

Name _____

Address _____

Walterboro Fountain Plaza Improvements

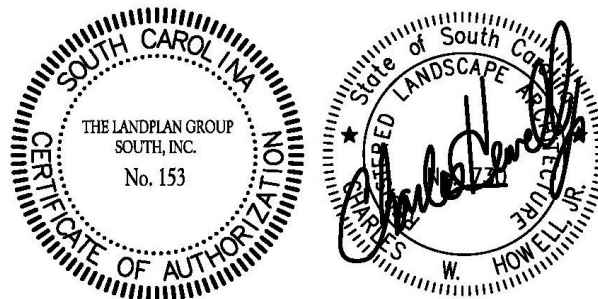
City of Walterboro
Walterboro, South Carolina

Construction Specifications

Proposal For:

S. C. File Number:

Project Number: 1256



Set #

Released for Bid
2026

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ARCHITECTURAL SPECIFICATIONS: See Drawings

SECTION 01105

INVITATION FOR BIDS

PROJECT: Walterboro – Walterboro Fountain Plaza Improvements

OWNER: City of Walterboro
242 Hampton Street Walterboro, SC 29488

RECEIPT OF BIDS: Separate sealed bids for the construction of the above referenced project will be received by the Owner at their office, by **September 30, 2026 at 2:00pm** local time, at place of bidding, City of Walterboro City Hall Council Chambers located at 242 Hampton Street, Walterboro, SC, and at said location will be publicly opened and read aloud. No bid may be withdrawn within a period of ninety (90) days to allow time for Bid review, qualification of Bidder, and approval of award from funding agencies

PROJECT DESCRIPTION: The project consists of the demolition of existing hardscape and landscaping, and installation of new bluestone paving, planting, low voltage lighting, fountain improvements, restroom and associated plumbing work, concrete and asphalt work at the existing water fountain plaza on Washington Street in Walterboro, SC. Prior experience, qualifications and product certification will be required. This project will be funded by the City of Walterboro.

PRE-BID MEETING: A **Mandatory Pre-bid** meeting will be held at the City of Walterboro City Hall Council Chambers located at, 242 Hampton Street, Walterboro, SC, on **September 11, 2026 at 10:00 am**. The purpose of such meeting will be to review this project and to answer any questions regarding the project. Any Contractor that does not attend the pre-bid will be disqualified.

QUESTIONS:

All questions regarding this Project should be submitted to:

Kimberly Brown, The LandPlan Group South, admin@landplansouth.com

Bid related questions will be accepted through **September 18, 2026 @ 5:00 p.m.**

The answers to all questions asked will be shared with all participants in the Bid process.

DOCUMENTS AVAILABLE: A non-refundable deposit of \$100.00 will be required to obtain a copy of Contract Documents, which can be requested from The LandPlan Group South, 1206 Scott Street, Columbia, SC 29201. Phone (803) 256-0562.

Documents may be obtained in pdf format without cost. For a link to download, please email a request to admin@landplansouth.com

(End of Section 01105)

1. RECEIPT AND OPENING OF BIDS: Bids will be received at the time and place as specified in the Advertisement for Bids, and then at said office publicly opened and read aloud.

2. LICENSES:

2.1. The attention of Bidders is directed to the provisions of the acts for licensing of General Contractors for the State of South Carolina and all requirements of such acts which have bearing upon this work shall be deemed a part of the Specifications as if written therein in full. The showing by the Contractor of his license number shall be deemed as the Contractor's representation that he is legally qualified to enter into the prescribed Contract for any/or all portions of the work included in his Bid.

2.2. All Bidders submitting a Bid shall have a currently valid "Contractor's License" and a "Bidder's License" for the State of South Carolina. These license numbers shall be shown on the bid form immediately below the signature identification and on the face of the sealed envelope containing the submitted Bid.

2.3. The successful Bidder will be required to obtain a business license from the City of Walterboro prior to beginning work, if said Bidder does not have a current license.

2.4. Subcontractors who will be engaged by the General Contractor shall also hold the required licenses.

3. BID SECURITY:

3.1. Each Bid must be accompanied by a certified check of the Bidder, or a Bid Bond duly executed by the Bidder as principal and having as surety thereon a surety company qualified to do business under the laws of the State of South Carolina and satisfactory to the Owner, in an amount not less than five (5) percent of the Bid.

3.2. Such check or Bid Bond will be returned to all except the three (3) lowest Bidders within three (3) days after the opening of Bids, and the remaining checks or Bid Bonds will be returned promptly after the Owner and the accepted Bidder have executed the Agreement, or, if no award has been made within ninety (90) calendar days after the date of the opening of Bids, upon demand of the Bidder at any time thereafter, so long as he has not been notified of the acceptance of his Bid.

4. GUARANTY BONDS:

4.1. The Bidder to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond, each in the sum of the full amount of the Contract Price, within ten (10) calendar days from the date when Notice of Award is delivered to the Bidder.

4.2. The Bonds must be duly executed and acknowledged by the Bidder as principal and by a corporate surety company qualified to do business under the laws of the State of South Carolina and satisfactory to the Owner as surety, for the faithful performance of the Contract and payment for labor and materials. The premiums for such Bonds shall be paid by the Contractor.

4.3. Each Bond must be valid for one year beyond the date of final acceptance of the project.

5. EXECUTION OF CONTRACT: The Owner, within ten (10) calendar days of receipt of acceptable Performance Bond, Payment Bond, and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the Owner not execute the Agreement within such period, the Bidder may by written notice withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

6. POWER OF ATTORNEY FOR BONDS: Attorneys-in-fact who sign Bid Bonds or Performance Bonds or Payment Bonds must file with each Bond a certified and effective dated copy of their power of attorney.

7. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT: The successful Bidder, upon his failure or refusal to execute and deliver the Contract and Bonds required within ten (10) calendar 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 deposited with his bid.

8. LAWS AND REGULATIONS: All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included as though herein written out in full.

9. NON-RESIDENT CONTRACTORS:

9.1. A Bidder, who is a non-resident contractor, shall be aware of Section 12-9-310, Article 3, of the South Carolina Income Tax Act of 1926, as amended. This article requires the Owner entering into a contract with a non-resident taxpayer, where such contract exceeds ten thousand dollars (\$10,000), to withhold two percent (2%) of each payment made to the non-resident.

9.2. The funds deducted from the payment made to the non-resident contractor are funds deemed to be held in trust for the State of South Carolina and will be reported by the Owner to the South Carolina Tax Commission. This Deduction is in addition to the retainage deductions specified in the General Conditions.

9.3. Modifications to the South Carolina Income Tax Act made January 1, 1993, allow a non-resident contractor to apply for an exemption or partial exemption from the two percent (2%) withholding rule. The non-resident contractor must complete a "Nonresident Taxpayer Request for Exemption Affidavit" (Form WH 303), "Nonresident Taxpayer Affidavit" (Form WH 302) and a subcontractors list. The South Carolina Tax Commission will make the determination and notify both contracting parties of the qualified exempt or partially exempt contracts.

9.4. All contracts for \$ 10,000.00 or more with non-residents which do not qualify for exemption will require the withholding of two percent (2%) from each payment as described above. The non-resident contractor may elect to post a surety bond with the South Carolina Tax Commission to eliminate this withholding requirement. The non-resident must complete and submit the Bond (Form L-2074) and a "Nonresident Taxpayer Affidavit" (Form WH 302) to the South Carolina Tax Commission for review and approval. The Owner must receive verification from the South Carolina Tax Commission if this deduction is to be waived.

9.5. The above referenced forms may be obtained from the South Carolina Tax Commission located at 301 Gervais Street, Columbia, South Carolina (mailing address - P.O. Box 125, Columbia, South Carolina 29214).

10. EXAMINATION OF DRAWINGS AND SPECIFICATIONS: Each Bidder shall carefully examine Drawings and Specifications and all Addenda or other revisions thereto and thoroughly familiarize himself with the detailed requirements thereof prior to submitting a Bid. If any Bidder is in doubt as to the true meaning of any part of the Drawings, Specifications, or other Documents, or if any error, discrepancy, conflict, or omission is noted, the Bidder should immediately contact the Engineer in writing and request clarification. The Engineer will clarify the intent of the Documents and/or correct such error, discrepancy, conflict, or omission, and will notify all Bidders by Addendum in cases where the extent of work or the cost thereof will be appreciably affected. No allowance will be made after Bids are received for oversight by a Bidder.

11. EXAMINATION OF SITE: Each Bidder shall visit the site of proposed work and fully acquaint himself with conditions relating to construction and labor so he may fully understand facilities, difficulties, and restrictions attending execution of work under contract. By executing the Agreement, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the work is to be performed, and correlated his observations with the requirements of the Contract Documents.

12. SUBSURFACE CONDITIONS: Any holder of Construction Documents will be permitted to make test boring, test pits or soundings on the site of the work if he so desires, subject to approval by the owner. The responsibility of all risks and liabilities contingent thereto shall be assumed by the party or parties receiving such approval.

Any boring information which may have been obtained by the owner in the vicinity of the work site of the project is shown in the contract drawings or other contract documents. Such boring information if shown is available to bidder, contractors and other interested parties only as a convenience, and is made available without express or implied representation, assurance or guarantee that the information is adequate, complete or correct or that it represents a true complete picture of the subsurface conditions to be encountered.

It shall be the contractor's obligation to satisfy himself as to the nature, character, quality and quantity of subsurface conditions likely to be encountered. The contractor agrees that he shall neither have nor assert against the owner or engineer, any claim for damages for extra work or relief from any obligation of this contract based upon the boring information made available or based upon the owner to furnish additional boring information.

13. INFORMATION NOT GUARANTEED:

13.1. All information given on the Drawings or in the Contract Documents relating to subsurface conditions, existing structures, location of utilities, sewer inverts, or other information on existing facilities, is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of the Bidders.

13.2. It is agreed and understood that the Owner does not warrant or guarantee that the conditions, pipes, or other structures encountered during construction will be the same as those indicated on the Drawings or in the Contract Documents. The Bidder must satisfy himself regarding the character, quantities, and conditions of the various materials and the work to be done.

13.3. It further is agreed and understood that the Bidder or the Contractor will not use any of the information made available to him or obtained in any examination made by him in any manner as a basis or ground of claim or demand of any nature, against the Owner or the Engineer, arising from or by reason of any variance which may exist between the information offered by the actual materials or structures encountered during the construction work, except as may otherwise be provided for in the Contract Documents.

13.4. If any work is performed by the Contractor, or any subcontractor, prior to adequate verification of applicable data, any resultant extra cost for adjustment of work necessary to conform to existing conditions, or damage to existing facilities, shall be assumed by the Contractor without reimbursement or compensation by the Owner.

14. COMPLETE WORK REQUIRED:

14.1. The Drawings, Specifications, and all supplementary documents are essential parts of the Contract, and requirements occurring in one are as binding as though occurring in all. They are intended to be cooperative, to describe and provide for a complete work. In case of discrepancy on the Drawings, figured dimensions shall govern. In case of omissions from the Specifications as to items of equipment and materials or quantities therefor, the Drawings shall govern.

14.2. It shall be the responsibility of the Bidder to call to the attention of the Engineer obvious omissions of such magnitude as to affect the strength, adequacy, function, completeness, or cost of any part of the work in ample time for amendment by Addendum prior to letting date.

15. ADDENDA AND INTERPRETATIONS:

15.1. No interpretation of the meaning of the Drawings, Specifications, or other Bid Documents will be made orally to any Bidder by the Engineers prior to award of the contract.

15.2. Every request for such interpretation should be in writing addressed to The LandPlan Group South, 1206 Scott Street, Columbia, SC 29201. To be given consideration, such request must be received at least seven (7) days prior to the date fixed for the opening of Bids. Any and

all such interpretation and any supplemental instruction will be made in the form of written Addenda to the Specifications.

15.3. Addenda will be mailed or delivered to all who are known to have received a complete set of Bidding Documents.

15.4. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

15.5. Every attempt will be made to issue addenda no later than four (4) days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids. Should Addenda be required closer to the bid date than the specified four (4) days, Bidders shall be notified via fax or telephone that an Addendum is being released. Bidders shall be responsible for making necessary arrangements to obtain late-issue Addenda. If an Addendum is technical in nature, no attempt shall be made to provide the changes verbally.

16. ABILITY AND EXPERIENCE OF BIDDER:

16.1. It is the purpose of the Owner not to award this Contract to any Bidder who does not furnish satisfactory evidence that he has the experience of successfully completing projects of this type and magnitude and that he has sufficient capital, equipment, plant, and personnel to enable him to prosecute the work successfully and to complete it in the time named.

16.2. The Owner may make such investigation as it deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner, under oath if so required, all such information and data for this purpose as the Owner may request.

16.3. The successful Bidder will be required to construct the work with his own directly employed personnel to an extent not less than fifty percent (50%) of the Contract Amount.

17. BIDS AND QUALIFICATIONS: Before a Bid is considered for award, the Bidder may be requested by the Engineer to submit a statement of facts in detail as to his previous experience in performing similar or comparable work, and of his business and technical organization and financial resources and plant available to be used in performing the contemplated work.

18. TIME FOR COMPLETION: The Bidder must agree to commence work within the time stipulated in the Agreement. The Bidder also must agree to fully complete the project within the time stipulated in the Agreement.

19. LIQUIDATED DAMAGES: The Bidder must agree to pay as liquidated damages the amount set forth in the Agreement for each consecutive calendar day that the work is incomplete after the date of completion.

20. MODIFICATION OF BIDS: Bids may be modified in writing, executed (in the manner that a bid must be executed) and delivered to the place where bids are to be submitted at any time prior to the opening of bids. Telegraphic modifications of the BID will not be allowed.

21. WITHDRAWAL OF BIDS:

21.1. Any Bidder may withdraw his Bid, either personally or by written request, at any time prior to the scheduled time for opening of Bids or authorized postponement thereof.

21.2. No Bidder may withdraw his Bid for a period of ninety (90) calendar days after the date set for the opening thereof, and all Bids shall be subject to acceptance by the Owner during this period.

22. IRREGULAR BIDS: A Bid will be considered irregular and may be rejected for any one of the following reasons:

22.1. If the Bid is on a form other than that furnished by the Owner; or if the form is altered or any part detached.

22.2. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the Bid incomplete, indefinite, or ambiguous as to its meaning.

22.3. If the Bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.

22.4. If the Bid does not contain a price for each item listed.

22.5. If the Bid does not contain the aggregate of the Bid, obtained by adding the extended amounts of the various items, if applicable.

22.6. If the Bid contains obviously unbalanced bid prices.

22.7. If there is reason to believe that any Bidder is interested in more than one Bid on the same project or that there has been collusion among the Bidders.

23. DISQUALIFICATION OF BIDDERS: More than one Bid from an individual, a firm or partnership, a corporation or any association, under the same or different names, will not be considered. Reasonable grounds for believing that any Bidder is interested as a principal in more than one Bid for the work contemplated will cause the rejection of all Bids in which such Bidder is believed to be interested. Any or all Bids will be rejected if there is reason to believe that collusion exists among the Bidders. Contracts will be awarded only to responsible Bidders capable of performing the class of work contemplated within the time specified, and having sufficient resources and finances to carry on the work properly.

A contract (subcontract) will not be awarded to any contractor that is in violation of the Clean Air Act and/or the Federal Water Pollution Control Act or that utilizes any facility included in

the EPA list of Violating Facilities (40 CFR part 15) 40 CFR Part 30.410-4. Responsiveness is defined by: The completeness and regularity and whether the bidder maintains permanent place of business, adequate equipment to accomplish work properly within time frame established, adequate financial status to meet obligations contingent to the work and whether technically qualified.

24. ACCEPTANCE OR REJECTION OF BIDS: The Owner reserves the right to reject any and all Bids when such rejection is in the interest of the Owner; to reject the Bid of a Bidder who has previously failed to perform properly or complete on time contracts of a similar nature; and to reject the Bid of a Bidder who is not, in the opinion of the Engineer, in a position to perform the Contract. The Owner also reserves the right to waive any informalities and technicalities in bidding. The Owner may also accept or reject any of the alternates that may be set forth on the Bid.

25. METHOD OF AWARD: Unless all Bids are rejected, the Contract will be awarded to the lowest responsive, responsible Bidder based on low bid or combination of low bid with alternates depending on which is in the best interest of the Owner. A responsive Bidder is defined as one whose Bid is complete and submitted in accordance with the Contract Documents without excisions, exceptions, special conditions or alternate bids (unless specifically requested in the bid form). A responsible Bidder is defined as one who is legally licensed to bid and perform work in the State of South Carolina, maintains a permanent place of business, has adequate plant equipment to complete the work properly and within the established time limit, has adequate financial status to meet his obligations contingent to the work, and is considered by the Owner and Engineer to be capable of performing the work in accordance with the Contract Documents.

26. NOTICE TO PROCEED: The Notice to Proceed will be issued within ten (10) calendar days of the execution of the Agreement by the Owner. Should there be reasons why the Notice to Proceed cannot be issued within such period; the time may be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the ten (10) calendar day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

27. ESTIMATED QUANTITIES: Bidders must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule by examination of the site and a review of the Drawings and Specifications, including Addenda. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done.

28. COMPARISON OF BIDS: Bids will be compared on the basis of the prices stated in the Bid. In the event there is a discrepancy between the unit price and/or the computed total amount, the unit price shall govern.

29. EASEMENTS: The Owner has obtained, or will obtain, permanent easements and temporary construction easements through private property. The temporary construction easements entitle the Contractor to the occupancy and use of the designated area near or adjacent

to the work for purposes related to the work. The Contractor will not encroach on any property unless it has been established that easements have been obtained. On all other land, the Contractor has no rights unless he obtains permission from the proper parties.

30. WORK IN STATE AND COUNTY RIGHTS-OF-WAY: The Owner will obtain the necessary easements and permits for construction across both County and State Highway rights-of-way. The Contractor shall abide by all rules, regulations, and requirements of these agencies in regard to construction under this contract, including the giving of notices, provisions for inspections, and employment of such methods of construction as may be required. Wherever these Specifications may be in conflict with the regulations or requirements of these agencies, such regulations shall govern and these Specifications shall be modified to such extent as necessary to conform to the said rules, regulations, and requirements. Wherever additional costs are incurred due to requirements of these agencies, such additional periods of maintenance, special features of construction, etc., all such costs shall be included in the prices bid. No additional compensation will be allowed for such costs after award of the Contract.

31. ITEMS AND INDETERMINATE ITEMS: The work to be done under this contract has been divided into items, and items having sub items to enable each Bidder to bid on the different portions of the work in accordance with his unit price estimate of their cost, and so that the actual quantity of work executed under each item, or sub item, may be paid for at the unit price bid for the particular item, or sub item, even though such quantity is greater or less than the estimated quantity stated in the Bid.

32. RIGHT TO INCREASE OR DECREASE THE AMOUNT OF WORK:

32.1. The work comprises approximately the quantities shown in the bid form which will be used as a basis for comparison of Bids and not for final estimate. The Owner does not, by expression or by implication, agree that the actual amount of work shall correspond with the estimated quantities.

32.2. The Owner reserves the right to increase or decrease the amount of work under the Contract to the extent of 25% of the work contemplated, at the unit prices quoted in the Bid.

33. SUBCONTRACTS: The Bidder is specifically advised that any person, firm or other party to whom it is proposed to award a subcontract under the contract:

32.1. Must be acceptable to the Owner and Federal Agencies concerned, and

32.2. Must submit Certification by Proposed Subcontractor regarding Compliance with Executive Order 11246. Approval of the proposed subcontract award cannot be given by the Owner unless and until the proposed subcontractor has submitted the Certification and/or evidence showing that it has fully complied with any reporting requirements to which it is or was subject.

Although the bidder is not required to attach such Certifications by proposed subcontractors to his bid, the bidder is hereby advised of this requirement so that appropriate action can be taken to prevent subsequent delay in subcontract awards.

34. FORM OF BID:

34.1. All Bids must be submitted on the blank bid form provided herein and must state the total price for which the Bidder will complete the work in accordance with the terms of the Contract Documents. All blank spaces must be filled in and there shall be no interlineations, alterations, or erasures.

34.2. The Bid must be signed manually by a principal or an officer duly authorized to make contracts. The Bidder's legal name must be fully stated and the name and title of the person signing must be typed below his signature.

35. SUBMITTING BIDS:

35.1. Each Bid must be submitted on the prescribed bid form. All blank spaces for bid prices must be filled in, in ink or typewritten, and the Bid must be fully completed and executed when submitted. Only one copy of the bid form is required.

35.2. Bidders are cautioned that it is the responsibility of each individual Bidder to assure that his Bid is in the possession of the responsible official or his designated alternate prior to the stated time and at the stated place of the bid opening. Owner is not responsible for Bids delayed by mail and/ or delivery services of any nature.

35.3. Each Bid must be submitted in an opaque sealed envelope, plainly marked on the outside, addressed and delivered as shown below. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the Owner at:

35.4.

Upper Left Hand Corner:

Bidder's Name

Bidder's Address

To: CITY OF WALTERBORO
242 Hampton Street
Walterboro, SC 29488

Attention: Jeff Molinari

Lower Left Hand Corner:

Bid for Construction of:

Walterboro Fountain Plaza Improvements
Walterboro, SC

South Carolina General Contractor's License No. _____

Classification _____

Expiration Date _____

(End of Section 01110)

TO: CITY OF WALTERBORO (hereinafter called "Owner")

FROM: _____

Phone - _____

of the City of _____ County of _____

and State of _____, hereinafter called "Bidder".

**PROJECT: Walterboro Fountain Plaza Improvements
City of Walterboro, SC**

Gentlemen:

The Bidder, in compliance with your Advertisement for Bids for the construction of above-referenced project, having examined the Drawings and Specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

The Bidder declares that he has carefully examined the site of the proposed Work and fully informed and satisfied himself as to the conditions there existing, the character and requirements of the proposed Work, and the difficulties attendant upon its execution, and that he has carefully read and examined the Drawings, the annexed proposed Agreement, and the Specifications and other Contract Documents therein referred to, and knows and understands the terms and provisions thereof.

Bidder understands that information relative to existing structures, apparent and latent conditions, and natural phenomena, as furnished to him on the Drawings, in the Contract Documents, or by the Owner or the Engineer, carries no guarantee expressed or implied as to its completeness or accuracy, and he has made due allowance, therefore.

He further understands that the quantities of work tabulated in the Bid are only approximate and are subject to increase or decrease as deemed necessary to the performance of the work by the

Engineer; and that these quantities as shown will be used in arriving at the total Contract Price and determination of the lowest Bidder.

TIME FOR COMPLETION AND LIQUIDATED DAMAGES: Bidder hereby agrees to commence work under this contract within 15 days of receipt of the Notice to Proceed and to fully complete the project within 180 consecutive calendar days thereafter.

Bidder also agrees to pay \$250/day as liquidated damages for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

ADDENDA: Bidder acknowledges receipt of the following Addenda:

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

SCHEDULE OF PRICES – Walterboro Fountain Plaza Improvements

Item	Description	Quantity	Unit	Unit Price	
1	Mobilization	1	LS		
2	Traffic Control	1	LS		
3	Demolition, Site Preparation, & Grading	1	LS		
4	Low-voltage Lighting System	1	LS		
5	Low Brick Wall and Cap	1	LS		
6	Site Furnishings				
	a. 25' Flag Pole	2	EA		
	b. 30' Flag Pole	1	EA		
	c. Benches	3	EA		
	d. Trash Receptacles	2	EA		
8	Concrete and Paving				
	a. Curb and Gutter	232	LF		
	b. Transition Curb	5	LF		
	c. Pedestrian Curb Ramp	6	LF		
	d. 4" Uniform Concrete Sidewalk (if necessary)	5	SY		
	e. Blue Stone Paving	360	SY		
	f. Brick Course with Conc. base	21	LF		
	g. Remove and re-install brick markers & Concrete Base	1	LS		
	h. ADA Concrete ramp	1	LS		
	i. Remove and re-install ADA concrete ramp	1	LS		
	j. ADA Detectable warning surface	20	SF		
9	Asphalt Patch	35	SY		
10	Drainage				
	a. Adjust ex. box and replace lid with new decorative lid	4	EA		
	b. Trench Frame and Grate	76	LF		
	c. 3" PVC restroom floor drain and tie into ex. box	1	LS		

Item	Description	Quantity	Unit	Unit Price	
11	ADA Striping, Signage and wheel stops	2	EA		
12	Planting				
	a. Slender Silhouette	7	EA		
	b. Sabal Palm	3	EA		
	c. Green Velvet Boxwood	13	EA		
	d. Lets dance Sky View Hydrangea	20	EA		
	e. Box leaf Euonymus	76	EA		
	f. Peter Pan Agapanthus	153	EA		
	g. Big Blue Liriope	261	EA		
	h. Confederate Jasmine	5	EA		
13	Irrigation	1	LS		
14	Restroom Building and utility connections	1	LS		
15	Painting				
	a. Existing Arbor	1	LS		
	b. Existing Gate	1	LS		

TOTAL, BASE BID ITEMS 1-15 Inclusive: \$_____

	BID ALTERNATE				
	Shade Sails (design Build)	1	LS		

TOTAL, ALTERNATE ITEM 1 Inclusive: \$_____

Additions to work and deletions from work shall be paid in accordance with these unit prices.

The above unit prices shall include all labor, materials, de-watering, shoring, removal, overhead, profit, insurance, taxes, fees, etc., to cover the finished work of the several kinds called for.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informality in the bidding. The Bidder agrees that this Bid shall be good and may not be withdrawn for a period of 90 calendar days after the scheduled closed time for receiving bids.

Upon receipt of written notice of the acceptance of this Bid, Bidder will execute the formal Agreement attached within 10 days and deliver Surety Bonds as required by the General Conditions. The bid security attached in the sum of:

_____ (\$_____) is to become the property of the Owner in the event the Agreement and Bond are not executed within the time above set forth as liquidated damages for the delay and additional expense to the Owner caused thereby.

The undersigned declares that his firm is (delete those not applicable):

A corporation organized and existing under the laws of the State of _____.

A partnership consisting of _____.

The undersigned declares that the person or person signing this proposal is fully authorized to sign the proposal on behalf of the firm listed and to fully bind the firm listed to all the conditions and provisions thereof.

It is agreed that no person or persons or company other than the firm listed below or as otherwise indicated hereinafter has any interest whatsoever in this proposal or the contract that may be entered into as a result thereof, and that in all respects the proposal is legal and fair, submitted in good faith, without collusion or fraud.

Respectfully Submitted:

(SEAL - if bid is by a
Corporation)

Contractor

By:_____

(Type/Print Name)

(Title)

(Street Address)

(City, State, Zip)

S.C. General Contractor's License No. _____

(End Section 01140)

KNOW ALL MEN BY THESE PRESENTS: that we, the undersigned _____
_____, as Principal, and _____, as Surety, are hereby held
and firmly bound unto _____, as OWNER, in the penal sum of
_____ for the payment of which, well and truly to be made, we hereby jointly and
severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed this _____ day of _____, 2026.

The Condition of the above obligation is such that whereas the Principal has submitted to
_____ a certain BID attached hereto and hereby made a part hereof, to enter
into a contract in writing, for the construction of:

**Walterboro Fountain Plaza Improvements
Walterboro, SC**

NOW, THEREFORE,

- (a) If the said BID shall be rejected, or in the alternate,
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated. The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____(L.S.)
Principal

Surety

By: _____

(SEAL)

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

(End of Section 01142)

SECTION 01210**AGREEMENT**

THIS AGREEMENT, made this _____ day of _____, 2026,

by and between _____ City of Walterboro _____,

acting herein through its _____ City Manager _____,
(Title of Authorized Official)

hereinafter called "OWNER" and _____,
(Name of Contractor)

doing business as _____
(an Individual), (a Partnership) or (a Corporation)

of the City of _____, County of _____, and

State of _____, hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows:

**Walterboro Fountain Plaza Improvements
Walterboro, SC**

hereinafter called the PROJECT.

2. The CONTRACTOR will furnish all of the materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the PROJECT described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 10 calendar days after the date of the NOTICE TO PROCEED and will fully complete the PROJECT within 180 consecutive calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS. The CONTRACTOR further agrees to pay, as liquidated damages, the sum of \$250.00 for each consecutive calendar day thereafter as hereinafter provided in the GENERAL CONDITIONS.
4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of _____ or as shown in the Bid Schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

- A. Advertisement for Bids
- B. Information for Bidders
- C. Bid
- D. Bid Bond
- E. Agreement
- F. General Conditions
- G. Supplemental Conditions
- H. Performance Bond
- I. Payment Bond
- J. Notice of Award
- K. Notice to Proceed
- L. Change Orders
- M. Drawings prepared by The LandPlan Group South, and listed in the Supplemental Conditions.
- N. Specifications prepared by The LandPlan Group South.
- O. Addenda

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

6. The OWNER agrees to pay the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. This Agreement shall be binding on all parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this Agreement in four (4) counterparts, each of which shall be deemed an original, in the year and day first above written.

OWNER:

(SEAL)

By: _____

(Type or Print Name)

ATTEST:

City Manager

(Title of Authorized Official)

(Secretary)

(Witness)

CONTRACTOR:

(SEAL)

By: _____

(Type or Print Name)

(Title)

(Street Address)

(City, State, Zip)

ATTEST:

(Secretary)

(Witness)

(End of Section 01210)

**CERTIFICATE OF ACKNOWLEDGEMENT OF CONTRACTOR
IF A CORPORATION**

FOR AGREEMENT

STATE OF _____

COUNTY OF _____

ON THIS _____ day of _____, 2026, before me

personally came _____, to me known, who being

by me duly sworn, did depose and say as follows:

That he resides at _____

and is the _____ of _____,
(Title of Officer) (Name of Corporation)

the Corporation described in and which executed the foregoing instrument; that he knows the corporate seal of said Corporation; that the seal affixed to the foregoing instrument is such Corporate Seal and it was so affixed by order of the Board of Directors of said Corporation; and that by the like order he signed thereto his name and official designation.

By: _____

(Name) (Title)

(Notary Public) (Seal)

My commission expires: _____

SECTION 01212

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

_____, hereinafter called Principal and
(Corporation, Partnership or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 2026, a copy of which is hereto attached and made a part hereof for the construction of:

**Walterboro Fountain Plaza Improvements
Walterboro, SC**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS. PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be deemed an original, in the year and day first above written.

ATTEST:

(Principal) Secretary

(SEAL)

Witness as to Principal

(Street Address)

(City, State, Zip)

ATTEST:

(Surety) Secretary

(SEAL)

Witness as to Surety

(Street Address)

(City, State, Zip)

Principal

By: _____ (S)

(Street Address)

(City, State, Zip)

Surety

Attorney-in-Fact

(Street Address)

(City, State, Zip)

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is a Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

(End of Section 01212)

SECTION 01214

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

_____, hereinafter called
(an Individual, (a Partnership), or (a Corporation)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the _____ day of _____ 2026, copy of which is hereto attached and made a part hereof for the construction of:

**Walterboro Fountain Plaza Improvements
Walterboro, SC**

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the

construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be deemed an original, in the year and day first above written.

ATTEST:

	_____	Principal

(Principal) Secretary		
(SEAL)	By: _____	(S)

	(Street Address)	
_____	_____	
Witness as to Principal	(City, State, Zip)	

(Street Address)		

(City, State, Zip)		

ATTEST:

	_____	Surety
_____	By: _____	
(Surety) Secretary	Attorney-in-Fact	
(SEAL)	_____	
	(Street Address)	

	(City, State, Zip)	

Witness as to Surety		

(Street Address)		

(City, State, Zip)		

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

(End of Section 01214)

SECTION 01219 CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, _____, the
duly authorized and acting legal representative of _____

_____ do hereby certify as follows:

I have examined the attached contract(s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

(Signed)

Date: _____

(End of Section 01219)

**CERTIFICATE OF ACKNOWLEDGEMENT OF CONTRACTOR
IF A CORPORATION**

FOR CONTRACT BONDS

STATE OF _____

COUNTY OF _____

ON THIS _____ day of _____, 2026, before me
personally came _____, to me known, who
being by me duly sworn, did depose and say as follows:

That he resides at _____

and is the _____ of _____,
(Title of Officer) (Name of Corporation)

the Corporation described in and which executed the foregoing instrument; that he knows the corporate seal of said Corporation; that the seal affixed to the foregoing instrument is such Corporate Seal and it was so affixed by order of the Board of Directors of said Corporation; and that by the like order he signed thereto his name and official designation.

By: _____

(Name) (Title)

(Notary Public) (Seal)

My commission expires: _____

NOTICE OF AWARD

TO:

PROJECT DESCRIPTION: **Walterboro Fountain Plaza Improvements**

The OWNER has considered the BID submitted by you on _____ for the above described WORK in response to its Advertisement for Bids and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of _____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out to the OWNER'S acceptance of your BID as abandoned and as forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 2026

City of Walterboro

Owner

By: _____

Title

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____

This the _____ day of _____, 2026

By _____

Title _____

NOTICE TO PROCEED

TO:

Date: _____

Project: **Walterboro Fountain Plaza Improvements**

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2026, on or before _____ 2026, and you are to complete the WORK within 180 consecutive calendar days thereafter.

The date of completion of all WORK is therefore _____, 2026.

Owner: _____ City of Walterboro _____

By: _____

Title: City Manager _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____

This the _____ day of _____, 2026

By _____

Title _____

1. GENERAL

1.1. THE CONTRACT DOCUMENTS: The Contract Documents consist of the Advertisement for Bids, Information for Bidders, Bid, Bid Bond, Agreement, Payment Bond, Performance Bond, Conditions of the Contract (General, Supplemental and Other Conditions), Drawings, Specifications, Addenda, Notice of Award, Notice to Proceed, and Change Orders.

1.2. CORRELATION AND INTENT OF DOCUMENTS:

1.2.1. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all.

1.2.2. The intent of the Drawings and Specifications is that the Contractor shall furnish all labor, supplies and materials, tools, machinery, equipment, transportation, supervision, temporary construction of any nature, and all other services, facilities and means necessary for the proper execution and completion of the Work in accordance with the Contract Documents and all incidental work necessary to complete the Project in an acceptable manner, and fully complete the work or improvement ready for use, occupancy and operation by the Owner.

1.2.3. Any mention in the Specifications or indication on the Drawings of articles, materials, methods or operations shall require the Contractor to furnish such item or service as if it was fully specified unless it is noted or specified as not in the contract. It is intended that all materials shall be new and best quality in every respect unless otherwise noted or specified. All workmanship, methods of assembly, and erection shall be first class in every respect.

1.3. CONFLICT OR INCONSISTENCY:

1.3.1. If there is any conflict or inconsistency between the provisions of the Supplemental Conditions and the provisions of the other Contract Documents, the provisions of the Supplemental Conditions shall prevail. If there is any conflict or inconsistency between the provisions of the General Conditions and the provisions of any of the Contract Documents other than the Supplemental Conditions, the provisions of the General Conditions shall prevail.

1.3.2. In case of conflict between the Drawings and Specifications, the Specifications shall govern. Figure dimensions on Drawings shall govern over scale dimensions, and detailed Drawings shall govern over general Drawings.

1.3.3. In case of difference between small-scale and large-scale drawings, the large scale drawings shall govern. Schedules on any contract drawing shall take precedence over conflicting information on that or any other contract drawing. On any of the drawings where a portion of the work is detailed or drawn out and the remainder is shown in outline, the parts detailed or drawn out shall apply also to all other like portions of the work. Where the word "similar" occurs on the drawings, it shall have a general meaning and not be interpreted as being identical, and all details shall be worked out in relation to their location and their connection with other parts of the work.

1.3.4. Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk.

1.3.5. Should a conflict be discovered within the Contract Documents, the Contractor shall be deemed to have estimated the higher quality way of doing the Work unless he shall have asked for and obtained a decision in writing from the Engineer before entering into this Contract.

1.4. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS: The Contractor may be furnished additional instructions and detail drawings, by the Engineer, as necessary to carry out the Work required by the Contract Documents. The additional drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.

1.5. SPECIFICATION HEADINGS:

1.5.1. For convenience of reference, these Specifications are divided into various Divisions, Sections, Subsections and Paragraphs. The titles of these headings shall not be taken as a correct or complete segregation of the various types of material and labor nor as an attempt to outline jurisdictional procedures. The headings shall not be deemed to limit or restrict the content, meaning or effect of such section, subsection, paragraph, provision or part.

1.5.2. The organization of the Specifications into the various headings, and the arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Each subcontract shall be dependent upon its own definite confines, regardless of Divisions of these Specifications. No responsibility, either direct or implied, is assumed by the Owner for omissions or duplications by the Contractor or by any of his subcontractors due to real or alleged errors in arrangement of matter in Contract Documents.

1.6. DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION PURPOSES: The Contractor will be furnished 6 complete sets of Drawings and Specifications to be used during the course of construction. If more than 6 sets are needed, the Contractor will be required to pay the actual cost of printing and handling.

1.7. DEFINITIONS: Wherever the words hereinafter defined or pronouns used in their stead occur in the Contract Documents, they shall have the following meanings:

1.7.1. ADDENDA: Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Document, Drawings and Specifications by additions, deletions, clarifications or corrections. Such addenda or addenda will take precedent over the position of the general drawings and specifications concerned and will be considered as part of the Contract Documents.

1.7.2. AGREEMENT: The Agreement represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations or agreements,

either written or oral, including the bidding documents. The Agreement may be amended or modified by a Change Order.

1.7.3. **BID:** The written offer or proposal of the Bidder, submitted on the prescribed form, properly signed and guaranteed, to perform the work at the prices quoted by the Bidder.

1.7.4. **BID BOND:** The security furnished by the Bidder with his proposal for the Project is guaranty he will enter into a contract for the work if his proposal is accepted.

1.7.5. **BIDDER:** Any individual, firm or corporation or combination of same submitting a bid for the work contemplated, acting directly or through a duly authorized representative.

1.7.6. **BONDS:** Bid, Performance and Payment Bonds and other instruments of security furnished by the Contractor and his Surety in accordance with the Contract Documents.

1.7.7. **CALENDAR DAY:** Every day shown on the calendar, Sundays and holidays included.

1.7.8. **CHANGE ORDER:** A written order to the Contractor authorizing an addition, deletion or revision in the Work within the general scope of the Contract Documents or authorizing an adjustment in the Contract Price or Contract Time.

1.7.9. **CONTRACT:** The Contract Documents form the Contract. The Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations or agreements, either written or oral, including the bidding documents. The Contract may be amended or modified by a Change Order.

1.7.10. **CONTRACT DOCUMENTS:** The Contract Documents consist of the Advertisement for Bids, Information for Bidders, Bid, Bid Bond, Agreement, Payment Bond, Performance Bond, the Conditions of the Contract (General, Supplemental, and other Conditions), the Drawings, the Specifications, Addenda issued prior to execution of the Contract, Notice of Award, Notice to Proceed and Change Orders.

1.7.11. **CONTRACT PRICE:** The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.7.12. **CONTRACTOR:**

1.7.12.a. The individual, firm or corporation with whom the Owner has executed the Agreement by which the Contractor is obligated directly, or through Subcontractors, to perform work in connection with the Project.

1.7.12.b. The Contractor is the person or organization identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.

1.7.13. **CONTRACT TIME:** The number of calendar days stated in the Contract Documents for the completion of the Work.

1.7.14. **DRAWINGS:** The part of the Contract Documents which show the characteristics and scope of the Work to be performed, and which have been prepared or approved by the Engineer.

1.7.15. **EARTH:** An excavated material or material to be excavated; all kinds of material other than rock.

1.7.16. **ELEVATION:** The figures given on the Drawings or in the other Contract Documents after the word "elevation" or abbreviation of it shall mean the distance in feet above the datum adopted by the Engineer.

1.7.17. **ENGINEER:** The person, firm or corporation named as such in the Contract Documents and duly appointed by the Owner to undertake the duties and powers herein assigned to the Engineer, acting either directly or through duly authorized representatives.

1.7.18. **EQUIPMENT:** All machinery, together with the necessary supplies for upkeep and maintenance, and all tools and apparatus necessary for the proper construction and acceptable completion of the work.

1.7.19. **FIELD ORDER:** A written order affecting a change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by the Engineer to the Contractor during construction.

1.7.20. **FURNISH:** Furnish and install complete, in place, and ready for use.

1.7.21. **INFORMATION FOR BIDDERS:** The Notice to Contractors containing all necessary information as to provisions, requirements, date, place, and time of submitting bids.

1.7.22. **LATEST EDITION:** The current printed document issued eight weeks or more prior to date of receipt of bids.

1.7.23. **MATERIALS:** Any substance specified for use in the construction of the Project and its appurtenances.

1.7.24. **NET COST:** The cost to the Contractor after application of all credits and discounts (excepting only cash discounts) and without the addition of any factor for burden, overhead or indirect cost or profit.

