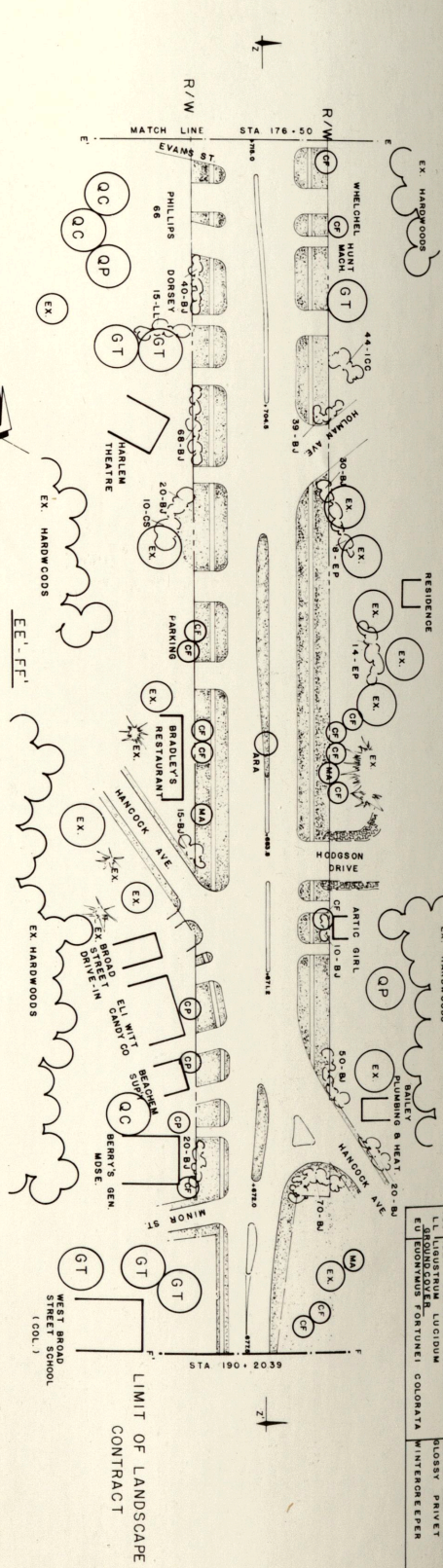
PLANT LIST THIS SHEET

KEY	BOTANICAL NAME	COMMON NAME	QUANTITY
TYPE	PINUS TAEDA	LOBLOLLY PINE	2
SHRUBS			
91	BENGALEIS	SADIN BASKBERRY	242
92	CONIFERA	SADIN JUNIPER	215
GROUNDCOVER			
93	PROCEMBENS	PROCEMBENS JUNIPER	885
JP	JUNIPERUS PROCEMBENS		

PLANT LIST THIS SHEET

KEY	OTANICAL	NAME	COMMON	NAME	QUANT
1	CONUS	FLORIDA	FLOWERING	DOGWOOD	5
2	CONUS	VALUS	ARNOLD'S	CRAB	2
3	CONUS	DARWINI	DARWIN	BARENEE	208
4	CONUS	FOUNTAIN	WINTERGREEN		40

NOTE: ADD 1 ARMSTRONG RED MAPLE (ACER RUBRUM "ARMSTRONG") THIS SHEET.



