SOUTHEAST WATER LABORATORY
Athens, Georgia

by

David B. Harrity

A Terminal Problem Presented for the
Degree of Bachelor of Landscape Architecture

Department of Landscape Architecture
University of Georgia
Athens, Georgia
June 1, 1965

H.B. Owens Resource Center School of Environmental Design Caldwell Hall University of Records VACEARORAL SEEMS TRANSPORTED AND ACTION OF STREET

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SOUTHEAST WATER LABORATORY

Introduction

For a number of years there has been a growing concern throughout the United States over actual or impending shortages of water for municipal, agricultural, industrial, recreational and legitimate purposes. The realization that water resources are limited is forcing itself more and more upon the attention of the public, even in regions of relatively abundant rainfall.

In this situation it is only prudent to take stock of the potential water available, to do what can reasonably be done to store water during seasons when runoff is greatest for use in times of shortage, to transport water from areas of relative abundance to areas of scarcity, and to eliminate loss and wastage. All of these things are being done, sometimes on a grand scale. Serious study is also being given to the possibility of increasing the available supply of water by converting salt and brackish water to usable fresh water at reasonable cost.

In addition to these measures, there is a strong and accelerating trend toward conserving water quality, of controlling or preventing pollution of water so as to keep it usable and re-usable as a beneficial resource. The nation cannot continue to degrade the quality of its waters to the point that they can no longer be utilized, thereby destroying an essential resource.

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

SOUTHEAST MATTE TABGETORY

Introduction

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University of Georgia

The treatment of water to remove detrimental impurities can be an expensive process. Nature itself is capable, under appropriate circumstances, of dealing with many kinds and degrees of polluting substances; and this natural purification capacity represents a considerable asset. Nature, furthermore, can teach a thoughtful observer her methods of purification; and these processes might very probably be the bases of better and cheaper methods of water purification. In this there is a fruitful field for research.

Historical Background

There are numbers of synthetic organic compounds finding their way into water that are potentially toxic in very small concentrations. New methods must be found for the treatment of water and wastes for the removal not only of conventional contaminants but also of the more refractory and persistent substances as well. Such methods may be physical, chemical, or biological; and to find and apply them calls for concerted effort by scientists and engineers.

The growing concern of the public has been reflected by the increasing insistence of both state and federal legislatures for a stronger, concentrated attack on the problem. In the last decade stronger legislative and financial backing has been given to water pollution control and to other stimulants to research. In 1956 the 84th Congress passed the Federal Water Pollution Control Act (Public

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Law 880) which vested broad powers in the Public Health Service of the Department of Health, Education and Welfare. In 1962 this Act was amended (Public Law 87, 88th Congress) and in this amendment provision was made, among other things, for at least seven regional research facilities "for the conduct of research, investigation, experiments, field demonstrations and studies, and training relating to the prevention and control of water pollution." It is this act of Congress that provides official basis for the construction and operation of the Southeast Water Laboratory here at Athens.

Statement of Problem

The United States Department of Health, Education and Welfare, Public Health Service division, has acquired five acres in Northeast Georgia for a research water laboratory. The laboratory will be one of nine build throughout the United States by the Public Health Service and located near large universities. This site, consisting of 12.7 acres, is on land provided by the University of Georgia, located approximately three miles southeast of the business district of Athens on College Station Road. It is in an area, consisting of several hundred acres, set spart for research facilities. I have been retained as landscape architect to design a general landscape development plan, with particular emphasis on fountain and water display.

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in Department of Harlin, Education and Welfere. In 1982 this Act was counted (sublic law 87, 39th Corpress) and in this paradosent as counted (sublic law 87, 39th Corpress) and in this paradosent provision was made, among other things, for at least seven regional research facilities "for the conduct of research, investigation, operations, field demonstrations and studies, and training relating to the prevention and control of water pollution." It is this eat of Compress that provides official basis for the construction and persion of the Southeast Water Leboursony here at Athens.

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The portion to be developed comprises a small area of the large research park and is located in the southeast corner of the park. The boundaries of the site are: College Station Road on the north; a residential sub-division to the east; pasture land on the south (where an Agricultural Laboratory will be constructed); and on the west the new Poultry Research Laboratory. The site includes an easement for a road to the proposed Agricultural Laboratory and a ravine separating the site from the pasture land.

The overall general landscape development plan will comprise the following:

- 1. Administrative building containing administrative and executive offices in one wing and a training center in the other.
- Main portion of building comprises working labs, shops,
 library, supply room, offices for the staff, and a lunch room.
- 3. Parking facilities for 125 cars.
- 4. Service facilities.
- 5. Fountain display area.

The solution will be presented in the following form:

- 1. Plans
 - a. Master Plan
 - b. Grading and Staking Plan
 - c. Planting Plan

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 - a. Mester Plan
 - b. Grading and Stabiling Plan
 - c. Planting Picm

- d. Sections or Profiles
- e. Construction and planting details
- 2. Scale model of site and building
- 3. A bound, typewritten report which includes:
 - a. Title and author's name
 - b. Table of Contents
 - c. List of Plates
 - d. Introduction and main body of report
 - e. Photostatic copies of the plans and model
 - f. An appendix containing acknowledgements, a bibliography, specifications and cost estimate for construction and planting, and other pertinent data.

General Analysis

The landscape architect must consider certain physical conditions on the site before any design can be properly justified and carried out. The existing environment will disclose many solutions to design problems. The climate, topography, existing vegetation, and the maintenance problem are among many problems that must be studied.

The site of the Southeast Water Laboratory consists of 12.7 acres of sparsely wooded land. The basic foliage types are oak and hickory and assorted shrubs and wild grasses. To the East, along College Station Road are two main groups of oak and hickory which flow into

- e. Construction and planting details
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the wooded area at the south end of the property. These clumps are in fairly good condition and with a little tree work will be in good condition. Along the north there is a 100' easement for the Georgia Power Company. The southwest portion, the main part of the site, is open, semi-pasture land that runs into pasture land on the adjacent property.

The soil types on the site range from clay to clay loam. The present condition of the soil is fairly good due to the pasture land and shrub coverage. Since the site is quite rolling, there are two major drainage patterns, one flowing down into the ditch along College Station Road and the other into the ravine separating the site from the adjoining pasture land. The site is located in the temperate region, bordering on the hot-humid, which facilitates an informal layout of plant material to get best use of desirable sun and wind penetration.

The Southeast Water Laboratory is oriented in an East-West direction in order to keep it parallel to College Station Road. The reasoning behind this is not quite clear because this orientation makes the West side of the building very hot in the spring and summer months. The wind direction averages out to one of a westerly course so that the building does get the wind head-on.

As previously stated, the only utility on the site at the present is the Georgia Power Company's power lines which run across at the northern end of the site.

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order and of the atte.

The problems faced in designing an area such as this are not only concerning with placement of different group plantings and use areas in relation to each other, but also placing these units in a manner which would best suit and accent the desirable characteristics of the site. Both topography and vegetation hold a prominent place in the design consideration, and they should be recognized as assets and used accordingly. These physical characteristics and all others must be taken into consideration before a design can be reached and a final draft be drawn up.

The different uses of the different parts of the building must also be taken into account along with the physical characteristics of the site. The landscape development of these uses must be placed in proper relation to each other and to the site as a whole. From these different relationships comes correct design for this site.

Justification and Design Conclusions

After careful consideration of the existing features of the site and each of its physical characterists and uses, the Landscape Architect must formulate certain design conclusions which tie building to the site and the proposed landscape to the existing landscape; in other words, tie everything together.

This design concept, which has evolved from a careful study of the site, is based on the recognition of the physical elements of the The problems faced in designing an eras such as this are not ally concerning with placement of different group plantings and use area in relation to each other, but also placeing these units in a man which would best suit and accept the desimable characteristics of the site, both topography and vegetation hold a prominent place in the design consideration, and they should be recognized as assets and used accordingly. These physical characteristics and all others and used accordingly. These physical characteristics and all others at the taken into consideration before a design can be reached and a lited draft be from up.

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site, the consideration of vehicular and service equipment movement on the site, and the different areas of the site as they relate to one another.

The first consideration to be taken is that of topography. The two entrances and the entrance road itself compliment so that a uniform slope may be obtained with as little disturbance to existing slopes as possible. Each entrance is at a low point in the site and leads up toward the main building and the parking area. The plantings are arranged with the roll of the site so that the clear view of Athens remains unobstructed. The service areas are laid out so that the basement and first floor levels are easily accessible without any unnecessary cut. The fountain area has been located in a swell so that it may be viewed equally well from the visitors' parking or from College Station Road.

Because of the existing types of vegetation on the site, Scarlet Oak and Pin Oak have been introduced as shade trees so that they will blend in with the existing plant material. Longleaf Pine and White Pine have been introduced as the prominent evergreens and are used as both a screen and as specimen group plantings. The greatest quantity of pines has been placed on the south side of the parking area to screen it from the residential area. Two flowering trees have been introduced, the Flowering Dogwood and the Redbud, to provide scale, dimension, and color to the landscape. These trees are planted in an informal manner in order to accent the natural beauty

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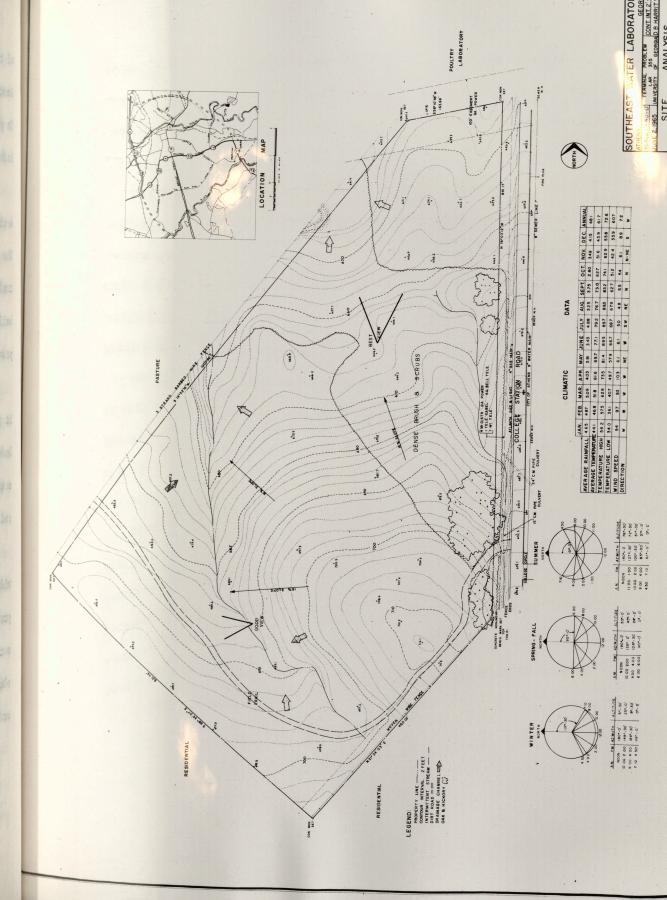
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of the rolling site. In the back of the building, the West side,
Hawthorne was introduced to provide a screen for the summer sun.
To provide some fall color in a large scale, Red Maple was planted informally throughout the site.

Seven different shrubs have been selected, six evergreen and one deciduous. They range in size from one foot high to ten feet high. The areas around the building where there will be the most pedestrian traffic was the heaviest planted. In front of the administration building both deciduous and evergreen material was used in order to provide color all year around.

Liriope spicata was used in sunny areas on the South side because it is the hardiest ground cover in the sun. For the shady areas Hedera helix was used because of its tolerance of shade; and in the semi-shade areas Vinca minor was used because of its spring color and the fact that it is an evergreen.

Scarlet Oak was used on the terrace for two reasons; they provide good shade in the spring and summer, and in the fall they provide excellent color. In the area around the fountain, low shrubs were selected in order that the view of the fountain would not be obstructed. Flowering Dogwood and Redbud were informally placed in order to provide some color.