1.7.25. **NOTICE OF AWARD:** The written notice of the acceptance of the Bid from the Owner to the successful Bidder.

1.7.26. **NOTICE TO PROCEED:** Written communication issued by the Owner to the Contractor authorizing him to proceed with the Work and establishing the date of commencement of the Work.

1.7.27. **OPTIMUM MOISTURE CONTENT FOR COMPACTION:** The moisture content of a soil calculated on the basis of dry weight of soil at which the soil can be compacted to the approximate maximum density under a specified standard method of compaction.

1.7.28. OWNER: A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed.

1.7.29. PAYMENT BOND: The approved form of security furnished by the Contractor to guarantee the payment to all persons supplying labor and materials in the prosecution of the work in accordance with the terms of the Contract.

1.7.30. PERFORMANCE BOND: The approved form of security furnished by the Contractor to guarantee the completion of the work in accordance with the terms of the Contract.

1.7.31. PRE-CONSTRUCTION CONFERENCE: A conference following award and prior to start of construction to be attended by a duly authorized representative of the Engineer and by the responsible officials of the Contractor and other affected parties.

1.7.32. PROJECT: The undertaking to be performed as provided in the Contract Documents.

1.7.33. PROPOSAL: The written offer of the Bidder, submitted on the prescribed form, properly signed and guaranteed, to perform the work at the prices quoted by the Bidder.

1.7.34. PROPOSAL FORM: The approved form on which the Owner requires formal bids to be prepared and submitted for the work.

1.7.35. PROPOSAL GUARANTY: The security furnished by the Bidder with his proposal for a Project, as guaranty he will enter into a contract for the work if his proposal is accepted.

1.7.36. PROVIDE: Furnish and install complete, in place, and ready for use.

1.7.37. RESIDENT PROJECT REPRESENTATIVE: The authorized representative of the Owner who is assigned to the Project site or any part thereof.

1.7.38. ROCK: An excavated material or material to be excavated; only boulders and pieces of concrete or masonry exceeding 1/2 cu. yd. in volume, or solid ledge rock which, in the opinion of the Engineer, requires, for its removal, drilling and blasting, wedging, sledging, barring, or breaking up with a power-operated tool. No soft or disintegrated rock which can be removed with hand pick or power-operated excavator or shovel, no loose shaken, or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the maximum limits of measurement allowed, which may fall into the excavation will be classified as rock.

1.7.39. SHOP DRAWINGS: All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, Supplier or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

1.7.40. SPECIALIST: An individual or firm of established reputation which is regularly engaged in, and which maintains a regular force of workmen skilled in either manufacturing or fabricating items required by the contract, installing items required by the contract, or otherwise performing work required by the contract. Where the contract specifications require installation by a specialist, that term shall also be deemed to mean either the manufacturer of the item, an

individual or firm licensed by the manufacturer, or an individual or firm who will perform the work under the manufacturer's direct supervision.

1.7.41. SPECIFICATIONS: A part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

1.7.42. STRUCTURES: Bridges, culverts, catch basins, drop inlets, manholes, retaining walls, cribbing, endwalls, buildings, sewers, service pipes, underdrains, foundation drains, and other miscellaneous items which may be encountered in the work, and which are not otherwise classified herein.

1.7.43. SUBBASE: The layer or layers of specified or selected material of designated thickness or rate of application placed on a subgrade to comprise a component of the pavement structure to support the base course, pavement or subsequent layer of the construction.

1.7.44. SUBCONTRACTOR: An individual, firm or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative.

1.7.45. SUB-SUBCONTRACTOR: An individual, firm or corporation having a direct or indirect contract with a Subcontractor to perform any of the Work at the site. The term Sub-subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Sub- subcontractor or an authorized representative thereof.

1.7.46. SUBGRADE: The top surface of a roadbed upon which the pavement structure and shoulders are constructed.

1.7.47. SUBSTANTIAL COMPLETION: That date as certified by the Engineer when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it is intended.

1.7.48. SUPPLEMENTAL CONDITIONS: Conditions of the Contract other than the General Conditions.

1.7.49. SUPERINTENDENT: The Contractor's authorized representative in responsible charge of the work.

1.7.50. SUPPLIER: Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

1.7.51. SURETY: The corporation, partnership or individual bound with and for the Contractor for the full and complete performance of the contract, and for the payment of all debts pertaining to the work.

1.7.52. TITLES (OR HEADINGS): The titles or headings of the sections and subsections herein are intended for convenience of reference and shall not be considered as having any bearing on their interpretation.

1.7.53. WORK: All labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in the Project.

1.7.54. WRITTEN NOTICE: Any notice to any part of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the Work.

1.7.55. ADDITIONAL DEFINITIONS:

1.7.55.a. Wherever in the Specifications or on the Drawings, the words "as designated", "as detailed", "as directed", "as ordered", "as permitted", "as prescribed", "as provided", "as requested", "as required", or words of like import are used, it shall be understood that the designation, detail, direction, order, permission, prescribed, provision, request or requirement of the Engineer is intended.

1.7.55.b. Similarly, the words "approved", "acceptable", "satisfactory", and words of like import shall mean approved by, acceptable to, or satisfactory to the Engineer.

1.8. ABBREVIATIONS: Where any other following abbreviations are used in the Specifications, they shall have the meaning set forth opposite each.

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturers Association
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AED	American Equipment Dealers
AFI	American Filter Institute
AGA	American Gas Association
AGC	Associated General Contractors of America, Inc.
AHDGA	American Hot Dip Galvanizers Association
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMA	Acoustical Materials Association
AMCA	Air Moving and Conditioning Association
ANS	American Nuclear Society
ANSI	American National Standards Institute
APA	American Plywood Association
ARI	Air Conditioning and Refrigeration Institute
ASA	Acoustical Society of America

ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers' Association
AWPI	American Wood Preservers' Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
CGA	Compressed Gas Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards, U. S. Department of Commerce
CSI	Construction Specification Institute
EIA	Electronic Industries Association
FS	Federal Specification
FSPT	Federation of Societies for Paint Technology
FSS	Federal Specifications, General Services Administration
FHWA	Federal Highway Administration
GA	Gypsum Association
IBI	Insulation Board Institute
IBR	Institute of Boiler and Radiator Manufacturers
IEEE	Institute of Electric and Electronics Engineers
IES	Illuminating Engineering Society
ISA	Instrument Society of America
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
LIA	Lead Industries Association
MBMA	Metal Building Manufacturers Association
MIA	Marble Institute of America
MPTA	Mechanical Power Transmission Association
MS	Military Specification
MSTD	Military Standard
NAAMM	National Association of Architectural Metal Manufacturers
NAFM	National Association of Fan Manufacturers
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association
NEC	National Electrical Code
NECA	National Electrical Contractors Association, Inc.
NEMA	National Electrical Manufacturers Association
NFC	National Fire Code
NFPA	National Fire Protection Association
NHLA	National Hardware Lumber Association

NLMA	National Lumber Manufacturers Association
NPC	National Plumbing Code
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	National Sanitation Foundation
NTMA	The National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Act
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PEI	Porcelain Enamel Institute
RTI	Resilient Tile Institute
RWMA	Resistance Welder Manufacturers Association
SBI	Steel Boiler Institute
SCDOT	South Carolina Department of Transportation
SCPI	Structural Clay Products Institute
SDI	Steel Deck Institute
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSBC	Southern Standard Building Code
SSGC	Southern Standard Gas Code
SSPC	Steel Structures Painting Council
TAPPI	Technical Association of the Pulp and Paper Industry
TCA	Tile Council of America
TRB	Transportation Research Board
UL	Underwriters' Laboratories, Inc.

2. OWNER'S RIGHTS AND RESPONSIBILITIES

2.1. CHANGES IN THE WORK:

2.1.1. The Owner, without invalidating the Contract, may make changes in the Work and in the Drawings and Specifications therefor by making alterations therein, additions thereto, or omissions therefrom.

2.1.2. All work resulting from such changes shall be performed and furnished under and pursuant to the terms and conditions of the Contract. If such changes result in an increase or decrease in the work to be done hereunder, or increase or decrease the quantities thereof, adjustment in compensation shall be made therefor as provided in Subsection 7.12 entitled PAYMENT FOR EXTRA WORK.

2.1.3. Except in an emergency endangering life or property, no change shall be made unless in pursuance of a written order from the Engineer authorizing the change, and no claim for additional compensation shall be valid unless the change is so ordered.

2.1.4. The Contractor agrees that he shall neither have nor assert any claim for, or be entitled to, any additional compensation for damages or for loss of anticipated profits on work that is eliminated.

2.2. PROJECT ENGINEER: As Engineer for this project the Owner has retained:

The LandPlan Group South, Inc.
1206 Scott Street
Columbia, SC 29201

2.3. ENGINEER'S AUTHORITY:

2.3.1. The Engineer will be the Owner's representative during the construction period and he will observe the work in progress on behalf of the Owner. The Engineer will have the authority to act on behalf of the Owner in the following matters consistent with Owner's rights and obligations as set forth in these Contract Documents:

- 2.3.1.a. Interpretation of Contract Documents.
- 2.3.1.b. Approval of samples and shop drawings.
- 2.3.1.c. Preparation of supplementary details and instructions.
- 2.3.1.d. Inspection and approval of construction work.
- 2.3.1.e. Preliminary approval of progress payment applications.

2.3.2. Any instructions which the Engineer may issue the Contractor shall be adjudged an interpretation of the Contract requirements and not an act of supervision. The Engineer has no authority, nor accepts any responsibility, either direct or implied, to direct and superintend the construction operations.

2.3.3. The Contractor shall proceed without delay to perform the work as directed, instructed, determined, or decided by the Engineer and shall comply promptly with such directions, instructions, determinations, or decisions. If the Contractor has any objection thereto, he may require that any such direction, instruction, determination, or decision be put in writing and within 10 days after receipt of any such writing, he may file a written protest with the Owner stating clearly and in detail his objections, the reasons therefor, and the nature and amount of additional compensation, if any, to which he claims he will be entitled thereby. A copy of such protest shall be filed with the Engineer at the same time it is filed with the Owner. Unless the Contractor files such written protest with the Owner and Engineer within such 10 day period, he shall be deemed to have waived all grounds for protest of such direction, instruction, determination, or decision and all claims for additional compensation or damages occasioned thereby, and shall further be deemed to have accepted such direction, instructions, determination, or decision as being fair, reasonable, and finally determinative of his obligations and rights under the Contract.

2.4. LIABILITY OF OWNER: No person, firm or corporation, other than the Contractor, who signed this Contract as such, shall have any interest herein or right hereunder. No claim shall be made or be valid either against the Owner or any agent of the Owner and neither the Owner nor any agent of the Owner shall be liable for or be held to pay any money, except as herein provided. The acceptance by the Contractor of the payment as fixed in the final estimate

shall operate as and shall be a full and complete release of the Owner and of every agent of the Owner of and from any and all claims, demands, damages and liabilities of, by or to the Contractor for anything done or furnished for or arising out of or relating to or by reason of the work or for or on account of any act or neglect of the Owner or of any agent of the Owner or of any other person, arising out of, relating to or by reason of the work, except the claim against the Owner for the unpaid balance, if any there be, of the amounts retained as herein provided.

2.5. RIGHTS-OF-WAY AND SUSPENSION OF WORK: The Owner shall furnish all land and rights-of-way necessary for the carrying out of this contract and the completion of the Work herein contemplated and will use due diligence in acquiring said land and rights-of-way as speedily as possible. But it is possible that all lands and rights-of-way may not be obtained as herein contemplated before construction begins, in which event the Contractor shall begin his work upon such land and rights-of-way as the Owner may have previously acquired and no claim for damages whatsoever will be allowed by reason of the delay in obtaining the remaining lands and rights-of-way. Should the Owner be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement, by reason of any litigation, or by reason of its inability to procure any lands or rights-of-way for the said work, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay or to withdraw from the contract except by consent of the Owner; but time for completion of the work will be extended to such time as the Owner determines will compensate for the time lost by such delay, such determination to be set forth in writing.

2.6. SURVEYS, PERMITS AND REGULATIONS:

2.6.1. The Owner will furnish all boundary surveys and establish all base lines for locating the principal component parts of the Work together with a suitable number of bench marks adjacent to the Work as shown in the Contract Documents. From the information provided by the Owner, unless otherwise specified in the Contract Documents, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

2.6.2. The Contractor shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

2.6.3. Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be secured and paid for by the Contractor unless otherwise stated in the Supplemental Conditions. Encroachment permits, easements for permanent structures and permits for permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the Contract Documents are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in Subsection 2.1 entitled CHANGES IN THE WORK.

2.7. LINES, GRADES AND MEASUREMENTS:

2.7.1. The Owner's Engineer will set sufficient base lines and elevations as shown on the Drawings for location of the Work. The Contractor shall employ a registered civil engineer, or land surveyor and shall require said Engineer to establish all lines, elevations, reference marks, batter boards, etc., needed by the Contractor during the progress of the work, and from time to time to verify such marks by instrument or other appropriate means.

2.7.2. The Owner's Engineer shall be permitted at all times to check the lines, elevations, reference marks, batter boards, etc., set by the Contractor, who shall correct any errors in lines, elevations, reference marks, batter boards, etc., disclosed by such check. Such check shall not be construed to be an approval of the Contractor's work and shall not relieve or diminish in any way the responsibility of the Contractor for the accurate and satisfactory construction and completion of the work.

2.7.3. The Contractor shall make, check and be responsible for all measurements and dimensions necessary for the proper construction of, and the prevention of misfittings in, the work.

2.8. OWNER'S RIGHT OF AUDIT: In case the Owner agrees that a Contractor perform work on a cost plus basis, the Owner is to have a full and complete right to audit and make copies of Contractor's or Subcontractor's records with respect to any payment to Owner may be requested to make, or may make, for any work done on a cost plus basis.

2.9. OWNER'S RIGHT TO SEPARATE CONTRACTS:

2.9.1. The Owner reserves the right to let other contracts in connection with the Work under similar General Conditions. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

2.9.2. The Owner may perform additional Work related to the Project by himself, or he may let other contracts containing provisions similar to these. The Contractor will afford the other contractors who are parties to such Contracts (or the Owner, if he is performing the additional Work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of Work and shall properly connect and coordinate his Work with theirs.

2.10. OWNER'S RIGHT TO DO WORK:

2.10.1. If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this contract, the Owner, after three days' written notice to the Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. If such expense shall exceed the unpaid balance, the Contractor shall pay the difference to the Owner on demand.

2.10.2. The Engineer's certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective work or equipment when performed by one other than the Contractor shall be binding and conclusive as to the amount thereof upon the Contractor.

2.11. 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 or trustee should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to Subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Owner and his representatives, or otherwise be guilty of substantial violation of any provision of the Contract, then the Owner, may, without prejudice to any other right or remedy and after giving the Contractor, and his surety, if any, seven days' written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, as it may deem expedient. In such case, the Contractor shall 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 engineering, managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner.

2.12. SUSPENSION OF WORK, TERMINATION AND DELAY: The Owner may suspend the Work or any portion thereof for a period of not more than 90 days or such further time as agreed upon by the Contractor, by written notice to the Contractor and the Engineer, which notice shall fix the date on which Work shall be resumed. The Contractor will resume that Work on the date so fixed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension.

2.13. INSPECTIONS AND TESTING: If the Contract Documents, Owner's instructions, laws, ordinances or any public authority having jurisdiction require any work to be specially tested or approved, the Contractor shall give the Owner timely notice of its readiness for observation by the Owner or inspection by another authority, and if the inspection is by another authority rather than the Owner, of the date fixed for such inspection. The required certificates of such inspection shall be secured and paid for by the Contractor. All SCDOT inspections shall be paid for by the General Contractor. Observations by the Owner shall be promptly made, and where practicable, at the source of supply. If any work should be covered up without approval or consent of the Owner, it must, if required by the Owner, be uncovered for examination, at the Contractor's expense.

2.14. INSPECTION OF WORK AWAY FROM THE SITE: If the work to be done away from the construction site is to be inspected on behalf of the Owner during its fabrication, manufacture, or testing, or before shipment, the Contractor shall give notice to the Engineer of the place and time where such fabrication, manufacture, testing, or shipping is to be done. Such notice shall be in writing and delivered to the Engineer in ample time so that the necessary arrangements for the inspection can be made.

2.15. PIPE LOCATION: Exterior pipelines will be located substantially as indicated on the Drawings, but the right is reserved to the Owner acting through the Engineer, to make such modifications in location as may be found desirable to avoid interference with structures or for other reasons. Where fittings, etc., are noted on the Drawings such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

2.16. PRIOR USE OR OCCUPANCY: The Owner reserves the right to use or occupy the Work or portion thereof, and to use equipment installed under the Contract, prior to final acceptance. Such use or occupancy will not constitute acceptance of the Work or any part thereof. Despite such use or occupancy, guarantee periods will not begin until the completion of all work under the Contract, unless agreement to the contrary is made in writing between the parties.

2.17. WEATHER CONDITIONS: In the event of temporary suspension of work, or during inclement weather, or whenever the Engineer shall direct, the Contractor will, and will cause his subcontractors to, protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors so to protect its work, such materials shall be removed and replaced at the expense of the Contractor.

2.18. OWNER'S RIGHT TO CLEAN UP: If a dispute arises between the separate contractors as to their responsibility for cleaning up, the Owner may clean up and charge the cost thereof to the Contractor as the Engineer shall determine to be just.

3. CONTRACTOR'S RIGHTS AND RESPONSIBILITIES

3.1. ACCESS TO WORK: The Owner, the Engineer, and their officers, agents, servants, and employees plus representatives of the various participating Federal or State agencies may at any and all times and for any and all purposes, enter upon the work and site thereof and the premises used by the Contractor, and the Contractor shall at all times provide safe and proper facilities therefor.

3.2. ACCIDENT PREVENTION: In the performance of the contract the Contractor shall comply with the applicable provisions of the regulations issued by the Secretary of Labor pursuant to section 107 of the Contract Work Hours and Safety Standards Act entitled "Safety and Health Regulations for Construction" (29 CFR 1518, renumbered as Part 1926). Occupational Safety and Health Standards (29 CFR Part 1910) issued by the Secretary of Labor pursuant to the Williams-Steiger Occupational Safety and Health Act of 1970 are applicable to work performed by the contractor subject to the provisions of the Act.

3.3. STATED ALLOWANCES: The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. These allowances shall cover the net cost of the materials and equipment delivered and unloaded at the site, and all applicable taxes. The Contractor's handling costs on the site, labor, installation costs, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contract Sum and not in the allowance. If the cost, when determined, is more than or less than the allowance, the Contract Sum shall be adjusted accordingly by Change Order which will include additional handling costs on the site, labor, installation costs, overhead, profit and other expenses resulting to the Contractor from any increase over the original allowance.

3.4. ARCHAEOLOGICAL RIGHTS: There is a possibility that items of archaeological significance may be found during the excavation of the site. In such event, the Contractor shall stop excavation in the vicinity of the find and notify the Engineer immediately; subsequent

excavation work shall proceed as directed by the Engineer. All items found which are considered to have archaeological significance are the property of the Owner.

3.5. AS-BUILT DRAWINGS: The Contractor shall designate one set of Drawings for "As-Built Drawings". The Contractor shall indicate on these drawings all field changes affecting various mechanical, electrical, piping and other items as well as locations as actually installed. The "As-Built Drawings" shall be kept current by the Contractor. The "As-Built Drawings" shall be delivered to the Engineer upon completion and acceptance of the work. Final payment for the work will not be made until the "As-Built Drawings" have been completed and delivered as indicated above.

3.6. OBLIGATIONS OF CONTRACTOR:

3.6.1. The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, tools, machinery, equipment, transportation, supervision, temporary construction of any nature, and all other services, means and facilities except as herein otherwise expressly specified, necessary or proper to perform and complete all work required by this Contract, within the time herein specified, in accordance with the provisions of this Contract and in accordance with the Drawings and Specifications and in accordance with the direction of the Engineer as given from time to time during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required.

3.6.2. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the Contract and Specifications, and shall do, carry on, and complete the entire work to the satisfaction of the Engineer and the Owner.

3.6.3. The Contractor shall check all dimensions, elevations, quantities and instructions shown on the Drawings or given in the Specifications and shall notify the Engineer should any discrepancy of any kind be found in the Drawings, Specifications or conditions at the site. He will not be allowed to take advantage of any discrepancy, error or omission in the Contract Documents. If any discrepancy is discovered, the Engineer will issue full instructions pertaining thereto and the Contractor shall carry out these instructions as if originally specified.

3.7. CLAIMS FOR ADDITIONAL COST: If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give written notice thereof within ten days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property, in which case the Contractor shall proceed in accordance with Subsection 3.27 entitled PROTECTION OF WORK, PROPERTY AND PERSONS IN AN EMERGENCY. No such claim shall be valid unless so made. If the Owner and the Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined by the Engineer. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.

3.8. CLAIMS FOR DAMAGE:

3.8.1. If the Contractor makes claim for any damages alleged to have been sustained by breach of contract or otherwise, he shall, within 10 days after occurrence of the alleged breach or within 10 days after such damages are alleged to have been sustained, whichever date is the earlier, file

with the Engineer a written, itemized statement in triplicate of the details of the alleged breach and the details and amount of the alleged damages. The Contractor agrees that unless such statement is made and filed as so required, his claim for damages shall be deemed waived, invalid and unenforceable, and that he shall not be entitled to any compensation for any such alleged damages. Within 10 days after the timely filing of such statement, the Engineer shall file with the Owner one copy of the statement together with his recommendations for action by the Owner.

3.8.2. The Contractor shall not be entitled to claim any additional compensation for damages by reason of any direction, instruction, determination or decision of the Engineer, nor shall any such claims be considered, unless the Contractor shall have complied in all respects with the last paragraph of Subsection 2.3 entitled ENGINEER'S AUTHORITY, including, but not limited to, the filing of written protest in the manner and within the time therein provided.

3.9. CUTTING AND PATCHING:

3.9.1. The Contractor shall leave all chases or openings for the installation of his own or any other contractor's subcontractor's work, or shall cut the same in existing work, and shall see that all sleeves or forms are at the work and properly set in ample time to prevent delays. He shall see that all such chases, openings, and sleeves are located accurately and are of proper size and shape and shall consult with the Engineer and the contractors and subcontractors concerned in reference to this work.

3.9.2. In case of his failure to leave or cut all such openings or have all such sleeves provided and set in proper time, he shall cut them or set them afterwards at his own expense, but in so doing he shall confine the cutting to the smallest extent possible consistent with the work to be done. In no case shall piers or structural members be cut without the written consent and approval of the Engineer.

3.9.3. The Contractor shall carefully fit around, close up, repair, patch, and point around the work specified herein to the satisfaction of the Engineer.

3.9.4. All of this work shall be done by careful workmen competent to do such work and with the proper small hand tools. Power tools shall not be used except where, in the opinion of the Engineer, the type of tool proposed can be used without damage to any work or structure and without inconvenience or interference with the operation of any facility. The Engineer's approval of the type of tool shall not in any way relieve or diminish the responsibility of the Contractor for such damage, inconvenience or interference resulting from the use of such tools.

3.9.5. The Contractor shall not cut or alter the work of any subcontractor or any other contractor, nor permit any of his subcontractors to cut or alter the work of any other contractor or subcontractor except with the written consent of the contractor or subcontractor whose work is to be cut or altered or with the written consent of the Engineer. All cutting and patching or repairing made necessary by the negligence, carelessness, or incompetence of the Contractor or any of his subcontractors shall be done by or at the expense of the Contractor and shall be the responsibility of the Contractor.

3.10. CLEANING UP:

3.10.1. The Contractor at all times shall keep the site of the work free from rubbish and debris caused by his operation under the Contract. When the work has been completed, the Contractor shall remove from the site of the work all of his plant, machinery, tools, construction equipment, temporary work and surplus materials so as to leave the work and the site clean and ready for use.

3.10.2. All public streets adjacent to the site and all private ways at the site shall be kept clean of debris, spilled materials, and wet and dry earth at all times and shall be cleaned at the end of each working day. When wet earth is encountered, it shall be cleaned from the vehicles before they leave the site and enter streets and private ways.

3.11. NON-COMPLIANCE WITH CONTRACT REQUIREMENTS: In the event the Contractor, after receiving written notice from the Owner of non-compliance with any requirement of this Contract, fails to initiate promptly such action as may be appropriate to comply with the specified requirement within a reasonable period of time, the Owner shall have the right to order the Contractor to stop any or all work under the Contract until the Contractor has complied or has initiated such action as may be appropriate to comply within a reasonable period of time. The Contractor will not be entitled to any extension of contract time or payment for any costs incurred as a result of being ordered to stop work for such cause.

3.12. OVERALL PROJECT COORDINATION: The Contractor shall coordinate all Work of his Contract to produce the required finished Project in accordance with the Contract Documents. Special attention shall be given to the submission of shop drawings, samples, color charts, and requests for substitution within the specified time; furnishing the proper shop drawings to Subcontractors and material suppliers, whose work and equipment is affected by and related thereto; and the furnishing of all information concerning location, type, and size of built-in equipment and materials and equipment utilities. This coordination is in addition to all other coordination requirements called for in the technical sections of the Specifications.

3.13. COMMUNICATIONS: The Contractor shall forward all communications to the Owner through the Engineer.

3.14. NO DISCRIMINATION IN EMPLOYMENT: In connection with the performance of work under this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

3.15. DRAWINGS AND SPECIFICATIONS AT THE SITE: The Contractor shall maintain at the site one complete set of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders and other Modifications, in good and readable condition and marked to record all changes made during construction. These shall be available to the Engineer. The Drawings, marked to record all changes made during construction, shall be delivered to the Engineer for the Owner upon completion of the work.

3.16. EMPLOY COMPETENT PERSONS: The Contractor shall endeavor to employ only competent persons on the Work. Whenever the Engineer notifies the Contractor in writing that

in his opinion any person on the Work is incompetent, unfaithful, disorderly, or otherwise unsatisfactory, or not employed in accordance with the provisions of the Contract, such person shall be discharged from the Work and shall not again be employed on it, except with the written consent of the Engineer. Provided, however, that the failure of the Owner or Engineer to object to an employee is not to be considered acknowledgment or approval of the employee's competence by the Engineer or Owner.

3.17. EMPLOY SUFFICIENT LABOR AND EQUIPMENT: If, in the judgement of the Engineer, the Contractor is not employing sufficient labor, plant, equipment or other means to complete the work within the time specified, the Engineer may, after giving written notice, require the Contractor to employ such additional labor, plant, equipment and other means as the Engineer may deem necessary to enable the work to progress properly.

3.18. EXISTING STRUCTURES: Where the dimensions and locations of existing structures are of importance in the installation or connection of any part of the Work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment which is dependent on the correctness of such information.

3.19. INDEMNIFICATION:

3.19.1. The Contractor will indemnify and hold harmless the Owner and the Engineer and their agents and employees from and against all claims, damages, losses and expenses, including attorneys' fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable.

3.19.2. In any and all claims against the Owner or the Engineer, or any of their agents or employees, by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by an limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefits acts.

3.20. INTOXICATING LIQUORS: The Contractor shall not sell and shall neither permit nor suffer the introduction or use of intoxicating liquors upon or about the work.

3.21. LEGAL ADDRESS OF CONTRACTOR: The Contractor's business address and his office at or near the site of the work are both hereby designated as places to which communications may be delivered. The depositing of any letter, notice, or other communication in a postpaid wrapper directed to the Contractor's business address in a post office box regularly maintained by the U. S. Postal Service or the delivery at either designated address of any letter, notice, or other communication by mail or otherwise shall be deemed sufficient service thereof upon the Contractor, and the date of such service shall be the date of receipt. The first-named address may be changed at any time by an instrument in writing, executed and acknowledged by

the Contractor and delivered to the Engineer. Service of any notice, letter or other communication upon the Contractor personally shall likewise be deemed sufficient service.

3.22. MUTUAL RESPONSIBILITY OF CONTRACTORS:

3.22.1. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and shall properly connect and coordinate his Work with theirs.

3.22.2. If any part of the Contractor's Work depends for proper execution or results upon the work of any other separate contractor, the Contractor shall inspect and promptly report to the Owner any apparent discrepancies or defects in such work that render it unsuitable for such proper execution and results. Failure of the Contractor so to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper to receive his Work, except as to defects which may develop in the other separate contractor's work after the execution of the Contractor's Work. To ensure proper execution of the subsequent work, the Contractor shall measure work already in place and shall at once report to the Owner any discrepancy between the executed work and the Contract Documents.

3.22.3. Should the Contractor cause damage to any separate contractor on the work, the Contractor agrees, upon due notice, to settle with such contractor by agreement or arbitration, if he will so settle. If such separate contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor, who shall defend such proceedings at the Contractor's expense, and if any judgement against the Owner arises therefrom, the Contractor shall pay or satisfy it and pay all costs incurred by the Owner.

3.23. NIGHT AND SUNDAY WORK:

3.23.1. No work shall be done at night or on Sunday except:

3.23.1.a. Usual protective work, such as pumping and the tending of lights and fires;

3.23.1.b. Work done in case of emergency threatening injury to persons or property;

3.23.1.c. When provided for under Supplemental Conditions as herein specified;

3.23.1.d. If all of the conditions set forth in the next paragraph below are met.

3.23.2. No work other than that included in (3.23.1.a), (3.23.1.b), and (3.23.1.c) above, shall be done at night except when:

3.23.2.a. In the judgment of the Engineer, the work will be of advantage to the Owner and can be performed satisfactorily at night;

3.23.2.b. The work will be done by a crew organized for regular and continuous night work;

3.23.2.c. The Engineer has given written permission for such night work.

3.23.3. Any work necessary to be performed after regular hours, on Sundays, or Legal Holidays, shall be performed without additional expense to the Owner.

3.24. OCCUPYING PRIVATE LAND: The Contractor shall not (except after written consent from the proper parties) enter or occupy with men, tools, materials, or equipment, any land

outside the rights-of-way or property of the Owner. A copy of the written consent shall be given to the Engineer prior to occupation of private land.

3.25. PERMITS AND RESPONSIBILITIES: The Contractor shall, without additional expense to the Owner, be responsible for obtaining any necessary licenses and permits, and for complying with any applicable Federal, State and municipal laws, codes, and regulations, in connection with the prosecution of the work. He shall be similarly responsible for all damages to persons or property that occurs as a result of his fault or negligence. He shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire construction work, except for any completed unit of construction thereof which theretofore may have been accepted.

3.26. PRECAUTIONS DURING ADVERSE WEATHER:

3.26.1. During adverse weather and against the possibility thereof, the Contractor shall take all necessary precautions so that the Work may be properly done and satisfactory in all respects. When required, protection shall be provided by use of tarpaulins, wood and building-paper shelters, or other approved means.

3.26.2. During cold weather, materials shall be preheated, if required, and the materials and adjacent structure into which they are to be incorporated shall be made and kept sufficiently warm so that a proper bond will take place and a proper curing, aging, or drying will result. Protected spaces shall be artificially heated by approved means which will result in a moist or a dry atmosphere according to the particular requirements of the work being protected. Ingredients for concrete and mortar shall be sufficiently heated so that the mixture will warm throughout when used.

3.26.3. The Engineer may suspend construction operations at any time when, in his judgement, the conditions are unsuitable or the proper precautions are not being taken, whatever the weather may be, in any season. The Contractor agrees that he shall not have or assert any claim for or be entitled to any additional compensation or damages on account of any such suspension.

3.27. PROTECTION OF WORK, PROPERTY AND PERSONS:

3.27.1. The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

3.27.2. The Contractor will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor will remedy all damage, injury or loss to any property caused, directly or indirectly,

in whole or in part, by the Contractor, any subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the Contract Documents or to the acts or omissions of the Owner or the Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the Contractor.

3.28. PROTECTION OF WORK, PROPERTY AND PERSONS IN AN EMERGENCY: In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Engineer or Owner, shall act to prevent threatened damage, injury or loss. He will give the Engineer prompt Written Notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved.

3.29. PROTECTION AGAINST WATER AND STORM: The Contractor shall take all precautions necessary to prevent damage to the Work by storms or by water entering the site of the Work directly or through the ground. In case of damage by storm or water, the Contractor shall at his own cost and expense make such repairs or replacements or rebuild such parts of the Work as the Engineer may require in order that the finished work may be completed as required by the Contractor.

3.30. PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES AND IMPROVEMENTS:

3.30.1. The Contractor will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site of the work which is not to be removed and which does not reasonably interfere with the construction work. Care shall be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. Any limbs or branches of trees broken during such operations or by the careless operation of equipment or by workmen, shall be trimmed with a clean cut and painted with an approved tree pruning compound as approved by the Engineer.

3.30.2. The Contractor will protect from damage all existing improvements or utilities at or near the site of the work, the location of which is made known to him, and will repair or restore any damage to such facilities resulting from failure to comply with the requirements of this Contract or the failure to exercise reasonable care in the performance of the Work. If the Contractor fails or refuses to repair any such damage promptly, the Owner may have the necessary work performed and charge the cost thereof to the Contractor.

3.30.3. The Contractor shall enclose the trunks of trees adjacent to his work and not to be cut, with substantial wooden boxes of such height as may be necessary to protect them from injury from piled material, from equipment, from his operation, or otherwise due to his work. Excavating machinery and cranes shall be of suitable type and shall be operated with care to prevent injury to trees not to be cut and particularly to overhanging branches and limbs.

3.30.4. On paved surfaces, the Contractor shall not use or operate tractors, bulldozers or other power-operated equipment, the treads or wheels of which are so shaped as to cut or otherwise injure such surfaces.

3.31. RESTORATION OF PROPERTY: All existing surfaces, including lawns, grassed and planted areas which have been injured by the Contractor's operations, shall be restored to a condition at least equal to that in which they were found immediately before work was begun. Suitable materials and methods shall be used for such restoration. All restored plantings shall be maintained by cutting, trimming, fertilizing, etc., until acceptance. The restoration of existing property or structures shall be done as promptly as practicable and shall not be left until the end of construction period.

3.32. INTERFERENCE WITH AND PROTECTION OF STREETS:

3.32.1. The Contractor shall not close or obstruct any portion of a street, road, or private way without obtaining permits therefor from the proper authorities. If any street, road or private way shall be rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the proper authorities.

3.32.2. Streets, roads, private ways, and walks not closed shall be maintained passable and safe by the Contractor, who shall assume and have full responsibility for the adequacy and safety of provisions made therefor.

3.32.3. The Contractor shall, at least 24 hours in advance, notify the highway, police and fire departments in writing, with a copy to the Engineer, if the closure of a street or road is necessary. He shall cooperate with the police department in the establishment of alternate routes and shall provide adequate detour signs, plainly marked and well lighted, in order to minimize confusion.

3.33. TRAFFIC CONTROL: Where control of traffic is required for public safety, the Contractor shall provide an adequate number of flagmen employed at his own expense.

3.34. CONSTRUCTION DRAINAGE:

3.34.1. The Contractor shall furnish all labor, materials and necessary equipment for the temporary control of surface water and seepage water during construction and keep all excavations, pits and trenches free from water at all times.

3.34.2. The Contractor shall furnish and operate pumps and other equipment required. Dikes and ditches shall be constructed around excavations and elsewhere as necessary to prevent surface water from flooding the excavations or standing in areas adjacent to excavations, in work areas or in material storage areas. The Contractor shall take all necessary precautions to protect adjacent areas and properties at points other than that which would be considered the natural flow, prior to construction, without the expressed consent of the Owner in writing with a copy to the Engineer. He shall take steps to prevent the erosion of soil, earth and other material and the conduction of the eroded materials onto adjacent properties and shall be responsible for the removal of such materials and the restoration of adjacent areas to their original condition.

3.35. RETURN OF DRAWINGS: All copies of Drawings, Specifications and other Documents furnished by the Owner or the Engineer to the Contractor may be used only in connection with the prosecution of the Work and shall be returned by the Contractor upon completion of the Work.

3.36. SITE INVESTIGATION: The Contractor acknowledges that he has investigated and satisfied himself as to the conditions affecting the Work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, water table, tides or similar physical conditions at the site, the confirmation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the Work. The Contractor further acknowledges that he has satisfied himself as to character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Owner, as well as from information presented by the Drawings and Specifications made a part of this Contract. Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner.

3.37. SOIL EROSION AND SEDIMENT CONTROL: The Contractor's attention is directed to the fact that unless exposed earth areas are properly cared for during construction, they may result in substantial sedimentation damage downstream from the construction area. The Contractor shall be responsible for conducting his site grading and drainage operations in such manner as to prevent excessive soil erosion of the construction site work areas. He shall at all times provide satisfactory means to prevent the movement and washing of soil onto pavements or into adjacent ditches, swales, inlets, and drainage pipes, to avoid the possibility of these structures becoming clogged with soil. He shall promptly repair all areas which may become eroded and shall clear drainage ditches, swales, and structures of siltation. The Contractor will indemnify and save harmless the Owner and Engineer from and against any and all claims, demands, fines, or assessments, including attorneys' fees and cost of defense arising out of or caused by the Contractor's failure to provide soil erosion and sediment control.

3.38. SUBSURFACE CONDITIONS: The Contractor shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the Owner by Written Notice of:

3.38.1.a. Subsurface or latent physical conditions of the site differing materially from those indicated in the Contract Documents.

3.38.1.b. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents.

3.38.2. The Owner shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the Work, an equitable adjustment shall be made and the Contract

Documents shall be modified by Change Order. Any claim of the Contractor for adjustment hereunder shall not be allowed unless he has given the required Written Notice; provided that the Owner may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

3.39. SUBCONTRACTING:

3.39.1. The Contractor may utilize the services of specialty Subcontractors on those parts of the Work which, under normal contracting practices, are performed by specialty Subcontractors. The Contractor shall, without additional expense to the Owner, utilize the services of specialty subcontractors on those parts of the work which are specified to be performed by specialty subcontractors.

3.39.2. The Contractor shall not award any work to any subcontractor without prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Owner may require. No request for payment will be approved before this list has been received and reviewed by the Owner.

3.39.3. The Contractor shall not award Work to Subcontractor(s), in excess of 50 percent of the Contract Price, without prior written approval of the Owner.

3.39.4. The Contractor shall be fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts or omissions of persons directly employed by him.

3.39.5. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind Subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the Work of Subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provisions of the Contract Documents.

3.39.6. If any other contractor or any subcontractor of any such other contractor shall suffer or claim to have suffered loss, damage or delay by reason of the acts or omissions of the Contractor or of any of his subcontractors, the Contractor agrees to assume the defense against any such claim and to reimburse such other contractor or subcontractor for such loss or damage. The Contractor agrees to and does hereby indemnify and save harmless the Owner from and against any and all claims by such other contractors or subcontractors alleging such loss, damage or delay and from and against any and all claims, demands, costs and expenses, including attorneys' fees, arising out of, relating to or resulting from such claims.

3.39.7. The Contractor shall be responsible for the coordination of the trades, subcontractors, and material men engaged upon his work. The Owner or Engineer will not undertake to settle any differences between the Contractor and his subcontractors or between subcontractors. If any Subcontractor on the project, in the opinion of the Engineer, proves to be incompetent or otherwise unsatisfactory, he shall be replaced if and when directed in writing.

3.40. SUPERVISION:

3.40.1. The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Owner. The superintendent shall not be changed except with the consent of the Owner, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. Important directions shall be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request in each case. The Owner shall not be responsible for the acts or omissions of the superintendent or his assistants.

3.40.2. The Contractor shall give efficient supervision to the Work, using his best skill and attention. He shall carefully study and compare all Drawings, Specifications and other instructions and shall at once report to the Owner any error, inconsistency or omission which he may discover.

3.41. TAXES: The Contractor shall promptly pay federal, state and local taxes which may be assessed against him in connection with the work or his operations under the Agreement and/or the other Contract Documents, including, but not limited to, taxes attributable to the purchase of materials and equipment, to the performance of services, and the employment of persons in the prosecution of the work.

3.42. TEMPORARY HEAT:

3.42.1. The Contractor shall provide temporary heat whenever necessary to protect all Work and materials against injury from dampness and cold and to dry out moisture from the building. Fuel, equipment and method of heating shall be satisfactory to the Owner's Insurer and the Engineer.

3.42.2. Temporary heating apparatus shall be installed and operated in such a manner that finished work will not be damaged thereby.

3.43. SANITARY FACILITIES: The Contractor shall provide adequate sanitary facilities for the use of those employed on the Work. Such facilities shall be made available when the first employees arrive on the site of the Work, shall be properly secluded from public observations, and shall be constructed and maintained during the progress of the Work in suitable numbers and at such points and in such manner as may be required or approved. The Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He shall rigorously prohibit the committing of nuisances on the site of the work, on the lands of the Owner, or on adjacent property. The Owner and the Engineer shall have the right to inspect such facilities at all times to determine whether or not they are being properly and adequately maintained.