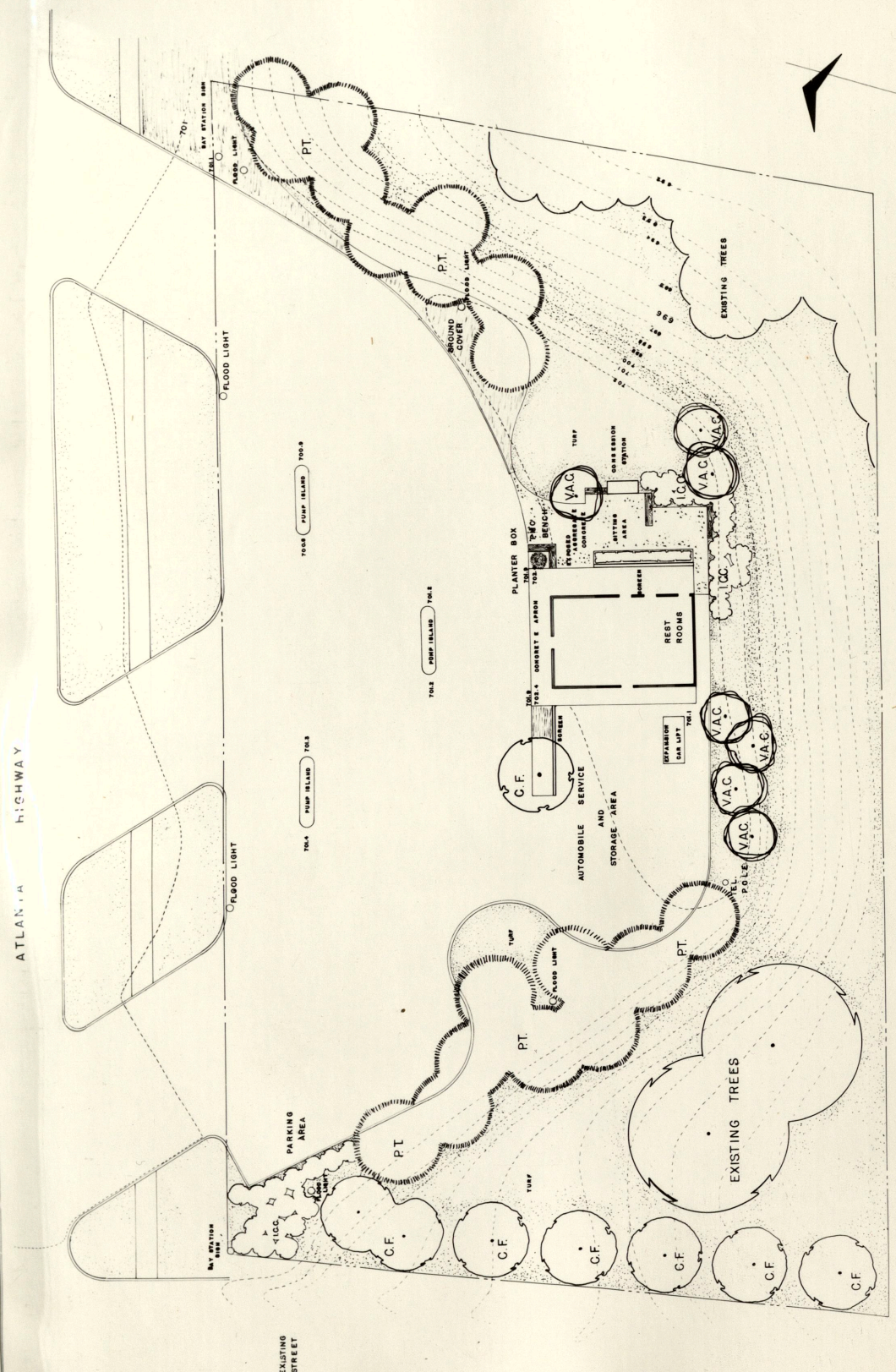
PLANT LIST THIS SHEET
ADJACENT LAND

NAME	STATE	DATE	AGE
1. J. C. CONNOR	FLORIDA	10/10/54	20
2. J. C. CONNOR	FLORIDA	10/10/54	20
3. J. C. CONNOR	FLORIDA	10/10/54	20
4. J. C. CONNOR	FLORIDA	10/10/54	20
5. J. C. CONNOR	FLORIDA	10/10/54	20
6. J. C. CONNOR	FLORIDA	10/10/54	20
7. J. C. CONNOR	FLORIDA	10/10/54	20
8. J. C. CONNOR	FLORIDA	10/10/54	20
9. J. C. CONNOR	FLORIDA	10/10/54	20
10. J. C. CONNOR	FLORIDA	10/10/54	20
11. J. C. CONNOR	FLORIDA	10/10/54	20
12. J. C. CONNOR	FLORIDA	10/10/54	20
13. J. C. CONNOR	FLORIDA	10/10/54	20
14. J. C. CONNOR	FLORIDA	10/10/54	20
15. J. C. CONNOR	FLORIDA	10/10/54	20
16. J. C. CONNOR	FLORIDA	10/10/54	20
17. J. C. CONNOR	FLORIDA	10/10/54	20
18. J. C. CONNOR	FLORIDA	10/10/54	20
19. J. C. CONNOR	FLORIDA	10/10/54	20
20. J. C. CONNOR	FLORIDA	10/10/54	20

SECTION ZZ'

KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUAN
1	TEJON	FLOWERING DOGWOOD	6'-8'-*	9
2	CRANE	MUGO PINE	18'-24'-*	18
3	PNUS	MUGO PINE	SEEDLING	10
4	CASTUS	CHASTE TREE	3'-4'-*	7
5	AGNUS-CASTUS	CHASTE TREE	3'-4'-*	7
6	VITEX	CHASTE TREE	3'-4'-*	7
7	ILIX	CONVEX-LEAF HOLLY	18'-24'-*	32
8	GRENATA	CONVEX-LEAF HOLLY	18'-24'-*	32
9	CONVEXA	CONVEX-LEAF HOLLY	18'-24'-*	32
10	MAJOR	LARGE-LEAF PERIWINKLE	PATCHES	42
11	VERNA	LARGE-LEAF PERIWINKLE	PATCHES	42
12	BERNUDA	LARGE-LEAF PERIWINKLE	PATCHES	42

PLANT LIST

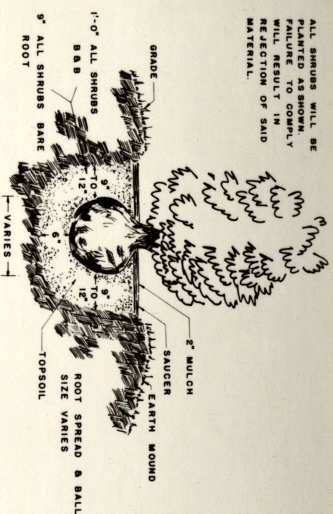


DETAIL OF SHRUB PLANTING

SCALE: N/A

PLANT LIST

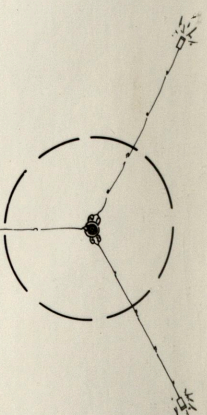
KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY	UNIT	O.C.
TREES -						
AR	ACER RUBRUM	RED MAPLE	8'-10'	9	6	
FR	FRAXINUS	DOGGWOOD	8'-10'	8	4	
CP	CRATAEGUS PHAEOCORYMBUS	WASHINGTON DOGWOOD	8'-8'	8	10	
ST	GLABRIS TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	8'-8'	17	10	
LS	LIRIODENDRON STRYACIFOLIA	SHEET PINE	11'-2'-2' CAL	5	10	
MS	MAHONIA GRANDIFLORA	SOUTHERN OAK	8'-8'	1	20	
NS	NYSSA SYCATIF	BLACK OAK	8'-8'	2	1	
PT	PRUNUS SPINOSA	SPINOSA	11'-2'-2' CAL	2	2	
QC	QUERCUS COCCINEA	SCARLET PINE	8'-10'	2	3	
SC	SCOTCH PINE	LOBLOLLY PINE	SEEDLING	4	NEED 2	
SV	SASSAPARA VARIIFOLIUM	SCARLET OAK	2'-2 1/2' CAL	4	AS NEEDED	
		SASSAPARA	2'-2 1/2' CAL	1	10	
SHRUBS -						
BJ	ABELIA GRANDIFLORA	GLOSSY ABELIA	24'-30'	888	105	17
BU	BREINIA DARWINI	DARWIN BARBERY	18'-24'	888	417	145
CB	CAMPIDIA SASSAQUA	COTONCASTER	18'-24'	888	50	4
ED	ELAEAGNUS PLUMERIANA	SASSAQUA	3'-4'	888	10	10
EP	ELAEAGNUS PARVIFLORA	TOMMY LITTON	24'-30'	888	51	3
LT	LEUCOSTRUM LUCIDUM	GLOSSY PRIVET	24'-35'	888	44	3
					15	4
GROUNDCOVER -						
EU	EUNYMIUS FORTUNEI	WINTERCREPPER	ROOTED CUTTING	7040	5200	12"
TABLE						
CYMOND	DACTYLON	COMMON BERNUDA		AS NEEDED		
DACTYLON	CASUAL					



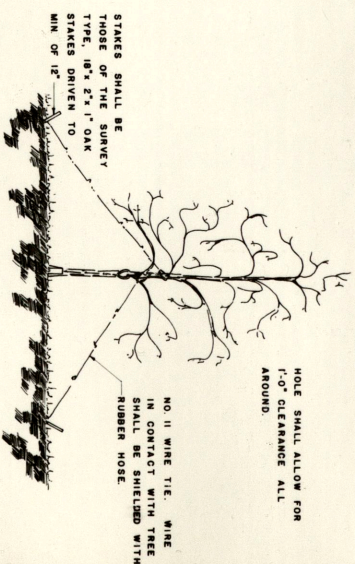
ALL SHRUBS WILL BE
PLANTED AS SHOWN.
FAILURE TO COMPLY
WILL RESULT IN
REJECTION OF SAID
MATERIAL.