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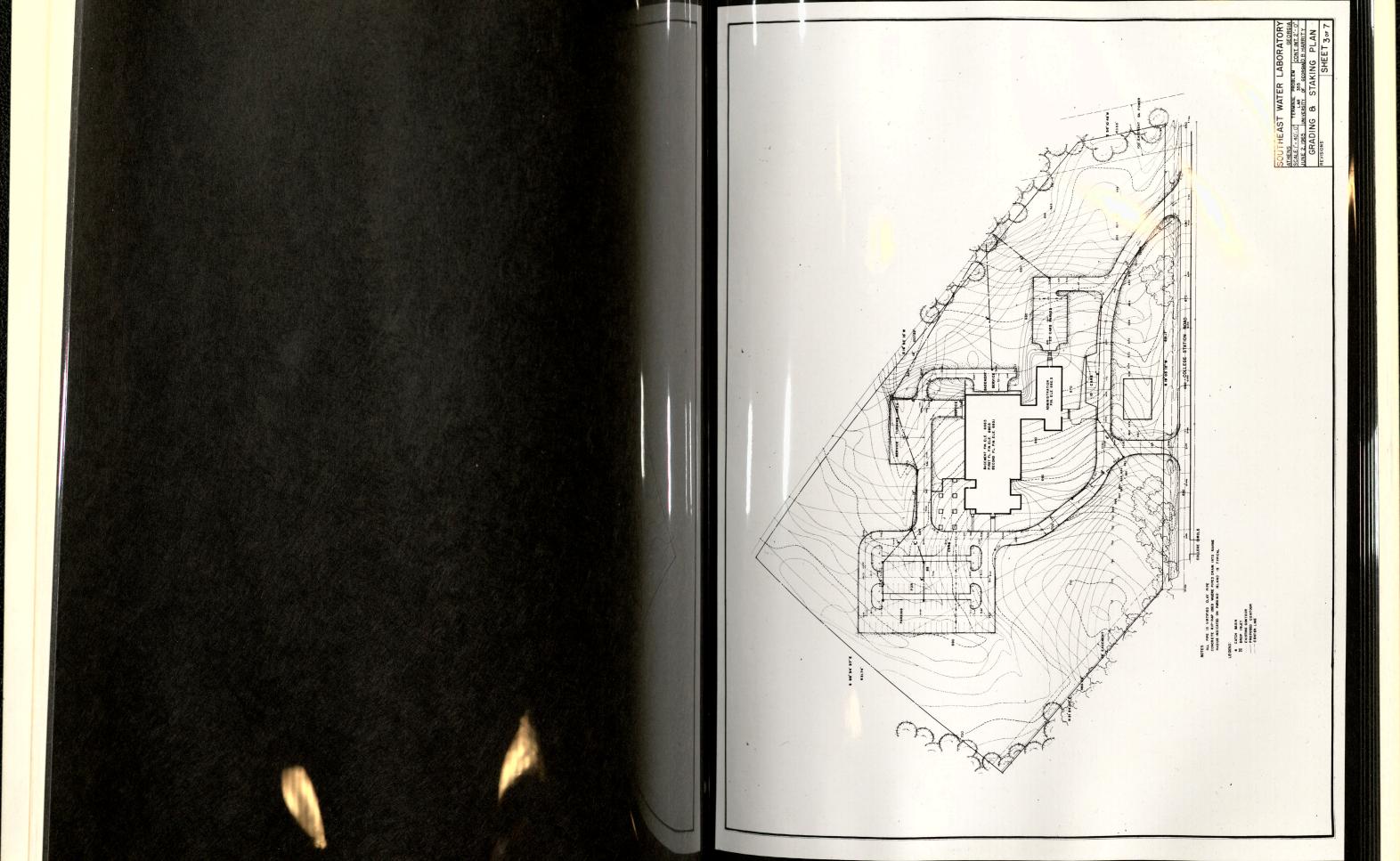
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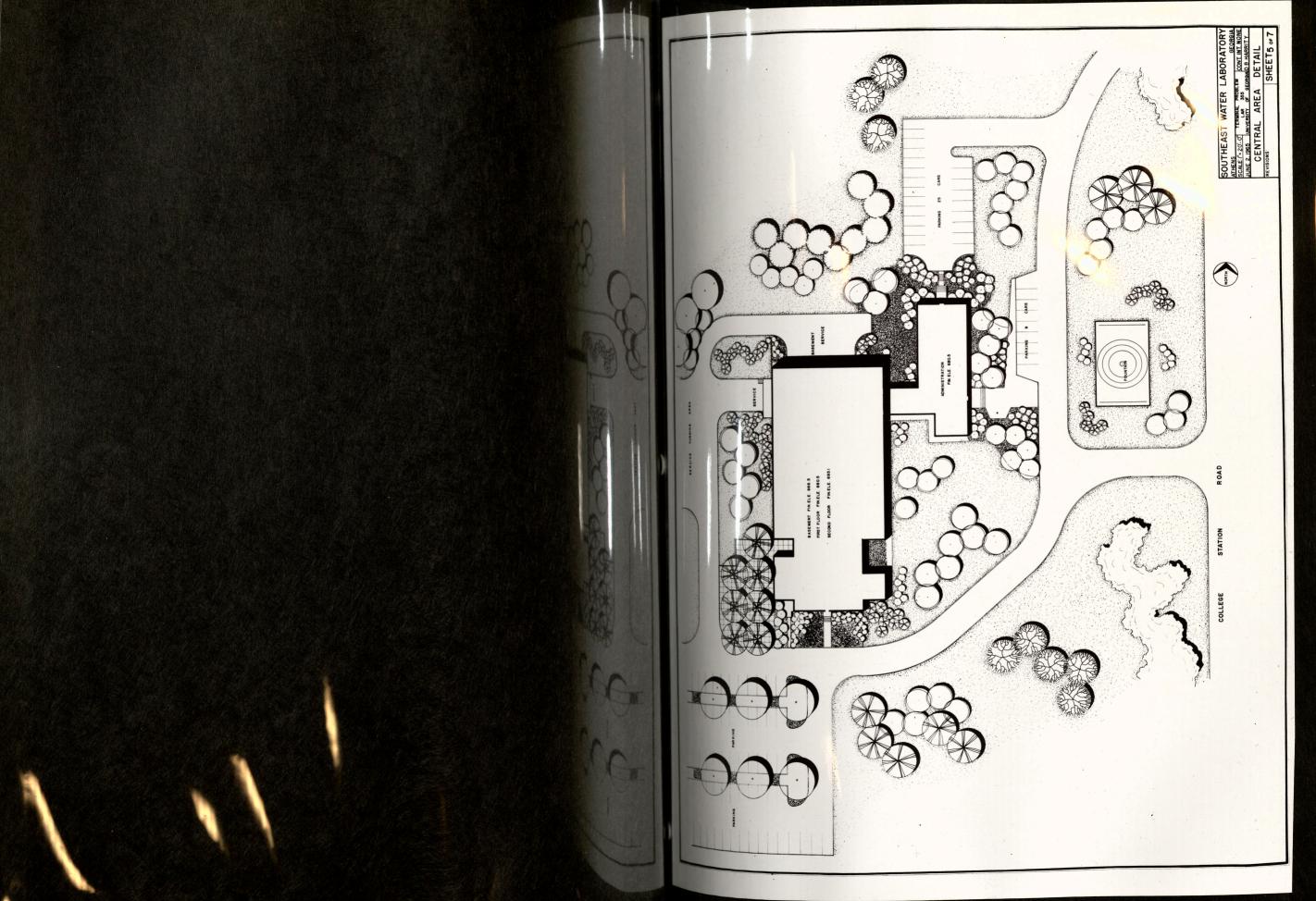
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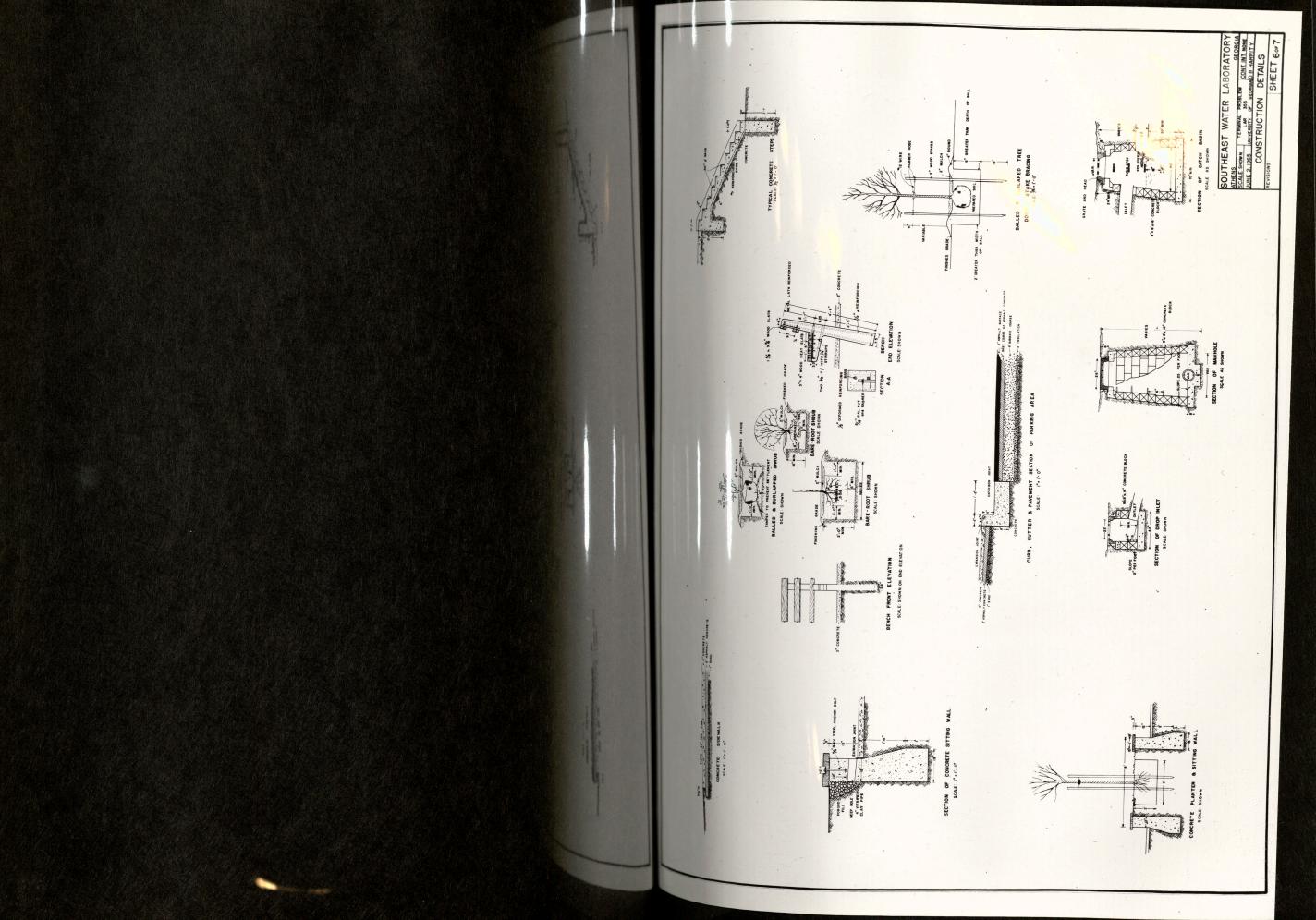
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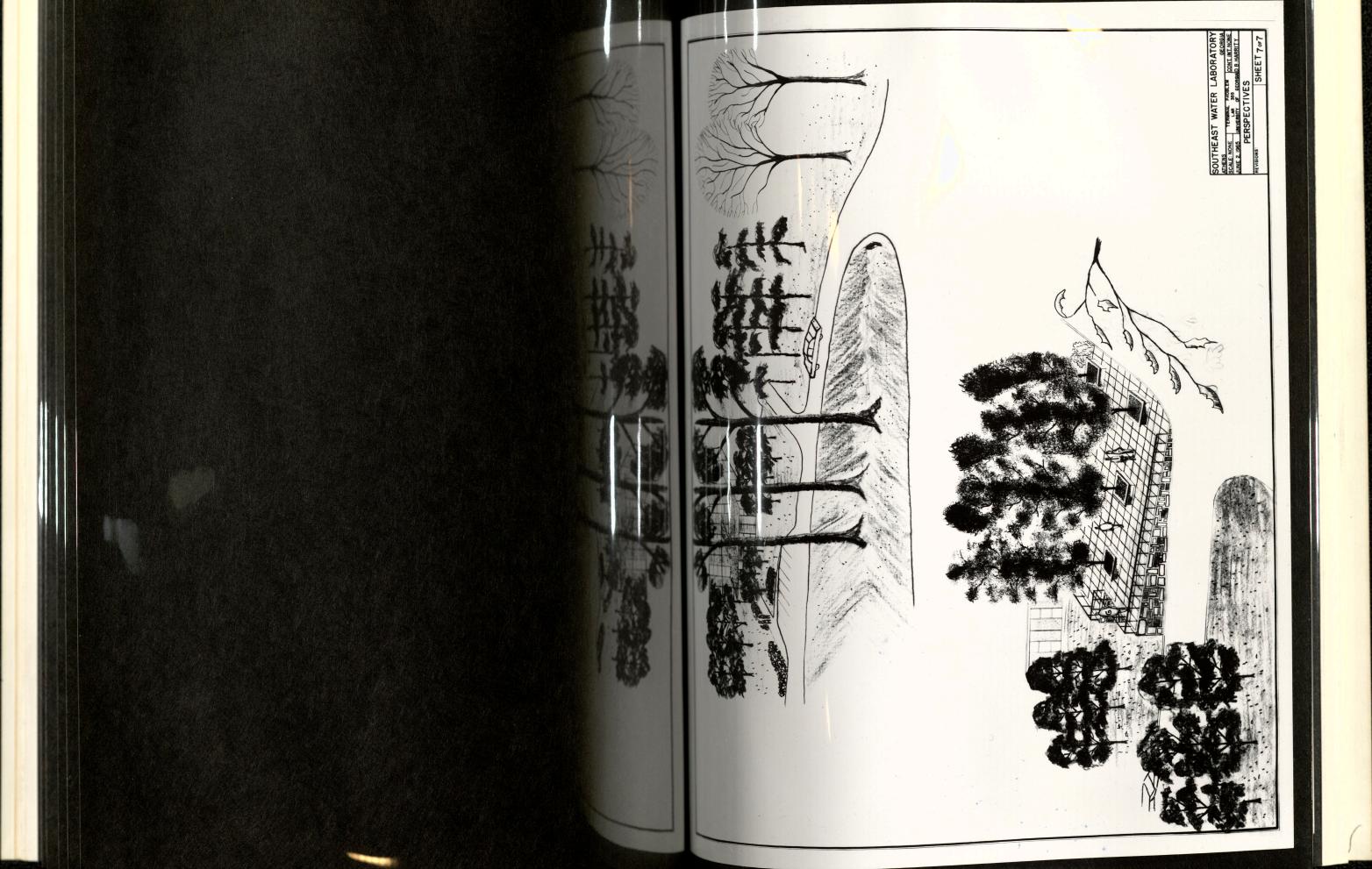














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NOTICE TO BIDDERS

Mr. John R. Thoman Director Room 254, Physics Building University of Georgia Athens, Georgia

Notice is hereby given for construction and installation of plant materials at Southeast Water Laboratory. The site is located on College Station Road, Athens, Georgia. Sealed bids shall be received by the United States Department of Health, Education, and Welfare, by the United States Department of Health, Education, and Welfare, Public Health Service division, on Monday, June 7, 1965 at two o'clock Public Health Service division, on Monday, June 7, 1965 at two o'clock Eastern Standard time in Room 254, Physics Building, University of Georgia, Athens, Georgia.

The work will consist of the following:

SUPPLYING AND INSTALLATION OF ALL PLANT MATERIALS, ESTABLISHING FINISHED GRADE AND TOWN, CONSTRUCTION OF PAVED AREAS (ROADS, PARKING AREAS, WALKS, TERRACE), TREE SLEEVES, STEPS, RETAINING WALLS, DRAINAGE SYSTEM.

The contract shall be awarded to the lowest responsible bidder subject, however, to the discretionary right reserved by the owner to waive any however, to the discretionary right reserved by the owner to waive any however, reject any and all proposals and to request new proposals, formalities, reject any and all proposals and to request new proposals, in his opinion the best interest of Southeastern Water Laboratory shall thereby be promoted.

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

Date: February 14, 1965

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My. John M. Whoman Diractor Loss 25%, Fayalca Burlding University of Georgia

Soince is hemosy gaven for construction and installation of plant materials at Southeast Water Leberatory. The site is isolated on College Starken Bord, Almens, Georgia, Sepled bids shall be received by the United Starken Department of Health, Education, and Walfard, Fuelic Health Service division, on Handay, June 7, 1965 at two o'clock Saviers Stankard time in Goom 154, Edystics Building, University of Georgia, Athens, Georgia.

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Such bidder most deposit with his bid, socurity in on conditions for the ties five (5%) per cont of the bid, inche force and subject to the conditions provided in the Information to Biddens.

Date: February 14, 1965

INFORMATION FOR BIDDERS
FOR THE
PLANTING AND CONSTRUCTION WORK
FOR

SOUTHEAST WATER LABORATORY
ATHENS, GEORGIA

1. RECEIPT AND OPENING OF BIDS

(a) Mr. John R. Thoman, Director, Southeast Water Laboratory, Athens, Georgia, (hereinafter called the owner) invites separate sealed bids for the:

SUPPLYING AND INSTALLATION OF ALL PLANT MATERIALS, ESTABLISHING FINISHED GRADE AND TOWN, CONSTRUCTION OF PAVED AREAS (WALKS, ROADS, PARKING AREAS, TERRACE) TREE SLEEVES, STEPS, RETAINING WALLS, DRAINAGE SYSTEM.

at the Southeast Water Laboratory.

- (b) Bids shall be received by Mr. John R. Thoman, Director, Southeast Water Laboratory, Athens, Georgia on Monday, June 7, 1965 at two o'clock Eastern Standard time in Room 254, Physics Building, University of Georgia, Athens, Georgia.
- (c) Any bids received after the time and date specified will not be considered. No bids will be withdrawn pending the decision of the Owner.

2. PREPARATION OF PROPOSAL

- (a) Proposals must be submitted on the prescribed form, two copies of which are attached hereto, all blanks filled by printing, in ink, in both words and figures. The Contractor shall remove the proposal form from the specifications, and submit as his bid one copy, and keep the other copy for his records.
- (b) All proposals must be submitted in sealed envelopes, bearing on the outside the name of the Bidder, his address, the name of the project, and the Contract bid upon.

Info. for Bidders Page 2

INFORMATION FOR DEDDHES
FOR THE
FLANTING AND GOMERUCTION HOLK
FOR

SOUTHEAST VALUE LABORATURY ATHEMS, GRORDIA

I. RECEIPT AND OPPURED OF BIRS

(a) Mr. John E. Thoman, Director, Southesst Water Laberstory, Athens, Georgie, (hereinafter called the owner) invites separate scaled bids for the:

SUPPLYING AND INSTALLATION OF ALL PLANT WARRALS, ESTABLISHING WINSHED GRADE AND TOWN, CONSTRUCTION OF PAVED ARRAS (WALKS, ROADS, PARKING ARRAS, INSTACE) TREE SINGUES, STEPS, ROTALING WALLS, DEALWAGE SYSTEM.

at the Southeast Water Laboratory.

- (b) Tide shall be received by Mr. John M. Thoman, Director, Southeast Water Laboratory, others, Georgia on Monday, June 7, 1965, at two o'clock Hastern Standard time in Boom 254, Mysice Kullding, University of Georgia, Athens, Georgia.
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AMEDICATION OF PROPOSAL

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

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

3. OBLIGATION OF BIDDERS

- (a) At the time of the opening of bids, each Bidder shall be presumed to have inspected the site and to have examined and to be thoroughly familiar with the Plans, General Conditions, General Requirements of the Contract, and Specifications (including all addenda thereto). The failure of or the omission of any Bidder to receive or examine any drawings, form, instruction or document shall in no wise relieve such Bidder from any obligation with respect to his bid.
- (b) Each Bidder shall, by careful examination of the site, satisfy himself as to the location of the work to be performed and materials to be furnished, the character of equipment and facilities needed preliminary to and during prosecution of the work, the general and local conditions and all other matters which in any way effect the work specified herein.
- (c) After the contract has been entered into, no consideration shall be given for any misunderstanding as to work and materials set forth herein and shown on any of the accompanying drawings, details and schedules, it being mutually understood that the tender of a bid carries with it an agreement to this and other obligations set forth in the Contract or Specifications, and further implies a full understanding of the Specifications, Drawings and Details, notes, indications and requirements.

