LANDSCAPE DESIGN
FOR
JOSEPH WHEELER HIGH SCHOOL
COBB COUNTY, GEORGIA

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A TERMINAL PROBLEM PRESENTED FOR
DEGREE OF BACHELOR OF LANDSCAPE ARCHITECTURE

DEPARTMENT OF LANDSCAPE ARCHITECTURE
UNIVERSITY OF GEORGIA
ATHENS, GEORGIA
JUNE, 1965

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

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Spring Quarter

LAR 355

Professor Owens

Joseph Wheeler High School

PROBLEM STATEMENT

Members of the Board of Education of the Cobb County school district, in March of 1965 have voted to secure professional assistance in the preparation of a landscape development plan for the grounds of the Joseph Wheeler High School. Mr. Jasper M. Griffin, Superintendent of Cobb County schools, has employed this firm of Landscape Architects to render this service.

The site, Joseph Wheeler High School, is located on the west side of Holt Road, approximately 3 miles east of downtown Marietta. It is boundered on 3 sides by densely wooded areas, consisting predominatly of pines and oaks. Directly across from the site on the east side of Holt Road, exists the recently completed East Cobb Junior High School.

Following a conference with Mr. Griffin, Superintendent of schools of Cobb County, and Mr. Cail, project architect, and after a careful study of the site, it was decided to include the following features in the landscape development plan:

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1. Location of existing and proposed buildings and walks.
2. Location of existing and proposed utility lines, sewage lines, and drainage lines.
3. Vehicular and pedestrian circulation.
4. Parking facilities for faculty, students, visitors, and service vehicles.
5. Outdoor recreation areas including, Football and Track field.
6. Outdoor classrooms, court areas, sitting areas, and landscape features.

We propose to prepare the following drawings, and other documents:

1. Site analysis plan, and area location map.
2. Master plan.
3. Staking and grading plan.
4. Planting plan.
5. Blow up of specific landscape features, including plan and elevations.
6. Construction details.
7. Perspectives.
8. Model.
9. A typewritten, bound comprehensive report, including a historical sketch, analysis of problem, justification of solution, plant list, cost estimate, and specifications.

HISTORICAL SKETCH

In November of 1964, the Cobb County School System, under the direction of Jasper M. Griffin, Superintendant of Schools, let out bids for the construction of a new high school. Twenty acres of land had been purchased in East Marietta, Georgia for the construction of the new high school which was designed by Mr. Cleveland M. Cail Jr. of Marietta. The school is to be named the "Joseph Wheeler High School," in honor of the famous calvary general who fought over this area during the Civil War. At this time construction is near completion in anticipation of opening for the 1965-66 school year. The building will consist of twenty-eight classrooms, and will accomodate approximately six hundred to one thousand students.

INTRODUCTION

The ultimate of the Cobb County School System is to provide the best instructional program that is available to students in this changing world of today. This curriculum is constantly under study to be improved.

In the late 1950's the federal government of the United States realized that to a certain extent school systems throughout the country were lagging in the instruction of math, science, and foreign language. With this in mind, the National Defense Education Act came into being. Since 1960 Cobb County has spent approximately $650,000 in the area of math, science, and foreign language, in a never ending effort to keep up-to-date on the needs of our students. All Cobb County High Schools are accredited by the Georgia Accrediting Commission, and by the Southern Association of Colleges and Schools.

Cobb County has one of the finest testing programs in the State of Georgia. Guiding, Counseling, and Testing play a very important role in the Cobb County School System.

The Cobb County School System is experiencing a phenominal growth, increasing about 3000 new students over the previous year. This increase has required an additional 110 classrooms and the construction of three new high schools, one of which is the Joseph Wheeler High School.

In our present day and age, the preservation of open space has become an important part of community planning. Mr. Jasper M. Griffin, Superintendant of Cobb County Schools, has conveyed the feeling that high schools could become a focal point of the community. The open space necessary in the programing of school activities is a contribution towards the enhancement of the community.

GENERAL ANALYSIS

Certain physical characteristics must be considered before a design can be justified and carried out. The physical features to be considered are climate, topography, soil, vegetation, and land use.

The site of Joseph Wheeler High School is located on Holt Road, in East Marietta, Cobb County, Georgia. The school is approximately three miles east of downtown Marietta. On the west side of Holt Road, directly opposite this school exists Cobb County Junior High School.

The topography slopes toward the rear of the site at an 8-10% slope draining into Sope Creek which lies just beyond the property. The site is completely surrounded on three sides by densely wooded areas consisting predominantly of pines and oaks. A steep bank exists along the northeast property line. An open drainage ditch runs parallel to Holt Road within the right of way line, at approximately a 4% slope.

Results of various boring tests by Hensey and Associates of Marietta, Georgia, show that the soil types on the site consist of sandy loam and clay loam. The topsoil has been found to be sandy. Therefore, additional nutrients are required to enhance proper vegetative growth. The sub-soils have been found to be stiff red micaceous clay and decomposed rock.

The existing utilities on the site consist of a four inch gas line and a six inch water line, running parallel to each other in a north-south direction at the east end of the site. Running in a north-south direction on the west side of the property exists a sewage line. Utility poles run east to west across the property approximately one hundred feet parallel to the north boundary line.

The general location of the site is in the Temperate Region, thirty-five degrees latitude. Cool summer breezes come from a south south-west direction, and cold winter winds are from the north west.

The building is geometric in shape and compact to accomodate air conditioning throughout the building. The exterior building materials consist of brick with stucco panels, and has a metal awning overhang along the west fascade for loading and discharging of students. The building is designed with the topography in mind, incorporating various changes in elevation which blend with the topography. Repetition of changes in elevation could be incorporated into the landscape development design.

The problems encountered in designing a school grounds are concerned with the placement of different objects as well as use areas in relation to each other. In this type of design vegetation and topography are the two major elements to be considered.

DESIGN EXPLANATION AND JUSTIFICATION

Following a thorough site analysis, consisting of physical and architectural characteristics, the Landscape Architect can draw certain conclusions as to the landscape development of the grounds. These conclusions will be the basis in formulating the final design.

The primary considerations of this design are the topography and the location of the building as it exits upon the topography. The entrance road was designed to provide smooth ingress and egress by school buses and student, faculty, and service vehicles. The convenience for loading and discharging of students was a consideration in having the entrance road run close to the steel canopy which has been provided.

A service road has been provided to the track and football field area for maintanence purposes as well as emergencies and additional services. A service area for the kitchen and disposal of refuse has been provided for on the north side of the building.

Parking has been located on the north and north-west portions of the building for easy access to and from the building. It was felt that the parking be placed here rather than in front of the building for aesthetic reasons in that a mass of automobiles would detract from the architecture of the

building. Adequate parking facilities are included to serve the growing number of students with automobiles as well as for the staff and visitors. Overflow parking for sports events and special functions will be handle by the parking facilities of Cobb County Junior High School on the opposite side of Holt Road.

A series of terraces and sitting areas have been designed for the south, south-west side of the building. The purposes and location of these areas are for the following reasons:

1. Best sun orientation.
2. Takes advantage of westward view toward Blackjack Mountain seen in the background.
3. Coincides with the changes in elevation of the building.
4. Provides a pleasant transition from the parking area up to the classrooms.
5. Serves as an outdoor sitting area for students during lunch hour, recess periods, and outdoor activities.
6. Provides a pleasant view looking down into a semi-naturalistic garden.

The football field has been placed in its present location for the following reasons:

1. It allows parking to be provided for on the north, north-west side of the building rather than in the front of the building.

2. It provides a pleasant area between the football field, and the building, which otherwise would not have been utilized.
3. Grandstands have been placed on both sides of the field accomodating approximately 2500 people. The proper slope of these grandstands have been used for minimum obstruction.