NOTES

1. BAG - BALLED AND BURLAPED
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR QUANTITY OF PLANTS EACH SHEET.
3. ANY LARGE TREE SHALL BE PLACED 20' AWAY IF IN CONFLICT WITH LINES.
4. NO TREE SHALL BE DELIVERED WITH HEIGHT GREATER THAN 15 FEET.



ALL NEWLY PLANTED TREES SHALL BE GUDED SECURELY TO PREVENT SWAYING OF THE TRUNK OR LOOSENING OF THE ROOT SYSTEM, WHICH OPERATION SHALL BE PERFORMED ACCORDING TO STANDARD NURSERY PRACTICES.



HOLE SHALL ALLOW FOR
1'-0" CLEARANCE ALL
AROUND.

TYPICAL METHOD FOR TREE GUYING

SCALE: N/A

PLANTING DETAILS

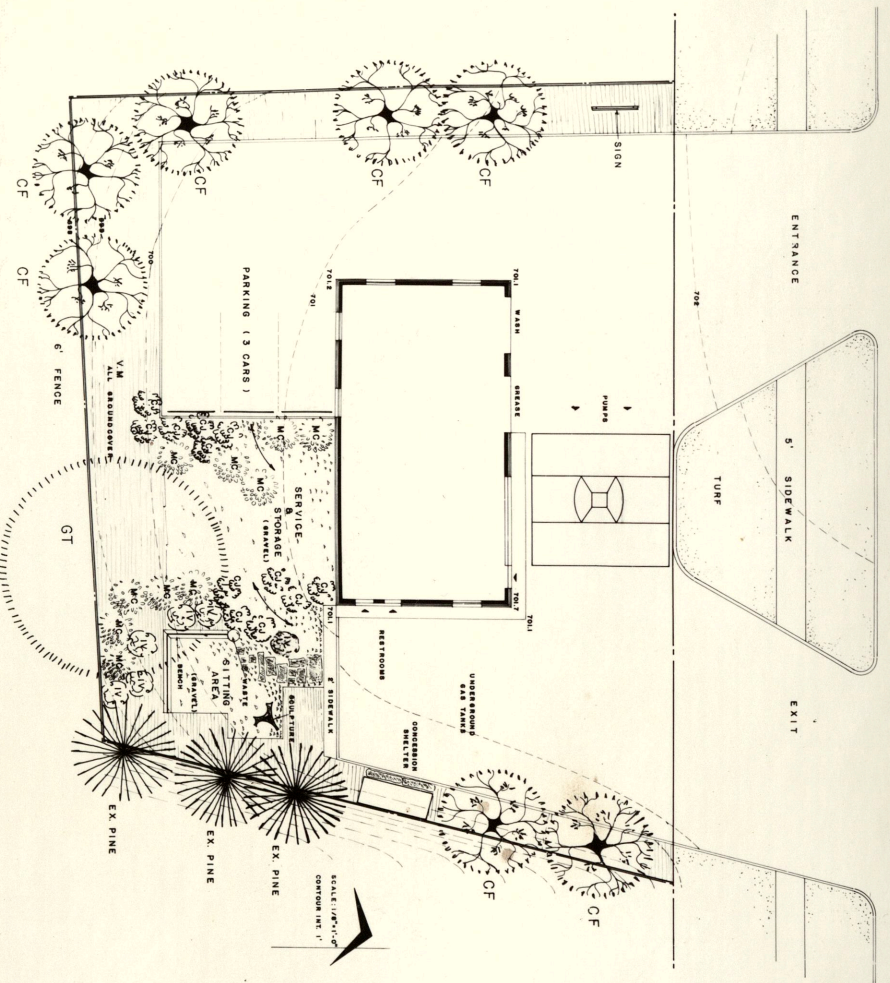
WESTERN APPROACH TO ATHENS
FEDERAL PROJECT F-014-1(6)