4. AWARDS

Contract will be awarded to the lowest responsible Bidder, subject, however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, to the discretionary right reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive however, the discretion reserved by the Owner to waive head of the owner to waive however, and the owner to waive however, the discretion reserved by the Owner to waive head of the owner to waive head of the owner to waive head of the

5. ADDENDA AND INTERPRETATION

Bidders are expressly notified that their proposals shall be based upon materials, products, and methods specified. For the purpose of estimate, no deviation from the Drawings and Specifications will

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

ONLIGHTION OF REDDERS

- (a) At the rise of the opening of bids, each Bidder shall be presumed to have inspected the site and to have examined and to be thoroughly familiar with the Plans, General Conditions. General Requirements of the Contract, and Specifications (including all addends thereto). The failure of or the contacton of any Bidder to receive or examine any drawings, form, 'instruction or document shall in no wise relieve such Bidder from any obligation with respect to his bid.
- (a) Each Bidder small, by careful examination of the site, satisfy himself as to the location of the work to be performed but naturalis to be furnished, the character of equipment and facilities needed preliminary to and furning prosequetion of the work, the general and local conditions and ofte other vasters which in any way effect the work execution herein.
- (c) After the contract has been entered into, no consideration shall be given for any misurderstanding as to work and mericalizate set form nearing and shown on any of the accompanying drawings, details and schedules, it being mutually understood that the tender of a bid carries with it an agreement to this and other chilgathers sat forth in the Comitate or Specificar tions, and further implies a null understanding of the Specifications, Drawings and Details, mates, indications and requirements.

Contract will be emerical to the lowest responsible Midder, subject, bosever, to the discretionary right reserved by the Owner to waive ony informalities in or to reject any or all proposals if, in his opinion, the best interests of Southeast Water Esternbery shall thereby be exampted.

S. ADDRESS AND INSPERSE STATE OF THE PROPERTY OF THE PROPERTY

Sidders are expressly notified that their proposals shall be besed upon nevertals, products, and methods specified. For the purpose of estimate, no deviation from the Drawings and Specifications will

be considered, except as provided. No interpretation of the meaning of the Drawings, Specifications or other Contract Documents shall be made to the Bidder orally. Every request for such interpretation shall be in writing addressed to Mr. John R. Thoman, Room 254, Physics Building, University of Georgia, Athens, Georgia, and to be given consideration must be received at least five (5) days prior to the date fixed for the opening of the bids. Any and all such interpretations and any supplemental drawings which, if issued, shall be mailed to all prospective Bidders (at the respective addresses furnished for such purposes) not later than three (3) days prior to the date fixed for the opening of bids. Failure of any Bidder to receive any such addenda or interpretation shall not relieve any Bidder from any obligation, under his bid as submitted.

6, TIME FOR COMPLETION

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

on louds representable Bidder or the work may be reneversional

7. BID SECURITY

Each bid must be accompanied by the certified check of the Bidder, or by a Bid Bond duly executed by the Bidder as principal, and having as surety thereon a surety company approved by the Owner, in an amount not less than five (5) percentum of the amount of the bid. Such check as Bid Bond shall be returned to all except the successful Bidder within 48 hours after the Owner and the accepted Bidder have executed the Contract, or if no Contract has been executed within fifteen (15) days after the opening of bids, upon demands of the Bidder, or anytime thereafter, so long as he has not been notified of the acceptance of his Bid.

8. SECURITY OF FAITHFUL PERFORMANCE

(a) Simultaneously with the delivery of the executed Contract, the successful Bidder must deliver to the Owner an executed Performance Bond of a corporate surety licenses to do busperson in the State of Georgia in the amount of one hundred iness in the State of Georgia in the amount of one hundred per cent (100%) of the accepted bid for the faithful performance of the terms, covenants, and conditions of the Contract and a further separate labor and material Bond, in Contract and a further separate labor and material bond, in the amount of fifty per cent (50%) of the accepted bid

be considered, except as provided. No interpretation of the meaning of the Trawings, Specifications or other Contract Dourscats Shall be made to the Siddar orally. Every request for such interpretation shall be in writing addressed to Mr. John K. Thoman, Room 25%, Enysics Edilding, University of Georgia, Athens, Georgia, and to be given consideration what be received at levet five (5) days prior to the date fined for the opening of the bids. May and all seven interpretations and any supplemental drawings which, if issued, shall be mailed to all prospective Bidders (at the respective edirenses furnished for such surpress) not later than three (3) days prior to the date fixed for the opening of bids. Failure of any Sidder to receive any such addends or interpretation shall not relieve any such addends or interpretation, under his bid as submitted.

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SECURITY OF FINITH PERFORMANCE

(a) Similtaneously with the delivery of the executed Contract, the successful Midder must deliver to the Owner an executed Performance and of a comported surety licenses to do bustiness in the State of Georgia in the amount of one hundred yer cant (190%) of the accepted and for the faithful performance of the terms, covenants, and conditions of the Contract and a further separate isoon and material Bond, in the amount of flight per cant (50%) of the accepted Mid

guaranteeing the prompt payment of all indebtedness encurred by the Contractor or Sub-Contractor for supplies, materials or labor furnished, used or consumed in connection with or in or about the construction of the project, including fuels, lubricants, power, etc. The forms of both Performance Bond and Labor and Material Payment Bond shall be as per form No. 107 (AIA).

- (b) The Broker for the Bond and the Surety Company shall be approved by the Owner.
- (c) The premium on all Bonds shall be paid for by the Contractor.

9. FAILURE TO EXECUTE CONTRACT

Failure to execute contract and file acceptance bonds within eight (8) days shall be just cause for the annulment of the award and the forfeiture of the Proposal Guarantee which shall become the property of the Owner, not as a penalty but in liquidation of the damages sustained. Award may then be made to the next lowest responsible Bidder or the work may be readvertised and constructed under contract or otherwise, as the Owner may decide.

10. INSURANCE

- (a) The successful Contractor shall not commence work until the following insurances have been obtained, approved and certificates delivered to the Owner.
- (b) Workman's Compensation Insurance.
- (c) Public Liability Insurance shall be furnished in amounts of \$100,000/300,000, and Property Damage Insurance in amounts of \$50,000.
- (d) Before final payment is made, the Contractor will provide an affidavit stating all costs for labor and materials have been paid, and that the Owner is indemnified against any lien.

guaranteeing the eromet payment of all indebtedness encurved by the Contractor or Sub-Contractor for supplies, materials or into a sout the construction of the project, includvite or in or sout the construction of the project, including fuels, lubricants, power, etc. The forms of both Performance Soud and Labor and Material Payment Soud shall be as per form Wey 137 (AIA),

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- (c) Public Cability Insurance shall be furnished in amounts of \$100,000/300,000, and Property Danage Insurance in amounts of \$50,000.
- (d) defore timel payment is made, the Contractor will provide an affidavit stating all costs for labor and materials have been paid, and that the O mer is indemnified against one of the

GENERAL CONDITIONS

Art. I. Definitions

- (a) Contract A written agreement executed between the Owner and the successful Bidder, covering the performance of work and the furnishing of labor, equipment and materials, by which the Contractor is bound to perform the work and furnish the labor, equipment and materials, and by which the Owner is obligated to compensate him therefore at the mutually established rate or price. The Contract shall include the invitation for bids, instructions to Bidders, Proposal Contract form and Contract Bond, These Specifications, all Special Provisions, all Plans and Notice to Proceed, also any written Change Orders and Supplemental Agreements that are required to complete the construction of work in an acceptable manner including plete the constructions, thereof, all of which constitute one instrument.
- (b) Contract Bond The approved form of security, executed by the Contractor and his surety or sureties, guaranteeing complete execution of the Contract and all Supplemental Agreements pertaining thereto.
- (c) Equipment All machinery, equipment and livestock, together with the necessary supplies for upkeep and maintenance and also tools and apparatus necessary for the proper construction and acceptable completion of the work.
- (d) Plans The official approved plans, profiles, typical cross sections, working drawings and supplemental drawings, or exact resections, working drawings and supplemental drawings, or exact reproduction thereof which show the location, character, dimensions, production thereof which show the location, character, dimensions, production thereof which show the location, and which are identified as such.
- (e) Profile Grade The trace of a vertical plane intersecting the top surface of the proposed wearing surface, along the longitudinal section of the roadbed.
- (f) Specifications The general term comprising all directions, provisions and requirements contained herein, together with such as may be added or adopted as Supplemental Specifications.
- (g) Subcontractor Any individual partnership, firm or corporation undertaking the construction of a part of the work under the tion undertaking the construction of an agreement with the Contractor, terms of the Contract, by virtue of an agreement of the Surety who, prior to such undertaking, receives the consent of the Surety and the approval of the Owner.

(a) Contract - A written agreement encoured herwest the Owner and the successful Cidder, bovertes, the purference of users and the Agriculture of labor, equipment and exterials, by which the Contingetor is bound to persion the work one furnish the labor, cantimagnt on esterials, and by titch the Owner is obliveded to opposeste his therefore at the cartally catebooks of price. The Contract shall include the invitation for bids, instructions to Middens, roposal Contract Corin and Contract Sond, Fine Specifications, all protel Provietore, all Pione and Motice to Proceed, also any written Trans orders and Supplemental Agreements that are regulared to complote the construction of work to an acceptable namer including suther lead est ansions, two root, all of which constitute one instrument.

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(c) Foutpaint - All mechinery, equipment and livestock, toguiler with the precedency coupling for uple p and maintenance and also tools and opparatus not caseary for the proper construction and acceptable completion of the vert.

(d) Plans - The official approved plans, profiles, typidal cross sections, working drawings and supplemental descripts, or exact reproduction thereof which show the location, character, dimensions, and details of the work to be done, and which are to be considered part of the Contract supplementary to these Specifications and which and identified as small.

(0) Profile Grade + Mac trace of a vertical plane intersecting the top surface of the proposed wearing surface, along the longi-.bodfany odd to golfosa Isabba

(4) Specifications - the general term comprising all directions, provisions and requir ments contained herein, together with such as my be added on edopted as Supplemental Specifications.

(8) Subcontractor - Any individual pertnership, firm or corporatime of the Contract, by whrtun of an agreement with the Contractor, ble, prior to such undertaking, receives the consent of the Surety . The appropriate of the Charles.

(h) Work - Work shall be understood to mean the furnishing of all labor, materials, equipment, and other incidentals necessary to the completion of the project and the carrying out of all duties and obligations imposed by the Contract. of all morphodized altermethods of severing the proposessment and the

Art. II. Intent of Contract

showers that he should be the class of allested by with The intent of the Contract is to prescribe a complete work of improvement which the Contractor undertakes to do, in full compliance with the Plans, Specifications, Special Provisions, Proposal and Contract. The Contractor shall perform all work in accordance with the lines, grades, typical cross sections dimensions, and other data shown on the Plans or as modified by the written orders, including the furnishing of all materials, implements, machinery, equipment, tools, supplies, transportation, labor, and all other things necessary to the satisfactory prosecution and completion of the Contract.

Art. III. Special Provisions

Conditions not covered by the Plans or these Specifications shall be known as Special Provisions and attached to the Proposal Form, and shall be considered a part of these Specifications the same as though contained fully herein. Special Provisions shall govern over Specifications, Supplimental Specifications and Plans. Also, it should be understood that Plans govern over Specifications and Supplimental Specifications. theready are first and discharges and any are are arranged to the states.

Art. IV. Execution of Contract

The Contract shall be signed by the successful bidder and returned, together with the Contract Bond and Payment Bond within ten (10) days after the Owner forewards the Contract. If the Contract is not executed by the Owner within twenty (20) days after receiving properly executed Contracts, Contract Bonds, and Payment Bonds from the Contractor, he shall have the right to withdraw his bid without penalty. No Contract shall be considered as effective until it has been executed by all of the parties thereto! It shall be further understood and agreed that all Specifications as well as Special Provisions attached to the Proposal Form used in submitting bids, and all approved drawings are parts of the Contract and shall be considered in full force and effect even though not included in and/or attached to the separate form used in actual execution of the Contract. THE COLUMN C. DECEMBER OF THE COLUMN CO. COME TO WILL ARRESTS ARE COMES AND AREASTS ARE CONTRACTED ASSESSMENT OF THE PROPERTY OF STREET, AND AREASTS ARE CONTRACTED ASSESSMENT OF THE PROPERTY OF THE P

General Conditions Page 3

(b) Work - Work shell be understood to meen the furnishing of or leber, materials, equipment, and other imoddentals necessary to the completion of the project and the carrying out of all dution and obligations imposed by the Contract.

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Art. V. Shop Plans and Working Drawings

The approved plans will be supplimented by such working drawings as are necessary to adequately control the work. It is mutually agreed that all authorized alterations effecting the requirements and information given on the approved plans shall be in writing and approved by the Landscape Architect. When at any time reference is made to the Plans, the interpretation shall be the Plans as affected by all authorized alterations then in effect.

Art. VI. Copies Furnished or detail of the work state to be a second or an art of the second of the

w by the Landscare architect or his appearing Unless otherwise provided in the Contract Documents, the Landscape Architect will furnish to the Contractor, free of charge, all copies of drawings and Specifications necessary for the execution of the work. The transmission should be accommon assemble as all passes

to be the common to the properties of men a complete and decested Art. VII. Drawings and Specifications on the Work

The Contractor will keep one copy of Drawings and Specifications on the work, in good order, available to the Landscape Architect.

of Concession with keeps on the works, during the programmy a popular Art. VIII. Ownership of Drawings

The drawings and Specifications furnished by the Landscape Architect are his property. They are not to be used on other work and are to be returned to him on request, at the completion of the work. held temperated a few cheek with enemy of alkeometric

Art. IX. Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor will provide and pay for, all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of the work. NOW, the prices to the troposite of the trappiness of the trappine

Art. X. Protection of Work and Property

The Contractor will maintain adequate protection of all his work from damage and will protect the Owner's property from injury or loss arising in connection with the Contract. He will make good any such damage, injury, or loss, except such as may be directly due to errors in the Contract Documents, or caused by agents or employees of the Owner. He will adequately protect adjacent property as provided for by law.

Art. V. Slop Plans and Norking Brewings

The operaved plans will be supplimented by such wording drawings as are necessary to adequately control the mark. It is entually egreed that all authorized alterations effecting the requirements and internation given on the approved plans chall be in writing and approved by the landscape Architect. When at any time reference is made to the Plans, the finterpretation chall be the There as sinceted by all substituted alterations then in effect.

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The Contractor will take all necessary precautions for the safety of employees on the work, and will comply with all applicable provisions of Federal, State and Municipal safety laws to prevent accident, injury to person on, about, or adjacent to the premises where the work is being performed. He will erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workmen and the public.

Art. XI. Inspection of Work

All materials and each part or detail of the work shall be subject at all times to inspection by the Landscape Architect or his authorized representative, and the Contractor will be held strictly to the Contract and allowable tolerances and regard to quantity of materials, workmanship and the diligent execution of the Contract. The Landscape Architect or his representative shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

Art. XII. Superintendence: Supervision

The Contractor will keep on his work, during its progress, a competent superintendent, satisfactory to the Landscape Architect.

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The Contractor will give efficient supervision to the work, using his best skill and attention. He will carefully study and compare all drawings and Specifications, and will at one report to the Landscape Architect any error, inconsistancy or omission which he may discover, but he will not be held responsible for their existence or discovery.

Art. XIII. Additional Work

The Contractor shall perform such increased quantity of any contract item as the Landscape Architect may deem necessary to properly complete the Contract, and shall receive in full payment for such inplete the Contract, and shall receive in full payment for such increased work the prices in the Proposal or by Supplimental Agreement(s) when such Supplimental Agreement(s) is (are) properly agreed to and executed.

Art. XIV. Changes in the Work

The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to, or deducting from the work, the Contract sum being adjusted accordingly. All such work will be

The Contractor will take all nacestary procautions for the safety of exployees on the work, and will comply with all applicable provisions of ederal, State and Mandaspal anisty laws to provent acaddont, in the yearson on, about, or adjacent to the provision where the work is some performed, in will exect and properly maintain at all times, as required by the conditions and properse of the work, all accordary exists for the protection of workers and the public.

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Art. MI. Superintendence: Supervisique

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Art. MIII. Additional Hork

The untractor shall perform such increased quantity of any contract item or the landscape Architect may does necessary to properly complet the Contract, and shall receive in full passent for such increased work the prizes in the Eropesal or by Supplimental Agreement(s) whose such Supplimental Agreement(s) is (are) properly agreed to and

Art. May. Changes in the Moris

The Ormer, without invalidating the Contract, may ender entra work, or date diamete by altering, adelan to, or deducting from the work, the Contract are being adjusted accomplantly. All such work will be

executed under the conditions of the original Contract. In giving instructions, the Landscape Architect will have the authority to make minor changes in the work not involving extra cost.

The value of any extra work or change will be determined in one of the following ways:

- (a) By estimate and acceptance in a lump sum.
- (b) By unit price named in the contract or subsequently agreed upon.
- (c) By cost and percentage or by cost and fixed fee.