3.44. TEMPORARY UTILITIES:

3.44.1. The Contractor shall make arrangements for and furnish as a part of the Contract, all electricity, water, lighting and other utilities needed to do the Work called for by the Contract. Any separate contractors having a contract with the Owner shall make arrangements for and

share the cost with the Contractor for the use of the required utilities on a pro rated schedule based on an agreed basis. All Electrical Work shall comply with the National Electrical Code.

3.44.2. The Contractor shall provide and pay for all temporary wiring, switches, connections and meters.

3.44.3. The Contractor shall provide sufficient electric lighting so that all work may be done in a workmanlike manner when there is not sufficient daylight.

3.45. UNCOVERING AND CORRECTION OF WORK:

3.45.1. The Engineer shall be furnished by the Contractor with every reasonable facility for examining and inspecting the work and for ascertaining that the work is being performed in accordance with the requirements and intent of the Contract, even to the extent of requiring the uncovering or taking down of portions of finished work by the Contractor.

3.45.2. Should the work thus uncovered or taken down prove satisfactory, the cost of uncovering or taking down and the replacement thereof shall be considered as extra work unless the original work was done in violation of the Contract in point of time or in the absence of the Engineer or his inspector and without his written authorization, in which case said cost shall be borne by the Contractor. Should the work uncovered or taken down prove unsatisfactory, said cost shall likewise be borne by the Contractor.

3.45.3. The inspection of the work shall not relieve the Contractor of any of his obligations to perform and complete the work as required by the Contract. Defective work shall be corrected and unsuitable materials, equipment, apparatus and other items shall be replaced by the Contractor, notwithstanding that such work, materials, equipment, apparatus and other items may have been previously overlooked or accepted or estimated for payment. If the work or any part thereof shall be found defective at any time before the final acceptance of the work, the Contractor shall forthwith make good such defect in a manner satisfactory to the Engineer; if any materials, equipment, apparatus or other items brought upon the site for use or incorporation in the work, or selected from the same, are condemned by the Engineer as unsuitable or not in conformity with the Specifications or any of the other Contract Documents, the Contractor shall forthwith remove such materials, equipment, apparatus and other items from the site of the work and shall at his own cost and expense make good and replace the same and any material furnished by the Owner which shall be damaged or rendered defective by the handling or improper installation by the Contractor, his agents, servants, employees or subcontractors.

3.45.4. If the Owner deems it inexpedient to correct work injured or done not in accordance with the Contract, an equitable deduction from the Contract Price shall be made therefor.

3.46. COOPERATION WITH UTILITIES:

3.46.1. The Owner will notify all utility companies, all pipe line owners, or other parties affected, and endeavor to have all necessary adjustments of the public or private utility fixtures, pipe lines, and other appurtenances within or adjacent to the limits of construction, made as soon as practicable.

3.46.2. Water lines, gas lines, wire lines, sewer lines, water and gas meter boxes, water and gas valve boxes, manholes, light standards, cableways, signals, and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted are to be moved by the Owners under separate agreement, except as otherwise provided for in the Supplemental Conditions or as noted on the Drawings.

3.46.3. The Drawings will show all known utilities located within the limits of the contract according to information obtained. The accuracy of the Drawings in this respect is not guaranteed by the Owner. The Contractor shall have considered in his bid all of the permanent and temporary utility appurtenances in their present or relocated position. No additional compensation will be allowed for any delays, inconveniences, or damages sustained by him due to any interference from the said utility appurtenances or the operation of moving them.

3.46.4. Unless otherwise provided, the cost of temporary rearrangement of utilities made only in order to facilitate the construction of the work will be borne by the Contractor.

3.47. VERIFICATION OF DIMENSIONS AND ELEVATIONS:

3.47.1. Dimensions and elevations indicated on the Drawings in reference to existing structures, location of utilities, sewer inverts, or other information on existing facilities, are the best available data obtainable but are not guaranteed by the Engineer. The Engineer will not be responsible for their accuracy. Before proceeding with any work dependent upon the data involved, the Contractor shall field check and verify all dimensions, grades, inverts, lines, elevations, or other conditions of limitations at the site of the work to avoid construction errors or damage to existing facilities. If any work is performed by the Contractor, or any subcontractors, prior to adequate verification of applicable data, any resultant extra cost for adjustment of work necessary to conform to existing facilities, shall be assumed by the Contractor without reimbursement or compensation by the Owner.

3.47.2. If the Contractor, in the course of the work, finds any discrepancy between the Drawings and the physical conditions of the locality, or any errors or omissions in the Drawings or in the layout as given by survey points and instructions, he shall immediately inform the Engineer, in writing. The Engineer will promptly investigate the reported conditions and issue such instructions as may be necessary for the proper execution of the work. Any work done after such discovery and prior to receipt of such instructions shall be at the risk of the Contractor.

4. MATERIALS, EQUIPMENT AND WORKMANSHIP

4.1. CHEMICAL USAGE: All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either EPA or U.S.D.A. The use of all such chemicals and disposal of residues shall be in strict conformance with manufacturer and U.S.D.A. instructions.

4.2. TITLE TO MATERIALS: No materials or supplies for the Work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him, in the Work, free from all liens, claims or encumbrances.

4.3. CORRECTION OF WORK BEFORE COMPLETION:

4.3.1. The Contractor shall promptly remove from the premises all work condemned by the Owner as failing to conform to the Contract Documents, whether incorporated or not and the Contractor shall promptly replace and re- execute his own work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement. The fact that the Engineer may have previously overlooked such defective work shall not constitute an acceptance of any part of it.

4.3.2. If the Contractor does not remove such condemned work within a reasonable time, fixed by written notice, the Owner may remove it, and after storing it at the job site for 30 days, due written notice thereof being given the Contractor, the Owner may offer the material for sale and removal from the premises. Net proceeds from such sale shall be for the Contractor's credit against the "Owner's Right to Do Work". If the material has no sale value, the Owner may remove it from the premises and/or otherwise dispose of it. The costs of such disposition shall be deducted from payments to the Contractor as provided in Subsection 2.10 entitled OWNER'S RIGHT TO DO WORK.

4.4. CORRECTION OF WORK AFTER COMPLETION: The Contractor shall remedy any defects due to faulty materials or workmanship and pay for any damage to other work resulting therefrom which shall appear within a period of one year from the date of final acceptance of the work except where longer periods are specified and in accordance with the terms of any special guarantees provided in the Contract.

4.5. CORRECTIONS OF WORK AFTER GUARANTEE PERIOD: It shall be the responsibility of the Contractor to permanently correct all defective items called to his attention within the guarantee period, whether such correction be made within the guarantee period or not. The Contract shall not be fully performed until such permanent corrections are made.

4.6. GENERAL GUARANTY:

4.6.1. The Contractor warrants to the Owner that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not so conforming to these standards may be considered defective. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

4.6.2. Neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work, except where longer periods are specified. If the Contractor shall fail to repair, replace, rebuild or restore such defective or damaged work or equipment promptly after receiving notice,

the Owner shall have the right to have the work done by others in the same manner as is provided for in Subsection 2.10, OWNER'S RIGHT TO DO WORK.

4.6.3. The Contractor shall further guarantee for a period of 24 months that any building or buildings, constructed under this Project, shall be watertight and leak proof at every point and in every area, except where leaks can be attributed to damage to the building by external forces other than storm or foundation settlement. He shall, immediately upon notification by the Owner of water penetration, determine the source of water penetration and, at his own expense, do any work necessary to make the building watertight. He shall also, at his own expense, repair or replace any other damaged material to return the building or buildings to the original accepted condition.

4.6.4. In addition to the foregoing stipulations, the Contractor shall comply with all other guarantees and warranties referred to in any portions of the Contract Documents, the more stringent requirement governing. Unless otherwise specifically stated elsewhere in these Specifications, the date of beginning of all guarantee or warranty periods shall be the date of acceptance of the project.

4.6.5. If for any reason, the Contractor cannot guarantee any part of his work using material or construction methods which have been specified, or shown, he shall notify the Engineer in writing before Contracts are signed, giving reasons together with the name of product and data on substitutions he can guarantee. Should the Contractor fail to so notify the Engineer prior to the signing of Contracts, he will be held to have agreed to guarantee all Work specified or shown.

4.7. HANDLING AND DISTRIBUTION:

4.7.1. The Contractor shall handle, haul and distribute all materials and all surplus materials on the different portions of the work as necessary or required; shall provide suitable and adequate storage room for materials and equipment during the progress of the work, and be responsible for the protection, loss of, or damage to materials and equipment furnished by him, until the final completion and acceptance of the work.

4.7.2. Storage and demurrage charges by transportation companies and vendors shall be borne by the Contractor.

4.8. MANUFACTURER'S DIRECTIONS:

4.8.1. All manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturers, unless herein specified to the contrary.

4.8.2. If the specifications or plans are contrary to the manufacturer's directions, the manufacturer shall be contacted by the Contractor before proceeding with the work and the Engineer advised if the manufacturer has any objections to the specified application.

4.9. MATERIALS, SERVICES AND FACILITIES:

4.9.1. It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all labor, supplies and materials, tools, machinery, equipment, transportation, supervision, temporary construction of any nature, and all other services, means and facilities of any nature whatsoever necessary to execute, complete, and deliver the Work within the specified time.

4.9.2. Materials and equipment shall be so stored as to ensure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.

4.9.3. Materials, supplies and equipment shall be in accordance with samples submitted by the Contractor and approved by the Engineer.

4.10. MISCELLANEOUS ITEMS:

4.10.1. The work to be done by the Contractor, specified and enumerated under this Contract, shall include any minor details of the Work not specifically mentioned in the Specifications or shown on the Drawings, but obviously necessary for the proper completion of the Work, which shall be considered incidental and as being a part of and included with the Work for which prices are given in the Bid. The Contractor will not be entitled to any additional compensation therefor.

4.10.2. Miscellaneous items and accessories which are not specifically mentioned, but which are essential to produce a complete and properly operating installation or usable structure or plant, providing the indicated function, shall be furnished and installed without change in the contract price. Such miscellaneous items and accessories shall be of the same quality standards, including material, style, finish, strength, class, weight and other applicable characteristics as specified for the major component of which the miscellaneous item or accessory is an essential part, and shall be approved by the Engineer before installation. The above requirement is not intended to include major components not covered by or inferable from the Drawings and Specifications.

4.10.3. MISTAKES OF CONTRACTOR: The Contractor shall promptly correct and make good any and all defects, damages, omissions, or mistakes, for which he and/or his agents, servants, employees or subcontractors are responsible, and he shall pay to the Owner all costs, expenses, losses, and damages resulting therefrom or by reason thereof as determined by the Engineer.

4.11. PROTECTION AGAINST ELECTROLYSIS: Where dissimilar metals are used in conjunction with each other, or against concrete surfaces, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or other approved materials.

4.12. RIGHT TO MATERIALS: Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials, equipment, apparatus and other items furnished after they have been installed or incorporated in or attached or affixed to the work or the site, but all such materials, equipment, apparatus and other items shall, upon being so installed, incorporated, attached or affixed, become the property of the Owner.

4.13. ROYALTIES AND PATENTS: The Contractor shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular process or the product of a particular manufacturer or manufacturers is specified, but if the Contractor has information that the process or article specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner in writing.

4.14. SUBMITTAL SCHEDULE:

4.14.1. Within 20 days after execution and delivery of the Contract, the Contractor shall prepare and deliver to the Engineer a Submittal Schedule. This includes a list of all submittals required under the Contract. The list shall identify each major group of shop drawings, coordination drawings and schedules and each sample and the planned submission date for each.

4.14.2. After the Engineer's review of the list of submittals, the Engineer will meet with the Contractor for a joint review and correction and adjustment, as necessary, for agreement on the submittal. In addition, at the meeting the duration of the review period for each submittal will be established. The Contractor's planned submission date for each submittal shall allow no less than 15 working days for review and appropriate action before approval of the submittal becomes critical to the progress of the Contractor's work. Within five calendar days after the joint review, the Contractor shall make any necessary revisions to the list of submittals, including duration of the review periods, in accordance with the agreements reached during the joint review and submit two revised copies to the Engineer. No application for partial payment will be approved until the submitted schedule is approved.

4.15. SHOP DRAWINGS:

4.15.1. Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by the Contractor or any Subcontractor, manufacturer, supplier or distributor, and which illustrate some portion of the Work. It shall be the Contractor's responsibility to furnish Shop Drawings as required by the technical specifications or as requested by the Engineer. These submittals must be made no later than is required by the submittal schedule.

4.15.2. Shop Drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for the contract.

4.15.3. When so specified or if considered by the Engineer to be acceptable, manufacturer's specifications, catalog data, descriptive manner, illustrations, etc., may be submitted for approval in place of shop and working drawings. In such case the requirements shall be as specified for shop and working drawings, insofar as applicable except that the submission shall be in quadruplicate.

4.15.4. The Contractor shall be responsible for the prompt and timely submittal of all shop and working drawings so that there shall be no delay to the work due to the absence of such drawings.

4.15.5. The Contractor shall check the Shop Drawings, shall coordinate them (by means of coordination drawings wherever required) with the work of all trades involved before submission and shall indicate thereon his approval. Drawings and schedules submitted without evidence of the Contractor's approval may be returned for resubmission.

4.15.6. By approving and submitting Shop Drawings, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated each Shop Drawing with the requirements of the Work and of the Contract Documents.

4.15.7. If drawings or schedules show variations from the contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, the Engineer may approve any or all such variations and issue an appropriate change order. If the Contractor fails to describe such variations he shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such drawings or schedules may have been approved.

4.15.8. Each Shop Drawing or Coordination Drawing shall have a blank area 5 by 5 inches located adjacent to the title block. The title block shall display the following:

- (1) Number and Title of Drawing
- (2) Date of Drawing
- (3) Revision number and date (if applicable)
- (4) Project Title
- (5) Name of project building or facility
- (6) Name of Contractor
- (7) Name of Subcontractor (if applicable)
- (8) Clear identity of contents and location of work

4.15.9. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Drawings and Specifications in all respects. All drawings which are correct shall be marked with the date, checker's name, and indication of the Contractor's approval, and then shall be submitted to the Engineer; other drawings shall be returned for correction.

4.15.10. The Contractor shall stamp all drawings which are to be submitted to the Engineer for approval. The rubber stamp shall incorporate the following items:

PROJECT TITLE Walterboro Fountain Plaza Improvements

CONTRACTOR'S NAME _____

APPROVED BY _____ DATE _____

SPECIFICATION SECTION _____ TRANSMITTAL NO. _____

4.15.11. The review of Shop Drawings will be general only and shall not relieve or in any respect diminish the responsibility of the Contractor for details of design, dimensions, etc., necessary for proper fitting and construction of the work as required by the Contract and for achieving the result and performance specified thereunder.

4.15.12. Should the Contractor submit for approval equipment that requires modifications to the structures, piping, layout, etc., detailed on the Drawings, he shall also submit for approval details of the proposed modifications. If such equipment and modifications are approved, the Contractor, at no additional cost to the Owner, shall do all work necessary to make such modifications. Required structural changes shall be designed and detailed by an Engineer registered in the state in which the project will be constructed. Drawings shall be signed and show registration numbers or may have seal affixed.

4.15.13. Submission of Shop Drawings shall be accompanied by a copy of a transmittal letter containing Project name, Contractor's name, number of drawings, titles, specifications section, and other pertinent data. The submittal shall include four (4) legible copies of Shop Drawings or printed matter

4.15.14. The review of Shop Drawings will be performed by the Engineer as follows:

4.15.14.a. When the submittal conforms fully with the Contract Drawings and Specifications, the Engineer will approve it. The reproducible of each drawing or page of approved submittals will be stamped approved, signed, dated and returned to the Contractor. No changes shall be made to approved drawings by the Contractor. If the Contractor desires to make any change from approved drawings, or pages of approved submittals, he shall notify the Engineer in writing that the approved material has been withdrawn and shall submit the substitution set in accordance with the above procedure.

4.15.14.b. When the submittal clearly does not conform with the Contract Drawings and Specifications, the Engineer will disapprove it by stamping it "Rejected". Rejected submittals shall be corrected and resubmitted within 14 calendar days from the date of rejection. Submittals that are rejected shall not be released for any work.

4.15.14.c. When the submittal has only minor deviations from the Contract Drawings and Specifications, the Engineer will note the deviations and omissions as may be appropriate and approve the submittal subject to the notations by stamping it "Approved as Noted". Approved as Noted submittals may be released for fabrication of work at the Contractor's risk; in any event the submittal shall be corrected and resubmitted for approval within 14 calendar days from the date of approval as noted.

4.15.15. The Contractor shall be responsible for delays resulting from the rejection or approval as noted of incomplete, inadequate, incorrect or otherwise unacceptable submittals.

4.15.16. The Contractor shall assure that only drawings and pages of printed material bearing the Engineer's "Approved" stamp are allowed on the job site.

4.15.17. The Contractor shall submit, at the completion of the Project, one set of all reviewed and correct shop drawings, catalog cuts, and descriptive literature for all Work previously

submitted. These sets shall be sent to the Engineer for the Owner before final Certificate of Payment is issued.

4.16. OPERATING AND MAINTENANCE MANUALS: One copy of each required Operating and Maintenance Manual must be submitted to the Engineer with the first submittal of shop drawings. Five additional copies of each required Operating and Maintenance Manual must be submitted to the Engineer within 14 days of the return of approved shop drawings to the Contractor. No payment will be approved on any equipment for received by the Engineer. These O&M manuals must be addressed specifically to the piece of equipment supplied and shall not be general in nature; each item must be clearly identified and located. Each page must be printed on 8-1/2" x 11" paper or folded to that size in a manner suitable for insertion in a 3-ring binder.

4.17. SAMPLES:

4.17.1. Samples are physical examples furnished by the Contractor to illustrate materials, equipment or workmanship, and to establish standards by which the Work will be judged. It shall be the Contractor's responsibility to furnish samples as required by the technical specifications or as required by the Engineer. These samples must be submitted no later than is required by the Submittal Schedule.

4.17.2. Each sample shall have a label indicating:

- (1) Project Title
- (2) Name of project building or facility
- (3) Name of Contractor
- (4) Name of Subcontractor (if applicable)
- (5) Identification of material with specification section
- (6) Name of producer and brand (if any)

4.17.3. Samples shall be submitted in duplicate unless otherwise noted in the technical specifications and shall be accompanied by a copy of a transmittal letter containing Project Name, Contractor's Name, number of samples, specification section and other pertinent data.

4.17.4. If the Engineer so requires, either prior to or after commencement of the work, the Contractor shall submit samples of materials for such special tests as the Engineer deems necessary to demonstrate that they conform to the Specifications. Such samples shall be furnished, taken, stored, packed and shipped by the Contractor as directed. Except as otherwise expressly specified, the Contractor shall make arrangements for, and pay for, the tests.

4.17.5. All samples shall be packed so as to reach their destination in good condition. To ensure consideration of samples, the Contractor shall notify the Engineer by letter that the samples have been shipped and shall properly describe the samples in the letter. The letter of notification shall be sent separate from and should not be enclosed with the samples.

4.17.6. The Contractor shall submit data and samples, or place his orders, sufficiently early to provide ample time for consideration, inspection, testing, and approval before the materials and equipment are needed for incorporation in the work. The consequences of his failure to do so shall be the Contractor's sole responsibility.

4.17.7. In order to demonstrate the proficiency of workmen, or to facilitate the choice among several textures, types, finishes, surfaces, etc., the Contractor shall provide such samples of workmanship of wall, floor, finish, etc., as may be required.

4.17.8. When required, the Contractor shall furnish to the Engineer triplicate sworn copies of manufacturer's shop or mill tests (or reports from independent testing laboratories) relative to materials, equipment performance ratings, and concrete data.

4.18. STORAGE OF MATERIALS AND EQUIPMENT: All excavated materials, construction equipment, and materials and equipment to be incorporated in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work. Materials and equipment shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.

4.19. INSPECTION AND TESTING:

4.19.1. All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents.

4.19.2. The General Contractor shall provide all inspection and testing services not required by the Contract Documents.

4.19.3. The Contractor shall provide at his expense the testing and inspection services required by the SCDOT and the Contract Documents.

4.19.4. If the Contract Documents, laws, ordinance, rules, regulations or orders of any public authority having jurisdiction require any Work to specifically be inspected, tested, or approved by someone other than the Contractor, the Contractor will give the Engineer timely notice of readiness. The Contractor will then furnish the Engineer the required certificates of inspection, testing or approval.

4.19.5. Inspections, tests, or approvals by the Engineer or others shall not relieve the Contractor from his obligations to perform the Work in accordance with the requirements of the Contract Documents.

4.19.6. The Engineer and his representatives will at all times have access to the Work. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, an other relevant data and records. The Contractor will provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.

4.19.7. If any Work is covered contrary to the written instructions of the Engineer it must, if requested by the Engineer, be uncovered for his observation and replaced at the Contractor's expense.

4.19.8. If the Engineer considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at the Engineer's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Engineer may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

4.20. SUBSTITUTIONS:

4.20.1. The Contractor may recommend the substitution of a material, article, or piece of equipment of equal function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the Engineer, such material, article, or piece of equipment is of equal function to that specified, the Engineer may approve its substitution and use by the Contractor. Any cost differential shall be deductible from the Contract Price and the Contract Documents shall be appropriately modified by Change Order.

4.20.2. The Contractor warrants that if substitutes are approved, no major changes in the function or general design of the Project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time.

4.21. "OR EQUAL" CLAUSE:

4.21.1. The phrase "or equal" shall be construed to mean that material or equipment will be acceptable only when in the judgement of the Engineer they are composed of parts of equal quality, or equal workmanship and finish, designed and constructed to perform or accomplish the desired result as efficiently as the indicated brand, pattern, grade, class, make or model.

4.21.2. Whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard of quality and function; and, any material, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed, is, in the opinion of the Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.

4.22. WAGES AND OVERTIME COMPENSATION: The Contractor and each of his subcontractors shall comply with all applicable State and local laws or ordinances with respect to the hours worked by laborers and mechanics engaged in work on the project and with respect to compensation for overtime.

4.23. NO WAIVER: Neither the inspection by the Owner or the Engineer, nor any order, measurement, approval, determination, decision or certificate by the Engineer, nor any order by

the Owner for the payment of money, nor any payment for or use, occupancy, possession or acceptance of the whole or any part of the work by the Owner, nor the extension of time, nor any other act or omission of the Owner or of the Engineer shall constitute or be deemed to be an acceptance of any defective or improper work, materials, or equipment nor operate as a waiver of any requirement or provision of the Contract, or of any remedy, power or right of or herein reserved to the Owner, nor of any right to damages for breach of contract. Any and all rights and/or remedies provided for in the Contract are intended and shall be construed to be cumulative; and, in addition to each and every other right and remedy provided for herein or by law, the Owner shall be entitled as of right to a writ of injunction against any breach or threatened breach of the Contract by the Contractor, by his Subcontractors or by any other person or persons.

4.24. **WORK TO CONFORM:** During its progress and on its completion, the work shall conform truly to the lines, levels, and grades indicated on the Drawings or given by the Engineer and shall be built in a thoroughly substantial and workmanlike manner, in strict accordance with the Drawings, Specifications, and other Contract Documents and the directions given from time to time by the Engineer. All work done without instruction having been given therefor by the Engineer, without prior lines or levels, or performed during the absence of the Engineer, will not be estimated or paid for except when such work is authorized by the Engineer in writing. Work so done may be ordered uncovered or taken down, removed, and replaced at the Contractor's expense.

4.25. **WORKING HOURS:**

4.25.1. It is contemplated that all work will be performed during the customary working hours of the trades involved unless otherwise specified in this Contract. Work performed by the Contractor at his own volition outside such customary working hours shall be at no additional expense to the Owner.

4.25.2. Any requests received by the Contractor from occupants of existing buildings to change the hours of work shall be referred to the Owner for determination.

5. **INSURANCE, LEGAL RESPONSIBILITY AND SAFETY**

5.1. **LITIGATION OF DISPUTES; JURISDICTION:** The Owner and Contractor agree that this Contract shall be interpreted according to the Laws of the State of South Carolina, and that the appropriate forum and jurisdiction for resolving any disputes and claims shall be the South Carolina Court of Common Pleas for Colleton County.

5.2. **ASSIGNMENTS:** The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of the Owner. In case the Contractor assigns all or any part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms, and corporations for services rendered or materials supplied for the performance of the work called for in this contract.

5.3. PERFORMANCE BOND AND PAYMENT BOND: Unless otherwise noted in the Supplemental Conditions, a Performance Bond and a Payment Bond are required. The Contractor shall obtain a Performance Bond and Payment Bond, acceptable to the Owner in a surety company authorized to do business in the state in which the Project is constructed, each for the full amount of the Contract Sum. The bonds shall guarantee the Contractor's faithful performance of the Contract and the payment of all obligations arising thereunder. The bonds shall remain in force until:

5.3.1. The Project has been completed and accepted by the Owner.

5.3.2. The provisions of all guarantees required by these Contract Documents have been fulfilled or the time limitation for all guarantees has expired, or

5.3.3. The time for the filing of all mechanics' liens has expired, whichever is longer, after which it shall become void.

5.3.4. The Contractor shall pay all charges in connection with the bonds as a part of the Contract. One executed copy of the bonds shall be attached to each copy of the Contract before they are returned to the Engineer for the Owner's signature.

5.3.5. If the Contractor defaults, the Contractor or his Surety shall reimburse the Owner for any additional Engineering fees for additional services made necessary because of the Contractor's default.

5.4. ADDITIONAL OR SUBSTITUTE BOND: If at any time the Owner for justifiable cause, shall be or become dissatisfied with the surety or sureties for the Performance and/or Payment Bonds, the Contractor shall within 5 days after notice from the Owner to do so, substitute an acceptable bond (or bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the Owner. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished such an acceptable bond to the Owner.

5.5. CHANGES NOT TO AFFECT BONDS: It is distinctly agreed and understood that any changes made in the Work or the Drawings or Specifications therefor (whether such changes increase or decrease the amount thereof or the time required for its performance) or any changes in the manner or time of payments made by the Owner to the Contractor, or any other modifications of the Contract, shall in no way annul, release, diminish or affect the liability of the Surety on the Contract Bonds given by the Contractor, it being the intent hereof that notwithstanding such changes the liability of the Surety on said bonds continue and remain in full force and effect.

5.6. COMPLIANCE WITH LAWS:

5.6.1. The law of the place where the Project is located shall govern the Contract. The Contractor shall abide by all local and State Laws or ordinances to the extent that such requirements do not conflict with Federal laws or regulations. The Contractor shall keep himself fully informed of all existing and future Federal, State and local laws, ordinances, rules and regulations affecting those engaged or employed on the work, the materials and equipment used

in the work or the conduct of the work, and of all orders, decrees and other requirements of bodies or tribunals having any jurisdiction or authority over the same, including, but not limited to the U. S. Department of Labor and Bureau of Standards Safety and Health Regulations for Construction and its amendments as set up under the Williams-Steiger Occupational Safety and Health Act of 1970. If any discrepancy or inconsistency is discovered in the Drawings, Specifications or other Contract Documents in relation to any such law, ordinance, rule, regulation, order, decree or other requirement, the Contractor shall forthwith report the same to the Engineer in writing.

5.6.2. The Contractor shall at all times observe and comply with, and cause all his agents, servants, employees, and subcontractors to observe and comply with all such existing requirements, and he shall protect, indemnify and save harmless the Owner, its officers, agents, servants, and employees, from and against any and all claims, demands, suits, proceedings, liabilities, judgements, penalties, losses, damages, costs and expenses, including attorney's fees, arising from or based upon any violation or claimed violation of any such law, ordinance, rule, regulations, order, decree, or other requirement, whether committed by the Contractor or any of his agents, servants employees, or subcontractors.

5.7. REQUIRED PROVISIONS DEEMED INSERTED: Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein. If through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the Contract shall forthwith be physically amended to make such insertion or correction.

5.8. LIENS: If at any time any notice of liens are filed for labor performed or materials or equipment manufactured, furnished, or delivered to or for the Work, the Contractor shall, at its own cost and expense, promptly discharge, remove or otherwise dispose of the same, and until such discharge, removal or disposition, the Owner shall have the right to retain from any monies payable hereunder an amount which, in its sole judgement, it deems necessary to satisfy such liens and pay the costs and expenses, including attorney's fees, of defending any actions brought to enforce the same, or incurred in connection therewith or by reason thereof.

5.9. CLAIMS: If at any time there be any evidence of any claims for which the Contractor is or may be liable or responsible hereunder, the Contractor shall promptly settle or otherwise dispose of the same, and until such claims are settled or disposed of, the Owner may retain from any monies which would otherwise be payable hereunder so much thereof as, in its judgement, it may deem necessary to settle or otherwise dispose of such claims and to pay the costs and expenses, including attorneys' fees, of defending any actions brought to enforce such claims, or incurred in connection therewith or by reason thereof.

5.10. INSURANCE:

5.10.1. The Contractor shall not commence any work until he obtains, at his own expense, all required insurance. Such insurance must have the approval of the Owner as to limit, form, and amount. The Contractor will not permit any Subcontractor to commence work on this project until such Subcontractor has complied with the same insurance requirements.

5.10.2. The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except after 10 days notice in writing and delivered by registered mail to the Owner." Should any policy be canceled before final payment by the Owner to the Contractor and the Contractor fails immediately to procure other insurance as specified, the Owner reserves the right to procure such insurance and to deduct the cost thereof from any sum due the Contractor under this Contract.

5.10.3. Any insurance bearing on adequacy of performance shall be maintained after completion of the project for the full guaranty period. Should such insurance be canceled before the end of the guaranty period and the Contractor fails immediately to procure other insurance as specified, the Owner reserves the right to procure such insurance and to charge the cost thereof to the Contractor.

5.10.4. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from his operations under this Contract.

5.10.5. The Contractor is required to obtain and maintain for the full period of the Contract the following types of insurance coverage with limits not less than stated below:

5.10.6. WORKMEN'S COMPENSATION INSURANCE

As required by applicable State or territorial law for all of his employees to be engaged in work at the site of the project under this Contract and, in case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workmen's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this Contract is not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.

5.10.7 COMPREHENSIVE GENERAL LIABILITY

	<u>Bodily Injury Per Person</u>	<u>Bodily Injury Per Accident</u>	<u>Property Damage</u>
Premises and Operations	500,000	1,000,000	500,000
Elevator Liability	500,000	1,000,000	500,000
Products Liability, Including Completed Operations Coverage	500,000	1,000,000	500,000

5.10.8 COMPREHENSIVE AUTOMOBILE LIABILITY

All Owner Automobiles	500,000	1,000,000	500,000
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Non-Owned Automobiles	500,000	1,000,000	500,000
Hired Car Coverage	500,000	1,000,000	500,000

5.10.9 SUBCONTRACTOR'S LIABILITY INSURANCE

Same limits as required of the General Contractor.

5.11. ORAL AGREEMENTS: No oral order, objection, claim or notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the Contract Documents, and none of the provisions of the Contract Documents shall be held to be waived or modified by reason of any act whatsoever, other than by a definitely agreed waiver or modification thereof in writing, and no evidence shall be introduced in any proceeding of any other waiver or modification.

5.12. SAFETY: In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property affected directly or indirectly by his operations during the performance of the work. This requirement will apply continuously 24 hours per day until acceptance of the work by the Owner and shall not be limited to normal working hours.

5.13. The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

5.13.1. All employees on the Work and all other persons who may be affected thereby;

5.13.2. All the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of Subcontractors or Sub-subcontractors; and

5.13.3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

5.14. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

5.15. When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel. The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated in writing by the Contractor to the Owner and the Engineer.

5.16. The Contractor shall not load or permit any part of the Work to be loaded so as to endanger its safety.

6. PROGRESS AND COMPLETION OF WORK

6.1. NOTICE TO PROCEED: Following the execution of the Agreement by the Owner and the Contractor, written Notice to Proceed with the work shall be given by the Owner to the Contractor. The Contractor shall begin and shall prosecute the work regularly and uninterruptedly thereafter (except as provided for herein) with such force as to secure the completion of the work within the Contract Time.

6.2. CONTRACT TIME: The Contractor shall complete, in an acceptable manner, all of the work contracted for in the time stated in the Agreement. Computation of Contract Time shall commence the day to be specified in the Notice to Proceed and every calendar day following, except as herein provided, shall be counted as Contract Time.

6.3. SCHEDULE OF COMPLETION: The Contractor shall submit, at such times as may reasonably be requested by the Engineer, schedules showing the order in which the Contractor proposes to carry on the work, with dates at which the Contractor will start the various parts of the work, and estimated date of completion of each part.

6.4. WORK CHANGES: The Owner may, as the need arises, order changes in the work through additions, deletions, or modifications to the extent of 25 percent of the Contract Amount, without invalidating the Contract. Compensation and time of completion affected by the change shall be adjusted at the time of ordering such change.

6.5. EXTRA WORK: New and unforeseen items of work found to be necessary, and which cannot be covered by an item or combination of items for which there is a Contract Price, shall be classed as Extra Work. The Contractor shall do such Extra Work and furnish such materials as may be required for the proper completion or construction of the whole work contemplated, upon written order from the Owner as approved by the Engineer. In the absence of such written order, no claim for Extra Work shall be considered. Extra Work shall be performed in accordance with these Contract Documents where applicable and work not covered by such shall be done in accordance with the best construction practice and in a workmanlike manner. Extra Work required in an emergency to protect life and property shall be performed by the Contractor as required.

6.6. EXTENSION OF CONTRACT TIME:

6.6.1. A delay beyond the Contractor's control occasioned by an Act of God, by act or omission on the part of the Owner or by strikes, lockouts, fire, etc., may entitle the Contractor to an extension of time in which to complete the work as agreed by the Owner, provided, however, that the Contractor shall immediately give written notice to the Owner of the cause of such delay.

6.6.2. Act of God shall mean an earthquake, flood, cyclone or other cataclysmic phenomenon of nature. Rain, wind, flood, or other natural phenomenon of normal intensity for the locality shall not be construed as an Act of God and no reparation shall be made to the Contractor damages to the work resulting therefrom.

6.6.3. All claims for extension of time shall be made in writing to the Engineer no more than 20 days after the occurrence of the delay; otherwise they shall be waived. In the case of continuing cause of delay only one claim is necessary. Any claim should include complete justification for the extent of the delay claimed.

6.6.4. This Subsection does not exclude the recovery of damages for delay for either party under other provisions of the Contract Documents.

6.7. ENGINEER'S CERTIFICATE OF SUBSTANTIAL COMPLETION: When the work to be performed under this Contract is substantially completed in accordance with the Contract Documents, the Engineer shall prepare an Engineer's Certificate of Substantial Completion to be acknowledged and accepted by the Owner and the Contractor. The Certificate may list items to be completed or corrected but such Certificate shall not relieve the Contractor of his obligation to complete all work, whether listed or not, in accordance with the Contract Documents nor will it preclude any right the Owner may have for recourse in accordance with the Contract Documents.

6.8. TERMINATION OF CONTRACTOR'S RESPONSIBILITY: The Contract will be considered complete when all work has been finished, the final review made up by the Engineer, and the project accepted in writing by the Owner. The Contractor's responsibility shall then cease, except as set forth in his Performance Bond, as provided in Subsection 4.6 entitled GENERAL GUARANTY, and as provided in Subsection 6.9 entitled CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT.

6.9. CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT: The making of the final payment by the Owner to the Contractor shall not relieve the Contractor of responsibility for faulty materials or workmanship. The Contractor shall promptly replace any such defects discovered within one year, except where longer periods are specified, from the date of written acceptance of the work.

6.10. PROGRESS SCHEDULE:

6.10.1. Within 20 days after execution and delivery of the Agreement and not less than 10 days prior to making an application for partial payment, the Contractor shall prepare and deliver to the Engineer a Progress Schedule on forms approved by the Engineer.

6.10.2. The schedule shall be set up in a Critical Path format and shall show the proposed dates of commencement and completion of the various subdivisions of work required under the Contract Documents.

6.10.3. The schedule shall show the dates of commencement and completion of the various subdivisions of work required by the Contract Documents and all activities required to accomplish the work. No activity included in the schedule shall have a duration greater than fifteen (15) days. After approval of the Submit Schedule, the Contractor shall incorporate this schedule into the CPM schedule.

6.10.4. The schedule shall be updated monthly. No progress payments will be made unless application is accompanied by the updated schedule.

6.11. SCHEDULES, REPORTS AND RECORDS:

6.11.1. The Contractor shall submit to the Owner such schedules of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the Contract Documents for the Work to be performed.

6.11.2. The Contractor shall also submit, in a format as approved by the Engineer, a schedule of payments that he anticipates he will earn during the course of the Work.

6.12. ABANDONMENT OF WORK OR OTHER DEFAULT:

6.12.1. If the work shall be abandoned, or any part thereof shall be sublet without previous written consent of the Owner, or the Contract or any monies payable hereunder shall be assigned otherwise than as herein specified, or if at any time the Engineer shall be of the opinion, and shall so certify in writing, that the conditions herein specified as to rate of progress are not being complied with, or that the work or any part thereof is being unnecessarily or unreasonably delayed, or that the Contractor has violated or is in default under any of the provisions of the Contract, or if the Contractor becomes bankrupt or insolvent or goes or is put into liquidation or dissolution, either voluntarily or involuntarily, or petitions for an arrangement or reorganization under the Bankruptcy Act, or makes a general assignment for the benefit of creditors or otherwise acknowledges insolvency, the happening of any of which shall be and constitute a default under the Contract, the Owner may notify the Contractor in writing, with a copy of such notice mailed to the Surety, to discontinue such work or any part thereof; thereupon the Contractor shall discontinue such work or such part thereof as the Owner may designate; and the Owner may, upon giving notice, by contract or otherwise as it may determine, complete the work or such part thereof and charge the entire cost and expense of so completing the work or such part thereof to the Contractor. In addition to the said entire cost and expense of completing the work, the Owner shall be entitled to reimbursement from the Contractor and the Contractor agrees to pay the Owner any losses, damages, costs and expenses, including attorney's fees, sustained or incurred by the Owner by reasons of any of the foregoing causes. For the purposes of such completion the Owner may for itself or for any contractors employed by the Owner take possession of any and use or cause to be used any and all materials, equipment, plant, machinery, appliances, tools, supplies and such other items of every description that may be found or located at the site of the Work. No equipment or materials may be removed from the Work without the written consent of the Owner.

6.12.2. All costs, expenses, losses, damages, attorney's fees and any and all other charges incurred by the Owner under this Subsection shall be charged against the Contractor and deducted and/or paid by the Owner out of any monies due or payable or to become due or payable under the Contract to the Contractor; in computing the amounts chargeable to the Contractor, the Owner shall not be held to a basis of the lowest prices for which the completion of the work or any part thereof might have been accomplished, but all sums actually paid or obligated therefor to effect its prompt completion shall be charged to and against the account of the Contractor. In case the costs, expense, losses, damages, attorney's fees and other charges together with all payments theretofore made to or for the account of the Contractor are less than the sum which would have been payable under the Contract if the work had been properly performed and completed by the Contractor, the Contractor shall be entitled to receive the difference and, in case such costs, expenses, losses, damages, attorney's fees and other charges, together with all payments theretofore made to or for the account of the Contractor, shall exceed the said sum, the Contractor shall pay the amount of the excess to the Owner.

7. PAYMENTS TO THE CONTRACTOR

7.1. PRICES FOR WORK: The Owner shall pay and the Contractor shall receive the prices stipulated in the Bid made a part hereof as full compensation for everything performed and furnished and for all risks and obligations undertaken by the Contractor under and as required by the Contract.

7.2. SCHEDULE OF VALUES: Except in cases where unit prices form the basis for payment under the Contract, the Contractor shall, within 20 days of the execution of the Contract and not less than 10 days prior to making an application for partial payment, submit to the Owner in a form approved by the Owner a schedule of values showing a breakdown of the Contract Sum itemized by trade and/or specification sections or as otherwise directed by the Owner and for each item shall show the total value including the Contractor's overhead and profit. Upon approval by the Owner, this schedule will be used in determining the value of the work done for the purpose of partial payments. The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the Contract Price.

7.3. APPLICATIONS FOR PARTIAL PAYMENT:

7.3.1. Before the first day of each month, or as otherwise directed by the Owner, the Contractor shall make applications for the value of the work done and the materials installed and/or delivered to the site for installation in the project during the previous month. Such applications shall show the breakdown of the project into the same items as the schedule of values specified in Subsection 7.2 entitled SCHEDULE OF VALUES and showing for each item the total value, the value previously reported as complete, the value completed during the month, the cumulative value completed and the value remaining to be done. The application shall also show the value of materials delivered to the site which have not been incorporated into the work and whose value is not included in the amount shown for the work of which they are a part. The value of such materials shall be established by attaching copies of invoices covering the materials to the application. The application shall include a summary of value of the work performed during the previous month, plus the value of the material delivered to the job site but not incorporated in the work, and minus the amount of the retainage indicated in Subsection 7.4 entitled RETAINAGE.