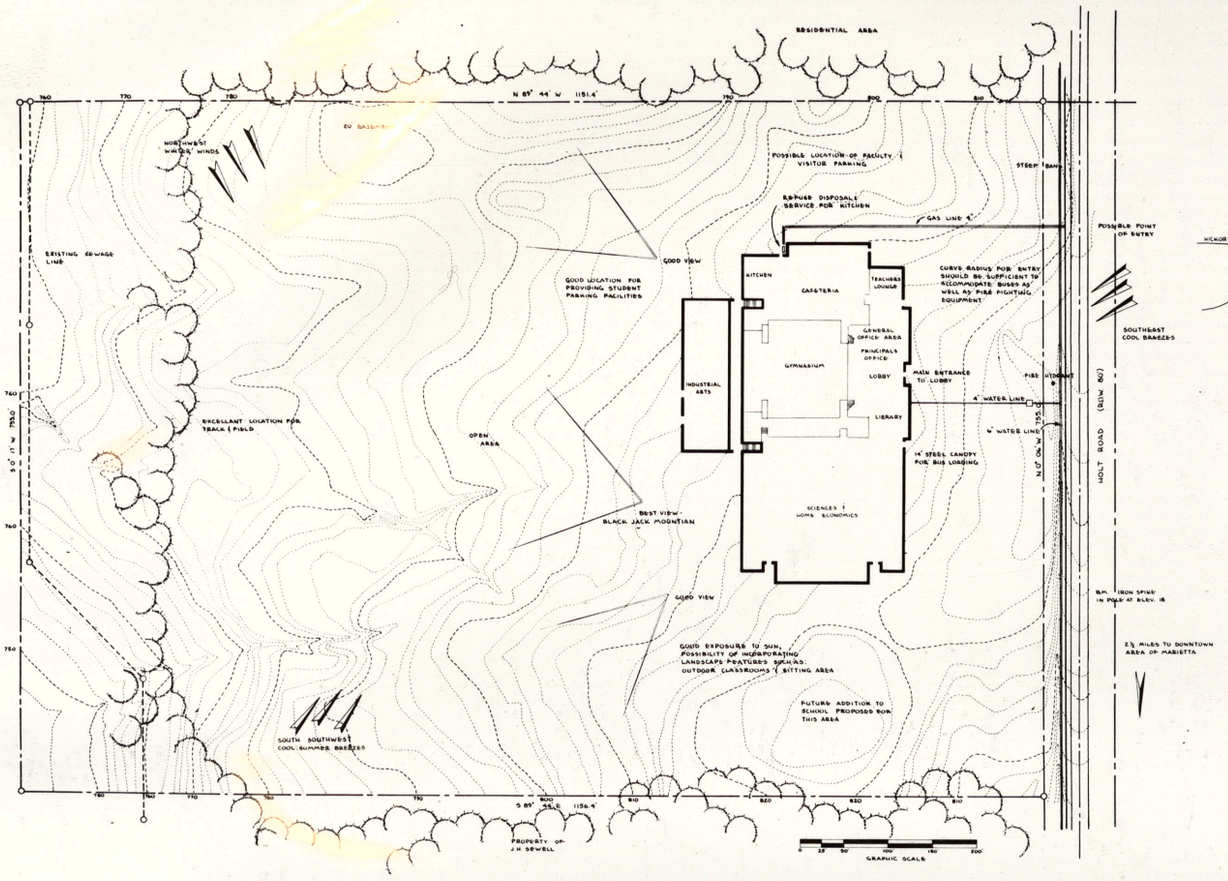
Three fairly large open spaces have been provided for on the south side to be used as outdoor classrooms. These areas will give more attention to the individual and to small groups. Past studies have found that outdoor areas are well justified for use in group activities.

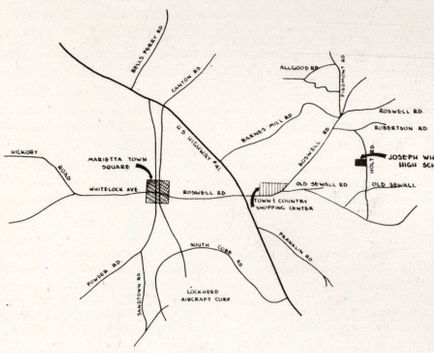
A semi-naturalistic garden was designed to be used both as a visual attraction, as well as a physical one. This area will provide a place for passive relaxation and contemplation, and will enhance the appearance of the school grounds.

The plant materials used were choosen to enhance the building and not detract from it. These plants unify the grounds as one element. The plants used were choosen for hardiness, texture, form, color and shade. The use of native plants will blend well with the area, and thus have a feeling of belonging.

The overall concept of this design was based on the premise that a high school would be of more value to a community, if it could be developed more on the order of a campus. The average high school shows little or nothing in going beyond the bare

minimum of site development. The cooperation of both architects and landscape architects from the beginning stages of design, would produce more effective and useful results.





LOCATION MAP

NO SCALE

GENERAL NOTES:

SITE:

THE 20 ACRE SITE IS LOCATED IN EAST MARIETTA ON THE WEST SIDE OF HOLT ROAD, APPROXIMATELY 2½ MILES FROM DOWNTOWN MARIETTA. (REFER TO LOCATION MAP)

DIRECTLY OPPOSITE THIS SITE, ON THE EAST SIDE OF HOLT ROAD EXISTS EAST COBB JUNIOR HIGH SCHOOL.

THE SITE HAS BEEN COMPLETELY CLEARED OF EXISTING PLANT MATERIAL IN THE ROUGH GRADING PROCESS.

THIS SITE IS COMPLETELY SURROUNDED ON THREE SIDES BY DENSELY WOODED AREAS CONSISTING PREDOMINANTLY OF PINES AND OAKS.

BUILDING:

THE BUILDING IS GEOMETRIC IN SHAPE, AND COMPACT TO ACCOMODATE AIR CONDITIONING THROUGHOUT THE BUILDING.

THE EXTERIOR BUILDING MATERIALS CONSIST OF BRICK WITH STUCCO PANELS, AND HAS A METAL AWNING OVERHANG ALONG THE WEST FASCADE FOR LOADING AND DISCHARGING OF STUDENTS.

THE VARIOUS LEVELS OF THE BUILDING STRUCTURE CREATE INTEREST. REPETITION OF THIS TYPE COULD BE INCORPORATED THROUGHOUT THE LANDSCAPE DEVELOPMENT PLAN.

SERVICE AREA TO BE PROVIDED FOR KITCHEN AS WELL REFUSE DISPOSAL.

ACCESS SHOULD BE PROVIDED TO RECREATIONAL AREAS FOR SAFETY & SERVICE.

SOIL:

SOIL SHOULD BE TESTED FOR Ph IN ORDER TO DETERMINE ANY ADJUSTMENTS TO IMPROVE SOIL CONDITIONS.

SOIL IMMEDIATELY AROUND BUILDING SHOULD BE TERMITE TREATED.

FROM VARIOUS BORING TESTS BY HENSLEY & ASSOCIATES OF MARIETTA, GA TOPSOIL HAS BEEN FOUND TO BE SANDY. WE THEREFORE ADVISE THE USE OF ADDITIONAL NUTRIENTS TO ENHANCE PLANT GROWTH.

SUB-SOILS HAVE BEEN FOUND TO BE STIFF, RED, MICACEOUS CLAY AND DECOMPOSED ROCK.