Art. XV. Claims for Extra Cost

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

Art. XVI. Correction of Work Before Final Payment

If the Contractor does not remove from the premises all work condemned by the Landscape Architect as failing to conform to the Contract within a reasonable time, fixed by written notice, the Owner may remove it and may store the material at the expense of the Contractor. If the Contractor does not pay the expenses of such removal within ten (10) days time thereafter the Owner may, upon ten (10) days notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the cost and expenses that should have been borne by the Contractor.

Art. XVII. Correction of Work After Final Payment

Meither the final certificate nor payment nor any provision in the Contract Documents will relieve the Contractor of responsibility for faulty materials or workmanship, and, unless otherwise specified, he will remedy any defects due thereto, and pay for damage for other will remedy any defects due thereto, and pay for damage for other will remedy any defects due thereto, and pay for damage for other will remedy any defects which will appear within a period of one work resulting therefrom, which will appear within a period of one year from the date of substantial completion. The Owner will give year from the date of substantial completion. The Owner will give year from the date of substantial completion. All questions arising under this article will be decided by the Landscape the third that the decided by the Landscape architect subject to arbitration.

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wither the final continients now payment now any provision in the Contract Securants will relieve the Contractor of responsibility for Land, extends of contractor of responsibility for Land, extends of workstands, and, unless otherwise specified, he will crasty my defects due thereto, and pay for dense, for other tor resulting therefrom, which will oppose within a period of one year from the date of substantial completion. The Camer will give notice of observed defects with responsibile promptness. All case time arising under this article will be decided by the Landscape time arising under this article will be decided by the Landscape decided to the section.

Art. XVIII. The Owner's Right to do Work

If the Contractor should neglect to prosecute the work or fail to perform any provisions of this Contract, the Owner, after three (3) days written notice to the Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then, or thereafter due the Contractor, provided, however, that the Landscape Architect approve such action and the amount charged to the Contractor.

Art. XIX. Owner's Right to Terminate Contract

If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistantly or repeatedly refuse or should fail to provide enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or for materials or labor, or persistantly disregard laws, ordinances, or the instructions of the Landscape Architect, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certificate of the Landscape Architect that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor seven (7) days written notice, terminate the employment of the Contractor and take possession of the premises and of all Materials, tools and appliances thereon and furmish the work by whatever method he may deem expedient. In such case the Contractor will not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work including compensation for additional managerial and administrative services, such excess will be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor will pay the difference to the Owner. The expense incurred by the Owner has herein provided, and the damage incurred through the Contractor's default, will be certified by the Landscape Architect.

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

If the work should be stopped under the order of any court, or under public authority, for a period of three months, through no act or fault of the Contractor or of anyone employed by him, or if the landscape Architect should fail to issue any certificate for payment within seven (7) days after it is due, or if the Owner should fail within seven (7) days after its maturity and to pay the Contractor within seven (7) days after its maturity and presentation, any sum certified by the Landscape Architect or awarded presentation, then the Contractor may, upon seven (7) days written

Arc. MIII. The Ovace's Right to do Hork

If the destruction should neglect to presente the work or fall to entire any provisions of this Contract, the Owner, after three (1) days related coting to the Contractor may, whichever neglects to any ether rancy he may have, make good such destainedes and may deduct the cost thereof from the payment than, or therester due the Contractor, provided, however, that the landscape Architect supprove such earlier and the amount charged to the Contractor.

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If the Contractor should be adjudged a beniumpt, or if he chould make a peneral analyterant for the benefit of his creditors, or if a receivof should be appointed on account at his Aucology or if he chould personnelly or repeatedly refuse or should fail to provide enough properly skilled working or proper meterials, or if he should fail to ram erount payment to subcontractors or for exterials or labor, or perstanting distributed larg, ordinances, or the instructions of the -aloiv laliustades a to villey of saluratio to . foother ages and tion of any erowickon of the Contract, then the Owner, upon the certi-Sicate of the Lamberge Architect that pufficient cause cuists to justily such action, new, without projudice to any other right or randy and after alwing the Contractor seven (7) days partition notice, tornismte the conjugate of the Congressor and take possession of the profite and of all Materials, tools and applicates thereon and furaich the world by plate with the may deem esquedlent. In cook care the Contractor will not be entitled to receive any furtiler paybent will the work is distubed. If the uppid belance of the Contract price shall enesed the engines of Cantaban che work including compomaggion for additional universal and administrative services, such orders will be paid to the Contractor. If such expense shall exceed such uspaid balonce, the Contractor will pay the difference to the oner. The empires incurred by the Omer has herein provided, and the camero incurred through the Contractor's delault, will be centi-Lied by the Landsonne Auchitect.

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notice to the Owner and the Landscape Architect, stop work or terminate this Contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

Art. XXI. Applications for Payment

The Contractor will submit to the Landscape Architect an application for each payment, and, if required, receipts or other vouchers, showing his payments to subcontractors as required by article XXXI.

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

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

Art. XXII. Certificates of Payments

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

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

morrice to the Owner and the Landscape Architect, stop work or termiwere this Continent and recover from the Owner payment for all work bear alaimed and loss said and and bear bear and loss of and and regentile profit and deserges.

Art. 1311. Applications for Payment

To Contractor will subset to the Lendscope Architect on application for each sayment, and, if required, receipts or other vouchers, showing his payments to subconfirsctors as required by article METE.

If sevents are task on valuation of very done, such application will be submitted at least ten days before each newment falls due, and, if remared, the Contractor will, before the first application, subauctrov and he acutey he adubation a realistic A readersheal set to the sayes of the work, duction obsatither, engagementars the total sum of the divided to de to facilitate pagestits to schrontractors in scordmen with citicle NULL (c), unde out in such form as the Landsease treinited and the Contractor was agree onon, and, if required, suported by sach syldence as to its correctness as the Architact may direct, file schoolude, when approved by the Landscape Architect, vill be used as a basis for certificates of payment, unless it be Sand to be in error. In applying for payamin, the Contractor will subsit a consequent beauti upon this scholade, and, if required, drontood in such folin and outposted by such evidence as the Landsonpo Architectus, direct, showing his right to the payment claimed.

If payants are rade on seconds of records delivered and suitable sourced at the sake, fut not trick prophese to the work, they will, if required to the landacepe Architect, be condictount upon submission by the doubleast of hills of eal, or such other procedure as will or solid the draw to take to such delicate or other all allies or protect the German a impercent.

Art. Mill. Dentification of Payments

If the Contractor has made explication as above, the Landscape Architect will, mor large than the date when each payment falls due, issue to the Confractor a certificate for such mayint as he decides to be proporty due, or state is action; who remeans for withholding

to cartificate thered non payment rade to the Contractor, non partial or entire use or occupancy of the work by the owner, will be an secopiones of my work or meterials not in accordance with this contract. The raising and acceptance of the final payment will constitute a nativer of all claims by the vaner, other chan those extains from mastiled liters, from faulty work appearing after final payment or

from requirement of the specifications, and of all claims by the Contractor, except those previously made and still unsettled.

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

Art. XXIII. Payments Withheld the water paners as may dequire property of all or

The Landscape Architect may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect the Owner from loss on one all substitutestors Bhall be subset of defigites account of:

- (a) Defective work not remedied.
- (b) Claims filed or reasonable evidence indicating probable filing of claims,
- (c) Failure of the Contractor to make payments properly to subcontractors or for material or labor.
- (d) A reasonable doubt that the contract can be completed for (e) Damage to another Contractor. the balance then unpaid.
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When the above grounds are removed, payment will be made for amounts withheld because of them.

Art. XXIV. Contractor's Liability Insurance

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

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

from requirement of the opecifications, and of all claims by the Contractor, except three prayeously rade and sailt mestaled.

Should the Comon fail to pay the sun newed in any certificate of the Legislance Architect or in any mord by arbitration, upon desend when den, the Contractor will receive, in addition to the sum remed in the certificate, interest thereon at the legal rate in force at the place of building.

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- (a) Defective work not remodied.
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- (c) Stimms of the Contractor to make payments properly to
 - superminectors on far aster at or laser.
- (d) A reasonable coats that the contract can be completed for the balance then unpaid.
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then the above granuls are remaind, payment will be made for anounts withing the common blinish w

Art. NATV. Contractor's Landlity Instrance

The Contractor wild mainted a such tunurance as will protect bin thom claims under workern's compensation note and from claims for demanor because of bedding injury, including death, which may arise from and during operations under this Contract, whether such operations be by binable or the any subscriber or arrows directly or indirectly onplayed by either of them. This insurance will be written for not less then any limits of Tiebility specified as part of this contract.

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he tamer will be responsible for and at his option may makentals such insurance as will protect him from his contingent liability to others for damages because of bodily injury, including death, which may arise from operations under this contract, and any other lightlity for danand the che contractor is required to insure under any provision of this contract.

Art. XXVI. Fire Insurance TO L. ON LOCALOR. THE LAND OF ALTERNATION OF MAN

The Owner will effect and maintain fire insurance on all structures on property that the work of this contract is to be done to 100 per cont of the insurable value, including items of materials connected therewith whether in or adjacent to the structure insured, materials in place or to be used as part of the permanent construction including surplus materials in place or to be used as part of the work, and such structures, miscellaneous materials and supplies incident to the work. The loss, if any, is to be made adjustable with and payable to the Owner as Trustee for the insureds as their interests my appear, except in such cases as may require payment of all or proportion of said insurance to be made to a mortgagee as his interests may appear.

The Contractor and all subcontractors shall be named or designated in such capacity as insured jointly with the Owner in all policies. If the Owner fails to effect or maintain insurance as above and so notifies the Contractor, the Contractor may insure his own interest and that of the subcontractors and charge the cost thereof to the Owner.

Art. XXVII. Guarantee Bonds

The Owner will have the right, prior to the signing of the Contract, to require the Contractor to furnish bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder, in such form as the Owner may prescribe and with sureties as he may approve. If such bond is required by instructions given previous to the submission of bids, the premium will be paid by the Contractor; if subsequent thereto, it will be paid by the Owner.

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Art. XXVIII. Responsibility for Damage Claims

The Contractor shall indemnify and save harmless the Owner or all of his representatives from all suits, actions, or claims of any character brought on account of any injuries or damages sustained by any person or property in consequence of any neglect in and safeguarding the work or through the use of unacceptable materials in the construction of the improvement, or an account of any act or omission by said Contractor, or as a result of faulty, or inadequate or improper temporary drainage during construction, or on account of the use or misuse, storage or handling of explosives, or on account of any claims or amounts recovered for any infringement, or patent, trademark or copyright, or from any claims or amounts arising or recovered under the Workmen's Compensation Laws, or any other law, by-law, ordinance, Order or decree. The Contractor shall be responsible for all damage

the name will estoot and maintain fire insurance on all structures on property that the tentuck of this continct is to be done to 100 per cent of the insurable value, including theme of extentials connected the righter in or adjacent to the structure insured, extentials in place or to be used as part of did personal construction including surplus interfals in piece or to be used as part of the work and surplus interfals in piece or to be used as part of the work, and such structures, miscollandous materials and supplies incident to the work. The loss, if any, is to be made adjustable with and may appear, except in such cases as may require payment of all or proportion of said insurance to be made to a montgages as his interests and each case as near require payment of all or

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Art. M.VIII. Responsibility for lamage Claims

To untractor shall indesnify and says harmless the Orner or all of his representatives from all suits, actions, or claims of any character in account of any injuries or dension sustained by my person or property in consequence of any neglect in and endequarding the war or throught the use of enacceptable metarials in the construction of the inprovement, or an account of any act or order or improper temporary tractor, or as a result of faulty, or inadequate or improper temporary attracts or hardling construction, or on account of the use or misuse, storage or hardling of explosives, or on account of the use or misuse, accounts recovered for any infringes ut, or petart, trademark or copyedict, or from any claims or expunts arising or recovered under the first, or from any claim or expunts arising or recovered under the form an's Compensation laws, or any other law, bywing, ordinance, our or decree. The Contractor shall be responsible for all decage.

or injury to property of any character during the prosecution of the work resulting from any act, omission, neglect, or misconduct, in the mamer of method of executing said work satisfactorily or due to the non-execution of said work or at any time due to defective work or materials and said responsibility shall continue until the improvement shall have been completed and accepted.

Claims for damages will be made in writing to the party liable within a reasonable time of the first observance of such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and will be adjusted by agreement or arbitrations.

Art. XXIX. Liens Tandapage Arabiteet may divide and vall contry any

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

Art. XXX. Assignment

Meither party to the Contract will assign the Contract or sublet it as a whole without the written consent of the other, nor will the Contractor assign any money due or to become due to him hereunder, without the previous written consent of the Owner.

Art. XXXI. Mutual Responsibility of Contractors

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

General Conditions Page 11

or in mry to property of any character during the prosecution of the work resulting from any act, ordesion, nonlect, or edecordact, in the concrete at method, of orientiany said work satisfactorily or due to the To ston or held work on all the doc to defective work or and that law been amended and necepted.

claim for desurge will be sweet in writing to the party liable within and his openad flow to seaver observers of gody datage and not beed than the time of thank paracut, integra as appears; stipulated otherwise in the case of feuity world or that orials, and will be adhated by arrest we be britten vi botton.

Art. MXXX, Light

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Art. MM. Are instant

Militar party to the Contract will assign the Contract of sublet it Contractor scotion only money due or to become due to him hereunder, without the provious written consent of the Guer.

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Should the Contractor eauer demage to any constructor on the word the contractor agener, to nettle with such contractor by agreebut or arbitration, if he will so settle. If such separate confineire sue the Coner on account of any demant elleged to lave been so sections at the Owner's commence, and, if any judgment against the her eries therefrom, the Contractor will pay or estiaty it and pay all conte incurred by the dance.

Art. XXII. Separate Contracts

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

Art. XXXIII. Subcontractors

successful by all the obtigations that The Contractor will as soon as practicable after the execution of the contract, notify the Landscape Architect in writing of the names of subcontractors proposed for the principal parts of the work and for such others as the Landscape Architect may direct and will employ any that the Landscape Architect may within a reasonable time object to as incompetent or unfit.

If the Contractor has submitted before execution of the contract a list of subcontractors and the change of any name on such a list is required in writing by the Owner after such execution, the contract price will be increased or diminished by the difference in cost occasioned by such changes.

The Landscape Architect will, on request, furnish to any subcontractor, wherever practicable, evidence of the amounts certified on his account.

The Contractor agrees that he is as fully responsible to the Owner for the acts of his subcontractors and of persons either directly or directly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the contract document will create any contractual reaction between any subcontractor and the Owner.

Art. XXXIV. Relations of Contractor and Subcontractor

The Contractor agrees to bind every Subcontractor and every Subcontractor agreement, the General tractor agrees to be bound by the terms of the Agreement, the General Conding agrees to be bound by the terms of the Agreement and the General Conditions, the Drawings, and Specifications as far as applicable to his Work, including the following provisions of this article.

The Subcontractor agrees--

To be bound to the Contractor by the terms of the Agreement, General Conditions, Drawings, and Specifications, and to assume toward him all the obligations and responsibilities that he assumes toward the Owner.

Art. Wolll. Sererate Contracts

The samer reserves the right to let other contracts is connection with this test work. The Contractor will afford other contractors reconsition to the contractor of their settings and atomation of their work, and will properly connect and constitute his work with thatrs.

Art, MONINI. Subcontractors

The Contractor will as even as practicable after the execution of the contract, notify the Landscape Architect in writing of the names of subcontractors proposed for the principal parts of the work and for orch others as the landscape Architect may direct and will capley any that the landscape Architect may within a ressonable time object to is incompetent or unfit.

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Detring contained in the contract document will ereste any contractual results between any subcontractor and the Owner.

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The Contractor agrees to Mind every Subscrittactor and every Subscrittactor agrees to be bound by the terms of the Agreement, the General Conditions, the Drawlings, and Specifications as far as applicable to his work, Ancluding the Sollowing provisions of this article.

The Subcontractor agrees at

(a) To be bound to the destractor by the terms of the Agreement, General Conditions, Brawings, and Specifications, and to caseure towerd him all the obligations and responsibilities that be assumed toward the Owner.

(b) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Art. XXI of the General Conditions.

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

The Contractor agrees --

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

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

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

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

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

percentage, at the time the certificate to the surance (i) To pay the Subcontractor a just share of any fire insurance money received by him, the Contractor.

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

(k) That no claim for services rendered or materials furnished by the Contractor to the Subcontractor will be valid unless by the Contractor to the Subcontractor to the written notice thereof is given by the Contractor to the Subcontractor during the first ten days of the calendar Subcontractor during the first ten days of the calendar month following that in which the claim originated.

month following that in which the claim of the present and
(1) To give the Subcontractor an opportunity to be present and
to submit evidence in any arbitration involving his right.

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

(b) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply in payment under Art. Not of the General Conditions.