7.3.2. The Engineer will, within 10 days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the Owner, or return the partial payment estimate to the Contractor indicating in writing his reasons for refusing to approve payment. In the latter case, the Contractor may make the necessary corrections and resubmit the partial payment estimate.

7.4. RETAINAGE: The Owner shall retain 10 percent of the amount of each payment until final completion and acceptance of all work covered by the Contract Documents. The Owner at any time, however, after 50 percent of the work has been completed, if he finds that satisfactory progress is being made, will make further partial payments in full on the current and remaining estimates, but amounts previously retained shall not be paid to the Contractor at 50 percent completion or any time thereafter when, in the opinion of the Engineer, the progress of the Work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be

more than 10 percent of the value of the work completed. Upon substantial completion of the work, any amount retained may be paid to the Contractor. When the Work has been substantially completed except for Work which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgment of the Owner are valid reasons for non- completion, the Owner may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the Work still to be completed.

7.5. PAYMENTS WITHHELD:

7.5.1. The Owner may withhold payment or, on account of subsequently discovered evidence, nullify the whole or part of any application to the extent necessary to protect himself from loss on account of:

7.5.1.a. Defective work not remedied.

7.5.1.b. Claims filed or reasonable evidence indicating the probably filing of claims.

7.5.1.c. Failure of the Contractor to make payments to Subcontractors, material suppliers, or employees.

7.5.1.d. A reasonable doubt that the Contract work can be completed for the balance unpaid.

7.5.1.e. Damage to another Contractor.

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

7.6. PAYMENT OF APPLICATIONS FOR PARTIAL PAYMENT: Upon verification and approval of the application for partial payment made as specified, the Owner will make payment of the amount found properly due. No payment made to the Contractor nor partial or entire use or occupancy of the Work by the Owner shall be an acceptance of any work or materials not in accordance with this Contract.

7.7. FINAL INSPECTION: Upon receipt of written notice from the Contractor that the work has been completed and finished in accordance with the Contract, the Owner shall cause an inspection to be made of the work by his authorized representatives. A list shall be made of all deviations from the Contract requirements (commonly termed "punch list") and a copy of such list furnished to the Contractor. The Contractor shall with reasonable haste remedy all defects so noted and shall notify the Owner upon the completion of such work. When inspection by the Owner's authorized representatives shows the work to be complete in accordance with the Contract, application for final payment may be made.

7.8. RELEASE OF LIENS: Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner a complete and notarized release of all liens arising out of this Contract, or receipts in full in lieu thereof, and if required in either case, an affidavit that so far as he had knowledge of information the releases and receipts include all the labor and material for which a lien could be filed; but the Contractor may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the

Owner, to indemnify him against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

7.9. USE OR PARTIAL PAYMENT NOT ACCEPTANCE: It is agreed that this is an entire contract for one whole and complete work or result and that neither the Owner's entrance upon or use of the Work or any part thereof nor any partial payments by the Owner shall constitute an acceptance of the Work or any part thereof before its entire completion and final acceptance.

7.10. PAYMENT FOR UNCORRECTED WORK: Should the Owner direct the Contractor not to correct work that has been damaged or that was not performed in accordance with the Contract Documents, an equitable deduction from the Contract Amount shall be made to compensate the Owner for the Uncorrected Work.

7.11. PAYMENT FOR REMOVAL OF REJECTED WORK AND MATERIALS:

7.11.1. The removal of work and materials rejected in accordance with Subsection 4.3 entitled CORRECTION OF WORK BEFORE COMPLETION and the re-execution of acceptable work by the Contractor shall be at the expense of the Contractor, and he shall pay the cost of replacing the work of other contractors destroyed or damaged by the removal of the rejected work or materials and the subsequent replacement of acceptable work.

7.11.2. Removal of rejected work or materials and storage of materials by the Owner, in accordance with Subsection 4.3 entitled CORRECTION OF WORK BEFORE COMPLETION, shall be paid by the Contractor within 30 days after written notice to pay is given by the Owner. If the Contractor does not pay the expenses of such removal and after 10 days' written notice being given by the Owner of his intent to sell the materials, the Owner may sell the materials at auction or at private sale and will pay the Contractor the net proceeds therefrom after deducting all the costs and expense that should have been borne by the Contractor.

7.12. PAYMENT FOR EXTRA WORK: Written notice of claims for payment for Extra Work shall be given by the Contractor within ten days after receipt of instructions from the Owner to proceed with the Extra Work and also before any work is commenced, except in emergency endangering life or property. No claim shall be valid unless so made. In all cases, the Contractor's itemized estimate sheets showing all labor and material shall be submitted to the Owner. The Owner's order for Extra Work shall specify any extension of the Contract Time and one of the following methods of payment:

7.12.1. Unit price or combinations of unit prices which form the basis of the original Contract.

7.12.2. A lump sum based on the Contractor's estimate and accepted by the Owner.

7.12.3. Net cost plus a fixed fee. Net costs are defined as follows:

7.12.3.a. Labor costs, including time of foreman while engaged directly upon extra work at rates not greater than the scale of rates for each respective classification of labor customary in the area where the work is performed for each respective job classification.

Labor insurance taxes including amounts paid on a percent of such labor rates or on a cents per hour basis for Workmen's Compensation, Public Liability, Contractor's Contingent Liability and Contractual Liability Insurance and all Federal Old Age and Unemployment Taxes and any other taxes applicable as well as fringe benefits as may be approved by the Engineer.

7.12.3.b. Materials and supplies actually used on the work.

7.12.3.c. Rental charges for necessary equipment, as agreed upon by the Owner and Contractor. Rental charges shall not exceed those published in Rental Rates for Construction Equipment issued by the American Equipment Distributor. Equipment and tools having a value of \$100.00 or less are considered to be "small tools" and, as such, are considered to be part of overhead.

7.13. To the cost under Subparagraph 7.12.3 there shall be added a fixed fee to be agreed upon but not to exceed fifteen (15) percent of the estimated cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses. On work performed by subcontractors, the fixed fee shall not exceed ten (10) percent of the cost of the work.

7.14. PAYMENT FOR WORK SUSPENDED BY THE OWNER: If the work or any part thereof shall be suspended by the Owner and abandoned by the Contractor as provided in Subsection 2.12 entitled SUSPENSION OF WORK, TERMINATION AND DELAY, the Contractor will then be entitled to payment for all work done on the portions so abandoned, plus 15 percent of the value of the abandoned work to compensate for overhead, plant expense, and anticipated profit. This does not relate to under run in quantities.

7.15. PAYMENT FOR WORK BY THE OWNER: The cost of the work performed by the Owner, in accordance with Subsection 2.10 entitled OWNER'S RIGHT TO DO WORK, shall be paid by the Contractor.

7.16. PAYMENT FOR WORK BY THE OWNER FOLLOWING TERMINATION OF CONTRACT BY OWNER: Upon termination of the Contract by the Owner in accordance with Subsection 2.11 entitled OWNER'S RIGHT TO TERMINATE CONTRACT, no further payment shall be due the Contractor until the work is completed. If the unpaid balance of the Contract Amount shall exceed the cost of completing the work including all overhead costs, the excess shall be paid to the Contractor. If the cost of completing the work shall exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The cost incurred by the Owner, as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Owner.

7.17. PAYMENT FOR SAMPLES AND TESTING OF MATERIALS:

7.17.1. Samples furnished all SCDOT required materials and in accordance with Subsection 4.17 entitled SAMPLES, shall be furnished by the Contractor at his expense.

7.17.2. Testing of samples and materials required by SCDOT and furnished in accordance with Subsection 4.17 entitled SAMPLES, shall be arranged and paid for by the Contractor.

7.18. ACCEPTANCE AND FINAL PAYMENT:

7.18.1. When the Contractor shall have completed the work in accordance with the terms of the Contract Documents, he shall certify completion of the work to the Owner and submit a final Request for Payment, which shall be the Contract Amount plus all approved additions, less all approved deductions and less previous payments made. The Contractor shall furnish evidence that he has fully paid all debts for labor, materials, and equipment incurred in connection with the work, and, upon acceptance by the Owner, the Owner will release the Contractor except as to the conditions of the Performance Bond and the Payment Bond, any legal rights of the Owner, required guaranties, and Correction of Faulty Work after Final Payment, and will pay the Contractor's final Request for Payment. The Contractor shall allow sufficient time between the time of completion of the work and approval of the final Request for Payment for the Engineer to assemble and check the necessary data.

7.18.2. The Contractor shall deliver to the Owner a complete release of all liens arising out of this Contract before the retained percentage or before the final Request for Payment is paid.

7.19. ACCEPTANCE OF FINAL PAYMENT AS RELEASE: The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically excepted by the Contractor for all things done or furnished in connection with this Work and for every act and neglect of the Owner and others relating to or arising out of this Work. Any payment, however, final or otherwise, shall not release the Contractor or his sureties from any obligations under the Contract Documents or the Performance Bond and the Payment Bond.

7.20. DELAYS AND DAMAGES:

7.20.1. The date of beginning and the time for completion of the Work are essential conditions of the Contract Documents and the Work embraced shall be commenced on a date specified in the Notice to Proceed.

7.20.2. The Contractor will proceed with the Work at such rate of progress to ensure full completion within the Contract Time. It is expressly understood and agreed by and between the Contractor and the Owner that the Contract Time for the completion of the Work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the Work. If the Contractor refuses or fails to prosecute the Work, or any separable part thereof, with such diligence as will ensure its completion within the time specified in the Contract, or any extension thereof, or fails to complete said Work within such time, the Owner may, by written notice to the Contractor and his Surety, terminate his right to proceed with the Work or such part of the work as to which there has been delay. In such event the Owner may take over the Work and prosecute the same to completion, by contract or otherwise, and may take possession of and utilize in completing the work such materials, appliances, and plant as may be on the site of the work and necessary therefor. Whether or not the Contractor's right to proceed with the Work is terminated, he and his sureties shall be liable for any damage to the Owner resulting from his refusal or failure to complete the Work within the specified time.

7.20.3. If fixed and agreed liquidated damages are provided in the Contract and if the Owner so terminates the Contractor's right to proceed, the resulting damage will consist of such liquidated

damages until such reasonable time as may be required for final completion of the Work together with any increased costs occasioned the Owner in completing the Work.

7.20.4. If fixed and agreed liquidated damages are provided in the Contract, and if the Owner does not so terminate the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until the Work is completed or accepted.

7.20.5. The Contractor's right to proceed shall not be so terminated nor the Contractor charged with resulting damage if:

7.20.5.a. The delay in the completion of the Work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, Acts of God, acts of the public enemy, acts of the Government in either its sovereign or contractual capacity, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of subcontractors or suppliers arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and such subcontractors or suppliers; and

7.20.5.b. The Contractor, within 10 days from the beginning of any such delay (unless the Owner grants a further period of time before the date of final payment under the Contract), notifies the Owner in writing of the causes of delay.

7.20.6. As used in subparagraph 1, above, the term "subcontractors or suppliers" means subcontractors or suppliers at any time.

7.20.7. The Engineer shall ascertain the facts and the extent of the delay and extend the time for completing the Work when, in his judgment, the findings of fact justify such an extension, and his findings of fact shall be final and conclusive on the parties, subject only to appeal as provided in these General Conditions. The rights and remedies of the Owner provided in this clause are in addition to any other rights and remedies provided by law or under this Contract. This does not relate to under run in quantities.

(End of Section 01230)

1. CONFLICT OR INCONSISTENCY: If there is any conflict or inconsistency between the provisions of the SUPPLEMENTAL CONDITIONS and the GENERAL CONDITIONS, the provisions of the SUPPLEMENTAL CONDITIONS shall prevail.
2. CONFLICT OF INTEREST: No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve, or to take part in negotiation, making, accepting, or approving any architectural, engineering, inspecting, construction, or material supply contract, or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract or in any part thereof. No officer, employee, architect, attorney, engineer, or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner who is in any legislative, executive, supervisory, or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.
3. CONTRACTOR'S FIELD OFFICE: The Contractor shall maintain a temporary field office near the work for his own use during the period of construction at which readily accessible copies of all Contract Documents shall be kept. The office shall be located where it will not interfere with the progress of the work. In charge of this office, there shall be a responsible and competent representative of the Contractor, duly authorized to receive orders and directions and to put them into effect.
4. CONTRACT MODIFICATION: All changes which affect the cost of the construction of and contract modifications must be approved by the Owner prior to becoming effective. The contract change order will include extra work, work for which quantities have been altered from those shown in the bidding schedule as well as decreases or increases in the quantities of installed units which are different from those shown in the bidding schedule because of final measurements. All changes the project must be authorized by means of a contract change order. All change orders should be recorded on a contract change order as they occur so that they may be included in the partial payment estimate.
5. WATER/SEWER LINE SEPARATION: The horizontal and vertical separation of sewer lines and water mains must be in accordance with Section R61-58.4D(12) of the State Primary Drinking Water Regulations.
 - 5.1 Parallel installation - Water mains shall be laid at least ten (10) feet horizontally from any existing or proposed sewer. The distance shall be measured edge to edge. In cases where it is not practical to maintain a ten foot separation, the Department may allow deviation on a case-by-case basis, if supported by data from the design engineer. Such deviation may allow installation of the water main closer to a sewer, provided that the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least eighteen (18) inches above the top of the sewer.
 - 5.2 Crossings - Water mains crossing sewers shall be laid to provide a minimum vertical separation of eighteen (18) inches between the outside of the water main and the outside of the

sewer. This shall be the case whether the water main is either above or below the sewer line. Whenever possible, the water main shall be located above the sewer line. Where a new water main crosses a new sewer line, a full length of pipe shall be used for both the water main and sewer line and the crossing shall be arranged so that the joints of each line will be as far as possible from the point of crossing and each other. Where a new water main crosses an existing sewer line, one full length of water pipe shall be located so both joints will be as far from the sewer line as possible. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer line to prevent damage to the water main.

5.2.1 Special Conditions - When it is impossible to obtain the distances specified in R.61-58.4(D)(12)(a) and (b) the Department may allow an alternative design. Any alternative design shall:

5.2.1.1 maximize the distances between the water main and sewer line and the joints of each;

5.2.1.2 use materials which meet the requirements R.61-58.4(D)(1) for the sewer line; and,

5.2.1.3 allow enough distance to make repairs to one of the lines without damaging the other.

5.2.2 Force mains - There shall be at least a ten (10) foot horizontal separation between water mains and sanitary sewer force mains. There shall be an eighteen (18) inch vertical separation at crossing as required in R.61-58.4(D)(12)(a) and (b).

5.2.3 Sewer manholes - No water pipe shall pass through or come in contact with any part of a sewer manhole. Water lines may come in contact with storm sewers or catch basins if there is no other practical alternative, provided that ductile iron is used, no joints of the water line are within the storm sewer or catch basin and the joints are located as far as possible from the storm sewer or catch basin.

5.2.4 Drain-fields and Spray-fields - Potable water lines shall not be laid less than twenty-five (25) feet horizontally from any portion of a waste-water tile-field or spray-field, or shall be otherwise protected by an acceptable method approved by the Department.

6. COMPUTATION OF QUANTITIES:

6.1 For estimating quantities in which the computation of areas by geometric methods would be comparatively laborious, it is agreed that a digitizer shall be considered an instrument of precision adapted to the measurement of such areas.

6.2 It is further agreed that the computation of the volume of prisms shall be by the method of average end areas.

7. LIMITS OF NORMAL EXCAVATION:

7.1 In determining the quantities of excavation to which unit prices shall apply, the limits of normal width and depth of excavation shall be as described below, unless other limits are indicated on the Drawings or specified.

7.2 For pipes in trenches, the normal width of the trench shall be measured between vertical planes which are a distance apart equal to the sum of 18 inches plus 1-1/3 times the nominal inside diameter of the pipe. If the width so computed is less than three feet, a width of three feet shall be taken as the normal width for payment. The normal depth shall be measured to a distance of 0.2 foot below the bottom of the pipe in earth and 0.7 foot in rock, unless there be a cradle underneath the pipe; in which case the normal depth shall be measured to the underside of the cradle. The width of trench for the cradle shall be assumed to be that specified above for pipes in trenches.

7.3 For concrete placed directly against undisturbed earth, the normal width and depth of the excavation for such concrete shall be measured to the neat lines of the concrete as indicated on the Drawings or as ordered.

7.4 For concrete placed against rock surfaces resulting from rock excavation, the normal width and depth of the excavation shall be measured to 0.4 foot outside the neat lines of the concrete as indicated on the Drawings or as ordered.

7.5 For other structures, except manholes as noted below, the normal width shall be measured between vertical planes one foot outside the neat lines of the several parts of the structure, except that the width at any elevation shall be measured as not less than the width at a lower elevation. The normal depth shall be measured to the underside of that part of the structure for which the excavation is made.

7.6 No additional width or depth of trenches excavated in earth or rock shall be allowed at standard circular manholes.

7.7 Wherever bell holes are required for jointing pipe, they shall be provided without additional compensation over and above that resulting from measurements as above described.

8. FEDERAL SAFE DRINKING WATER ACT: In accordance with Section 1417 of this Act, any pipe, solder, or flux used in the installation or repair of public water systems and plumbing used for drinking water, must be lead free. Lead free is defined as less than 0.2 percent lead in solder and flux and less than 8.0 percent lead in pipes and fittings. Leaded joints for the repair of cast iron pipes are not included. Lead shot and lead packers in well construction are no longer allowed.

9. WORK ON HIGHWAY RIGHT-OF-WAY: All work performed in roads and street crossings and all work performed on street or road rights-of-way shall be performed in accordance with "Policy for Accommodating Utilities on Highway Rights-of-Way", current issue, by the South Carolina Highway Department.

10. CONNECTIONS MADE TO EXISTING MAINS:

10.1 No existing main shall be cut, tapped, or otherwise disturbed without first obtaining permission in writing from the Owner to make that connection. At least 48 hours notice is required to obtain written approval.

10.2 Connections to mains shall be coordinated with the Office of the County Supervisor so that they are made during a period of low water demand and with a minimum of service interruption.

11. WATER SUPPLY:

11.1 Water supply for the purposes of flushing, disinfecting and pressure testing of the water line will be furnished by the Owner. It shall be the Contractor's responsibility to convey the water to any remote location that is required on the project.

11.2 The Contractor shall install a metering system that complies with AWWA C700 and shall pay the Owner for the water used

12. USE OF PREMISES: The Contractor shall confine his materials, equipment, and the operations of his employees, subcontractors, and suppliers to minimize interference with the Owner's normal operations being carried on in the existing plant and use of yards, roadways, trucking and parking areas. Where connection between new and existing work is necessary and requires shutting down of any existing facilities, services, or areas, these connections shall be made at such times and in such manner as the Owner may direct.

13. PERSONNEL FACILITIES: In order to minimize interference with the operations of the merchants, Contractor shall provide suitable facilities necessary for his personnel for use as lunch rooms, vending areas, first aid rooms, toilets, etc., and shall instruct and supervise his personnel to ensure that the facilities provided by the Owner for the use of its employees are not used by employees of the Contractor. All such personnel facilities provided by the Contractor shall be located adjacent to or within the area of the work.

14. PARKING AREAS: The Contractor shall secure suitable parking areas for his employees.

15. STATE AND LOCAL PERMITS, LICENSES, INSPECTIONS, CERTIFICATES: The Contractor shall obtain such required documents and pay the fees assessed for each division of work for which such permits, licenses, and inspections are required. The Contractor shall also obtain and pay the fees for general permits such as Building Permits and Certificate of Occupancy.

16. SIGNS:

16.1 The Owner reserves the right to all advertising privileges about the job and no signs shall be posted by the Contractor anywhere on the premises without approval by the Owner except those signs, posters, or bulletins required by Federal, State, or local authorities. Directional signs identifying offices and/or storage areas of the Contractor may be erected as required to facilitate work, provided:

16.1.1 The Contractor shall submit to the Owner for approval a scale drawing or sketch of the proposed sign showing size, type of material, painting, and proposed location. All submittal data shall be in triplicate.

16.1.2 The size of the individual sign shall be not greater than 24 inches wide by 12 inches high.

16.1.3 Signs shall be neatly painted on weather-resistant materials.

16.1.4 The signs will be removed upon completion of the job.

16.1.5 No sign shall be erected prior to approval by the Owner.

17. OWNER'S INSURANCE AUTHORITY: During all phases of construction, the Contractor will be required to perform his operations so as to comply expeditiously with the recommendations of the Owner's Insurance Authority.

18. BUILDERS RISK INSURANCE: The Contractor shall procure and maintain during the life of this Contract, Builders Risk Insurance on an all risk basis, on a 100 percent completed value basis on the insurable portion of the project. The Owner, the Contractor, and Subcontractor (as their interest may appear) shall be named as the Insured.

19. FLOOD INSURANCE:

19.1 The Contractor must acquire any flood insurance made available to it under the National Flood Insurance Act of 1968 as amended beginning with the period of construction and maintain such insurance for the entire useful life of the project, if the total value of insurable improvements is \$10,000 or more.

19.2 The amount of insurance required is the total project cost, excluding facilities which are uninsurable under the National Flood Insurance Program such as bridges, dams, water and sewer lines, and underground structures, and excluding the cost of the land, or the maximum limit of coverage made available to the grantee under the National Flood Insurance Act, whichever is less.

20. PUBLICITY: All prime contractors and their subcontractors shall submit to the Owner for approval all publicity items, including photographs, relating to the work of this project. Owner shall approve any and all material prior to release for publication.

21. PROTECTION OF WORK: The Contractor shall at all times, until final acceptance of the work, provide protection of the work, either new or previously existing, from all hazards involved in his operations. All damage suffered by any item of work, including, but not limited to, drains, curbs, doors, equipment, and structures, shall be repaired or the item shall be replaced prior to final acceptance.

22. SPECIAL PRECAUTIONS: At all times during the construction of the project and its component parts, the Contractor shall provide, install, and maintain proper temporary supports, shoring, and bracing to prevent any damage to the work due to all causes. When openings are made in the roof and/or exterior walls, suitable temporary weathertight closures shall be installed and maintained at all times when work is not in progress at that location.

23. SMOKING AND FIRE PROTECTION:

23.1 Smoking is absolutely forbidden except in such areas as the Owner shall designate. The Contractor shall confer with the Owner to determine the areas in which smoking is permitted. It

is the responsibility of the Contractor to enforce "No Smoking" regulations in the restricted areas. The Owner will remove from the premises any person violating the smoking regulations.

23.2 Welding, flame cutting, or other operations involving the use of flame, arc, or sparking devices will not be allowed without adequate protection.

24. POWDER ACTUATED FASTENERS: Whether or not permitted by local code or ordinance, powder actuated fasteners may not be used except on specific approval of the Owner or the Engineer in writing.

25. COMPRESSED AIR: The Contractor shall furnish all compressed air and temporary piping required for the work. Where necessary to locate air compressors within the building, proper ventilation shall be supplied for the compressors. All costs of providing the compressed air shall be borne by the Contractor. No connection or use of the Owner's air supply will be permitted.

26. ELEVATION DATUM: The datum adopted by the Engineer is NGVD 29. All elevations shown on the Drawings or referred to in these specifications refer to this datum.

27. EASEMENTS:

27.1 The Owner has obtained, or will obtain, permanent easements and temporary construction easements through private property. The temporary construction easements entitle the Contractor to the occupancy and use of the designated area near or adjacent to the work for purposes related to the work.

27.2 The Contractor will not encroach on any property unless it has been established that easements have been obtained. On all other land, the Contractor has no rights unless he obtains permission from the proper parties.

28. OCCUPYING PRIVATE LAND: The Contractor shall not (except after written consent from the proper parties) enter or occupy with men, tools, or materials, any land outside the rights-of-way of property of the Owner. A copy of the written consent shall be given to the Engineer.

29. WORK IN STATE AND CITY RIGHTS-OF-WAY:

29.1 Attention is directed to the fact that work will be going on in both City and State highway rights-of-way. The Owner has obtained permission for the Contractor to encroach on these rights-of-way for work.

29.2 The Contractor will be required to conform to the requirements of the South Carolina Department of Transportation, (SCDOT) and the City of Walterboro while working within the rights-of-way.

30. SCDHEC DISTRICT ENGINEER INSPECTION: All of the work constructed on this project is subject to the inspection and approval by the South Carolina Department of Health and Environmental Control District Engineer. This inspection and acceptance is in addition to inspection and acceptance of the Engineer.

31. WORK ADJACENT TO TELEPHONE, POWER AND GAS COMPANY STRUCTURES: Where work is being performed within the telephone company or electric and gas company rights-of-way, the Owner has acquired, or will acquire, permission from these agencies to construct facilities within their rights-of-way or easements. In all cases where work is being performed near telephone company or electric or gas company facilities, the Contractor will notify the respective companies of areas in which work is being performed.

32. WORK BEING PERFORMED NEAR WATER LINES: The Contractor will inform the Town as to the areas where work is being performed. It is required of a Contractor to obtain permission from the Department of Public Utilities where alterations to their system are required.

33. TRAFFIC CONTROL:

33.1 The Contractor will comply with the manual published by the South Carolina Department of Highways and Public Transportation entitled "Traffic Controls for Street and Highway Construction and Maintenance Operations, Part V, of the South Carolina Manual on Uniform Traffic Control Devices for Streets and Highways, 1994" or the latest version. Provide traffic control as required and approved by the South Carolina Department of Highways and Public Transportation.

33.2 Upon completion and acceptance of the work or as the need for temporary traffic control devices ceases, they shall be removed by the Contractor and shall remain the property of the Contractor.

33.3 Signs shall be used where warranted to maintain traffic or to call attention to conditions on, or adjacent to, the construction work. Such signs shall be removed when they are no longer required.

33.4 All traffic control and marking devices shall be in accordance with the provisions of the "State of South Carolina Uniform Manual on Traffic Control Devices". Upon completion and acceptance of the work or as the need for temporary traffic control devices ceases, they shall be removed by the Contractor and shall remain the property of the Contractor.

33.5 Signs shall be used where warranted to maintain traffic or to call attention to conditions on, or adjacent to, the construction work. Such signs shall be removed when they are no longer required.

34. LINES, GRADES AND MEASUREMENTS:

34.1 The Contractor shall employ, at his own expense, a competent civil engineer or land surveyor who shall be registered in South Carolina and who shall be thoroughly experienced in field layout work. Said Engineer shall establish all lines, elevations, reference marks, etc., needed by the Contractor during the progress of the work, and from time to time he shall verify such marks by instrument or by other appropriate means. The Owner's Engineer may waive the requirement for the Engineer to be registered in South Carolina upon a presentation of a resume which is satisfactory. The waiving of this requirement may be revoked at any time by the Owner's Engineer.

34.2 Alignment and grade of all pipe, tunnels, and borings shall be continuously controlled by use of lasers established through the pipe or casing, not transferred from another medium. The Contractor shall furnish lasers and accessories as required and approved by the Engineer. The Contractor's Engineer will set and check each laser each day that work is in progress or more often as required to assure continuous accurate control.

34.3 The Contractor's Engineer responsible for lines and grades shall verify to the Owner in writing that work has been constructed to lines and grades as shown on the Drawings. This certification shall accompany each request for payment.

34.4 The Owner's Engineer shall be permitted at any time to check the lines, elevations, reference marks, lasers, etc., set by the Engineer employed by the Contractor, and the Contractor shall correct any errors in lines, elevations, reference marks, lasers, etc., disclosed by such check. Such a check shall not be construed to be an approval of the Contractor's work and shall not relieve the Contractor of the responsibility for the accurate construction of the entire work.

34.5 The Contractor shall make all measurements and check all dimensions necessary for the proper construction of the work called for by the Drawings and Specifications. During the prosecution of the work, he shall make all necessary measurements to prevent misfitting in said work, and he shall be responsible therefore, and for the accurate construction of the entire work.

34.6 The Owner's Engineer shall have access to all field notes. Field notes will be recorded in bound field books, and carbon copies given the Owner's Inspector at the close of each shift.

35. CITY BUSINESS LICENSE: The successful Bidder and all subcontractors will be required to obtain a business license from the City of Walterboro prior to beginning work, if said Bidder does not have a current license.

36. UTILITY LOCATIONS: Prior to beginning any excavation, the Contractor shall notify all public utility companies and have their lines located and marked. The following is a list of utility companies and persons to be contacted for utility locations.

UTILITY SERVICE OR FACILITY	PERSON TO CONTACT (NAME, TITLE, & PHONE NO.)
Electric, Gas, Telephone Cable TV Sewer Water	For all utilities, call: Palmetto Utility Protection Service 8-1-1 or, 1-888-721-7877 City of Walterboro Water and Sewer Departments 843-782-1065

37. DANGER SIGNALS AND SAFETY DEVICES: The Contractor shall make all necessary precautions to guard against damages to property and injury to persons. He shall put up and maintain in good condition, sufficient red or warning lights at night, suitable barricades and other devices necessary to protect the public. In case the Contractor fails or neglects to take such precautions, the Owner may have such lights and barricades installed and charged the cost of this work to the Contractor. Such action by the Owner does not relieve the Contractor of any liability incurred under this Specifications or contract.

38. PAVEMENT GUARANTEE: The Contractor warrants to the Owner that all materials and workmanship furnished on state roadways are guaranteed in accordance with the terms of the General Conditions, Section 4, General Guaranty, for a period of two years. The Contractor will remedy any settlements or deficiencies of the pavement surface within this period.

39. CLEAN-UP FOLLOWING PAVEMENT INSTALLATION; PUBLIC AND PRIVATE RIGHT-OF-WAYS:

39.1 All work within state, county and city highway right-of-ways is to be conducted in accordance with the contract drawings and specifications, the general and special provisions of the encroachment permit, and the traffic control requirements of the Supplemental Conditions. The work is subject to inspections by highway representatives and their directions regarding activities in right-of-ways.

39.2 Clean-up is a major issue with regards to work in public right-of-ways. Initial clean-up shall be performed daily as it affects roadway safety and drainage. Soils are to be removed from roadways, sidewalks, and drainage ditches and culverts restored. Impediments to drainage and safety such as excess dirt piles, stored materials, lax or incomplete traffic control will not be tolerated.

39.3 To the maximum extent possible, private roadways, drives, offsite drainage ditches and structures shall be restored immediately after the installation of sidewalk and roadway pavements. The restoration or replacement of public or private property shall be scheduled as a top priority work item in the execution of this project.

39.4 Final clean-up, including grassing, shall also be expedited to the maximum extent possible. The Owner reserves the option to direct this work to be performed expeditiously for the protection of the environment and the welfare of the public.

40. PRE-CONSTRUCTION CONFERENCE: Prior to construction, a pre-construction conference will be held with representatives of the Owner, Contractor, the Engineer, and other parties that are stakeholders in the project.

41. SPECIFICATIONS AND DRAWINGS: The following Drawings and Specifications form a part of this Contract as set forth in Paragraph 1.1, Section 01230, GENERAL CONDITIONS. The Drawings bear the general designation:

42. A. THE DRAWINGS ARE LISTED AS FOLLOWS

<u>Sheet No.</u>	<u>Title</u>
1.0	COVER SHEET
2.0	GENERAL NOTES
3.0	EXISTING CONDITIONS & DEMOLITION PLAN
4.0	LAYOUT PLAN
5.0	GRADING PLAN
6.0	EROSION CONTROL
7.0	UTILITY PLAN
8.0	LANDSCAPE PLAN
9.0	IRRIGATION PLAN
10.0	LOW VOLTAGE LIGHTING PLAN
11.1-11.5	DETAILS

ARCHITECTURE:

A 1.1	FLOOR PLANS
A 1.2	BUILDING ELEVATIONS
A 1.3	BUILDING SECTION
S0.0-S2.0	GENERAL NOTES
P1.1	PLUMBING
M1.1	HVAC FLOOR PLAN, OUTLINE SPEC, NOTES, SECHEDULES & DETAILS
E1	POWER & LIGHTING PLAN

B. THE SPECIFICATIONS ARE LISTED AS FOLLOWS:

<u>Section No.</u>	<u>Title</u>
02050	Demolition and Removal
02110	Clearing and Grubbing
02220	Earthwork
02222	Excavating, Backfilling & Compacting for Utilities
02231	Subgrade
02270	Erosion Control
02277	Silt Fence
02441	Underground Irrigation System
02523	Concrete Sidewalk & Driveway
02527	Concrete Curb, Curb & Gutter, and Gutter
02614	Brick Work
02780	Unit Paving
02830	Planting
02995	Clean Up
03100	Concrete Form Work
03200	Concrete Reinforcement
03300	Cast In Place Concrete

03311	Bluestone Pavers
-----	Trench Grate
-----	Flag Pole
-----	Catch Basin Lid

ARCHITECTUAL SPECIFICATIONS: See Drawings

(End of Section 01232)

PART ONE - GENERAL:**1.1 Scope**

This work includes the demolition and removal of all items necessary for the completion of the work as shown on the contract documents, including but not limited to, hardscape and asphalt surfacing, concrete paving, and designated vegetation.

1.2 Quality Assurance**1.2.1 Referenced Standards**

Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these specifications shall in no way invalidate the minimum requirements of the referenced standards. South Carolina Highway Department Standard Specifications for Highway Construction, 2007 Edition.

PART TWO - PRODUCTS: (This section not applicable).**PART THREE - EXECUTION:****3.1 Requirements**

The work includes demolition or removal of all existing materials indicated, specified or required. All materials resulting from demolition work, except as indicated or specified otherwise, shall become the property of the contractor and shall be removed from the limits of the owner's property. Remove all rubbish and debris from the site daily, unless otherwise directed.

3.1.1 Dust Control

Take appropriate action to check the spread of dust to avoid the creation of a nuisance in the surrounding area. Comply with all dust regulations imposed by local air pollution agencies.

3.1.2 Personnel

Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights to meet the SCDOT standard for traffic control.

3.2 – Existing Facilities to be Removed

3.2.1 Asphalt

Remove asphalt concrete, concrete and base materials completely where indicated within the limits as specified for the new work. Exercise extreme care in the demolition procedures to avoid damage to private and public property. The existing roadway materials are indicated on the drawings. This information is not presented as a guarantee of the material to be encountered. Contractors are to make their own determinations as to the work involved.

3.2.2 Miscellaneous Removals

Remove completely all lawn and gravel within the limits specified for the new work. Exercise extreme care in the removal procedures to avoid damage to private and public property.

3.2.3 Concrete

Where concrete work to be removed abuts concrete to remain, saw concrete along straight lines to a depth of not less than two inches (2"). The remainder of the concrete shall be broken out, provided that the broken area is concealed in the finished work, and the remaining is sound. At locations where the broken face cannot be concealed, it shall be ground smooth or the saw cut shall be made entirely through the concrete.

3.2.4 Salvaged Materials

Items to be salvaged and delivered to the City include, any and all asphalt millings, chain link and ornamental fencing, and signage in the construction limits.

3.3 – Clean Up

Remove and transport all debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean up spillage from streets and adjacent areas.

3.4 - Regulations

Comply with all Federal, State and local hauling and disposal regulations.

(End of Section 02050)

PART ONE – DESCRIPTION:

1.1 The clearing work covered by this section consists of cutting, removing and properly disposing of vegetation and debris. Trees specifically identified on the plans to be preserved shall be adequately delineated and flagged by the CONTRACTOR, such that the balance of the work may be performed in a safe and harmless manner in the vicinity of preserved trees. Such tree preservation will be considered part of the work and shall be in conformance with applicable local codes and regulations. Clearing and grubbing shall be performed in areas as called for on the plans, the limits of which shall coincide with the construction limits and in general shall extend five (5) feet beyond top of cut and toe of fill, not to exceed the limits of the Owner's property.

1.2 Related Work

Any reference to standard specifications refers to the most current published date of the following specification unless otherwise noted.

1.2.1 Reference the following specifications for related work:

02210 Unclassified Excavation and Grading

1.2.2 Clearing and grubbing activities shall conform to Section 201 of the "Standard Specifications for Highway Construction" dated 2007, published by the South Carolina Department of Transportation, except that grubbing shall be performed on all cleared excavation and embankment areas and shall include the complete removal of all stumps, roots and embedded debris.

1.3 The grubbing work covered by this section consists of removing and properly disposing of all surface vegetation and debris. Where the material being removed is high in organic matter content, such as root mat and other vegetative matter, it shall be considered vegetation and removed as part of the work of grubbing. Where material being removed consists predominantly of soils, such removal will be considered part of the work covered by Section 02210 of these specifications, entitled Unclassified Excavation and Grading.

1.4 The work of clearing and grubbing shall also include the removal and satisfactory disposal of crops, weeds and other annual growth, fences, steps, walls, chimneys, column footings, other footings, foundation slabs, basements, other foundation components, signs, junked vehicles, and other rubble and debris, and the filling of holes and depressions. This work shall also be performed in all non-wooded areas within the construction limits, shown on the project plans upon which seeding and mulching, sprigging or sodding is to be performed.

As a part of the work of clearing and grubbing, the CONTRACTOR will be required to cut off and plug at the right of way or construction limits, as directed by the ENGINEER, any private water or sewer line intercepted during the construction of the project, as well as cut off and remove from the construction area any septic tank or portion thereof during the construction of the project.

1.5 Clearing and grubbing operations shall be completed sufficiently in advance of grading operations as may be necessary to prevent any of the debris from the clearing and grubbing operations from interfering with the excavation or embankment operations.

1.6 The CONTRACTOR shall obtain, at his own expense, all necessary permits pertaining to clearing and grubbing work not already secured by the ENGINEER. The CONTRACTOR shall then provide a copy of any and all required permits to the ENGINEER.

PART TWO – MATERIALS:

Topsoil shall be considered to mean original surface soil, typical of the area, which is capable of supporting native plant growth, and shall be free of large stones, roots, brush, waste construction debris and other undesirable material.

PART THREE – INSTALLATION:

3.1 Clearing and grubbing shall be performed in areas as called for on the plans, the limits of which shall coincide with the construction limits and in general shall extend 5 feet beyond top of cut or toe of fill, not to exceed the limits of the OWNER's property. Clearing and grubbing activities shall conform to the "Standard Specifications for Highway Construction" dated 2007, published by the South Carolina Department of Transportation, except that grubbing shall be performed on all cleared excavation and embankment areas and shall include the complete removal of all stumps, roots and embedded debris.

3.2 The CONTRACTOR shall perform all clearing and grubbing operations before construction operations begin.

3.2.1 Where adjacent areas within the site but outside the limits of construction are disturbed as a result of clearing and grubbing activities, the CONTRACTOR shall remove all debris and restore to the original grades and equal or better condition.

3.2.2 The CONTRACTOR shall exercise caution to protect and maintain all existing utilities and underground works which are to remain. Any existing utilities or underground works which are to remain that are disturbed during construction shall be repaired or replaced at the CONTRACTOR's expense.

3.2.3 The CONTRACTOR must comply with all local, state and federal laws, ordinances and regulations in the removal and disposal of clearing and grubbing of all vegetation, timber, waste and all surface debris that must be hauled from the Project Site. No burning of materials will be allowed on site. The CONTRACTOR shall properly dispose of all cleared materials at his expense, in conformance with all applicable local and state laws and ordinances with the exception of any materials to be reused or recycled as directed elsewhere in this contract.

3.3 Stripping and Storage of Topsoil

All topsoil suitable for reuse, in the opinion of the ENGINEER, shall be stripped to its full depth, all topsoil to be moved shall be free of large stone, roots, brush, waste construction materials and other undesirable matter.

3.3.1 Topsoil stripping shall be accomplished from all topsoiled areas to be disturbed.

3.3.2 Existing lawn sods may be left to decompose with the topsoil. Heavier stands of weeds and grasses shall be removed as directed by the ENGINEER prior to the stripping operations.

3.3.3 The topsoil shall be kept separate from other excavated materials and stored in stockpiles, the location of which shall be as directed by the ENGINEER. Topsoil shall be stockpiled so that it shall not be subject to abnormal erosion and loss, and so that it does not impede the flow of drainage runoff. The directed locations of topsoil stockpiles will, when construction sequence permits, be located in areas that have previously been graded to design rough grade.

3.3.4 Any excess topsoil shall be hauled off the OWNER's property by the CONTRACTOR at CONTRACTOR expense.

(End of Section 02110)

SECTION 01250

MEASUREMENT AND PAYMENT

GENERAL: The following paragraph establishes the basis for Measurement and Payment for the Work to be performed under the respective Bid items listed in the BID, Section 01140.

The Bid Price shall constitute full compensation for doing each item of work including all activities and incidentals required for the installation and completion of each item and accordance with the Contract Drawings, Specifications and requirements.