AZIMUTH & ALTITUDE OF THE SUN

TEMP.												
LOW	35	36	39	46	53	70	73	73	64	50	42	36
HIGH	48	49	57	70	79	88	91	89	80	71	48	51
MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

TEMPERATURE CHART

AVERAGE DAILY MAXIMUM 70.1
AVERAGE DAILY MINIMUM 51.2

PRECIP.												
LOW	4.2	4.4	5.0	4.0	3.4	3.4	4.1	3.5	2.5	2.0	2.7	3.3
HIGH	4.8	4.9	5.8	4.7	4.0	4.2	4.7	4.3	3.7	3.1	3.5	3.1
MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

PRECIPATATION CHART

TOTAL YEARLY AVERAGE FROM 45.9" TO 51.4"
50" IN A TEN MINUTE PERIOD
2.25" IN A ONE HOUR PERIOD
3.25" IN A TWO HOUR PERIOD

NORTH

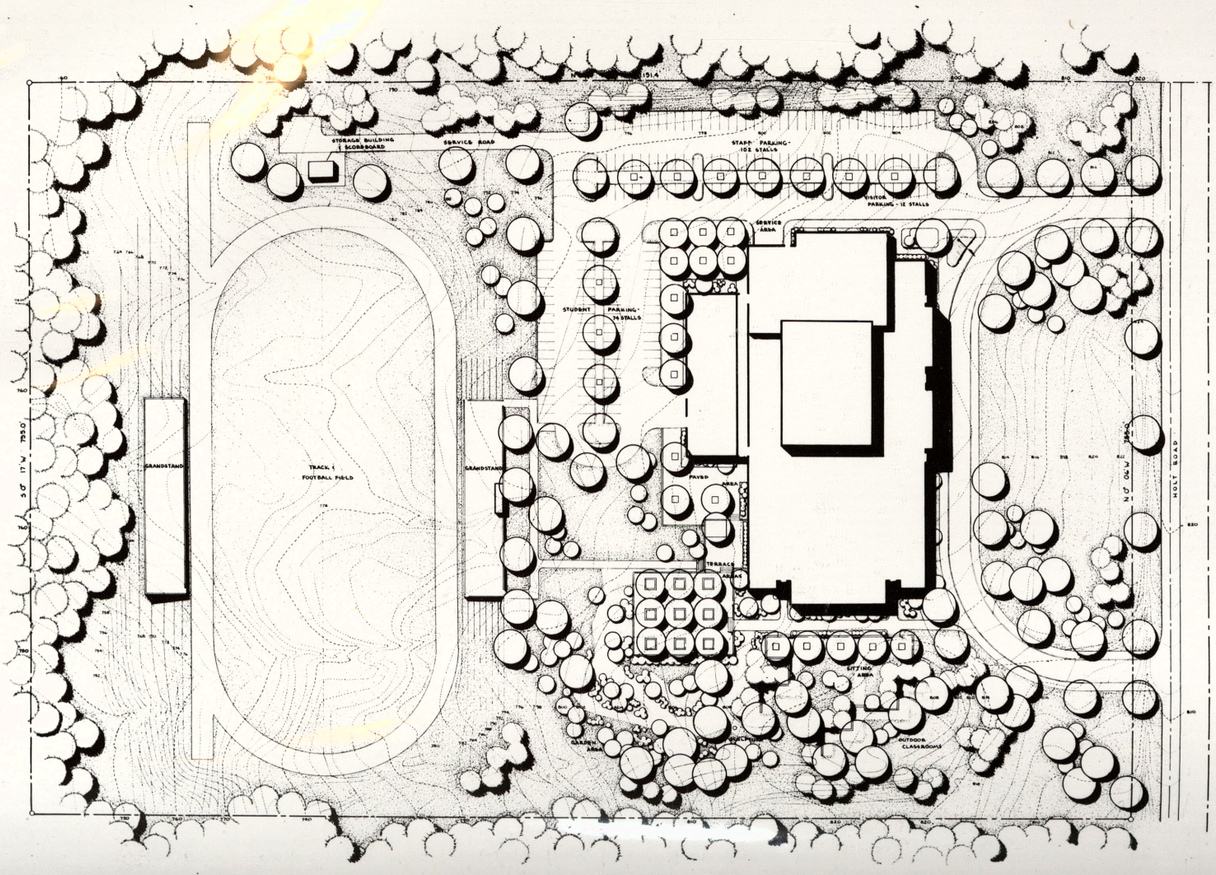
JOSEPH WHEELER HIGH SCHOOL

MARIETTA GEORGIA

SCALE: 1" = 50'-0" | TERMINAL PROBLEM | CHIEF UNIT 5'-0"

DATE: JUNE 1965 | UNIVERSITY OF GEORGIA | ATLANTA

SITE ANALYSIS



NORTH

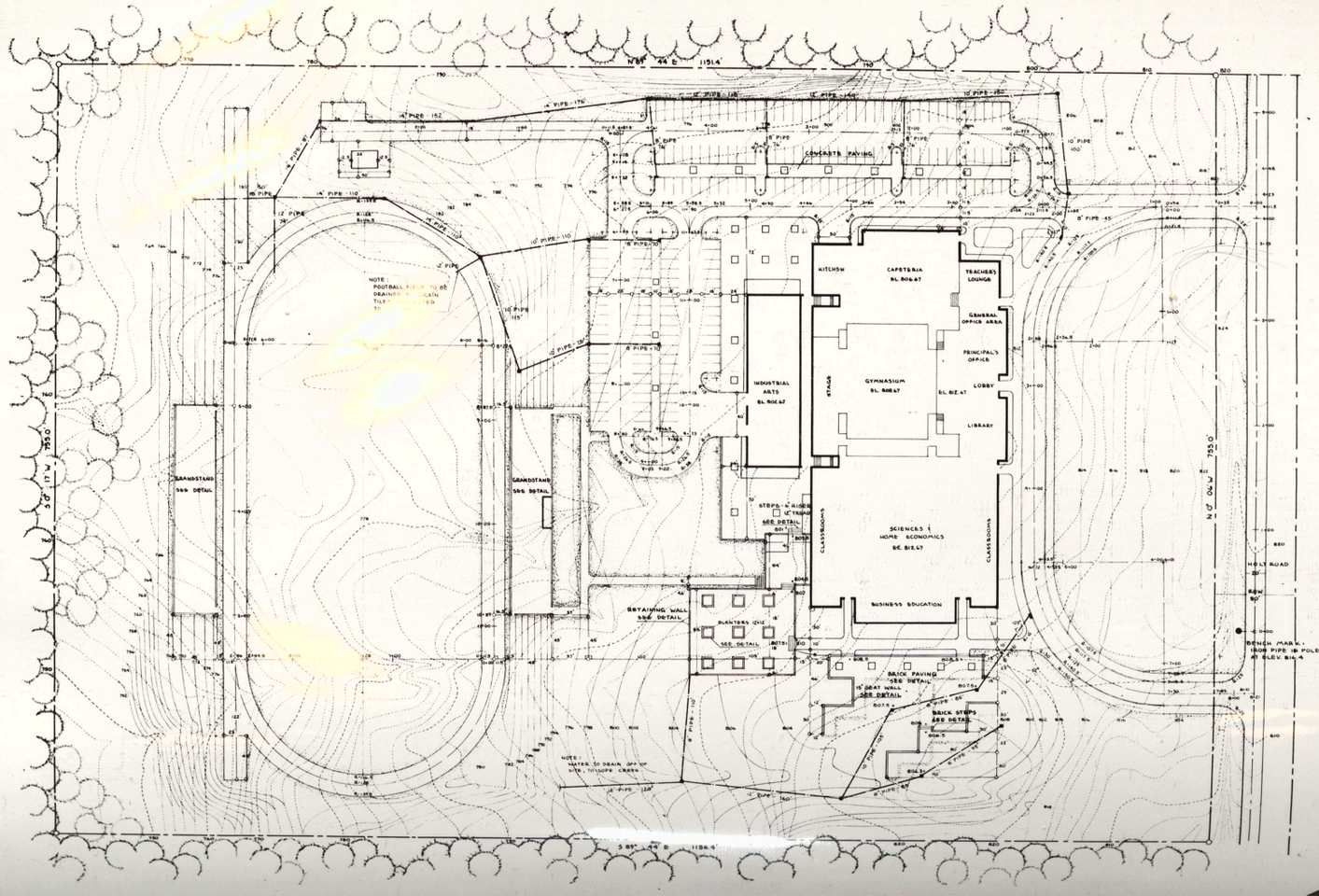
JOSEPH WHEELER
HIGH SCHOOL

MARIETTA GEORGIA

SCALE 1" = 40'-0"
DATE JUNE 1965
TERMINAL PROBLEM
UNIVERSITY OF GEORGIA
GEORGIA TECH
SCHOOL OF ARCHITECTURE

MASTER PLAN

SHEET
2 - 7



LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED PIPE LINE
- CENTERLINE OF ROAD
- MEASURING DIMENSIONS
- R= RADIUS

NOTES

1. WATER TO DRAIN WEST OF PROPERTY TO SOPE CREEK.
2. FOOTBALL FIELD TO BE DRAINED BY DRAIN TILES.
3. DRAINAGE SYSTEM TO BE CLAY PIPE.
4. UTILITY LINES TO BE PLACED UNDER GROUND.
5. ALL CURBS TO BE 6"x 6".
6. SIDEWALK CORNERS TO BE ROUNDED TO 5' RADII.
7. PARKING
   - A. VISITORS - 12 STALLS
   - B. STAFF - 102 STALLS
   - C. STUDENTS - 74 STALLS
   - TOTAL - 189 STALLS
   - D. STALLS - 90°, WIDTH 9', LENGTH 18
8. CUT & FILL
   - TOTAL CUT - 48,474 CU YDS.
   - TOTAL FILL - 32,673 CU YDS.