(c) To raise claims for extres to the Contractor in the namer provided to the Conoral Conditions for like claims by the Contractor upon the Comer, exampt that the time for esides class one at tace same rel astale

The Continuotor agreement

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(a) to pay the Subcontractor, (pon the payment of certificates. if issued under the schedule of values in Art. XXI of the Central dendictions, the arount allowed to the Contractor on second of the Subcostractor's work to the entent of the Coherentector's interest therein.

(i) To pay sin Subcontractor, upon the payment of certificates, if tuened otherwise than as in (c), so that at all times his total psyments will be as letye in proportion of the value of the work done by him as the total amount cortified to the Contractor is to the value of the werk done by him.

(g) To pay the Subcontractor to such entent as may be provided by the Contract Occuments or the subcontract, if either of these provides for carifor or larger paramits than the above.

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(1) To make no demand for liquidated darages or penalty for delay in my sum in excess of each smount as may be speci-

fied in the coursect. (I) That no plaim for services rendered on materials furnished by the Contractor to the Subcentractor will be valid unless written notice thereof is given by the Contractor to the Subscontractor during the first ton days of the calendar nonth following that is which the chain originated. (1) To give the Subcontractor an opportunity to be present and

to subsit widence in any arbitration involving his right. (a) To make as arbitrator as provided for in the Ceneral Conditions the person southaited by the Subconfractor, if the sole cause of dispute is the veri, meterials, rights; or responsibilitates of the Subscontractor.

The Contractor and Subcontractor agree --

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

Art. XXV. Landscape Architect's Status

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

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

Art. XXVI. Landscape Architect's Decisions

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

Art. XXXVII. Cash Allowances

The Contractor will include in the contract summ all allowance named in the Contract Documents and will cause the work so covered to be done by such contractors and for such sums as the Architect may direct, the contract sum being adjusted in conformity therewith.

The Contractor will not be required to employ for any such work persons against whom he has a reasonable objection.

Art. XXXVIII. Arbitration

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

Art. XXXIX. Use of Premises

The Contractor will confine his apparatus, the storage of materials, and the operations of his workmen to the limits indicated by law, Ordinances, permits, or directions of the Landscape Architect and vill not unreasonably encumber the premises with his materials.

The Contractor and Subcontinector appoor-

(a) In the mother of erbitration, their rights and obligations and all procedure will be evaluated to those set fouth in this contract. Nothing in this article will exact any obligation on the part of the Owner to pay or to see to the partent of any subcontractor.

Art. MXV. Londsonge Architect's Status

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The impleoses Architect will edde neither with the Owner nor with the Centractor, but will use his power under the centract to endouge its island performance by both.

Art. XXXVI. Landerenge Architect's Decisions

the Architect will, within a responsible time, water decisions on all claims of the Greek or Contractor end on all otherwantitors relating to the execution and progress of the work or the interpretation of the Contract Domments.

Art. MINTE. Carb Allowences

The destractor will include in the communications all allowance pamed in the destract Decarate and will cause the weak so covered to be done by such contractors and for such reas is the Archicoctary direct, the contract our being adjusted in conformity thereastly.

The Contractor will not be required to sapley for any such newl per-

Art. EEXVEER. Arbitration

All disputes, claims, or questions subject to arbitration under this contract with be substitued to arbitration in accordance with the provisions, then obtaining, of the standard worm of Arbitration Proceedure of the American Tratitute of Arbitration Proceedure of the American Tratitute of Arbitration.

Art. MYM. Ge of Prenders

The Contractor will confine his oppositus, the storage of motorials, and the operations of his workern to the limits indicated by law, orthances, penalts, or directions of the Landscape Archisect and will not unreseasably enougher the president with his materials.

Art. XL. Final Cleaning Up

Upon completion of the work specified in the Contract, and before final payment will be made, the construction area and all other adjoining areas, other than those owned and/or controlled by him, occupied by the Contractor during the construction of said Contract shall be cleaned of all surplus and discarded materials, false work, rubbish and temporary structures and buildings; that were placed thereon by the Contractor, and left in a neat and presentable condition. Borrow pits and spoil areas shall be treated as elsewhere herein provided.

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1.3 CLEARING ADD COURTER

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Art. M. Final Classics (p.

then completion of the work specified in the Contract, and before first payment will be unde, the construction area and all other adfolding areas, other than times owned and/or controlled by him, occupied by the Contractor during the construction of said Contract shall be cleaned of all surplus and discarded materials, false mark, rebitsh and temporary structures and buildings; that were placed thousand by the Contractor, and left in a neat and presentable condition. Borrow pitts and spoil areas shall be treated as elsewhere herein provided.

DIVISION PL - 1

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(a) Work under this division is indicated on the drawings entitled "Grading & Staking Plan" and "Construction Details" prepared by David B. Harrity, Landscape Architect, Staten Island, New York.

a grade what he one one countries or make stones.

- (b) Each Bidder will familiarize himself with the Contract Documents and shall visit the site of proposed work to acquaint himself with the existing conditions pertinent to the execution of all work described herein.
- (c) Should the Bidder find a discrepancy of omission in the Specifications, or should he be in doubt as to the meaning of any portion of them, he shall then notify the Landscape Architect who shall then instruct all bidders in the matter by an Addendum.
- (d) This Contractor shall guard and protect against damage to existing work. Any work, already completed, that is disturbed or in any way damaged or changed, shall be replaced to original condition, or as shown on the drawings.

FL 1.2 CLEARING AND GRUBBING

- (a) This item shall consist of clearing and grubbing areas as described below and in conformity with the Plans.
- (b) Clearing is defined as the clearing of areas of trees, shrubs, brush, down timber, rotten wood rubbish and any other vegetation, as well as the removal of fences and incidental structures.
- (c) Grubbing is defined as removing from the ground all stump roots and stubs, brush, organic materials and debris. When indicated such materials as leaf mould or other organic materials above the surface of the ground and suitable for use as mulch or as topsoil, shall be salvaged and stockpiled.
- (d) Limits of clearing shall be out of construction limits. All other areas within the "Limit of Work" shall be cleaned

DIVISION PL - 1

N. NOVALITE OF AN

PL I.I GENGELAE

- (a) North under this division is indicated on the drawings entitled "Grading & Stating Plan" and "Construction Testalis" propered by Bavid E. Harrity, Laudscape Archi-tect, States Island, New York,
- (b) Sach Bidder will femiliarize bimself with the Contract Decements and shall visit the site of proposed work to acquaint bimself with the existing conditions pertinent to the execution of all work described herein.
- (c) Should the Bidder find a discrepancy of onission in the Specifications, or should be be in doubt as to the meaning of any partion of them, he shall then notify the Landscape Architect who shall then instruct all bidders in the matter by an Addendum.
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PL 1.2 GLEARING AIR CHUBBING

- (a) This item shall consist of clearing and grubbing areas as described below and in conformity with the Blass.
- (b) Clearing is defined as the clearing of creas of trees, carubs, brush, down timber, rotten wood subbish and any other vegetation, as well as the removal of fences and incidental structures.
- (a) Grubbing is defined as removing from the ground all stump roots and stubs, brush, organic meterials and debris.

 When indicated such moterials as leaf would or other ormanic authorisis above the surface of the ground and suits able for use as mulch or as topsell, shall be salvaged and stockpludd.
- (d) Limits of clearing shall be out of construction limits.

 All other areas within the "Limit of Work" shall be cleaned

of all rubbish and fallen wood. All standing stumps and dead trees shall be cut off flush with the ground. The Landscape Architect has the right to designate trees and other growth to leave standing and when such is done, the Contractor shall conform to such direction.

- (e) Limits of grubbing are hereby defined to include construction area (out to out excavation or embankment, as the case may be.)
- (f) Removal materials derived from clearing and grubbing shall be salvaged and/or disposed of as subsequently set forth.

PL 1.3 ROADWAY EXCAVATION

(a) Description

- 1) Roadway excavation shall in general consist of excavation and grading for roadways and their appurtenances to lines and grades indicated on the Plans. Unsuitable and excess materials in any excavation shall be disposed of by being removed from the limits of the work or to such locations as approved by the Landscape Architect.
- 2) Roadway excavation shall include the following:
 - (a) Within the boundary faces of the typical cross section(s) indicated on the Plans, including ditches within the cut section.
 - (b) Topsoil to be salvaged within the limits of the road.
 - (c) Excavation for stream and channal changed.

(b) Construction Methods

- 1) All suitable material removed from the excavation shall be used as far as practicable in the formation of embankment, subgrade, shoulders, slopes, tion of embankment, subgrade, shoulders, slopes, backfill for structures and at such other places as directed.
- 2) Boulders and excavated rock shall be broken and reduced in size so as to be acceptable for use in embankments and in other specified areas.
- 3) All earth slopes shall be formed in lines conforming to the plans.

of ell rubbish and fallen wood. All standing stumps and dead trees shall be out off flush with the ground. The Landscape Architect has the right to designate trees and other growth to leave standing and when such is done, that dominacior shall conform to such direction.

- struction area (out to out encavation or embantment, os the case may be.)
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- (a) Broavation for stream and chennel changed.

- rion of embaniment, subgrade, shoulders, slopes, backfill for structures and at such other-places as directed.
- 2) Soulders and executed rock aball be broken and reduced in size so as to be acceptable for use in enbandrence and in other specified areas.
 - 3) All carth slopes shalt be formed in times conforming to the plans.

- 4) All boulders and ledge rock encountered in the roadbed, shall be removed within ditch lines.
- 5) All spaces created by removal of rock, or unsuitable material, shall be backfilled to the lines and grades indicated on the Plans.

PL 1.4 EMBANKMENT

(a) Embankment shall be formed of suitable material, obtained from roadway, Structure and other excavation included in the Contract and it shall be placed, processed and compacted to the lines and grades on the Plans.

PL 1.5 EARTH SHOULDERS

- (a) This item shall consist of the formation and compaction of earth shoulders in conformity with the lines and grades shown on the Plans and in accordance with these Specifications.
- (b) Earth shoulders shall be composed of suitable materials from roadway or Structure excavation, supplemented by suitable material, if directed from borrow excavation.
- (c) Construction Methods
 - publication, or an elemen of the dynamics 1) Earth shoulders shall be formed and compacted as soon as possible after the surfacing item is complete.
 - 2) Any damage to the surfacing or pavement by reason of carelessness or negligence on the part of the Contractor shall be repaired to the satisfaction of the Landscape Architect.
 - 3) The entire shoulder area shall be uniformly and thoroughly compacted by rolling with a tandem, or three-wheel or pneumatic tire roller.
 - 4) The weight of any roller used for this operation shall be such that the shoulder shall be thoroughly compacted; however, the weight shall not exceed that required for the adjacent surface of pavement. The areas to be shaped and compacted shall include all shoulder areas shaped to the specified cross-slope. Marchines for the doubtroction of the retaining

- () All boulders and ledge rock encountered in the reschool, shall be removed within dittel lines.
- -1) All spaces created by removal of rock, or unsultable material, shall be becafilled to the lines and grades indicated on the Plans.

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 - (b) Earth shoulders shall be composed of suitable materials from readway or Structure excavation, supplemented by suitable material, if directed from borrow excavation.

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- 1) Harth shoulders shall be formed and compacted as soon as possible after the surfacing idem is complete.
- 2) Any decage to the surfacing or payment by reason of carelessness or usgligence on the part of the Contractor shall be regaired to the satisfaction of the Landscape Architect.
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DIVISION PL - 2

CONSTRUCTION WORK

PL 2.1 GENERAL

- (a) Work under this division is indicated on drawings entitled "Grading & Staking Plan and "Construction Details" prepared by David B. Harrity, Landscape Architect, Staten Island, New York,
- (b) Each Bidder will familiarize himself with the Contract Documents and shall visit the site of proposed work to acquaint himself with the existing conditions pertinent to the execution of all work described herein.
- (c) Should the Bidder find a discrepancy or omission in the Specifications, or should he be in doubt as to the meaning of any portion of them, he shall then notify the Landscape Architect who shall then instruct all Bidders in the matter by an Addendum.
- (d) This Contractor shall protect, and guard against damage to existing work. Any work already completed, that is disturbed or in any way damaged or changed, shall be replaced to original condition, or as shown on the drawings.

PL 2.2 WORK INCLUDED

- (a) The work covered by this specification consists of furnishing labor and materials, equipment appliances necessary for establishing finished grade, and for construction of concrete sitting walls, concrete retaining walls, steps, tree sleeves, construction of paved areas, walls, steps, tree sleeves, construction of paved areas, construction of drainage system as shown on drawings and schedules as specified herein including but not limited to the following:
 - 1) Furnishing cement, stone, sand, water, reinforcement rods, prefabricated concrete coping, formwork and all other necessary materials for the construction of the sitting walls.
 - 2) Furnishing cement, stone, sand, water, reinforcement rods, formwork, and all other necessary materials for the construction of the retaining walls.

DIVISION PL - 2

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- (a) work under this division is indicated on drawings encialed "Grading & Stabing Flam and "Construction Depails" propored by David S. Marvity, Landscape Architect, Staten leland, New York.
- (b) Each Sidder will familiarine bimeaif with the Contract
 Documents and shall visit the since of proposed work to
 acquaint nimeoif with the existing conditions pectiment
 to the execution of all work described herein.
- (a) Should the gridder find a discrepancy or omission in the Specifications, or should be be in doubt as to the meaning of any portion of them, he shall then notify the Landscape Architect who shall then instruct all didders in the matter by an Addmidtes.
- (d) This Contractor shall protect, and yeard against damage to emisting work. Any work already completed, that is disturbed or in any way damaged or changed, shall be replaced to original condition, or as shown on the drawings.

PLES WHEN INCHIDED

- (a) The work covered by this specification consists of formishing labor and materials, equisment appliances necessary for establishing limished grads, and for construction of congrete sitting valls, consiste vetaining walls, stops, thee sleeves, construction of paved eross, construction of dishere ayeter as about on drawings and construction of dishere ayeter as about on drawings and construction of architect harding for the limited control of the fallowing.
- 1) Furnishing demont, stone, sand, water, reinforceact reis, prefabricated centrate coping, forework and all other nacessary materials for the construction of the citting walls.
 - 2) Eurnishing concert, stone, sand, water, rednforcement rode, formwork, and all other necessary naterials for the construction of the rotaining walls.

- 3) Furnishing cement, stone, sand, water, wire mesh reinforcement, and all other necessary materials for the construction of the concrete tree sleeves.
- 4) Furnishing cement, stone, sand, water, steel reinforcement rods, formwork and all other necessary materials for the construction of the concrete steps.
- 5) Establishing base for paved areas.
- 6) Furnishing materials used in base.
- 7) Furnishing concrete asphalt mixtures for roads and walks.
- 8) Furnishing combination curb and gutter for parking areas.

PL 2.3 CONCRETE

- (a) All cement shall be Portland Cement and shall meet the requirements of the latest standard specifications of the American Society of Testing Materials. It shall be dry and in its original container.
- (b) Water used in mixing concrete shall be free from acids alkalies, oils, salts, organic matter or any deleterious substances which would impair the strength of the concrete. Water containing not more than one per cent (1%) of chlorides by weight will be acceptable for curing concrete.
- (c) Fine aggregate shall consist of clean, washed sand, ninety-five per cent (95%) which shall pass through a number four (4) sieve. Not less than fifty per cent (50%) shall be retained in a number thirty (30) sieve, and not more than five per cent (5%) shall pass a 100 mesh sieve.
- (d) Coarse aggregate may be either crushed stone, gravel, crushed slag or combinations thereof.
 - 1) Crushed stone shall consist of particles of clean, hard, tough, durable rock free from adherent coating.
 - 2) Gravel shall be composed of hard, durable particles of clean stone and shall be free from an excess of thin, or elongated pieces, frozen lumps, vegetable or other deleterious matter.

- 3) Furnishing cement, stone, dand, vater, wire mean reinforcement, and all other necessary metarials for the construction of the countete tree sleeves.
- 4) Furnishing cament, stone; sand, water, steel reinforcement rods, formwork and all other necessary materials for the construction of the congrete steps.
 - 5) Escablishing base for payed areas.
 - 6) Maraishing materials used in base.
 - 7) Purntsular concrete asphelu alacures for roads and
 - a) Furnishing combination outboard gutter for parking

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- (c) Pine apprecate shall consist of elean, washed sand, minetyfive per cont (95%) which shall pass through a masher four (4) glove. Not less than fifty her cont (55%) shall be retained in a marker thirty (35) slove, and not more than five per cont (5%) shall pass a 100 mean eleve.
 - (d) Coarso appregate way be either crushed stone, gravel, crushed slag or combinations thereof.
- 1) Grayhod abone shall consist of particles of cleam, hard, tough, durable rook free from adherent coating.
- 2) Gravel shalf be compaced of hard; durable particles of elean utons and shall be free from as exacts of this, or elengated pieces, frozen lumps, vegetable or other delaterious matter.