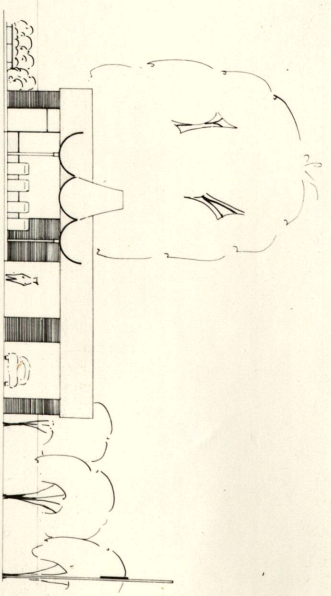
PLANT LIST

KEY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUAN.
CF		CORNUS FLORIDA	DOGWOOD	8'-8'	7
GT		GLEDETZIA TRICANTHOS	THORNLESS HONEY LOCUST	2' CAL 1	
SHRUBS		INERMIS			
CJ		CLEYERA JAPONICA	JAPANESE CLEYERA	24-30' 12	
MC		MYrica COMPACTA	DOGFISH TAIL	12-18' 6	
MC		MYrica GLABRA	DOGFISH TAIL	12-18' 6	
GROUNDCOVER		PERIWINKLE		2' VA	4550
VA		VINCA MINOR		2' VA	4550