NORTH

JOSEPH WHEELER HIGH SCHOOL

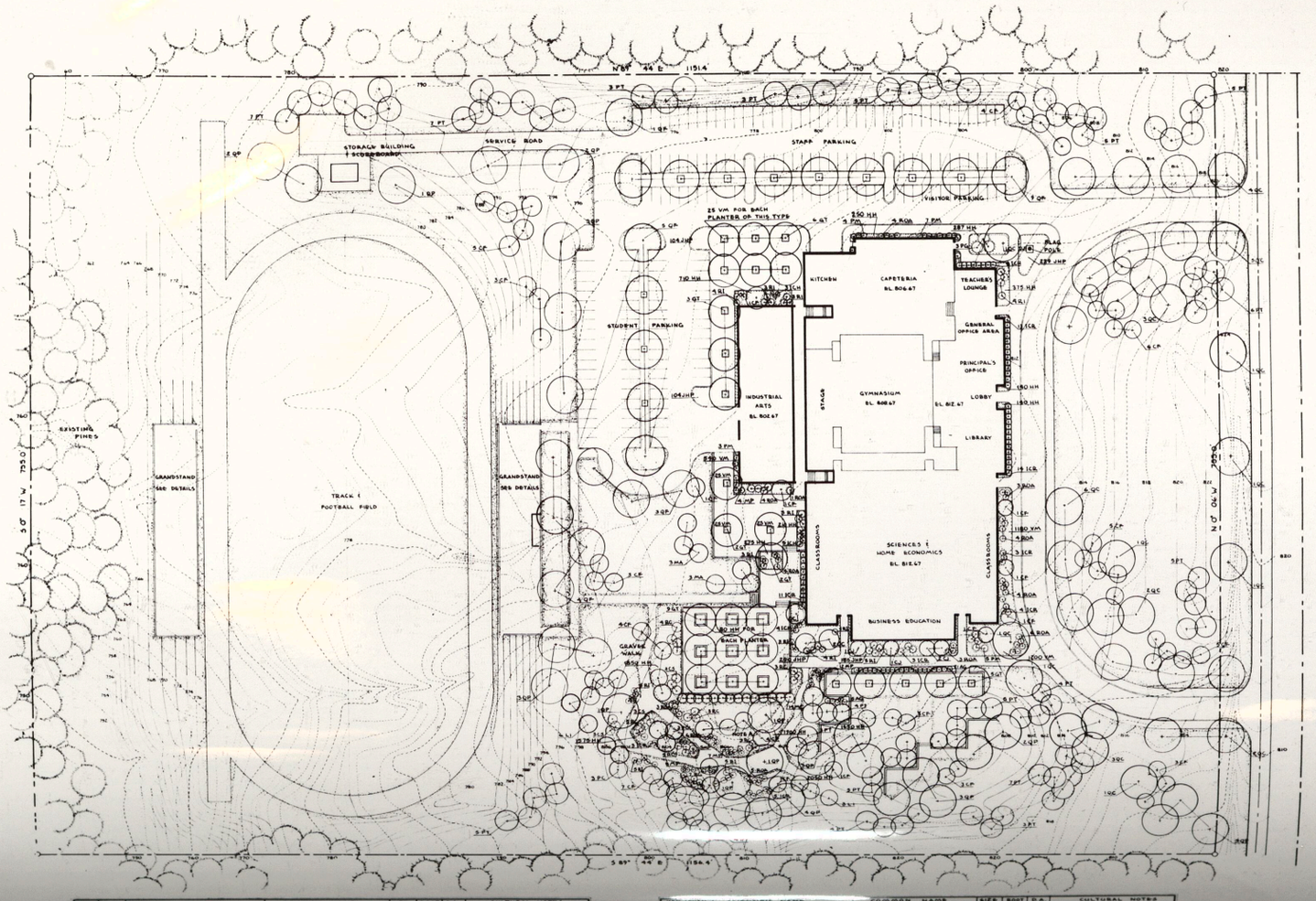
MARIETTA GEORGIA

SCALE 1" = 50'

DATE JUNE 1963

TERMINAL PROJECT

GRADING & STAKING



NOTES:

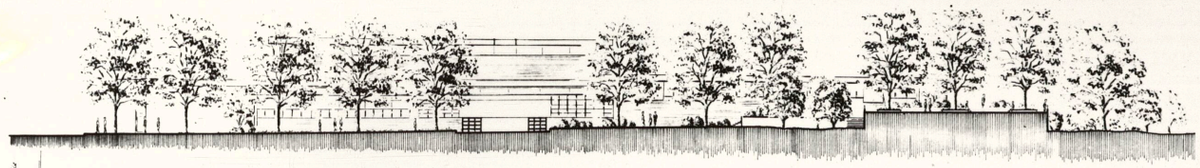
A. FLOWER BED:

BOTANICAL NAME	COMMON NAME
ANNUALS:	
AGERATUM HOUSTONIANUM	AGERATUM
CALENDULA OFFICINALIS	CALENDULA
PHLOX DRUMMONDII	PHLOX
SALVIA SPLENDENS	SCARLET SAGE
VERBINA HYBRIDA	VERBINA
BIENNIALS:	
DIGITALIS	FOXGLOVES
ALTHEA ROSEA	HOLLYHOCK
HERBACEOUS PERENNIALS	
AQUILEGIA HYBRIDA	LONGSPURRED COLUMBINE
ARTEMISIA LACTIFLORA	WHITE MUGWORT
CHRYSANTHEMUM MAXIMUM	SHASTA DAISY
DICENTRA SPECTABILIS	BLEEDING HEART
HEMEROCALLIS SP.	DAYLILY
IBERIS SEMPERVIRENS	HARDY CANDYTUFT
PHLOX PANICULATA	PHLOX
VERONICA SPICATA	SPEEDWELL
YUCCA FILAMENTOSA	ADAMS NEEDLE

NORTH

JOSEPH WHEELER HIGH SCHOOL

PLANTING PLAN



CROSS SECTION A' A'

SCALE 1"-20'

LEGEND

SHADE TREES (HONEY LOCUST)

SHADE TREES (OAKS)

FLOWERING TREES

PINES

SHRUBS

ENTRANCE DRIVE

FLAG POLE

STEEL AWNING CANOPY

GENERAL OFFICE AREA

LOBBY

LIBRARY

CLASSROOMS

TRAFFIC ISLAND

OUTDOOR CLASSROOM

VISITOR PARKING

STAFF PARKING

SITTING AREA

BUSINESS EDUCATION

CAFETERIA

GYMNASIUM

SERVICE AREA

KITCHEN

CLASSROOMS

TERRACE

GRAVEL WALK

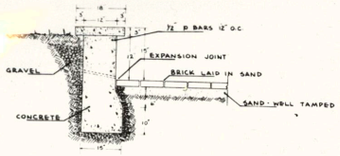
SCULPTURE

INDUSTRIAL ARTS

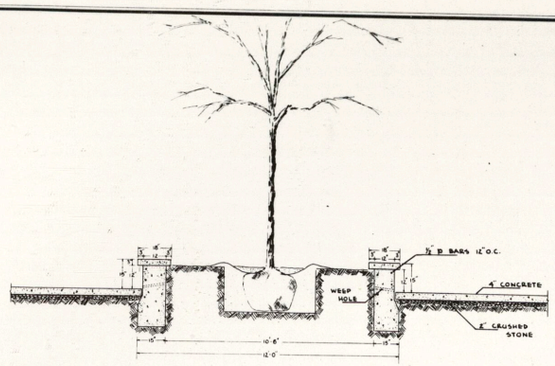
ACCESS TO AUTO MECHANICS SHOP

STAFF PARKING

JOSEPH WHEELER HIGH SCHOOL

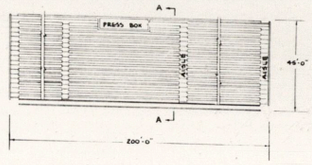


SITTING WALL DETAIL
SCALE ½"=1'