The Bid Price for each item shall be full compensation for the following activities: Furnishing and installing all materials and equipment, including excavation, disposal of surplus excavated or material, backfill, compaction, all necessary sheeting and bracing, dewatering, handling water flows, removing and replacing base and pavement outside the limits of demolition, property corners, signs, fences, shrubs, lawns, water lines, gas lines, storm drain lines and storm drainage structures, maintenance of drives and streets and protection of power and communication lines. The price shall also constitute full compensation for all barricades, lighting and flagmen as required for the protection of the public and public property.

Each price stated in the BID shall constitute full compensation for each completed item of work.

ITEM NO. 1 MOBILIZATION

The Lump Sum Bid for mobilization shall include:

- 1) The establishment of all temporary offices, buildings, fencing, staging areas, haul routes, and other facilities necessary for the work on the project.
- 2) Surveying and construction staking.
- 3) Performance bond, labor, and materials bond.
- 4) General Liability Insurance; and
- 5) All other work and operations which must be performed, or costs incurred prior to beginning work on the various items on the project site.

The mobilization cost will be paid with the first pay request and shall be limited to **9%** of the total contract amount.

Payment, at the amount stated, will be full compensation for the work satisfactorily completed.

ITEM NO. 2 TRAFFIC CONTROL

The Lump Sum Bid for traffic control shall include all costs for material, labor, coordination with Local officials and/or the city to provide traffic control throughout the life of the project in accordance with city and SCDOT standards.

The traffic control cost shall be pro-rated equally, by month, over the length of the project.

Payment, at the pro-rated amount, will be full compensation for the work satisfactorily completed.

ITEM NO. 3 DEMOLITION, SITE PREPARATION, AND GRADING

The Lump Sum Bid for demolition, site preparation, & grading shall include, but not be limited to, all costs for furnishing labor, equipment, and materials for the complete removal, salvage, and disposal of existing material necessary for the installation of hardscape, lighting, fountain work Restroom, utilities, asphalt concrete work, landscaping, irrigation, and brick paver relocation at the locations shown on the drawings and in accordance with the specifications. Demolition, site preparation, and grading work shall be performed in accordance with Specification Section 02050 DEMOLITION AND REMOVAL.

Measurement will be on a lump sum basis of the demolition, site preparation and grading work accomplished on site.

Payment, at the Unit Price Bid, will be full compensation for the work satisfactorily completed.

ITEM NO. 4 LOW VOLTAGE LIGHTING SYSTEM

The Unit Price Bid for low voltage lighting system shall include costs for all labor, equipment, conduits and material for installing the low voltage lighting at the locations on the Drawings and in accordance with the details and specifications. The price shall also include coordination with all affected local utility companies, tie into power source and City of Walterboro.

Payment will be measured on a lump sum basis of in-ground lighting installed and accepted.

Payment, at the Unit Price Bid, will be full compensation for all work satisfactorily completed.

ITEM NO. 5 LOW BRICK WALL AND CAP

The Unit Price Bid for low brick wall and cap shall include all costs for furnishing all materials, labor, and equipment to install low brick wall and cap, at the location specified on the plans. The Bid Price shall also include all preparation costs, including but not necessarily limited to, excavation, grading, forming, cap installation, finishing, reinforcing, compaction, and disposal of any excess materials.

Measurement will be on a lump sum basis of the completed low brick wall and cap.

Payment at the Unit Price Bid will be full compensation for the work satisfactorily completed.

ITEM NOS. 6a & 6b SITE FURNISHINGS

The Unit Price Bid for 25' and 30' flag poles shall include all labor, materials, and equipment for installation of specified items per manufacturers requirements at the locations shown on the Drawings, and in accordance with the Details.

Payment will be measured on a per-item basis of items installed.

Payment, at the Unit Price Bid, will be full compensation for all work satisfactorily completed.

ITEM NOS. 6c & 6d., SITE FURNISHINGS

The Unit Price Bid for benches, and trash receptacles shall include all labor, materials, and equipment for installation of specified items per manufacturers requirements at the locations shown on the Drawings, and in accordance with the Details.

Payment will be measured on a per-item basis of items installed.

Payment, at the Unit Price Bid, will be full compensation for all work satisfactorily completed.

ITEM NO. 7a., 7b. & 7c. CONCRETE WORK - CURB & GUTTER

The Unit Price Bid for concrete curb and gutter, transition curb and pedestrian curb ramp shall include, but not be limited to, all costs for furnishing all material, labor, and equipment required to construct concrete curb and gutter, transition curb and pedestrian curb ramp at the locations indicated on the plans and as specified herein.

Measurement will be in Linear Feet of new concrete curb and gutter, transition curb and pedestrian curb ramp in place and accepted. Length of curb & gutter will be measured in accordance with the plans.

Payment will be made at the Unit Price Bid for concrete curb and gutter, transition curb and pedestrian curb ramp measured as specified above and constitute full compensation for the work satisfactorily completed.

ITEM NO. 7d CONCRETE WORK - 4" CONCRETE SIDEWALK (if necessary)

The Unit Price Bid for concrete sidewalk 4" thick shall include all costs for furnishing all materials, labor, and equipment to install concrete slab at the locations on the drawings and in Specification Section 03300 CAST-IN-PLACE CONCRETE. The Bid Price shall also include all preparation costs, including but not necessarily limited to, excavation, grading, forming, reinforcing, compaction, and disposal of any excess materials. This unit price bid is for incidental concrete repair work or sidewalk that may be demolition to install new work.

Measurement will be on a square yard basis of the completed concrete slab surface.

Payment at the Unit Price Bid will be full compensation for the work satisfactorily completed.

ITEM NO. 7e BLUSTONE PAVING

The Unit Price Bid for bluestone paving as shown on plans shall include all costs for furnishing all materials, labor, and equipment to install bluestone paving with concrete base at the locations on the drawings and in Specification Section 03300 CAST-IN-PLACE CONCRETE. The Bid Price shall also include all preparation costs, including but not necessarily limited to, excavation, grading, forming, finishing, reinforcing, compaction, and disposal of any excess materials.

Measurement will be on a square yard basis of completed bluestone paving with concrete base surface with oyster shell finish.

Payment at the Unit Price Bid will be full compensation for the work satisfactorily completed.

ITEM NO. 7f BRICK COURSE WITH CONCRETE BASE

The Unit Price Bid for brick course with concrete base as shown on plans shall include all costs for furnishing all materials, labor, and equipment to install concrete slab at the locations on the drawings and in Specification Section 03300 CAST-IN-PLACE CONCRETE. The Bid Price shall also include all preparation costs, including but not necessarily limited to excavation, grading, forming, finishing, reinforcing, compaction, and disposal of any excess materials.

Measurement will be on a linear foot basis of completed brick course with concrete base.

Payment at the Unit Price Bid will be full compensation for the work satisfactorily completed.

ITEM NO. 7g REMOVE AND RE INSTALL BRICK MARKERS WITH CONCRETE BASE

The Unit Price Bid for remove and re-installing brick markers with concrete base as shown on plans shall include all costs for furnishing all materials, labor, and equipment to install concrete slab at the locations on the drawings and in Specification Section 03300 CAST-IN-PLACE CONCRETE. The Bid Price shall also include all preparation costs, including but not necessarily limited to excavation, grading, forming, finishing, reinforcing, compaction, and disposal of any excess materials.

Measurement will be on a linear foot basis of completed remove and re-installing brick markers with concrete base.

Payment at the Unit Price Bid will be full compensation for the work satisfactorily completed.

ITEM NO. 8e BRICK PAVING WITH BORDER COURSE & CONCRETE BASE

The Unit Price Bid for all brick work shall include, but not be limited to, all cost for furnishing all material, labor and equipment required for the installation of brick paving in accordance with the drawings and specifications including detailing as shown in the drawings. The price shall also include the installation of the sand cement setting bed and sand swept joints. Payment will be made at the Unit Price Bid, measured as specified above and will constitute full compensation for the work satisfactorily completed and accepted.

The brick paving will be measured on a square foot basis of the work completed.

Payment, at the Unit Price Bid, will be full compensation for the work satisfactorily completed.

ITEM NO. 7h., 7i, & 7j. ADA CONCRETE RAMP, & DETECTABLE WARNING SURFACE

The Unit Price Bid for ADA concrete ramp, reinstall ADA ramp and Detectable warning surfaces shall include, but not be limited to, all cost for furnishing all material, labor and equipment required for the installation of ADA concrete ramp, reinstall ADA ramp and Detectable warning surfaces in accordance with the drawings and specifications and ADA guidelines including detailing as shown in the drawings. Payment will be made at the Unit Price Bid, measured as specified on bid tab and will constitute full compensation for the work satisfactorily completed and accepted.

The ADA concrete ramp, reinstall ADA ramp and Detectable warning surfaces will be measured on a lump sum or square foot basis of the work completed (see bid tab).

Payment, at the Unit Price Bid, will be full compensation for the work satisfactorily completed.

ITEM NO. 8 FOUNTAIN RENOVATION

The Unit Price Bid for fountain renovation shall include, but not be limited to, all cost for furnishing all material, labor and equipment required for the renovation of the existing fountain installation of stone veneer, fill, new plumbing, filter system and items as described by the fountain designer in accordance with the drawings and specifications. Payment will be made at the Unit Price Bid, measured as specified above and will constitute full compensation for the work satisfactorily completed and accepted.

The fountain renovation will be measured on a lump sum basis of the work completed.

Payment, at the Unit Price Bid, will be full compensation the work satisfactorily completed.

ITEM NO. 9 ASPHALT PATCH

The Unit Price Bid for asphalt paving patch shall include all costs for furnishing labor, equipment, and materials for saw cutting, excavating, grading, preparing the subsurface, installing new stabilized aggregate base material, prime coat, asphaltic concrete binder, tack coat, and asphaltic concrete surface course to meet SCDOT Standards as indicated on the drawings and in accordance with the specifications.

The asphalt patch will be measured on a square yard basis of the work completed.

Payment at the Unit Price Bid for asphalt patch will be full compensation for work satisfactorily completed.

ITEMS NO. 10a. ADJUST EX. BOX AND ADD DECORATIVE LID

The Unit Price Bid for adjusting drainage structures and adding decorative lids shall include furnishing the materials, labor and equipment, as well as the cost, including but not necessarily limited to, for excavation, removal of existing lid/inlet, if necessary, shoring, dewatering, backfilling, compaction, and disposal of any excess material, in the adjusting drainage structures and adding decorative lids at the locations specified on the drawings and in accordance with Specification Section 02721, Drainage Structures and Inlets and SCDOT standards. Frames and covers are to be included in the Unit Bid price.

The method of measurement will be the number of adjusting drainage structures and adding decorative lids installed.

Payment, at the Unit Price Bid, will be full compensation for each item of work satisfactorily completed.

ITEM NO. 10b., TRENCH FRAME AND GRATE

The Unit Price Bid for trench frame and grate shall include, but not be limited to, all costs for furnishing all material, labor, and equipment required to construct trench frame and grate at the locations indicated on the plans and as specified herein.

Measurement will be in Linear Feet of trench frame and grate in place and accepted. Length of curb & gutter will be measured in accordance with the plans.

Payment will be made at the Unit Price Bid for trench frame and grate measured as specified above and constitute full compensation for the work satisfactorily completed.

ITEM NO. 10c. STORM DRAIN PIPE – 3” RCP

The Unit Price Bid for installing drainpipes indicated on the drawings shall include the costs for furnishing and installing the drainpipe lines as well as the costs of trench excavation, disposal of

excess excavated material off-site, sheeting and bracing, dewatering, removal and disposal of existing storm drainage pipes indicated in the drawing, locating, avoiding, and working around existing utilities. Hauling of fill materials, filling of ditches as shown in the details, backfilling, compaction, grading, drain line tie-in to existing structures, and all other work associated with the requirements for the pipe installation shall also be included.

Measurement for drainpipe lines shall be in lump sum.

Payment, at the Unit Price Bid, will be full compensation for the work satisfactorily completed.

ITEM NO. 12a-h., PLANTING

The Unit Price bid for planting shall include costs for furnishing all labor, equipment and materials including planting mixtures for providing and installing the plant material at the locations shown on the drawings and in accordance with the specifications. The Contractor also shall include topsoil, planting mix, weed fabric, and double hammered hardwood mulch in the bid price. Topsoil and mulch shall be added to areas as needed per specifications.

Measurement will be on a per item basis for plant material installed and accepted.

Payment, at the Unit Price Bid, will be full compensation for the work satisfactorily completed.

ITEM NO. 13 IRRIGATION

The Lump Sum bid for irrigation shall include costs for all labor, equipment, and material for installing the individual items at the locations on the Drawings and in accordance with the details and specifications. The price shall also include new service line or the tapping and setting of a new meter and backflow preventer if required to operate system.

Measurement will be on a lump sum basis of the irrigation system installed and accepted.

Payment, at the Lump Sum Bid, will be full compensation for all work satisfactorily completed.

ITEM NOS. 14b., RESTROOM BUILDING

The Lump Sum Bid for structures shall include:

1. The purchase of all materials required for construction of the restroom building as per architectural plans and specifications.
2. Structure layout as per architectural drawings & site drawings
3. All labor and equipment required to construct the restroom building.
4. Concrete floor slab and foundations as shown on the architectural and structural plans.
5. Sanitary Sewer clean outs and connection to existing City of Waltherboro sewer tap.
6. Domestic water line connection to existing City of Waltherboro water meter.
7. Electrical Service and coordination with Duke Energy to bring underground service to the proposed building.

8. Coordination with City of Waltherboro and all utility companies associated with the improvements as shown on the plans.

Measurement will be fully completed structure and accepted.

Payment at the lump sum Bid will be full compensation for the work satisfactorily completed.

ITEM NO. 15a., 15b PAINTING EX. ARBOR AND GATE

The Lump Sum bid for painting the existing arbor shall include costs for all labor, equipment, and material for painting the individual items at the locations on the Drawings and in accordance with the details and specifications. The price shall also include painting the existing arbor and removal and painting and reinstalling of the existing pedestrian gate at the end of the alley. Colors to be selected by owner, exterior grade paint to be utilized specified for exterior use on each material.

Measurement will be on a lump sum basis of the arbor and gate painted and accepted.

Payment, at the Lump Sum Bid, will be full compensation for all work satisfactorily completed.

BID ALTERNATE:

ITEM NO. 1 SHADE SAILS – (DESIGN BUILD)

The Unit Price Bid for Shade Sail design build shall include costs for all labor, design, geotechnical evaluation, equipment, post and material for installing the shade sails across the existing courtyard. Cost to include add bid low voltage lighting to proposed poles at the locations on the Drawings and in accordance with the details and specifications. The price shall also include coordination with all local property owners and City of Waltherboro.

Payment will be measured on a lump sum basis of shade sails installed and accepted.

Payment, at the Unit Price Bid, will be full compensation for all work satisfactorily completed.

(End Section 01250)

PART ONE - DESCRIPTION:

The Contractor shall furnish all labor, material, equipment, and supplies, and shall perform all earthwork including excavation and backfill, pavement removal, sheathing, bracing, shoring, pumping or bailing, dewatering, restoration and cleanup; all as indicated, specified and/or necessary to complete the work.

1.1 Any reference to SCDOT standard specifications was obtained from the "Standard Specifications for Highway Construction" latest edition, published by the South Carolina Department of Transportation. Unless otherwise noted, the most current date published applies.

1.2 Related Work: Reference the following specifications for related work:

02270 Erosion Control

02820 Grassing

PART TWO - MATERIALS:

2.1 Fill Material: Shall be classified as ML-low plasticity silt or better by the Unified Soil Classification System and tabulated below:

	<u>Unified Class</u>	<u>Description</u>
Class I		1/4" - 1-1/2" well graded stone including coral, slag, cinders, crushed stone and crushed shells
Class II	GM	Coarse gravel well graded
	GP	Coarse gravel poorly graded
	SW	Coarse sands well graded
	SP	Coarse sands poorly graded
Class III	GM	Silty-sandy gravel
	GC	Clayey-sandy gravel
	SM	Silty-sands
	SC	Clayey-sands
Class IV	ML	Inorganic silts and fine sands

Fill material shall exhibit a plasticity index of less than 20, and Standard Proctor maximum density at optimum moisture greater than 90 pounds per cubic foot.

2.1.1 The following materials are unacceptable:

	<u>Unified Class</u>	<u>Description</u>
Class IV	CL	Inorganic clays - low plasticity
	MH	Inorganic elastic silts
	CH	Inorganic clays - high plasticity
Class V	OL	Organic silts
	OH	Organic clays
	PT	Highly organic soil

2.2 Washed Stone: Stone material where indicated shall be crushed stone or gravel of strong, durable nature and shall conform to standard size No. 57 per SCDOT Section 804.

2.3 Class C Concrete: Minimum 28-day compressive strength of 2000 psi.

PART THREE – CONSTRUCTION:

3.1 Existing Facilities:

3.1.1 Existing Utilities Shown on the Drawings: It shall be the Contractor's responsibility to conduct the work in such a manner as to avoid damage to or interference with any utilities services shown on the drawings. If such damage, interference, or interruption of service shall occur as a result of his work, then it shall be the Contractor's responsibility to promptly notify the Engineer of the occurrence and to repair or correct it immediately, at his own expense, and to the satisfaction of the Engineer and the Owner of the Utility.

3.1.2 Existing Utilities Not Shown on the Drawings: It shall be the Contractor's responsibility to exercise all reasonable precaution in the performance of the work to avoid damage to or interference with any utilities services, even though not shown on the drawings. If such damage, interference, or interruption of service shall occur as the result of this work, then the Contractor's responsibility will be the same as stipulated in Paragraph 2.1 above.

3.2 Excavation and Backfill - General Requirements:

3.2.1 Pavement, gutters, sidewalks, aprons and curbs which will be disturbed by excavation shall be removed and disposed of as a part of ordinary excavation. That which is to be removed shall be cut or sawn along clean straight lines from that which is to remain. Remove enough such that a minimum of twelve inches of undisturbed earth remain between the excavation and that which is to remain.

3.2.2 Where required, and as approved by the Engineer, sheeting and bracing shall be used to prevent injury to persons, caving of trench walls and to conform with all governing laws and ordinances. Sheeting and bracing shall be left in place until the trench is refilled to a safe limit. The top portion may then be removed, but the lower portion shall remain undisturbed.

3.2.3 It is the responsibility of the Contractor to provide an adequate dewatering system where required. The system shall be capable of removing any water that accumulates in the excavation and maintaining the excavation in a dry condition while construction is in progress. The surface of the ground shall be sloped away from the excavation or piping provided to prevent surface water from entering the excavation. Disposal of water resulting from the dewatering operation shall be done in a manner that does not interfere with normal drainage, and does not cause damage to any portion of the work or adjacent property. All drains, culverts, storm sewers and inlets subject to the dewatering operation shall be kept clean and open for normal surface drainage. The dewatering system shall be maintained until backfilling is completed or as otherwise directed by the Engineer. All damage resulting from the dewatering operation shall be repaired by the Contractor to the satisfaction of the Engineer and at no cost to the Owner.

3.3 The Contractor shall erect, maintain, and safeguard temporary bridges, walkways, or crossings where it is necessary to maintain traffic. Where trenches are open in the vicinity of pedestrian or vehicular travel lanes, suitable carriers will be constructed and maintained, and the work will be further protected from sunset to sunrise with a sufficient number of lights or flares to fully protect the public from accidents on account of construction.

3.4 If the specified depth for foundations proves insufficient to reach firm ground, the Engineer shall be notified and will furnish instructions for proceeding with the work.

3.5 Rock, wherever used as a name for excavation material, shall mean boulders exceeding one-half cubic yard in volume or solid ledge rock, which in the opinion of the Engineer, requires for its removal drilling and blasting, or wedging or sledge and barring. Where rock excavation is necessary, the Contractor shall excavate the same as near the neat lines of the trench as practicable and he shall take all due precautions in the pursuance of the work. He will be held strictly responsible for all injury to life and to public and private property.

3.5.1 Rock shall be removed from the excavation to the following limits:

- a. Trenches - The diameter of the pipe plus 8-inches on each side, extending six inches below the pipe wall and bell.
- b. Structures - 12-inches beyond the vertical plane of the structure on all sides and on the bottom only to the depth necessary for proper installation.

3.6 Blasting: Prior to commencing any blasting operations the Contractor shall notify the Engineer and either the Local Fire Department - Fire Prevention Section or the County Fire Administrator (as applicable) and obtain blasting permits as required. The Contractor must furnish proof (certification) of insurance specifically covering any and all obligations assumed pursuant to the use of explosives.

All blasting operations shall be conducted in strict accordance with any and all decrees, rules, regulations, ordinances, laws as may be imposed by any regulatory body and/or agency having jurisdiction over the work relative to handling, transporting, use and storage of explosives. Blasting shall be done only by competent, and experienced men whose activities shall be conducted in a workmanlike manner. Satisfactory information must be provided to the Engineer, that the blaster meets or exceeds the qualifications enumerated in OSHA Regulations Part 1926, Subpart U, Section 1926.901 - Blaster Qualifications.

3.6.1 Overburden: Undisturbed overburden may be deemed adequate in lieu of matting but only after the actual depth of the undisturbed overburden has been determined and adjudged sufficient by the Engineer. Under no circumstances will loose or fill overburden be adequate without the use of weighted mats.

3.6.2 Permission to Blast: The Contractor shall not be allowed to blast before 9 a.m. or after 3 p.m. without approval of the Engineer and Owner. Blasting will not occur within any rights-of-way maintained by any agency (D.O.T., R.R., Gas, Owner, etc.) without specific approval of the controlling agency and only in accordance with their respective requirements (as exceeded herein).

The Contractor shall be held responsible for any and all injury to persons or damage to public or private property.

PART FOUR – STRUCTURE EXCAVATION AND BACKFILL:

4.1 Structure Excavation shall be made at the locations shown on the plans and to the exact subgrade required. Bottom of excavations shall be level and in firm, solid material, with soft material or voids treated as specified. Excavated areas shall be kept free of water during the construction period. Where either will stand, footing trenches may be cut to the exact size of the footings; otherwise, forms shall be used. Where necessary, sides of excavations shall be shored and sheathed, or cofferdams built, as required for protection of the work and personnel.

4.1.1 Wherever excavation for a foundation extends below the water table or where specifically indicated on the plans, washed stone shall be placed to a minimum thickness of 12 inches, unless otherwise shown, prior to placing the foundation. The washed stone shall be compacted to 90% of maximum as determined by the Standard Proctor test (ASTM D698).

4.1.2 If the specified depth for foundations proves insufficient to reach firm ground, the Engineer shall be notified for furnishing instructions and proceeding with the work.

4.1.3 An adequate dewatering system shall be provided at all structure excavations and elsewhere as directed by the Engineer. If a well-point system is used, the Contractor shall submit plans to the Engineer for approval. The system shall be capable of removing any water that accumulates in the excavation and maintaining the excavation in a dry condition while construction is in progress. The surface of the ground shall be sloped away from the excavation or piping provided to prevent surface water from entering the excavation. Disposal of water resulting from the dewatering operation shall be done in a manner that does not interfere with normal drainage, and does not cause

damage to any portion of the work or adjacent property. All drains, culverts, storm sewers and inlets subject to the dewatering operation shall be kept clean and open for normal surface drainage. The dewatering system shall be maintained until backfilling is complete or as otherwise directed by the Engineer. All damage resulting from the dewatering operation shall be repaired by the Contractor to the satisfaction of the Engineer and at no cost to the Owner.

4.2 Structure Backfill shall be done with material free from large clods, frozen earth, organic material or any foreign matter, and shall evenly and carefully be placed and tamped in horizontal layers. Compaction equipment specifically designed for these purposes must be present and operational at the job site and shall be utilized throughout to obtain uniform compaction. The degree of compaction and the density shall be determined by the Standard Proctor Test (ASTM D698), with compaction requirements as follows:

<u>Percent of Maximum Density at Optimum Moisture</u>	<u>Location</u>
98	Top 12" of fill pavement or surfacing.
98	Full depth beneath all roads (paved or unpaved), driveways, sidewalks, undercut backfill for structure excavation, and lot fill.
95	All other areas not defined above.

4.2.1 No backfill shall be placed against a structural wall until all connecting structural members are in place. It shall be the Contractor's responsibility to provide compaction to such a degree that subsidence after placing shall not be detrimental to the stability or appearance of the structure, adjacent ground, or paved areas. The Contractor shall provide adequate protection to all structures during backfilling and shall use every precaution to avoid damaging or defacing them in any way. Contractor shall be responsible for the protection of all structures from damage or flotation prior to backfill being placed.

4.2.2 Unless otherwise approved by the Engineer, liquid-retaining structures shall not be backfilled until tested for leakage.

PART FIVE – UNSTABLE SUBGRADE:

5.1 Should unstable soil, organic soil, or soil types classified as fine-grained soils (silts and clays) by ASTM D-2487 be encountered in the bottom of pipe trenches or structure excavations, such soils shall be removed to a depth and width determined by the Engineer, properly disposed of and shall be backfilled with crushed stone conforming to the Department of Transportation Specifications, Size 57. Placement shall not exceed 12-inches loose and compacted to 90% of the dry density determined by the Standard Proctor test ASTM D698 (Class C concrete may be substituted in place of #57 stone at the Contractor's option. A 24-hour cure must be given before proceeding with the work).

PART SIX – SITE GRADING:

Site grading shall conform to the grades indicated by the finish contours on the plans. Where topsoil, pavement, gravel or crushed stone surfacing and other items are shown, rough grade shall be finished to such depth below finish grade as necessary to accommodate these items. All areas where structures are to be built on fill shall be stripped to such depth as necessary to remove turf, roots, organic matter and other objectionable materials.

6.1 Excavation shall be made to the exact elevations, slopes and limits shown on the plans.

6.1.1 Material excavated may be used as fill material as long as it meets the material requirements established herein. Acceptable material must be stockpiled neatly onsite and clear of all unsuitable materials to be removed from the site.

6.2 Fill: Shall incorporate only acceptable materials defined herein. It shall not contain organic material, roots, debris or rock larger than 6 inches in diameter.

6.2.1 Where fill is to be placed, all existing vegetation, roots and other organic matter down to 12 inches below grade shall be stripped and disposed of as directed.

6.2.2 After clearing existing vegetation, at the Engineer's discretion, the site may require proof rolling to ensure that all unstable material has been removed. Proof rolling shall be done in the Engineer's presence, utilizing a fully loaded pan or tandem axle truck.

6.2.3 Fill shall be placed in successive compacted layers not to exceed 6 inches compacted thickness. Each layer shall be spread evenly and compacted as specified below before the next layer is placed.

6.2.4 Rock shall not be incorporated in fill sections supporting pavement or structures.

6.2.5 Where natural slopes exceed 3:1, horizontal benches shall be cut to receive fill material. Slopes of less than 3:1 and other areas shall be scarified prior to placing fill material.

6.2.6 Borrow material, as required, shall be provided by the Contractor at his own expense. Borrow material on site may be utilized provided it complies with these specifications.

6.3 Compaction: Unless otherwise noted, each layer of fill and backfill and the top 12 inches of existing subgrade material in cuts shall be compacted by approved equipment as specified below. The degree of compaction and the density shall be determined by the Standard Proctor Test (ASTM D698).

	Percent of Max. Dry Density at <u>Optimum Moisture Content</u>
Top 12 inches of fill under pavement or surfacing	98%
Fill under roads, structures, and lots	98%
Fill and backfill in other areas	95%

Material too dry for proper compaction shall be moistened by suitable watering devices, turned and harrowed to distribute moisture, and then properly compacted. When material is too wet for proper compaction, operations shall cease until such material has sufficiently dried.

PART SEVEN – COMPACTION TESTS:

The Contractor shall provide compaction tests by an independent testing agency selected by the Contractor and approved by the Engineer. The compaction tests shall be taken at appropriate locations and frequency to demonstrate that the backfill (or fill) has been placed to meet the minimum compaction density required. The testing agency shall submit written test records to the Engineer for all compaction tests performed. Minimum testing shall be:

1. One test per 250 L.F. of trench cut for every 2 feet of backfill placed.
2. One test per 10,000 square feet of fill placed for every foot of fill thickness.

In the event that the soil compaction is not in compliance with these specifications, then the Contractor shall take corrective action, at no cost to the Owner, to compact the soils within the limits of the specifications. The Engineer shall be notified within 24 hours of any failing compaction tests. Any retesting of failed areas shall be performed only after corrective measures have been made by the Contractor to bring the compacted soils into compliance. All retesting shall be performed with the Engineer present.

PART EIGHT – SITE RESTORATION:

8.1 General: All surfaces disturbed by the Contractor in the work shall be restored to a condition equal to or better than that which existed prior to commencement of the work, except as otherwise specified herein.

8.2 Pipe drains, headwalls, catch basins, curbs and gutters, and all incidental drainage structures shall be restored using like materials and details at no additional cost to the Owner. The Contractor shall maintain drainage during construction.

8.3 All cuts, fills and slopes shall be neatly dressed off to the required grade or subgrade, as indicated on the plans.

8.4 Grassed areas shall be restored at no additional cost to the Owner. Disturbed areas shall be covered with two (2) inches of topsoil, furnished by the Contractor from an approved source and of approved quality, then shall be fertilized, and seeded to match existing adjoining areas. All ditches shall be restored to their existing grade, line and cross section.

8.5 Paved surfaces shall be restored in accordance with the provisions of Section 02575.

(End of Section 02200)

SECTION 02222 EXCAVATING, BACKFILLING & COMPACTING FOR UTILITIES

PART 1 DESCRIPTION

The CONTRACTOR shall furnish all labor, material, equipment, and supplies, and shall perform all earthwork including excavation and backfill, pavement removal, sheathing, bracing, shoring, pumping or bailing, dewatering, restoration and cleanup, all as indicated, specified and/or necessary to complete the work.

1.1 Any reference to standard specifications refers to the most current published date of the following specification unless otherwise noted.

1.2 RELATED WORK

Reference the following Specifications Sections for related work:

02270	Erosion and Sediment Control
02933	Seeding and Mulching
03300	Cast-in-Place Concrete

Reference the following National Specifications for related work:

D-2487	ASTM Uniform Soil Classification System, 1991 (US Army Corp of Engineers Standard as revised by the US ACE and the Bureau of Reclamation in 1952)
D-698	ASTM Compaction Testing
P-1926	OSHA Regulations

1.2. REFERENCES

1.2.1 Any reference to Standard National or State Specifications and/or Regulations refers to the most current published date of the specification or regulation unless otherwise noted.

The design, manufacture, and installation of these materials shall meet or exceed the applicable provisions and recommendations of the noted National Specifications and/or Regulations or meet the requirements of the latest revision of these specifications or regulations.

1.2.2. Any reference to SCDOT standard specifications was obtained from the “Standard Specifications for Highway Construction” latest edition, published by the South Carolina Department of Transportation.

PART TWO – MATERIALS:

2.1 Fill Material shall be classified as ML-low plasticity silt or better by the Unified Soil Classification System and tabulated below:

Unified Class	Description
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Class I		1/4" - 1-1/2" well graded stone including coral, slag, cinders, crushed stone and crushed shells
Class II	GM	Coarse gravel well graded
	GP	Coarse gravel poorly graded
	SW	Coarse sands well graded
	SP	Coarse sands poorly graded
Class III	GM	Silty-sandy gravel
	GC	Clayey-sandy gravel
	SM	Silty-sands
	SC	Clayey-sands
Class IV	ML	Inorganic silts and fine sands

Fill material shall exhibit a plasticity index of less than 20 and Standard Proctor maximum density at optimum moisture greater than 90 pounds per cubic foot.

The following materials are unacceptable

	Unified Class	Description
Class IV	CL	Inorganic clays - low plasticity
	MH	Inorganic elastic silts
	CH	Inorganic clays - high plasticity
Class V	OL	Organic silts
	OH	Organic clays
	PT	Highly organic soil

2.2 WASHED STONE

Stone material where indicated shall be crushed stone or gravel of strong, durable nature and shall conform to standard size No. 57 stone in SCDOT Appendix 6:

1 1/2"	100%
1"	95-100%
1/2"	25-60%
#4	0-10%
#8	0-5%

2.3 CLASS C CONCRETE

Minimum 28-day compressive strength of 2000 psi.

PART 3 CONSTRUCTION

3.1 EXISTING FACILITIES

3.1.1 Existing Utilities Shown on the Drawings

It shall be the CONTRACTOR's responsibility to conduct the work in such a manner as to avoid damage to or interference with any utilities services shown on the drawings. If such damage, interference, or interruption of service shall occur as a result of his work, then it shall be the CONTRACTOR's responsibility to promptly notify the ENGINEER of the occurrence and to repair or correct it immediately, at his own expense, and to the satisfaction of the ENGINEER and the OWNER of the Utility.

3.1.2 Existing Utilities Not Shown on the Drawings

It shall be the CONTRACTOR's responsibility to exercise all reasonable precaution in the performance of the work to avoid damage to or interference with any utilities services, even though not shown on the drawings. If such damage, interference, or interruption of service shall occur as the result of this work, then the CONTRACTOR's responsibility will be the same as stipulated in Paragraph 3.1.1 above.

3.2 EXCAVATION AND BACKFILL - General Requirements

3.2.1 Pavement, gutters, sidewalks, aprons and curbs which will be disturbed by excavation shall be removed and disposed of as a part of ordinary excavation. That which is to be removed shall be cut or sawn along clean straight lines from that which is to remain. Remove enough such that a minimum of twelve inches of undisturbed earth remain between the excavation and that which is to remain.

3.2.2 Where required, and as approved by the ENGINEER, sheeting and bracing shall be used to prevent injury to persons, caving of trench walls and to conform with all governing laws and ordinances. Sheeting and bracing shall be left in place until the trench is refilled to a safe limit. The top portion may then be removed, but the lower portion shall remain undisturbed.

3.2.3 It is the responsibility of the CONTRACTOR to provide an adequate dewatering system where required. The system shall be capable of removing any water that accumulates in the excavation and maintaining the excavation in a dry condition while construction is in progress. The surface of the ground shall be sloped away from the excavation or piping provided to prevent surface water from entering the excavation. Disposal of water resulting from the dewatering operation shall be done in a manner that does not interfere with normal drainage, and does not cause damage to any portion of the work or adjacent property. All drains, culverts, storm sewers and inlets subject to the dewatering operation shall be kept clean and open for normal surface drainage. The dewatering system shall be maintained until backfilling is completed or as otherwise directed by the ENGINEER. All damage resulting from the dewatering operation shall be repaired by the CONTRACTOR to the satisfaction of the ENGINEER and at no cost to the OWNER.

3.3 The CONTRACTOR shall erect, maintain, and safeguard temporary bridges, walkways, or crossings where it is necessary to maintain traffic. Where trenches are open in the vicinity of pedestrian or vehicular travel lanes, suitable carriers will be constructed and maintained and the work will be further protected from sunset to sunrise with a sufficient number of lights or flares to fully protect the public from accidents on account of construction.

3.4 If the specified depth for foundations proves insufficient to reach firm ground, the ENGINEER shall be notified and will furnish instructions for proceeding with the work.

3.5 ROCK, wherever used as a name for excavation material, shall mean boulders exceeding one-half cubic yard in volume or solid ledge rock, which in the opinion of the ENGINEER, requires for its removal drilling and blasting, or wedging or sledging and barring. Where rock excavation is necessary, the CONTRACTOR shall excavate the same as near the neat lines of the trench as practicable and he shall take all due precautions in the pursuance of the work. He will be held strictly responsible for all injury to life and to public and private property.

3.5.1 Rock shall be removed from the excavation to the following limits:

3.5.1.1 Trenches - The diameter of the pipe plus 8-inches on each side, extending six inches below the pipe wall and bell.

3.5.1.2 Structures - 12-inches beyond the vertical plane of the structure on all sides and on the bottom only to the depth necessary for proper installation.

3.6 BLASTING

Prior to commencing any blasting operations the CONTRACTOR shall notify the ENGINEER and either the Local Fire Department - Fire Prevention Section or the County Fire Administrator (as applicable) and obtain blasting permits as required. Blasting must be done by a licensed blaster. Blasting and magazine permits must be obtained from the South Carolina Department of Labor, Licensing, and Regulation. The CONTRACTOR must furnish proof (certification) of insurance specifically covering any and all obligations assumed pursuant to the use of explosives.

All blasting operations shall be conducted in strict accordance with any and all decrees, rules, regulations, ordinances, laws as may be imposed by any regulatory body and/or agency having jurisdiction over the work relative to handling, transporting, use and storage of explosives. Blasting shall be done only by competent and experienced men whose activities shall be conducted in a workmanlike manner. Satisfactory information must be provided to the ENGINEER, that the blaster meets or exceeds the qualifications enumerated in OSHA Regulations Part 1926, Subpart U, Section 1926.901 - Blaster Qualifications.

The CONTRACTOR shall protect all structures from the effects of the blast and repair any resulting damage. If the CONTRACTOR repeatedly uses excessive blasting charges or blasts in an unsafe or improper manner, the ENGINEER may direct the CONTRACTOR to employ an independent blasting consultant to supervise the preparation for each blast and approve the quantity of each charge.

3.6.1 Overburden

Undisturbed overburden may be deemed adequate in lieu of matting but only after the actual depth of the undisturbed overburden has been determined and adjudged sufficient by the ENGINEER. Under no circumstances will loose or fill overburden be adequate without the use of weighted mats.

3.6.2 Permission to Blast

The CONTRACTOR shall not be allowed to blast before 9 a.m. or after 3 p.m. without approval of the ENGINEER and OWNER. Blasting will not occur within any rights-of-way maintained by any agency (D.O.T., R.R., Gas, OWNER, etc.) without specific approval of the controlling agency and only in accordance with their respective requirements (as exceeded herein). The CONTRACTOR shall be held responsible for any and all injury to persons or damage to public or private property.

3.6.3 The CONTRACTOR shall not use excavated rock as backfill material. Dispose of rock which is surplus or not suitable for use as rip rap.

3.6.4 Monitoring

The CONTRACTOR shall notify the ENGINEER prior to any blasting. Additionally, the CONTRACTOR shall notify the ENGINEER before any charge is set. Following review by the ENGINEER regarding the proximity of permanent structures to the blasting site, the ENGINEER may direct the CONTRACTOR to employ an independent, qualified specialty Sub-Contractor, approved by the ENGINEER, to monitor the blasting by use of seismograph, identify the areas where light charges must be used, conduct pre-blast and post-blast inspections of structures, including photographs or videos, and maintain a detailed written log.

3.7. **STRUCTURE EXCAVATION AND BACKFILL**

3.7.1 Structure Excavation shall be made at the locations shown on the plans and to the exact subgrade required. Bottom of excavations shall be level and in firm, solid material, with soft material or voids treated as specified. Excavated areas shall be kept free of water during the construction period. Where earth will stand, footing trenches may be cut to the exact size of the footings; otherwise, forms shall be used. Where necessary, sides of excavations shall be shored and sheathed, or cofferdams built, as required for protection of the work and personnel.

3.7.1.1 Wherever excavation for a foundation extends below the water table or where specifically indicated on the plans, washed stone shall be placed to a minimum thickness of 12 inches, unless otherwise shown, prior to placing the foundation. The washed stone shall be compacted to 90% of maximum as determined by the Standard Proctor test (ASTM D698).

3.7.1.2 If the specified depth for foundations proves insufficient to reach firm ground, the ENGINEER shall be notified for furnishing instructions and proceeding with the work.

3.7.1.3 An adequate dewatering system shall be provided at all structure excavations and elsewhere as directed by the ENGINEER. If a well-point system is used, the CONTRACTOR shall submit plans to the ENGINEER for approval. The system shall be capable of removing any water that accumulates in the excavation and maintaining the excavation in a dry condition while construction is in progress. The surface of the ground shall be sloped away from the excavation or piping provided to prevent surface water from entering the excavation. Disposal of water resulting from the dewatering operation shall be done in a manner that does not interfere with normal drainage, and does not cause damage to any portion of the work or adjacent property. All drains, culverts, storm sewers and inlets subject to the dewatering operation shall be kept clean and open for normal surface drainage. The dewatering system shall be maintained until backfilling is complete or as otherwise directed by the ENGINEER. All damage resulting from the dewatering operation shall be repaired by the CONTRACTOR to the satisfaction of the ENGINEER and at no cost to the OWNER.

3.8. Structure Backfill shall be done with material free from large clods, frozen earth, organic material or any foreign matter, and shall evenly and carefully be placed and tamped in horizontal layers. Compaction equipment specifically designed for these purposes must be present and operational at the job site and shall be utilized throughout to obtain uniform compaction. The degree of compaction and the density shall be determined by the Standard Proctor Test (ASTM D698), with compaction requirements as follows:

<u>Percent of Maximum Density at Optimum Moisture</u>	<u>Location</u>
100	Top 12" of fill for pavement or surfacing
95	Full depth beneath all roads (paved or unpaved), driveways, sidewalks, undercut backfill for structure excavation, and lots
95	All other areas not defined above

3.8.1 No backfill shall be placed against a structural wall until all connecting structural members are in place. It shall be the CONTRACTOR's responsibility to provide compaction to such a degree that subsidence after placing shall not be detrimental to the stability or appearance of the structure, adjacent ground, or paved areas. The CONTRACTOR shall provide adequate protection to all structures during backfilling and shall use every precaution to avoid damaging or defacing them in any way. CONTRACTOR shall be responsible for the protection of all structures from damage or flotation prior to backfill being placed.