- 3) Crushed slag shall be air-cool, blast furnace slag weighing not less than 70 lbs. per cu. ft. dry rodded, when produced to a number six (6) size and shall consist of angular fragment, reasonably uniform in density and quality, and reasonably free from thin, elongated or glassy pieces, dirt or other objectionable matter and coatings of any character that would indicate an unstable product.
- 4) Crushed gravel shall consist of clean, hard durable particles of clean stone, and shall be free from an excess of elongated pieces, frozen lumps or vegetable or other deleterious matter, and shall contain at least seventy-five per cent (75%) crushed particles.
- 5) Coarse aggregate shall consist of number one (1) and number two (2) size particles, provided that not more than fifty per cent (50%) or less than thirty per cent (30%) shall be of number one (1) size or more than seventy per cent (70%) or less than fifty per cent (50%) shall be of number two (2) size.
- (e) All concrete shall have an ultimate compressive strength of three thousand (3,000) pounds per square inch at the end of twenty-eight (28) days.

PL 2.4 REINFORCEMENT STEEL

- (a) All rods for concrete reinforcement shall be of performed rods, rolled of new brilliant steel conforming to the specifications of the American Society for Testing Materials.
- (b) Wire mesh for reinforcement shall be composed of cold drawn steel wires in accordance with the specifications of the American Society of Testing Materials. It shall be furnished in flat sheets of the dimensions, spacing and wire sizes specified on the plans.

PL 2.5 MASONRY WORK

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

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object accommon shall have emerger disea-

- 3) Omeshed sing aball be sir-cool, clast farmace sing wolgisher not less them 70 lbs. per an. Et. dry rodded, when produced to a number six (6) size and shall admits of engular fragment, reasonably uniform in density and quality, and reasonably fraction thin, elongsted or glassy pieces, dirt or other objectionable uniter and coatings of any character first would instead an unstable product.
- 4) Chushed gravel shall consist of alean, hard durable partiales of clean stone, and shall be free from an access of clongsted pieces, fracen lusps or vegetable or other celeterious matter, and shall contain at least seventy-five per tent (752) crushed particles.
- S) Coarce sugregate shall consist of number one (1) and number two (2) size particles, provided that not more than Hifty per cent (50%) or less than thirty per cent (30%) shall be of number one (1) size or more than payency per cent (70%) or less than fifty per cent (50%) shall be of number two (2) size.
 - (e) all condructe shall have on untimate compressive strength of three thousand (5,000) pounds per square inch at the end of trenty-eight (28) days.

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PL 2.6 CONCRETE SITTING WALLS

The Contractor shall construct the concrete sitting walls set into the asphalt concrete pavement as shown on the plans as follows:

- 1) The concrete sitting walls shall be square with an exterior dimension of eight (8) feet and an interior dimension of seven (7) feet and formed in two equal sections, see Plans. The structures shall be fifteen (15) inches high from the ground level and extend one (1) foot below the ground level, with a width of twelve (12) inches from the top to five (5) inches below the ground level and widening to an ultimate width of eighteen (18) inches at the base.
- 2) The concrete used for the construction of the sitting walls shall be mixed in the proportions of one (1) part Portland Cement, two (2) parts sand, and three (3) parts gravel or crushed stone.
- 3) Concrete shall be poured in continuous layers, six (6) to eight (8) inches deep.
- 4) Number 3 temperature rods shall be placed two (2) inches from the outer face of the wall and twelve (12) inches on center.
- 5) The mortar for the precast concrete coping shall be composed of one (1) part of Portland Cement and a maximum of two (2) parts fine aggregate, with not more than five (5) parts of hydrated lime or lime putty.

PL 2.7 CONCRETE TREE SLEEVES

The Contractor shall construct concrete tree sleeves located on the Plans as follows:

- 1) The concrete structures shall have exterior dimensions of four (4) feet long, four (4) feet wide and five (5) feet deep; and an interior dimensions of one (1) foot radius, and four feet and six inches (4' 6") deep, as shown on the Plans.
- 2) The concrete used for the construction of concrete tree sleeves shall be mixed in the proportions of one (1) part Portland Cement, two (2) parts sand, and three (3) parts gravel or crushed stone.

TO SEE CONCRETE SITTING VALLS

The Contractor shall construct the concrete sitting walls set into the asphalt concrete pavement as shown on the plans as follows:

- I) The concrete sitting value shall be square with an enterior dimension of seven (7) feet and formed in two equal sections, see Fings. The structures shall be fiften (15) inches high from the ground level and extend one (1) foot below the ground level, with a width of twelve (12) inches from the top to five with a of the twelve (12) inches from the top to five an ultimate width of eighteen (18) inches at the base.
- 2) The constraine used for the construction of the sitting walls shall be mired in the proportions of one (1) part Portima Cement, two (2) parts cans, and turce (3) parts grayel or crushed stone.
 - 3) Concrete shall be poured in continuous layers, six (6) to cigut (8) inches deep.
 - d) Number Secondersture rods shall be placed two (2) inches fuss the outer face of the wall and evelve (12) inches on tenter.
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L 2.7 CONTRETE TARK STREVES

The Contractor whall construct concrete tree sleaves located on the Plane as fallows:

- I) The concrete structures shall have exterior dimensions of four (4) feet long, four (6) feet wide and five (5) fact deep, and an interior dimensions of one (1) foot radius, and four feet and six indice (4' 6') deep, as shown on the Plans.
- 2) The contracte used for the construction of concrete tree alseves shall be wired in the proportions of one (1) part Portland Cament, two (2) parts sand, and three (3) parts gravel or crushed stone.

- 3) Concrete shall be poured in continuous layers, six (6) to eight (8) inches deep.
- 4) One quarter (%) inch wire mesh reinforcing with six (6) inch spacing shall be placed three (3) inches from the interior face of the structure, as shown on the Plans.

PL 2.8 ASPHALT CONCRETE PAVEMENT

- (a) Entrance Road, Parking Area, Service Road, and Walks.
 - The Contractor shall have the responsibility for installing these in accordance with the Asphalt Institute Specifications 1(SS-1), Asphalt Institute, College Park, Maryland, March 1962.

PL 2.9 BENCHES

- (a) The Contractor shall establish benches as follows:
- (b) Benches located in terrace as shown on drawings shall be constructed as follows:
 - (1) Bench shall be constructed of five (5) two by fours (2x4's) by eight (8) feet, and two (2) two by six's (2x6's) by eight (8) feet Redwood lumber separater by six (6) one half by three (½x3) inch Redwood dividers as shown on drawings.
 - (2) Bench shall be tied together with three eights (3/8's) inch thread rods.
 - (3) Bench shall be treated with Ressex Redwood Stain.
 - (4) Three (3) bench supports shall be located one footfive (5) inches from end of bench on one (1) foot seven (7) inches centers.
 - (5) Bench supports shall be three (3) feet long, one and one half (1½) inches below finish grade, three (3) inches thick, one (1) foot five (5) inches wide on top, with a two by two (2x2) inch recess on each edge tapering to one (1) foot at finish grade.
 - (6) Form work plans shall be submitted by contractor and approved by Landscape Architect before being used on the work, no special remuneration shall be made for the work, the cost of such work being included in the

- 3) Concrete shall be paured on continuous layers, six (6) to eight (8) inches deep.
- 4) One querter (t) inch wire mesh reinforcing with sin (4) inch specing shall be placed white (3) inches from the intenior face of the structure, as shown on the Plans.

PE 2. S ASERALT CONCRETE PAVEGENT

- (a) Entrance Road; Pariding Area, Sarvice Road, and Walks.
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 - (2) Sends shall be ried together with three eights (3/8/s) inch thread ross.
- (3) Bench chald be treated with Resser Redwood Stain.
- (4) Three (3) bench supports shall be located one footfive (3) inches from end of bench on one (1) foot seven (7) inches centers.
- (5) Beach supports shall be three (3) feet long, one and one bull (14) inches bules illnich grade, three (2) inches thick, one (1) foot five (5) inches vide on top, with a two by two (2x3) inch recess on each edge tipering to one (1) foot at finish grade.
- (6) Form work plans shall be submitted by contractor and approved by Landscape Architect before being used on the work, as special remumeration shall be made for form work, the cost of such work being Engludes in the

price tendered for concrete.

- (7) The concrete shall be mixed in the proportions of one (1) part Portland cement, two (2) parts sand and (3) parts gravel or crushed stone.
- (8) Number three (3) reinforcement rods shall be placed in bench supports as shown on drawings.
- (9) After all forms have been removed, all exposed surfaces shall be rubbed with carborundum bricks and clean water only to a uniform color and finish satisfactory to the Landscape Architect.
- (10) After the cast standards have been removed from the forms, they shall be cured for a period of at least seven (7) days before being removed from the original pallet. Curing shall be done in a closed room which can be maintained at an even temperature. Cast standards shall be moistened every four (4) hours during the curing period.
- (11) Contractor shall not commence quantity production on the cast bench standards until a finished sample has been approved by Landscape Architect.

PL 2.10 MANHOLES

- (a) The Contractor shall build manholes of the size called for on the plans, where indicated on the plans or ordered by the Landscape Architect, in accordance with the plans and specifications, and the directions of the Landscape Architect.
- (b) The Contractor shall construct manholes as follows:
 - (1) The concrete shall be mixed in the proportions of one
 (1) part Portland cement, two (2) parts fine aggregate
 and four (4) parts coarse aggregate, with the maximum
 size of stone limited to one (1) inch.
 - (2) Mortar shall be composed of one (1) part Portland cement and two (2) parts fine aggregate, with not more than five (5) per cent of the cement content of hydrated lime or lime putty.
 - (3) Ladder rungs for manhole shall be constructed of wrought iron and shall be hot-dipped galvanized after bending.

- orice tendered for concrete.
- (7) The concrete shall be sized in the proportions of one (1) part Bortland cement, two (2) parts sant and (3) parts gravel of crushed stone.
- (6) Murber three (3) reinforcement rods shall be placed in bench supports as shown on drawings.
- (9) After all forms have been removed, all exposed nurfaces shall be subbed with carborundum bricks and clear water only to a uniform color and flated satisfactory to the Landscape Architect.
- (10) After the cast standards have been removed from the forms, they shall be aured for a paried of at least seven (7) days before being removed from the original pallot. Unring shall be done in a classed from the original can be actinizated at an even temperature. Unit standards shall be moistened every four (4) hours during the cuting paried.
- (11) Contractor shall not commence quantity production on the cast beach stradards until a finished sample has been approved by Landstere Architect.

PL 2.10 MANHORNS

- (a) The Congrector chall build rachales of the size called for an the plans, where indicated on the class or ordered by the Landscape Architect, in accordance with the plans and specifications, and the directions of the Landscape Architect.
 - (b) The Contractor shall construct manhales as follows:
- (1) The concrete shall be mixed in the proportions of one (1) part Perbland cement, two (3) parts fint aggregate and four (4) parts coarse aggregate, with the maxisum size of stone limited to one (1) Inch.
- (2) Morter shall be composed of one (1) part Portland comment and two (2) parts fine aggregate, with not more than five (1) per cent of the ement content of hydraned line or line outly.
- (3) Laider numgs for membole shall be constructed of wrought iron and shall be hotedtoped galverized after bending.

- (4) Frames and covers shall be of the type shown on plans or as directed by Landscape Architect.
- (5) Frames Shall be adjusted to the final grades by the use of cement mortar or by brick masonary set in cement mortar.
- (6) The Contractor shall furnish materials for and do all incidental work to complete the structure, including the work of setting and adjusting frames and plastering.

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

PL 2.11 FOUNTAIN

- (a) The Contractor shall establish the fountain as follows:
- (b) Fountain pool is to be made of concrete mixed at the same proportion as stated herein for the concrete sitting wall.
- (c) Pool walls are to be six (6) inches thick and reinforced with No. 7 steel bars. Pool floor is to be a six (6) inch concrete slab reinforced with No. 10 steel mesh.
- (d) Pool is to be eighteen (18) inches deep with a six (6) inch footing for the walls.
- (e) Concrete surfaces on both inside and outside of pool are to be uniformly water proofed with hot coal-tar pitch.

 No less than 50 lbs. per square of coal-tar pitch is to be used.
- (f) Spray rings will be Heavy Duty Red Brass with diameters of 45 feet, 35 feet, 25 feet, and 4 feet.
- (g) Pump to be 40 horsepower, single stage centrifugal, 222/440 volts, 60 cycle 3 phase with 8" suction and 8" discharge (3576).
- (h) Contractor shall see Roman Fountain Catalogue Guide to Better Fountain Designs for complete specifications and details.

- (4) Frames and dovers shall be of the type shown on plans or as directed by Lenderges Architect.
- (5) Frames Shall be adjusted to the final grades by the use of coment-mortar or by brick masonary set in cesent mortar.
- (6) The Contractor shall furnish materials for and do all incidental rock to complete the structure, including the work of setting and adjusting france and elastering.

No additional gayment will be allowed for the aforesaid, but the cost thereoff will be decade to have been included in all the prices bid for all the items, for which prices are named in the contract.

PL 2.11 FOUNTAIN

- (a) The Congrector shall establish the fountain as follows:
- (a) Fountain pool is to be made of concrete nixed at the sear proportion as stated herein for the concrete sitting
- (c) Pool walls are to be six (6) inches thick and reinforced with No. 7 steel bars. Pool floor is to be a six (6) inch concrete size reinforced with No. 10 steel wesh.
 - (d) Pool is to be eighteen (13) inches deep with a six (6) inch footing for the walls.
- (e) Concrete autitates on both inside and outside of gool are to be uniformly water proofed with not coal-ter picch.
 No less than 50 lbs, per square of coal-ter picch is to be used.
- (f) Spray riage will be Heavy Duty Red Brass with dismeters of 65 feet, 35 feet, 25 feet, and 6 feet.
- (8) Purp to be 40 hersepower, single stage centrifugel, 222/440 volts, 60 cycle 3 phase with 8" suction and 5" discharge (3576).
 - (b) Contractor shall see Roman Fountain Catalogue Guide to Setter Fountain Designs for complete specifications and dateils.

DIVISION PL - 3

PLANTING WORK

PL 3.1 GENERAL

- (a) Work under this division is indicated on drawings entitled "Planting Plan" and "Construction Details", prepared by David B. Harrity, Landscape Architect, Staten Island, New York.
- (b) Each Bidder will familiarize himself with the Contract Documents and shall visit the site of proposed work to acquaint himself with the existing conditions pertinent to the execution of all work described herein.
- (c) Should the Bidder find a discrepancy or omission in the Specifications, or should he be in doubt as to the meaning of any portion of them, he shall then notify the Landscape Architect who shall then instruct all bidders in the matter by an Addendum.
- (d) This Contractor shall guard and protect against damage to existing work. Any work, already completed, that is disturbed or in any way damaged or changed, shall be replaced to original condition, or as shown on the drawings.

PL 3.2 WORK INCLUDED

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

Excavating for all tree and shrub pits and beds.

Furnishing and preparing topsoil for backfilling all tree and shrub pits and beds.

Furnishing and incorporating fertilizer and peat.

Furnishing and planting all trees and shrubs as shown.

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

DIVISION PL - 3

PLANTING WORK

PL 3, I GENERAL

- (a) Work under this division is indicated on drawings estitled Planting Plant and "Construction MetaAls", prepared by David B. Herrity, Landscape Architect, Statem Island, New York.
 - (b) Each Eidder will devillarize himself with the Contract Focuments and shall wisht the site of proposed work to acquaint himself with the unisting conditions pertinent to the execution of all work described herein.
- (a) Should the Bidder find a discrepancy of entesion in the Specifications, or should be in in doubt as to the menning of any portion of them, he shall then notify the landscape Architect who shall then instruct all bidders in the patter by an Addendum.
- (d) This Contractor simil guard and protect against damage to emisting work. Any work, already completed, that is disturbed or in any way damaged or chapped, shall be replaced to original condition, or as shown on the drawings.

PL 3.2 VOIR INCLUDED

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

Excavating for all tree and chrob pits and bods.

Burnishing and propering topseil for backfilling all true and shouth pits and beds.

Auralehing and incorporating fertilizer and peat.

Furnishing and planting all trees and sixude as shown.

Burnishing and apreading topsoil, as needed beyond that on the site.

Mulching

Maintenance inspection.

Replacements of unsatisfactory plant material.

Installation of grass areas.

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

Testing soil for content.

Furnishing and incorporating fertilizer and soil conditioner.

Establishing the grade.

Furnishing and installing the seed.