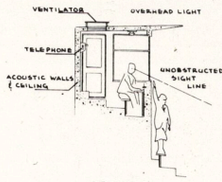


PLANTER BENCH DETAIL
SCALE ½"=1'

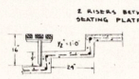
NOTES:
1. TOTAL SEATING FOR ONE GRANDSTAND EQUALS 1,836
2. 19 ROWS IN DEPTH
3. 40" AISLES
4. 18" PER SEAT



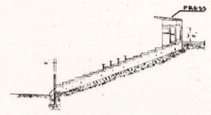
PLAN



PRESS BOX

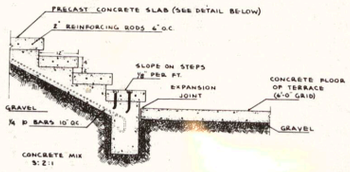


RISER & SEAT DETAIL

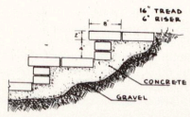


SECTION A-A

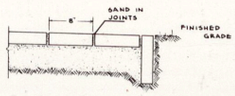
GRANDSTAND DETAILS
NO SCALE



DETAIL OF FLOATING STEPS & TERRACE FLOOR

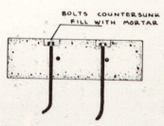


BRICK GARDEN STEP DETAIL



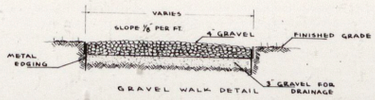
SECTION - BRICK LAID IN SAND
SCALE 1"=1'

CURB & ASPHALT PAVING DETAIL



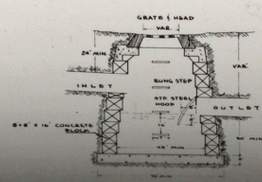
SECTION - PRECAST CONCRETE SLAB

BRICK PAVING PATTERN BASKET WEAVE

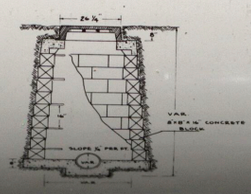


GRAVEL WALK DETAIL

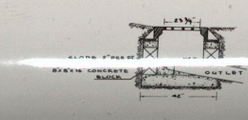
PAVING DETAILS



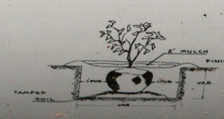
SECTION OF CATCH BASIN



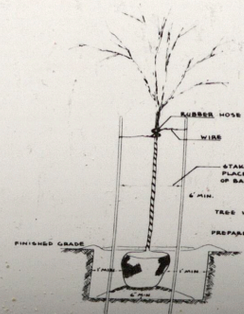
SECTION OF MANHOLE



D.S.D. INLET

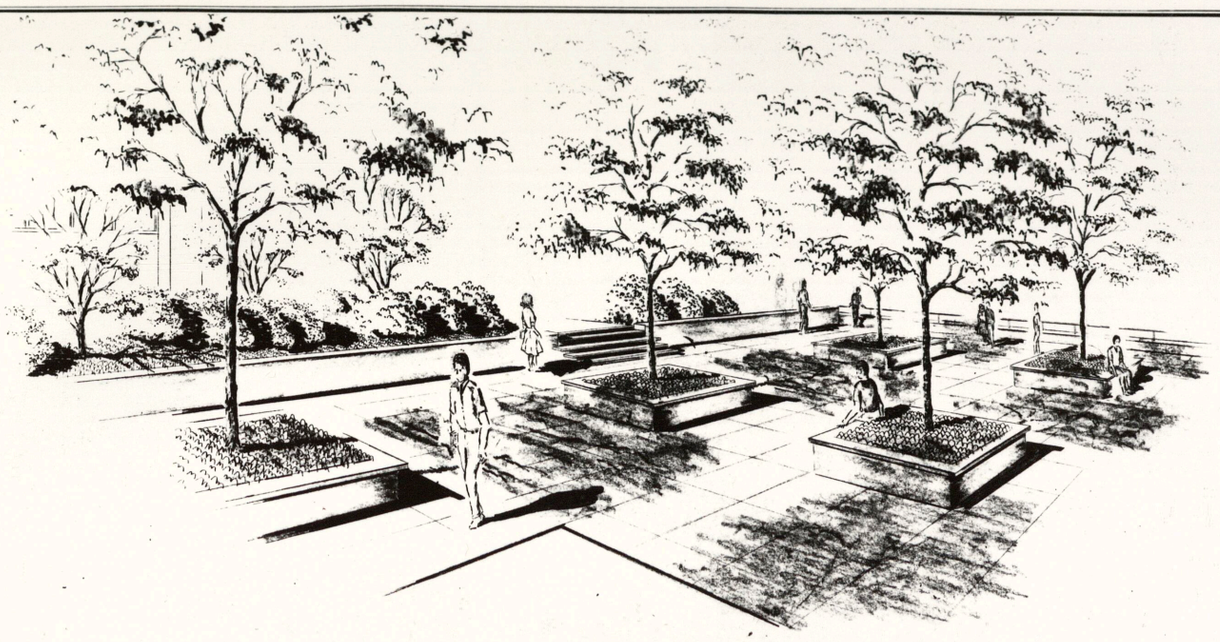


B&B SHRUB

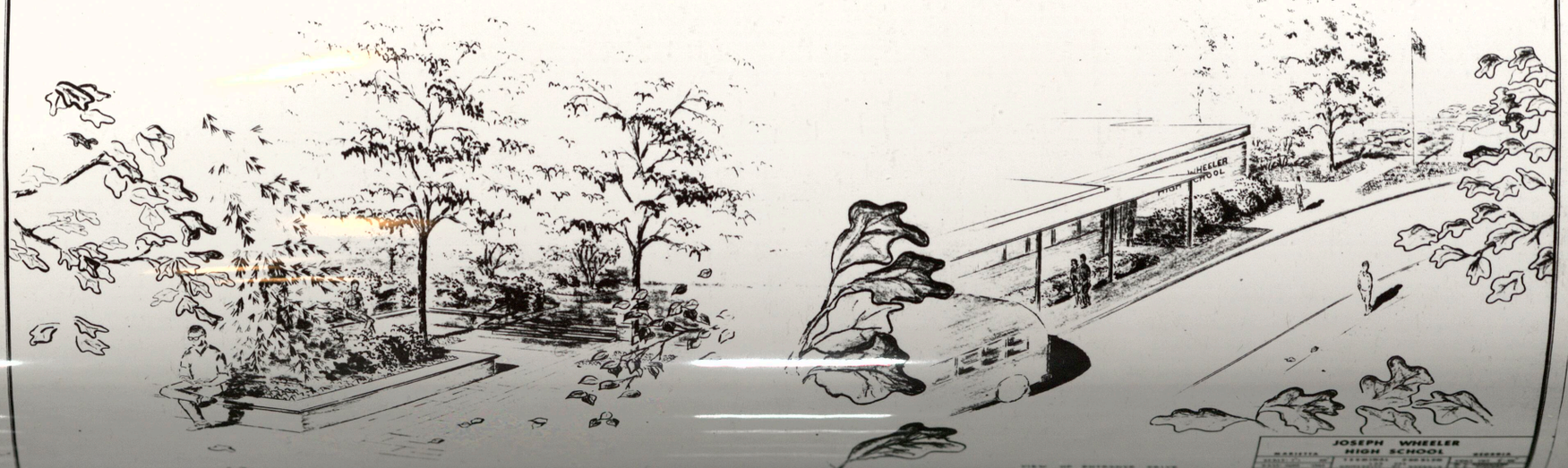


B&B DOUBLE STAKING

JOSEPH WHEELER HIGH SCHOOL



VIEW OF TERRACE AREA



JOSEPH WHEELER
HIGH SCHOOL

APPENDIX

NOTICE TO BIDDERS

Cobb County Board of Education
Marietta, Georgia

Notice is hereby given for construction and installation of plant materials at Joseph Wheeler High School. The site is located on Holt Road, East Marietta, Georgia. Sealed bids will be received by Cobb County Board of Education, Marietta, Georgia, on Wednesday, July 3, 1965 at 2 o'clock Eastern Standard Time.