3.8.2 Unless otherwise approved by the ENGINEER, liquid-retaining structures shall not be backfilled until tested for leakage.

3.9. UNSTABLE SUBGRADE

Should unstable soil, organic soil, or soil types classified as fine-grained soils (silts and clays) by ASTM D-2487 be encountered in the bottom of pipe trenches or structure excavations, such soils shall be removed to a depth and width determined by the ENGINEER, properly disposed of and shall be backfilled with crushed stone conforming to the Department of Transportation Specifications, Size 57. Placement shall not exceed 12-inches loose and compacted to 90% of the dry density determined by the Standard Proctor Test ASTM D698 (Class C concrete may be substituted in place of #57 stone at the CONTRACTOR's option. A 24-hour cure must be given before proceeding with the work).

3.10. SITE GRADING

Site grading shall conform to the grades indicated by the finish contours on the plans. Where topsoil, pavement, gravel or crushed stone surfacing and other items are shown, rough grade shall be finished to such depth below finish grade as necessary to accommodate these items. All areas where structures are to be built on fill shall be stripped to such depth as necessary to remove turf, roots, organic matter and other objectionable materials.

3.10.1 Excavation shall be made to the exact elevations, slopes and limits shown on the plans. Material excavated may be used as fill material as long as it meets the material requirements established herein. Acceptable material must be stockpiled neatly onsite and clear of all unsuitable materials to be removed from the site.

3.10.2 Fill shall incorporate only acceptable materials defined herein. It shall not contain organic material, roots, debris or rock larger than 6 inches in diameter.

3.10.2.1 Where fill is to be placed, all existing vegetation, roots and other organic matter down to 12 inches below grade shall be stripped and disposed of as directed.

3.10.2.2 After clearing existing vegetation, at the ENGINEER's discretion, the site may require proof rolling to insure that all unstable material has been removed. Proof rolling shall be done in the ENGINEER's presence, utilizing a loaded dump truck or similar pneumatic-tired vehicle with a minimum loaded weight of 25 tons.

3.10.2.3 Fill shall be placed in successive compacted layers not to exceed 6 inches compacted thickness. Each layer shall be spread evenly and compacted as specified below before the next layer is placed.

3.10.2.4 Rock shall not be incorporated in fill sections supporting pavement or structures.

3.10.2.5 Where natural slopes exceed 3:1, horizontal benches shall be cut to receive fill material. Slopes of less than 3:1 and other areas shall be scarified prior to placing fill material.

3.10.2.6 Borrow material, as required, shall be provided by the CONTRACTOR at his own expense. Borrow material on site may be utilized provided it complies with these specifications.

3.11. COMPACTION

Unless otherwise noted, each layer of fill and backfill and the top 12 inches of existing subgrade material in cuts shall be compacted by approved equipment as specified below. The degree of compaction and the density shall be determined by the Standard Proctor Test (ASTM D698).

	Percent of Max. Dry Density at Optimum Moisture Content
Top 12 inches of fill under pavement or surface	95%
Fill under roads and structures	95%
Fill and backfill in other areas	95%

Material too dry for proper compaction shall be moistened by suitable watering devices, turned and harrowed to distribute moisture, and then properly compacted. When material is too wet for proper compaction, operations shall cease until such material has sufficiently dried.

3.12. COMPACTION TESTS

The OWNER shall provide compaction tests by an independent testing agency selected by the OWNER and approved by the ENGINEER. CONTRACTOR to coordinate with independent testing agency for tests. The compaction tests shall be taken at appropriate locations and frequency to demonstrate that the backfill (or fill) has been placed to meet the minimum compaction density required. The testing agency shall submit written test records to the ENGINEER for all compaction tests performed. Minimum testing shall be one test per 500 CY of material placed at the ENGINEER's option and one test per 10,000 square feet of fill placed for every foot of fill thickness.

In the event that the soil compaction is not in compliance with these specifications, then the CONTRACTOR shall take corrective action, at no cost to the OWNER, to compact the soils within the limits of the specifications. The ENGINEER shall be notified within 24 hours of any failing compaction tests. Any retesting of failed areas shall be performed only after corrective measures have been made by the CONTRACTOR to bring the compacted soils into compliance.

All retesting shall be performed with the ENGINEER present.

3.13. SITE RESTORATION

3.13.1 General

All surfaces disturbed by the CONTRACTOR in the work shall be restored to a condition equal to or better than that which existed prior to commencement of the work, except as otherwise specified herein.

3.13.2 Pipe drains, headwalls, catch basins, curbs and gutters, and all incidental drainage structures shall be restored using like materials and details at no additional cost to the OWNER. The CONTRACTOR shall maintain drainage during construction.

3.13.3 All cuts, fills and slopes shall be neatly dressed off to the required grade or subgrade, as indicated on the plans.

3.13.4 Grassed areas shall be restored at no additional cost to the OWNER. Disturbed areas shall be covered with two (2) inches of topsoil, furnished by the CONTRACTOR from an approved source and of approved quality, then shall be fertilized, and seeded to match existing adjoining areas. All ditches shall be restored to their existing grade, line and cross section.

(End of Section 02222)

PART 1 DESCRIPTION:

The work covered by this section consists of the preparation, shaping and compaction of either an un-stabilized or stabilized subgrade, suitable for placement of base course, pavement and shoulders or for the placement of structures as called for on the plans. The CONTRACTOR shall furnish all equipment, tools, labor and materials necessary to complete the work in accordance with the plans and specifications.

1.1 RELATED WORK

Any reference to standard specifications refers to the most current published date published of the following specification unless otherwise noted.

1.1.1. Reference the following specifications for related work:

Section 02200 Earthwork
ASTM C977
AASHTO T26
AASHTO T-99

Subgrade work shall conform to the "Standard Specifications for Roads and Structures" latest edition, published by the South Carolina Department of Transportation.

PART 2 MATERIALS**2.1. WATER**

Water shall be clean and free from oil, salt, acid, alkali, organic matter or other substances detrimental to the finished product. Water shall not contain more than 100-PPM chlorides or more than 500 PPM dissolved solids, and shall have a pH in the range of 4.5 to 8.5.

2.1.1. Water from a city water supply may be accepted without being tested. Water from other sources shall be tested in accordance with AASHTO T26, unless the requirement for testing is waived by the ENGINEER. The cost of testing water shall be paid by the CONTRACTOR.

2.2. LIME

Quicklime and Hydrated Lime for soil stabilization shall meet the requirements of ASTM C977 except that it shall contain a minimum of 90 percent available calcium oxide (CaO) on an LOI-free basis.

2.2.1. Hydrated Lime shall have a minimum of 85 percent passing a No. 200 sieve.

2.2.2. Quicklime shall meet one of the following gradation requirements.

"A" Gradation (% Passing)	"B" Gradation (% Passing)
3/4 in. Sieve - 100%	No. 6 Sieve 100%
1/8 in. Sieve - 0% to 5%	

2.2.3. The CONTRACTOR shall furnish material certifications with each shipment of lime attesting that the lime meets the requirements of the specifications; however, the material shall be subject to inspection, test or rejection by the ENGINEER at any time.

2.3. STABILIZER AGGREGATE

Stabilizer Aggregate shall consist of crushed stone or gravel or other similar material having hard, strong, durable particles free of adherent coatings.

STABILIZER AGGREGATE GRADATION ACCEPTANCE CRITERIA

Column A Sieve Size	Column B % Passing	
1½"	98 - 100	
1"	60 - 100	
½"	36 - 84	
No. 4	21 - 61	
No. 10	10 - 50	
No. 40		0 - 34
No. 200	0 - 13	
Material Passing No. 40 Sieve		
L.L.	0 - 30	
P.I.	0 - 6	

PART 3 INSTALLATION

3.1 GENERAL REQUIREMENTS

All subgrade preparation shall be in conformance with local and state Department of Transportation requirements.

3.1.1 The subgrade for roadways and structures shall be shaped to conform to the lines, grades and typical sections shown on the plans or established by the ENGINEER. All vegetation, organic matter or other deleterious material shall be removed and properly disposed of by the CONTRACTOR. Nor shall the soil contain stone or gravel larger than 2 inches for the full depth of the specified subgrade thickness. In areas where the subgrade is to be stabilized with aggregate, the subgrade surface may be left uniformly below grade to provide for the addition of the stabilizer aggregate.

3.1.2 All material to a depth of 12 inches below the finished surface of the subgrade shall be compacted to at least 98% of the soil's Standard Proctor maximum dry unit weight.

3.1.3 A tolerance of plus or minus 0.1+ foot from the established grade will be permitted after the subgrade has been graded and compacted to a uniform surface.

3.2 PROOF ROLLING

The subgrade for roads, parking areas and other locations designated on the plans or by the ENGINEER shall be proof rolled in accordance with local and state Department of

Transportation requirements, to test for stability and uniformity of compaction. The subgrade shall be proof rolled in the presence of the ENGINEER, the OWNER'S independent testing agency or his designee using a loaded dump truck or similar pneumatic-tired vehicle with a minimum loaded weight of 25 tons. Any area of the subgrade which pumps or ruts excessively shall be considered unsatisfactory and shall be windrowed and dried or shall receive lime or aggregate stabilization as directed by the ENGINEER. The subgrade shall then be recompacted and proof rolled at no additional cost to the OWNER, repeating the above-outlined process until a stable, unyielding and uniformly compacted subgrade is provided.

3.3 LIME STABILIZED SUBGRADE

Where the existing soil is incapable of providing adequate foundation for roadways or structures or where called for on the plans, the subgrade may be stabilized using lime. The treatment of subgrade soils with lime shall be in conformance with local and state Department of Transportation requirements.

3.4 AGGREGATE STABILIZED SUBGRADE

Where the existing soil is incapable of providing adequate foundation for roadways or structures or where called for on the plans, the subgrade may be stabilized using aggregate. The treatment of subgrade soils with aggregate shall be in conformance with local and state Department of Transportation requirements.

(End of Section 02231)

PART 1 DESCRIPTION

1.1. Erosion and sedimentation control shall be provided by the CONTRACTOR for all areas of the site denuded or otherwise disturbed during construction. The CONTRACTOR shall be responsible for all installation, materials, labor, and maintenance of erosion and sediment control devices, as well as removal of temporary erosion and sediment control devices shown on the plans or required to protect all downstream properties, natural waterways, streams, lakes, ponds, catch basins, drainage ditches, roads, gutters, natural buffer zones, and man-made structures.

1.2. Erosion and sediment control procedures and facilities shall conform to all legally regulated procedures for the control of erosion and sedimentation.

1.3. RELATED WORK

See the following sections for related work.

02271	Engineering Fabrics
02275	Stone for Erosion Control
02277	Temporary Silt Fence
02933	Seeding and Mulching

1.4 REFERENCES

Any reference to standard National or State Specifications and/or Regulations refers to the most current published date of the specification or regulation unless noted otherwise.

The design, manufacture, and installation of these materials shall meet or exceed the applicable provisions and recommendations of the noted National Specifications and/or Regulations or meet the requirements of the latest revision of these specifications or regulations.

1.5 SPECIAL REFERENCES

Erosion and sediment control procedures and facilities shall conform to the “Standard Specifications for Highway Construction” latest edition, published by the South Carolina Department of Transportation and South Carolina Stormwater Management and Sediment Control Handbook as published by EQC, Bureau of Water, SC Department of Health and Environmental Control.

PART 2 MATERIALS

2.1. Washed stone to be used in temporary sediment basins shall be of strong, durable nature, resistant to weathering and shall be graded to conform to local and state Department of Transportation requirements.

2.2. Refer to other sections within these specifications as listed in Item 1.3 above for other material specification required in the installation of erosion and sediment control facilities.

PART 3 INSTALLATION

3.1 GENERAL REQUIREMENTS

3.1.1 The CONTRACTOR shall follow the erosion control construction sequence schedule as shown on the contract drawings, except that should circumstances dictate that extra precaution be taken to prohibit erosion and sedimentation on the project, the CONTRACTOR will, at his own expense, take preventative measures as needed.

3.1.2 The CONTRACTOR is required to maintain all erosion and sediment control facilities to insure proper performance throughout the construction phase and until such time all disturbed areas are permanently stabilized.

3.1.3 Upon completion of construction or successful permanent stabilization of all areas which were disturbed before or during construction operations or as indicated on the construction drawings, whichever occurs last, the CONTRACTOR shall remove all temporary erosion and sediment control devices and facilities from the project site. The CONTRACTOR shall retain these items for future use or properly dispose of these items offsite.

3.1.4 The CONTRACTOR shall provide temporary or permanent ground cover as called for on the construction plans within thirty (30) working days after disturbance of any areas on the site.

(End of Section 02270)

PART ONE – GENERAL:

The work covered by this Section consists of the furnishing, installing, maintaining, replacing as needed, and removing of temporary silt fence. The CONTRACTOR shall furnish all equipment, tools, labor and materials necessary to complete the work in accordance with the plans and specifications. All materials and procedures shall conform to the latest version of local and state Department of Transportation requirements.

1.1. Related Work

Any reference to standard specifications refers to the most current published date published of the following specifications unless otherwise noted.

1.1.1. Reference the following specifications for related work:
02270 Erosion Control

All applicable local design manuals, codes and/or ordinances for Erosion and Sedimentation Control. (Where these design manuals, local codes and ordinances are more stringent than the State Department of Transportation, these codes and/or ordinances will control the erosion and sedimentation control procedures to be followed.)

The temporary silt fence shall conform to the “Standard Specifications for Highway Construction” latest edition, published by the South Carolina Department of Transportation.

PART TWO – MATERIALS:**2.1. General Requirements**

Temporary silt fence shall be a water permeable filter type fence for the purposes of removing suspended particles from the water passing through it.

2.2. Posts

Steel posts must be used. Steel posts shall be at least 5 feet in length, approximately 1-3/8 inches wide measured parallel to the fence, and have a minimum weight of 1.25 lb/ft of length. The post shall be equipped with an anchor plate having a minimum area of 14.0 square inches, and shall have a means of retaining wire and fabric in the desired position without displacement.

2.3. Woven Wire Fence

Wire fence fabric shall be at least 32 inches high but no more than 36” high, and shall have at least 6 horizontal wires. Vertical wires shall be spaced 12 inches apart. The top and bottom wires shall be at least 10 gage. All other wires shall be at least 12-1/2 gage.

2.4. Silt Fence Filter Fabric

The filter fabric shall conform to the “Standard Specifications for Highway Construction”, latest edition, published by the South Carolina Department of Transportation and the South Carolina Stormwater Management and Sediment Control Handbook as published by EQC, Water Bureau, South Carolina Department of Health and Environmental control.

Silt fence which incorporates filter fabric meeting the requirements of these State Specifications, but which fail to perform in an acceptable manner shall be replaced with silt fences which are capable of acceptable performance. All silt fences shall meet the local governmental requirements as well as the State's requirements.

PART THREE – INSTALLATION:

3.1. General Requirements

3.1.1. The CONTRACTOR shall install temporary silt fence as shown on the plans or as required by field conditions. The silt fence shall be constructed at the locations shown on the plans and at all other locations necessary to prevent sediment transport, as directed by the ENGINEER.

3.1.2. Class A synthetic filter fabric may be used only in conjunction with woven wire fence fabric backing. Filter fabric shall be attached to the wire fence fabric by wire or other acceptable means.

3.1.3. Class B synthetic filter fabric may be used without the woven wire fence fabric backing, subject to the following conditions:

- Post spacing is reduced to a maximum of 6 feet.
- The proposed fabric has been approved by the ENGINEER as being suitable for use without the woven wire fence fabric backing.
- Fence posts shall be inclined toward the runoff source at an angle of not more than 20° from vertical.
- Posts shall be installed so that no more than 3 feet of the post shall protrude above the ground. Where possible, the filter fabric from a continuous roll cut to the length of the barrier shall be used to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with overlap to the next post. At the time of installation, the fabric will be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.

3.2. Maintenance and Removal

3.2.1. The CONTRACTOR shall inspect temporary silt fences at least once a week and after each rainfall and shall make any required repairs and remove and dispose of silt accumulation immediately. Should the fabric of the silt fence collapse, tear, decompose or become ineffective, the CONTRACTOR will replace it promptly at his own expense. The CONTRACTOR shall remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence.

3.2.2 The CONTRACTOR shall remove all temporary silt fence and associated appurtenances once all disturbed areas upland of the fence is properly and satisfactorily stabilized as called for on the plans.

(End of Section 02277)

PART ONE - GENERAL:**1.01 - SCOPE**

This section covers the furnishing, installation, testing and adjustment based on field conditions of an underground sprinkler system. The irrigation system shall be installed by a CONTRACTOR who specializes in irrigation installation. The CONTRACTOR shall furnish a unit price for each type of head, fitting, pipe, etc. furnished, installed, guaranteed, etc. for the purpose of increasing or decreasing quantities.

1.02 - LINES AND GRADES

The CONTRACTOR shall provide his own lines and grades for this work, and he shall have someone on the site during installation that is familiar with all aspects of irrigation systems.

1.03 - SAFETY CODES AND STANDARDS

Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. No water from the irrigation system shall cover or land on any walkway, hardscape surface or roadway.

1.04 - EXISTING UTILITIES

Locate existing underground utilities by careful hand excavation. Utilities are to remain in place; provide protection from damage during ditching operations. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the OWNER immediately for direction as how to proceed. Cooperate with the utility company in keeping respective service and facilities in operation. Repair damaged facilities to the satisfaction of the utility company.

1.05 - PROTECTION OF PERSONS AND PROPERTY

Barricade open excavation and post with warning lights for safety of persons. Operate warning lights during hours from dusk to dawn each day. Protect structures, utilities, driveways, pavements, and other facilities immediately adjacent to excavation from damage caused by settlement, lateral movement, undermining, washout or other hazards. Take precautions and provide necessary bracing and shoring to guard against movement or settlement of existing improvements. The CONTRACTOR is entirely responsible for the strength and adequacy of bracing and shoring and for the safety and support of construction from damage or injury caused by the lack thereof or by movement or settlement.

1.06 - MATERIALS STORAGE

Stockpile materials where directed. Locate and retain materials away from edge of excavations, even though such excavations may be sheeted and braced, to prevent such material from falling or sliding into excavation to prevent cave-ins.

PART TWO - PRODUCTS:

2.01 - MATERIALS STORAGE

This section covers the furnishings and installation of heads, fittings, pipes, backflow preventers and all other materials shown on the plans or their equivalent. All material shall be new and free of defects.

2.02 - SURPLUS MATERIALS

Remove and dispose of surplus materials from the site at no additional cost to the OWNER.

PART THREE - EXECUTION:

3.01 - COORDINATION

Coordinate work with the OWNER and any other trades on the project to avoid possible conflicts. Before installation is started, the ground shall be within approximately two inches, plus or minus, (2"±) of finished grade.

3.02 - LAYOUT

The arrangement of the system shall be designed by the CONTRACTOR and submitted to the OWNER for approval before proceeding with installation.

3.03 - INSTALLATION OF PIPE

Install pipe in straight runs, without sags and graded for drainage according to applicable code. Cut pipe ends straight, cleanse of dirt before assembly. Lay pipes in trenches, bottoms tamped hard without soft spots.

3.04 - TEST AND INSPECTIONS

Upon completion of tests and inspections, backfill with materials free of rocks and debris; trenches backfilled in six-inch (6") layers with each layer tamped firmly. Remove excess earth from the site.

(End of Section 02441)

PART ONE - GENERAL**1.1 Summary**

1.1.1 Concrete sidewalk shall be constructed of Portland cement concrete, at the locations and to the dimensions, lines, grades and cross section indicated on the Drawings or as directed by the ENGINEER and in conformity with the provisions and requirements set out in these Specifications.

1.1.2 Concrete driveways shall be constructed of Portland Cement concrete, at the locations and to the dimensions, lines, grades and cross section indicated on the Drawings or as directed by the ENGINEER, and in conformity with the provisions and requirements set out in these Specifications.

1.1.3 Concrete sidewalk and driveway shall include all the necessary excavation, unless otherwise indicated, subgrade and subbase preparation, backfilling, final CLEANING up and completing all incidentals thereto, as indicated on the Drawings or as directed by the ENGINEER.

1.2 Related Work Specified Elsewhere:

Excavation and Backfill	Section 02220
Cast-In-Place Concrete	Section 03300
Concrete Sidewalks and Brick Foundation	Section 03310

PART TWO - PRODUCTS**2.1 Materials**

2.1.1 Materials used in the construction of sidewalks and driveways, in addition to the general requirements of these Specifications, shall conform, unless otherwise stipulated, to the following:

2.1.1.1 Concrete shall be manufactured of the materials meeting the requirements of and in accordance with the provisions and requirements for Class "A" concrete as set out in Section 03300 of these Specifications.

2.1.1.2 Crushed stone for base shall meet the gradation requirements for Size 7 or 8 as specified in ASTM D 448 or AASHTO M43.

2.2 Form Material

2.2.1 Forms may be constructed of wood or metal.

2.2.2 The lumber to be used in the construction of wood forms shall be free of bulge or warp, of uniform width, not less than 2-inches (commercial) in thickness, except that 1-inch thickness may be used on curves and shall be sound and free from loose knots. Stakes shall be not less than 2 x 4-inch lumber of sufficient length that, when driven they will hold the forms rigidly in place.

2.2.3 Metal forms shall be approved sections and shall have a flat surface on top. They shall present a smooth surface of the desired contour, sufficiently thick and braced to withstand the weight of the concrete without bulging or becoming displaced.

PART THREE - EXECUTION

3.1 Labor

3.1.1 For finishing, competent and skilled finishers shall be provided.

3.2 Equipment

3.2.1 All equipment necessary and required for the construction of concrete sidewalks, curb and gutter, must be on the Project, proven to be in first class working condition and approved by the ENGINEER, before construction will be permitted to begin.

3.2.2 A one bag mixer will be permitted when the total output of concrete, per 10-hour day does not exceed 25 cubic yards.

3.2.3 Satisfactory floats, edgers, spades and tamps shall be furnished. Tamps of not over 8-inch diameter and weighing not less than 25 pounds shall be provided for tamping subgrade. A 10-foot longitudinal float of the inverted T-type with plough handles attached for manipulation, and a rigid float not less than 18-inches longer than the width of the walk being constructed, shall be provided.

3.3 Removal of Structures and Obstructions

3.3.1 Remove existing curbs, gutters, sidewalks, driveways and other structures shown on the drawings to be removed.

3.3.2 Cut existing concrete neatly, load and haul debris to an SCDHEC approved disposal areas.

3.4 Road and Drainage Excavation

3.4.1 Road and drainage excavation, as indicated on the Drawings or as directed by ENGINEER, shall be performed in accordance with the requirements of Section 02200 of these Specifications.

3.5 Embankment Construction

3.5.1 Embankment construction, as indicated on the Drawings or as directed by the ENGINEER, shall be performed in accordance with the provisions of Section 02200 of these Specifications.

3.6 Subgrade Preparation

3.6.1 The subgrade for sidewalks and driveways shall be formed by excavation to a depth equal to the thickness of the concrete plus 2-inches.

3.6.2 All subgrade shall be of such width as to permit the proper installation and bracing of the forms.

3.6.3 Yielding, or unsuitable material shall be removed and backfilled with satisfactory material. Place 6-inches of graded aggregate base under commercial/industrial driveways, compacted thoroughly and finished to a smooth, unyielding surface and proper line, grade and cross section of the proposed construction.

3.7 Forms

3.7.1 All forms shall be set upon the prepared subgrade, true to lines and grade, and held rigidly in place so as to not to be disturbed or displaced during the placing of the concrete. The top of the form shall be set to exact grade and the height shall be equal to not less than the thickness of the proposed concrete.

3.7.2 All forms shall be so constructed as to form the cross section, contour, etc., of the proposed construction.

3.7.3 Immediately before placing the concrete, the forms shall be given a coat of light oil and where being removed and used again, the forms shall be thoroughly cleaned and oiled each time.

3.7.4 Forms shall be removed within 24 hours after placing concrete and no pressure shall be exerted upon the concrete in removing forms.

3.7.5 When the sidewalk is to be joined to an existing sidewalk, the existing sidewalk, if not in proper condition for the junction, shall be cut to a neat line perpendicular to both the centerline and the surface, or as indicated by the ENGINEER.

3.8 Expansion Joints

3.8.1 Unless otherwise indicated on the Drawings or as directed by the ENGINEER, premoulded expansion joint filler, ½" in thickness, shall be placed at the locations and in line with expansion joints in the adjoining pavement, gutter, and not otherwise indicated on the Drawings, a ½" premoulded expansion joint filler shall be placed at intervals of not over 50 feet apart. All premoulded expansion joint filler must be cut to full width or length of the proposed construction and shall extend to within 1-inch of the top or finished surface. All longitudinal expansion joints shall be placed as indicated on the Drawings or as directed by the ENGINEER.

3.8.2 All expansion joints shall be true, even and present a satisfactory appearance.

3.8.3 All expansion joint material protruding after the concrete has been finished shall be trimmed as directed by the ENGINEER.

3.9 Manufacturing and Placing Concrete

3.9.1 Immediately before placing concrete, the depth of the proposed concrete shall be checked by means of a template cut true to the cross section of the proposed construction and any irregularities shall be corrected.

3.9.2 Immediately before placing concrete, all subgrade shall be thoroughly sprinkled or wetted.

3.9.3 Concrete shall not be placed upon a frozen subgrade or subbase.

3.9.4 Construction joints will be permitted only at grooves or at expansion joints, unless otherwise approved by the ENGINEER.

3.9.5 The concrete shall be manufactured and placed in accordance with the requirements of Section 03300 of these Specifications.

3.9.6 The concrete shall be placed immediately after mixing, the edges, sides, etc., shall be thoroughly spaded and the surfaces tamped sufficiently to thoroughly compact the concrete and bring the mortar to the surface. The concrete shall be deposited and compacted in a single layer.

3.10 Finishing

3.10.1 The concrete shall be stuck-off with a transverse template resting upon the side forms and then shall be floated with a 10 foot longitudinal float working the float transversely across the concrete with a sawing motion, always maintaining it parallel to the edges of the sidewalk, or driveway, where practicable, and in such a manner that all surplus water, laitance and inert material shall be removed from the surface. This operation shall be continued until the surface of the concrete shows no variation from 10-foot straightedge. If necessary, additional concrete shall be added to fill depressions, and the longitudinal float used again. The longitudinal float shall not be moved ahead more than one-half its length at any time.

3.10.2 When the surface of the concrete is free from water and just before the concrete obtains its initial set, it shall be gone over and finished with a wooden float so as to produce a sandy texture. The longitudinal surface variations shall be not more than 1/4-inch under a 12-foot straightedge, nor more than 1/8-inch on a five foot transverse section. The surface of the concrete must be finished so as to drain completely at all times.

3.10.3 The edges of the sidewalks or driveways shall be carefully finished and rounded with an edging tool having a radius of 1/2".

3.10.4 The surface of sidewalks shall be divided into blocks by use of a grooving tool. Grooves shall be placed so as to cause contraction joints to be placed at a groove line, where practical. The grooves shall be spaced approximately five feet apart and the blocks shall be rectangular unless otherwise ordered by the ENGINEER. The grooves shall be cut to a depth of not less than 1-inch. The edges of the grooves shall be edged with an edging tool having a radius of 1/4-inch, and any marks caused by edging or otherwise shall be removed with a wetted brush or wooden float so as to give the surface a uniform texture and finish.

3.10.5 The edges of the concrete at contraction joints shall be rounded with an edging tool having a radius of 1/4-inch. The top and ends, where practicable, of expansion joint material shall be cleaned of all concrete and the expansion joint material shall be trimmed so as to be slightly below the surface of the concrete. All marks caused by edging shall be removed with a wetted brush or wooden float.

3.11 Protection and Curing

3.11.1 Immediately after finishing the concrete, it shall be covered and cured in accordance with the requirements of Section 03300 of these Specifications. If the temperature falls to below freezing, satisfactory heating devices shall be placed under suitable covers to keep the temperature around the concrete at above 45 degrees F.

3.11.2 Pedestrians will not be allowed upon concrete sidewalks or driveways until 12 hours after finishing concrete, and no vehicles or loads shall be permitted upon any sidewalk or driveway until the concrete has attained sufficient strength for such traffic.

3.11.3 The CONTRACTOR shall construct such barricades and protection devices as are necessary to keep pedestrians and traffic off the sidewalks or driveways.

3.11.4 If any sidewalk or driveway is damaged at any time previous to final acceptance of the project, it shall be repaired by removing all concrete within the limits of the grooves, and be replaced, at the CONTRACTOR's expense, with concrete of the type, kind and finish in the original construction.

3.12 Backfilling

3.12.1 Immediately after the concrete has set sufficiently, the spaces along the sides or edges of the sidewalk or driveway shall be refilled with suitable material, this material shall be in compacted layer of not over 4-inches each, until firm and solid.

3.13 Cleaning

3.13.1 All excess or unsuitable material shall be removed and disposed of in accordance with requirements of Section 02200 and 02220 of these Specifications.

3.13.2 Final clean-up shall be performed in accordance with the requirement of Section 02995 of these Specifications.

3.13.3 All material becoming the property of the OWNER shall be stored in a manner and at locations near or on the Project as directed by the ENGINEER.

(End of Section 02523)

SECTION 02527 CONCRETE CURB, CURB AND GUTTER, AND GUTTER

PART 1 DESCRIPTION

The work covered by this Section consists of the construction of Portland cement concrete curb, curb and gutter, concrete noses and concrete gutter necessary to complete the project. The CONTRACTOR shall furnish all equipment, tools, labor and materials necessary to complete the project in conformance with the plans and specifications.

1.1. RELATED WORK

Any reference to standard specifications refers to the most current published date of the following specification unless otherwise noted.

1.2. Reference the following specifications sections for related work:

- 02231 Subgrade
- References to National Specifications for related work:
 - ASTM C150 - Type T Portland Cement
 - ASTM Material Specifications as listed Concrete Products (Section 02513 Part 2)
 - ASTM Testing Requirements - As listed under testing in Section 02513.3.4.2
 - AASHTO Material Requirements - As listed under Concrete Products (Section 02513 Part 2)
 - AASHTO Testing Requirements - As listed under Concrete Products (Section 02513 Part 2)

1.3. REFERENCES

The design, manufacture, and installation of these materials shall meet or exceed the applicable provisions and recommendations of the noted National Specifications or meet the requirements of the latest revision of these specifications.

1.3.1 All concrete curb, curb and gutter, and gutter installation shall conform to the “Standard Specifications for Highway Construction” latest edition, published by the South Carolina Department of Transportation.

1.4. The CONTRACTOR shall furnish all equipment, tools, labor, and materials necessary to complete the work in accordance with the plans and specifications.

PART 2 MATERIALS

All materials shall meet the requirements of Section 03300, Cast In Place Concrete, of these specifications.

PART 3 INSTALLATION

3.1. GENERAL

All concrete curb, curb and gutter, and gutter installation shall conform to the “Standard Specifications for Roads and Structures” latest edition, published by the South Carolina Department of Transportation.

3.2 CONCRETE

Class B concrete shall be used. Prior to placing forms the base or subgrade shall have been compacted to the degree required by the applicable section of these specifications.

3.3 FORMS

Forms shall be of such section and design that they will adequately support the concrete and any construction equipment used to construct the work. Straight forms shall be within a tolerance of 1/8 inch in 10 feet from a true line horizontally and vertically. Form pins shall be metal and shall be capable of holding the forms rigidly in place during construction operations. The form sections shall be connected by a locking joint that shall keep the forms free from vertical and horizontal movement.

3.4 FINISHING

The concrete shall be given a light broom finish with the brush marks parallel to the curb line or gutter line.

3.5 JOINTS

3.5.1 Joints shall be located as shown on the plans except as otherwise provided herein. Joint spacing shall not be less than 10 feet. Where concrete is placed adjacent to Portland cement concrete pavement, the joints shall be located so as to line up with the joints in the concrete pavement.

3.5.2 Grooved contraction joints shall be formed by the use of templates or by other approved methods. Where such joints are not formed by templates, the move shall be of the depth shown on the plans.

3.5.3 Grooved butt joints shall be placed between the work and adjacent pavement except where expansion joints are required by the plans.

3.5.4 All joints shall be sealed except for joints in curb sections not having an integral gutter. In curb and gutter the joint sealer shall not be poured above the top surface of the gutter. Joints in gutter shall be filled with joint sealer to the top surface of the gutter. Joints shall be sealed before backfilling or other adjacent operations are performed.

(End of Section 02527)

PART ONE - GENERAL**1.1 Related Documents**

1.1.1 Requirements of the General Provisions apply to all Work in this Section. Provide all labor, materials, equipment and services indicated on the Drawings, or specified herein, or reasonably necessary for or incidental to a complete job.

1.2 Description of Work

1.2.1 The Work includes furnishing all labor, equipment, and materials and performing all the operations required for the installation of all brick pavers in roadways, sidewalks, driveways, borders, and row-lock paving on a prepared subgrade and concrete base as indicated on the Drawings. Work also includes providing the brick columns as indicated. All brick work shall be constructed to the lines, grades and cross-sections indicated on the Drawings.

1.3 Related Work Specified Elsewhere

Excavation and Backfill	Section 02220
Cast-In-Place Concrete	Section 03300

1.4 Quality Assurance

1.4.1 Installer: The CONTRACTOR or Subcontractor performing the masonry paving work must have at least 5 years of successful experience in the required types of paving application.

1.4.2 Product Handling: Protect brick paving and column materials during storage and construction against wetting by rain, snow or ground water and against soilage or intermixture with earth or other types of materials.

1.4.2.1 Protect grout and mortar materials from deterioration by moisture and temperature. Store in a dry location or in waterproof container.

1.4.3 Hot Weather Requirements: Protect brick work in hot weather to prevent excessive evaporation of setting beds and grout. Provide artificial shade, wind breaks and use cooled materials, as required.

1.5 Submittals

1.5.1 Brick: For a brick to be considered as an approved equivalent to the shade specified, the CONTRACTOR shall submit a sample panel showing consistent brick color to the following address no later than 5:00 PM, two weeks prior to bid opening.

The LandPlan Group South, Inc.
1206 Scott Street
Columbia, SC 29201
ATTN: Charles Howell

1.5.2. Sample Panels: The CONTRACTOR shall construct a sample with full range of brick and mortar colors for the pavement prior to the start of any paving. The work will be inspected by the OWNER and ENGINEER. If the original sample panel is not acceptable, the CONTRACTOR shall provide additional samples at no cost to the OWNER. Accepted sample shall become the standards for the entire job, and shall remain undisturbed until completion of all paving and walk work. All work must have full range of previous colors approved in sample.

1.5.3 The following sample panel shall be constructed separate and distinct from the final paving. Panel size indicated will be the minimum size accepted

1.5.3.1 A 4' x 4' panel of brick paving with the single brick curb border and brick column in accordance with the drawing details for the work.

PART TWO - PRODUCTS

2.1 Brick Columns and Signage: Supply a brick that matches existing columns that is 3-5/8"x 7-5/8" x 2-1/4" in size, the Brick Shall be US Brick Old Guignard, Queen Size with Argos Sahara Mortar Color with White Sand. The paver shall be RUMBLED FULL RANGE Modular or approved equal. The brick/paver must conform to meet ASTM C902, Class SX, Type 1 for traffic.

2.2 All brick shall be supplied by the same manufacturer. The brick shall conform to ASTM 216 and/or ASTM C902, as applicable.

2.3 Mortar: Mortar shall conform to the South Carolina Highway Department Standard Specifications and shall be buff in color.

2.4 Joint Filler: Preformed expansion joint fillers shall be non-extruding resilient, non-bituminous type, conforming to AASHTO M153, Type II, and South Carolina State Highway Department Standards.

2.4.1 Unless otherwise indicated on the Drawings, joint filler shall be 1/2inch.

2.5 Sand: Sand shall be a clean aggregate with less than 10% fines.

PART THREE - EXECUTION

3.1 Brick Border

3.1.1 The CONTRACTOR shall install the concrete foundation for the brick border in accordance with the details and Section 03300. The CONTRACTOR shall then spread a damp/sand cement bed on the foundation. The brick is to have the 4"x8" surface exposed. The mortar joint for the brick border course shall be nominal 3/8-inch, with no joint smaller than 1/4" and no joints greater than 5/8". For brick border in a curved pattern that does not conform to this joint maximum and minimum shall be sawn as required.

3.2 Brick Column Cap

3.2.1 The brick column cap is to have the 4"x8" solid surface exposed. The mortar joint for the row-lock shall be nominal 3/8-inch, with no joint smaller than 1/4" and no joints greater than 5/8".

3.3 Repair, Pointing and Cleaning

3.3.1 Removal of Units: Remove masonry units which are loose, chipped, broken, stained, or otherwise damaged, or if units do not match adjoining units and install in fresh mortar, pointed to eliminate evidence of replacement.

3.3.2 Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints at corners, openings, and adjacent work to provide a neat, uniform appearance, properly prepared for application of sealant compounds.

3.3.2.1 At completion of masonry work, point holes in exposed masonry, and cut out defective joints and tuck point solidly with mortar which has been retempered one or two hours after original mixing.

3.3.3 Cleaning: During construction, keep the exposed faces clean of mortar and other stains. When mortar joints reach thumbprint hardness and are tooled, brush the exposed work with a soft fiber brush to remove adhering mortar, and use a wood paddle to remove more tenacious material. Protect bases of walls from splash stains by covering the adjacent ground with sand, sawdust, or polyethylene.

3.3.3.1 Clean exposed brick masonry surfaces as recommended by BIA Technical Note 20 "Cleaning Clay Products Masonry".

3.3.4 Protection: Advise the ENGINEER of proper procedures required to protect the masonry work from deterioration, discoloration or damage during subsequent construction operations.

3.3.5 Sand-and-Swept Joints: After placement of brick paving, coarse, clean sand shall be swept into the joints for the full depth of the bricks. The CONTRACTOR shall be responsible for reapplication as necessary to achieve the full depth of sand.

(End of Section 02614)

PART ONE - GENERAL**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY**A. Section Includes:**

- 1. Bluestone Paving, set-in mortar setting bed over concrete base.

B. Description of Work:

- 1. This work shall consist of all labor, equipment, and materials and performing all operation required for furnishing, delivering, cleaning and installing bluestone paving and miscellaneous items of the types and sizes indicated below. All bluestone paving shall be constructed to the lines, grades, and cross-section indicated on the drawings.

C. Related Requirements:

- 1. Section 02220 "Excavation and Backfill"
- 2. Section 03100 "Concrete Form Work"
- 3. Section 03300 "Cast-in-Place Concrete"
- 4. Section 03310 "Brick and Flagstone Foundations"

1.3 ACTION SUBMITTALS**A. Product Data: For the following:**

- 1. Unit Pavers.
 - a. Retain approved samples and mockup at the construction site throughout the installation process.

B. Samples for Initial Selection: For each type of unit paver indicated and the following:

- 1. Joint materials involving color selection.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Storage and handling requirements and recommendations.
 - 2. Installation Methods.
- B. Qualification Data: Information indicating compliance with specifications. Include list of completed projects with pertinent contact information.
- C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- D. Manufacturer's Warranties: Warranties and guarantees that are offered by the manufacturer as a customary trade practice shall be turned over to the Client. City of Walterboro, SC shall be named as the obligee on all manufacturer's warranties and guarantees.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 10 years' experience manufacturing/supplying unit pavers for each type of unit paver indicated.
- B. Installer Qualifications: Minimum 5 years' experience assembling and installing unit pavers commercially.
- C. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods for proper performance of the work of this Section.
- D. Shop Drawings:
 - 1. Contractor to get approval from landscape architect/engineer prior to manufacturing.
- E. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
 - 2. Bluestone Paving
 - a. One (1) 4'x4' panel of bluestone paving with mortar in accordance with the drawing details for the work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stone paving units shall be delivered to the site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by forklift or clamp lift. Paving units shall be unloaded at job site in such a manner that no damage occurs to the product.
- B. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

- C. Protect stone paving materials during storage and construction against wetting by rain, snow or ground water and against soilage or intermixture with earth or other types of materials.
- D. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- E. Store aggregates where grading and other required characteristics can be maintained, and contamination avoided.

1.7 FIELD CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- B. Paving units shall not be installed during heavy rain or snowfall over frozen base materials. Sand shall not be wet or frozen.
- C. Hot Weather Requirements: Protect unit paver work in hot weather to prevent excessive evaporation of setting beds and grout. Provide artificial shade, wind breaks and use cooled materials, as required.