ATLANTA HIGHWAY



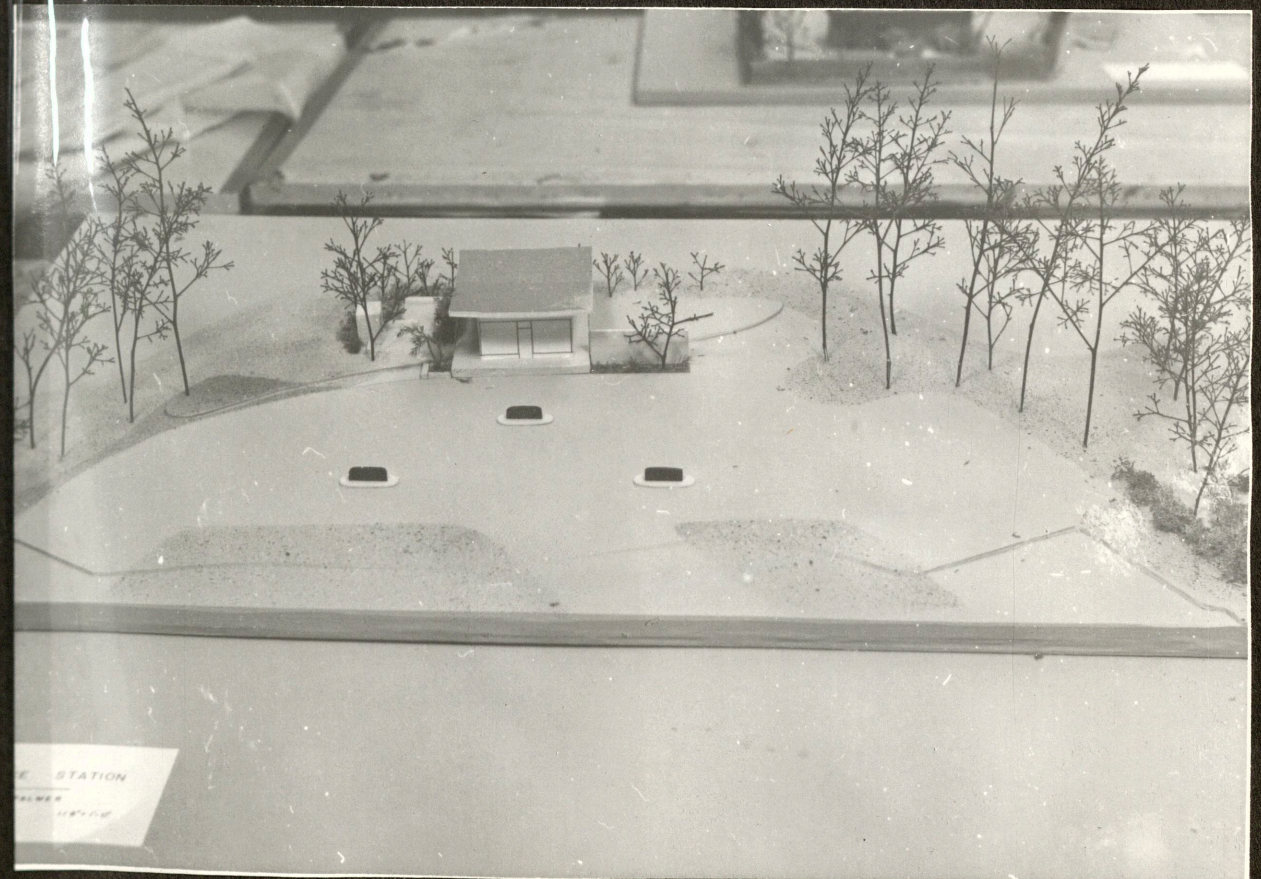
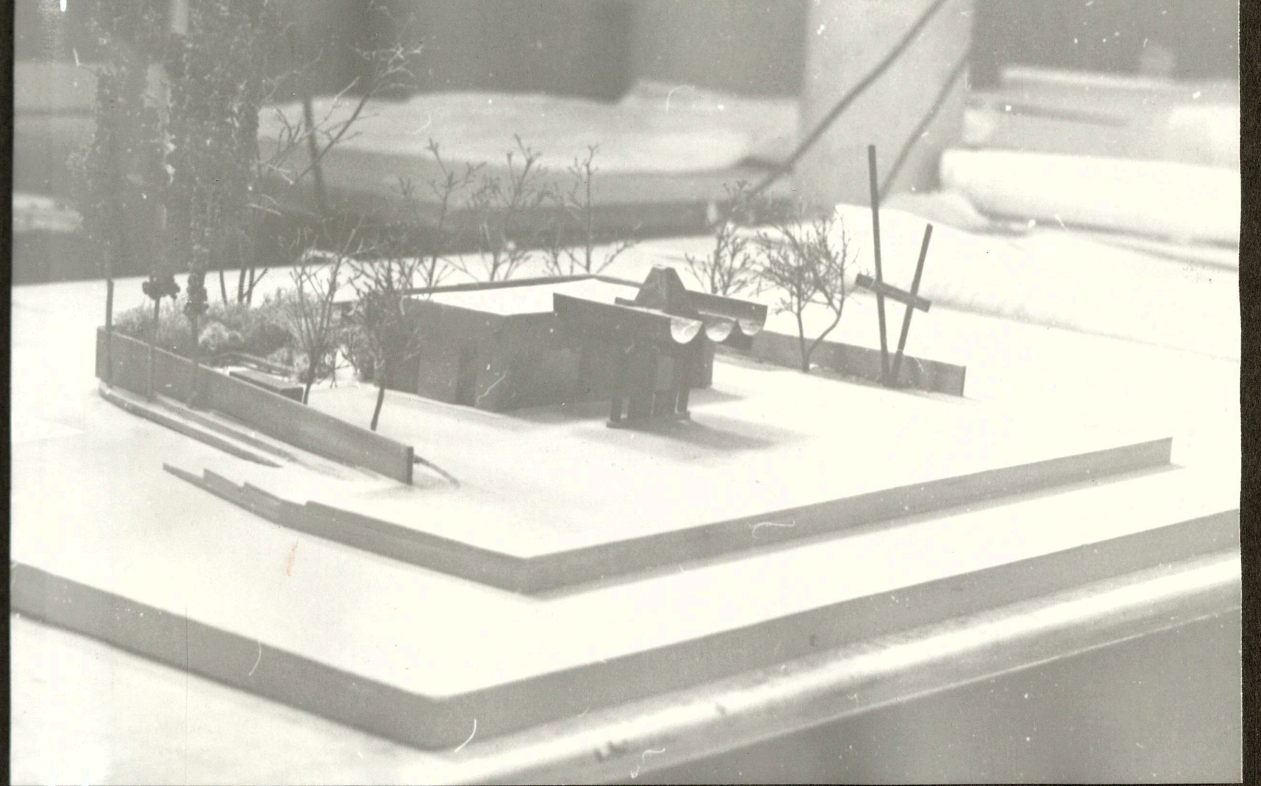
PLAN



FRONT ELEVATION







MASTER SPECIFICATION - PLANTING

I. SCOPE OF WORK

Work shall include all materials, supplies, labor and equipment incidental to, and for the installation of planting as set forth herein, or indicated on the Planting Plan, or as ordered by the Landscape Architect, for Federal Aid Project F 014-1 (6), Clarke County, Georgia.

II. SPECIFICATIONS AND DRAWINGS

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, either in the 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.