The work will comprise the following:

EARTHWORK, CONSTRUCTION OF RETAINING WALLS, GRAND-STANDS, STEPS, SITTING WALLS, PLANTERS, PAVED AREAS (ROADS, PARKING AREAS, WALKS), SUPPLYING AND INSTALL-ING PLANT MATERIAL.

The Contract will be awarded to the lowest responsible bidder or the proposals will be rejected within fifteen (15) days of the date of opening proposals, subject, however, to the discretionary right reserved by the Owner to waive any informalities in, reject any or all proposals and to request new proposals, if, in his opinion the best interest of the Joseph Wheeler High School will thereby be promoted.

No bidder shall withdraw his bid within fifteen (15) days after the formal opening thereof.

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

Date June 1965

INFORMATION FOR BIDDERS
FOR THE
PLANTING AND CONSTRUCTION WORK
FOR
JOSEPH WHEELER HIGH SCHOOL
Marietta, Georgia

1. RECEIPT AND OPENING OF BIDS

(a) Cobb County Board of Education, Marietta, Georgia, (hereinafter called the Owner) invites separate sealed bids for the:

EARTHWORK, CONSTRUCTION OF RETAINING WALLS, GRANDSTANDS, STEPS, SITTING WALLS, PLANTERS, PAVED AREAS (ROADS, PARKING AREAS, WALKS), SUPPLYING AND INSTALLING PLANT MATERIAL.

at Joseph Wheeler High School.

(b) Bids will be received by Mr. Jasper M. Griffin, Superintendant of Schools, Cobb County Board of Education, Marietta, Georgia, on Wednesday, July 3, 1965 at 2 o'clock Eastern Standard Time.

(c) Any bids received after the time and date specified will not be considered. No bids shall 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 in which must be appropriately filled in, in ink, in both words and figures. The Contractor shall remove proposal from Specifications, and submit as his bid one copy, and keep the other copy for his records.

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

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

3. OBLIGATION OF BIDDERS

(a) At the time of the opening of bids, each Bidder will 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 omission of any Bidder to receive or examine any drawings, form, instruction or document shall in no wise relieve such Bidder from any obligation in respect to his bid.

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

(c) After the contract has been entered into, no consideration will 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, or proposals rejected within fifteen (15) days of opening of proposals, subject, however, to the discretionary right reserved by the Owner to waive any informalities in or to reject any or all proposals and to advertise for new proposals it, in his opinion, the best interests of the Joseph Wheeler High School will thereby be promoted.

5. ADDENDA AND INTERPRETATION

(a) Bidders are expressly notified that their proposals shall be based upon materials, products, and methods specified. For the purpose of estimate, no deviation from the drawings and specifications will be considered, except as provided. No interpretation of the meaning

of the drawings, specifications, or other Contract documents will be made to any Bidder orally, addressed to Mr. Jasper M. Griffin, Superintendant of Schools, Cobb County Board of Education, Marietta, Georgia, and to be given consideration must be received at least five (5) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental drawings which, if issued, will 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 addends or interpretation shall not relieve any Bidder from any obligation, under his bid as submitted.

6. TIME FOR COMPLETION

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

7. BID SECURITY

Each bid must be accompanied by the certified check of the Bidder, or by a Bid Bond duly executed by the Bidder as principal, and having as surety thereon a surety company approved by the Owner, in an amount not less than five (5) percentum of the amount of the bid. Such check or Bid Bond will 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 licensed to do business in the State of Georgia in the amount of one hundred percent (100%) of the accepted bid for the faithful performance of the terms, covenants, and conditions of the Contract and a further separate labor and material payment Bond, in the amount of fifty percent (50%) of the accepted bid guaranteeing the prompt payment of all indebtedness incurred by the Contractor or sub-contractor for supplies, materials or labor furnished, used or consumed with or in or about

the construction of the project, including fuels, lubricants, power, etc. The form of both Performance Bond and Labor and Material Payment Bond shall be as per form No. 107 (AIA).

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

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

9. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

(a) The successful Bidder, upon failure to enter into or refusal to execute the Contract, and the Bond required within eight (8) days after he has received notice of the acceptance of his bid, shall forfeit to the Owner as liquidated damages for such failure or refusal, the security with bond. Award may then be made to the next lowest responsible Bidder or the work may be re-advertised and construced under Contract or otherwise as the Owner may decide.

10. INSURANCES

(a) The sucessful Contractor shall not commence work or allow his subcontractors to commence work until the following insurances have been obtained, approved and certificates delivered to the Owner:

(b) Workmans' Compensation Insurance.

(c) Public Liability and Property Damage Insurance. Public Liability Insurance shall not be less than 100,000/300,000 and not less than 50,000 for property damage. Public Liability shall specifically cover all automobile liability, and should include contingent liability to protect the Owner from claims of subcontractors.

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

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 authorized extensions, 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 and equipment 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 supplimental drawings, 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 supplimentary to these Specifications and which are identified as such.

(e) Specifications - The general term comprising all directions, provisions and requirements contained herein, together with such as may be added or adopted as Supplemental Specifications.

(f) Subcontractor - Any individual partnership, firm or corporation undertaking the construction of a part of the work under the terms of the Contract, by virtue of an agreement with the Contractor, who, prior to such undertaking, receives the consent of the Surety and the approval of the Owner.

(g) 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 ofall duties and obligations imposed by the Contract.

Art. II. Intent of Contract

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.

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.

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

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.

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.

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.

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.

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.

The Contractor will take all necessary precautions for the safety of employees on the work, and will comply with all applicable pro-

visions 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 hiswork, during its progress, a competent superintendent, satisfactory to the Landscape Architect.

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 once 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 fully 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. Extra Work

When required alterations require work for which no quantity and price have been included in the Proposal, such work shall be done at a price agreed upon previously in writing by the Contractor and the Landscape Architect, or where such parties cannot be satisfactorily agreed upon by both parties, or where such agreement is im-

practicable, the Landscape Architect may, in writing, order the work be done in a force account basis, to be paid for in one of the following methods:

(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. XVIII. Correction of work after final Payment

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

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 furnish 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 adminstrative 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. XX. 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 to pay the Contractor within seven (7) days after its maturity and presentation, any sum certified by the Landscape Architect or awarded by arbitrators, then the Contractor may, upon seven (7) days written 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, itemized in such form and supported by such evidence as the Landscape 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 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 inwriting his reasons for withholding a certificate.

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

Should the Owner fail to pay the sum named in any certificate of the 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 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 account of:

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

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

Art. 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.

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 operations under this contract, and any other liability for damages which the Contractor is required to insure under any provision of this contract.

Art. XXVI. Fire Insurance

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 percent 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 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 may 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 forms 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 payed by the Contractor; if subsequent thereto, it will be paid by the Owner.

Art. XXVIII. Responsibility for Damage Claims

The Contractor shall indemnify and save harmless the Owner or all of his representitives from all suits, actions, or claims of any charactor 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 or injury to property of any character during the prosecution of the work resulting from any act, omission, neglect, or misconduct, in the manner 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

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

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

Art. 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 sustained, the Owner will notify the Contractor, who will defend such proceedings at the Owner's expense, and, if any judgment against the Owner arise therefrom, the Contractor will pay or satisfy it and pay all costs incurred by the Owner.