PART TWO - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of unit paver, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.2 FLAGSTONE

- A. Bluestone: Blue-blue (sometimes referred to as Select Blue or True Blue), Natural Cleft, Pennsylvania Bluestone complying with ASTM C616/C616M. Bluestone to be of Pennsylvania origin in a blue, blue-gray color range.
 - 1. Color and Grain: Blue to blue-gray with no variegation and no rust or plumb color.
 - 2. Thickness: 1.5 inch, plus or minus 1/4 inch.
 - 3. Face Size: 12 inches (plus or minus 1/2 inch) by 12 inches (plus or minus 1/2 inch) to 36 inches (plus or minus 1/2 inch) by 36 inches (plus or minus 1/2 inch) nominal.
 - 4. Finish: Natural Cleft with no variation greater than 1/4 inch.
 - 5. Pattern: Ashlar Pattern (Contractor to provide pattern for final approval)
 - 6. Joint Size: 1/2 inch.

2.3 MORTAR SETTING-BED MATERIALS

- A. General: Type S Cement-Lime setting mortar mixture consisting of 3 parts white sand to 1 part Type S Cement-Lime. Always measure ingredients to keep the mix consistent from one batch to another. Mix these ingredients dry.
 - 1. Mortar to adhere to ASTM C 207, ASTM C 270, section 718 of the SCDOT 2007 Standard Specification for Highway Construction, manufacture specifications, and construction drawings.
 - 2. Portland Cement: ASTM C150/C150M, Type I or Type II.
 - 3. Sand: ASTM C144.
 - 4. Latex Additive: acrylic resin water emulsion recommended by latex-additive manufacturer for use with field-mixed portland cement.
 - 5. Water: Potable.
 - 6. Color: To be chosen by owner, landscape architect/engineer during submittal process.

2.4 BASE

- A. 4" thick concrete base. See Brick and Flagstone Foundations - Section 03310

2.5 ACCESSORIES

- A. Compressible Foam Filler: Preformed strips complying with ASTM D1056, Grade 2A1.
 - 1. Unless otherwise indicated on the Drawings, joint filler shall be 1/2inch.

PART THREE - EXECUTION

3.1 GENERAL

- A. Construction methods for each type unit shall be provided by the manufacturer and approved by the OWNER based on the site-specific use. Delivery and paving schedule shall be coordinated to minimize interference with normal use of buildings adjacent to paving.

3.2 EXAMINATION

- A. Acceptance of Site Verification of Conditions
 - 1. Contractor shall inspect, accept and certify in writing to the paver installation subcontractor that site conditions meet specifications for the following items prior to installation of concrete pavers.
 - a. Verify that subgrade preparation, compacted density and elevations conform to specified requirements.
 - b. Verify that geotextiles, if applicable, have been placed according to drawings and specifications.
 - c. Verify that aggregate base materials, if applicable, thickness, compacted density, surface tolerances and elevations conform to specified requirements.
 - d. Verify that concrete base, if applicable, has been installed according to drawings and specifications.

- e. Provide written density test results for soil subgrade, aggregate base materials to the Owner, General Contractor and paver installation subcontractor.
 - f. Verify location, type, and elevations of edge restraints, utility structures, and drainage inlets.
 - 2. Do not proceed with installation of unit pavers until subgrade soil and base conditions are corrected by the General Contractor or designated subcontractor.
- B. Determine actual unit paver dimensions (including tolerances) and coordinate with dimensions for pavement areas indicated on Contract Drawings prior to any pavement installation. Adjust pavement area dimensions to eliminate unnecessary paver cutting.

3.3 PREPARATION

- A. Clean surfaces of unit pavers thoroughly prior to installation. Any unit pavers stored by the contractor are to be thoroughly cleaned of all dirt and debris prior to installation such that a “like new” appearance is present.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Verify base is dry, certified by General Contractor as meeting material, installation and grade specifications.
- D. Remove substances from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.
- E. Sweep concrete substrates to remove dirt, dust, debris, and loose particles.
- F. Ensure curb, sidewalk, and edge restraints are installed as per construction drawings.
- G. Verify that base and geotextile is ready to support mortar, edge restraints, and, pavers and imposed loads.
- H. Install geotextile where indicated on construction drawings. Lap ends and edges a minimum of 12 inches.

3.4 INSTALLATION, GENERAL

- A. Do not use unit pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.
- B. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- C. Joint Pattern: As indicated in layout and details.
- D. Tolerances: Do not exceed 1/4 inch in 10 feet from level, or indicated slope, for finished surface of paving.

- E. Expansion and Control Joints: Provide for sealant-filled joints at locations and of widths indicated. Provide compressible foam filler as backing for sealant-filled joints. Install joint filler before setting pavers.

3.5 Bluestone - SETTING-BED APPLICATIONS

- A. Excavate earth true to grade with the allowance of sub-base, setting bed, and flagstone.
- B. Compact soil subgrade uniformly to at least 95 percent of ASTM D 1557 laboratory density.
- C. Form and install 4" Class 3000 concrete base. Concrete base to follow section 701 of the SCDOT 2025 Standard Specifications for Highway Construction and construction drawings.
- D. Before proceeding with installation of flagstone, concrete must cure for a minimum of 14 days. A 28-day waiting period is preferred to ensure concrete has properly cured.
- E. Inspect the natural cleft flagstone surface and discard or work stones that have more than ¼ inch elevation differences. Create as smooth a surface as possible that is easily traversable by individuals of all ages and abilities.
- F. Prepare a Type S Cement-Lime setting mortar mixture consisting of 3 parts white sand to 1 part Type S Cement-Lime. Always measure ingredients to keep the mix consistent from one batch to another. Mix these ingredients dry. Mortar to adhere to ASTM C 207, ASTM C 270, section 718 of the SCDOT 2025 Standard Specification for Highway Construction, manufacture specifications, and construction drawings.
- G. Add potable water to the dry mix to create a damp mixture. Do not over saturate the mix, as it will cause the stone to float on a layer of water when set, causing an improper bond with the setting bed.
- H. Prepare a bond coat consisting of potable water and straight cement powder to the consistency of cake batter.
- I. Apply the mortar bed bond coat to the concrete slab. Lay out a layer of setting mortar no less than 1" thick. Set a test stone and tamp down with a rubber mallet. Pick the stone back up at the edges and check the back of the stone for coverage. Mortar should cover 95 percent of the surface area. After achieving the desired coverage, sprinkle the setting bed with water. Do not over saturate the bed. Dust the surface of the setting bed with a fine layer of dry Cement-Lime.
- J. Coat the back of each stone with the bond coat consisting of water and straight Cement-Lime and then add potable water until the mix is similar to the consistency of cake icing. This mix will be used to create suction between the stone and the masonry structure and will hold the stone in place until the mortar cures. Pack the mortar under the edges of the stone to leave no voids. Make sure to create an expansion joint in the stonework at the same area where there are expansion joints in the masonry subsurface. Repeat the installation steps to set other stones.
- K. Keep the joint between the stones free of loose mortar. It is important to have a clean joint cavity to fill with mortar. "Pointing" up the joints can be done after the installation of the stone is complete.

- L. Prepare the same mixture used for the setting bed for the joint mixture. Fill in all ½" joints with the joint mixture. The joint mix should be much wetter than the setting bed. Purchase a grout bag for use in this phase.
- M. Take a damp sponge and work back and forth across the joint in a 45° direction, slightly compressing the joint and cutting off excess joint mix. Keep plenty of clean water available and rinse the sponge regularly. Remove as much of the joint mix smear as possible from the face of the stone before it dries.
- N. Only prepare as much mix as you can use quickly. If the unused portion starts to set, do not add more water, as this will result in an inconsistent joint strength and possible color difference.
- O. Point joints after setting to seal mortar.
- P. The final surface elevation of paving units after removal of excess mortar shall conform to the plans, shall not deviate more than 1/4-in. under a 10-ft. long straightedge.
- Q. Water should drain freely from the surface and not form puddles.

3.6 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Pointing:
 - 1. During tooling of joints, enlarge voids or holes and completely fill with grout. Point joints at sealant joints to provide a neat, uniform appearance, properly prepared for sealant application.
 - 2. At completion of masonry work, point holes in exposed masonry, and cut out defective joints and tuck point solidly with mortar which has been retempered one or two hours after original mixing.
- C. Cleaning:
 - 1. During construction, keep the exposed faces clean of mortar and other stains. When mortar joints reach thumbprint hardness and are tooled, brush the exposed work with a soft fiber brush to remove adhering mortar, and use a wood paddle to remove more tenacious material. Protect bases of walls from splash stains by covering the adjacent ground with sand, sawdust, or polyethylene.
 - 2. Remove excess grout from exposed paver surfaces, wash and scrub clean.
 - 3. Follow all manufacturer and supplier installation and cleaning instructions for stone pavers and brick pavers. Prior to installation, check that manufacturer installation standards have not altered.
 - 4. Clean exposed brick masonry surfaces as recommended by BIA Technical Note 20 "Cleaning Clay Products Masonry".
- D. After all work in this section is complete, the CONTRACTOR shall protect work from damage due to subsequent construction activity on site. Damage will be replaced at the CONTRACTORS expense prior to final payment.

3.7 PROTECTION

- A. Prohibit foot traffic from installed unit paver for a minimum of 72 hours.
- B. Protect during construction with nonstaining kraft paper, and cover with a layer of untreated plywood where adjoining areas require construction work access.

(End of Section 02780)

PART ONE - GENERAL:**1.01 - SCOPE**

This section includes furnishing all materials, equipment, and labor necessary for the installation of trees and shrubs; protection, maintenance, guarantee and replacement of plants; and all related items required to complete the work shown on the drawings and as specified. The contractor shall furnish a unit price for each type of plant specified for the purpose of adding or deleting plants. The price shall be the same for adding or deleting plants. The price shall include the total cost for furnishing each plant and installation, complete to include mulch. The unit price shall be the same for additions and deletions in bid quantities.

Existing plant material that is to remain shall be thinned, pruned, and all weeds, vines, trash, etc., removed. These plants shall be fertilized the same as for new plantings.

PART TWO - PRODUCTS:**2.01 - TOPSOIL**

Topsoil shall be tested for the pH and corrected, if necessary, before planting operations are started. Test results shall be submitted to the Owner/Landscape Architect prior to beginning planting operations.

2.02 - TOPSOIL TO BE FURNISHED

The contractor shall furnish, at his expense, additional topsoil to properly install all work as specified and as shown on the drawings. The contractor shall provide a soil analysis and report for any area which topsoil is to be stripped and used for this project. Topsoil shall have a "high" rating in each of the basic nutrients tested and a pH ranging from 6.0 to 6.5. Necessary additives shall be incorporated in a proper quantity as recommended in the soil analysis or as necessary to bring the soil supplied up to standards specified. Topsoil shall be from naturally well drained areas. It shall be classified as a loam, silt loam, clay loam or a combination thereof, as determined from the Bureau of Plant Industry, Soils and Agricultural Engineering, USDA triangular soil texture chart. Topsoil shall be without admixture of subsoil and shall be clean.

2.03 - BASIC SLAG AND AGRICULTURE SULPHUR

Basic slag and agricultural sulfur (for correcting soil pH) shall be standard grade.

2.04 - COW MANURE OR SLUDGE

Cow manure shall be heat treated, weed seed free, and commercially bagged.

2.05 - COMMERCIAL FERTILIZER

Commercial fertilizer shall be 15-15-15 (50% organic) formula with trace elements and shall conform to the applicable State Fertilizer Laws. It shall be uniform in composition, dry and free flowing and shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer which becomes caked or otherwise damaged, making it unsuitable for use, will not be accepted.

2.06 - PEAT

Peat shall be a domestic product consisting of partially decomposed vegetable matter of natural occurrence. It shall be brown, clean, low in content of mineral and woody material, mildly acidic and granulated or shredded.

2.07 - MULCH

Double hammered hardwood mulch mix shall be used. Mulch shall be a minimum of 3" depth.

2.08 - WATER

The contractor may use the owner's water if it is available. The contractor shall insure that an adequate supply of water is available for the planting. The contractor shall furnish all necessary hoses, equipment, attachments and accessories for the adequate irrigation of planted areas.

2.09 - PLANT MATERIALS

A. Plants

Plants are shown on the drawings with sizes and spacing.

B. Nomenclature

The names of plants required under this contract conform to those given in Standard Plant Names, latest edition, prepared by American Joint Committee on Horticultural Nomenclature. Names of varieties not included therein conform generally with names accepted in the nursery trade.

C. Quantities

Quantities are shown for information only. The contractor is responsible for calculating his own quantities. If there is a conflict between quantities and spacing, spacing shall prevail.

D. Quality and Size

Plants shall have a habit of growth that is normal for the species and shall be sound, healthy and free from insect pests, plant diseases and injuries. All plants shall equal

or exceed the measurements specified in the plant list, which are minimum acceptable sizes. They shall be measured before pruning, with branches in normal position. Any necessary pruning shall be done at time of planting; however, no plants supplied under this contract shall be pruned back to such extent that it no longer meets specifications. Requirements for the measurement, branching, grading, quality, balling and burlapping of plants in the plant list generally follow the code of standard currently recommended by the American Association of Nurserymen, Inc., in the latest edition of the American Standard for Nursery Stock.

E. Substitution

Substitution will be permitted only upon submission of proof that any plant is not obtainable within four hundred (500) miles of the site and authorized by the owner of a changed order providing the use of the nearest equivalent obtainable size or variety of plant having the same essential characteristics with an equitable adjustment of contract price.

2.10 - TYPE OF PROTECTION TO ROOTS

A. Balled and Burlapped Plants

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

The balls of "B & B" plants which cannot be planted immediately on delivery, shall be covered with moist soil or mulch, or other protection from drying winds and sun.

B. Container Plants

Container grown plants in cans or pots or equal quality as balled and burlapped plants may be substituted in lieu thereof. The plants in the containers shall be delivered to the site and remain in the containers until planted. Plants in containers that are severely root bound shall not be acceptable. All plants shall be carefully removed from their containers in such a manner not to injure the roots.

2.11 - SAMPLES, TESTS AND INSPECTIONS

A. Notice of Sources

Within ten (10) days following acceptance of the bid, the owner shall be notified of the sources of the materials required or desired to be inspected or tested.

B. Topsoil to be Furnished:

The owner reserves the right to inspect the topsoil to be furnished, to determine whether or not it meets the requirements specified, and approve the depth to which it may be stripped. At the time of inspection, the contractor shall be required to take representative soil samples from several locations in the area under consideration. Tests shall be conducted by a State or Commercial Soil Testing Laboratory using methods approved by the Association of Official Agricultural Chemists or the State Agricultural Experimental Station. Delivery of topsoil may begin after approval of the sample. Soil test results shall be submitted to the Owner/Landscape Architect prior to beginning planting operations.

C. Plants

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

PART THREE - EXECUTION:

3.01 - TIME OF PLANTING

It is the responsibility of the contractor to coordinate all phases of the planting. Planting operations shall be conducted under favorable weather conditions during the next season or seasons which are normal for such work. At the option and on the full responsibility of the contractor, planting operations may be conducted under unseasonable conditions without additional compensation.

3.02 - SPRAYING

Plant material shall be sprayed, as may be necessary to control diseases and insects and to prevent their spread to other plantings. Materials and methods employed shall be as are commonly used to control the diseases and pests found present and shall not be injurious to person or structures.

3.03 - PRUNING AND REPAIR

Upon completion of the work under this contract, all trees and shrubs shall be pruned and any injuries repaired. The amount of pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as not to change the natural habit or shape of the plant, however, no plants applied under this contract shall be pruned back to such extent that it no longer meets specifications. All cuts shall be made flush, leaving no stubs. On all cuts over three-fourths inch (3/4") in diameter and bruises or scars on the bark, the injured cambium shall be traced back to living tissue and removed; wounds shall be smoothed and shaped so as not to retain water and the treated area shall be

coated with an acceptable tree wound paint.

3.04 - OBSTRUCTION BELOW GROUND OR OVERHEAD

- A. It is not contemplated that planting shall be done where the depth of soil over underground construction and obstructions is insufficient to accommodate the roots or where pockets of impervious soil will require drainage. Where such conditions are encountered in excavation of planted areas and where the obstruction cannot be removed by hand methods in the course of digging plant pits of the usual size, and where trees to be planted are found to be under overhead wires, other locations for plant material may be designated by the owner.
- B. Removal of underground obstructions, relocation of construction and provision of drainage for planting areas shall be done only as directed by the owner.
- C. If changes in the location of the work, or if the removal of obstructions involves additional work, the contractor shall not proceed until authorized in writing by the owner.

3.05 - NEW PLANTING

A. Layout

New plantings shall be located where shown on the plans except where obstructions below ground or overhead are encountered or where changes have been made in the construction. If adjustments are necessary they shall be made only after approval by the Owner or Landscape Architect. No planting shall be placed closer than one foot (1') to pavements or structures except where indicated.

B. Planting Pits

Reasonable care shall be exercised to have pits dug and soil prepared prior to moving plants to their respective locations for planting to insure that they will not be unnecessarily exposed to drying elements or physical damage. Circular pits with vertical sides shall be excavated for all plants, except for hedge and plants specifically designated on the plans to be planted in beds. Diameter of pits for plant material, trees, and shrubs shall be at least twice the width of the diameter of the ball or spread roots. The depth of pits for trees and shrubs shall be enough to accommodate the ball or roots when the plant is set to finished grade allowing for compacted, prepared soil in the bottom of the pit.

C. Percolation Tests

Subsurface drains have not been included as part of the project, therefore, the contractor shall make such percolation tests as may be necessary to determine if subsurface drainage conditions in landscape areas are so poor as to support moisture conditions potentially fatal to plantings. The following procedure is recommended:

1. Wait at least twenty-four (24) hours after rain and dig test pit twelve inches

(12") square or twelve and one-half inches (12-1/2") in diameter to depth of bottom of plant trench or pit; remove all loose soil (if standing water is visible, notify the owner).

2. Quickly fill bottom with six inches (6"), approximately three and one-fourth gallons (3-1/4 gal.) of water.
3. Record length of time from filling until disappearance of water and divide number of minutes by six (6) to give average time of one inch (1") fall.
4. Compare one inch (1") fall time with the following table:
 - a. One inch (1") in zero to three (0 - 3) minutes indicates rapid absorption.
 - b. One inch (1") in three to five (3 - 5) minutes indicates medium absorption.
 - c. One inch (1") in five to thirty (5 - 30) minutes indicates slow absorption.
 - d. One inch (1") in over sixty (60) minutes indicates impervious soil.
5. If test indicates soil to be semi-impervious or impervious, or if water is initially found in test pit, notify the owner in writing before proceeding further.
6. If the contractor does not make tests at representative locations and file records or results with the owner, or if he plants in areas shown to have poor drainage without a written release from the owner, he shall be liable for any further guaranteed replacements due to subsurface water damage.
7. If the contractor makes proper tests and files complete records indicating semi-impervious soil or worse conditions, he will not be held responsible for future subsurface water damage to work of this contract. The owner may observe the testing at any time, and shall be informed in advance of the time and place of testing.

D. Planting Mixture

Soil used in planting shall be topsoil, as herein before specified, or suitable existing soil, either of which shall be thoroughly mixed with one (1) part peat and one (1) part manure to five (5) parts soil. Very poor soils, grave, hardpan or other soil injurious to plants shall not be used. Except for ericaceous plants, very acidic or sour soil (having a pH of less than six {6}) shall be thoroughly mixed with sufficient slag to produce a slightly acid reaction (a pH of 6.0 to 6.5). Soil used in planting shall be thoroughly mixed with five pounds (5 lbs.) of 16-4-12 (50% organic) formula commercial fertilizer per cubic yard.

E. Excess Soil

Excess excavated soil from planting operations shall be disposed off the site or as directed by the owner.

F. Setting Plants

Unless otherwise specified, all plants shall be planted in pits, centered, and set on compacted planting mixture to such a depth that the finished grade level at the plant after settlement will be the same as that at which the plant was grown. They shall be planted upright and faced to give the best appearance or relationship to adjacent structures. No burlap shall be pulled from under the balls. Platform wire and surplus binding from top and sides of the balls shall be removed. Roots shall be spread in their normal position. All broken or frayed roots shall be cut off evenly. Planting mixture shall be placed and compacted carefully to avoid injury to roots and to fill all voids. When the hole is nearly filled, add water as necessary and allow it to soak away. Fill the holes to finished grade and form a shallow saucer around each plant by placing settles, additional soil shall be filled in to the level of the finished grade.

G. Mulching

All plants shall be mulched with a three inch (3") layer of double hammered hardwood mulch within two (2) days after planting. This mulch shall entirely cover the area of the planting pit, bed, or saucer around each plant.

3.06 - MAINTENANCE

Maintenance shall begin immediately following the last operation of installation for each plant and shall continue in accordance with the following requirements: New planting shall be protected and maintained until installation of all planting is completed plus a minimum of ninety (90) days. Maintenance shall include watering, weeding, cultivating, mulching, removal of dead material, re-inserting plants to proper grades or upright position and restoration of the planting saucer, re-staking or additional staking and other necessary operations. If planting is done after lawn preparation, proper protection to lawn areas shall be provided and any damage resulting from planting operations repaired promptly.

3.07 - INSPECTION FOR ACCEPTANCE

A. Substantial Completion

Substantial completion is determined when installed material is alive and in a healthy condition.

B. Inspection

Inspection of the work of planting to determine completion of contract work will be made by the owner at the conclusion of the maintenance period upon written notice requesting such inspection submitted to the owner at least ten (10) days prior to the anticipated date.

C. Acceptance

After inspection, the contractor will be notified by the owner of acceptance of all work of this section, or, if there are any deficiencies, of the requirements for completion of the work. Maintenance or other work remaining to be done shall be subject to re-inspection before acceptance. Maintenance of all work will be required by the contractor until the entire plantings have been accepted by the owner.

D. Acceptance In Part

The work of planting may be accepted in part by the owner upon written acceptance by the owner clearly stating the portion accepted and the conditions of the acceptance. This in no way voids the replacement on plants under "Plant Guarantee and Replacement".

3.08 - PLANT GUARANTEE AND REPLACEMENT

A. Guarantee

Ten percent (10%) of the Contract Price shall be withheld for a period of twelve (12) months from acceptance to ensure replacement of plant material not meeting the guarantee. Provided that plants are maintained in accordance with the contractor's maintenance schedule, plants shall be guaranteed for one (1) year and shall be alive and in satisfactory growth at the end of the guarantee period.

B. The contractor shall provide the owner with a written detailed outline for maintenance for the first year. This shall cover all plant requirements needed to assure healthy material at the conclusion of the guarantee period.

C. Replacement

At the end of the guarantee period, inspection will be made by the owner upon written notice requesting such inspection submitted by the contractor at least ten (10) days before the requested date. Any plant required under this contract that is dead or not in satisfactory growth, as determined by the owner, shall be removed from the site; these and any plants missing due to the contractor's negligence, shall be replaced as soon as conditions permit, but during the normal planting season. At the successful completion of this work the ten percent (10%) retention shall be released.

D. Materials and Operations

All replacements shall be plants of the same kind and size as specified in the plant list. They shall be furnished and planted as specified under "New Planting". The cost of such replacements shall be borne by the contractor.

E. The contractor shall visit the site on his own schedule during the one (1) year guarantee period to determine if proper maintenance is being conducted. If the contractor determines that the owner is not performing proper maintenance, then he shall outline in writing, in detail, his concerns.

3.09 - SUBMITTALS

The contractor shall submit results of pH tests and his plans for correcting the pH to the owner and the results of the percolation tests prior to beginning planting operations.

(End of Section 02830)

PART ONE – GENERAL:**1.01 – RELATED DOCUMENTS**

Provide all labor, materials, equipment and services indicated on the drawings, or specified herein, or reasonably necessary for, or incidental to a complete job.

PART TWO – PRODUCTS: (This section not applicable.)**PART THREE – EXECUTION:****3.1– Clean Up**

3.1.1 During the progress of the work, keep the site and affected adjacent areas in a neat and clean condition at all times. Remove all rubbish, surplus materials, and unneeded construction equipment from the site. Repair all damages so that the public and property owners will be inconvenienced as little as possible.

3.1.2 Where materials or debris has washed or flowed into, or has been placed in, existing water-courses, ditches, gutters, drains, pipes, and/or structures by work performed under this contract, or elsewhere during the course of the contractor's operations, remove and satisfactorily dispose of such material or debris during the progress of the work. Upon completion of the work, leave all ditches, channels, drains, pipes, and/or structures and work, etc., in a clean and neat condition.

3.1.3 On or before completion of the work, unless otherwise directed or permitted in writing, tear down all temporary buildings and structures built by the contractor for his own use. Remove all temporary works, tools, and machinery or other construction equipment furnished by the contractor. Remove all rubbish from any grounds which have been occupied by the contractor; leave all roads and all parts of the premises and adjacent property affected by the contractor's operations in a neat and satisfactory condition.

3.1.4 Remove, acceptably disinfect and cover all organic matter and materials containing organic matter in, under, and around all privies, houses, and other buildings used.

3.1.5 Restore or replace, when and as directed, any public or private property damaged by contractor's work, equipment or employees to a condition at least equal to that existing immediately prior to the beginning of the operations. Perform, as required, all necessary highway or driveway reshaping of shoulders and ditches, walks and landscaping work. Use suitable materials, equipment and methods for such restoration. The contractor shall be responsible for obtaining releases from the various property owners, stating that all restoration work is satisfactory.

(End of Section 02995)

PART ONE - GENERAL:**1.1 - Description**

1.1.1 Form cast-in-place concrete indicated on drawings and subsequently remove such forms except earth forms.

1.1.2 Related Work Described Elsewhere

1.1.2.1 Concrete Reinforcement, Section 03200

1.1.2.2 Cast-In-Place Concrete, Section 03300

1.2 – Quality Assurance**1.2.1 Qualifications of Workmen**

Provide superintendent or foreman who will be present during this portion of work, who shall be thoroughly familiar with materials being installed, referenced standards and requirements of this work, and who shall direct work performed under this section.

1.2.2 Codes and Standards

1.2.2.1 In addition to complying with pertinent codes and regulations, comply with pertinent recommendations contained in publication ACI 347 of the American Concrete Institute, "Recommended Practice for Concrete Formwork".

1.2.2.2 Where provisions of pertinent codes and standards conflict with this specification, the more stringent provisions shall govern.

1.3 - Submittals**1.3.1 Manufacturer's Data**

Submit two (2) copies manufacturer's data and installation instructions for proprietary materials, including form coatings, manufactured form systems, ties and accessories to the owner for approval.

1.4 – Product Handling**1.4.1 Protection**

Use means necessary to protect formwork materials before, during and after installation and to protect installed work and materials of other trades.

1.4.2 Replacements

In the event of damage, immediately make repairs and replacements necessary at no additional cost to the owner.

PART TWO - PRODUCTS:

2.1 - Materials

2.1.2 Forms for Smooth Finished Exposed Concrete

Plywood, metal, metal-framed plywood faced, or other acceptable panel type materials providing continuous, straight surfaces.

2.1.2.1 Plywood shall comply with U.S. Product Standard PS-1, "B-B High Density Overlaid Concrete Form", Class I.

2.1.2.2 Furnish in largest practicable sizes to minimize joints.

2.1.2.3 Furnish in thickness sufficient to withstand pressure of newly placed concrete without bow or deflection.

2.1.3 Forms for Other Unexposed Concrete

Plywood, lumber, metal or other material acceptable to the owner; lumber shall be dressed on at least two (2) edges and one (1) side for tight fit.

2.2 – Accessories

2.2.1 Form Ties

2.2.1.1 Factory fabricated, adjustable length, removable or snap off metal ties, designed to prevent deflection and to prevent spilling upon removal.

2.2.1.2 Do not use form ties fabricated on job site or wire ties.

2.2.2 Form Coatings

Commercially formulated compounds that will not bond with, stain or adversely affect concrete surfaces, and will not impede wetting of surfaces to be cured with water or curing compounds.

2.3 - Formwork Design

2.3.1 Safety

Design, erect, support, brace and maintain formwork to safely support vertical and lateral loads until such loads can be supported by structure.

2.3.1.1 Construct formwork so that concrete members and structures are of correct size, shape, alignment, elevation and position.

2.3.2 Removable

Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete or adjacent materials.

2.3.3 Tighten

Tighten formwork to prevent leakage of wet concrete. Solidly butt joints and provide backup material at joints to prevent leakage and fins.

2.3.4 Side Forms

Side forms of footings may be omitted and concrete placed directly against excavation.

PART THREE - EXECUTION:

3.1 – Surface Conditions

3.1.1 Inspection

3.1.1.1. Before work of this section, inspect installed work of other trades and verify that such work is complete to the point where this installation may properly begin.

3.1.1.2 Verify that forms may be constructed in accordance with pertinent codes and regulations, referenced standards and original design.

3.1.2 Discrepancies

3.1.2.1 In the event of discrepancy, immediately notify the owner.

3.1.2.2 Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.

3.2 - Form Construction

3.2.1 General

3.2.1.1 Construct to dimensions shown, level, plumb and alignment.

3.2.1.2 Fabricate for easy removal without hammering or prying against concrete surfaces.

3.2.1.3 Examine drawings and specifications and consult with other trades relative to provision for openings.

3.2.1.4 Set required time to be embedded in concrete.

3.2.1.5 Keep form sufficiently wetted to prevent joints opening before concrete placement.

3.2.1.6 Brace and tie forms so as to maintain position and shape. Space forms apart and securely tie together, using metal spreader ties that give positive tying and accurate spreading.

3.2.1.7 Exercise care in form layout to avoid necessity for cutting in-place concrete.

3.2.2 Footing Forms

Footing side forms may be of earth, provided soil will stand without caving and sides are made with neat cuts to minimum dimensions shown on drawings. Make necessary provisions to prevent cave-ins during concrete placement.

3.2.3 Forms for Exposed Construction

Provide sharp, clean corners at intersecting planes, without visible edges or offsets.

3.2.4 Form Coatings

Coat form surfaces before reinforcement is placed. Do not allow excess coating material to accumulate in forms or to come into contact with surfaces to be bonded to fresh concrete.

3.3 – Form Removal

3.3.1 General

Do not remove forms until concrete is twenty-four (24) hours old.

3.3.2 Non-Supporting Formwork

3.3.2.1 Formwork not supporting concrete, such as walls and similar parts of the work, may be removed after cumulatively curing at not less than fifty degrees fahrenheit (50 F) for twenty-four (24) hours after concrete placement, provided that:

3.3.2.1.1 Concrete is sufficiently hard to not be damaged by removal.

3.3.2.1.2 Curing and protection operations are maintained.

3.4 – Form Re-Use

3.4.1 Form re-use shall be subject to advance approval by the owner.

3.4.2 Unless specifically approved in advance by the owner, form re-use shall in no way delay or change schedule for concrete placement from schedule obtainable if all forms were new.

(End of Section 03100)

PART ONE – GENERAL:**1.1 Description****1.1.1 Work Included**

Concrete reinforcement and associated items required for this work as shown on the drawings.

1.1.2 Related Work Described Elsewhere**1.1.2.1. Placement of other embedded items**

Concrete Formwork, Section 03100
Cast-In-Place Concrete, Section 03300

1.2 – Quality Assurance**1.2.1 Qualifications of Workmen**

Provide the superintendent or foreman who will be present during this portion of the work, who shall be thoroughly familiar with materials being installed and the best methods for installation and who shall direct work performed under this section.

1.2.2 Codes and Standards

1.2.2.1 In addition to complying with pertinent codes and regulations, comply with pertinent recommendations contained in publication ACI 315 of the American Concrete Institute, “Manual of Standard Practice for Detailing Reinforcing Concrete Structures” and ACI 318 (latest edition) “Building Code Requirements for Reinforced Concrete”.

1.2.2.2 Where provisions of pertinent codes and standards conflict with this specification, the more stringent provisions shall govern.

1.3 – Submittals**1.3.1 Shop Drawings**

1.3.1.1 Submit shop drawings to the owner for review.

1.3.1.2 Do not deliver concrete reinforcement to job site until receipt of reviewed shop drawings from the owner.

1.4 – Product Handling

1.4.1 Protection

1.4.1.1 Use means necessary to protect concrete reinforcement before, during, and after installation and to protect installed work and materials of other trades.

1.4.1.2 Store in a manner to prevent excessive rusting and fouling with dirt, grease, and other bond breaking coatings.

1.4.1.3 Use necessary precautions to maintain to maintain identification after bundles are broken.

1.4.2 Replacements

In the event of damage, immediately make repairs and replacements necessary, at no additional cost to the owner.

PART TWO – PRODUCTS:

2.1 – Concrete Reinforcement

Concrete reinforcement materials shall be new, free from loose rust and scale and complying with the following referenced standards:

2.1.1 Reinforcement Bars

ASTM A-615, Grade 60. All reinforcing bars, except No. 2 shall be deformed in accordance with ASTM A-305, latest edition.

2.1.2 Welded Wire Fabric

Welded wire fabric shall conform to ASTM A-185, latest edition.

2.2 – Other Materials

Other materials not specifically described, but required for complete and proper installation of concrete reinforcement, shall be selected by the contractor and subject to approval by the owner.

PART THREE – EXECUTION:

3.1 – Surface Conditions

3.1.1 Inspection

3.1.1.1 Before installation of work of this section, inspect installed work of other trades and verify that such work is complete to the point where this installation may properly begin.

3.1.1.2 Verify that concrete reinforcement may be installed in strict accordance with pertinent codes and regulations, shop drawings and original design.

3.1.2 Discrepancies

3.1.2.1 In the event of discrepancy, immediately notify the owner.

3.1.2.2 Do not start installation until discrepancies and unsatisfactory conditions are corrected.

3.2 – Bending

3.2.1 General

3.2.1.1 Fabricate reinforcement in accordance with shop drawing.

3.2.1.2 Do not use bars with kinks or bends not shown on drawing or shop drawing.

3.2.1.3 Do not bend or straighten steel in a manner that will damage material.

3.2.2 Design

3.2.2.1 Bend all bars cold unless approved by the owner.

3.2.2.2 Make bends for ties around pins having diameter not less than two (2) times minimum bar thickness.

3.2.2.3 Make bends for other bars, including hooks, around pins having diameter not less than six (6) times minimum bar thickness.

3.3 – PLACEMENT

3.3.1 General

Before start of concrete placement, accurately place concrete reinforcement, positively securing and supporting by metal chairs or spacers, or by metal hangers.

3.3.2 Inspection

Prior to placement of concrete, the owner shall be notified in ample time to inspect placement of reinforcement. Inspection of reinforcement will be made only after the placement of each section to be poured. The owner shall always be notified of pouring schedule well in advance.

3.3.3 Clearance

3.3.3.1 Preserve clear space between bars of not less than the normal diameter of round bars.

3.3.3.2 In no case allow clear distance of less than three-quarter inch (3/4") or less than one and one-third (1-1/3) times maximum aggregate size.

3.3.3.3 Minimum clearance for reinforcing shall be two and one-half inches (2-1/2") when in contact with the ground, two inches (2") in concrete walls and three-quarters inch (3/4") in concrete not exposed to weather or in contact with the ground.

3.3.4 Dowels

Place required steel dowels securely anchored into position before concrete is placed.

3.3.5 Obstructions

In the event conduits, piping, inserts, sleeves or other items interfere with placing reinforcement as indicated on drawings or as otherwise required, immediately consult the owner and obtain approval of new procedures before placing concrete.

3.3.6 Splicing

3.3.6.1 Splices shall conform to ACI 238, Chapter 12. Splices shall be Class C unless otherwise indicated.

3.3.6.2 Welded wire fabric shall lap one (1) full mesh and shall be securely wired at each end and side.

3.4 – Cleaning Reinforcement

Concrete reinforcement, at the time concrete is placed, shall be free from rust scale, loose mill scale, oil paint and other coatings which will destroy or reduce bond between steel and concrete.

(End of Section 03200)

PART ONE - GENERAL:**1.1 - Scope****1.1.1 Work Included**

Cast-In-Place concrete required for this work as indicated on drawings and includes, but is not necessarily limited to:

1.1.1.1 Footings and Foundations**1.1.1.2 Portland Cement Concrete Paving****1.1.1.3 Curbs and Gutters****1.1.2 Related Work Described Elsewhere:****1.1.2.1 Concrete Formwork, Section 03100****1.2 – Standards and Specifications****1.2.1 Qualifications**

1.2.1.1 Provide superintendent or foreman who will be present at all times during execution of this portion of work, who shall be thoroughly trained and experienced in placing types of concrete specified and who shall direct work performed under this section.

1.2.1.2 For finishing exposed concrete surfaces, use thoroughly trained and experienced journeymen concrete finishers.

1.2.2 Codes and Standards

1.2.2.1 In addition to complying with pertinent codes and regulations, comply with pertinent recommendations of publication ACI 301 of the American Concrete Institute, "Structural Concrete for Buildings".

1.2.2.2 Where provisions of pertinent codes and standards conflict with this specification, the more stringent provisions shall govern.

1.3 - Submittals**1.3.1 Materials List**

Within ten (10) days after contract award and before any concrete is delivered to job site, submit to the owner a complete list of materials proposed to be provided under this portion of the work, showing manufacturer's name and catalog number of all items such as admixtures, curing compounds and chemical floor hardener, and names and addresses of

transit-mix concrete supplier.

1.3.2 Transit-Mix Delivery Slips

1.3.2.1 Keep record at job site showing time and place of each concrete placement together with transit-mix delivery slip certifying contents of delivery.

1.3.2.2. Make record available to the owner upon request.

1.3.3.3. Upon completion of this portion of work, deliver record and delivery slips to the owner.

1.4 – Product Handling

1.4.1 Protection

Use means necessary to protect cast-in-place concrete materials before, during and after installation and to protect installed work of other trades.

1.4.2 Replacements

In the event of damage, immediately make repairs and replacements necessary at no additional cost to the owner.

PART TWO - PRODUCTS:

2.1 - Concrete

2.1.1 General

2.1.1.1 Concrete shall be transit-mixed in accordance with ASTM C-94, unless otherwise specifically permitted by the owner.

2.1.1.2 Control of concrete production shall be under supervision of an independent laboratory who shall design mixes, train contractor's technician to make concrete cylinder and test concrete cylinders for compression strength. The testing agency shall furnish the owner with certified copies of test results. Cost of all testing shall be borne by the contractor.

2.1.1.2.1 Strength Test: One (1) test consisting of four (4) specimens (cylinders) shall be made for each seventy-five cubic yards (75 c.y.) of each type concrete placed, but not less than one (1) test shall be made for each type concrete for each days work. Procedure for obtaining samples of fresh concrete for preparing test specimens shall be in accordance with ASTM C-172. Specimens for strength tests shall be made and cured in accordance with ASTM C-31. Strength tests of concrete specimens shall be made in accordance with ASTM C-39. One (1) specimen of each set shall be reported by the following day to the owner.

2.1.2 Quality

2.1.2.1 Concrete shall have the following minimum compressive strengths at twenty-eight (28) days and proportioned within the following limits:

Concrete Maximum <u>Location</u>	Compressive <u>Strengths</u>	Maximum Size <u>Aggregate</u>	Minimum Cement/ <u>Cubic Yard</u>	<u>Slump</u>
Footings and Retaining Walls	3,000	1-1/2"	5.25 Sacks	4"
Exterior Slabs, Walks and Curbs & Gutters	3,000	3/4"	5.75 Sacks	4"
All Other Work Not Indicated On Details	5,000	1"	5.25 Sacks	3"

2.1.2.2 Concrete shall have water-cement ratio not exceeding six gallons (6 gal.) per sack.

2.1.2.3 Air-entraining admixture complying with ASTM C-260 shall be added at manufacturer's prescribed rate to result in concrete at point of placement having maximum air content as follows:

2.1.2.3.1 4% for maximum 1-1/2" aggregate.

2.1.2.3.2 6% for maximum 3/4" aggregate.

2.1.3 Portland Cement
ASTM C-150, Type I, unless otherwise indicated.

2.1.4 Aggregates
ASTM C-33, unless otherwise indicated.

2.1.5 Water
Potable

2.1.6 Admixtures

2.1.6.1 Air-entraining admixture - ASTM C-260.

2.1.6.2 Calcium Chloride - Do not use calcium chloride.

2.1.6.3 Other - As specifically authorized in writing by the owner.

2.2 - Accessories

2.2.1 Vapor Barrier Under Slab On-Grade

Minimum eight (8) mil thick polyethylene sheet, decay resistant when tested in accordance with ASTM E-154.

2.2.2 Expansion Joint Material

Self expanding cork, ASTM D-1752, Type III, W.R. Grace/Service "4324". W.R. Meadows "Sealtight", or other product specifically approved by the owner.

2.2.3 Curing Compounds

Membrane forming type complying with ASTM C-309, Type I, unless otherwise approved by the owner.

2.2.4 Other Materials

Other materials not specifically described, but required for proper completion of the work of this section, shall be selected by the contractor and subject to the owner's approval.