III. 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 - of 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.

IV. ERRORS OR 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

Trees

Acer rubrum
Cornus florida
Crataegus phaeopyrum
Gleditsia triancanthos inermis
Liquidambar styraciflua
Magnolia grandiflora
Malus arnoldiana
Nyssa sylvatica
Oxydendrum arboreum
Quercus coccinea
Quercus phellos
Sassafras varifolium

Red Maple
Flowering Dogwood
Washington Hawthorne
Thornless Honeylocust
Sweetgum
Southern Magnolia
Arnold Crab
Black Tupelo
Bourwood
Scarlet Oak
Willow Oak
Sassafras

8'-10' BB
6'-8' BB
6'-8' BB
1 1/2"-2" cal
1 1/2"-2" cal
6'-8' BB
5'-6' BB
8'-10' BB
4'-5' BB
2"-2 1/2" cal
2"-2 1/2" cal
6'-8' BB

9 1/2
52
17
5
2
12
2
2
4
1

36.00
286.00
102.00
45.00
24.00
24.00
22.00
16.00
70.00
4.00

24.00
264.00
60.00
65.00
180.00
12.00
18.00
22.00
16.00
160.00
105.00

Shrubs

Abelia grandiflora
Berberis darwini
Ceanothus sesuvium Mino-Mo-Yuki
Cotoneaster divericata
Elaeagnus pungens
Ilex crenata convexa
Ligustrum lucidum

Glossy Abelia
Darwin Barberry
Sasanqua
Cotoneaster
Thorney Elaeagnus
Convex Leaf-Holly
Glossy Privet

24"-30"BB
18"-24"BB
3'-4' BB
18"-24"
24"-30"BB
18"-24"BB
24"-36"

105
417
95

210.00
333.60
190.00

34.00
116.00
35.00
80.00
72.00
143.00
11.25

Groundcover

Suomyus fortunea coloratus

Wintercreeper

rooted cutting

7040

1760.00

5200

1300.00

3122.60

2717.25

Planted
Clean-up (20 acres)

936.78

815.18

Misc.

4059.38

11532.43

Grand Total

312.26

\$16,175.80

271.73

which is discrepant or otherwise appears in error, the Contractor will immediately call it to the attention of the Landscape Architect.

V. TIME

Work shall begin within five days after receipt of "Notice to Proceed" and shall be completed within the specified time.

VI. MATERIALS

Plant materials shall be specimen plants, true to species and variety, of symmetrical growth, and well developed branch and root systems, free of insect pests and diseases, nursery grown and meeting the standards of the American Association of Nurserymen.

VII. WORKMANSHIP

Staking out of plant materials shall be done prior to planting and in accordance with the plan. Stakes shall indicate the name of the plant for each location. The Landscape Architect will inspect the stakes and verify proposed plant locations prior to actual planting. Nursery stock shall at all times be protected from drying out and shall be planted within a reasonable time. Planting operations shall proceed under a well organized program and according to accepted nursery practice.

VIII. SUBSTITUTION

No substitution shall be made without the written permission of the Landscape Architect.

IX. REJECTION

All materials which do not meet specifications will be rejected by the Landscape Architect and shall be removed and replaced by the Contractor at his own expense with proper materials.

X. PLANTING INSTRUCTIONS

(1) ALL PLANTING shall conform with the lines, grades and dimensions shown on the plan or as ordered by the Landscape Architect. The Contractor shall verify all dimensions and notify the Landscape Architect of any deviation or situation or unsafe condition which would adversely effect the satisfactory performance of the work or the intended result. All plants shall conform in size to the Plant List unless otherwise approved by the Landscape Architect.

(2) HOLES for small trees and evergreens shall be dug 18 inches larger than the diameter of the root ball. Holes for plants to be planted "bare root" or "loose ball" shall be dug with the root spread having a minimum of 12 inches of clearance. Holes shall be dug with vertical sides and horizontal bottoms. All plants shall be planted plumb and true. Plants shall be planted 2 to 4 inches lower in their new location than they stood prior to transplanting.

(3) BARE ROOT plants shall have their roots adjusted to their normal position without crowding together. Only pulverized soil will be placed in contact with the roots. Soil will be sifted in between the roots and no air pockets will be left.

(4) BALLED AND BURLAPED - Plants shall have the burlap taken away from the upper part of the plant and adjusted so as not to form air pockets. Care shall be used to preserve the solidity of the ball. Burlap shall not be pulled from underneath the ball.