Art. XXXII. 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

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, whereever practicable, evidence of the amounts certified on his account.

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

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

Art. XXXIV. Relations of Contractor and Subcontractor

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

The Subcontractor agrees--

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

(b) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Art. 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, ifissued otherwise than as in (e), so that at all times his total payments will be as large in proportion ofthe 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.

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

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

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

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

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. XXXV. 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. XXXVI. Landscape Architect's Decisions

The Landscape 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 Cantract Documents.

Art. XXXVII. 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. XXXVIII. Cash Allowances

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

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

Art. 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 will not unreasonably encumber the premises with his materials.

Art. XXXX. 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.

DIVISION PL - 1

EARTHWORK

PL 1.1 GENERAL

(a) Work under this division is indicated on the drawings entitled "Grading and Staking Plan", and "Landscape Development Details" prepared by Guerriero and Viscomi, Landscape Architects, New York.

(b) Each Bidder will familiarize himself with the Contract Documents and shall visit the site of proposed work to aquaint 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.

PL 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 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.

M 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, 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 foruse in embankments and in other specified areas.

3) All earth slopes shall be formed in lines 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.

DIVISION PL - 2

CONSTRUCTION WORK

PL 2.1 GENERAL

(a) Work under this division is indicated on drawings entitled "Grading and Staking Plan", and "Landscape Development Details" prepared by Guerriero and Viscomi, Landscape Architects, New York.

(b) Each Bidder will familiarize himself with the Contract Documents and shall visit the site of proposed work to aquaint 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 grades, and for construction of concrete sitting walls (retaining walls) steps, and construction of paved areas, as shown on drawings and schedules as specified herein including but not limited to the following:

1) Furnishing cement, stone, sand, water, reinforcement rods, formwork and all othernecessary materials for the construction of the sitting walls (retaining walls).

2) Furnishing cement, stone, sand, water, steel reinforcement rods, formwork and all other necessary materials for the construction of the concrete steps.

3) Establishing base for paved areas.

4) Furnishing materials used in base.

5) Furnishing concrete asphalt mixtures for roads.

6) Furnishing combination curb and gutter for parking areas.

M 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 percent (1%) of chlorides by weight will be acceptable for curing concrete.

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

d) Coarse aggregate may be either crushed stone, gravel, crushed slag or combinations thereof.

1) Crushed stone shall consist of particles ofclean, 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) 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 percent (75%) crushed particles.

5) Coarse aggregate shall consist of numberone (1) and number two (2) size particles, provided that not more than fifty percent (50%) or less than thirty percent (30%) shall be of number one (1) size or more than seventy percent (70%) or less than fifty percent (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-eitht (28) days.

PL 2.4 REINFORCEMENT STEEL

(a) All rods for concrete reinforcement shall be of performe d 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 wire 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, all exposed work shall be washed down and left clean, and in every way acceptable to the Owner.

PL 2.6 CONCRETE SITTING WALLS (RETAINING WALLS)

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

1) The concrete sitting walls shall be eighteen (18) inches high from the ground level and extend three (3) feet 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 (retaining 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 continous 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.

PL 2.7 ASPHALT CONCRETE PAVEMENT

a) Entrance Road, Parking Area, Service Road.

1) Subgrade, and subbase preparation shall be in accordance with the Asphalt Institute Specifications 1 (SS-1) Asphalt Institute, College Park, Maryland, March, 1962.

DIVISION PL -3

PLANTING WORK

PL 3-1 GENERAL

(a) Work under this division is indicated on drawings entitled "Planting Plan" and "Landscape Development Details," prepared by Guerriero and Viscomi, Landscape Architects, New York.

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

(c) Should the Bidder find a discrepency or omission in the Specifications, or should he be in doubt as to the meaning of any portion of them, he shall notify the Landscape Architect who will 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.

(e) The Contractor shall have the responsibility of contracting the concerned utility company, and the town or village authorities when their structures or lines are to be altered, or in any way affect the courseof construction.

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 Trees, as shown on drawings and schedules and as specified herein, including but not limited to the following:

Evavating for all tree shrub and vine pits and beds.

Furnishing and preparing of topsoil for back-filling of all shrub tree and vine pits and beds.

Furnishing and incorporating fertilizer and peat.

Furnishing and planting trees and plants as shown.

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

Mulching.

Maintenance inspection.

Replacements of unsatisfactory plant material.

Installation of 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 are as specified in PL 3-9.

PL 3.3 PROTECTION OF EXISTING UTILITIES

(a) The Contractor shall ascertain the location of all electrical cables, all conduit, all utility lines, oil tanks, seepage pools and supply lines, and take proper precautions not to disturb any existing utilities, or sewers.

(b) Should any utility line be uncovered during the progress of the work, the Contractor shall promptly notify the Landscape Architect in writing. The Contractor shall be held responsible for any damage to utility lines incurred during the process of work under this Contract.

PL 3.4 INSPECTION

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

PL 3.5 FERTILIZER

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

(b) Fertilizer shall be complete, shall bear manufacturer's guaranteed statement of analysis, and shall meet the following minimum requirements:

(five) 5% Nitrogen
(ten) 10% Phosphoric Acid
(five) 5% Potash

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

PL 3.6 SOIL CONDITIONER

(a) Peat Moss shall be domestic, incorporated into soil planting mixture to suffieient quantity to provide a friable plant mixture.

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

PL 3.7 TOPSOIL AND LOAM

(a) Topsoil to be used on planting 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, and free from stone, larger than one inch diameter. It s be reasonably uniform in texture and structure.

11.3.8 SEEDING

(a) All areas not required to be developed otherwise shall be seeded. If construction is completed at a time out of season for Bermuda grass, all areas required to be developed otherwise, shall be soeded in Italian Rye grass at a rate of five pounds per one thousand aquare feet.

(b) The subsoil shall be graded and uniformly compacted so that it will be parallel to the proposed finished grade. The subgrade shall be loosened and mixed to a depth of three to four inches. All stones over two inches in size, sticks and rubbish are to be removed. Heavy objects except lawn rollers shall be moved off lawn areas after the grade soil has been prepared, unless the subsoil is again graded and loosened as specified above, before topsoil is spread.

(c) After the subgrade is prepared, topsoil shall be spread evenly thereon and lightly compacted. No topsoil shall be spread on a muddy condition.

(d) Immediately before any seed is to be sown, the ground shall be scarified as necessary and shall be raked until the surface is smooth, and of uniformly fine texture. Lawn seed shall be seeded evenly in a mechanical spreader at the rate of three pounds per one thousand square feet of area, lightly raked, rolled with a three hundred pound roller and watered with a fine spray. The method of seeding may be varied at the discretion of the contractor on his own responsibility to establish a smooth, uniformly grassed lawn.

(e) Lime shall be applied at the rate of thirty pounds per one thousand square feet to the lawn areas being prepared for planting.

(f) Commercial fertilizer shall be applied at the rate of fifty pounds per one thousand five hundred square feet to the lawn areas being prepared for planting. Fertilizer may be applied with the seed.

11.3.9 GUARANTEE OF PLANT GROWTH

(a) All plants shall be typical of their species or variety and shall have a normal habit of growth. No grees which have had their leaders cut, or so damaged that cutting is necessary will be accepted.

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

PL 3.10 EXCAVATION, HANDLING AND PLANTING OPERATIONS

(a) All plants shall be handled so that roots are adequately protected at all times. During shipment they shall be protected by tarpaulin or other suitable covering. All balled and burlapped plants which cannot be planted immediately upon delivery shall be set on the ground and be well protected with soil. Bare rooted plants shall be planted or heeled in trenches immediately after removal from bundles. Care shall be taken to prevent air pockets among the roots.

(b) All plants shall be set plumb, and shall stand, after settlement, slightly lower than their previous growing conditions. All debris shall be removed from the pit and shrub beds before backfilling.

(c) Pits for trees shall be filled with a topsoil and clay loam mixture to a depth of 6" minimum below ball, and have a diameter equal in feet to the caliper of the tree trunk in inches but not less than 24" wider than the root spread, or root diameter.