PART THREE - EXECUTION:

3.1 – Surface Conditions

3.1.1 Inspection

3.1.1.1 Before work of this section, inspect installed work of other trades and verify that such work is complete to the point where this installation may properly begin.

3.1.1.2 Verify the items to be embedded in concrete are in place.

3.1.1.3 Verify that concrete may be placed to lines and elevations indicated on drawings or details, with required clearances for reinforcement.

3.1.2 Discrepancies

In the event of discrepancy, immediately notify the owner. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.

3.2 - Preparation

3.2.1 General

3.2.1.1 Preparation for placement shall be in accordance with ACI 318 and as specified herein.

Concrete

shall not be placed until reinforcement, anchor bolts, pipes, conduits or other set-in items have been inspected and approved by the owner. Concrete shall not be placed on soft or water-soaked ground, in water, on frozen ground or on surfaces covered with frost. Wood forms shall be thoroughly wetted or oiled before concrete is placed.

- 3.2.1.2 Remove debris from areas in which concrete will be placed.
- 3.2.1.3 Thoroughly clean areas to ensure proper placement and bonding of concrete.
- 3.2.1.4 Thoroughly clean transporting and handling equipment.
- 3.2.1.5 Notify the owner at least forty-eight (48) hours before placing concrete.

3.2.2 Joints

Locate construction joints in slabs where indicated on plans.

3.2.3 Vapor Barrier

Install vapor barrier under slab in continuous sheets, lapping joints six inches (6") minimum.
Cut around penetrations to provide as close fit as possible.

3.3 - Testing

3.3.1 General

3.3.1.1 Test concrete as follows:

- 3.3.1.1.1 Three (3) concrete cylinders for each concrete quality for each days pour.
- 3.3.1.1.2 Make and cure cylinders in accordance with ASTM C-31.
- 3.3.1.1.3 Test for compression in accordance with ASTM C-39 and C-192.
- 3.3.1.1.4 Test for compression in accordance with ASTM C-143 when directed by the owner.

3.3.2 Have available on the job at all times, four (4) six inch by twelve inch (6" x 12") steel cardboard test cylinders and one (1) standard slump cone.

3.3.3 Payment for testing of concrete shall be made by the contractor.

3.4 – Placing Concrete

3.4.1 Method

- 3.4.1.1 Convey concrete from mixer to place of deposit by methods that will prevent separation and loss of material. Method of conveying concrete shall be reviewed with the owner prior to placement of concrete.
- 3.4.1.2 For chuting, pumping and pneumatically conveying concrete, use equipment of size and design as to ensure a practically continuous concrete flow at delivery end without loss or separation of materials.
- 3.4.1.3 Deposit concrete as nearly as possible in its final position to avoid segregation due to handling and flowing.
- 3.4.1.4 Place concrete as dry as possible consistent with good workmanship, never exceeding maximum specified slump.
- 3.4.1.5 Place concrete continuously or in layers on ss that no c be placed on cured concrete which has hardened sufficiently to cause formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joint as herein specified.

3.4.1.6 Concrete shall be placed and protected as specified for temperature conditions:

3.4.1.6.1 Cold weather in accordance with ACI 604.

3.4.1.6.2 Hot weather in accordance with ACI 605.

3.4.2 Rate of Placement

3.4.2.1 Place concrete at such a rate that concrete is at all times plastic and flows readily between bare reinforcing bars. Concrete shall be poured in a continuous operation until placement of section is complete.

3.4.2.2 Do not place a greater area at one (1) time than can be properly finished, particularly during hot or dry weather.

3.4.2.3 Do not in any case place a slab or any other member greater than forty feet (40') in length without expansion joints as shown on the drawings.

3.4.2.4 Place concrete in form in horizontal layers not deeper than twenty-four inches (24") and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

3.4.2.5 Arrangement of construction joint bulkheads shall allow for concrete between construction joints to be placed in a continuous operation, with not more than one (1) hour of elapsed time between pours or not more than two (2) hours when retarders are used. Before placing new concrete on or against hardened concrete, forms shall be re-tightened, hardened surfaces roughened and cleaned of foreign matter and latency and moistened with water. Hardened concrete shall be given a brush coat of neat cement grout, broomed into the surface immediately before placing new concrete.

3.4.3 Consolidation

3.4.3.1 Thoroughly consolidate concrete in accordance with recommended practices of ACI 309 to suit concrete type and project conditions.

3.4.3.2 Consolidate concrete placed in forms by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping.

3.4.3.2.1 Do not use vibrators to transport concrete within forms.

3.4.3.2.2 Do not vibrate forms or reinforcing.

3.4.3.3 Place vibrators to rapidly penetrate concrete layer and at least six inches (6") into preceding layer; do not vibrate lower layers that have begun to set.

3.4.3.4 Limit vibration to the time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

3.4.4 Curbs and Gutters

Construct in accordance with locations, line, grade and details shown on the drawings in accordance with the applicable requirements of the South Carolina State Highway Department Standard Specifications for Highway Construction, 2000 Edition, Sections 701, 702 and 721. Match except no extruded curb and gutter will be allowed.

3.5 – Finishing Concrete

3.5.1 Formed Surfaces

3.5.1.1 Provide as-cast rough form finish where concealed in finish work, unless otherwise specified.

3.5.1.2 Smooth-finished exposed concrete shall have forms stripped as soon as possible; after any necessary repairs are made, wet surface thoroughly and rub with No. 16 grit carborundum stone to remove fins and roughness. Spread past resulting from rubbing uniformly over surface and allow to set; moisten and rub with No. 30 stone until smooth and uniform.

3.5.2 Slabs

3.5.2.1 See section 03310

3.6 - Curing

3.6.1 General

3.6.1.1 Protect fresh concrete from premature drying and excessive cold or hot temperatures, mechanical injury or injury from rain or flowing water.

3.6.1.2 Maintain concrete without drying at relatively constant temperature for period of time necessary for cement hydration and proper concrete hardening.

3.6.1.3 Start initial curing as soon as free water has disappeared from surface after finishing. Keep continuously moist for not less than seventy-two (72) hours.

3.6.1.4 Start final curing procedures immediately following initial curing before concrete has dried. Continue final curing for at least seven (7) days in accordance with ACI 301, ACI 604 procedures. Avoid rapid drying at end of final curing period.

3.6.2 Formed Surfaces

Wet forms at least twice daily for at least ten (10) days after concrete placement.

3.6.3 Unformed surfaces

Initially cure unformed surfaces, such as slabs, by moisture curing as specified hereinafter, wherever possible.

3.6.4 Curing Methods

3.6.4.1 Moisture curing shall consist of any of the following methods:

- 3.6.4.1.1 Keeping concrete surface continuously wet by covering with water.
- 3.6.4.1.2 Continuous water-fog spray.
- 3.6.4.1.3 Cover concrete surface with waterproof paper, polyethylene film or white burlap-polyethylene sheet, thoroughly saturating and keeping continuously wet. Place cover over entire surface and around edges with four inch (4") laps over adjacent covers. Immediately repair holes or tears during curing period.
- 3.6.4.1.4 Apply curing compound to horizontal surfaces when concrete is dry to the touch using power spray in two (2) coat continuous operation in accordance with manufacturer's directions.
- 3.6.4.1.5 Maintain concrete temperature between fifty and sixty degrees fahrenheit (50 F to 60 F).
- 3.6.4.1.6 When atmospheric temperature is at eighty degrees fahrenheit (80 F) or above, or during other climatic conditions which would cause rapid drying, make arrangements before concrete placement for installation of wind breaks or shading, and for fog spraying, wet sprinkling or moisture retaining covering, and provide other hot weather protection to complying with ACI 306.
- 3.6.4.1.7 During curing period, maintain concrete temperature as uniform as possible and protect from rapid atmospheric temperature changes. Avoid concrete temperature changes exceeding five degrees fahrenheit (5 F) in any one (1) hour or twenty degrees fahrenheit (20 F) in a twenty-four (24) hour period.

3.7 – Defective Work

3.7.1 Inspection

Immediately after forms and curing membranes are removed, inspect concrete surfaces and patch voids, rock pockets, form tie holes and other imperfections.

3.7.2 Patching

3.7.2.1 Minor Defective Areas

- 3.7.2.1.1 Chip away to about one inch (1") leaving edges perpendicular to surface; wet area to be patched and at least six inches (6") adjacent to prevent water absorption.
- 3.7.2.1.2 Patching compound shall be L&M Construction Chemicals, Inc. "Everbond", or other product approved by the owner; mixed and applied according to manufacturer. Apply patching mortar immediately.
- 3.7.2.1.3 Patching mortar shall be of as dry consistency as possible within handling and placing requirements; thoroughly compact mortar by ramming into place.
- 3.7.2.1.4 Screed off to leave patch slightly higher than surrounding surfaces; leave

undisturbed for one to two (1-2) hours to permit initial shrinkage, then perform final finishing.

3.7.2.1.5 Finish patch to match adjacent surfaces and keep wet for at least seven (7) days; provide required protective covering.

3.7.2.2 Major Defective Areas

If defects are serious or affect strength of structure or if patching does not satisfactorily restore quality and appearance of surface, the owner may require that concrete be removed and replaced in accordance with provisions of this section at no additional cost to the owner.

(End of Section 03300)

PART ONE - GENERAL:**1.01 - SCOPE**

The work includes furnishing all labor, equipment and materials and performing all operations required for the installation of bluestone sidewalks on prepared concrete base as shown on the drawings.

1.02 - RELATED WORK SPECIFIED ELSEWHERE

Earthwork	Section 02200
Brick Foundations	Section 03310
Concrete Sidewalk & Driveway	Section 02523

1.03 - QUALITY ASSURANCE**A. Referenced Standards**

Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these specifications shall in no way invalidate the minimum requirements of the referenced standards. South Carolina State Highway Department Standard Specifications for Highways and Bridges, latest edition.

1.04 - MANUFACTURER'S QUALIFICATIONS

Only the products of a manufacturer regularly engaged in the manufacture of Bluestone material will be acceptable.

1.05 - SUBMITTALS

Samples will be submitted for OWNER's approval prior to purchasing materials. Bluestone samples shall be twelve inches by twelve inches (12" x 12"). Sufficient samples will be furnished to demonstrate the supplier's full range of colors. Approved samples will serve as the project standard.

1.06 - SAMPLE PANELS

The CONTRACTOR shall construct the Bluestone plaza panel prior to starting installation. This work will be inspected by the OWNER and ENGINEER. If this work is not acceptable, the CONTRACTOR will provide additional samples at no cost to the OWNER. Accepted samples will become the standards for the entire job and shall remain undisturbed until completion of all work. The sample will include the full range of previously approved colors.

1.07 - DELIVERY, HANDLING AND STORAGE

Bluestone material packaged by strapping in accordance with the manufacturer's standard when delivered to the site. Material damaged in any manner will be rejected and shall be replaced with new material at no additional cost to the OWNER.

PART TWO - PRODUCTS:

2.01 - BLUESTONE MATERIAL

Bluestone material shall be a minimum of one and one-half inches (1-1/2") in thickness as supplied by the Johnston-Rhodes Bluestone Company, East Branch, New York or approved equal. The material shall be furnished in nominal widths of 12"x12", 12"x24", 24"x24", and 24"x36" to complete a 4-piece French Pattern. All slabs will be natural cleft finish in full color with no lilacs, greens, or rusts. All edges will be either clean snapped or saw cut, except for edges adjacent to buildings. Refer to the drawings for placing requirements and provide shapes to conform with the drawings.

2.02 – MORTAR SETTING BED

Sand-cement setting bed shall be 3:1 sand-cement mixture. Slump shall be adjusted to obtain a suitable stable setting bed. Sand will conform to South Carolina Highway Department Specifications, latest edition. Portland cement will conform to South Carolina Highway Department Specifications, latest edition.

PART THREE - EXECUTION:

3.01 - INSTALLATION

The CONTRACTOR performing the flagstone paving shall have at least five (5) years of successful experience in this type of paving application. The work must be acceptable to the OWNER prior to the completion of the work.

3.02 - CLEAN UP

After installation, the bluestone pavers shall be cleaned of all dirt, stains and left in a completed condition acceptable to the ENGINEER.

(End of Section 03311)



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Our external halyard **Continental** flag poles utilize the traditional method for raising and lowering flags. These **architectural grade** cone-tapered aluminum flagpoles are suitable for use in most wind conditions flying maximum size or multiple flags. Exposed heights of 20' to 80' are available. A selection of shaft diameters and wall thicknesses are offered for most exposed heights to meet your specific needs and to offer the best overall value.

Standard fittings:

- External nylon braided halyard
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- Revolving Truck Assembly
- Spun aluminum collar
- Ground sleeve for lightning protection
- 2 snap hooks
- Cast aluminum cleat

[Flag Pole Wind Ratings](#)

[Continental Flagpole Architectural Drawing and Information \(PDF\)](#)

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Available Aluminum Finishes

Satin (standard) Natural Anodized Dark Bronze Anodized Black Anodized



Also available in white, black, and brown powdercoat

Anodized finishes are achieved by immersing the material into an acid solution and passing a direct current through the material in such a manner as to form a durable oxide film on the surface of the flagpole shaft. This is meant to increase resistance to corrosion and abrasion. An anodized finish can be attained in Natural, black or Dark bronze.

Due to digital reproduction, colors are for display purposes only.

Prices do NOT include freight. Click on a specific pole to request a freight quote, or call us.

Part Number	Exposed Height	Base Diameter	Wall Thickness	Shaft Sections	Satin Finish	Natural Anodized	Duranodic Bronze or Black	Powder Coat	Shipping Weight (pounds)
20x4x125	20'	4.00	0.125"	1	\$780.00	\$804.00	\$839.00	\$808.00	84
20x5x125	20'	5.00	0.125"	1	\$952.00	\$1074.00	\$1136.00	\$1072.00	102
20x5x156	20'	5.00	0.156"	1	\$1061.00	\$1188.00	\$1245.00	\$1177.00	133
20x5x188	20'	5.00	0.188"	1	\$1204.00	\$1332.00	\$1389.00	\$1316.00	133
20x6x156	20'	6.00	0.156"	1	\$1279.00	\$1431.00	\$1463.00	\$1389.00	149
20x6x188	20'	6.00	0.188"	1	\$1605.00	\$1759.00	\$1791.00	\$1708.00	165
25x4x125	25'	4.00	0.125"	1	\$754.00	\$864.00	\$925.00	\$900.00	87
25x5x125	25'	5.00	0.125"	1	\$1036.00	\$1200.00	\$1261.00	\$1181.00	128
25x5x156	25'	5.00	0.156"	1	\$1224.00	\$1389.00	\$1452.00	\$1365.00	166
25x5x188	25'	5.00	0.188"	1	\$1480.00	\$1642.00	\$1708.00	\$1614.00	128
25x5x188	25'	5.50	0.188"	1	\$1568.00	\$1759.00	\$1839.00	\$1716.00	118
25x6x156	25'	6.00	0.156"	1	\$1530.00	\$1725.00	\$1800.00	\$1679.00	163
25x6x188	25'	6.00	0.188"	1	\$1559.00	\$1754.00	\$1829.00	\$1706.00	182
30x5x125	30'	5.00	0.125"	1 or 2	\$1224.00	\$1420.00	\$1485.00	\$1423.00	134
30x5x156	30'	5.00	0.156"	1 or 2	\$1444.00	\$1639.00	\$1704.00	\$1636.00	140
30x5x188	30'	5.00	0.188"	1 or 2	\$1588.00	\$1771.00	\$1848.00	\$1813.00	146
30x6x156	30'	6.00	0.156"	1 or 2	\$1765.00	\$1991.00	\$2069.00	\$1957.00	184
30x6x188	30'	6.00	0.188"	1 or 2	\$1853.00	\$2079.00	\$2159.00	\$2043.00	206
35x5x156	35'	5.00	0.156"	1 or 2	\$1586.00	\$1810.00	\$1898.00	\$1798.00	190
35x5x188	35'	5.00	0.188"	1 or 2	\$1599.00	\$1880.00	\$1955.00	\$1921.00	190
35x6x156	35'	6.00	0.156"	1 or 2	\$1853.00	\$2117.00	\$2228.00	\$2080.00	216
35x6x188	35'	6.00	0.188"	1 or 2	\$2316.00	\$2580.00	\$2690.00	\$2528.00	216
35x7x156	35'	7.00	0.156"	1 or 2	\$2140.00	\$2463.00	\$2573.00	\$2388.00	235
35x7x188	35'	7.00	0.188"	1 or 2	\$2384.00	\$2706.00	\$2816.00	\$2624.00	269
40x7x156	40'	7.00	0.156"	1 or 2	\$2576.00	\$2936.00	\$3052.00	\$2848.00	280
40x8x156	40'	8.00	0.156"	1 or 2	\$2842.00	\$3271.00	\$3407.00	\$3172.00	315
40x8x188	40'	8.00	0.188"	1 or 2	\$3077.00	\$3506.00	\$3644.00	\$3400.00	280
45x8x188	45'	8.00	0.188"	2	\$3439.00	\$3884.00	\$4056.00	\$3768.00	362
50x8x188	50'	8.00	0.188"	3	\$3708.00	\$4204.00	\$4405.00	\$4077.00	430
50x10x188	50'	10.00	0.188"	3	\$4636.00	\$5239.00	\$5480.00	\$5098.00	527

55x10x188	55'	10.00	0.188"	3	\$5044.00	\$5647.00	\$5893.00	\$5494.00	550
Part Number	Exposure	Height	Base Diameter	Wall Thickness	Shaft Sections	Shipping	Natural Finish	Brass	Back Plate
60x10x250	60'	10.00	0.188"	3	\$5274.00	\$5991.00	\$6260.00	\$5812.00	(p6081s)
60x12x250	60'	12.00	0.250"	3	\$6663.00	\$7380.00	\$7652.00	\$7160.00	741
65x10x312	65'	10.00	0.312"	3	\$8472.00	\$9338.00	\$9647.00	\$9058.00	750
65x12x250	65'	12.00	0.250"	3	\$8015.00	\$8880.00	\$9184.00	\$8613.00	N/A
70x10x312	70'	10.00	0.312"	3	\$9085.00	\$9997.00	\$10328.00	\$9698.00	N/A
70x12x250	70'	12.00	0.250"	3	\$8240.00	\$9108.00	\$9415.00	\$8834.00	920
75x12x375	75'	12.00	0.375"	3	\$9477.00	\$10440.00	\$10792.00	\$10127.00	872
80x12x375	80'	12.00	0.375"	3 or 4	\$11767.00	\$12930.00	\$13426.00	\$12543.00	N/A
					\$12114.00	\$13276.00	\$13772.00	\$12879.00	1241

All prices listed in US Dollars.

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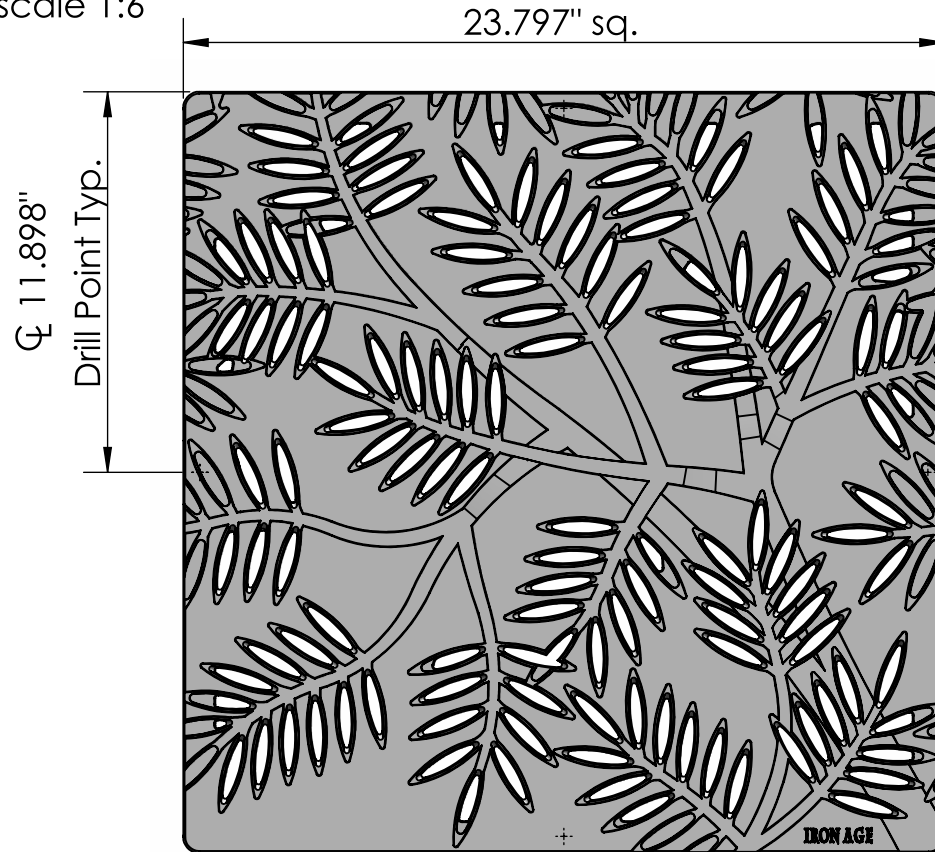


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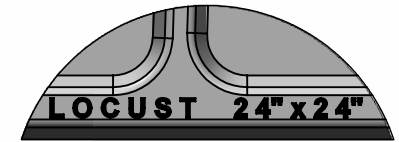
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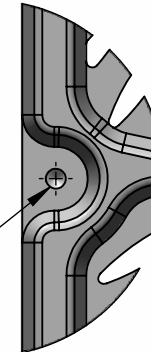
TOP VIEW
scale 1:6



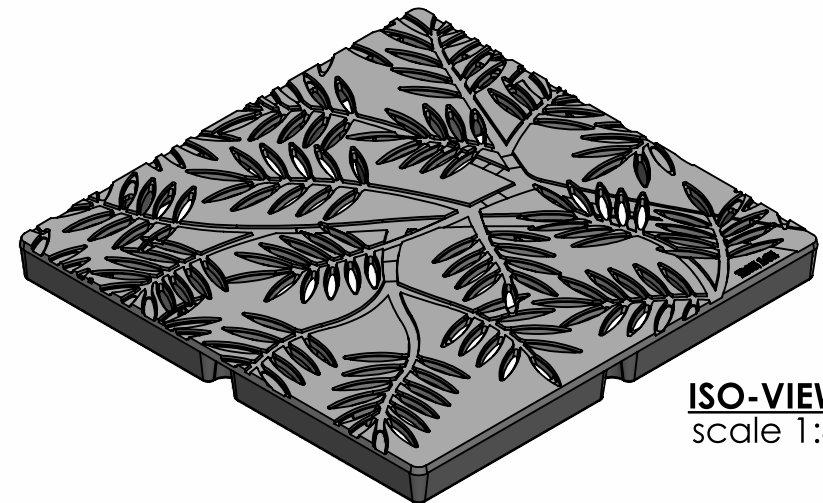
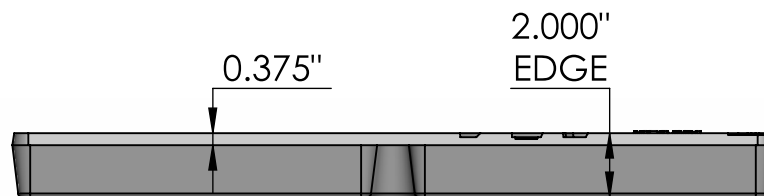
CASTING-ID
scale 1:3



Drill Points (4x)
in Back



SIDE VIEW
scale 1:6



ISO-VIEW
scale 1:8

NOTES:

1. ADA Compliant: No thru openings greater than ½".
2. Ships in pieces: 1
3. Due to casting inconsistencies, all dimensions are nominal.

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Locust 24" x 24" Catch Basin Grate

 IRON AGE DESIGNS Telephone 206.276.0925 www.ironagegrates.com	Material: Cast Iron A 48	Weight: 95.32 lbs.	Free Drain Area: 68.28 in/sq., or 12.05 %	By: MS Checked: MS Date: 9-28-23
	Finish: Raw	Edge: 2.000"	Flow Rate: 89.45 GPM, or .199 CuFt./sec.	© Registration: VA 2-159-748 Scale: NTS
	Fits: NDS® 2400 Series	Product ID: LN24-24I14	Drawing Name: 05_LOC_N_24x24_CatchBasin_Iron	

AS Standards

	Commercial 95 340	Commercial 95 340 FR
Maximum force	warp 670 N/50mm	580 N/50mm
Elongation at max. force	warp 117%	98%
Maximum force	weft 2400 N/50mm	2000 N/50mm
Elongation at max. force	weft 83%	71.5%
Breaking force	warp 990 N	930 N
Breaking force	weft 2000 N	2000 N
Tear strength	warp 184 N	194 N
Tear strength	weft 347 N	282 N
Bursting pressure	3500 kPa	3600 kPa
Bursting force	1937 N	1944 N

Performance

Maximum force
Elongation at max. force
Maximum force
Elongation at max. force
Breaking force
Breaking force
Tear strength
Tear strength
Bursting pressure
Bursting force

ASTM Standards

	Commercial 95 340	Commercial 95 340 FR
Maximum force	warp 189.1 lbf	158.6 lbf
Elongation at max. force	warp 103.67%	88.7%
Maximum force	weft 462.3 lbf	412.3 lbf
Elongation at max. force	weft 63%	49%
Breaking force	warp 52.2 lbf	43 lbf
Breaking force	weft 52.2 lbf	39.6 lbf
Tear strength	422 lbf	408 lbf

Fabric Properties

Nominal Fabric Mass

340 gsm ± 20

340 gsm ± 20

340 gsm ± 20

340 gsm ± 20

Roll Specification

Width
Length

3m (folded)
40m

3m (folded)
40m

9 ft. 10 in. (folded)
131 ft. 3 in.

9 ft. 10 in. (folded)
131 ft. 3 in.

Flammability Info

Flammability Index - 12
Ingnitability Index - 10
Spread of Flame Index - 7
Heat Evolved Index - 5
Smoke Developed Index - 4

Flammability Index - 1
Ingnitability Index - 13
Spread of Flame Index - 8
Heat Evolved Index - 3
Smoke Developed Index - 6

ASTM E84 19B Class A

CSFM Title 19 1237.1
NFPA 701 Test Methods 1&2
ASTM E84 19B Class A



*The results listed in this brochure are typical averages from independent testing and quality assurance testing and are not to be taken as a minimum specification nor as forming any contract between GALE Pacific and another party. Due to continuous product improvement, refer to the GALE Pacific Commercial Fabrics website for latest technical performance information.

¹ Please note, Check with your local waste handler to confirm recyclability
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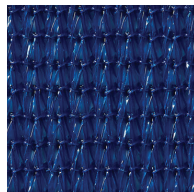
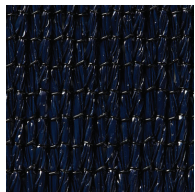
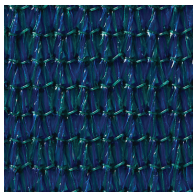
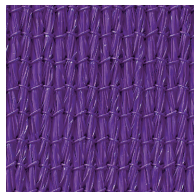
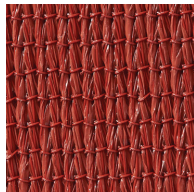
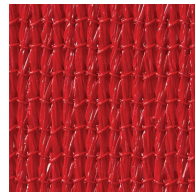
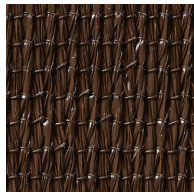
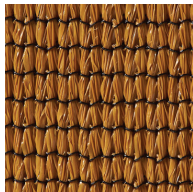
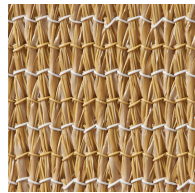
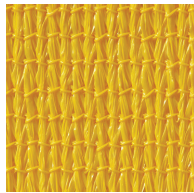
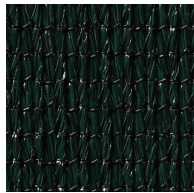
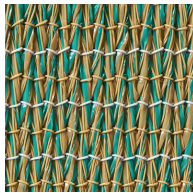
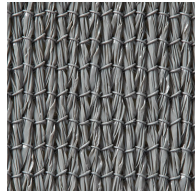
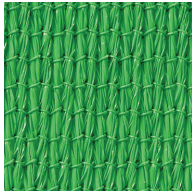
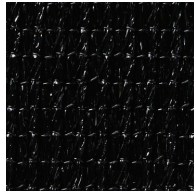
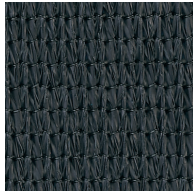
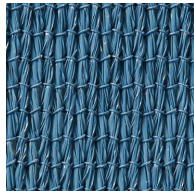
Commercial
NinetyFive
340

Commercial Ninety-Five 340 delivers the utmost in versatility across a wide range of applications.

Provides the optimal combination of sun protection, strength and durability to ensure low maintenance and long-life performance.

The most expansive color assortment in the HDPE shade fabric market. Offering 22 rich, vibrant and on-trend colors to fulfill a wide range of design requirements.

A mid-weight fabric (340 gsm) suitable for applications spanning a wide array of sizes and designs, making Commercial Ninety-Five 340 one of the most versatile HDPE shade fabrics in the industry.

 Aquatic Blue 444938 495671	 Navy Blue 445010 495602	 Turquoise 445065 495664	 Royal Purple 459185 495725	 Deep Ochre 444990 495688
 Cayenne 455255 495701	 Cherry Red 444976 495695	 Orange 459215 495633	 Brown 481254 495657	 Cedar 465360 495534
	 Desert Sand 444983 495565	 Yellow 445072 495619	 Brunswick Green 444952 495572	 Rivergum 445027 495589
	 Steel Grey 445041 495718	 Bright Green 459208 495596	 Black 444945 495640	 Charcoal 444969 495558
 Gun Metal 455262 495527	 Natural 445003 495541	 Sky Blue 445034 495626	 White 497736 495732	

Commercial
NinetyFive
340**FR**

Durability and **FR** compliance are now combined to create premium fabrics providing maximum performance.

Only GALE Pacific offers the **WIDEST RANGE of FLAME RETARDANT** knitted fabrics globally.

Our FR fabrics meet the most stringent Fire Standards for shade fabrics including CSFM 1237.1 & NFPA 701 across all color variants. Offering premium biaxial stability and tensile properties, for minimal maintenance and improved fabric life.

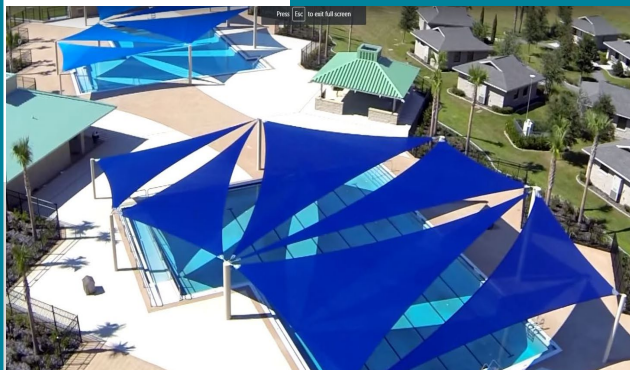


Backed by a full 10-year warranty against UV degradation

Designed to withstand the world's harshest environments

Industry-leading stentering process provides premium lay flat characteristics

A mid-weight fabric suitable for a wide array of applications and designs



Commercial 95 340 is the cornerstone of the GALE portfolio and the most trusted HDPE shade fabric in the industry with over 20 years of time-tested reliability. Commercial 95 delivers the utmost in versatility across a wide range of applications with an expansive assortment of modern and vibrant colors.

PERFORMANCE

ASTM D5034

Tensile Strength and Elongation

Maximum Force – Warp (Mean)	189.1 lbf
Elongation at Maximum Force – Warp (Mean)	103.67 %
Maximum Force – Weft (Mean)	462.3 lbf
Elongation at Maximum Force (Mean)	63%

ASTM D2261

Tearing Strength – Tongue (Single Rip)

Mean Force – Warp	52.2 lbf
Mean Force – Weft	52.2 lbf

ASTM D6797

Bursting Strength – Ball Burst (Constant Rate of Extension)

Mean Force	422 lbf
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AS 4174:2018

Shade Protection Fabric Performance



- A mid-weight fabric (340 gsm) suitable for applications spanning a wide array of sizes and designs, making Commercial 95 one of the most versatile HDPE shade fabrics in the industry.
- Provides the optimal combination of sun protection, strength, and durability to ensure low maintenance, and long-life performance.
- The most expansive color assortment in the HDPE shade fabric market. Offering 22 rich, vibrant and on-trend colors to fulfill a wide range of design requirements.
- Industry-leading stentering process provides premium lay flat characteristics to assist with accurate design and fabrication
- Backed by a full 10-year warranty against UV degradation and designed to withstand the world's harshest environments
- 100% Lead and Phthalate free

FABRIC PROPERTIES

AS 2001.2.13

Mass per unit

Nominal fabric mass 340 gsm ± 20; 10 oz / yd²

Approximate thickness 0.06 in. / 1.6 mm

ROLL SPECIFICATIONS

Nominal width: 9 ft. 10 in. / 3.0m (folded)

Length: 131 ft 3 in. / 40m

Approx. roll weight: 97 lbs. / 44 kg

Approx. roll diameter: 1.05 ft / 0.32 m

Core diameter: 1.38 in. / 35 mm

USAGE INSTRUCTIONS

Do not use against flames. Contact with organic solvents, halogens or highly acidic substances may reduce the service life of the fabric and void the warranty. Biaxial elastic material properties available on request.

SUGGESTED SPECIFICATION

Shade cloth fabric shall be compliant to Australian standard AS 4174:2018 and shall be GALE Pacific Commercial 95 Knitted HDPE monofilament & tape shade fabric offering a UVE Protection Category of "Very Effective".

FLAMMABILITY

ASTM E84 19B Class A

Colour	Cover Factor	Shade Factor	UV-Vis Trans %	UVR Trans %	UVR Block %	UVE %	Protection Category
Aquatic Blue	92	85.6	14.4	8.9	91.1	91	Very Effective
Black	94	94.6	5.4	5.2	94.8	93	Very Effective
Bright Green	92	88.6	11.4	7.5	92.5	91	Very Effective
Brown	93	91.5	8.5	6.9	93.1	92	Very Effective
Brunswick Green	94	93.8	6.2	5.3	94.7	93	Very Effective
Cayenne	92	85.3	14.7	7.6	92.4	91	Very Effective
Cedar	93	87.3	12.7	6.4	93.6	93	Very Effective
Charcoal	93	93.1	6.9	6.6	93.4	91	Very Effective
Cherry Red	91	78.4	21.6	8.8	91.2	91	Very Effective
Deep Ochre	94	92.8	7.2	5.4	94.6	93	Very Effective
Desert Sand	94	86.1	13.9	6.2	93.8	93	Very Effective
Gun Metal	93	91.4	8.6	6.8	93.2	92	Very Effective
Natural	93	76.2	23.8	6.9	93.1	92	Very Effective
Navy Blue	94	93.6	6.4	5.6	94.4	93	Very Effective
Orange	93	80.6	19.4	6.0	94.0	93	Very Effective
Rivergum Green	93	88.7	11.3	7.1	92.9	92	Very Effective
Royal Purple	91	87.7	12.3	8.9	91.1	91	Very Effective
Sky Blue	92	89.0	11.0	7.8	92.2	91	Very Effective
Steel Grey	94	90.9	9.1	5.7	94.3	93	Very Effective
Turquoise	92	86.0	14.0	8.5	91.5	91	Very Effective
Yellow	95	77.6	22.4	4.5	95.5	94	Very Effective



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www.galecommercial.com





Commercial NinetyFive 340 FR, the flame retardant version of the most trusted HDPE shade fabric in the industry, is a mid-weight, flame retardant fabric that delivers the utmost in versatility. Available in 22 vibrant and on-trend colors, Commercial NinetyFive 340 FR can fulfill almost any HDPE design requirement.

- A mid-weight, 340 gsm fabric suitable for applications spanning a wide array of sizes and designs,
- Provides the optimal combination of sun protection, strength, and durability to ensure low maintenance, and long-life performance
- The most expansive color assortment in the HDPE shade fabric market. Offering 22 rich, vibrant and on-trend colors to fulfill a wide range of design requirements.
- Each color individually tested and meets the most stringent FR certification criteria
- Industry-leading stentering process provides premium lay flat characteristics to assist with accurate design and fabrication
- Backed by a full 10-year warranty against UV degradation and designed to withstand the world's harshest environments
- 100% Lead and Phthalate free

FLAMMABILITY

CSFM Title 19 1237.1

NFPA 701 Test Methods 1 & 2

ASTM E84 19B

Each color individually tested and passes all certification criteria for above. Test results available upon request.
NFP92-503 Class M1 in process

FABRIC PROPERTIES

AS 2001.2.13 Mass per unit
Nominal fabric mass 340 gsm ± 20; ;10 oz/yd²
Approximate thickness 0.06 in. / 1.6 mm

ROLL SPECIFICATIONS

Nominal width: 9 ft. 10 in. / 3.0m (folded)
Length: 131 ft 3 in. / 40m
Approx. roll weight: 97 lbs. / 44 kg
Approx. roll diameter: 1.05 ft / 0.32 m
Core diameter: 1.38 in. / 35 mm

USAGE INSTRUCTIONS

Do not use against flames. Contact with organic solvents, halogens or highly acidic substances may reduce the service life of the fabric and void the warranty. Biaxial elastic material properties available on request.

SUGGESTED SPECIFICATION

Shade cloth fabric shall be compliant to Australian standard AS 4174:2018 and shall be GALE Pacific Commercial NinetyFive 340 FR Knitted HDPE monofilament & tape shade fabric offering a UVE Protection from 90 to 96%.

PERFORMANCE

ASTM D5034

Tensile Strength and Elongation

Maximum Force – Warp (Mean)	158.6 lbf
Elongation at Maximum Force (Mean)	89%
Maximum Force – Weft (Mean)	412.3 lbf
Elongation at Maximum Force – Warp (Mean)	49%

ASTM D2261

Tearing Strength – Tongue (Single Rip)

Mean Force – Warp	43.0 lbf
Mean Force – Weft	39.6 lbf

ASTM D6797

Bursting Strength – Ball Burst (Constant Rate of Extension)

Mean Force	408 lbf
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AS 4174:2018

Shade Protection Fabric Performance

Colour	Cover Factor	Shade Factor	UV-Vis Trans %	UVR Trans %	UVR Block %	UVE %	Protection Category
Aquatic Blue	92	88.1	11.9	8.5	91.5	91	Very Effective
Black	95	94.8	5.2	5.0	95.0	94	Very Effective
Bright Green	90	87.3	12.7	9.0	91.0	90	Effective
Brown	96	94.3	5.7	4.0	96.0	96	Most Effective
Brunswick Green	93	92.9	7.1	6.4	93.6	92	Very Effective
Cayenne	93	87.3	12.7	6.7	93.3	92	Very Effective
Cedar	93	88.4	11.6	6.4	93.6	93	Very Effective
Charcoal	93	93.6	6.4	6.1	93.9	92	Very Effective
Cherry Red	90	80.0	20.0	10.0	90.0	90	Effective
Deep Ochre	91	90.5	9.5	8.3	91.7	90	Effective
Desert Sand	93	86.1	13.9	6.6	93.4	92	Very Effective
Gun Metal	96	94.5	5.5	3.5	96.5	96	Most Effective
Natural	94	78.3	21.7	6.5	93.5	92	Very Effective
Navy Blue	94	93.1	6.9	6.2	93.8	93	Very Effective
Orange	92	80.8	19.2	7.6	92.4	91	Very Effective
Rivergum Green	94	89.7	10.3	6.0	94.0	93	Very Effective
Royal Purple	91	87.9	12.1	8.6	91.4	90	Effective
Sky Blue	94	91.3	8.7	6.0	94.0	93	Very Effective
Steel Grey	92	89.7	10.3	7.6	92.4	91	Very Effective
Turquoise	94	89.5	10.5	6.6	93.4	93	Very Effective
White	95	76.5	23.5	5.4	94.6	94	Very Effective
Yellow	93	77.5	22.5	6.8	93.2	92	Very Effective



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000000 FOUTAIN Improvement

The feature presently needs:

Water level sensors/electronic components.

RGBW free standing lights/junction boxes/circuitry wiring with communication cable/,iPlayer control.

Re-working of the weir.

Pool floor raising.

Retro-fitting pool drain, suction intakes, eyeball fittings and skimmer IF pool floor is raised.

Waterproofing.

Install Labor.

Licenses

Fountain contractors shall be licensed to perform fountain, electrical and utility work in the states of South Carolina and have the following South Carolina licenses:

Mechanical License -----

Bidders License -----

General License -----

Swimming Pool License under above General License -

Bonds and Insurance

Fountain contractors shall have bonds are written at a preferred rate