(5) ARRANGEMENT of plants shall be for the best effect. When shrubs vary in height the larger will be placed in the center of a group or at its wider part.

(6) BACKFILL shall be composed of topsoil obtained from the excavation with materials unfit for this purpose removed. Clods will be broken up.

(7) ACID SOIL plants, such as Azaleas, shall be back-filled with a mixture of topsoil, free from any alkaline material, with peat moss or leaf mold a minimum of 25 percent by volume well mixed in.

(8) OTHER THAN ACID SOIL PLANTS shall have their holes prepared as follows: The bottom of the hole shall be covered with manure one inch deep and this incorporated from 4 to 6 inches into the soil. This layer shall be covered with a layer of topsoil one inch deep. This may be performed either before or after the depth of the pit is tested for the individual plant to go in, but must be repeated if the loose soil and manure is removed to deepen the hole.

(9) EACH PLANT shall be thoroughly watered into place when the hole is approximately two-thirds filled with soil. Earth saucers shall be shaped around each plant after completion of well compacted backfill, forming an earth circle at least 4 inches in height, around the circumference of the hole and a few inches lower at the base of the plant.

(10) ROOT PRUNING of bare root plants shall be accomplished to remove poorly formed or broken roots.

(11) TOP PRUNING shall be performed as directed, to the satisfaction of the Landscape Architect. The general principals of pruning shall be as follows: remove all undesirable branches; those that are weak or damaged; those that tend to cross the plant; those that detract from the appearance of the plant; and tree branches that hang too low. Cut back until enough of all the branches are removed to balance roots cut in digging on all kinds of plants that usually receive a severe setback by being transplanted, such as Pyracantha. Cut surfaces over an inch in diameter shall be painted with tar or acceptable preservative.

(12) STAKING of trees shall be accomplished to insure their establishment and protection in such manner so as to not injure them. Stakes shall be those of the survey type, 12" x 2" x 1" oak stakes driven to a 12" minimum, or a substitute approved by the Landscape Architect. Wire for guying trees shall be two strands 11 guage malleable galvanized wire. Hose shall be new two-ply fabric bearing rubber hose with an inside diameter of not less than 1/2 inch.

(13) A MULCH or manure or substitute acceptable to the Landscape Architect shall be spread evenly one inch deep on the area of the saucer about each plant, except on the "acid-loving plants" which will be mulched with leaves 6 inches deep held in place by a little soil.

(14) WATERING of plants shall be accomplished at frequent intervals. Water to be used should be clean, fresh water, free from any harmful or objectionable qualities or organisms.

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

(16) PEAT MOSS shall be brown; acid reaction about 4 to 5 pH; low in content of woody materials and free of mineral matter harmful to plant life; water absorbing capacity, 1100 to 2000 percent; moisture content 30 percent; natural, shredded or granulated.

(17) PLANTS ON SITE - Any plants on the site caused to be moved shall have the same care and good nursery practice specified for nursery grown material. The method shall consist of moving the plant with all dirt practicable adhering to the roots, but without wrapping the ball in burlap or necessarily keeping it solid. The plant shall be dug without shaking the dirt from the roots and be carefully placed on burlap to be carried to its new location.

XI. CLEAN UP

Removal of all debris from the planting operation, such as, sacks, pots, tags, stakes, root and branch prunings, shall be performed each evening of every work day. All brick bats, rock, wood, debris, metal objects, and similar materials shall be collected as they are uncovered during planting and cultivation operations and shall be removed from the site leaving the completed work in a neatly policed condition.

XII. CONTRACTOR'S RESPONSIBILITIES

The Contractor will take such action as required to insure protection of any existing material, plants, structures or utilities, in, or over the site, and will be responsible for damage to any of these in the performance of this contract. Contractor will not burn debris on the site. Contractor will at all times be responsible for the safety and conduct of his employees and representatives. He will conduct his operations and leave the site so as to in no way endanger the health or lives of anyone using the property.

XIII. GUARANTEE

All plant material shall be guaranteed for one year from acceptance of planting by the Landscape Architect except for material already on the site to be moved as a part of the contract. All plant material so guaranteed, which are not in a healthy and vigorous growing condition, upon inspection by the Landscape Architect, shall be removed and replaced at the contractor's expense. For this purpose, the Landscape Architect will make one inspection 30 days after initial acceptance and one inspection one year after initial acceptance. The contractor may, during the period of the guarantee, make periodic inspection, maintenance and watering, feeding or weeding as required.

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