PL 3.11 PREPARATION OF TOPSOIL FOR PLANT PITS AND BEDS

(a) Where plant material is to be placed in beds of topsoil laid down by the grading contractor in accordance with the Grading Plan and under the terms of the grading contract, the Planting Contractor shall be responsible for reworking the planting beds until they are friable, free from mortar and debris, accurate as to line and grade, and otherwise in a suitable condition for planting.

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

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

PL 3.12 MULCHING

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

(b) All evergreens, broadleaved evergreens, ground cover plants and ericaceous material shall be mulched to a depth of 2" with a mixture consisting of 50% leaf mold, and 50% peat moss. A portion of this shall be scratched into the top 1-1/2" of soil.

PL 3.13 PLANTING SEASON

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

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

PL 3.14 STAKING, GUYING, WRAPPING

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

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

(c) Stakes shall be placed a minimum of 4" from the trunk of the tree for bare root plants and a minimum of 12" for balled and burlap plants, taking care to clear the roots. They shall be driven into the ground to the depth shown.

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

(e) The trunks of all trees of three inch caliper or greater shall be wrapped, and the material securely tied at top and bottom, and at two foot intervals. Bandaging shall start at base, and shall 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 3.15 MAINTENANCE OF PLANTING UNTIL ACCEPTANCE

(a) Areas around trees shall be kept cultivated, free of weeds and grass, and properly watered until acceptance. Replacement and pruning shall 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 merely filled with additional topsoil.

PL 3.16 CLEANING UP

(a) The Contractor shall dispose 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. Prior to final acceptance the Contractor shall clean up his work areas to the satisfaction of the Landscape Architect.

PL 3.17 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 releive Contractor of responsibility of guarantees, or of conformance with provisions for plant replacement as specified below (3.18).

PL 3.18 GUARANTEE OR WARRANTY

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

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

PL 3.19 REPLACEMENTS

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

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

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

PL 3.20 COOPERATION

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

FORM OF PROPOSAL FOR THE EXCAVATION, CONSTRUCTION AND PLANTING WORK AT JOSEPH WHEELER HIGH SCHOOL HOLT ROAD MARIETTA, GEORGIA

TO:

Cobb County Board of Education
Cobb County
Marietta, Georgia

Dear Sirs:

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

_____

_____Dollars, ($_____)

TIME OF COMPLETION

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

Unit Costs

Listed below are the unit and total cost for individual plant materials:

Key	Quan. Trees	Botanical and Common Name	Size	Unit Cost	Total
CC	3	Cercis canadensis Redbud	8-10'	$ 8.00	$ 24.00
CJ	4	Cercis japonica Chinese Redbud	5-6'	4.00	16.00
CF	63	Cornus florida Flowering Dogwood	8-10'	6.00	378.00
GT	27	Gleditsia triacanthos Thornless Honey Locust	8-10'	7.50	202.50
LI	9	Lagerstroemia indica Crapemyrtle	6-7'	5.00	45.00
MA	6	Malus angustifolia Southern Crabapple	6-7'	5.00	30.00
PT	90	Pinus taeda Loblolly Pine	8-10'	7.00	630.00
PC	9	Prunus caroliniana Carolina Cherry Laurel	7-8'	7.50	67.50
QC	34	Quercus coccinea Scarlet Oak	10-12'	19.00	340.00
QF	25	Quercus falcata Southern Red Oak	10-12'	9.00	225.00
QP	34	Quercus phellos Willow Oak	10-12'	9.00	306.00
					$2,263.00

Key	Quan.	Botanical and Common Name	Size	Unit Cost	Total
Shrubs					
AG	26	Abelia grandifolia Glossy Abelia	2'	$1.49	$ 38.74
CS	9	Camelia sasanqua Sasanqua Camelia	3-4'	2.50	22.50
ICH	12	Ilex crenata helleri Helleri Japanese Holly	1-2'	1.95	23.40
ICR	56	Ilex crenata rotendifolia Boxleaf Holly	2-3'	2.50	140.00
MC	14	Myrica cerifera Southern Waxmyrtle	4-5'	3.75	52.50
MP	29	Myrica pumila Dwarf Waxmyrtle	1-2'	1.75	50.75
PG	3	Paotinia glabra Japanese Paotinia	6-7'	6.00	18.00
PM	22	Podocarpus maki Southern Yew	2-3'	1.30	28.00
RC	30	Rhododendron catanbiense Catanba Rhododendron	3-4'	3.00	90.00
RI	48	Rhododendron indica Indica Azalea	3-4'	2.95	141.60
ROA	47	Rhododendron obtusum amdena Kurume Azalea	18-21"	2.00	94.00
Ground Covers					
HH	10,855	Hedera Helix English Ivy	Flats	$1.00/Flat 25 Plants	$440.00
JHP	612	Juniperus horizontalis Plumosa Andora Creeping Juniper	8-10"	.50	306.00
VM	5,370	Vinca minor Comon Periwinkle	Bushel	3.50/Bu.	35.00
					TOTAL $1460.49
Grass					
6-1/2 acres		Burmuda Gynodon dactylon	$.02/sq. ft.		$5,850

TOTALS

Items	Sub-totals	Grand Totals
1. Trees and Shrubs	$3723.49	
2. Transportation Costs	370.54	
3. Special Equipment	183.06	
4. Labor and Equipment	3436.29	
5. Contingencies	185.27	
6. Overhead	741.08	
7. Profit	741.08	$9,380.81
Total	$9380.81	
Installation of Grass	5850.00	
Grand Total		$15,230.81

NOTE: Topsoil has not been added, because there is an already arising stockpile of topsoil on the site.

EARTHWORK

QUAN.	ITEM	UNIT PRICE	SUB-TOTALS	GRAND TOTALS
20 acres	General Cleaning & Grubbing	$400/acre	$8,000.00	
78,147 cu. yd.	Earth Cut & Fill	$~~.145~~ .45/cu. yd.	$35,166.15	

LANDSCAPE CONSTRUCTION

45,936/sq. ft.	Walks	$ .35/sq. ft.	$16,076.60	
11,348/sq. ft.	Terraces	.35/sq. ft.	3,971.80	
440/lin. ft.	Retaining Walls	25.00/lin. ft.	11,000.00	
490/lin. ft.	Sitting Walls	5.00/lin. ft.	2,400.00	
360/lin. ft.	Concrete Planter Benches	3.00/lin. ft.	1,080.00	
15	Concrete Precast Floating Steps	10.00 a piece	150.00	
4,680/lin. ft.	Concrete Curbs & Gutter	2.50/ lin. ft.	11,700.00	
			$46,378.40	$46,378.40

ASPHALT PAVEMENT

49,560/sq. ft.	Entrance Road & Parking Area	$.32/sq. ft.	$12,979.20	
6,112/sq. ft.	Service Road	.30/ sq. ft.	1,833.60	
			$14,812.80	$14,812.80

CONSTRUCTION

4,352/sq. ft.	Gravel Walk	.05/sq. ft.	217.60	
300/lin. ft.	Railings	.45/lin. ft.	135.00	
			$ 1352.60	$ 1352.60

ITEM	TOTALS	GRAND TOTALS
1. Planting	$15,212.81	
2. Earthwork	43,166.15	
3. Landscape Construction		
a) Concrete Structures	46,378.40	
b) Asphalt Pavement	14,812.80	
Construction	1,352.60	$120,922.76

GRAND TOTAL: $120,922.76

BID SECURITY

A certified check or bid bond in the sum of _____

_____Dollars, ($_____)

delivered herewith, to be held as prescribed in Information for Bidders.

The undersigned hereby designates as his address to which Notice of Acceptance or other communication may be delivered or mailed, is that appended to his signature below.

Signed this___day of____

_____

_____

Title

Countersigned

_____ For _____

Title_____ Address_____

_____

Insert her the name under which the Bidder does business, and if a corporation, add "A Corporation organized under the laws of _____."

If the person signing is not an official, a person who is authorized shall countersign the proposal.

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