Watering the area as specified in PL 3.9.

13.3 PROTECTION OF EXISTING UTILITIES

- (a) The Contractor shall ascertain the location of all electrical cables, utility lines, cesspools, and supply lines.
- (b) The Contractor shall be held responsible for any damage to existing utilities incurred during the process of work under this Contract.

PL 3.4 INSPECTION

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

the tests ther soil minders for grant

M. 3.5 FERTILIZERS

(a) Commercial fertilizer shall be 5-10-5. Commercial fertilizers shall have an analysis and guarantee, and shall analyze in the following order: 5% Total Nitrogen; 10% available in the following order: 5% Total Potash. Nitrogen in such Phosphoric Acid; and 5% Total Potash. Nitrogen in such commercial fertilizer shall be supplied in the form of incommercial fertilizer shall be supplied in the form of incommercial fertilizer shall be supplied in the form of incommercial fertilizer shall be supplied in the form of incommercial fertilizers shall be supplied in the form of incommercial fertilizers shall be supplied in the form of incommercial fertilizers shall meet the specified requirements of All fertilizers shall meet the specified requirements of State and Federal laws regarding them.

Meintenance inspection.

Replacements of unsatisfactory plant material.

Installation of passe steem.

(b) All labor, materials, and equipment necessary in establishtes cursa aucas, as epocificod bareta, include aut are not limited to the following:

Jestine soil for contest.

Description one decomposating fortiliser and soil condittioner.

Hetablishing the grade.

Burnishing and installing the seed.

Matering the eres as specified in PL 3.9.

PL 3.3 PROTECTION OF BRIEFIES BUILDING E.C. 19

- (a) The Contractor shall ascertain the location of all electrical cables, utility lines, casspools, and supply lines.
- (b) The Contractor shall be held responsible for any demage to existing utilities incorred during the process of work under this Contract.

PE 3.4 IMPRECION

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

IL 3.5 RERILLIZERS

(a) Commercial fortilizer shall be 3-10-5. Commercial fertilicous chall have as analysis and guarantee, and shall enalyse in the following order: 5% Total Mitrogen; 10% available Prosphoric Acid; and 5% focal Potach. Mitrogen is such corneredal fortilizer shell be supplied in the form of inorganic charicals to the amount of at least seventy-five per cont (VEV) of the nitrogen carrying agents on materials. All Sorthiners shall meet the specified requirements of State and Federal Laws regarding tham.

- (b) Commercial fertilizer shall be thoroughly incorporated with topsoil and loam planting mixture at the rate of three pounds per inch caliper of tree (approximately two shovels per tree).
- (c) Commercial fertilizer shall be applied on grass areas at the rates that follow:
 - 1) Five (5), ten (10), five (5) fertilizer shall be applied at the rate of thirty (30) pounds per thousand (1,000) square feet.
 - 2) Ammonium Nitrate shall be applied at the rate of three (3) pounds per thousand (1,000) square feet, every six (6) weeks during the growing season.
- (d) The Contractor shall provide weatherproof storage space for fertilizer, until and during its use.

ASSESSED TO THE RESIDENCE ASSESSED.

PL 3.6 SOIL CONDITIONER

(a) Peat moss shall be granulated sphagnum or moss peat furnished in air-dry condition and shall be free from woody substances and mineral matter such as sulphur or iron, and it shall show an acid reaction of 3.5 to 5.5 PH.

Peat moss shall be incorporated into the soil planting mixture to provide a friable planting mixture.

(b) Lime shall consist of ground limestone containing not less than eighty-five per cent (85%) of calcium and Magnesium carbonates. Dolomitic lime or high magnesium lime shall contain at least ten per cent (10%) of magnesium oxide.

Lime shall be incorporated into the soil mixture for grass areas at the rate of fifty (50) pounds per thousand (1,000) square feet. the state of the s

PL 3.7 TOPSOIL AND LOAM

server attall he from March Street to her Topsoil to be used on planted areas shall be good, friable, sandy or silt loam, containing no subsoil material, and known to have supported good vegetation. It shall contain not less than 1.5% organic matter as determined by the Thomas Rapid Test method and free from stone larger than one inch diameter. It shall be reasonably uniform in texture and structure. White the description as the property of the p

- (b) Commonstal fertilizer shall be thoroughly incorporated to star old to southing minimal and has illeged this caree nounds per inch caliper of tree (approximately two shovels per true).
- (c) Commercial fertilizer shall be applied on grass areas at the rates chat follows
- 1) Five (5), con (10), five (5) fortiliser shall be applied at the rate of thirty (50) younds per thousand (1,000, square feet.
- 2) Amondus Mitrate shell be applied at the rate of targe (3) pounds per thousand (1,000) square feet, every sax (6) wasks during the growing seesen.
- (i) The Contractor shall provide weathenproof storage space for formaliser, until and during the use.

SOLL CONSTRUCTION

- (a) Foot maps shall be granulated sphanum or mans poot furntaked in six-dry condition and shall be free from woody substances and mineral matter such on suspiner or iron, and it shall show on actd reaction of 3.5 to 1.4 PH.
 - Feat mose shall be incorporated into the sail planting misture to provide a friable planting misture.
- (b) hime shall consist of ground limestone containing now less then efacty-five per court (85%) of calcium and Magnesius carbonaton. Dolomicic line or high manuachn line shall contain at least ten per cent (10%) of magnesium outsie.

then shall be incomporated into the anil mixture for great stees at the rate of fifty (50) pounds per thousand (1,000)

TANDA ONE STORAGE CAR LOADS

Topsoff to be used on planted areas shall be good, friendle, sandy or silt loan, containing no substil material, and known to have supported good vogetation. It shall contain not less than 1.3% organic mutter as determined by the Thomas Rapid Test wethod and true from stone larger than one inch diameter. It shall be reasonably uniform in texture and atructure.

PL 3.8 MULCH

Woodchip mulch shall be prepared from selected timber on the site and installed at the rate specified on the Plans.

PL 3.9 SEED

When the ages, to be seeded has been receipt at a (a) On all slope areas, the following seed mix shall be used:

65% Kentucky 31 Fescue 15% Lespedesa Korean 15% Red Top Ever the star stoueness broke, Walnut 5% Perennial Rye

(b) On all areas ten per cent (10%) or less the following mix shall be used: and converted, or easies and

45% Kentucky Bluegrass 15% Fancy Re-cleaned Red Top

(c) Prior to the application of seed, a certificate from the dealer of purity, weed seed and germination must be furnished to the Landscape Architect, so that he may be able to check the seed and make adjustments for seed under the required minimum percentage of purity and germination.

an described shows. The time about to their Superior of three trainer of the although the world of

PL 3.10 SEEDING

- (a) Description 1) Seeding shall consist of preparing seedbeds, furnishing, placing and covering lime, fertilizer and seed; compacting seedbeds and other operations incidental to the proper seeding of areas shown on the Plans, or directed by the Landscape Architect, and in accordance with these Specifications.
 - 2) The planting season shall be from March first to May thirty-first, and from August sixteenth to October thirty-first inclusive. The Contractor shall perform all liming, fertilizing, seeding, raking and compaction operations only at times when local weather or other conditions affecting such work are normal and favorable to the proper prosecution of the work. No seeding will be done on frozen ground or when temperature is 32° F. or lower.

HDLDM B.E JE

woodchip mulch shall be prepared from selected timber on the atte and installed at the rate specified on the Plans.

STEE 8.8 3.9

(a) On all slope areas, the following need with chall be used:

65% Mentucky SI Fescue 15% Lespedesa Korren 15% Srd Pop 5% Personall Rys

(b) On all areas can per cent (10%) or less the Collowing min

AST Sentucity Bluegraus
SET Red Charine Toscue
LEW Famor Re-clesmed Red Top

(c) Prior to the application of seed, a certificate from the dealer of purity, weed each and germination must be faculated to the landscape Architect, so that he may be calle to check the seed and make adjustments for seed under the required mini-

PL 5.10 SEEDING

(a) Bescription

- I) Sceding shall consist of preparing seedbeds, furnishing, placing and covering lime, fortilizer and seed; compacting seedbeds and other operations incidental to the proper seeding of areas shown on the Place, or directed by the Landscape Architect, and in accordance with these Specifications.
- The planting season shall be from Narch first to hay thirty-first, and from August sinteenth to October thirty-first, and from August sinteenth to October first-first inclusive. The Contractor shall permise all liming, fortilizating, sceding, reight and compection operations only at times when local wastine they or other conditions offecting such work are normal and devemble to the proper prosecution of the work. No secaing will be done on from an are when temperature is 32° T. or issuer.

(b) Construction Methods

1) Seedbed Preparation

All grading and shaping operations shall be completed before seeding.

When the area to be seeded has been recently and thoroughly loosened to a depth of not lessthan five inches as a result of grading operations and, if immediately prior to seeding, the top three inches of soil is loose, friable, reasonably free from large clods, rocks, large roots and other undesirable matter and if shaped to the required grade, it shall be considered a satisfactory seedbed without additional treatment.

However, when the areas to be seeded are sparcely sodded, weedy, barren, and unworked, or packed and hard, any grass or weeds shall be cut or otherwise satisfactorily disposed of, and the soil then be scarified or otherwise loosened to a depth of not less than five inches.

2) Dry application Method

Liming: Lime shall be applied separately and prior to the application of any fertilizer or seed, and only on seedbeds which have previously been prepared as described above. The lime shall be worked to a depth of three inches after which the seed bed shall be properly graded and dressed to a smooth finish.

Fertilizing: 5-10-5 Commercial fertilizer will be applied at the rates specified in Article 3.5 above.

Seeding: Seed mixture shall be applied at the rate of three (3) pounds per thousand (1,000) square feet, immediately after fertilizing. Fertilizer and seed shall be raked to a depth of one quarter (1/4) inch.

Rolling: After the seed has been properly covered, the seed bed shall be immediately compacted by means of an approved lawn roller, weighing forty (40) to sixty-five (65) pounds for foot of width for clay sixty-five (65) pounds for foot of width for sandy or hundred (200) pounds per foot of width for sandy or light soils.

(b) Construction Methods

1) Sendled Preparation ..

All grading and shaping operations shall be completed before seeding.

When the area to be seeded has been recently and thoroughly locsemed to a depth of not lessthan five indres as a result of grading operations and, if tranclintely prior to seeding, the top three inches of soil is losse, friable, reaconably fire from large clock, rocks, large roots and other undestrable ratter and if slaped to the required grade, it shall be constituted a texts account secobed without addithough twoatment.

Bostown, when the ercas to be seeded are sparcely sedded, weedy, marken, and unterfeed, or paoled and hard, say grees or woods chall be cut or otherwise maris Sactorily otogosed of, and the soil then be scarified or otherwise loopened to a depth of not less than five laches.

2) Dry opplication Method

Liming: Dime shall be applied separately and prior to the application of any fertilizer or seed, and only on reedbeds which have greytously occas prepared as described above. The lime shall be worked to a depth of times toches after which the seed bed eleli be properly graded and dropped to a smooth finish.

Fertilizating 5-10-5 Commercial fortilizer will be applied at the rates epocified is Article 3.5 above.

Scoting: Seed wisture shall be applied at the rate of three (3) pounds per thousand (1,000) square feet, humedictely after fertilising. Bertilizer and seed shall be raised to a depth of one cuerter (1/6) inch.

Solikage After the good has been properly covered, the seed bed shall be immediately compacted by means of an approved last roller, watching forty (AD) to sinty-five (65) pounds for flot of width for clay soil, and wet whing one handred fifty (150) to two to winter a (200) pounds per foot of which for samp or Lefte soils.

PL 3.11 PLANT MATERIAL

- (a) All plants to be supplied shall be first class representatives of their normal species or variety unless otherwise specified on the Plans. All material is to conform in size grade to American Standards for Nursery Stock.
- (b) Flowering shrubs are to be well furnished with branches and be symetrically balanced and conform to their natural shape. Evergreens are to be full foliage compact specimens of mature growth.
- (c) All plants must show normal health and vigor in strict accordance with these Specifications and shall be free from disfiguring knots, sun scald injuries, abrasions and other disfigurements. Weak plants will not be accepted or paid for. All stock shall be nursery grown, freshly dug plants unless otherwise specified on the Plans.

PL 3.12 EXCAVATION, HANDLING AND PLANTING OPERATIONS

- (a) All plants shall be handled so that the roots are adequately protected at all times. During shipment they shall be protected by tarpaulin or other suitable covering. All balled and burlaped plants which cannot be planted immediately upon delivery shall be set in the ground and well covered with soil.
- (b) All trees shall be planted as shown on the plan according to the Standards of the Maryland State Nurserymen's Association.

PL 3.13 PREPARATION OF TOPSOIL FOR PLANT PITS AND BEDS

Topsoil for plant pits and beds shall be prepared by mixing with peat moss in the proportions of one (1) unit of peat moss to seven (7) units of topsoil by volume. The components shall be thoroughly mixed before use.

PL 3.14 MULCHING

(a) A two (2) inch mulch of wood chips shall be applied around all deciduous trees after planting.

IL D. II PUANT NATURIAL

- (a) All plants to be supplied shall be first class representatives of their normal species or variety unless otherwise specified on the Plans. All material is to conform in sise arade to American Susadards for Nursery Stock.
- (b) Flowering thrube are to be well furnished with bronches and be symmetrically balanced and conform to their natural shape.

 Evergrans are to be full foliage compact specimens of mature growth.
- (c) All plants must show nower health and vigor in strict accurdance with these Specialocylons and shall be fire from distinguishing labbe, can scald injuries, chrosions and other distinguishments. Heal plants will not be accepted or paid for. All stook shall be runsery cross, it ship the plants onless otherwise specified on the Plant.

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- (a) All plants shall be bandled so that the rosts are addquately protected at all times. During shipment they shall be protected by tarpealin or other suitable deveripg. All balled and buriaped plants which cannot be planted ismodiately upon delivery shall be set in the ground and roll covered with soil.
 - (b) All troos shall be planted as shown on the Plan according to the Standards of the Muryland State Nurserywen's Association.

PL 3.13 PHYRATERIA OF TOPOOT, NOW PLANT PIES AND MYSE

Togerall for plant pits and bods chall be prepared by mining with peat more in the proportions of one (1) andt of peat most to seven (7) units of topsoil by values. The components shall be chornogilly mired before use.

PE 3, 14 MULCHELMO

(a) A two (2) took mulch of wood chips shall be applied around all deciduous trees after planting.

(b) All evergreens and broadleaved evergreens, shall be mulched to a depth of two (2) inches with a mixture consisting of fifty per cent (50%) leaf mold, and fifty per cent (50%) peat moss. A portion of this shall be scratched into the top one and one-half (1 1/2) inch of soil.

PL 3.15 STAKING, GUYING, WRAPPING

- (a) All trees shall be guyed by wire guys encased in water hose at the trunk and stakes. Guys will be securely staked in an approved manner. All wire will be pliable iron of Md. shown of guying sketches.
- (b) Stakes for supporting trees shall be of sound wood of uniform size, capable of standing in ground at least two years. They shall be at least two (2) inch actual dimension and not less than eight (8) feet in length, and as shown on the Plans.
- (c) Stakes shall be placed a minimum of four (4) inches from the trunk of the tree for bare root plants and a minimum of twelve (12) inches from the ball for balled and burlaped plants. They shall be driven into the ground to the depth shown.
- (d) Wrapping material shall be first quality burlap or waterproffed crepe paper not less than six (6) inches or more than ten (10) inches in width, and of suitable length.
- (e) The trunks of all large trees, shall be wrapped and the material securely tied at the top and bottom, and at two foot intervals. Bandaging shall start at the base and will cover the entire surface of the trunk to the first branches.
- (f) All guying, staking and wrapping shall be done immediately after planting. All plants shall stand plumb after guying and staking.

PL 3.16 MAINTENANCE OF PLANTING UNTIL ACCEPTANCE

Areas around trees shall be kept cultivated, free of weeds and grass, and properly watered until acceptance. Replacement will be done as soon as dead material appears. If ment will be done as soon as dead material appears. If any tree, shrub or plant bed settles more than three (3) any tree, shrub or plant bed settles more than three to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches below the established grade, it shall be raised to inches the proper level, and not merely filled with additional topsoil.

- (b) All evergreens and broadloaved evergreens, shall be suiched to a depth of two (2) inches with a mixture consisting of fifty per cent (502) leaf mold, and fifty per cent (502) peat soul. A partion of this shall be scratched into the top cent con cent con one-half (1 1/2) inch of soil.
 - PL 3.15 SYAKING, GUYING, WLAIFING
- (c) All trees chall be guyed by wire guys encosed in water hose at the trunc and stakes. Guys will be scowely staked in an approved manner. All wire will be pliable from of Md. shown of guying statehes.
- (b) Stakes for supporting trees shall be of sound wood of unitform size, espable of strading in ground at least two years. They shall be at least two (1) inch actual direction and not less than eight (3) feet in length, and as shown on the
- (c) Stakes shall be pieced a minimum of four (4) inches from the trunc of the true (12) inches from the fall for balled and surlaped plants, they shall be driven date the ground to the choice shows.
 - (6) Wrapping naturial shall be first quality burlap or waterprofind except paper not less than six (6) inches or more than ten (10) inches in width, and of suitable length.
 - (e) The trunks of all large trues, thall be trapped and the reterial securely they at the top and betten, and at two foot intervals. Landaging shall start at the base and will erver the entire parties of the true to the first breakes.
- (3) All cuping, staling and trapping shall be done invediately after planting. All plants shall stand plant after puring and staring.
 - PL 3.16 VALUTUANCE OF PLANTING UNTIL ACCIP ANCE

Ares around trees shall be hept cultivated, free of weeds and ress, and properly vatered until ecoeptance, applacement will be done as soon as dead material appears. If any tree, shrub or plant bed settles more than three (3) inches below the established grade, it shall be raised to the proper level, and not marely filled with additional topsell.

PL 3.17 CLEANING UP

- (a) The Contractor shall disopse of, on the site or as directed by the Landscape Architect, all subsoil excavated from his work. All other debris including branches, paper and rubbish resulting from his work shall be removed from the site as work proceeds.
- (b) All areas shall be kept in a neat and orderly condition at all times. Proir to final acceptance the Contractor will clean up his work areas to the satisfaction of the Landscape Architect.

PL 3.18 INSPECTION FOR ACCEPTANCE

- (a) Inspection by the Landscape Architect shall be made upon completion of all work, at the notification of the Contractor.
- (b) Payment shall be made after acceptance by the Landscape Architect. Such payment shall not relieve Contractor of responsibility of guarantees, or of conformance with provisions of plant replacement as specified below. (3.19)

A 3.19 GUARANTEE OR WARRANTY

- (a) This Contractor warrants that all work executed under this division shall be free from defective plant material or workmanship for a period of one yearafter the Landscape's Architect's acceptance of the work.
- (b) This Contractor will guarantee to replace all defective plants and workmanship by approved methods and at his own expense whensoever such defects amy appear prior to the conslusion of this guarantee.

PL 3.20 REPLACEMENTS

- (a) Any trees or shrubs not found to be healthy and a in a good growing condition at any time during the period of guarantee, shall be removed from the site and replaced, as soon as weather and seasonal conditions permit, as determined by the Landscape Archditect.
- (b) Plant replacements shall be the same kind and size as specified in the itemized plant list, all peplacements shall be frunished, planted, mulched as specified, at the Contractor's expense.

SU ALIA CLAMBING UP

- (a) The Contractor shall disoped of, on the sits or as directed by the landscape dramitest, all subsell excavated from his work. All other debris including branches, paper and rubbish resulting from his work shall be removed from the site as work shall be removed from the site as
 - (b) All ereas shall be kept in a neat and orderly condition at all times. Froir to final comprise the Contractor will cases up his work areas to the satisfaction of the Landounce Arteltact.

ELS. 18 INSPICERON FOR AUCHSTANCE

- (a) Inspection by the Landsoape Architect shell be made upon completion of all work, at the notification of the doubte stor.
- (b) Paysant shall be made diter acceptance by the Lendscape Architect. Such payment shall not reliave Contractor of responsibility of guarantees, or of conformance with provisions or plant replacement as specified below.

TENNERAVI SO SETEMEND CL. C. III

- (a) This congrator warrance that with more assumed under this division shall be free from descetive plant naterial or workmanship for a period of one yearskier the landscape's arrestance of the work.
- (a) This Contractor will guarance to seviace all defective plants and vortexpands by approved methods and at his own expense whentever and defects any appear prior to the consistion of the wateries.

PL 3.20 REPLACEMENTS

- (a) May trees or shrubs not found to be issistly and a in a good growing condition at cay time during the period of guarantee, shall be removed from the same and applaced, as soon as seath reaction and section of permit, as determined by the Landscape Aronditate.
 - (b) Plant replacements shall be the some kind and size as specified is the itemized plant list, all replacements shall be frimished, planted, multiped as specified, at the Contractor's expense.

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

PL 3.21 COOPERATION

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

M 3.22 Sequence of the Work

The Contractor shall do the work specified in the following order:

- 1) Sub. grade (1-2)inches)
- 2) Construction work and Paanting work
- 3) Spread topsoid
- 4) Spreading of seed

(c) The Contractor shall be Mable for any damage to property including lawns, aprintilar systems, pavements, outps, etc. caused in replacement operations.

POUTARRIODD IS.E IF

Tale Contractor shall agree to supplete cooperation and

The Contractor shall do the work specified in the following

1) Sub. grade (1-2) taches) 2) Construction work and Picardag work

FORM OF PROPOSAL FOR THE

EXCAVATION, CONSTRUCTION AND PLANTING WORK

SOUTHEAST WATER LABORATORY

COLLEGE STATION ROAD ATHENS, GEORGIA

Mr. John R. Thoman, Director Southeast Water Laboratory Room 254, Physics Building University of Georgia Athens, Georgia

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

	BOOK AND A CONTROL OF THE WORLD'S AND A CONTROL OF THE CONTROL OF
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dollars, (\$)
TIME OF COMPLETION	A CONTRACT OF SHAPE AND A PARTY OF THE SHAPE AND A SHA
If awarded the Contract, within Contract	the undersigned agrees to complete the work lendar days for the date of the award of the

ATRIBL GROUGEA

Er. John E. Fromen, Director Laivereity of Coorgle Athons, Georgia

Furewant to and in compliance which the Plans, Specifications and comments related the rate, the understand hereby affect to furnish all labor, materials, supplies, equipment and other facilities and things necessary and proper for or two dental to the scopletion of the work as required by and in strict accordance with the applicable Specifications, and all Addends Assued by the Owner prior to the dote of the opening of bids, whether received by the undersigned or not, for the following sunt

#10 #10	envision educa	el entre consulta	- Arden Sinkers			TO MICHIGAN CONTRACTOR	- Company	· in the state of the state of		Access to the wind of the second	
en en			er Erre Roomk on Alberta		, are.	liou_				****	

If swarded the Contract, the undersited agrees to complete the work vithin _____Calendar days for the date of the avaid of the Contract. COST ESTIMATE

Prepared For:

Southeast Water Laboratory Athens, Georgia

David B. Harrity
Landscape Architect Staten Island, New York

Compiled by: David B. Harrity

Checked by: David B. Harrity

Job Description: To prepare a comprehensive Landscape Development Design for the Southeast Water Laboratory.

Wholey Abelia Elex Crousts Bullata (BS)

Anderes Crosping Assigned Silveria

Shocodandren Catrovitanes (\$5)

Form of Proposal
Page 3

COST ESTEMATE

repared For:

Southeast Water Laboratory

By:

David B. Herrity Lendscape Architect

Compiled by: David B. Harvity

Checked by: Bayid H. Hazrity

Job Description: Wo prepare a comprehensive Landscape Development Description for the Southeast Vater Laboratory.

PLANT MATERIALS:

QUANTITY	BOTANICAL AND COMMON NAME	SIZE	UNIT PRICE	TOTAL
	TREES			
8	Acer Rubrum (BB) Red Maple	8'-10'	10.00	\$80.00
28	Cercis Canadensis (BB) Redbud	5'-6'	7.00	196.00
23	Cornus Florida (BB) Flowering Dogwood	5'-6'	5.50	126.50
29	Crataegus Phaenopyrum (BB) Washington Hawthorne	6'-8'	12.00	348.00
15	Pinus Palustris (BB) Longleaf Pine	31-41	2.00	30.00
24	Pinus Strobus (BB) White Pine	3'-4'	2.00	48.00
15	Quercus Coccinea (BB) Scarlet Oak	8'-10'	18.00	270.00
16	Quescus Palustris (BB) Pin Oak	61+81	15.00	240.00
20	SHRUBS Abelia Grandillora (BB)	18"-24"	1.75	35.00
46	Glossy Abelia Ilex Crenata Bullata (BB) Japanese Holly	18"-24"	2.00	92.00
22	Junipeus Chinensis Pfitzer Pfitzer's Juniper	iana (BB) 24"-30"	2.25	49.50
18	Junipeus Horizontalis Plum Andorra Creeping Junipe	nosa (BB) er 15"-18"	1.75	31.50
43	Photina Glabra (BB) Japanese Photina	24"-30"	2.00	86.00
10	Rhododendron Catawbiense Catawba Rhodedendron	(BB) 18"-24"	3.50	35.00

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JATET	HOLES TIME	31,82	BOTANICAL AND CONTROL NAME	YTITHAU
			Battar	
\$80.00	10,00	31-10	Amer Rubrum (BB) Red Maple	. 8
196.00	00.7	19-15	Ocreia Canadensia (BB) Redbud	
126.30	5.50	19-12	Cornue Florida (BS) Flowering Degwood	
348,00	12,00	18-18	Cratae us Phaenopyrus (88) Wishington Hawkhorne	52
30.00	2.00	14418	Pinus Pilustris (35) Longiesi Pine	15
48.00	2.00	31-41	Figus Stropus (88) White Fine	
270.00	18.00	81-101	Querous Geograda (BB) Somriet Cak	15
240.00	15.00	18-18	Quesque Paluatris (BE) Pia Dak	91
35.00	1.75	18"-24"	Abelia Grandillora (38)	20
92.00	2,00	18"-26"	llex Grenata Bullata (83) Jepanese Holly	
49.50	2.25	ane (3B) 244-30"	Jumipous Chimensis Pfiltzerd	22
31.50	1.75	as (BH) 15"-18"	Junipeus Rorizontella Plumo Andorra Grosping Juniper	18
96,00	2,00	24"+30"	Fioring Glabra (SS)	64
35.00	3,50	18"-24"	Khadadendron Catambiense (T Catamba Madadandron	

PLANT MATERIALS

OUANITY	BOTANICAL AND COMMON NAME	SIZE	UNIT PRICE	TOTAL
	SHRUBS SHRUBS			
25	Viburnum Ryhtidophyllum (BB) Leatherleaf Viburnum	24"-30"	\$2.25	\$56.25
	GROUND COVERS			
16,320	Hedera Helix English Ivy	3"-5"	7.00/100	1141.25
5,460	Vinea Mindé Common Periwinkle	3"-4"	6.00/100	327.00
7,210	Liriope Spaciata	2"-3"	.257clump	1802.50
	100 100 bioxi 325,05			

SAMESTAN TEATS

The transfer of the transfer o				
MIKATO	BOTARICAL AND COMMON MARKS	STIE	DATE PRICE	TATOR
	201793			
	Viburana Sybiidophyliwa (BD) Lestherlesh Wiburana	24"-30"	82.25	\$56.25
	SATIVOS, EVEICHE			
16,320	Hedern Holls Sugised Lyx	37.57	7.03/103	1141.25
5,460	Vines Minds Common Partylisis	30-10	6,40/100	327.00
7, 210	analonga sectili	ng hig	. 25% clump	1802.50

TOTALS

i) Planting

ITEMS	TERE.	SUBTOTALES	GRAND TOTAL
1) Trees, Shrube	and Ground Cover	\$44994.70	p,080 - 50
2) Transportacio	on Costs	497.20	16,355 60
3) Special Equip	ment Fall	320.00	
4) Labor and Equ	ipmental whelp	6,748.50	12 March 640,326.W
5) Contingencies		2230.20	in a supervision
6) Overhead	sandaVe en enjare de las	1,218.60	The second second
7) Pool Equipmen	ic Allendary	8,750.16	
8) Profit		2,251.00	\$25,010.76
	Total -	\$25,010.76	\$23,000
Installation of	Grass (.02/sq.ft. Grand Total -		\$30,188.76
		The sold energy s	
ASPESALT GE	MICHER PAYER		
60,750 mg.fr.	Estrance Road & Farking Apas		418.525.00 3,738.00
13,380 sq.Zv.	Service hands a Walks	ed .20/sq.ft.	7.300.00
	Guttet	2.50/itm.ft.	
MANUSCARE.			
	Pool Walls		
2,120 lin.fu.	Drainega tila		

ers, oro, ere

030,100.76

2) Transports data Costs 697.30

Total -

Grand Foosi - 970, 156, 76

Installation of Course (.02/sq.ft.) 1,173.00.

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BARIHWUNA				
QUANITY	ITEM 06.5	UNIT PRICE	SUBTOTAL	TOTAD
12.7 acres	General Cleaning & Grubbing	\$400/acre	\$5,080.00	
73,733.2 cu.yd.	Earth Cut & Fill	.50/cu.yd.	36,866.60	
6,380 wu.yd.	Topsoil sprip and repalce	1.00/cu.yd.	6,390.00	\$48,326.60
LANDSCAPE	CONSTRUCTION			
Quanity	ITEM AND STORY OF A	UNIT PRICE	SUBTOTAL	TOTAL
CONCRETE				
295 LIN.FEET	Retaining Walls	\$25/lin/ft.	\$7,375.00	
7	Tree Sleeves	\$122 each	854.00	
Tricks towards.	iree Sieeves		920.00	** *** ***
7	Sitting Walls	\$60.00/cu.yd.		\$9,149.00
ASPHALT C	ONCRETE PAVING	18	\$18,525.00	
60,750 sq.ft.	Entrance Road & Parking Area	\$.30/sq.ft.		
13,350 sq.ft.	Service Roads and Walks	.28/sq.ft.	3,738.00	
37720 lin.ft.	Concrete Curb &	2.50/lin.ft.	7,300.00	\$29,640.00
	A CHATT	IRES)		
LANDSCAPE	CONSTRUCTION (FEATL	\$5.00/lin.ft.	\$17,750.0	0
3,750 lin.ft.	Pool Walls		- 674411 41	0 004 ((0.00
2,120 lin.ft.	Drainage tile	\$3.2571in.ft.		\$24,640.00
	1		GRAND	TOTALS
ITEM		TOTALS M		

1) Planting

\$5,441.90

datoi	SURTOWAL	ELICA PLANTA	MINIE	XIIVAO /
	95,000.00	6/30/3/00/5	enersi Cleaning E Orchbiug	13.7 acres - 6
	36,856.50	. 30/ cm.yd.	Sarch Cos & Fill	75,733.2 cu.yd.
648,326.60	00.088.0	1,007 cm.yd.	Topsoil sprip and rapalos	.54. nr 68£,3
			MOTTOWREEKO	LAMUSARELA
AMET	BULLDLAF	BONES, EXVID	MAX	65 752050
				ES PEDIFOR
	\$7,375.00	925/11a/ec.	Recaiming Walls	TEET, HILL-PV
	854.00	SL22 cach	seveel8 eszl	e in Carlotten and Carlotte
89,149,00	920.00	#50,50/cm,yd.	Steeling Walls	7
			DELYAS RESERVE	ASPIALT ON
	\$18,525.00	\$.30/aq.Eq.	Entrance Rood & Parsing Ares	50,750 sq.ft.
	3,738.00	.20/sq.£6.	bes about entries alfall	13,350 eq.fd.
\$39,640.00	7,300.60	2.50/lin.ft.	Concrete Curb & Guecak	37720 Kin.Er.
		<u>Caro</u>	ETATE) ENTROUTERED	D EGYDSCHAI
	817,750.00	\$5.00/11n.ct.	Podl Walls	3,750 lin.fc.
\$26,640.00	05.008.8	63.25/11a.fc.	Drainage tile	2,120 Ha.st.
n waren				
	D OMEO	HEILES		.MIL
		00.14	4,25	1) Fluncing

ITEM	TOTALS	GRAND TOTALS
2) Earthwork	\$48,326.60	
3) Landscape Construction		
a) Concrete Structures	9,149.00	
b) Asphalt Structures	29,663.00	
c) Pool	17,750.00	
d) Drainage	6,890.00	\$117,220.00
	OF JOB - \$117,220.00	
Rogan Paratains, "Goide to Batte Paucains, Enc., 1964)		
Sociya, Kilya Z., "Shariga" Yhdon Some, Enc., 1959)	i Berrins, (Mar Tork: A	

Nyman, Denold, "Itoes for American American Company, 1958)

CHARLE TOTALE	POLLARS	MAXI
	648,006.60	3) Sakularouti
		3) Landscape Construction
	9,149.00	a) Commete Structures
	29,663.00	b) Asphalt Structures
	17,750.00	6) 2001
\$117,220.00	6,890.00	d) Disinage

TOTAL COST OF JOB + 6117, 220.00

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